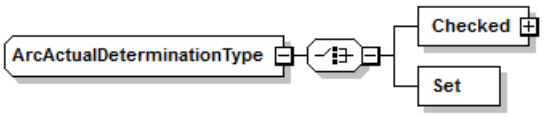
Data dictionary for QIF Library Features.xsd (normative)

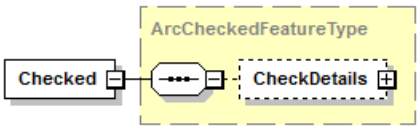
schema location: **..\QIFLibrary\Features.xsd**
attributeFormDefault: **unqualified**
elementFormDefault: **qualified**
targetNamespace: **http://qifstandards.org/xsd/qif2**

Complex types

complexType **ArcActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **ArcFeatureItemType/DeterminationMode**
annotation	documentation The ArcActualDeterminationType defines how the arc actual is determined, either by being set or by being checked (measured or constructed).

element **ArcActualDeterminationType/Checked**

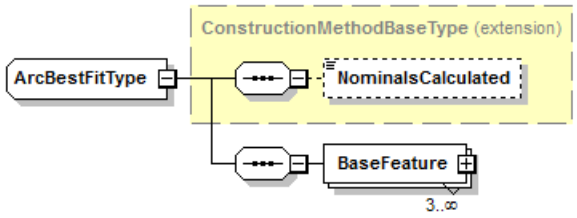
diagram	
type	**ArcCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the arc is checked from actual data, either measured or constructed.

element **ArcActualDeterminationType/Set**

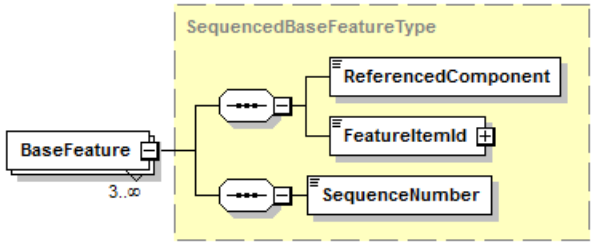
diagram	

type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the arc actual is set to its nominal value.

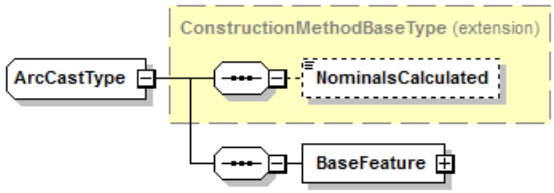
complexType **ArcBestFitType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **ArcConstructionMethodType/BestFit**
annotation	documentation The ArcBestFitType defines the information for a best-fit arc which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the arc.

element **ArcBestFitType/BaseFeature**

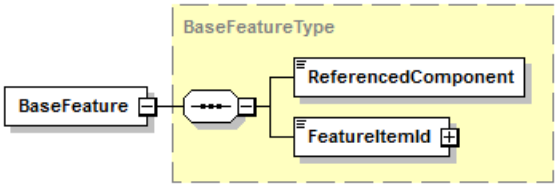
diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 3 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of an arc. The number of base features must be 3 or greater.

complexType **ArcCastType**

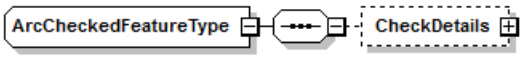
diagram	

type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **ArcConstructionMethodType/Cast**
annotation	documentation The ArcCastType defines an arc construction by the casting of another feature type to an arc. The location, vector and size are copied from the base feature. Any information not available on the base feature will remain at nominal. For example, a cast sphere will create an arc with center and diameter taken from the sphere but it will retain its nominal normal vector and start and end angles.

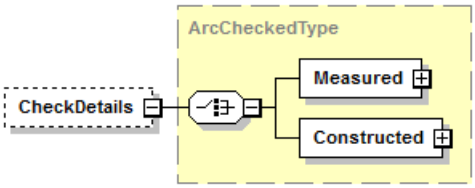
element **ArcCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the feature to be cast to an arc.

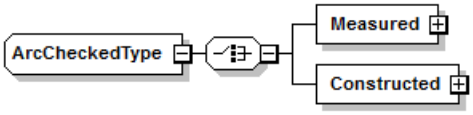
complexType **ArcCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **ArcActualDeterminationType/Checked**
annotation	documentation The ArcCheckedFeatureType defines that an arc feature is checked.

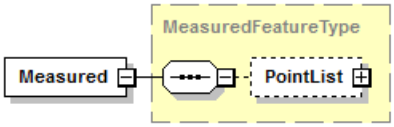
element **ArcCheckedFeatureType/CheckDetails**

diagram	
type	**ArcCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured** **Constructed**
annotation	documentation The optional CheckDetails element gives details about the arc check (measurement or construction).

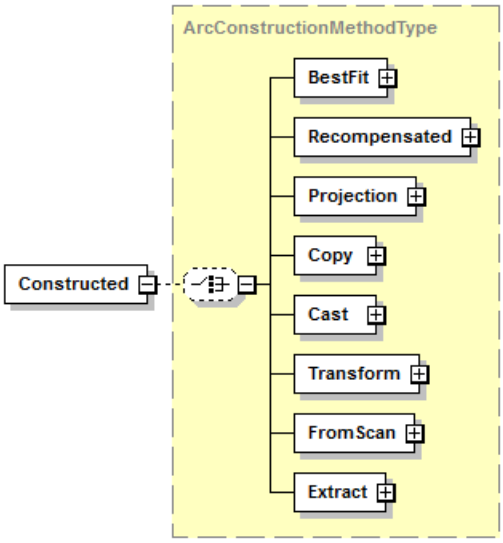
complexType **ArcCheckedType**

diagram	
children	**Measured** **Constructed**
used by	element **ArcCheckedFeatureType/CheckDetails**
annotation	documentation The ArcCheckedType defines how the arc actual is checked, either by measurement or by construction.

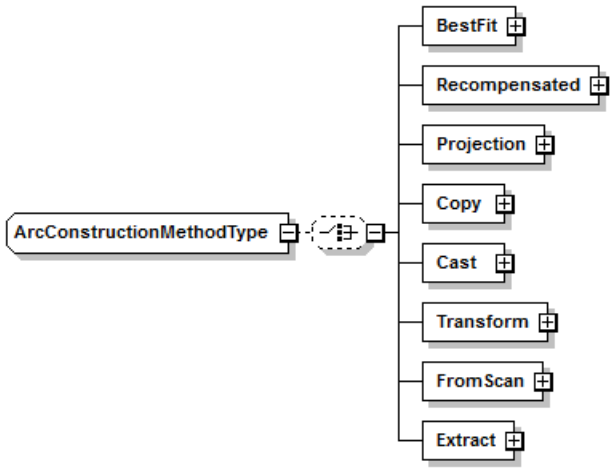
element **ArcCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the arc is measured.

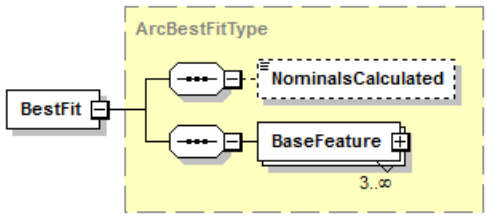
element **ArcCheckedType/Constructed**

diagram	
type	**ArcConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Projection** **Copy** **Cast** **Transform** **FromScan** **Extract**
annotation	documentation The Constructed element signifies that the arc is constructed.

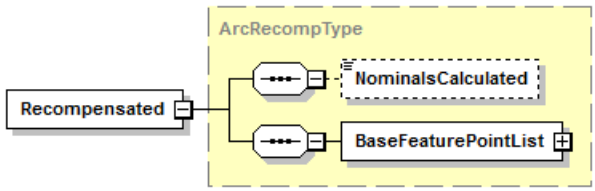
complexType **ArcConstructionMethodType**

diagram	
children	**BestFit** **Recompensated** **Projection** **Copy** **Cast** **Transform** **FromScan** **Extract**
used by	element **ArcCheckedType/Constructed**
annotation	documentation The ArcConstructionMethodType defines the method for constructing a unique nominal or actual arc feature.

element **ArcConstructionMethodType/BestFit**

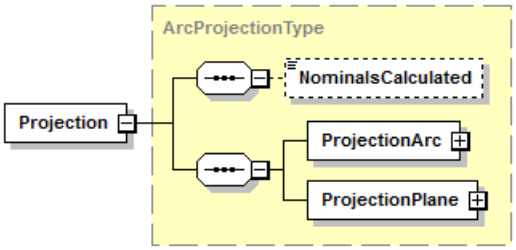
diagram	
type	**ArcBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of an arc from 3 or more point-reducible base features. This element is in an optional choice.

element **ArcConstructionMethodType/Recompensated**

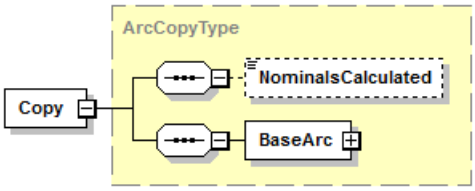
diagram	
type	**ArcRecompType**
properties	content complex

children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of an arc from 3 or more base feature points. This element is in an optional choice.

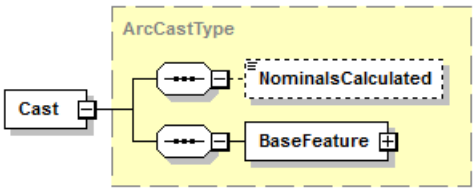
element **ArcConstructionMethodType/Projection**

diagram	
type	**ArcProjectionType**
properties	content complex
children	**NominalsCalculated** **ProjectionArc** **ProjectionPlane**
annotation	documentation The Projection element describes the construction of an arc by the projection of a base arc onto a plane. This element is in an optional choice.

element **ArcConstructionMethodType/Copy**

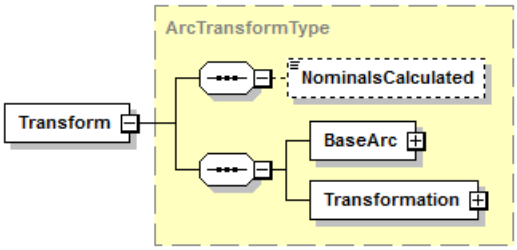
diagram	
type	**ArcCopyType**
properties	content complex
children	**NominalsCalculated** **BaseArc**
annotation	documentation The Copy element describes the construction of an arc by the copying of a base arc. This element is in an optional choice.

element **ArcConstructionMethodType/Cast**

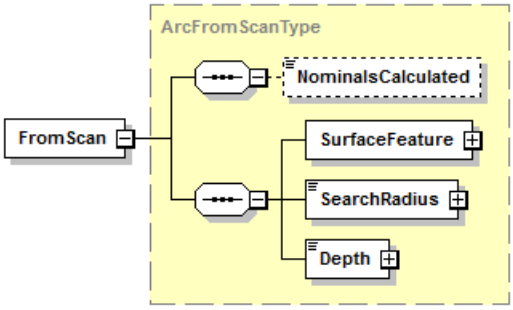
diagram	
type	**ArcCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**

annotation	documentation The Cast element describes the construction of an arc by the casting of a base feature. This element is in an optional choice.

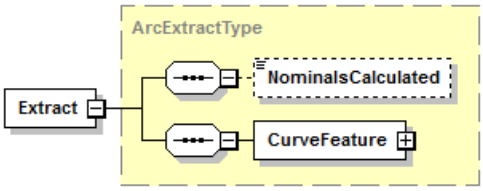
element **ArcConstructionMethodType/Transform**

diagram	
type	**ArcTransformType**
properties	content complex
children	**NominalsCalculated** **BaseArc** **Transformation**
annotation	documentation The Transform element describes the construction of an arc by the transformation of a base arc. This element is in an optional choice.

element **ArcConstructionMethodType/FromScan**

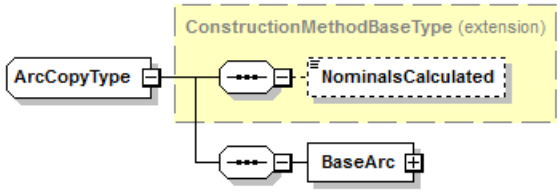
diagram	
type	**ArcFromScanType**
properties	content complex
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius** **Depth**
annotation	documentation The FromScan element describes the construction of an arc from scan data. This element is in an optional choice.

element **ArcConstructionMethodType/Extract**

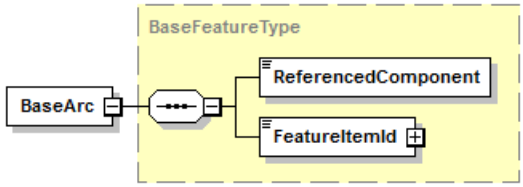
diagram	
type	**ArcExtractType**
properties	content complex

children	**NominalsCalculated** **CurveFeature**
annotation	documentation The Extract element describes the extraction of an arc from a curve. This element is in an optional choice.

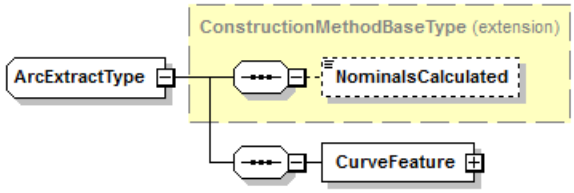
complexType **ArcCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseArc**
used by	element **ArcConstructionMethodType/Copy**
annotation	documentation The ArcCopyType defines a copied arc construction.

element **ArcCopyType/BaseArc**

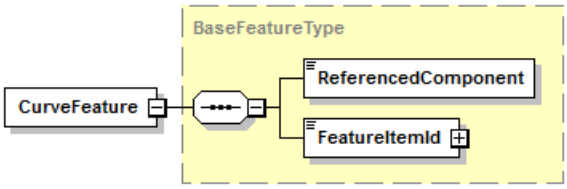
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseArc element identifies the arc to be copied.

complexType **ArcExtractType**

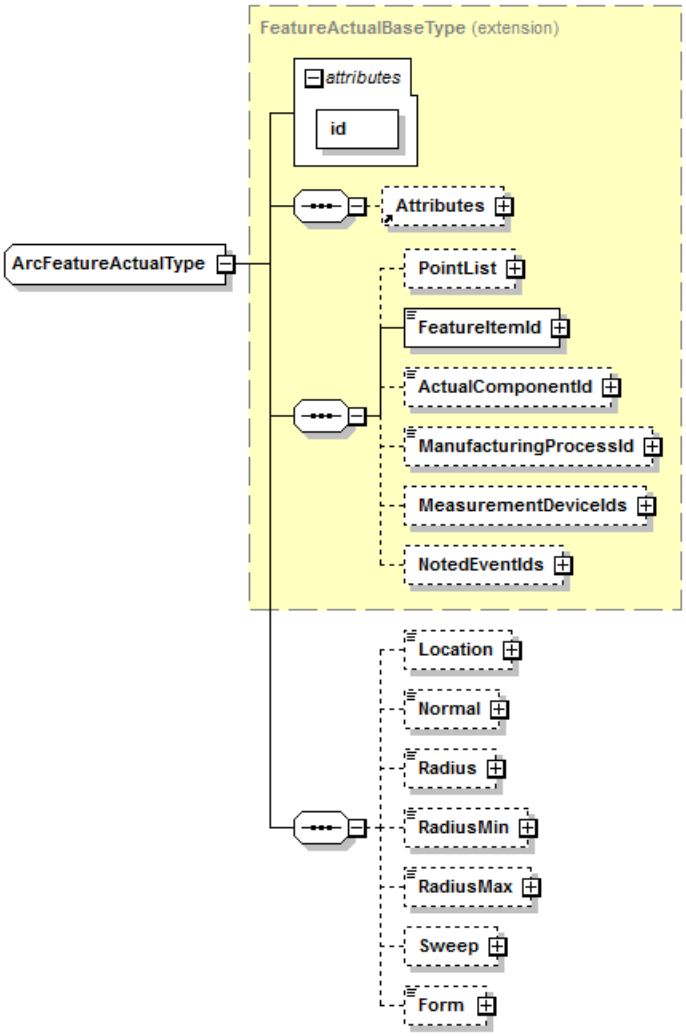
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **CurveFeature**
used by	element **ArcConstructionMethodType/Extract**
annotation	documentation

	The ArcExtractType defines an arc construction by the extraction of an arc from a curve feature.

element **ArcExtractType/CurveFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The CurveFeature element identifies the curve from which the arc is extracted.

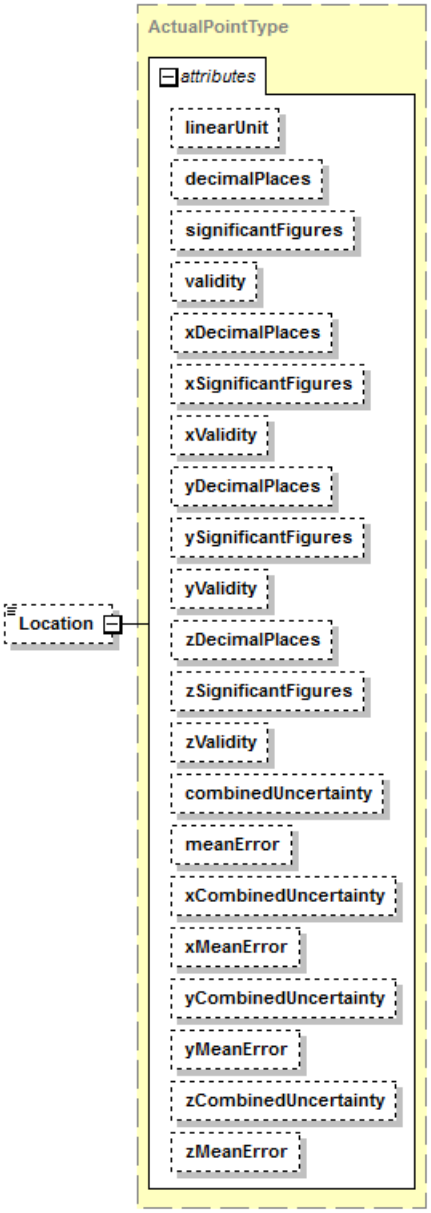
complexType **ArcFeatureActualType**

diagram	

type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **Location** **Normal** **Radius** **RadiusMin** **RadiusMax** **Sweep** **Form**
used by	element **ArcFeatureActual**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ArcFeatureActualType defines actual information for an individual arc feature.

element **ArcFeatureActualType/Location**

diagram



type	**ActualPointType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

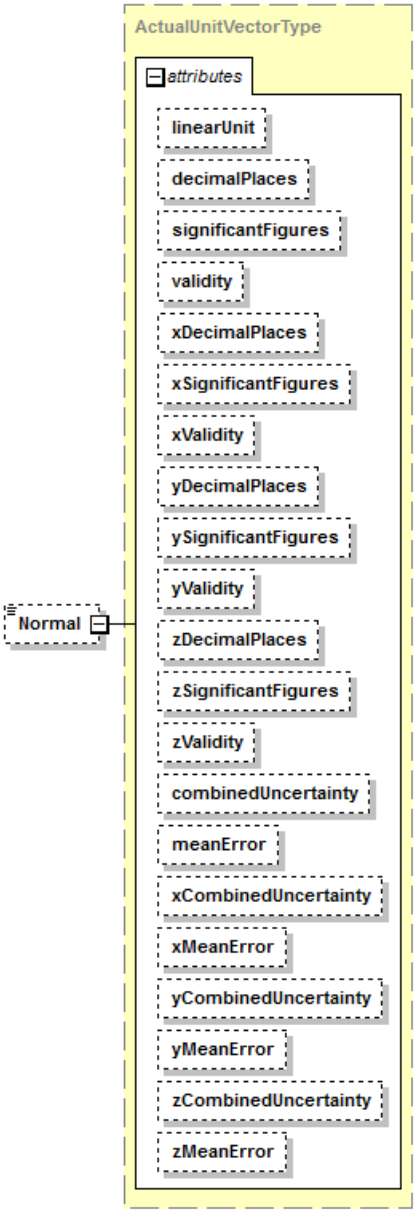
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Location element is the actual center point of the arc.	

element **ArcFeatureActualType/Normal**

diagram



type **ActualUnitVectorType**

properties

minOcc	0
maxOcc	1
content	complex

facets

Kind	Value	Annotation
length	3	

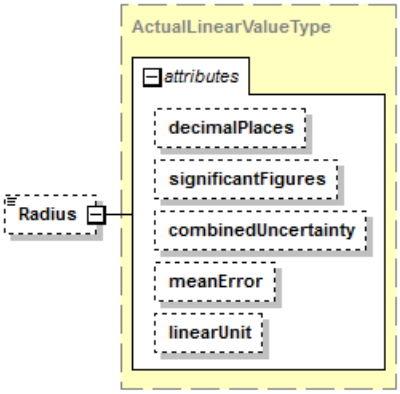
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Normal element is the actual normal vector of the plane of the arc.	

element **ArcFeatureActualType/Radius**

diagram



type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

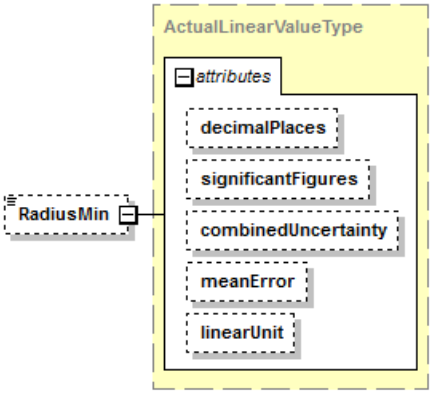
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is

	linearUnit	**xs:token**	a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Radius element is the actual radius of the arc based on substitute feature data fitting algorithm setting.		

element **ArcFeatureActualType/RadiusMin**

diagram



type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

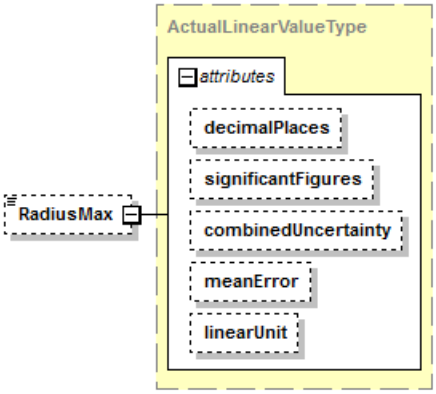
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

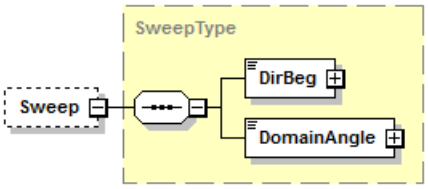
annotation

documentation
The optional RadiusMin element is the minimum radius of the arc from a report or an analysis.

element **ArcFeatureActualType/RadiusMax**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional RadiusMax element is the maximum radius of the arc from a report or an analysis.

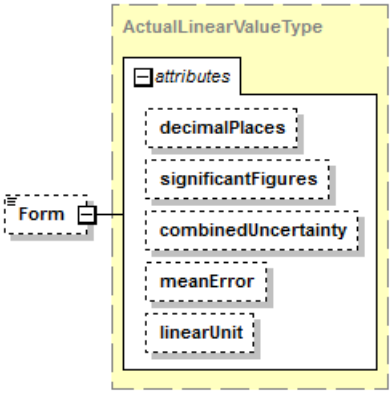
element **ArcFeatureActualType/Sweep**

diagram	
type	**SweepType**

properties	minOcc 0 maxOcc 1 content complex
children	**DirBeg DomainAngle**
annotation	documentation The optional Sweep element gives the actual start direction and the swept angle of the arc. The StartVector of the Sweep must lie in the plane of the arc.

element **ArcFeatureActualType/Form**

diagram



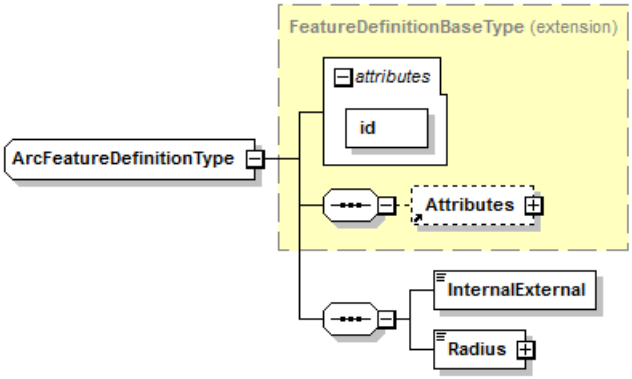
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

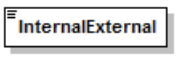
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation	documentation The optional Form element is the form error (roundness) of the arc from a report or an analysis.

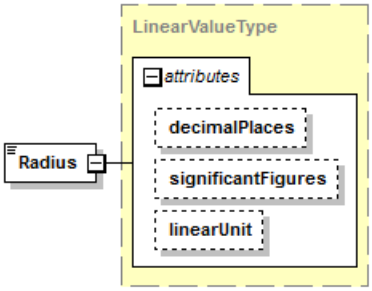
complexType **ArcFeatureDefinitionType**

diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes** **InternalExternal** **Radius**
used by	element **ArcFeatureDefinition**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ArcFeatureDefinitionType defines the arc feature nominal information that can be common to one or more arc features.

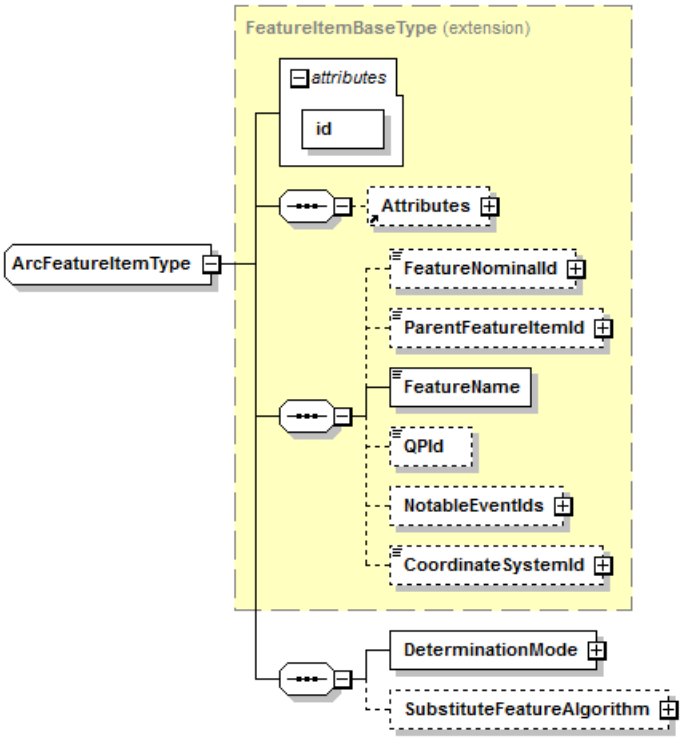
element **ArcFeatureDefinitionType/InternalExternal**

diagram	
type	**InternalExternalEnumType**
properties	content simple
facets	Kind: enumeration, Value: INTERNAL; Kind: enumeration, Value: EXTERNAL; Kind: enumeration, Value: NOT_APPLICABLE; Annotation
annotation	documentation The InternalExternal element indicates whether the feature is internal or external.

element **ArcFeatureDefinitionType/Radius**

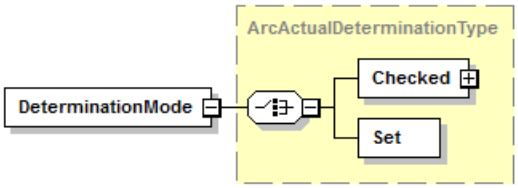
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Radius element is the nominal radius of the arc feature.

complexType **ArcFeatureItemType**

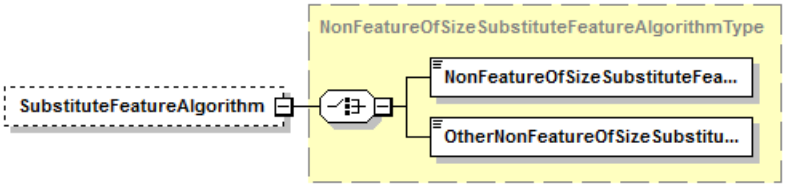
diagram	
type	extension of **FeatureItemBaseType**

properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **ArcFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ArcFeatureItemType defines an individual arc feature. An arc feature is a two dimensional circular segment.

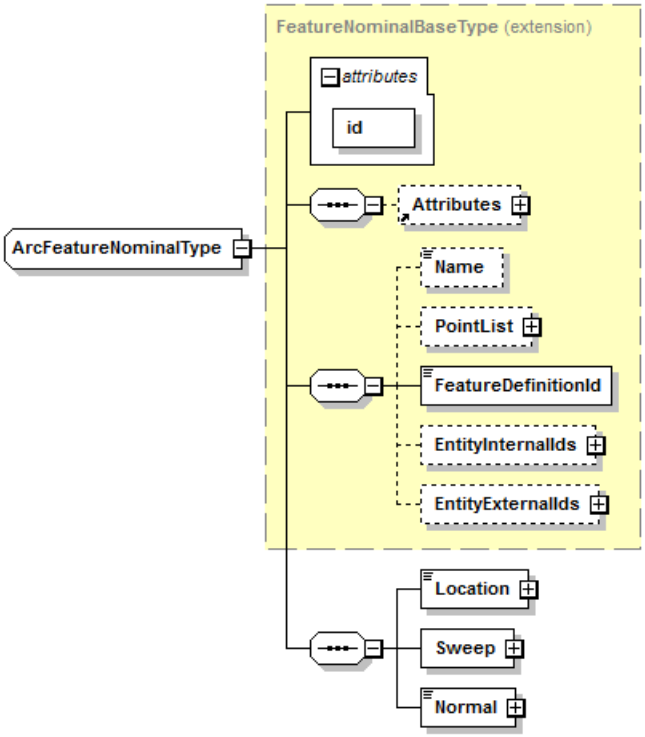
element **ArcFeatureItemType/DeterminationMode**

diagram	
type	**ArcActualDeterminationType**
properties	content complex
children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the arc feature actual is determined.

element **ArcFeatureItemType/SubstituteFeatureAlgorithm**

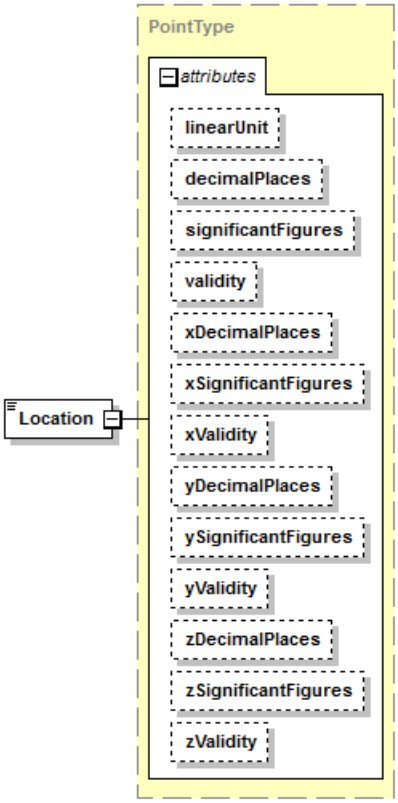
diagram	
type	**NonFeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**NonFeatureOfSizeSubstituteFeatureAlgorithmEnum** **OtherNonFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the arc feature.

complexType **ArcFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **Location** **Sweep** **Normal**
used by	element **ArcFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ArcFeatureNominalType defines feature nominal information for an individual arc feature.

element **ArcFeatureNominalType/Location**

diagram



type **PointType**

properties content complex

facets

Kind	Value	Annotation
length	3	

attributes

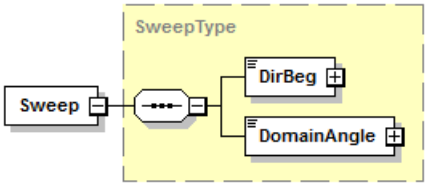
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

annotation

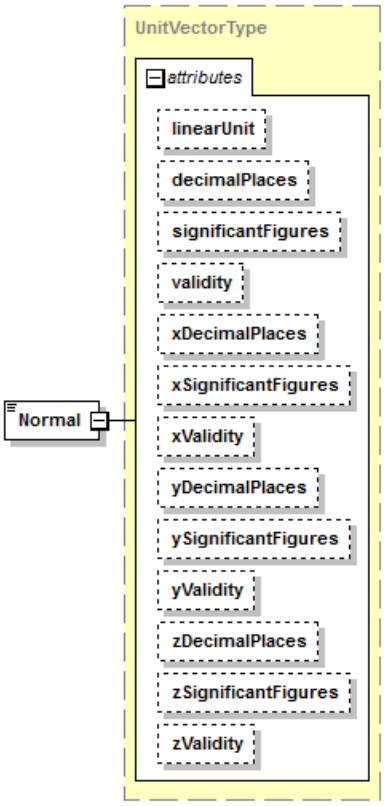
documentation

The Location element is the nominal center point of the arc.

element **ArcFeatureNominalType/Sweep**

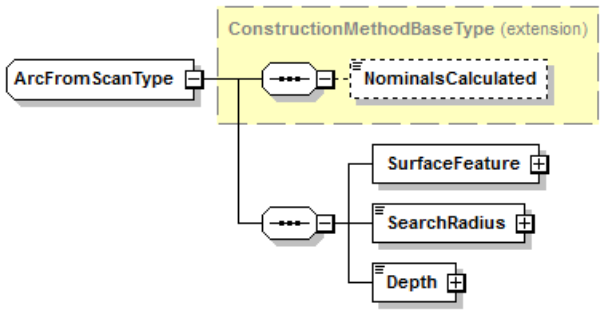
diagram	
type	**SweepType**
properties	content complex
children	**DirBeg DomainAngle**
annotation	documentation The Sweep element gives the nominal start direction and the swept angle for the arc. The StartVector of the Sweep must lie in the plane of the arc.

element **ArcFeatureNominalType/Normal**

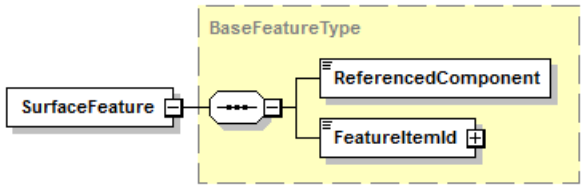
diagram	
type	**UnitVectorType**
properties	content complex
facets	Kind Value Annotation length 3
attributes	Name Type Use Default Fixed Annotation linearUnit **xs:token** decimalPlaces **xs:nonNegativeInteger** significantFigures **xs:nonNegativeInteger**

	validity	**ValidityEnumType**
	xDecimalPlaces	**xs:nonNegativeInteger**
	xSignificantFigures	**xs:nonNegativeInteger**
	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
annotation	documentation The Normal element is the nominal unit normal vector of the plane of the arc.	

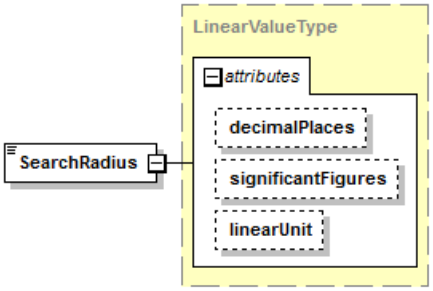
complexType **ArcFromScanType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius** **Depth**
used by	element **ArcConstructionMethodType/FromScan**
annotation	documentation The ArcFromScanType defines an arc construction by the retrieval of an arc from a scanned surface feature (point cloud).

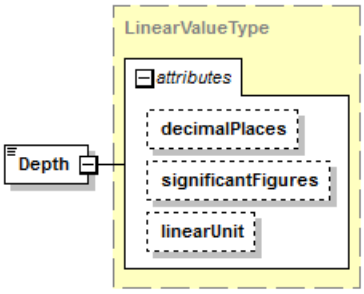
element **ArcFromScanType/SurfaceFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The SurfaceFeature element identifies the scanned surface feature from which the arc is retrieved.

element **ArcFromScanType/SearchRadius**

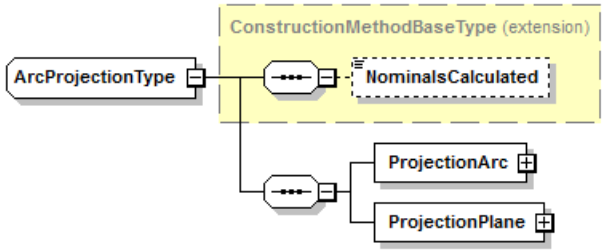
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The SearchRadius element is the radius around the nominal feature, wherein the actual feature can be expected. The SearchRadius is the radius added to and subtracted from the nominal feature radius to define a cylindrical shell. All scanned points within this cylindrical shell are used for the retrieval of the feature. The cylindrical shell's axis is defined by the feature's direction and the cylindrical shell's axis passes through the feature's center point.

element **ArcFromScanType/Depth**

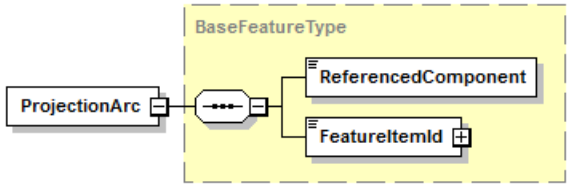
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.

annotation	documentation The Depth element is the measuring depth down the arc nominal axis vector at which the arc is to be retrieved.

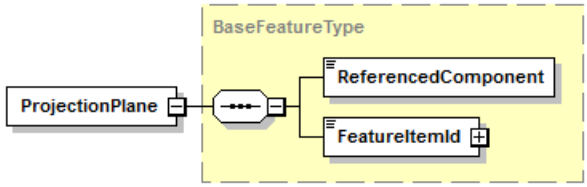
complexType **ArcProjectionType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **ProjectionArc** **ProjectionPlane**
used by	element **ArcConstructionMethodType/Projection**
annotation	documentation The ArcProjectionType defines a projected arc construction with the arc to be projected and the projection plane.

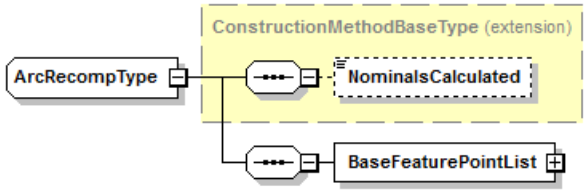
element **ArcProjectionType/ProjectionArc**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The ProjectionArc element identifies the arc to be projected.

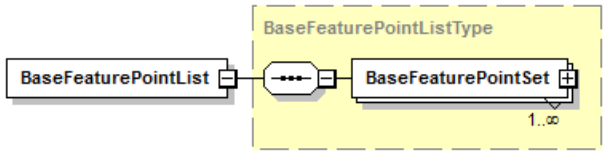
element **ArcProjectionType/ProjectionPlane**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The ProjectionPlane element identifies the plane onto which the arc is to be projected.

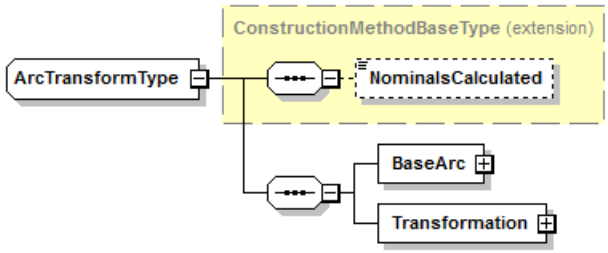
complexType **ArcRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **ArcConstructionMethodType/Recompensated**
annotation	documentation The ArcRecompType defines a list of base feature points for the construction of a re-compensated-for-probe-size best-fit arc through the measurement points of base features.

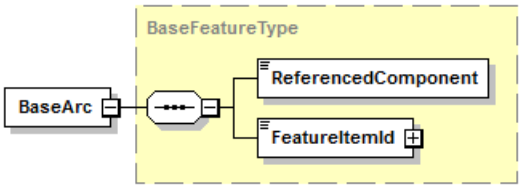
element **ArcRecompType/BaseFeaturePointList**

diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element is a list of points for the construction of a re-compensated-for-probe-size best-fit arc. The total number of points in the BaseFeaturePointSets in the list must be 3 or greater.

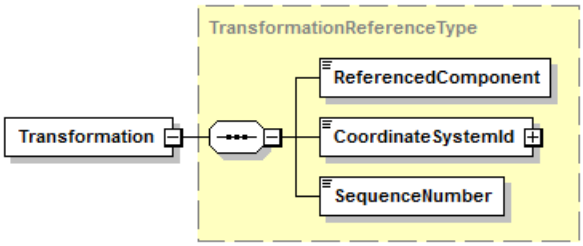
complexType **ArcTransformType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseArc** **Transformation**
used by	element **ArcConstructionMethodType/Transform**
annotation	documentation The ArcTransformType defines an arc construction by the transformation of an arc through the specified nominal or actual coordinate system.

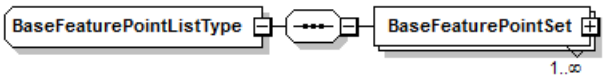
element **ArcTransformType/BaseArc**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseArc element identifies the arc to be transformed.

element **ArcTransformType/Transformation**

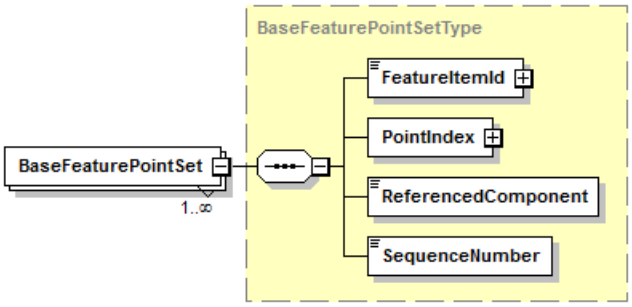
diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent CoordinateSystemId SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the base arc.

complexType **BaseFeaturePointListType**

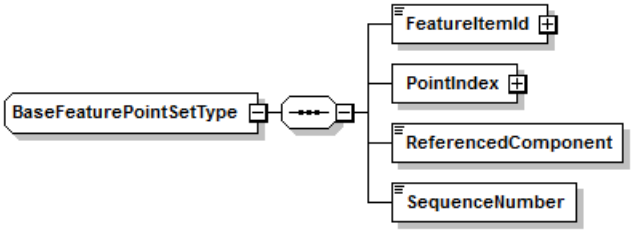
diagram	
children	**BaseFeaturePointSet**
used by	elements **ArcRecompType/BaseFeaturePointList CircleRecompType/BaseFeaturePointList ConeRecompType/BaseFeaturePointList ConicalSegmentRecompType/BaseFeaturePointList CuboidRecompType/BaseFeaturePointList CylinderRecompType/BaseFeaturePointList CylindricalSegmentRecompType/BaseFeaturePointList EllipseRecompType/BaseFeaturePointList ElongatedCylinderRecompType/BaseFeaturePointList ExtrudedCrossSectionRecompType/BaseFeaturePointList LineRecompType/BaseFeaturePointList OppositeLinesRecompType/BaseFeaturePointList OppositePlanesRecompType/BaseFeaturePointList PlaneRecompType/BaseFeaturePointList PointDefinedCurveRecompType/BaseFeaturePointList PointDefinedSurfaceRecompType/BaseFeaturePointList SphereRecompType/BaseFeaturePointList SphericalSegmentRecompType/BaseFeaturePointList SurfaceOfRevolutionRecompType/BaseFeaturePointList ThreadedFeatureRecompType/BaseFeaturePointList ToroidalSegmentRecompType/BaseFeaturePointList TorusRecompType/BaseFeaturePointList**
annotation	documentation

	The BaseFeaturePointListType defines a list of base feature points to be used in the construction of a re-compensated-for-probe-size best-fit feature. Each feature recompensation type will have a minimum number of points this list must contain.

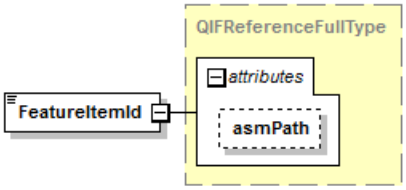
element **BaseFeaturePointListType/BaseFeaturePointSet**

diagram	
type	**BaseFeaturePointSetType**
properties	minOcc 1 maxOcc unbounded content complex
children	**FeatureItemId** **PointIndex** **ReferencedComponent** **SequenceNumber**
annotation	documentation Each BaseFeaturePointSet element is an individual point or set of points for a best-fit construction.

complexType **BaseFeaturePointSetType**

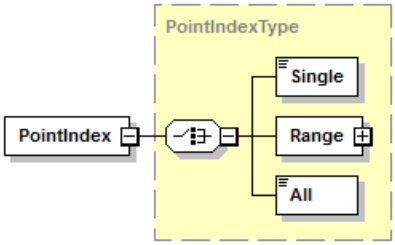
diagram	
children	**FeatureItemId** **PointIndex** **ReferencedComponent** **SequenceNumber**
used by	element **BaseFeaturePointListType/BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointSetType defines a measurement point or points from a feature to be used in a re-compensated-for-probe-size best-fit.

element **BaseFeaturePointSetType/FeatureItemId**

diagram	
type	**QIFReferenceFullType**
properties	content complex

attributes	Name	Type	Use	Default	Fixed	Annotation
	asmPath	**QIFIdType**				documentation The optional asmPath attribute is an id which must be used for locating of the assembly path within the AsmPaths. The assembly path (instantiation chain) unambiguously identifies a model entity within an assembly.
annotation	documentation The FeatureItemId element is the QIF id of the feature item.					

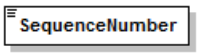
element **BaseFeaturePointSetType/PointIndex**

diagram	
type	**PointIndexType**
properties	content complex
children	**Single** **Range** **All**
annotation	documentation The PointIndex element is a reference to a measurement point by a single index, or to several measurement points by a range, or by specifying all measurement points.

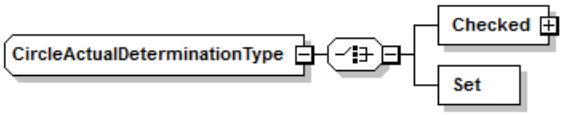
element **BaseFeaturePointSetType/ReferencedComponent**

diagram			
type	**ReferencedComponentEnumType**		
properties	content simple		
facets	Kind	Value	Annotation
	enumeration	NOMINAL	
	enumeration	ACTUAL	
annotation	documentation The ReferencedComponent element identifies whether the actual or nominal component of a measurement point or points on this feature is used in the construction.		

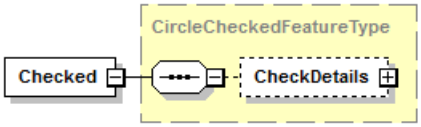
element **BaseFeaturePointSetType/SequenceNumber**

diagram	
type	**xs:positiveInteger**
properties	content simple
annotation	documentation The SequenceNumber element is an ordinal number defining the order of the base feature in the construction.

complexType **CircleActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **CircleFeatureItemType/DeterminationMode**
annotation	documentation The CircleActualDeterminationType defines how the circle actual is determined, either by being set or by being checked (measured or constructed).

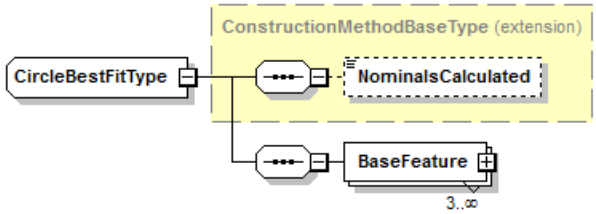
element **CircleActualDeterminationType/Checked**

diagram	
type	**CircleCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the circle is checked from actual data, either measured or constructed.

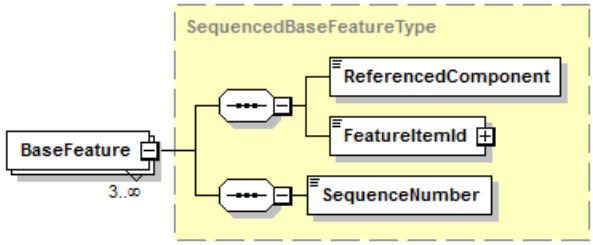
element **CircleActualDeterminationType/Set**

diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the circle actual is set to its nominal value.

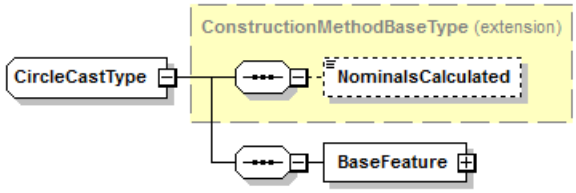
complexType **CircleBestFitType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **CircleConstructionMethodType/BestFit**
annotation	documentation The CircleBestFitType defines the information for a best-fit circle which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the circle.

element **CircleBestFitType/BaseFeature**

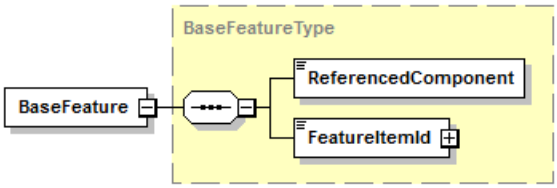
diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 3 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of a circle. The number of base features must be 3 or greater.

complexType **CircleCastType**

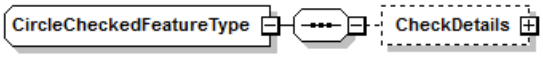
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **CircleConstructionMethodType/Cast**
annotation	documentation The CircleCastType defines a circle construction by the casting of another feature type to a circle. The location, vector

	and size are copied from the base feature. Any information not available on the base feature will remain at nominal. For example, a cast sphere will create a circle with center and diameter taken from the sphere but it will retain its nominal normal vector.

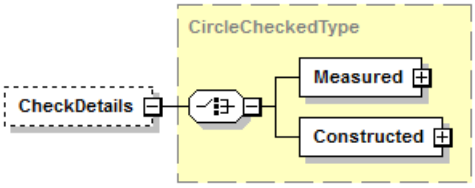
element **CircleCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the feature to be cast to a circle.

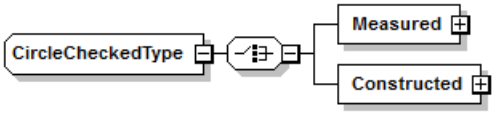
complexType **CircleCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **CircleActualDeterminationType/Checked**
annotation	documentation The CircleCheckedFeatureType defines that a circle feature is checked.

element **CircleCheckedFeatureType/CheckDetails**

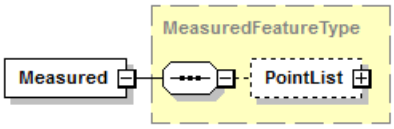
diagram	
type	**CircleCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured Constructed**
annotation	documentation The optional CheckDetails element gives details about the circle check (measurement or construction).

complexType **CircleCheckedType**

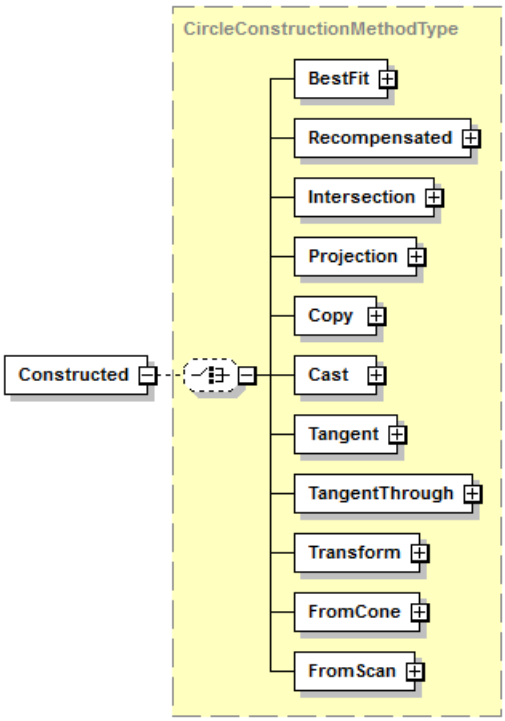
diagram	

children	**Measured** **Constructed**
used by	element **CircleCheckedFeatureType/CheckDetails**
annotation	documentation The CircleCheckedType defines how the circle actual is checked, either by measurement or by construction.

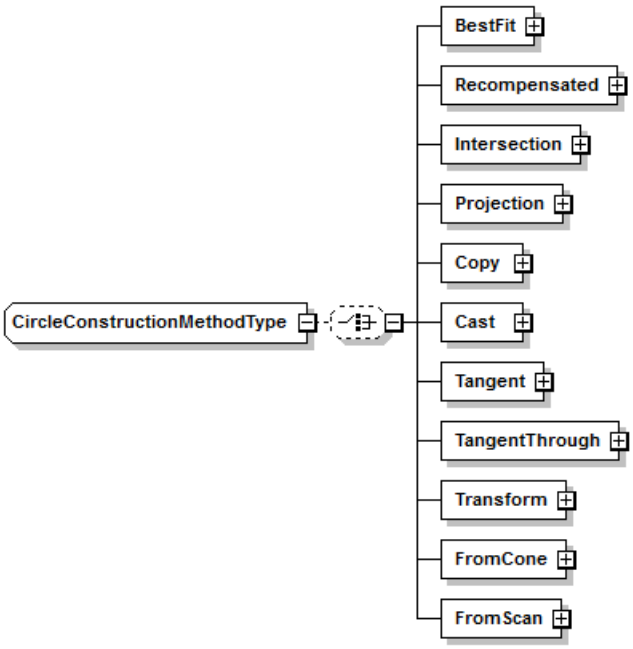
element **CircleCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the circle is measured.

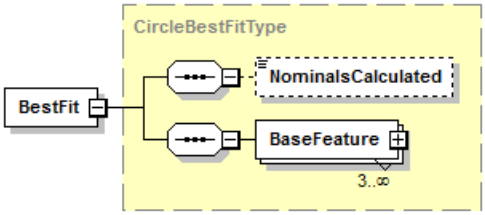
element **CircleCheckedType/Constructed**

diagram	
type	**CircleConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Intersection** **Projection** **Copy** **Cast** **Tangent** **TangentThrough** **Transform** **FromCone** **FromScan**
annotation	documentation The Constructed element signifies that the circle is constructed.

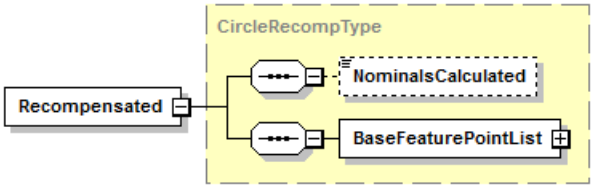
complexType **CircleConstructionMethodType**

diagram	
children	**BestFit** **Recompensated** **Intersection** **Projection** **Copy** **Cast** **Tangent** **TangentThrough** **Transform** **FromCone** **FromScan**
used by	element **CircleCheckedType/Constructed**
annotation	documentation The CircleConstructionMethodType defines the method for constructing a unique nominal or actual circle feature.

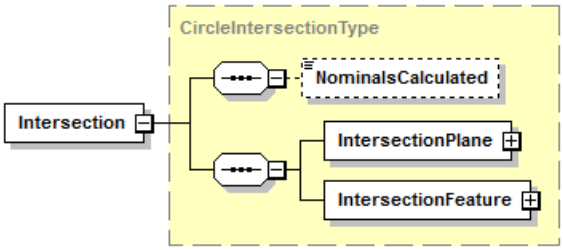
element **CircleConstructionMethodType/BestFit**

diagram	
type	**CircleBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of a circle from 3 or more point-reducible base features. This element is in an optional choice.

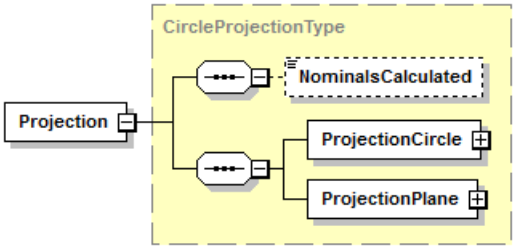
element **CircleConstructionMethodType/Recompensated**

diagram	
type	**CircleRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of a circle from 3 or more base feature points. This element is in an optional choice.

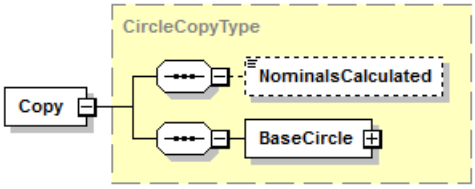
element **CircleConstructionMethodType/Intersection**

diagram	
type	**CircleIntersectionType**
properties	content complex
children	**NominalsCalculated** **IntersectionPlane** **IntersectionFeature**
annotation	documentation The Intersection element describes the construction of a circle by the intersection of a plane and a feature which has a circular cross section. This element is in an optional choice.

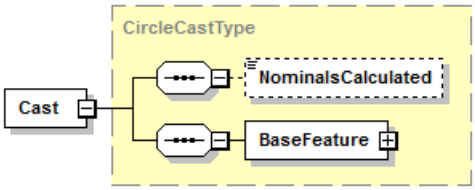
element **CircleConstructionMethodType/Projection**

diagram	
type	**CircleProjectionType**
properties	content complex
children	**NominalsCalculated** **ProjectionCircle** **ProjectionPlane**
annotation	documentation The Projection element describes the construction of a circle by the projection of a base circle onto a plane. This element is in an optional choice.

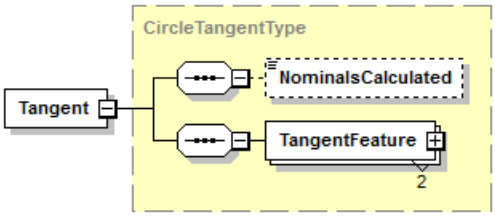
element **CircleConstructionMethodType/Copy**

diagram	
type	**CircleCopyType**
properties	content complex
children	**NominalsCalculated** **BaseCircle**
annotation	documentation The Copy element describes the construction of a circle by the copying of a base circle. This element is in an optional choice.

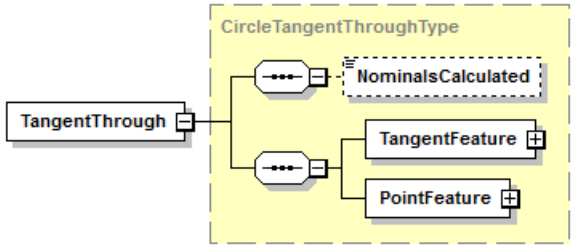
element **CircleConstructionMethodType/Cast**

diagram	
type	**CircleCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of a circle by the casting of a base feature. This element is in an optional choice.

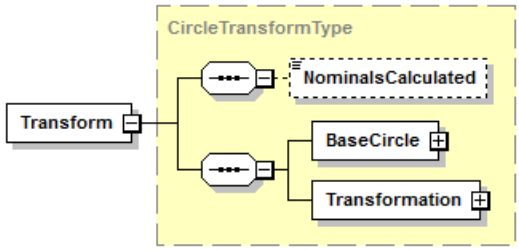
element **CircleConstructionMethodType/Tangent**

diagram	
type	**CircleTangentType**
properties	content complex
children	**NominalsCalculated** **TangentFeature**
annotation	documentation The Tangent element describes the construction of a circle that is tangent to two base features. This element is in an optional choice.

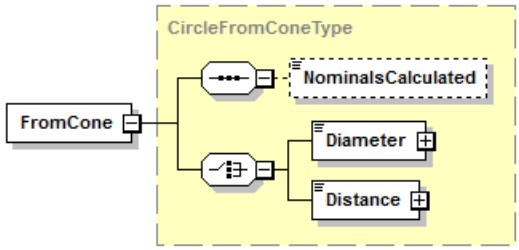
element **CircleConstructionMethodType/TangentThrough**

diagram	
type	**CircleTangentThroughType**
properties	content complex
children	**NominalsCalculated** **TangentFeature** **PointFeature**
annotation	documentation The TangentThrough element describes the construction of a circle tangent to a feature and passing through a point. This element is in an optional choice.

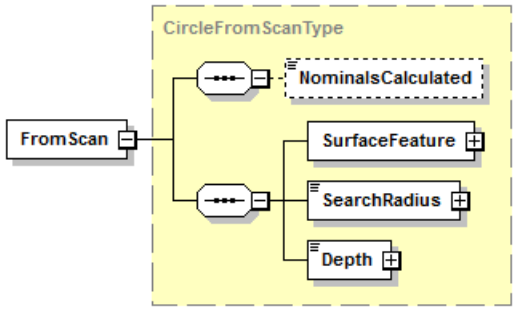
element **CircleConstructionMethodType/Transform**

diagram	
type	**CircleTransformType**
properties	content complex
children	**NominalsCalculated** **BaseCircle** **Transformation**
annotation	documentation The Transform element describes the construction of a circle by the transformation of a base circle. This element is in an optional choice.

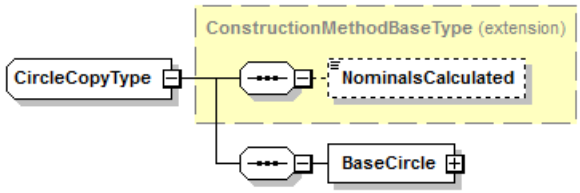
element **CircleConstructionMethodType/FromCone**

diagram	
type	**CircleFromConeType**
properties	content complex
children	**NominalsCalculated** **Diameter** **Distance**
annotation	documentation The FromCone element describes the construction of a circle from a cone at a specified cone diameter or at a specified distance from the cone vertex. This element is in an optional choice.

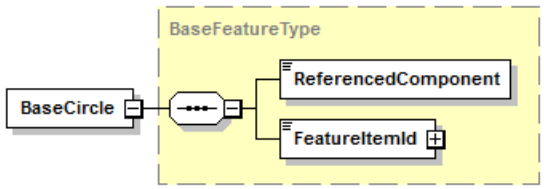
element **CircleConstructionMethodType/FromScan**

diagram	
type	**CircleFromScanType**
properties	content complex
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius** **Depth**
annotation	documentation The FromScan element describes the construction of a circle from scan data. This element is in an optional choice.

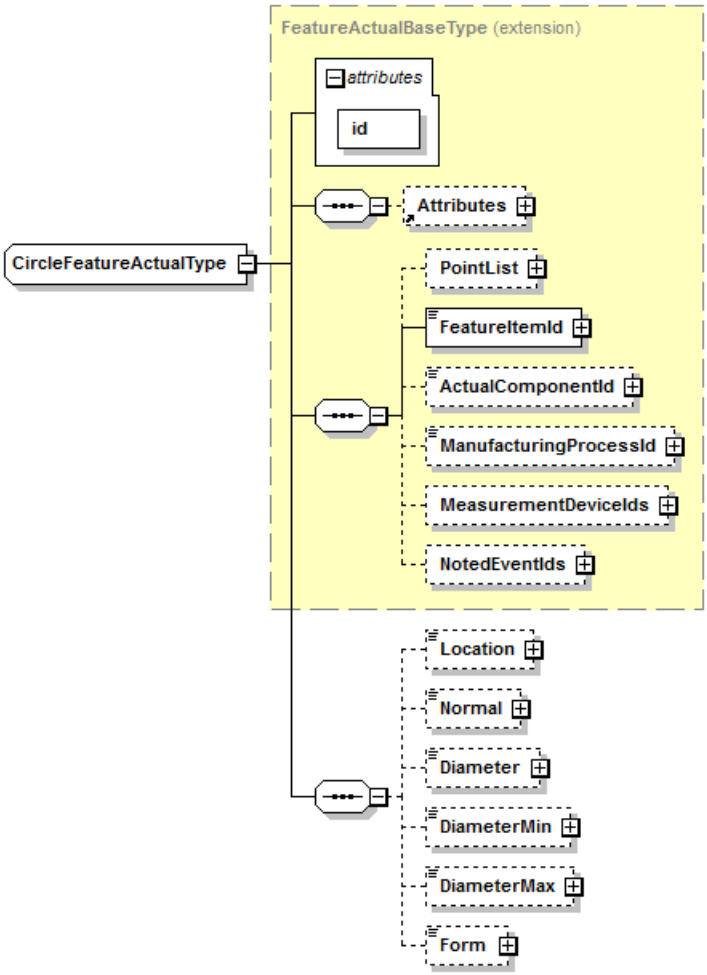
complexType **CircleCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseCircle**
used by	element **CircleConstructionMethodType/Copy**
annotation	documentation The CircleCopyType defines a copied circle construction.

element **CircleCopyType/BaseCircle**

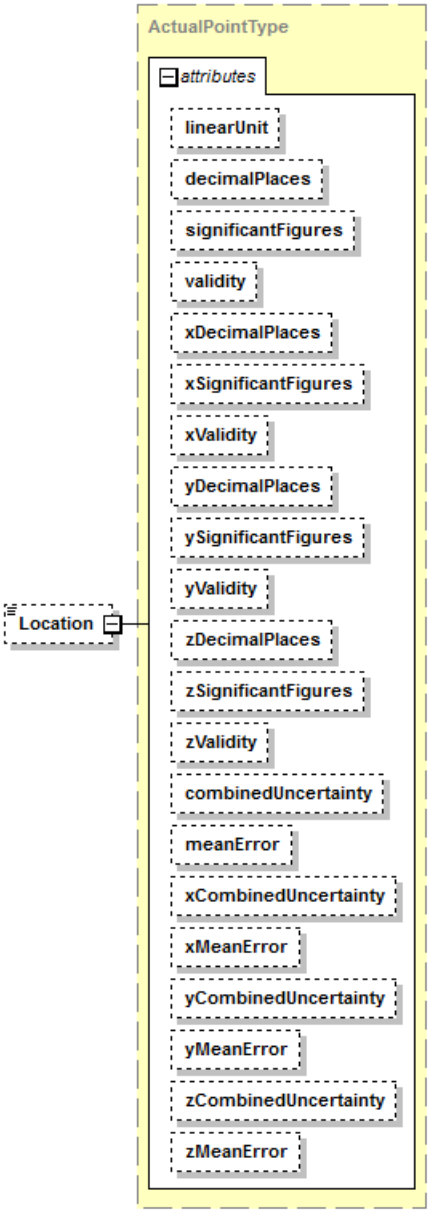
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseCircle element identifies the circle to be copied.

complexType **CircleFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **Location** **Normal** **Diameter** **DiameterMin** **DiameterMax** **Form**
used by	element **CircleFeatureActual**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CircleFeatureActualType defines actual information for an individual circle feature.

element **CircleFeatureActualType/Location**

diagram



type	**ActualPointType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

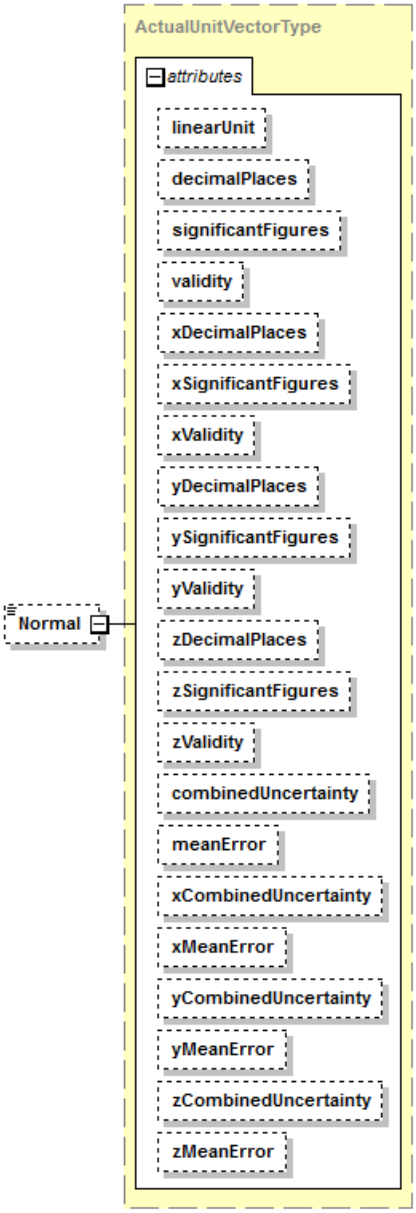
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Location element is the actual center point of the circle.	

element **CircleFeatureActualType/Normal**

diagram



type	**ActualUnitVectorType**
properties	minOcc 0 maxOcc 1 content complex

facets

Kind	Value	Annotation
length	3	

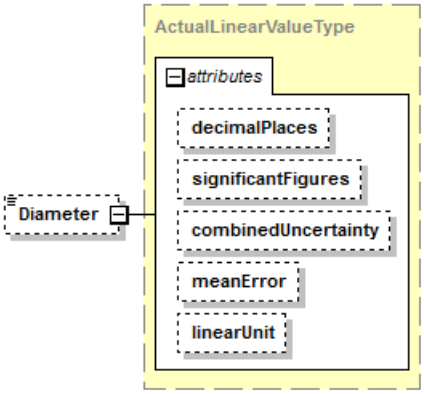
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Normal element is the actual normal vector of the plane of the circle.	

element **CircleFeatureActualType/Diameter**

diagram



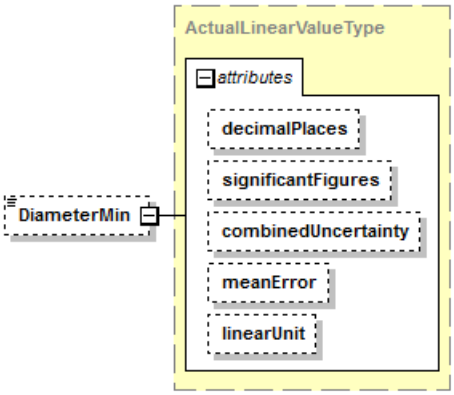
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

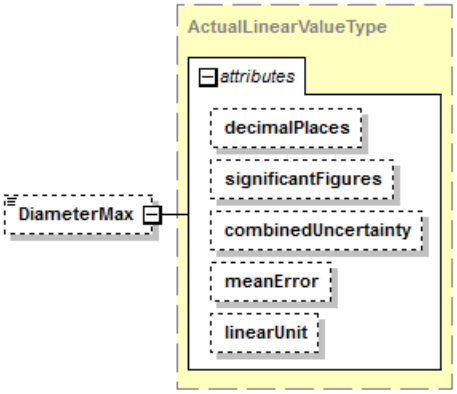
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is

	linearUnit	**xs:token**	a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Diameter element is the actual diameter of the circle based on the substitute feature data fitting algorithm setting.		

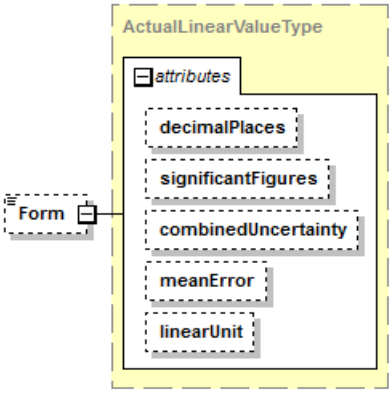
element **CircleFeatureActualType/DiameterMin**

diagram						
type	**ActualLinearValueType**					
properties	minOcc 0 maxOcc 1 content complex					
attributes	Name	Type	Use	Default	Fixed	Annotation
	decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
	meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
	linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional DiameterMin element is the minimum actual diameter of the circle from a report or an analysis.					

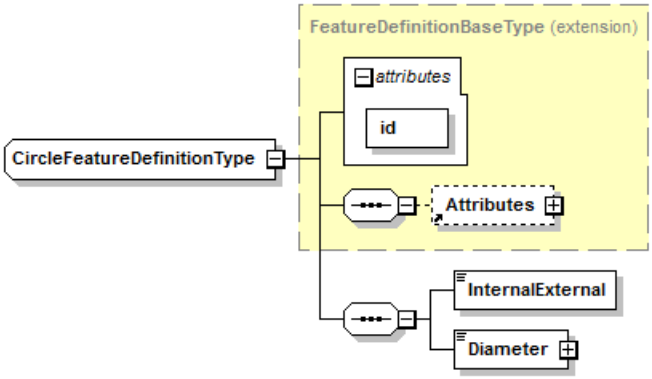
element **CircleFeatureActualType/DiameterMax**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** — documentation: The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** — documentation: The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional DiameterMax element is the maximum actual diameter of the circle from a report or an analysis.

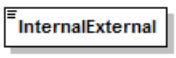
element **CircleFeatureActualType/Form**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Form element is the form error (roundness) of the circle from a report or an analysis.

complexType **CircleFeatureDefinitionType**

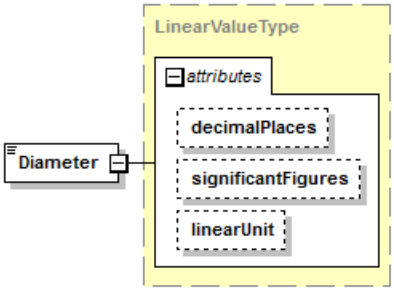
diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes** **InternalExternal** **Diameter**
used by	element **CircleFeatureDefinition**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CircleFeatureDefinitionType defines circle feature nominal information that can be common to one or more circle features.

element **CircleFeatureDefinitionType/InternalExternal**

diagram	
type	**InternalExternalEnumType**
properties	content simple
facets	Kind: enumeration, Value: INTERNAL, Annotation: Kind: enumeration, Value: EXTERNAL Kind: enumeration, Value: NOT_APPLICABLE
annotation	documentation The InternalExternal element indicates whether the feature is internal or external.

element **CircleFeatureDefinitionType/Diameter**

diagram



type **LinearValueType**

properties content complex

attributes

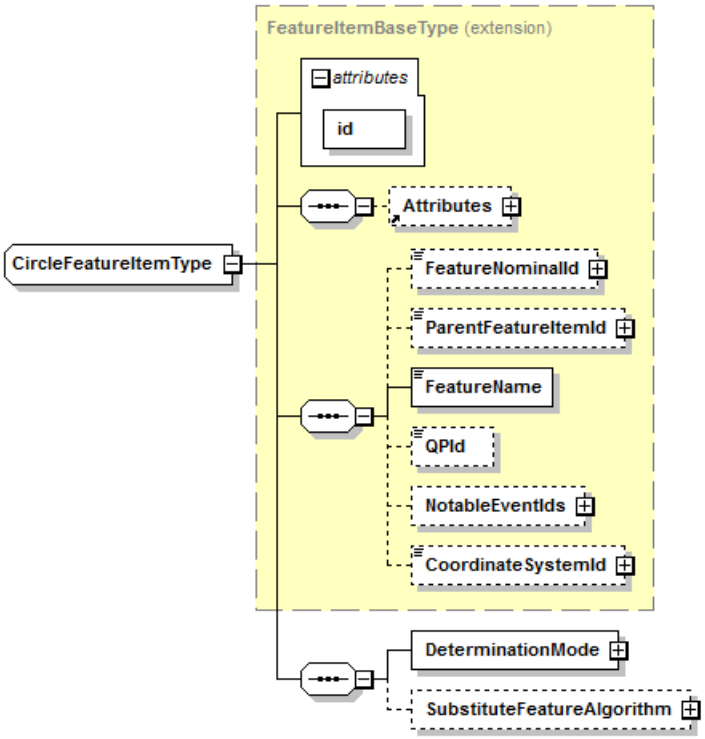
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.

annotation

documentation
The Diameter element is the nominal diameter of the circle feature.

complexType **CircleFeatureItemType**

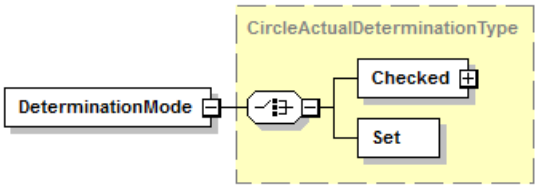
diagram



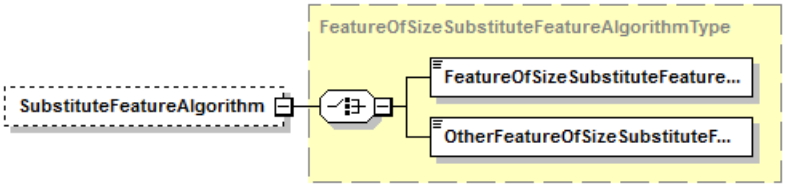
type extension of **FeatureItemBaseType**

properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **CircleFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CircleFeatureItemType defines an individual circle feature.

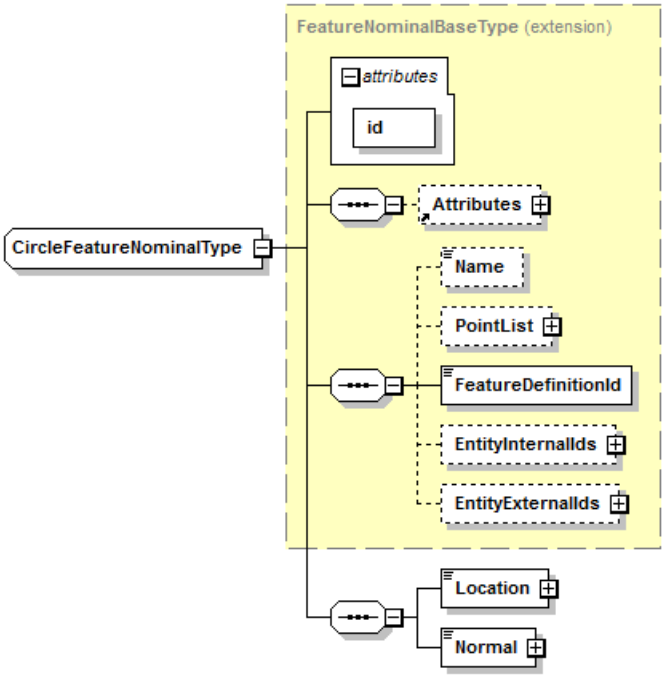
element **CircleFeatureItemType/DeterminationMode**

diagram	
type	**CircleActualDeterminationType**
properties	content complex
children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the circle feature actual is determined.

element **CircleFeatureItemType/SubstituteFeatureAlgorithm**

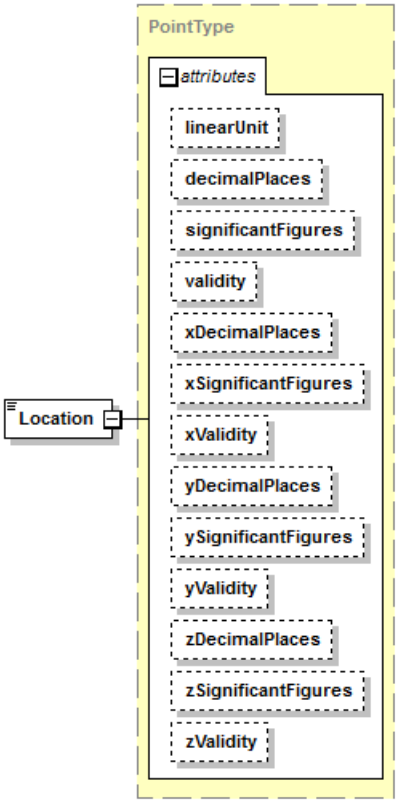
diagram	
type	**FeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**FeatureOfSizeSubstituteFeatureAlgorithmEnum** **OtherFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the circle feature.

complexType **CircleFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **Location** **Normal**
used by	element **CircleFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CircleFeatureNominalType defines nominal information for an individual circle feature.

element **CircleFeatureNominalType/Location**

diagram



type **PointType**

properties content complex

facets

Kind	Value	Annotation
length	3	

attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

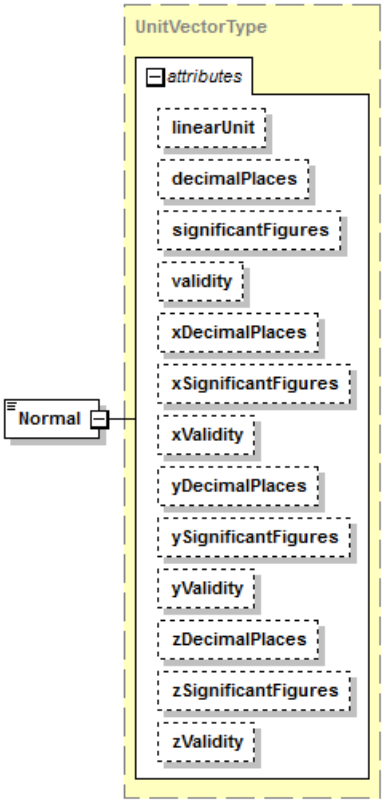
annotation

documentation

The Location element is the nominal center point of the circle.

element **CircleFeatureNominalType/Normal**

diagram



type **UnitVectorType**

properties content complex

facets

Kind	Value	Annotation
length	3	

attributes

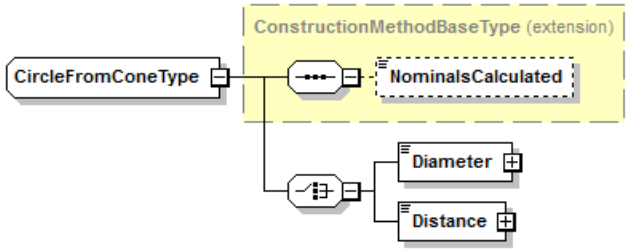
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

annotation

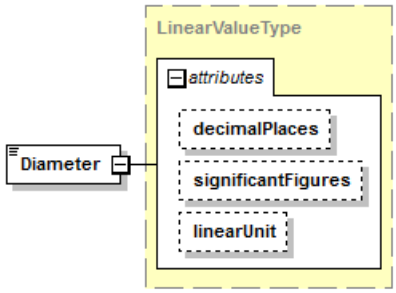
documentation

The Normal element is the nominal unit normal vector of the plane of the circle.

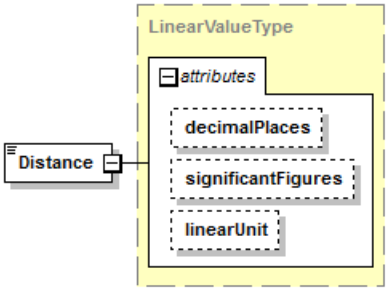
complexType **CircleFromConeType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **Diameter** **Distance**
used by	element **CircleConstructionMethodType/FromCone**
annotation	documentation The CircleFromConeType defines the construction of a circle from a cone. The circle will be located either at a specified diameter on the cone or at a specified distance from the vertex of the cone.

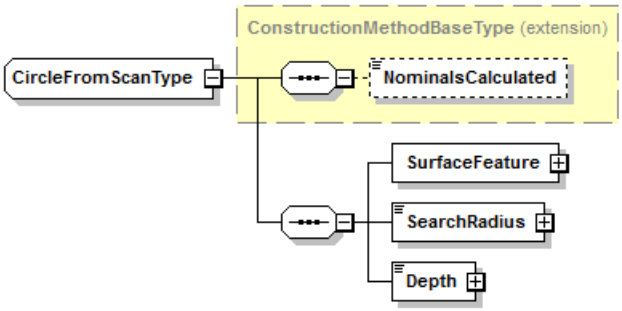
element **CircleFromConeType/Diameter**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. significantFigures / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. linearUnit / **xs:token** / / / / documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Diameter element is the cone diameter at which the circle will be constructed.

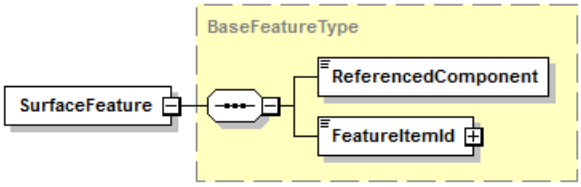
element **CircleFromConeType/Distance**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Distance element is the distance from the cone vertex at which the circle will be constructed.

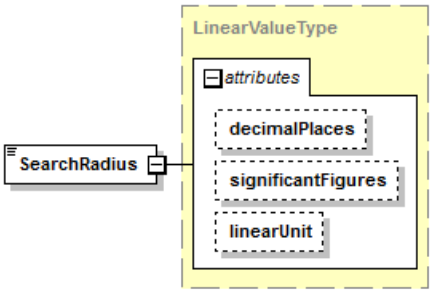
complexType **CircleFromScanType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius** **Depth**
used by	element **CircleConstructionMethodType/FromScan**
annotation	documentation The CircleFromScanType defines a circle construction by the retrieval of a circle from a scanned surface feature (point cloud).

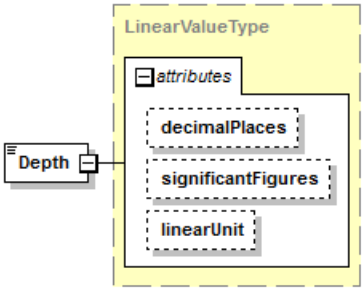
element **CircleFromScanType/SurfaceFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The SurfaceFeature element identifies the scanned surface feature from which the circle is retrieved.

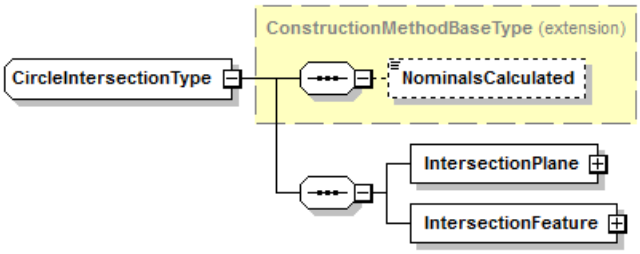
element **CircleFromScanType/SearchRadius**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces / **xs:nonNegativeInteger** / / / / documentation See documentation of SpecifiedDecimalType. significantFigures / **xs:nonNegativeInteger** / / / / documentation See documentation of SpecifiedDecimalType. linearUnit / **xs:token** / / / / documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The SearchRadius element is the radius around the nominal feature, wherein the actual feature can be expected. The SearchRadius is the radius added to and subtracted from the nominal feature radius to define a cylindrical shell. All scanned points within this cylindrical shell are used for the retrieval of the feature. The cylindrical shell's axis is defined by the feature's direction and the cylindrical shell's axis passes through the feature's center point.

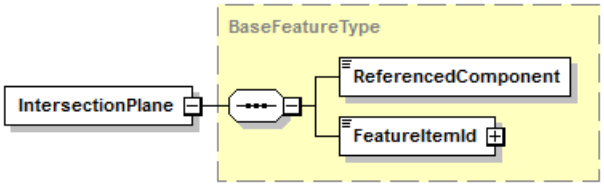
element **CircleFromScanType/Depth**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Depth element is the measuring depth down the circle nominal axis vector at which the circle is to be retrieved.

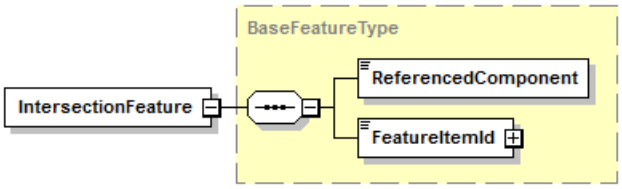
complexType **CircleIntersectionType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **IntersectionPlane** **IntersectionFeature**
used by	element **CircleConstructionMethodType/Intersection**
annotation	documentation The CircleIntersectionType defines the construction of a circle by the intersection of a plane with a feature with a circular cross section.

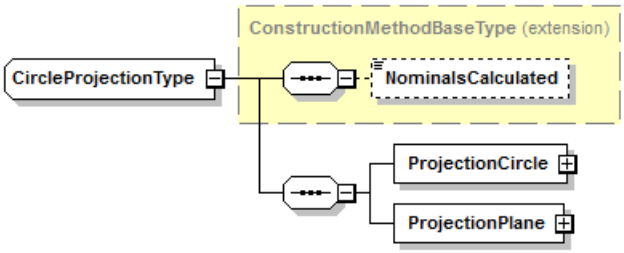
element **CircleIntersectionType/IntersectionPlane**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The IntersectionPlane element identifies the intersecting plane.

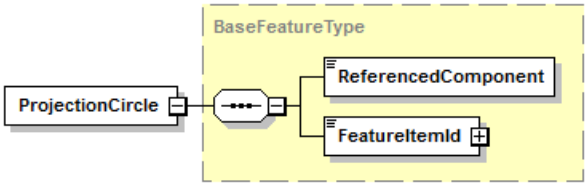
element **CircleIntersectionType/IntersectionFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The IntersectionFeature element identifies a cylinder, cone, sphere, surface of revolution or other feature with a circular cross section.

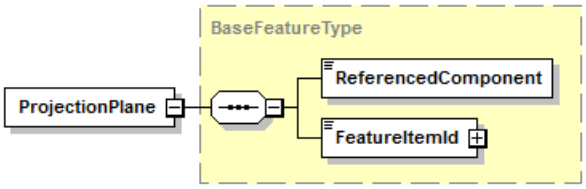
complexType **CircleProjectionType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **ProjectionCircle** **ProjectionPlane**
used by	element **CircleConstructionMethodType/Projection**
annotation	documentation The CircleProjectionType defines a projected circle construction with the circle to be projected and the projection plane.

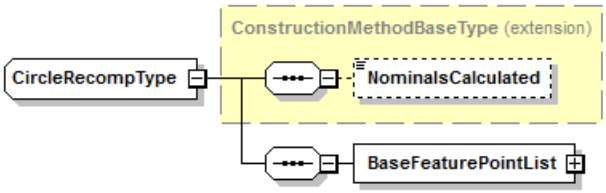
element **CircleProjectionType/ProjectionCircle**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The ProjectionCircle element identifies the circle to be projected.

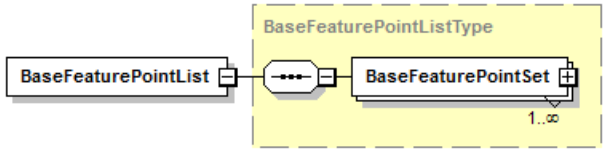
element **CircleProjectionType/ProjectionPlane**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The ProjectionPlane element identifies the plane onto which the base circle is to be projected.

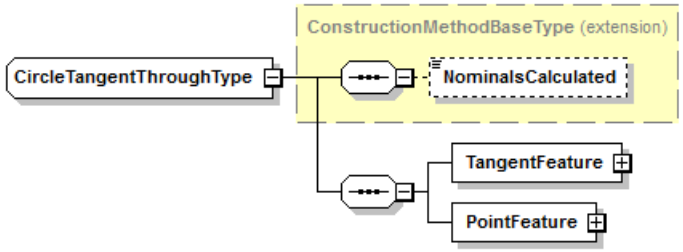
complexType **CircleRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **CircleConstructionMethodType/Recompensated**
annotation	documentation The CircleRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit circle through the measurement points of base features.

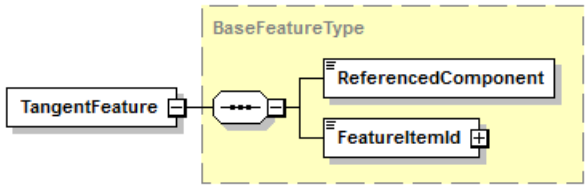
element **CircleRecompType/BaseFeaturePointList**

diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit circle. The total number of points in the BaseFeaturePointSets in the list must be 3 or greater.

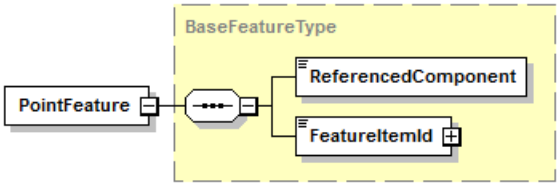
complexType **CircleTangentThroughType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **TangentFeature** **PointFeature**
used by	element **CircleConstructionMethodType/TangentThrough**
annotation	documentation The CircleTangentThroughType defines the construction of a circle with a nominal diameter through a point and tangent to a base feature. The point and base feature are both coplanar with the circle.

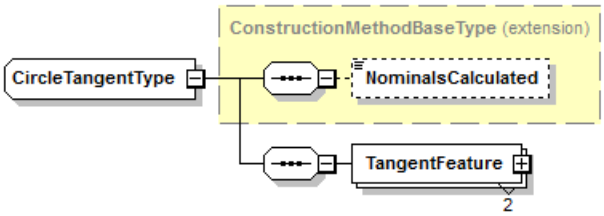
element **CircleTangentThroughType/TangentFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The TangentFeature element identifies the base feature to which the constructed circle is tangent.

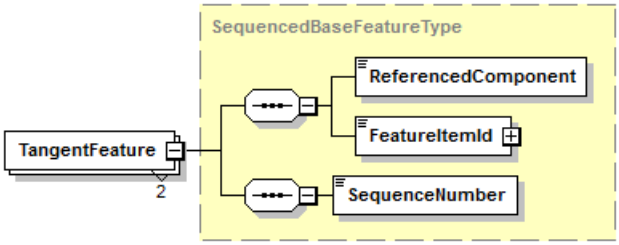
element **CircleTangentThroughType/PointFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The PointFeature element identifies the point feature through which the constructed circle passes.

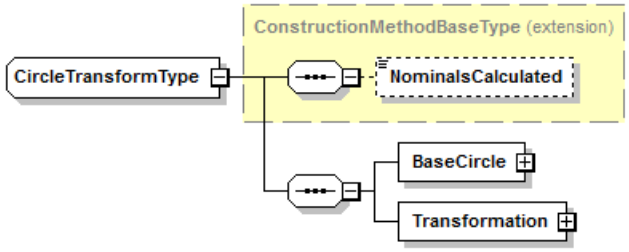
complexType **CircleTangentType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated TangentFeature**
used by	element **CircleConstructionMethodType/Tangent**
annotation	documentation The CircleTangentType defines the construction of a circle with a nominal diameter tangent to two base features coplanar with the circle.

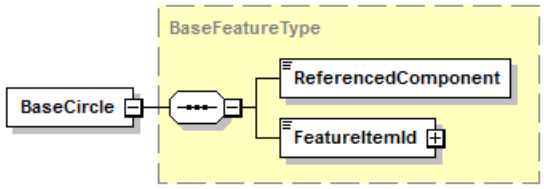
element **CircleTangentType/TangentFeature**

diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 2 maxOcc 2 content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each TangentFeature element identifies a base feature for the tangent circle construction.

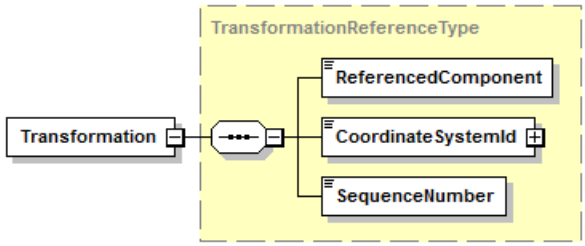
complexType **CircleTransformType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseCircle** **Transformation**
used by	element **CircleConstructionMethodType/Transform**
annotation	documentation The CircleTransformType defines a circle construction by the transformation of a circle through the specified nominal or actual coordinate system.

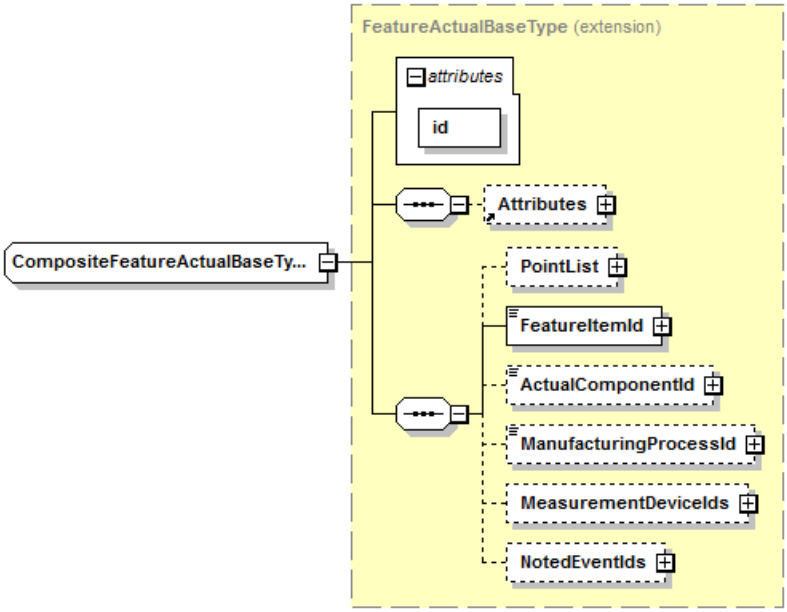
element **CircleTransformType/BaseCircle**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseCircle element identifies the circle to be transformed.

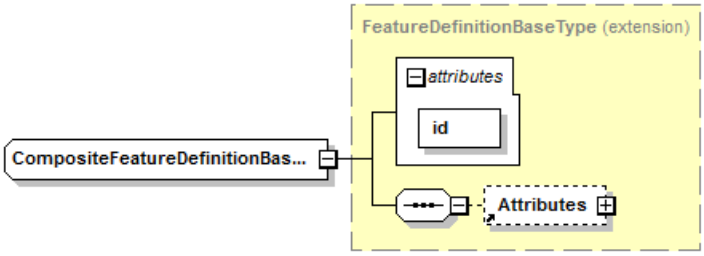
element **CircleTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the base circle.

complexType **CompositeFeatureActualBaseType**

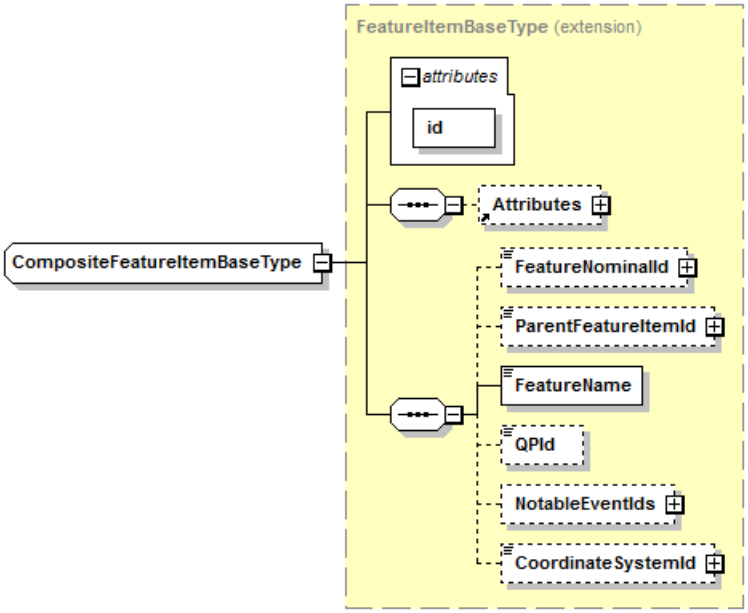
diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType abstract true
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds**
used by	complexTypes **CompoundFeatureActualType** **PatternFeatureActualType** **ProfileGroupFeatureActualType** **RunoutGroupFeatureActualType**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CompositeFeatureActualBaseType is the abstract base type that defines the composite feature actual information for an individual composite feature.

complexType **CompositeFeatureDefinitionBaseType**

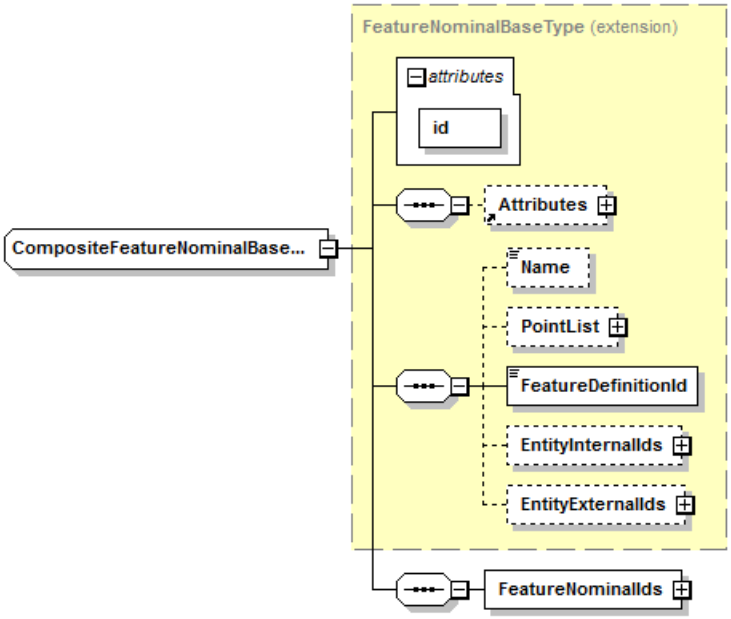
diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType abstract true
children	**Attributes**

used by	complexTypes	**CompoundFeatureDefinitionType** **PatternFeatureDefinitionType** **ProfileGroupFeatureDefinitionType** **RunoutGroupFeatureDefinitionType**				
attributes	Name	Type	Use	Default	Fixed	Annotation
	id	**QIFIdType**	required			documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CompositeFeatureDefinitionBaseType is the abstract base type that defines the composite feature nominal information that can be common to one or more composite features.					

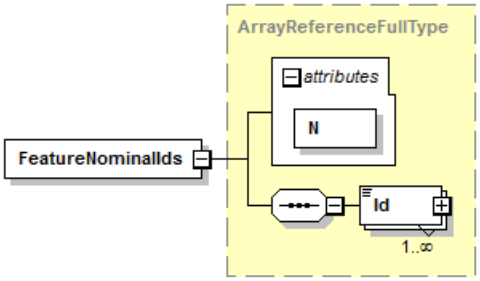
complexType **CompositeFeatureItemBaseType**

diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType abstract true
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId**
used by	complexTypes **CompoundFeatureItemType** **PatternFeatureItemType** **ProfileGroupFeatureItemType** **RunoutGroupFeatureItemType**
attributes	Name / Type / Use / Default / Fixed / Annotation id / **QIFIdType** / required / / / documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CompositeFeatureItemBaseType is the abstract base type that defines an individual composite feature. A composite feature is a complex feature defined by a set of simple features to which a characteristic tolerance like composite profile can be applied.

complexType **CompositeFeatureNominalBaseType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType abstract true
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **FeatureNominalIds**
used by	complexTypes **CompoundFeatureNominalType** **PatternFeatureNominalType** **ProfileGroupFeatureNominalType** **RunoutGroupFeatureNominalType**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CompositeFeatureNominalBaseType is the abstract base type that defines the composite feature nominal information for an individual composite feature.

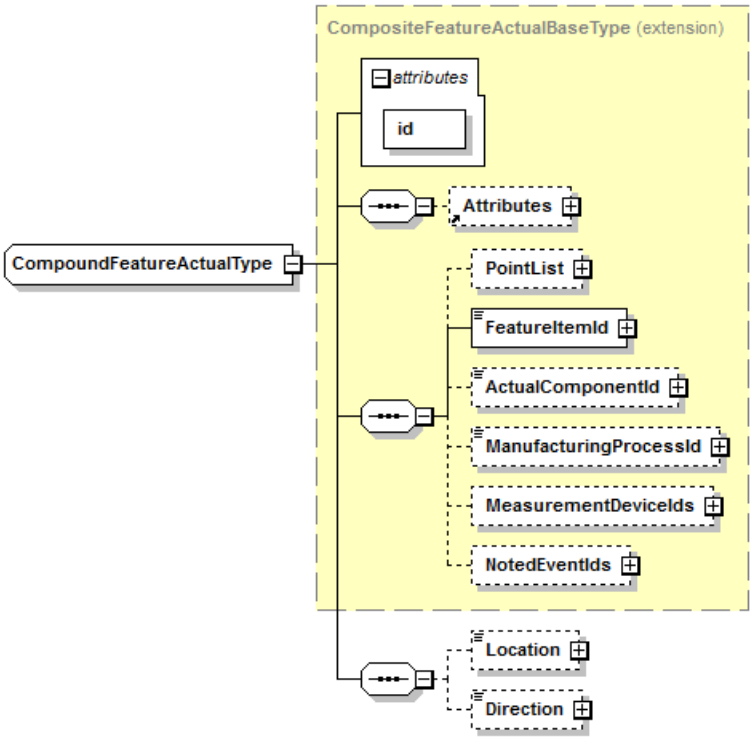
element **CompositeFeatureNominalBaseType/FeatureNominalIds**

diagram	
type	**ArrayReferenceFullType**
properties	content complex
children	**Id**

attributes	Name N	Type **NaturalType**	Use required	Default	Fixed	Annotation documentation The required N attribute shows how many Id elements are present in this array.
annotation	documentation The FeatureNominalIds element is a list of QIF ids of the set of feature items comprising the CompositeFeature. Having a single QIF id in the list is OK because it is allowable to reference another CompositeFeature.					

complexType **CompoundFeatureActualType**

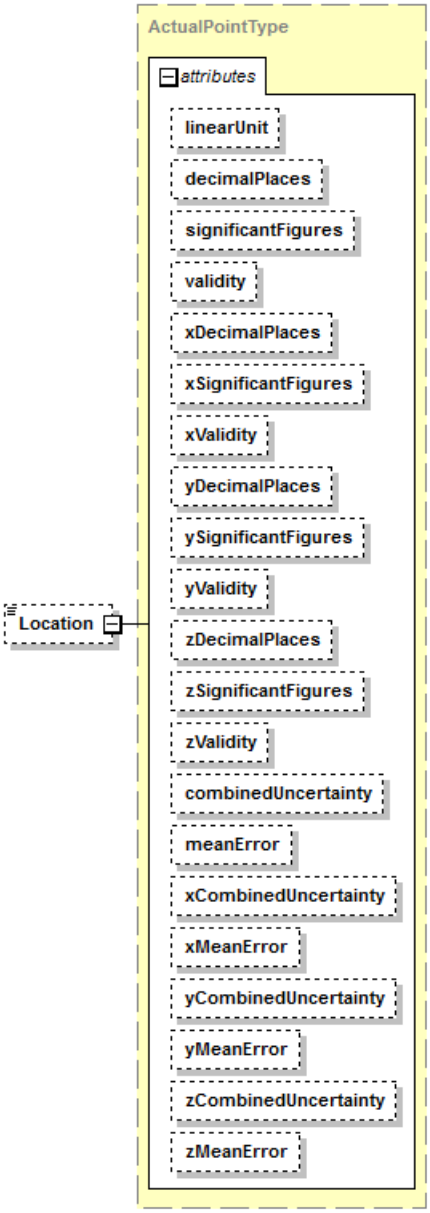
diagram



type	extension of **CompositeFeatureActualBaseType**					
properties	base CompositeFeatureActualBaseType					
children	**Attributes PointList FeatureItemId ActualComponentId ManufacturingProcessId MeasurementDeviceIds NotedEventIds Location Direction**					
used by	element **CompoundFeatureActual**					
attributes	Name id	Type **QIFIdType**	Use required	Default	Fixed	Annotation documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CompoundFeatureActualType defines the compound feature actual information for an individual compound feature.					

element **CompoundFeatureActualType/Location**

diagram

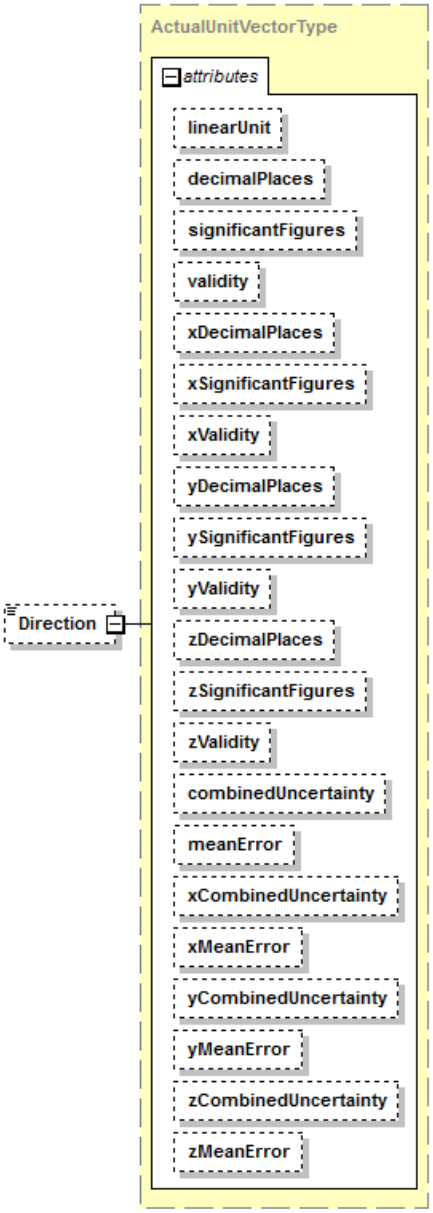


type	**ActualPointType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3
attributes	Name Type Use Default Fixed Annotation linearUnit **xs:token** decimalPlaces **xs:nonNegativeInteger** significantFigures **xs:nonNegativeInteger** validity **ValidityEnumType** xDecimalPlaces **xs:nonNegativeInteger** xSignificantFigures **xs:nonNegativeInteger**

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Location element is the actual location of the compound feature. This is a point in the plane of a co-planar compound feature, on the axis of a co-axial compound feature, or at the center of a co-centered compound feature.	

element **CompoundFeatureActualType/Direction**

diagram



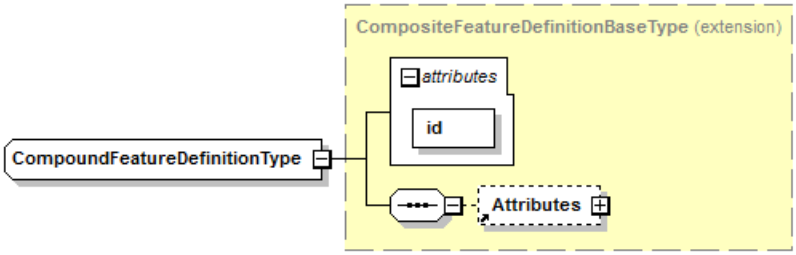
type	**ActualUnitVectorType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

attributes

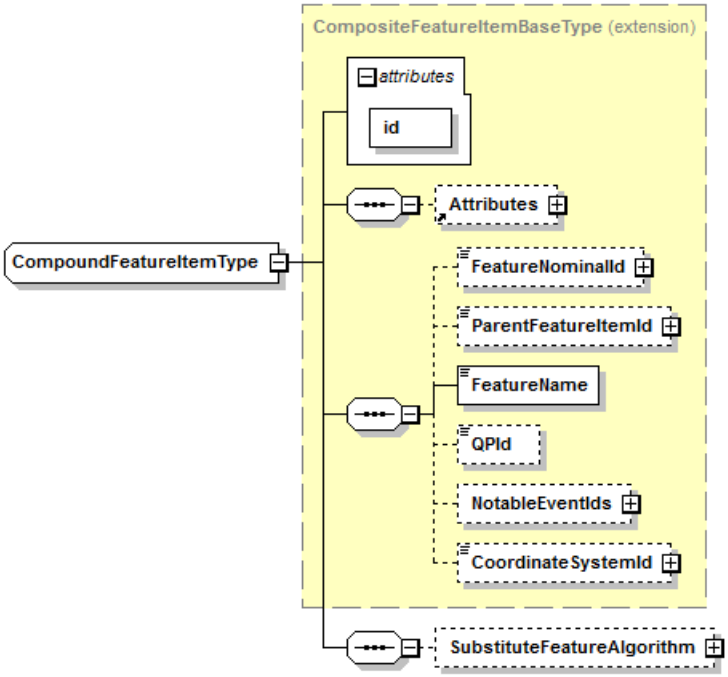
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Direction element is the actual unit normal vector or unit axis vector of the compound feature.	

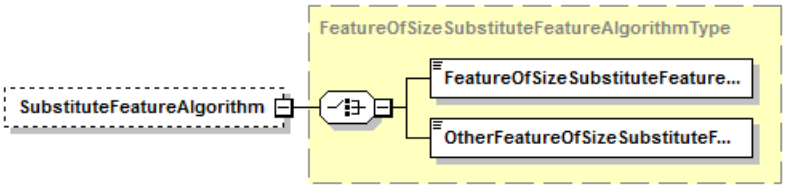
complexType **CompoundFeatureDefinitionType**

diagram						
type	extension of **CompositeFeatureDefinitionBaseType**					
properties	base CompositeFeatureDefinitionBaseType					
children	**Attributes**					
used by	element **CompoundFeatureDefinition**					
attributes	Name	Type	Use	Default	Fixed	Annotation
	id	**QIFIdType**	required			documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CompoundFeatureDefinitionType defines the compound feature nominal information that can be common to one or more compound features.					

complexType **CompoundFeatureItemType**

diagram	
type	extension of **CompositeFeatureItemBaseType**
properties	base CompositeFeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **SubstituteFeatureAlgorithm**
used by	element **CompoundFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CompoundFeatureItemType defines an individual compound feature. A compound feature is a complex feature defined by a set of simple features that are geometrically coincident (e.g., co-planar, co-axial) which can be used to establish a single compound datum.

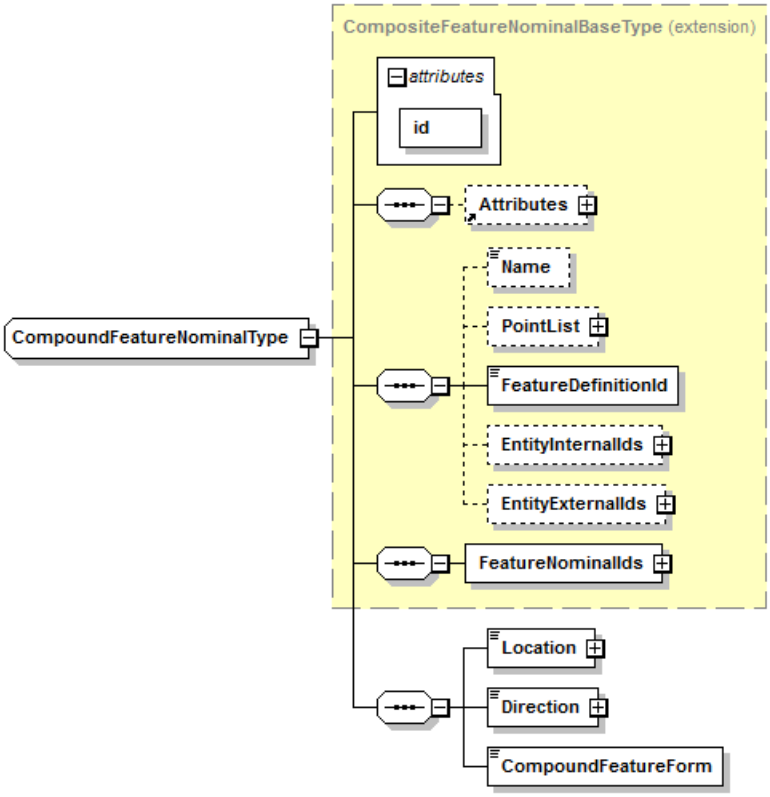
element **CompoundFeatureItemType/SubstituteFeatureAlgorithm**

diagram	
type	**FeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex

children	**FeatureOfSizeSubstituteFeatureAlgorithmEnum OtherFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the compound feature. If the compound feature is not a feature of size (i.e., planar) then neither the MINCIRCUMSCRIBED algorithm nor the MAXINSCRIBED algorithm should be used.

complexType **CompoundFeatureNominalType**

diagram



type	extension of **CompositeFeatureNominalBaseType**
properties	base CompositeFeatureNominalBaseType
children	**Attributes Name PointList FeatureDefinitionId EntityInternalIds EntityExternalIds FeatureNominalIds Location Direction CompoundFeatureForm**
used by	element **CompoundFeatureNominal**

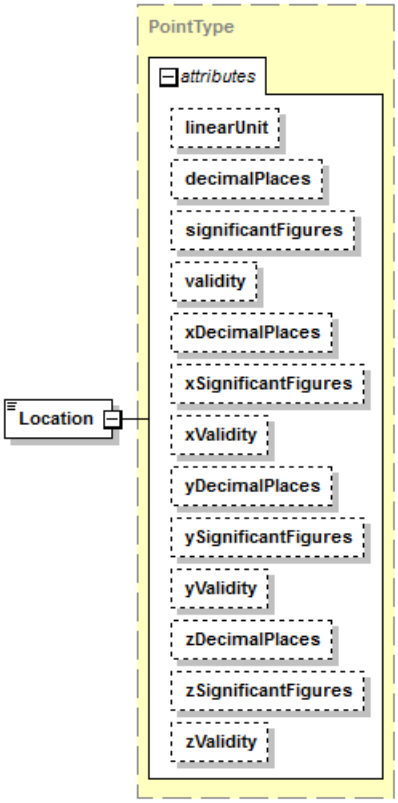
attributes

Name	Type	Use	Default	Fixed	Annotation
id	**QIFIdType**	required			documentation The id attribute is the QIF id of the feature, used for referencing.

annotation	documentation The CompoundFeatureNominalType defines the compound feature nominal information for an individual compound feature.

element **CompoundFeatureNominalType/Location**

diagram



type **PointType**

properties content complex

facets

Kind	Value	Annotation
length	3	

attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

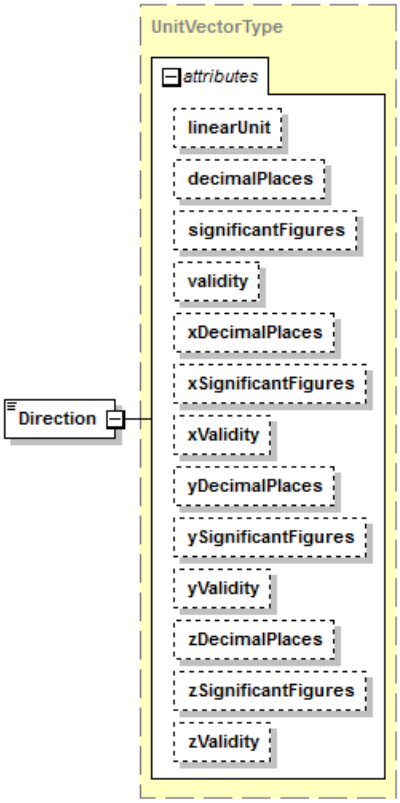
annotation

documentation

The Location element is the nominal location of the compound feature. This is a point in the plane of a co-planar compound feature, on the axis of a co-axial compound feature, or at the center of a co-centered compound feature.

element **CompoundFeatureNominalType/Direction**

diagram



type **UnitVectorType**

properties content complex

facets

Kind	Value	Annotation
length	3	

attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

annotation

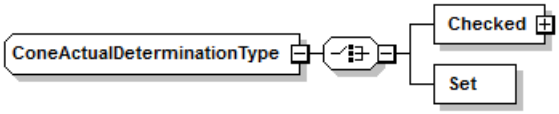
documentation

The Direction element is the nominal unit normal vector or the axis vector of the compound feature.

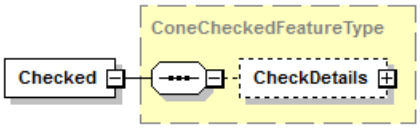
element **CompoundFeatureNominalType/CompoundFeatureForm**

diagram	
type	**CompoundFeatureGeometryEnumType**
properties	content simple
facets	Kind / Value / Annotation enumeration COAXIAL enumeration COPLANAR enumeration COCENTERED
annotation	documentation The CompoundFeatureForm element is the type of the compound feature: COPLANAR, COAXIAL or COCENTERED.

complexType **ConeActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **ConeFeatureItemType/DeterminationMode**
annotation	documentation The ConeActualDeterminationType defines how the cone actual is determined, either by being set or by being checked (measured or constructed).

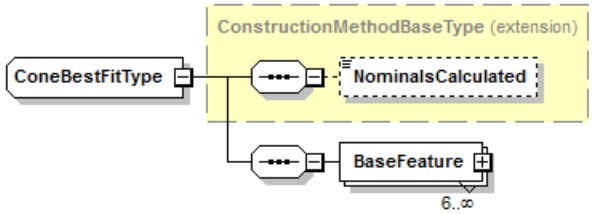
element **ConeActualDeterminationType/Checked**

diagram	
type	**ConeCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the cone is checked from actual data, either measured or constructed.

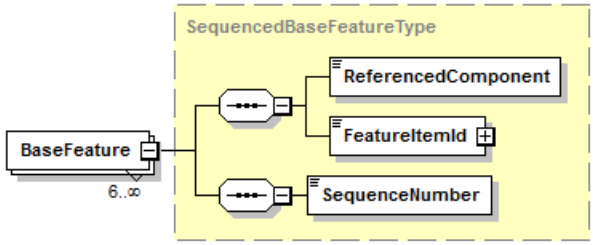
element **ConeActualDeterminationType/Set**

diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the cone actual is set to its nominal value.

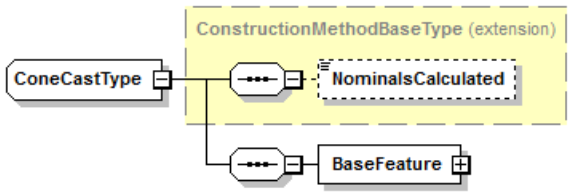
complexType **ConeBestFitType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **ConeConstructionMethodType/BestFit**
annotation	documentation The ConeBestFitType defines the information for a best-fit cone which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the cone.

element **ConeBestFitType/BaseFeature**

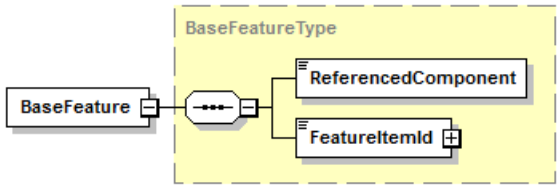
diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 6 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of a cone. The number of base features must be 6 or greater.

complexType **ConeCastType**

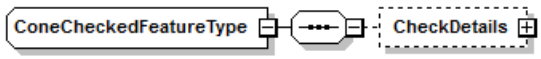
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **ConeConstructionMethodType/Cast**
annotation	documentation The ConeCastType defines the cast of feature type to a cone. The location, vector and angle are copied from the base

	feature. Any information not available on the base feature will remain at nominal.

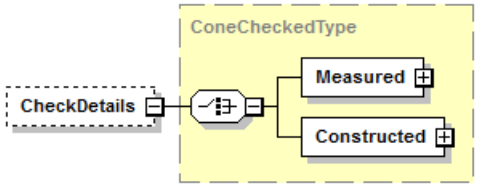
element **ConeCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to a cone.

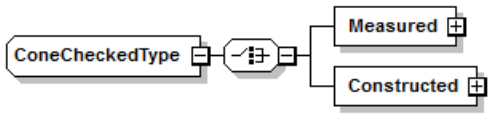
complexType **ConeCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **ConeActualDeterminationType/Checked**
annotation	documentation The ConeCheckedFeatureType defines that a cone feature is checked.

element **ConeCheckedFeatureType/CheckDetails**

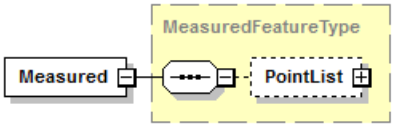
diagram	
type	**ConeCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured Constructed**
annotation	documentation The optional CheckDetails element gives details about the cone check (measurement or construction).

complexType **ConeCheckedType**

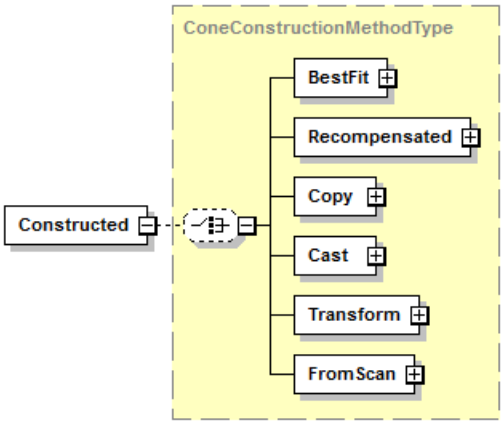
diagram	
children	**Measured Constructed**

used by	element **ConeCheckedFeatureType/CheckDetails**
annotation	documentation The ConeCheckedType defines how the cone actual is checked, either by measurement or by construction.

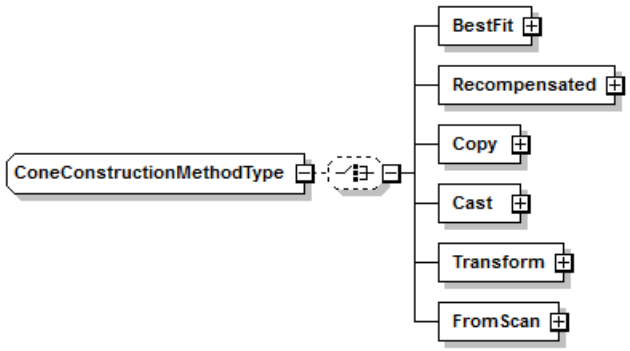
element **ConeCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the cone is measured.

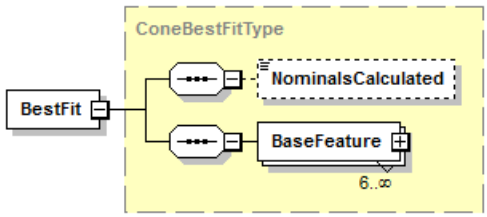
element **ConeCheckedType/Constructed**

diagram	
type	**ConeConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform** **FromScan**
annotation	documentation The Constructed element signifies that the cone is constructed.

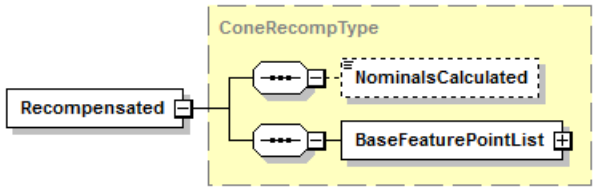
complexType **ConeConstructionMethodType**

diagram	
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform** **FromScan**
used by	element **ConeCheckedType/Constructed**
annotation	documentation The ConeConstructionMethodType defines the method for constructing a unique nominal or actual cone feature.

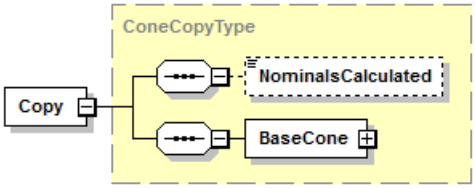
element **ConeConstructionMethodType/BestFit**

diagram	
type	**ConeBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of a cone from 6 or more point-reducible base features. This element is in an optional choice.

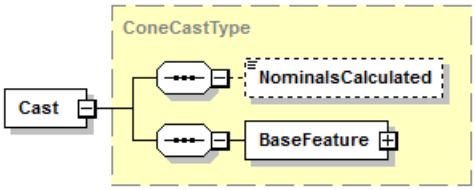
element **ConeConstructionMethodType/Recompensated**

diagram	
type	**ConeRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of a cone from 6 or more base feature points. This element is in an optional choice.

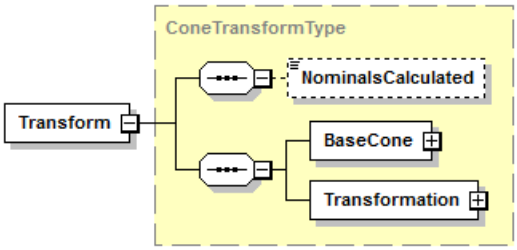
element **ConeConstructionMethodType/Copy**

diagram	
type	**ConeCopyType**
properties	content complex
children	**NominalsCalculated** **BaseCone**
annotation	documentation The Copy element describes the construction of a cone by the copying of a base cone. This element is in an optional choice.

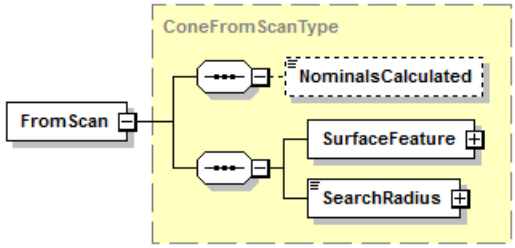
element **ConeConstructionMethodType/Cast**

diagram	
type	**ConeCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of a cone by the casting of a base feature. This element is in an optional choice.

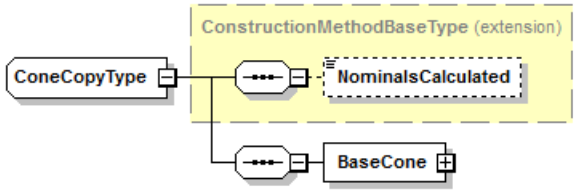
element **ConeConstructionMethodType/Transform**

diagram	
type	**ConeTransformType**
properties	content complex
children	**NominalsCalculated** **BaseCone** **Transformation**
annotation	documentation The Transform element describes the construction of a cone by the transformation of a base cone. This element is in an optional choice.

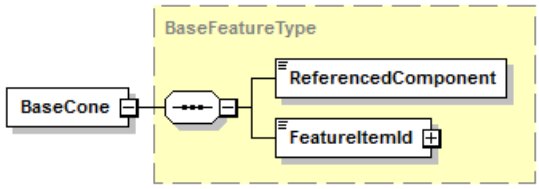
element **ConeConstructionMethodType/FromScan**

diagram	
type	**ConeFromScanType**
properties	content complex
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius**
annotation	documentation The FromScan element describes the construction of a cone from scan data. This element is in an optional choice.

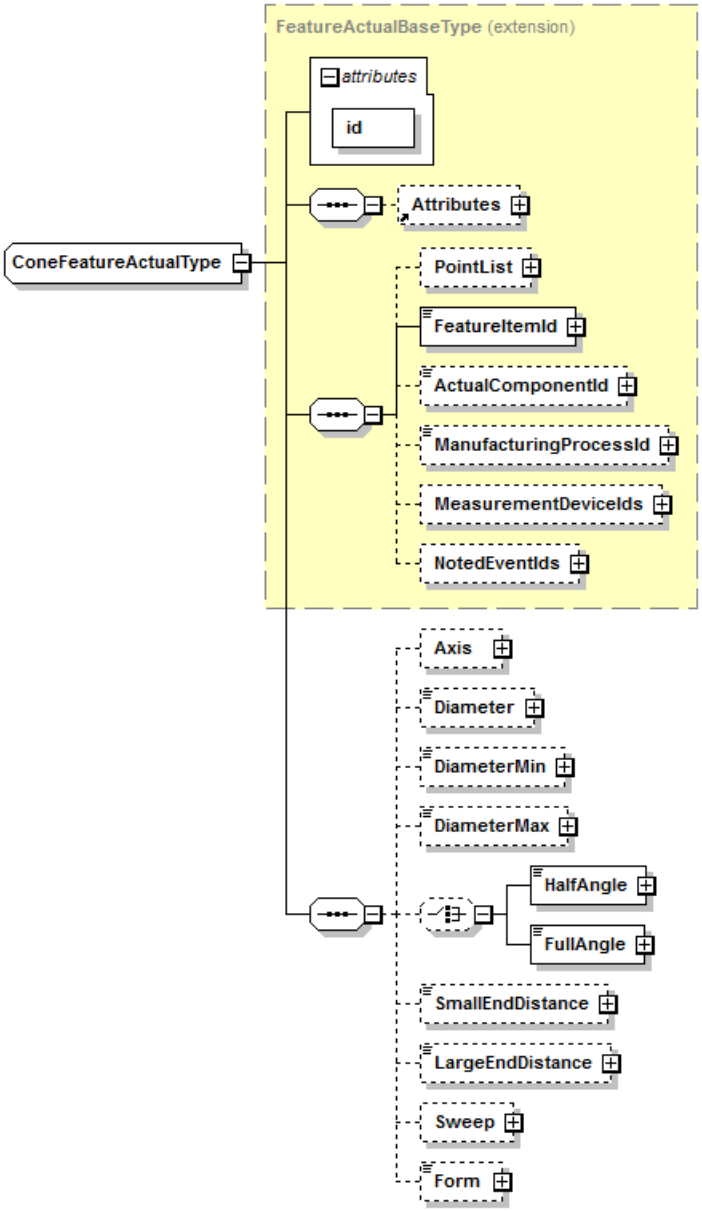
complexType **ConeCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseCone**
used by	element **ConeConstructionMethodType/Copy**
annotation	documentation The ConeCopyType defines a copied cone construction.

element **ConeCopyType/BaseCone**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseCone element identifies the cone to be copied.

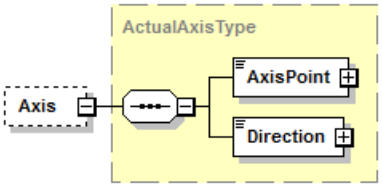
complexType **ConeFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **Axis** **Diameter** **DiameterMin** **DiameterMax** **HalfAngle** **FullAngle** **SmallEndDistance** **LargeEndDistance** **Sweep** **Form**
used by	element **ConeFeatureActual**

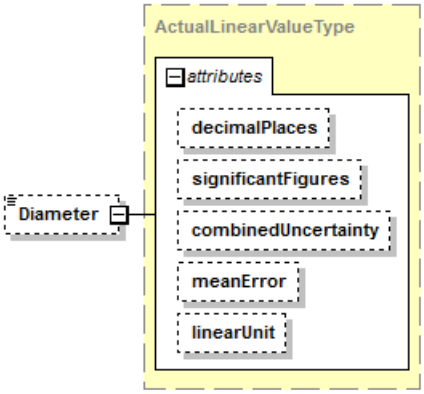
attributes	Name	Type	Use	Default	Fixed	Annotation
	id	**QIFIdType**	required			documentation The id attribute is the QIF id of the feature, used for referencing.

annotation	documentation The ConeFeatureActualType defines the cone feature actual information for an individual cone feature.

element **ConeFeatureActualType/Axis**

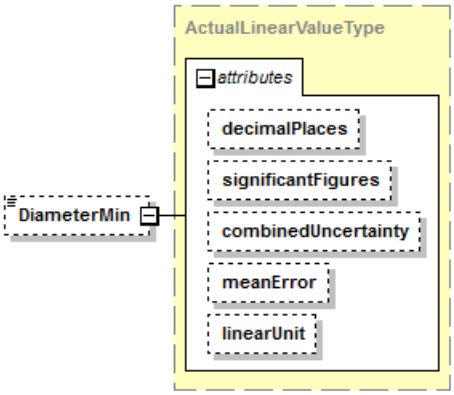
diagram	
type	**ActualAxisType**
properties	minOcc 0 maxOcc 1 content complex
children	**AxisPoint Direction**
annotation	documentation The optional Axis element is the actual XYZ locating point and unit axis vector of the cone which points from the locating point into the expanding end of the cone.

element **ConeFeatureActualType/Diameter**

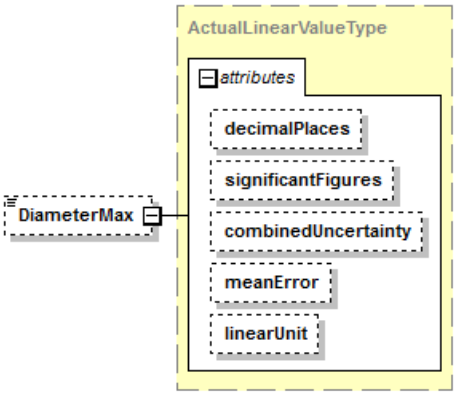
diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** — documentation: The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** — documentation: The optional meanError attribute is

	linearUnit	**xs:token**	a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Diameter element is the actual diameter of the the cone at the locating point. If the actual locating point is at the vertex this value will be zero.		

element **ConeFeatureActualType/DiameterMin**

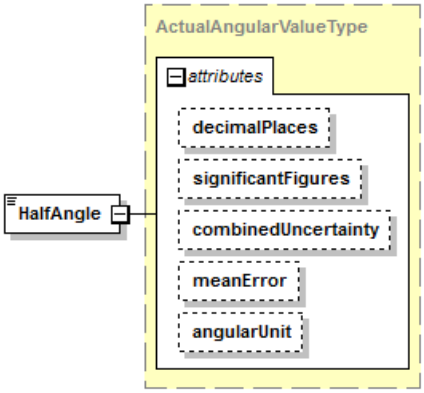
diagram						
type	**ActualLinearValueType**					
properties	minOcc 0 maxOcc 1 content complex					
attributes	Name	Type	Use	Default	Fixed	Annotation
	decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
	meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
	linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional DiameterMin element is the actual minimum diameter at the locating point of the cone from a report or an analysis.					

element **ConeFeatureActualType/DiameterMax**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** — documentation: The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** — documentation: The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional DiameterMax element is the actual maximum diameter at the locating point of the cone from a report or an analysis.

element **ConeFeatureActualType/HalfAngle**

diagram



type **ActualAngularValueType**

properties content complex

attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
angularUnit	**xs:token**				documentation The optional angularUnit attribute defines the unit used by ActualAngularValueType.

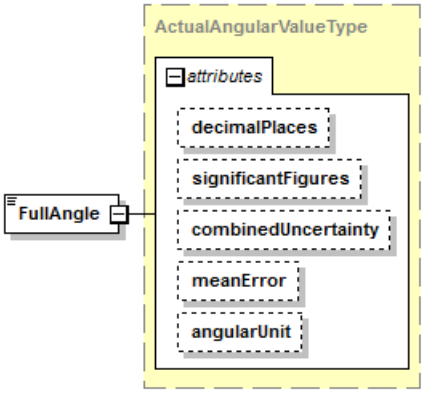
annotation

documentation

The HalfAngle element is the actual angle between the side of the cone and its axis (this is half of the included angle of the cone). This angle will be greater than or equal to zero and less than or equal to 90 degrees.

element **ConeFeatureActualType/FullAngle**

diagram



type **ActualAngularValueType**

properties content complex

attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
angularUnit	**xs:token**				documentation The optional angularUnit attribute defines the unit used by ActualAngularValueType.

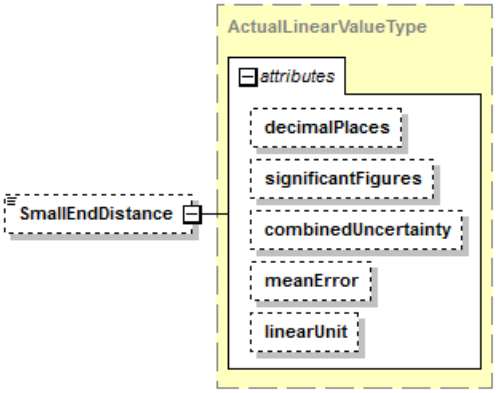
annotation

documentation

The FullAngle element is the actual angle between the sides of the cone in a plane including the cone's axis (this is the included angle of the cone). This angle will be greater than or equal to zero and less than or equal to 180 degrees.

element **ConeFeatureActualType/SmallEndDistance**

diagram



type **ActualLinearValueType**

properties

minOcc	0
maxOcc	1
content	complex

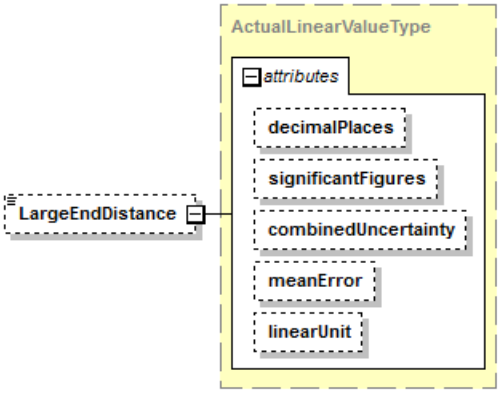
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

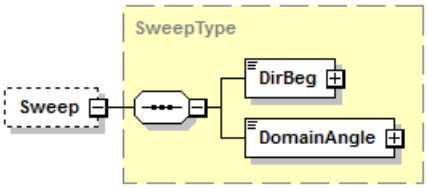
annotation

documentation
The optional SmallEndDistance element is the actual distance from the locating point to the small end of a truncated cone along the axis vector.If the cone has a pointed end then this element must be omitted.

element **ConeFeatureActualType/LargeEndDistance**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional LargeEndDistance element is the actual distance from the locating point to the large end of a truncated cone along the axis vector.

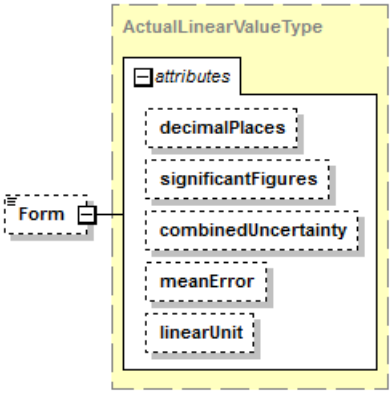
element **ConeFeatureActualType/Sweep**

diagram	
type	**SweepType**

properties	minOcc 0 maxOcc 1 content complex
children	**DirBeg DomainAngle**
annotation	documentation The optional Sweep element gives the actual start direction and the swept angle for a partial cone feature. The StartVector of the Sweep must lie in a plane normal to the axis of the cone.

element **ConeFeatureActualType/Form**

diagram



type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

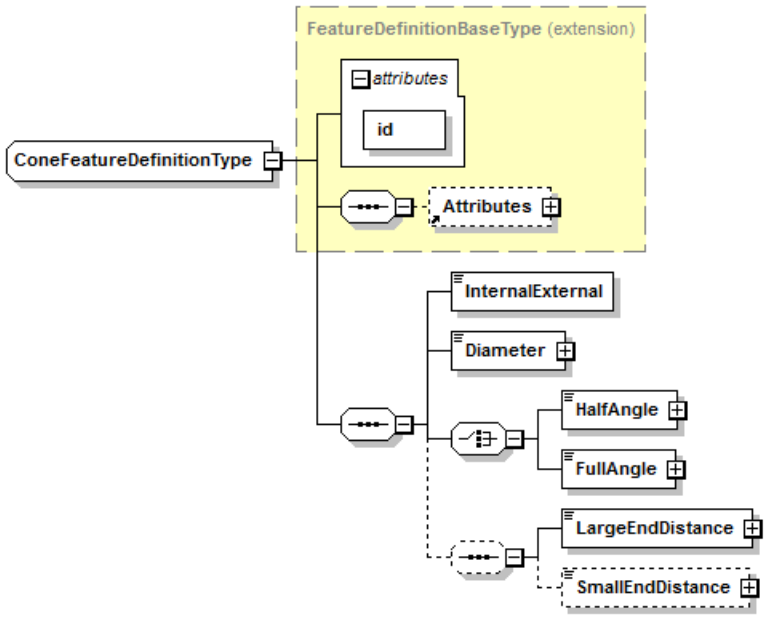
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

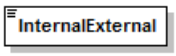
annotation

documentation
The optional Form element is the form error (conicity) of the cone from a report or an analysis.

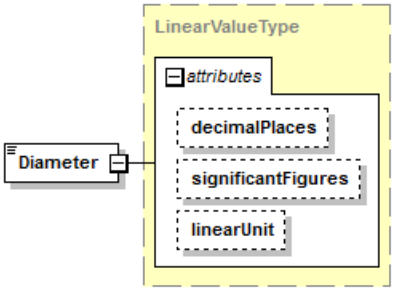
complexType **ConeFeatureDefinitionType**

diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes** **InternalExternal** **Diameter** **HalfAngle** **FullAngle** **LargeEndDistance** **SmallEndDistance**
used by	element **ConeFeatureDefinition**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ConeFeatureDefinitionType defines the cone feature nominal information that can be common to one or more cone features.

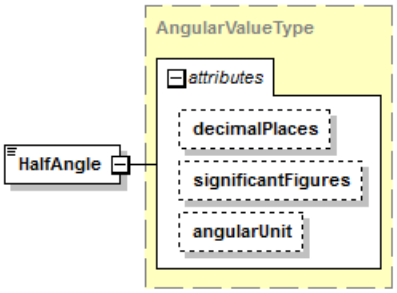
element **ConeFeatureDefinitionType/InternalExternal**

diagram	
type	**InternalExternalEnumType**
properties	content simple
facets	Kind: enumeration, Value: INTERNAL enumeration, EXTERNAL enumeration, NOT_APPLICABLE Annotation:
annotation	documentation The InternalExternal element indicates whether the feature is internal or external.

element **ConeFeatureDefinitionType/Diameter**

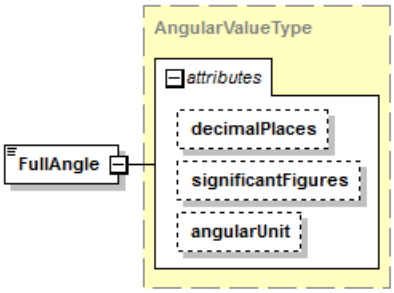
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Diameter element is the nominal diameter of the cone at the locating point. If the locating point is defined at the cone vertex then this value will be zero.

element **ConeFeatureDefinitionType/HalfAngle**

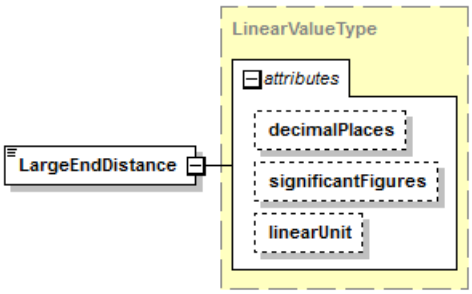
diagram	
type	**AngularValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. angularUnit **xs:token** documentation The optional angularUnit attribute defines the UnitName for the AngularValueType.

annotation	documentation The HalfAngle element the nominal angle between the side of the cone and its axis (this is half of the included angle of the cone). This angle will be greater than zero and less than 90 degrees.

element **ConeFeatureDefinitionType/FullAngle**

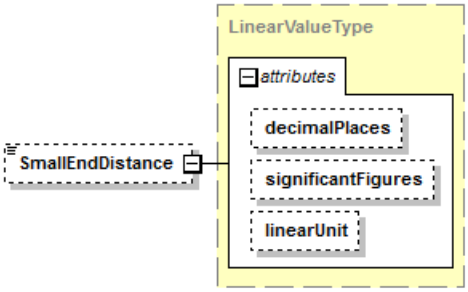
diagram	
type	**AngularValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. significantFigures / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. angularUnit / **xs:token** / / / / documentation: The optional angularUnit attribute defines the UnitName for the AngularValueType.
annotation	documentation The FullAngle element is the nominal angle between the sides of the cone in a plane including the cone's axis (this is the included angle of the cone). This angle will be greater than zero and less than 180 degrees.

element **ConeFeatureDefinitionType/LargeEndDistance**

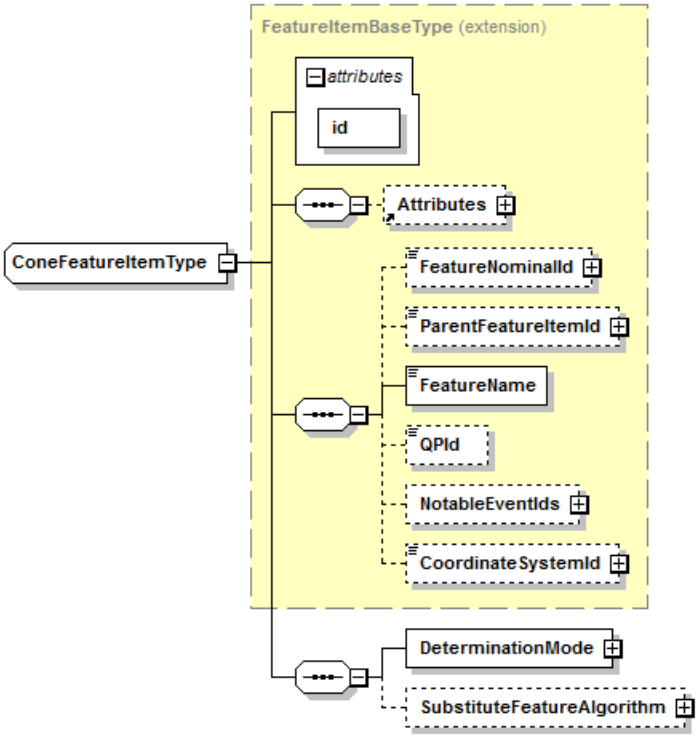
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. significantFigures / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType.

	linearUnit	**xs:token**	documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The LargeEndDistance element is the nominal distance from the locating point to the large end of a truncated cone along the axis vector.		

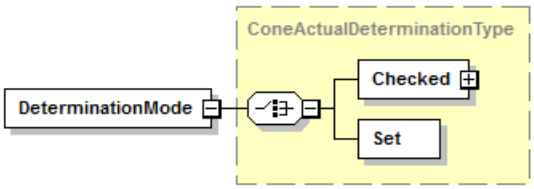
element **ConeFeatureDefinitionType/SmallEndDistance**

diagram	
type	**LinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The optional SmallEndDistance element is the nominal distance from the locating point to the small end of a truncated cone along the axis vector. If this element is missing, the cone has a pointed end.

complexType **ConeFeatureItemType**

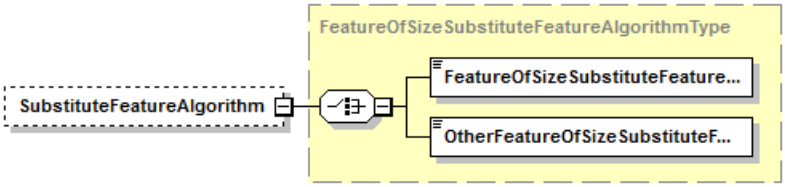
diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **ConeFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ConeFeatureItemType defines an individual cone feature.

element **ConeFeatureItemType/DeterminationMode**

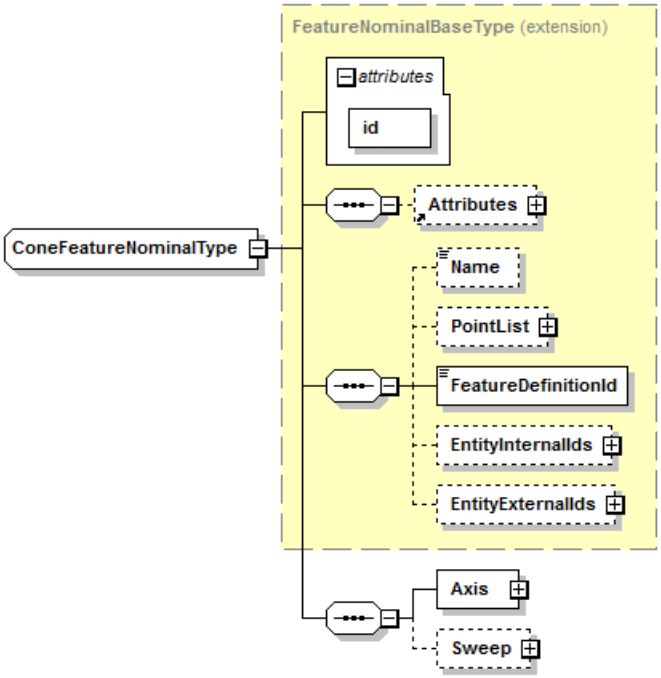
diagram	
type	**ConeActualDeterminationType**
properties	content complex
children	**Checked** **Set**

annotation	documentation The DeterminationMode element is the means by which the cone feature actual is determined.

element **ConeFeatureItemType/SubstituteFeatureAlgorithm**

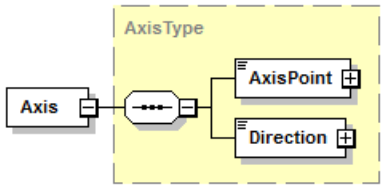
diagram	
type	**FeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**FeatureOfSizeSubstituteFeatureAlgorithmEnum OtherFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the cone feature.

complexType **ConeFeatureNominalType**

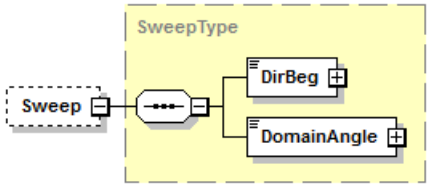
diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes Name PointList FeatureDefinitionId EntityInternalIds EntityExternalIds Axis Sweep**
used by	element **ConeFeatureNominal**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the QIF id of the

	feature, used for referencing.
annotation	documentation The ConeFeatureNominalType defines the cone feature nominal information for an individual cone feature.

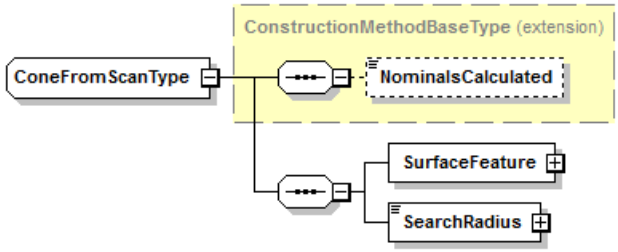
element **ConeFeatureNominalType/Axis**

diagram	
type	**AxisType**
properties	content complex
children	**AxisPoint Direction**
annotation	documentation The Axis element is the nominal locating point and nominal unit axis vector of the cone which points from the locating point into the expanding end of the cone.

element **ConeFeatureNominalType/Sweep**

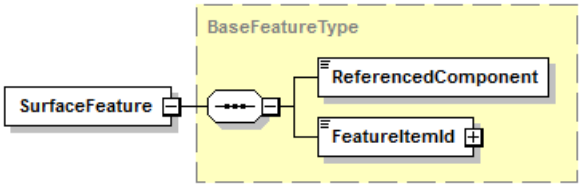
diagram	
type	**SweepType**
properties	minOcc 0 maxOcc 1 content complex
children	**DirBeg DomainAngle**
annotation	documentation The optional Sweep element is the swept angle for a partial cone. The swept angle is typically greater than 180 degrees for a feature of size. If the sweep is not specified then the feature subtends a full 360 degrees. The StartVector of the Sweep must lie in a plane normal to the axis of the cone.

complexType **ConeFromScanType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType

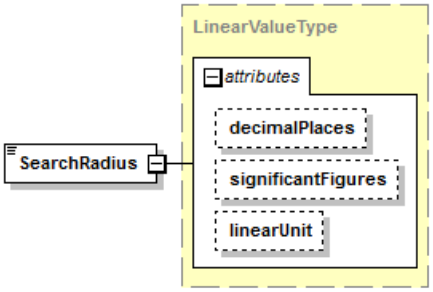
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius**
used by	element **ConeConstructionMethodType/FromScan**
annotation	documentation The ConeFromScanType defines a cone construction by the retrieval of a cone from a scanned surface feature (point cloud).

element **ConeFromScanType/SurfaceFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The SurfaceFeature element identifies the scanned surface feature from which the cone is retrieved.

element **ConeFromScanType/SearchRadius**

diagram



type **LinearValueType**

properties content complex

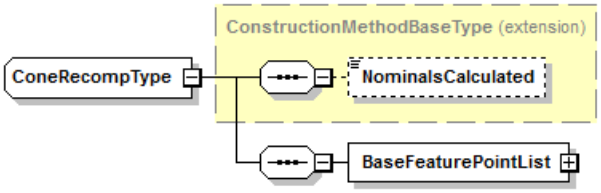
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.

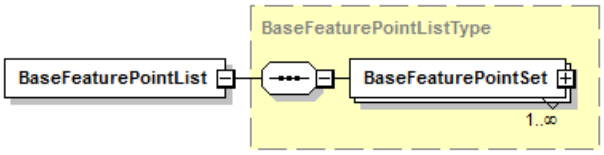
annotation

documentation
The SearchRadius element is the radius around the nominal feature, wherein the actual feature can be expected. The SearchRadius is the radius added to and subtracted from the nominal feature radius (normal to the cone surface) to define a conical shell. All scanned points within this conical shell are used for the retrieval of the feature. The conical shell's axis is defined by the feature's direction and the conical shell's axis passes through the feature's center point. The conical acceptance shell is evenly disposed about the nominal cone.

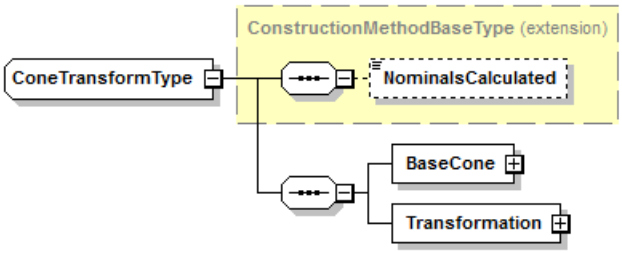
complexType **ConeRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **ConeConstructionMethodType/Recompensated**
annotation	documentation The ConeRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit cone through the measurement points of base features.

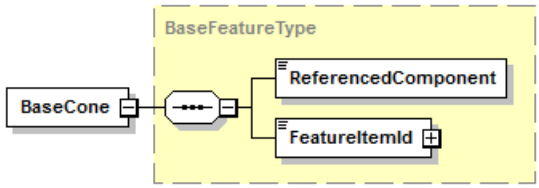
element **ConeRecompType/BaseFeaturePointList**

diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit cone. The total number of points in the BaseFeaturePointSets in the list must be 6 or greater.

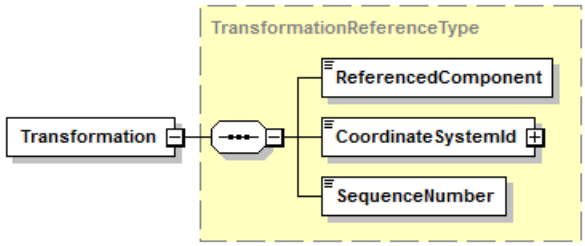
complexType **ConeTransformType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseCone** **Transformation**
used by	element **ConeConstructionMethodType/Transform**
annotation	documentation The ConeTransformType defines a cone construction by the transformation of a base cone through the specified nominal or actual coordinate system.

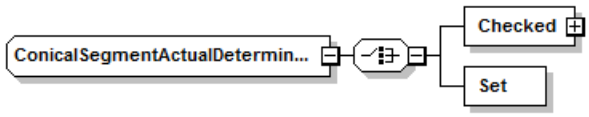
element **ConeTransformType/BaseCone**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseCone element identifies the cone to be transformed.

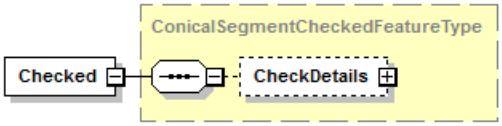
element **ConeTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent CoordinateSystemId SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the cone.

complexType **ConicalSegmentActualDeterminationType**

diagram	
children	**Checked Set**
used by	element **ConicalSegmentFeatureItemType/DeterminationMode**
annotation	documentation The ConicalSegmentActualDeterminationType defines how the conical segment feature actual is determined, either by being set or by being checked (measured or constructed).

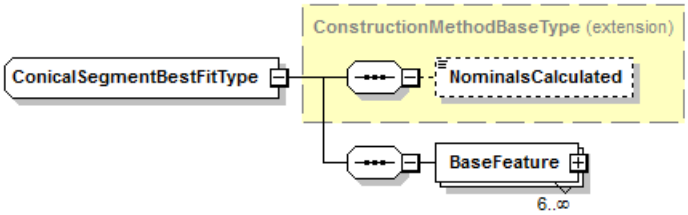
element **ConicalSegmentActualDeterminationType/Checked**

diagram	
type	**ConicalSegmentCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the conical segment feature is checked from actual data, either measured or constructed.

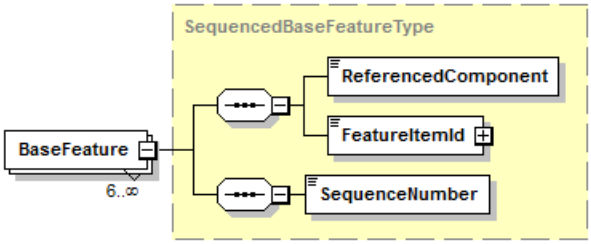
element **ConicalSegmentActualDeterminationType/Set**

diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the conical segment feature actual is set to its nominal value.

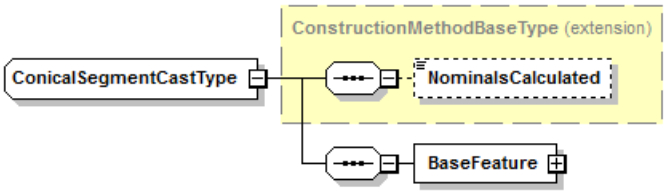
complexType **ConicalSegmentBestFitType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **ConicalSegmentConstructionMethodType/BestFit**
annotation	documentation The ConicalSegmentBestFitType defines the information for a best-fit conical segment which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the conical segment.

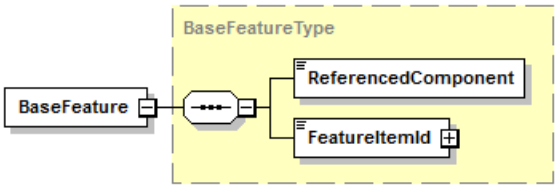
element **ConicalSegmentBestFitType/BaseFeature**

diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 6 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of a conical segment. The number of base features must be 6 or greater.

complexType **ConicalSegmentCastType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **ConicalSegmentConstructionMethodType/Cast**
annotation	documentation The ConicalSegmentCastType defines a conical segment construction by the casting of another feature type to a conical segment. The location, vector and size are copied from the base feature. Any information not available on the base feature will remain at nominal.

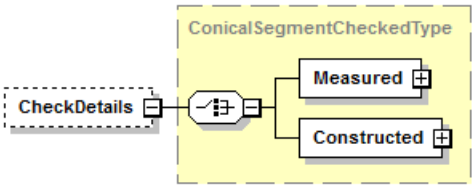
element **ConicalSegmentCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to a conical segment.

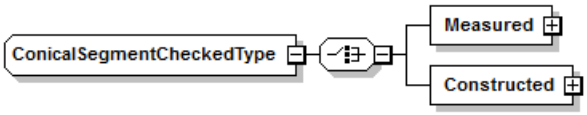
complexType **ConicalSegmentCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **ConicalSegmentActualDeterminationType/Checked**
annotation	documentation The ConicalSegmentCheckedFeatureType defines that a conical segment feature is checked.

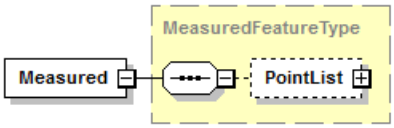
element **ConicalSegmentCheckedFeatureType/CheckDetails**

diagram	
type	**ConicalSegmentCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured** **Constructed**
annotation	documentation The optional CheckDetails element gives details about the conical segment feature check (measurement or construction).

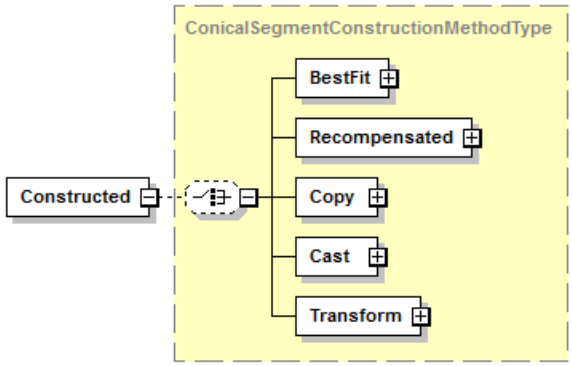
complexType **ConicalSegmentCheckedType**

diagram	
children	**Measured** **Constructed**
used by	element **ConicalSegmentCheckedFeatureType/CheckDetails**
annotation	documentation The ConicalSegmentCheckedType defines how the conical segment feature actual is checked, either by measurement or by construction.

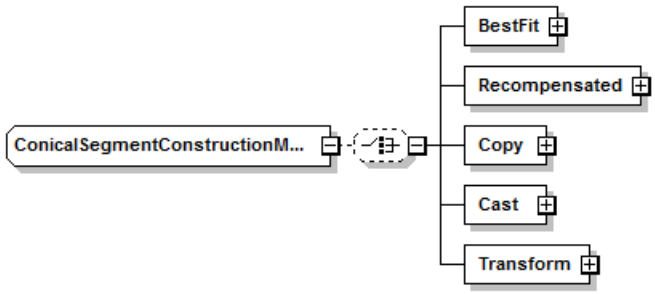
element **ConicalSegmentCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the conical segment feature is measured.

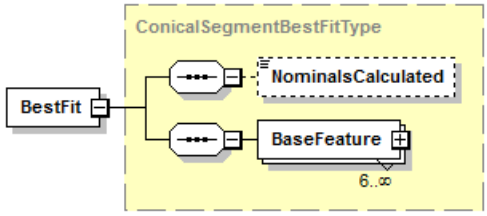
element **ConicalSegmentCheckedType/Constructed**

diagram	
type	**ConicalSegmentConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform**
annotation	documentation The Constructed element signifies that the conical segment feature is constructed.

complexType **ConicalSegmentConstructionMethodType**

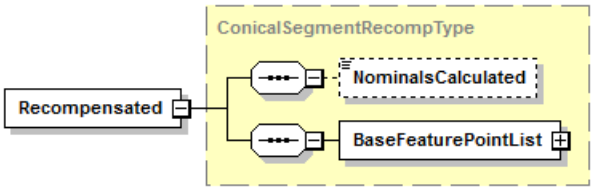
diagram	
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform**
used by	element **ConicalSegmentCheckedType/Constructed**
annotation	documentation The ConicalSegmentConstructionMethodType defines the method for constructing a unique nominal or actual conical segment feature.

element **ConicalSegmentConstructionMethodType/BestFit**

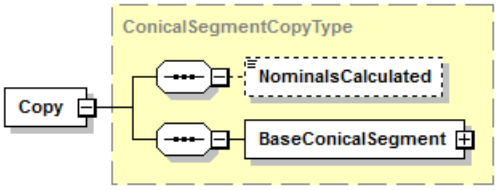
diagram	
type	**ConicalSegmentBestFitType**
properties	content complex

children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of a conical segment from 6 or more point-reducible base features. This element is in an optional choice.

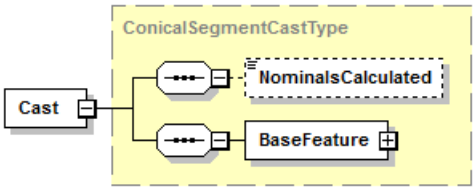
element **ConicalSegmentConstructionMethodType/Recompensated**

diagram	
type	**ConicalSegmentRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of a conical segment from 6 or more base feature points. This element is in an optional choice.

element **ConicalSegmentConstructionMethodType/Copy**

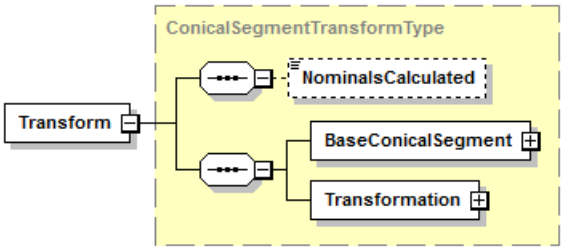
diagram	
type	**ConicalSegmentCopyType**
properties	content complex
children	**NominalsCalculated** **BaseConicalSegment**
annotation	documentation The Copy element describes the construction of a conical segment by the copying of a base conical segment. This element is in an optional choice.

element **ConicalSegmentConstructionMethodType/Cast**

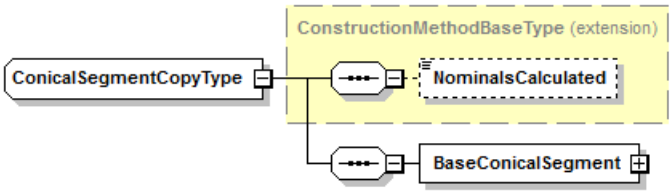
diagram	
type	**ConicalSegmentCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of a conical segment by the casting of a base feature. This element is in an

	optional choice.

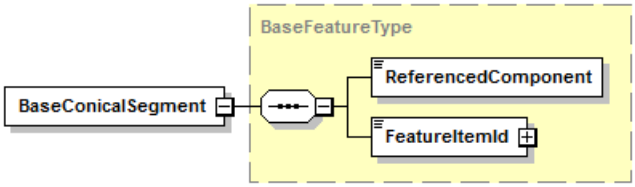
element **ConicalSegmentConstructionMethodType/Transform**

diagram	
type	**ConicalSegmentTransformType**
properties	content complex
children	**NominalsCalculated** **BaseConicalSegment** **Transformation**
annotation	documentation The Transform element describes the construction of a conical segment by the transformation of a base conical segment. This element is in an optional choice.

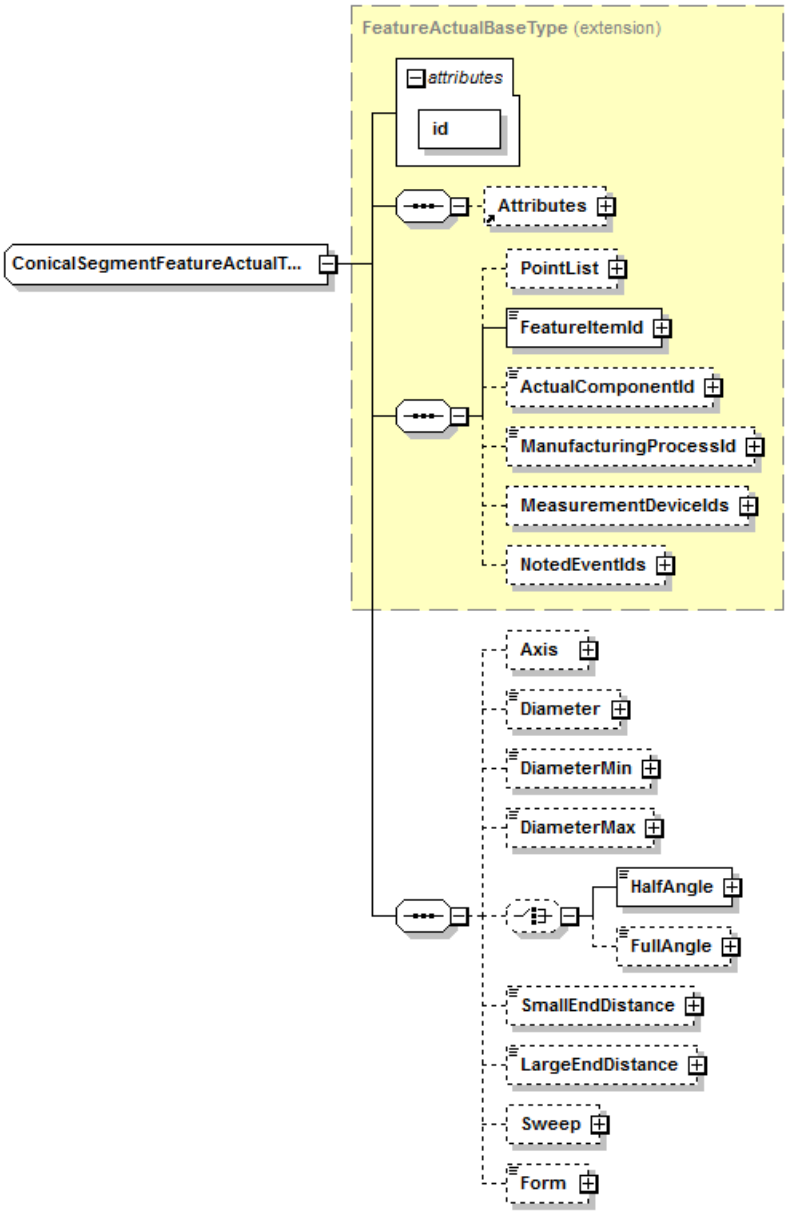
complexType **ConicalSegmentCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseConicalSegment**
used by	element **ConicalSegmentConstructionMethodType/Copy**
annotation	documentation The ConicalSegmentCopyType defines a copied conical segment construction.

element **ConicalSegmentCopyType/BaseConicalSegment**

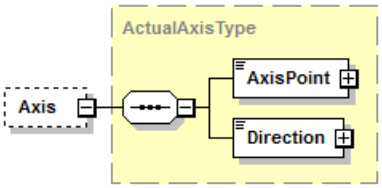
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseConicalSegment element identifies the conical segment to be copied.

complexType **ConicalSegmentFeatureActualType**

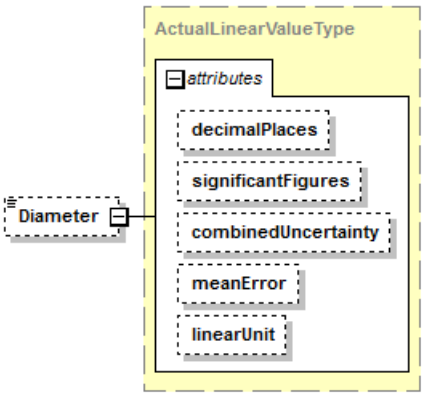
diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **Axis** **Diameter** **DiameterMin** **DiameterMax** **HalfAngle** **FullAngle** **SmallEndDistance** **LargeEndDistance** **Sweep** **Form**
used by	element **ConicalSegmentFeatureActual**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation: The id attribute is the QIF id of the feature, used

	for referencing.
annotation	documentation The ConicalSegmentFeatureActualType defines the conical segment feature actual information for an individual conical segment feature.

element **ConicalSegmentFeatureActualType/Axis**

diagram	
type	**ActualAxisType**
properties	minOcc 0 maxOcc 1 content complex
children	**AxisPoint Direction**
annotation	documentation The optional Axis element is the actual XYZ locating point and unit axis vector of the conical segment which points from the locating point into the expanding end of the conical segment.

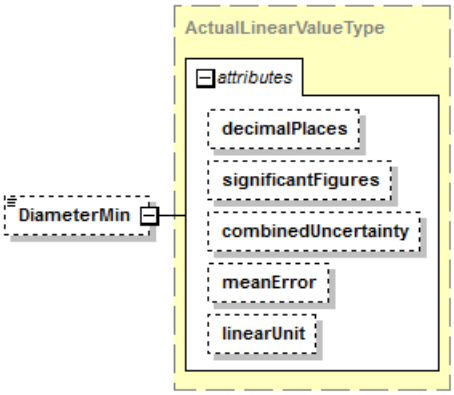
element **ConicalSegmentFeatureActualType/Diameter**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces / **xs:nonNegativeInteger** / / / / documentation See documentation of SpecifiedDecimalType. significantFigures / **xs:nonNegativeInteger** / / / / documentation See documentation of SpecifiedDecimalType. combinedUncertainty / **NonNegativeDecimalType** / / / / documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.

	meanError	**NonNegativeDecimalType**	documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
	linearUnit	**xs:token**	documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Diameter element is the actual diameter of the the conical segment at the locating point. If the actual locating point is at the vertex this value will be zero.		

element **ConicalSegmentFeatureActualType/DiameterMin**

diagram



type **ActualLinearValueType**

properties

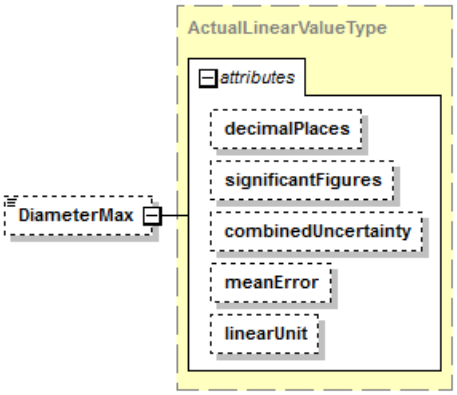
minOcc	0
maxOcc	1
content	complex

attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation	documentation The optional DiameterMin element is the actual minimum diameter at the locating point of the conical segment from a report or an analysis.

element **ConicalSegmentFeatureActualType/DiameterMax**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

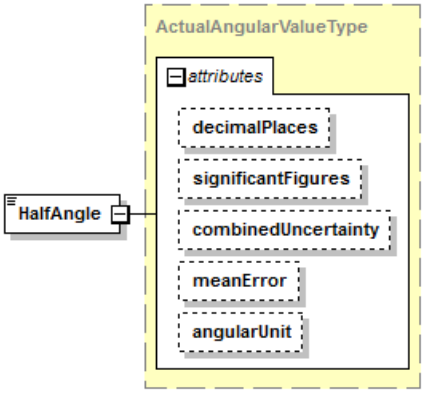
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation	documentation The optional DiameterMax element is the actual maximum diameter at the locating point of the conical segment from a report or an analysis.

element **ConicalSegmentFeatureActualType/HalfAngle**

diagram



type **ActualAngularValueType**

properties content complex

attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
angularUnit	**xs:token**				documentation The optional angularUnit attribute defines the unit used by ActualAngularValueType.

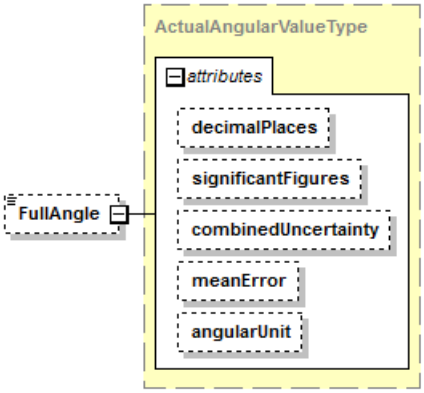
annotation

documentation

The HalfAngle element is the actual angle between the side of the conical segment and its axis (this is half of the included angle of the conical segment). This angle will be greater than or equal to zero and less than or equal to 90 degrees.

element **ConicalSegmentFeatureActualType/FullAngle**

diagram



type **ActualAngularValueType**

properties

minOcc	0
maxOcc	1
content	complex

attributes

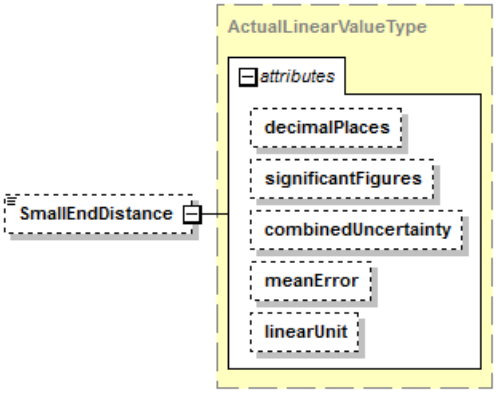
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
angularUnit	**xs:token**				documentation The optional angularUnit attribute defines the unit used by ActualAngularValueType.

annotation

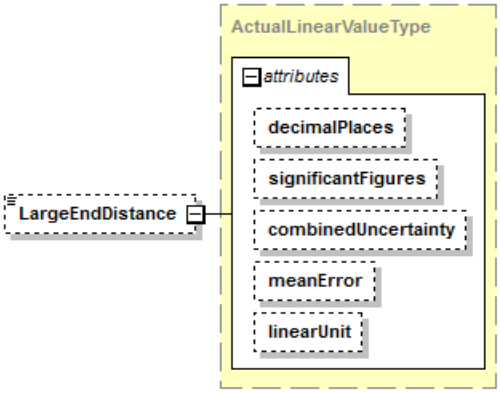
documentation

The FullAngle element is the actual angle between the sides of the conical segment in a plane including the conical segment's axis (this is the included angle of the conical segment). This angle will be greater than or equal to zero and less than or equal to 180 degrees.

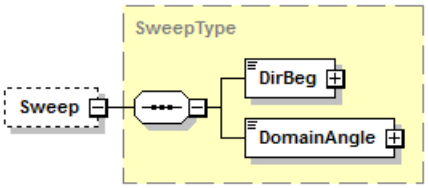
element **ConicalSegmentFeatureActualType/SmallEndDistance**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces — **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures — **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. combinedUncertainty — **NonNegativeDecimalType** — documentation: The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError — **NonNegativeDecimalType** — documentation: The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit — **xs:token** — documentation: The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional SmallEndDistance element is the actual distance from the locating point to the small end of the conical segment along the axis vector.If the cone has a pointed end then this element must be omitted.

element **ConicalSegmentFeatureActualType/LargeEndDistance**

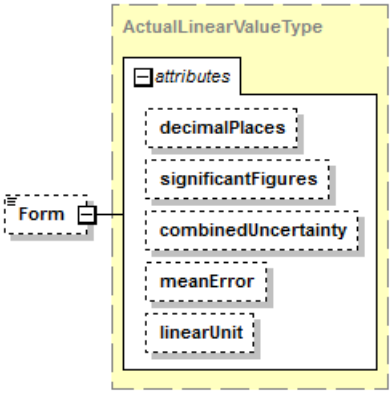
diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional LargeEndDistance element is the actual distance from the locating point to the large end of the conical segment along the axis vector.

element **ConicalSegmentFeatureActualType/Sweep**

diagram	
type	**SweepType**

properties	minOcc 0 maxOcc 1 content complex
children	**DirBeg DomainAngle**
annotation	documentation The optional Sweep element gives the actual start direction and the swept angle for a conical segment feature. The StartVector of the Sweep must lie in a plane normal to the axis of the cone.

element **ConicalSegmentFeatureActualType/Form**

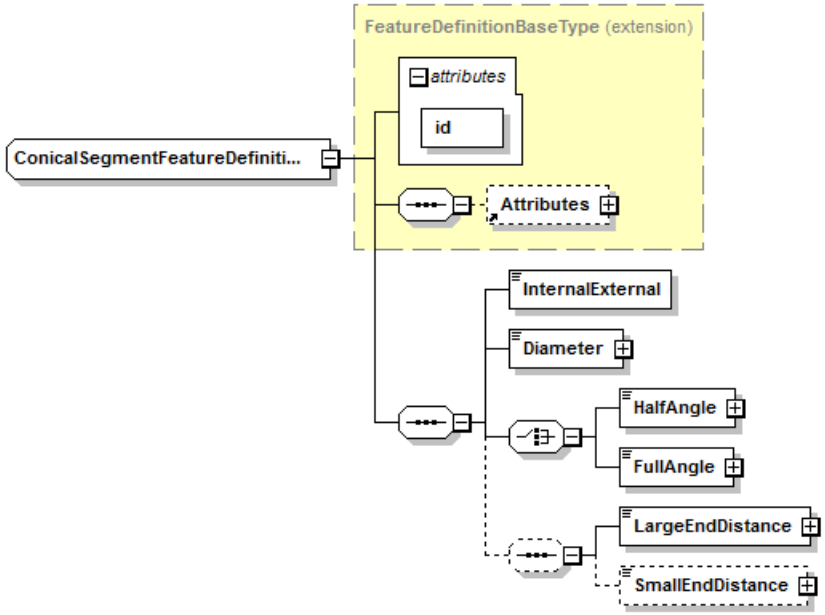
diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

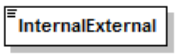
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation	documentation The optional Form element is the form error (conicity) of the conical segment from a report or an analysis.

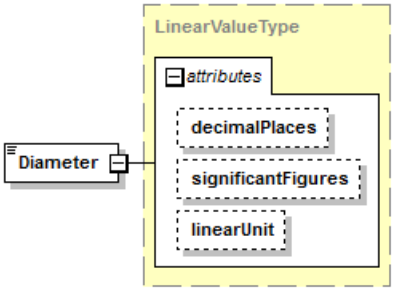
complexType **ConicalSegmentFeatureDefinitionType**

diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes** **InternalExternal** **Diameter** **HalfAngle** **FullAngle** **LargeEndDistance** **SmallEndDistance**
used by	element **ConicalSegmentFeatureDefinition**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ConicalSegmentFeatureDefinitionType defines the conical segment feature nominal information that can be common to one or more conical segment features.

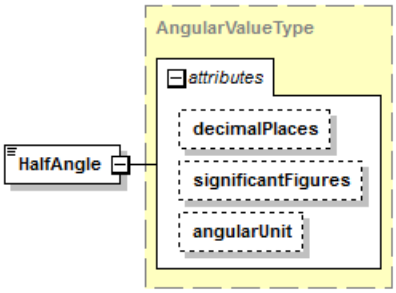
element **ConicalSegmentFeatureDefinitionType/InternalExternal**

diagram	
type	**InternalExternalEnumType**
properties	content simple
facets	Kind / Value / Annotation enumeration INTERNAL enumeration EXTERNAL enumeration NOT_APPLICABLE
annotation	documentation The InternalExternal element indicates whether the feature is internal or external.

element **ConicalSegmentFeatureDefinitionType/Diameter**

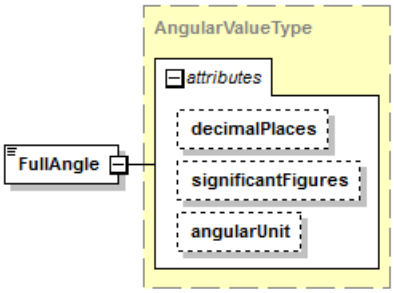
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Diameter element is the nominal diameter of the conical segment at the locating point. If the locating point is defined at the conical segment's vertex then this value will be zero.

element **ConicalSegmentFeatureDefinitionType/HalfAngle**

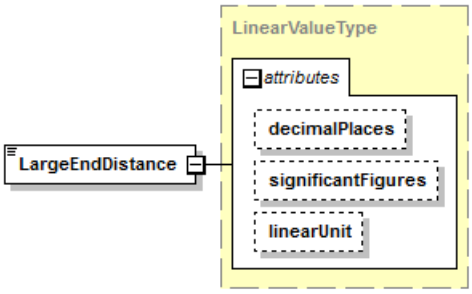
diagram	
type	**AngularValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. angularUnit **xs:token** documentation The optional angularUnit attribute defines the UnitName for the AngularValueType.

annotation	documentation The HalfAngle element is the nominal angle between the side of the conical segment and its axis (this is half of the included angle of the conical segment). This angle will be greater than zero and less than 90 degrees.

element **ConicalSegmentFeatureDefinitionType/FullAngle**

diagram	
type	**AngularValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. significantFigures / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. angularUnit / **xs:token** / / / / documentation: The optional angularUnit attribute defines the UnitName for the AngularValueType.
annotation	documentation The FullAngle element is the nominal angle between the sides of the conical segment in a plane including the conical segment's axis (this is the included angle of the conical segment). This angle will be greater than zero and less than 180 degrees.

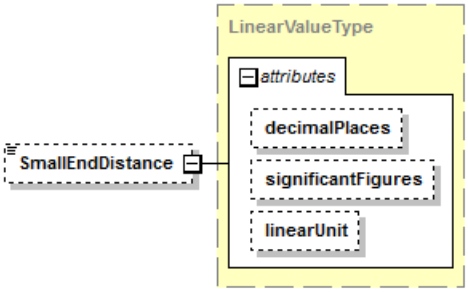
element **ConicalSegmentFeatureDefinitionType/LargeEndDistance**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. significantFigures / **xs:nonNegativeInteger** / / / / documentation: See documentation of

	linearUnit	**xs:token**	SpecifiedDecimalType. documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The LargeEndDistance element is the nominal distance from the locating point to the large end of the conical segment along the axis vector.		

element **ConicalSegmentFeatureDefinitionType/SmallEndDistance**

diagram



type **LinearValueType**

properties

minOcc	0
maxOcc	1
content	complex

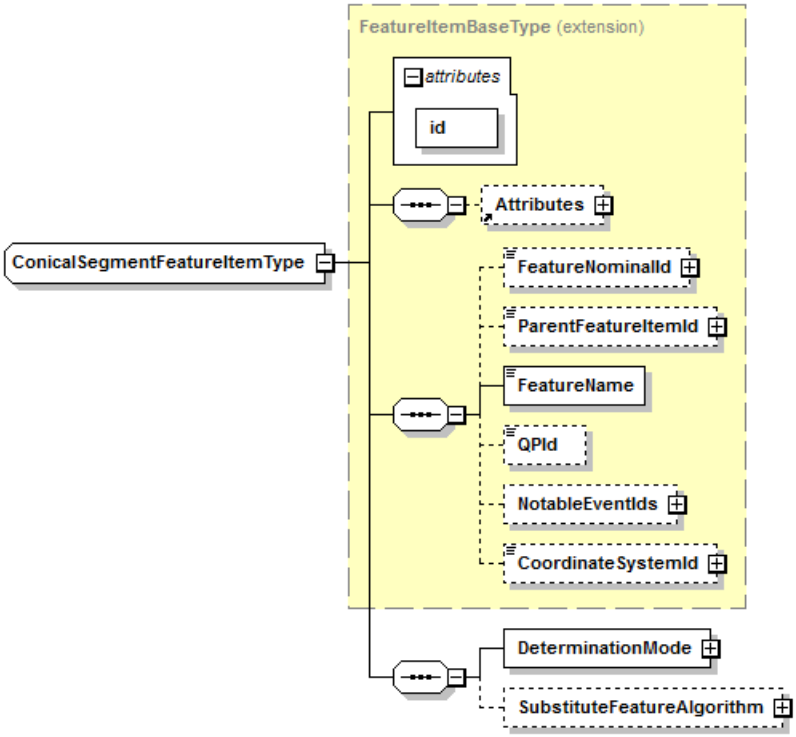
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.

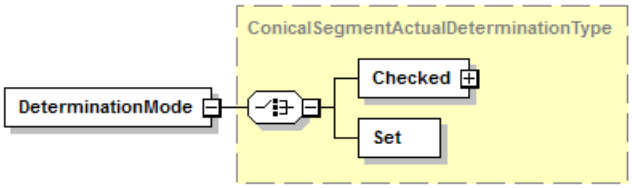
annotation

documentation
The optional SmallEndDistance element is the nominal distance from the locating point to the small end of the conical segment along the axis vector. If this element is missing, the conical segment has a pointed end.

complexType **ConicalSegmentFeatureItemType**

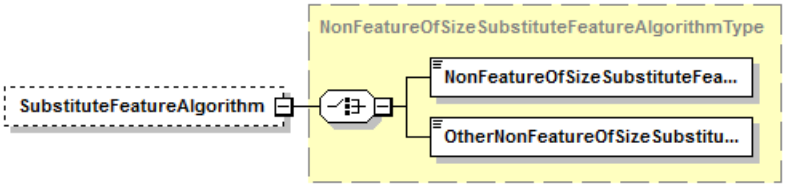
diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **ConicalSegmentFeatureItem**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ConicalSegmentFeatureItemType defines an individual conical segment feature. A conical segment feature is a portion of a cone, for example, the surface of a rounded corner of a pocket with draft.

element **ConicalSegmentFeatureItemType/DeterminationMode**

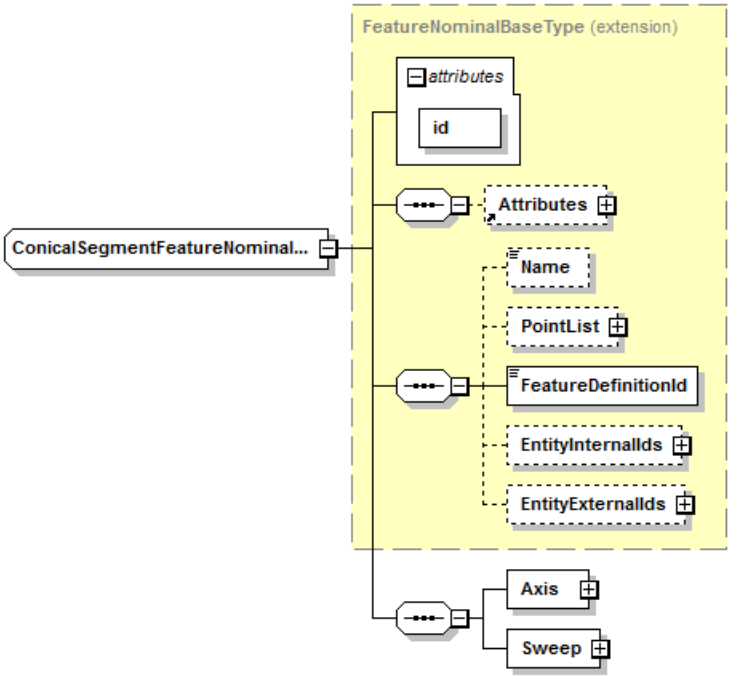
diagram	
type	**ConicalSegmentActualDeterminationType**
properties	content complex

children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the conical segment feature actual is determined.

element **ConicalSegmentFeatureItemType/SubstituteFeatureAlgorithm**

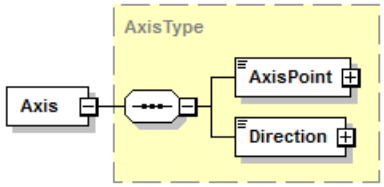
diagram	
type	**NonFeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**NonFeatureOfSizeSubstituteFeatureAlgorithmEnum OtherNonFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the conical segment feature.

complexType **ConicalSegmentFeatureNominalType**

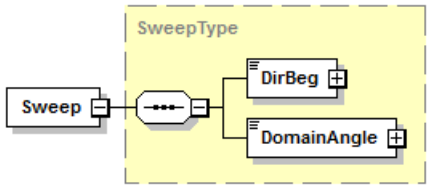
diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **Axis** **Sweep**
used by	element **ConicalSegmentFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation

	The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ConicalSegmentFeatureNominalType defines the conical segment feature nominal information for an individual conical segment feature.

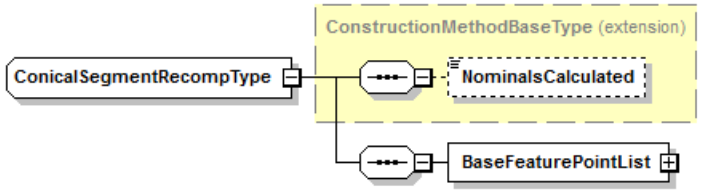
element **ConicalSegmentFeatureNominalType/Axis**

diagram	
type	**AxisType**
properties	content complex
children	**AxisPoint Direction**
annotation	documentation The Axis element is the nominal locating point and nominal unit axis vector of the conical segment which points from the locating point into the expanding end of the conical segment.

element **ConicalSegmentFeatureNominalType/Sweep**

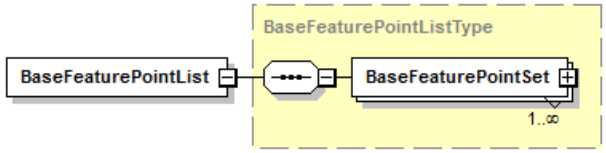
diagram	
type	**SweepType**
properties	content complex
children	**DirBeg DomainAngle**
annotation	documentation The Sweep element gives the start direction and the swept angle for a conical segment feature. The StartVector of the Sweep must lie in a plane normal to the axis of the cone.

complexType **ConicalSegmentRecompType**

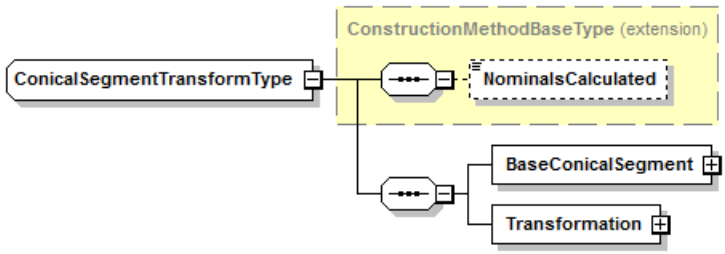
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType

children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **ConicalSegmentConstructionMethodType/Recompensated**
annotation	documentation The ConicalSegmentRecompType defines a list of base feature points for the construction of a re-compensated-for-probe-size best-fit conical segment through the measurement points of base features.

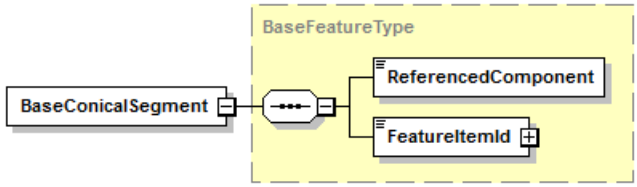
element **ConicalSegmentRecompType/BaseFeaturePointList**

diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for the construction of a re-compensated-for-probe-size best-fit conical segment. The total number of points in the BaseFeaturePointSets in the list must be 6 or greater.

complexType **ConicalSegmentTransformType**

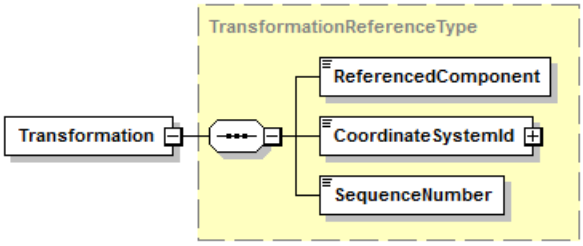
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseConicalSegment** **Transformation**
used by	element **ConicalSegmentConstructionMethodType/Transform**
annotation	documentation The ConicalSegmentTransformType defines a conical segment construction by the transformation of a conical segment through the specified nominal or actual coordinate system.

element **ConicalSegmentTransformType/BaseConicalSegment**

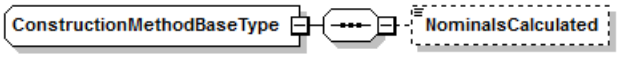
diagram	
type	**BaseFeatureType**
properties	content complex

children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseConicalSegment element identifies the conical segment to be transformed.

element **ConicalSegmentTransformType/Transformation**

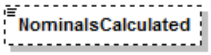
diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the base conical segment.

complexType **ConstructionMethodBaseType**

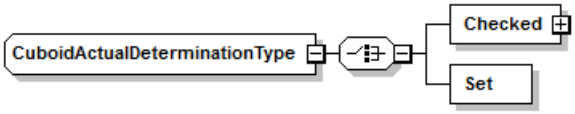
diagram		
properties	abstract true	
children	**NominalsCalculated**	
used by	complexTypes	**ArcBestFitType** **ArcCastType** **ArcCopyType** **ArcExtractType** **ArcFromScanType** **ArcProjectionType** **ArcRecompType** **ArcTransformType** **CircleBestFitType** **CircleCastType** **CircleCopyType** **CircleFromConeType** **CircleFromScanType** **CircleIntersectionType** **CircleProjectionType** **CircleRecompType** **CircleTangentThroughType** **CircleTangentType** **CircleTransformType** **ConeBestFitType** **ConeCastType** **ConeCopyType** **ConeFromScanType** **ConeRecompType** **ConeTransformType** **ConicalSegmentBestFitType** **ConicalSegmentCastType** **ConicalSegmentCopyType** **ConicalSegmentRecompType** **ConicalSegmentTransformType** **CuboidBestFitType** **CuboidCastType** **CuboidCopyType** **CuboidRecompType** **CuboidTransformType** **CylinderBestFitType** **CylinderCastType** **CylinderCopyType** **CylinderFromScanType** **CylinderRecompType** **CylinderTransformType** **CylindricalSegmentBestFitType** **CylindricalSegmentCastType** **CylindricalSegmentCopyType** **CylindricalSegmentRecompType** **CylindricalSegmentTransformType** **EdgePointCastType** **EdgePointCopyType** **EdgePointFromScanType** **EdgePointTransformType** **EllipseBestFitType** **EllipseCastType** **EllipseCopyType** **EllipseFromScanType** **EllipseIntersectionType** **EllipseProjectionType** **EllipseRecompType** **EllipseTransformType** **ElongatedCylinderBestFitType** **ElongatedCylinderCastType** **ElongatedCylinderCopyType** **ElongatedCylinderRecompType** **ElongatedCylinderTransformType** **ExtrudedCrossSectionBestFitType** **ExtrudedCrossSectionCastType** **ExtrudedCrossSectionCopyType** **ExtrudedCrossSectionRecompType** **ExtrudedCrossSectionTransformType** **LineBestFitType** **LineCastType** **LineCopyType** **LineExtractType** **LineFromScanType** **LineIntersectionType** **LineMidlineType** **LineParallelType** **LinePerpendicularType** **LineProjectionType** **LineRecompType** **LineTangentThroughType** **LineTransformType** **OppositeLinesBestFitType** **OppositeLinesCastType** **OppositeLinesCopyType** **OppositeLinesFromScanType** **OppositeLinesProjectionType** **OppositeLinesRecompType** **OppositeLinesTransformType** **OppositePlanesBestFitType** **OppositePlanesCastType** **OppositePlanesCopyType** **OppositePlanesFromScanType** **OppositePlanesRecompType** **OppositePlanesTransformType** **PlaneBestFitType** **PlaneCastType** **PlaneCopyType** **PlaneExtractType** **PlaneMidplaneType** **PlaneOffsetType** **PlaneParallelType** **PlanePerpendicularType** **PlaneRecompType** **PlaneTangentThroughType** **PlaneTransformType** **PointDefinedCurveBestFitType** **PointDefinedCurveCopyType** **PointDefinedCurveExtractType** **PointDefinedCurveFromScanType** **PointDefinedCurveRecompType** **PointDefinedCurveTransformType**

	PointDefinedSurfaceBestFitType PointDefinedSurfaceCopyType PointDefinedSurfaceExtractType PointDefinedSurfaceRecompType PointDefinedSurfaceTransformType PointFeatureCastType PointFeatureCenterOfGravityType PointFeatureCopyType PointFeatureExtremeType PointFeatureFromConeType PointFeatureFromScanType PointFeatureIntersectionType PointFeatureMidPointType PointFeatureMovePointAxisType PointFeatureMovePointType PointFeatureMovePointVectorType PointFeaturePierceType PointFeatureProjectionType PointFeatureTransformType SphereBestFitType SphereCastType SphereCopyType SphereFromScanType SphereRecompType SphereTransformType SphericalSegmentBestFitType SphericalSegmentCastType SphericalSegmentCopyType SphericalSegmentRecompType SphericalSegmentTransformType SurfaceOfRevolutionBestFitType SurfaceOfRevolutionCastType SurfaceOfRevolutionCopyType SurfaceOfRevolutionRecompType SurfaceOfRevolutionTransformType ThreadedFeatureBestFitType ThreadedFeatureCastType ThreadedFeatureCopyType ThreadedFeatureFromCylinderType ThreadedFeatureRecompType ThreadedFeatureTransformType ToroidalSegmentBestFitType ToroidalSegmentCastType ToroidalSegmentCopyType ToroidalSegmentRecompType ToroidalSegmentTransformType TorusBestFitType TorusCastType TorusCopyType TorusFromScanType TorusRecompType TorusTransformType
annotation	documentation The ConstructionMethodBaseType is the abstract base type that defines a construction method. A construction method defines the data for constructing a feature and describes how to use that data in the construction of a feature. In any case where more than one feature can be constructed with the same input, the result closest to the feature's nominal definition will be chosen.

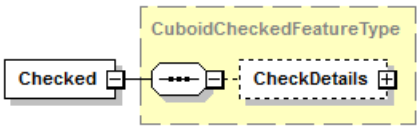
element **ConstructionMethodBaseType/NominalsCalculated**

diagram	
type	**xs:boolean**
properties	minOcc 0 maxOcc 1 content simple
annotation	documentation The optional NominalsCalculated element identifies whether nominals are calculated rather than supplied for the constructed feature: "true" for calculated, "false" or not present for supplied.

complexType **CuboidActualDeterminationType**

diagram	
children	Checked Set
used by	element CuboidFeatureItemType/DeterminationMode
annotation	documentation The CuboidActualDeterminationType defines how the cuboid actual is determined, either by being set or by being checked (measured or constructed).

element **CuboidActualDeterminationType/Checked**

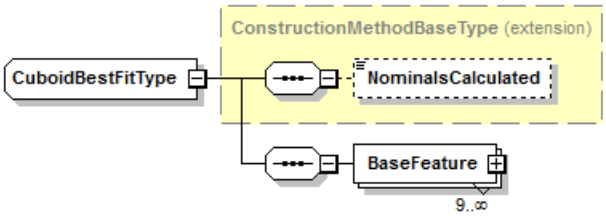
diagram	
type	CuboidCheckedFeatureType

properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the cuboid is checked from actual data, either measured or constructed.

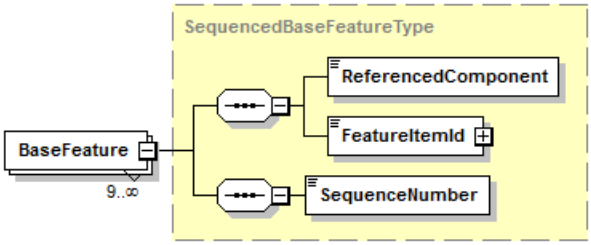
element **CuboidActualDeterminationType/Set**

diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the cuboid actual is set to its nominal value.

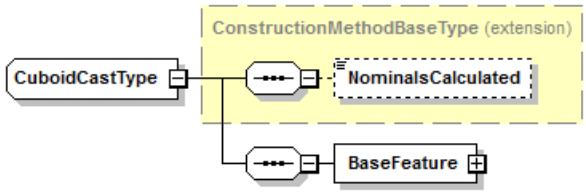
complexType **CuboidBestFitType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **CuboidConstructionMethodType/BestFit**
annotation	documentation The CuboidBestFitType defines the information for a best-fit cuboid which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the cuboid.

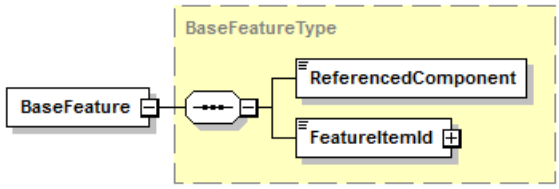
element **CuboidBestFitType/BaseFeature**

diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 9 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of a cuboid. The number of base features must be 9 or greater.

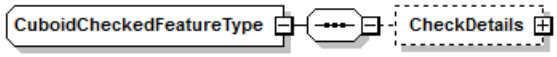
complexType **CuboidCastType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **CuboidConstructionMethodType/Cast**
annotation	documentation The CuboidCastType defines a cuboid construction by the casting of another feature type to a cuboid. The location, vectors and sizes are copied from the base feature. Any information not available on the base feature will remain at nominal.

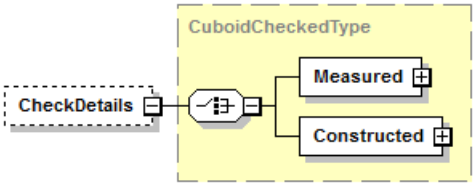
element **CuboidCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to a cuboid.

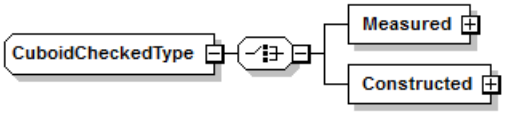
complexType **CuboidCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **CuboidActualDeterminationType/Checked**
annotation	documentation The CuboidCheckedFeatureType defines that a cuboid feature is checked.

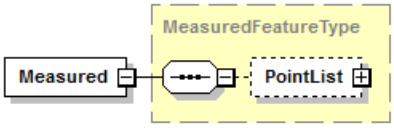
element **CuboidCheckedFeatureType/CheckDetails**

diagram	
type	**CuboidCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured** **Constructed**
annotation	documentation The optional CheckDetails element gives details about the cuboid check (measurement or construction).

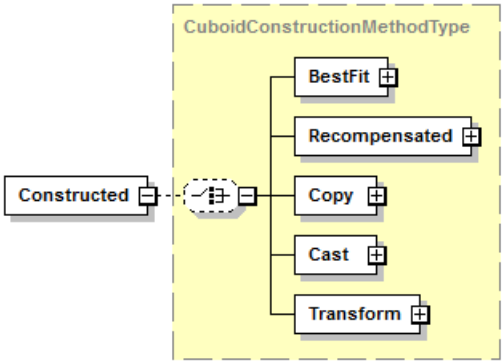
complexType **CuboidCheckedType**

diagram	
children	**Measured** **Constructed**
used by	element **CuboidCheckedFeatureType/CheckDetails**
annotation	documentation The CuboidCheckedType defines how the cuboid actual is checked, either by measurement or by construction.

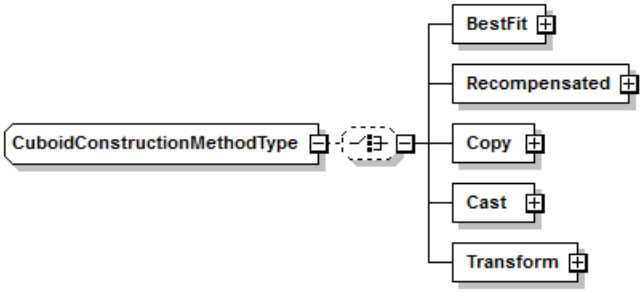
element **CuboidCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the cuboid is measured.

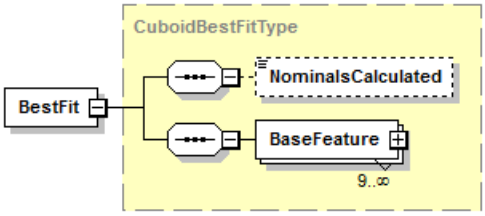
element **CuboidCheckedType/Constructed**

diagram	
type	**CuboidConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform**
annotation	documentation The Constructed element signifies that the cuboid is constructed.

complexType **CuboidConstructionMethodType**

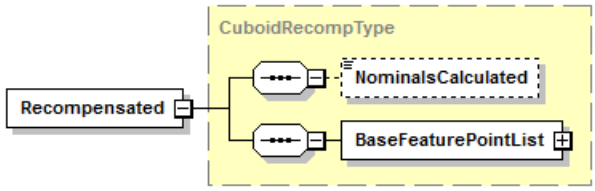
diagram	
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform**
used by	element **CuboidCheckedType/Constructed**
annotation	documentation The CuboidConstructionMethodType defines the method for constructing a unique nominal or actual cuboid feature.

element **CuboidConstructionMethodType/BestFit**

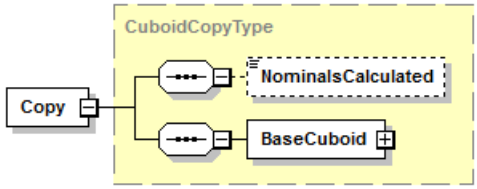
diagram	
type	**CuboidBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of a cuboid from 9 or more point-reducible base features. This

	element is in an optional choice.

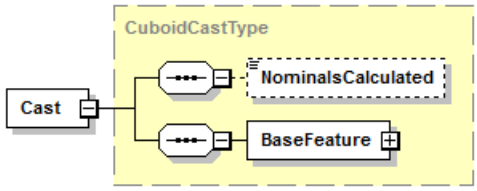
element **CuboidConstructionMethodType/Recompensated**

diagram	
type	**CuboidRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of a cuboid from 9 or more base feature points. This element is in an optional choice.

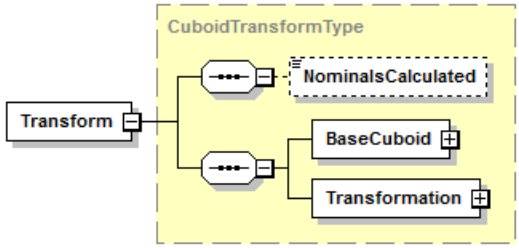
element **CuboidConstructionMethodType/Copy**

diagram	
type	**CuboidCopyType**
properties	content complex
children	**NominalsCalculated** **BaseCuboid**
annotation	documentation The Copy element describes the construction of a cuboid by the copying of a base cuboid. This element is in an optional choice.

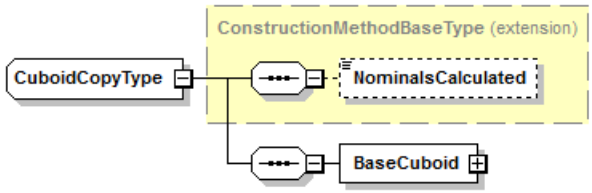
element **CuboidConstructionMethodType/Cast**

diagram	
type	**CuboidCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of a cuboid by the casting of a base feature. This element is in an optional choice.

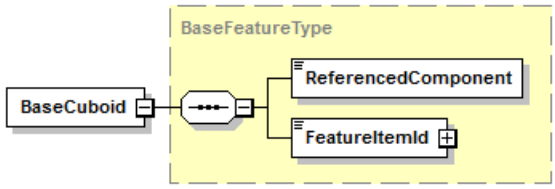
element **CuboidConstructionMethodType/Transform**

diagram	
type	**CuboidTransformType**
properties	content complex
children	**NominalsCalculated** **BaseCuboid** **Transformation**
annotation	documentation The Transform element describes the construction of a cuboid by the transformation of a base cuboid. This element is in an optional choice.

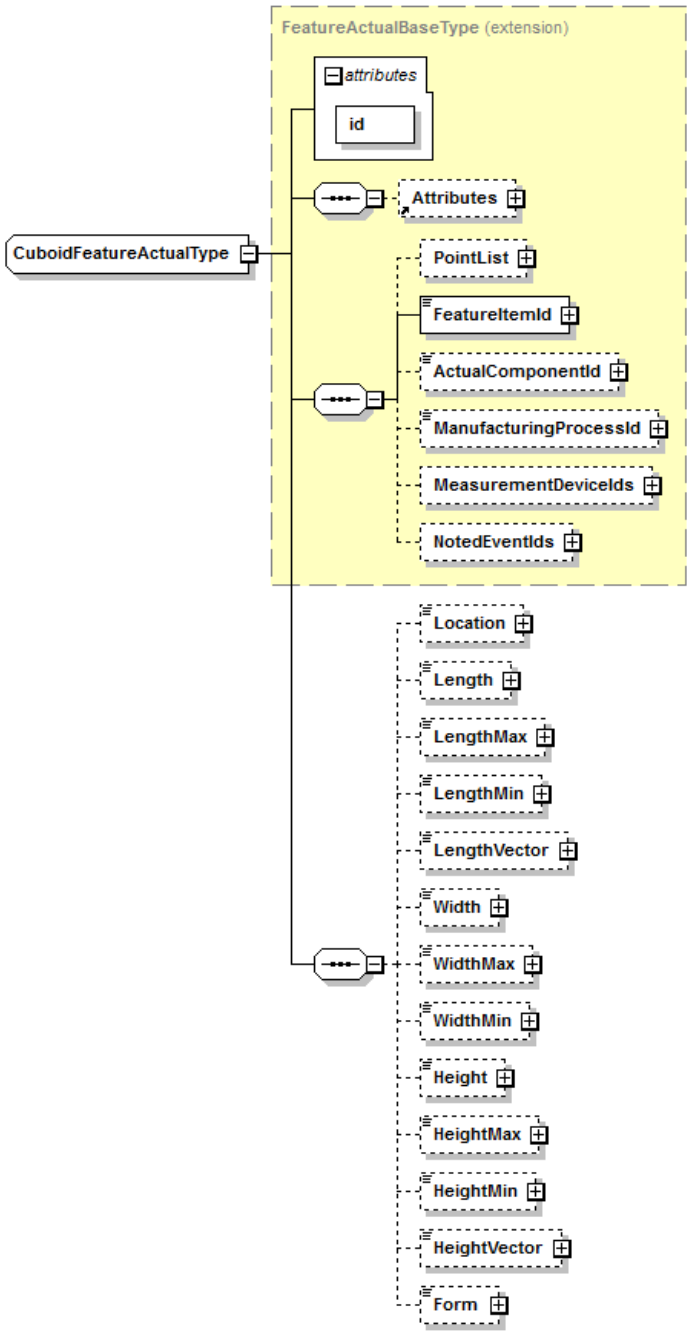
complexType **CuboidCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseCuboid**
used by	element **CuboidConstructionMethodType/Copy**
annotation	documentation The CuboidCopyType defines a copied cuboid construction.

element **CuboidCopyType/BaseCuboid**

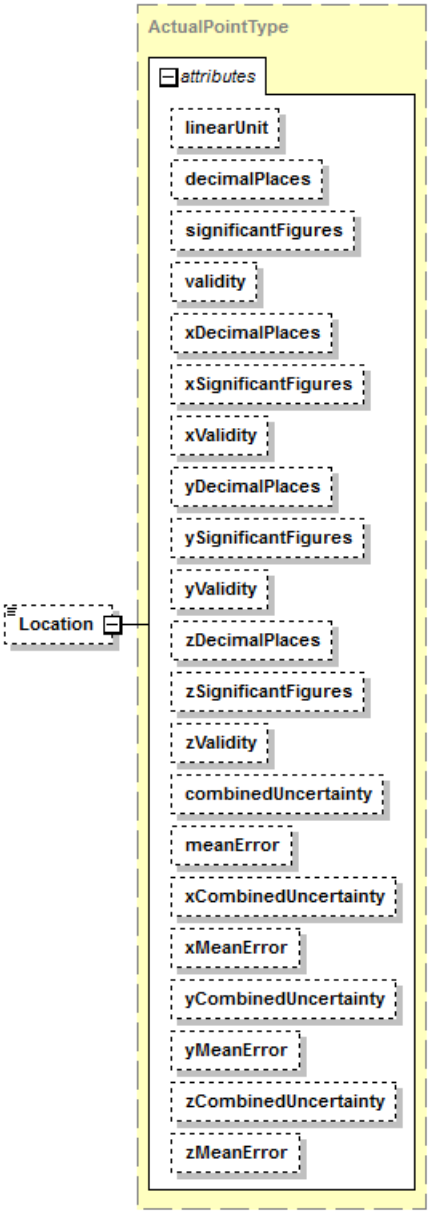
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseCuboid element identifies the cuboid to be copied.

complexType **CuboidFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **Location** **Length** **LengthMax** **LengthMin** **LengthVector** **Width** **WidthMax** **WidthMin** **Height** **HeightMax** **HeightMin** **HeightVector** **Form**
used by	element **CuboidFeatureActual**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the

	QIF id of the feature, used for referencing.
annotation	documentation The CuboidFeatureActualType defines the cuboid feature actual information for an individual cuboid feature.

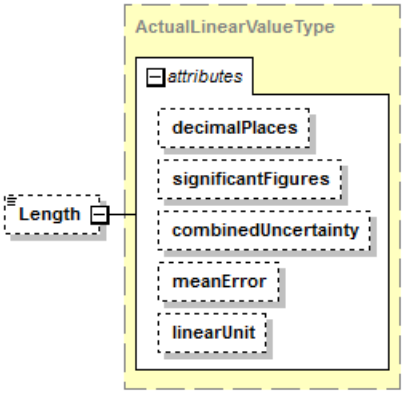
element **CuboidFeatureActualType/Location**

diagram	
type	**ActualPointType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

attributes	Name	Type	Use	Default	Fixed	Annotation
	linearUnit	**xs:token**				
	decimalPlaces	**xs:nonNegativeInteger**				
	significantFigures	**xs:nonNegativeInteger**				
	validity	**ValidityEnumType**				
	xDecimalPlaces	**xs:nonNegativeInteger**				
	xSignificantFigures	**xs:nonNegativeInteger**				
	xValidity	**ValidityEnumType**				
	yDecimalPlaces	**xs:nonNegativeInteger**				
	ySignificantFigures	**xs:nonNegativeInteger**				
	yValidity	**ValidityEnumType**				
	zDecimalPlaces	**xs:nonNegativeInteger**				
	zSignificantFigures	**xs:nonNegativeInteger**				
	zValidity	**ValidityEnumType**				
	combinedUncertainty	**xs:decimal**				
	meanError	**xs:decimal**				
	xCombinedUncertainty	**xs:decimal**				
	xMeanError	**xs:decimal**				
	yCombinedUncertainty	**xs:decimal**				
	yMeanError	**xs:decimal**				
	zCombinedUncertainty	**xs:decimal**				
	zMeanError	**xs:decimal**				
annotation	documentation The optional Location element is the actual center of the cuboid.					

element **CuboidFeatureActualType/Length**

diagram

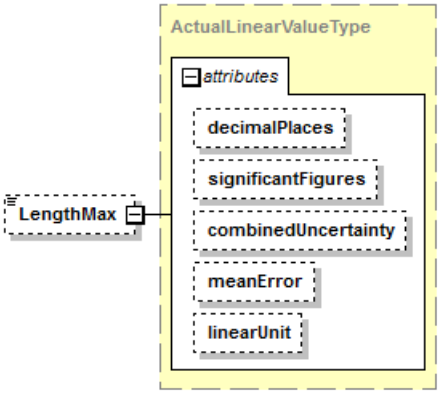


type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes	Name	Type	Use	Default	Fixed	Annotation
	decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	combinedUncertainty	**NonNegativeDecimalType**				documentation

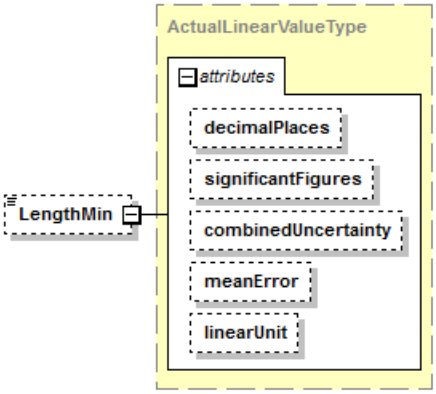
	meanError	**NonNegativeDecimalType**	The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
	linearUnit	**xs:token**	
annotation	documentation The optional Length element is the actual length of the cuboid.		

element **CuboidFeatureActualType/LengthMax**

diagram						
type	**ActualLinearValueType**					
properties	minOcc 0 maxOcc 1 content complex					
attributes	Name	Type	Use	Default	Fixed	Annotation
	decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
	meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.

	linearUnit	**xs:token**	documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional LengthMax element is the maximum length of the cuboid from a report or an analysis.		

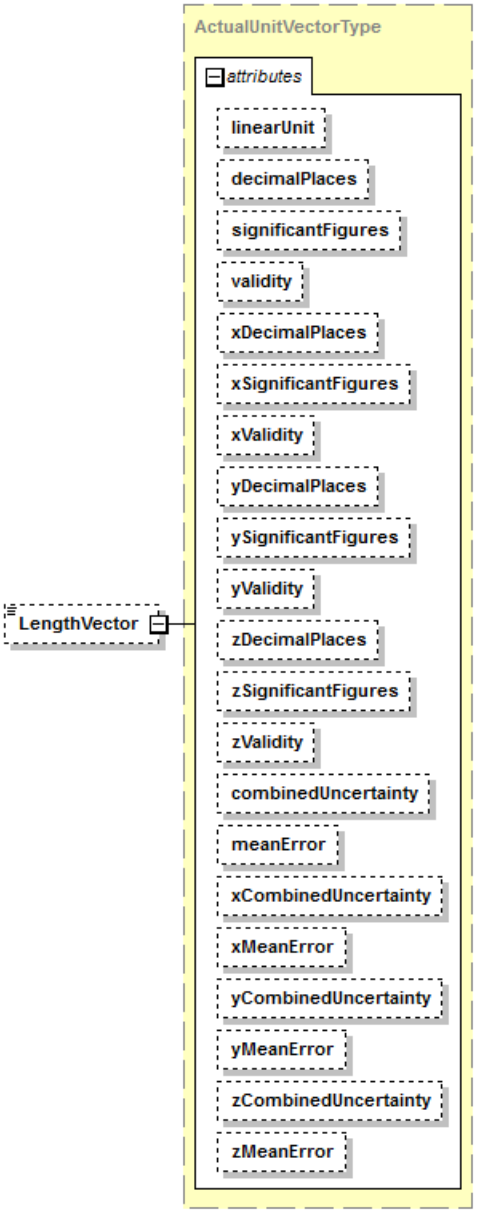
element **CuboidFeatureActualType/LengthMin**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes	Name	Type	Use	Default	Fixed	Annotation
	decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
	meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
	linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional LengthMin element is the minimum length of the cuboid from a report or an analysis.					

element **CuboidFeatureActualType/LengthVector**

diagram



type	**ActualUnitVectorType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

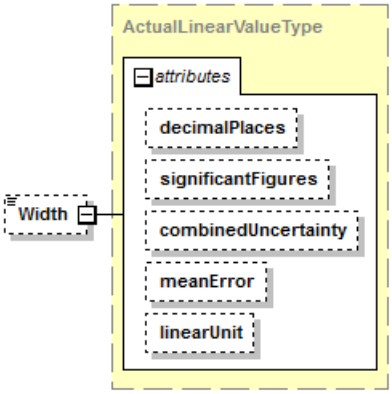
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional LengthVector element is the actual unit vector length direction of the cuboid.	

element **CuboidFeatureActualType/Width**

diagram



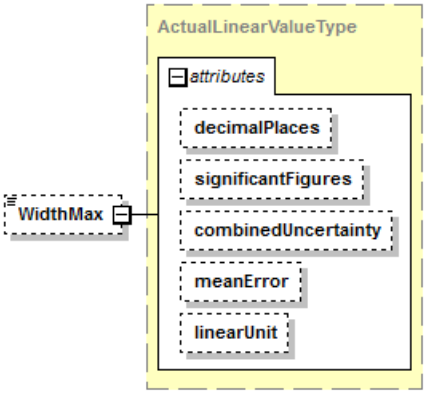
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

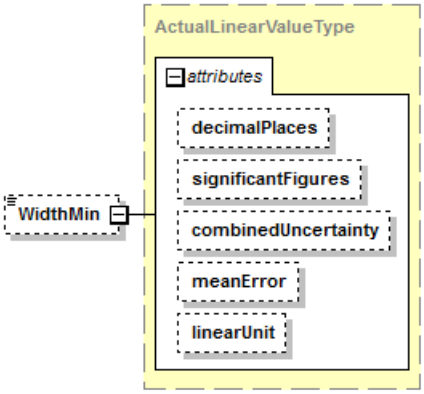
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is

	linearUnit **xs:token**	a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Width element is the actual width of the cuboid.	

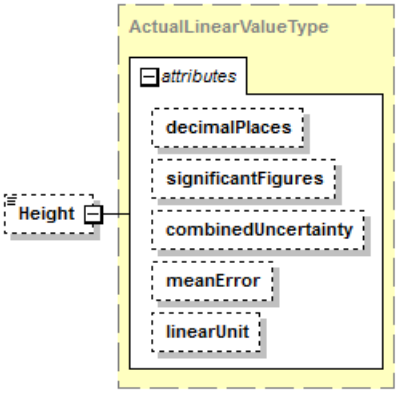
element **CuboidFeatureActualType/WidthMax**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** — documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** — documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** — documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional WidthMax element is the maximum width of the cuboid from a report or an analysis.

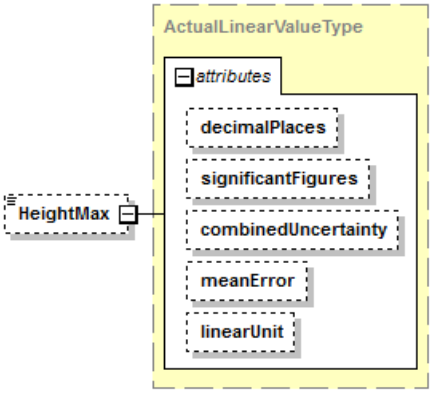
element **CuboidFeatureActualType/WidthMin**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional WidthMin element is the minimum width of the cuboid from a report or an analysis.

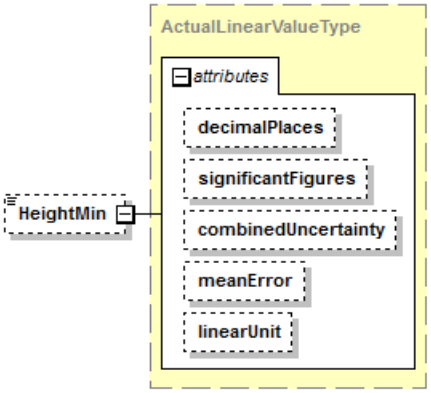
element **CuboidFeatureActualType/Height**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Height element is the actual height of the cuboid.

element **CuboidFeatureActualType/HeightMax**

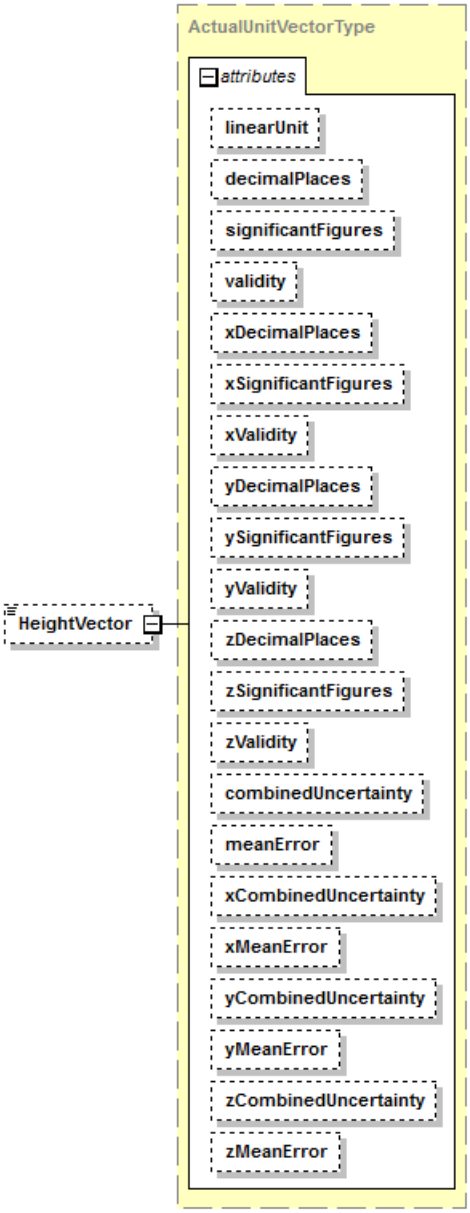
diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional HeightMax element is the maximum height of the cuboid from a report or an analysis.

element **CuboidFeatureActualType/HeightMin**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional HeightMin element is the minimum height of the cuboid from a report or an analysis.

element **CuboidFeatureActualType/HeightVector**

diagram



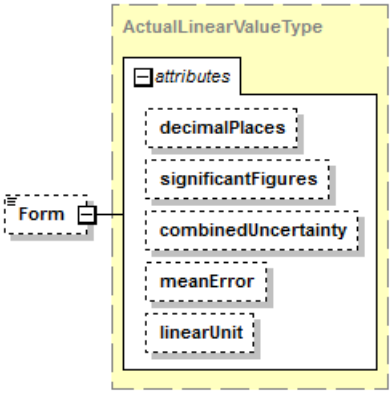
type	**ActualUnitVectorType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

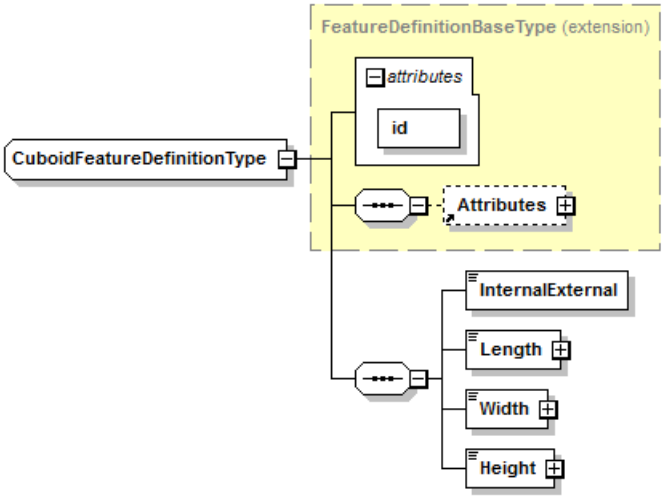
	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional HeightVector element is the actual unit vector height direction of the cuboid.	

element **CuboidFeatureActualType/Form**

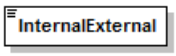
diagram						
type	**ActualLinearValueType**					
properties	minOcc 0 maxOcc 1 content complex					
attributes	Name	Type	Use	Default	Fixed	Annotation
	decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
	meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is

	linearUnit **xs:token**	a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Form element is the form error of the cuboid from a report or an analysis.	

complexType **CuboidFeatureDefinitionType**

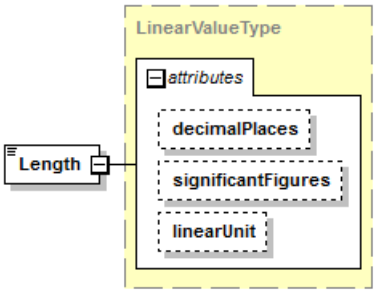
diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes InternalExternal Length Width Height**
used by	element **CuboidFeatureDefinition**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CuboidFeatureDefinitionType defines the cuboid feature nominal information that can be common to one or more cuboid features.

element **CuboidFeatureDefinitionType/InternalExternal**

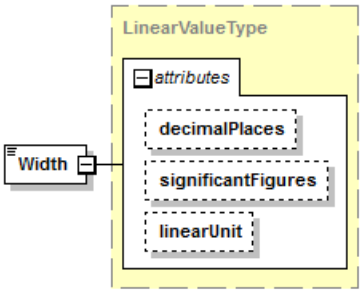
diagram	
type	**InternalExternalEnumType**
properties	content simple
facets	Kind: enumeration; Value: INTERNAL; Annotation

	enumeration EXTERNAL enumeration NOT_APPLICABLE
annotation	documentation The InternalExternal element indicates whether the feature is internal or external.

element **CuboidFeatureDefinitionType/Length**

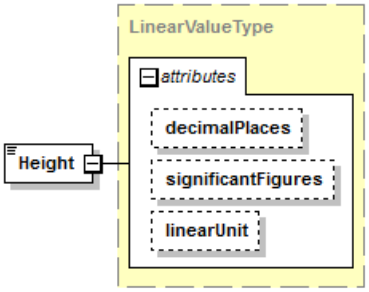
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Length element is the size of the cuboid in the length direction.

element **CuboidFeatureDefinitionType/Width**

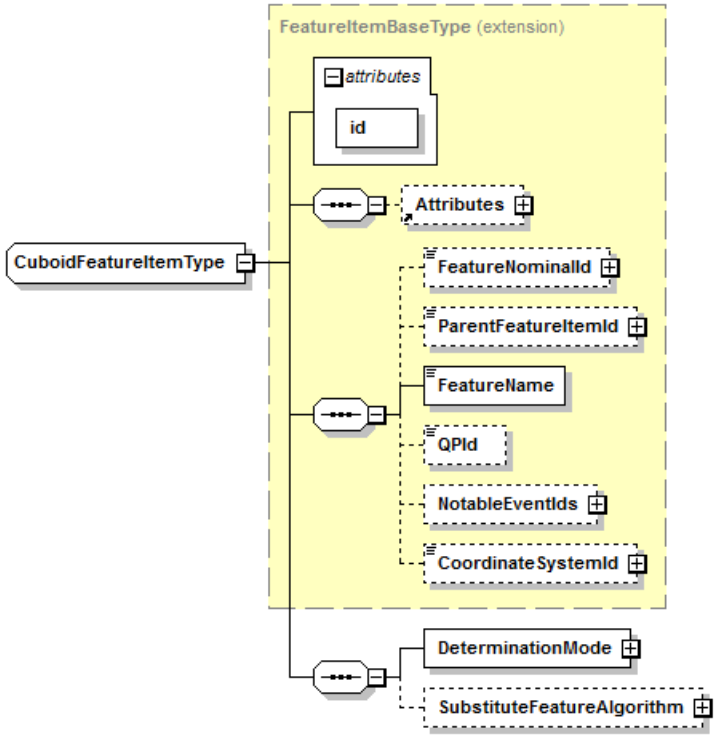
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType.

	linearUnit	**xs:token**	documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Width element is the size of the cuboid in the width direction. The width direction is given by the cross product of the height direction and the length direction.		

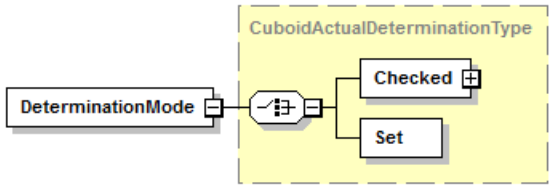
element **CuboidFeatureDefinitionType/Height**

diagram						
type	**LinearValueType**					
properties	content complex					
attributes	Name	Type	Use	Default	Fixed	Annotation
	decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Height element is the size of the cuboid in the height direction.					

complexType **CuboidFeatureItemType**

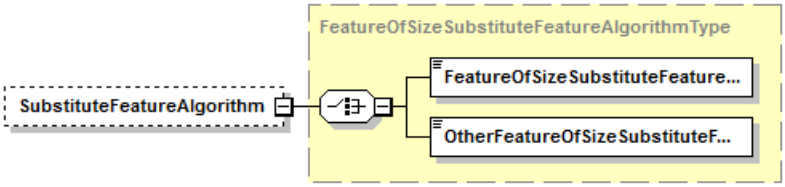
diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **CuboidFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CuboidFeatureItemType defines an individual cuboid feature. A cuboid feature is a solid prism with three pairs of parallel faces that are rectangles. Cuboid is a synonym for rectangular parallelepiped.

element **CuboidFeatureItemType/DeterminationMode**

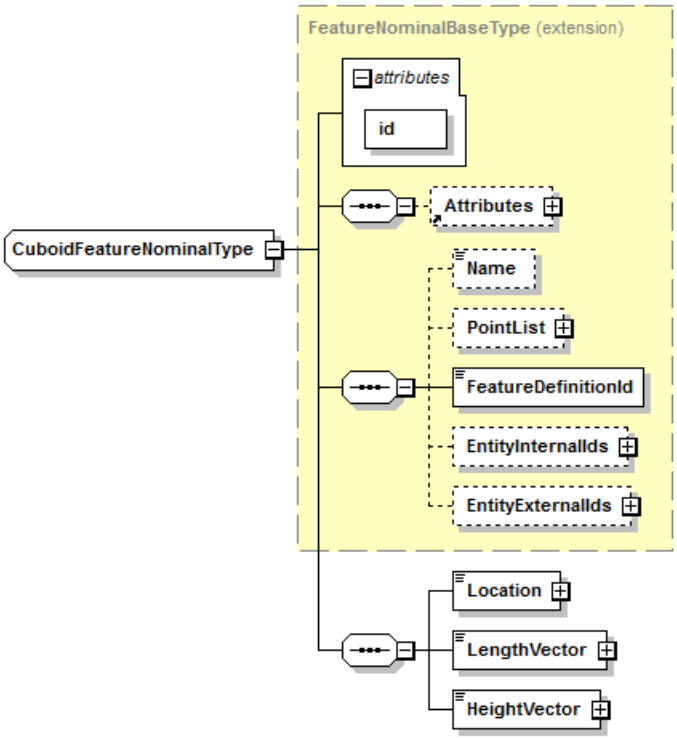
diagram	
type	**CuboidActualDeterminationType**
properties	content complex

children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the cuboid feature actual is determined.

element **CuboidFeatureItemType/SubstituteFeatureAlgorithm**

diagram	
type	**FeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**FeatureOfSizeSubstituteFeatureAlgorithmEnum OtherFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the cuboid feature.

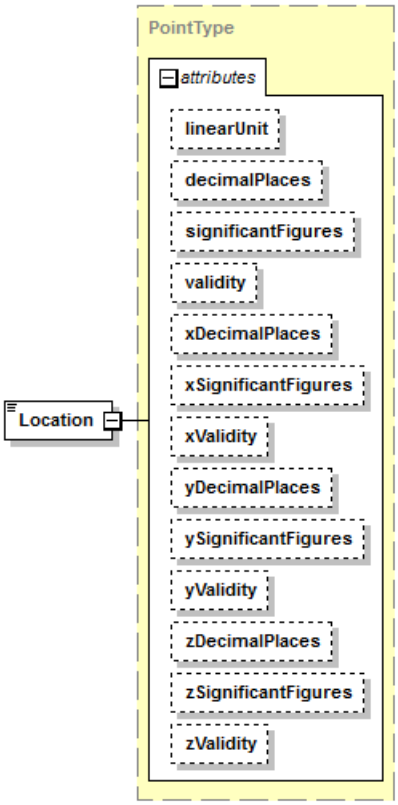
complexType **CuboidFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **Location** **LengthVector** **HeightVector**
used by	element **CuboidFeatureNominal**

attributes	Name	Type	Use	Default	Fixed	Annotation
	id	**QIFIdType**	required			documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CuboidFeatureNominalType defines the cuboid feature nominal information for an individual cuboid feature.					

element **CuboidFeatureNominalType/Location**

diagram



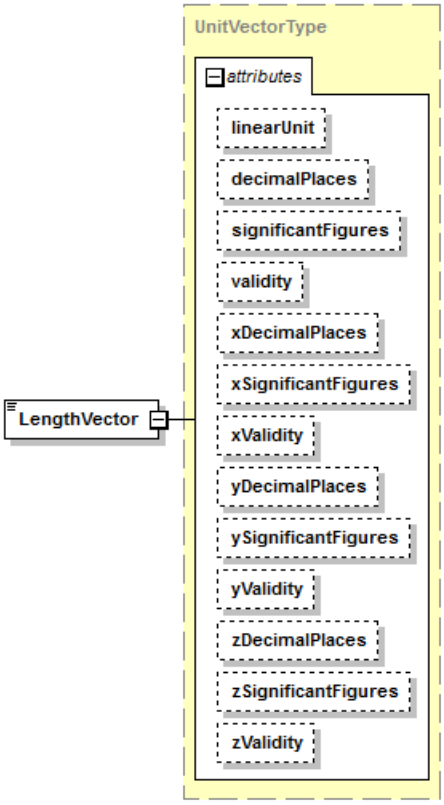
type	**PointType**
properties	content complex
facets	Kind: length; Value: 3; Annotation

attributes	Name	Type	Use	Default	Fixed	Annotation
	linearUnit	**xs:token**				
	decimalPlaces	**xs:nonNegativeInteger**				
	significantFigures	**xs:nonNegativeInteger**				
	validity	**ValidityEnumType**				
	xDecimalPlaces	**xs:nonNegativeInteger**				
	xSignificantFigures	**xs:nonNegativeInteger**				
	xValidity	**ValidityEnumType**				
	yDecimalPlaces	**xs:nonNegativeInteger**				
	ySignificantFigures	**xs:nonNegativeInteger**				

	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
annotation	documentation The Location element is the nominal center of the cuboid midway between each pair of opposite faces.	

element **CuboidFeatureNominalType/LengthVector**

diagram



type	**UnitVectorType**
properties	content complex
facets	Kind Value Annotation length 3

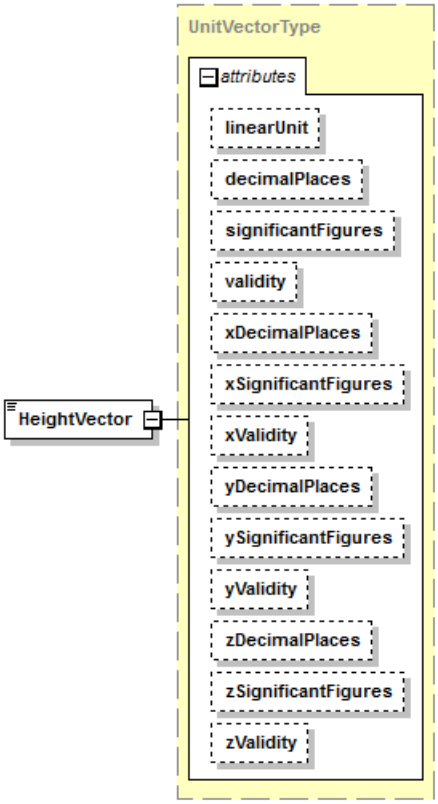
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				

	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
annotation	documentation The LengthVector element is the nominal unit vector of the length of the cuboid.	

element **CuboidFeatureNominalType/HeightVector**

diagram



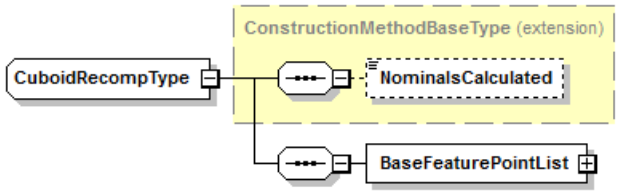
type	**UnitVectorType**
properties	content complex
facets	Kind Value Annotation length 3

attributes

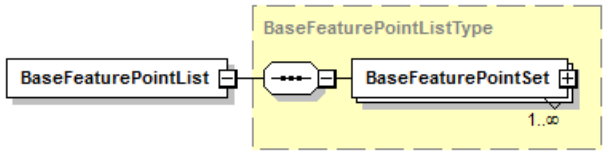
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				

	zSignificantFigures **xs:nonNegativeInteger** zValidity **ValidityEnumType**
annotation	documentation The HeightVector element is the nominal unit vector of the height of the cuboid.

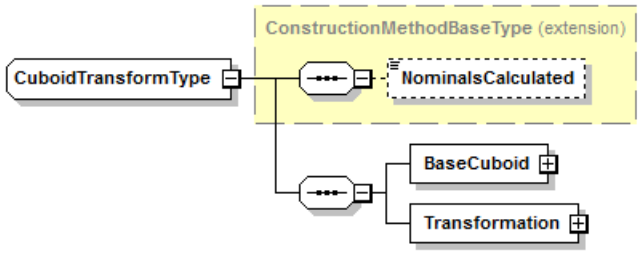
complexType **CuboidRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **CuboidConstructionMethodType/Recompensated**
annotation	documentation The CuboidRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit cuboid through the measurement points of base features.

element **CuboidRecompType/BaseFeaturePointList**

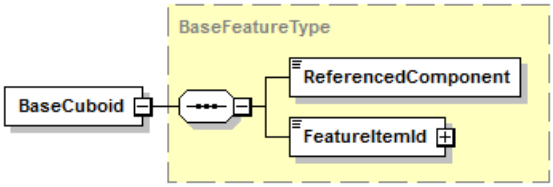
diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit cuboid. The total number of points in the BaseFeaturePointSets in the list must be 9 or greater.

complexType **CuboidTransformType**

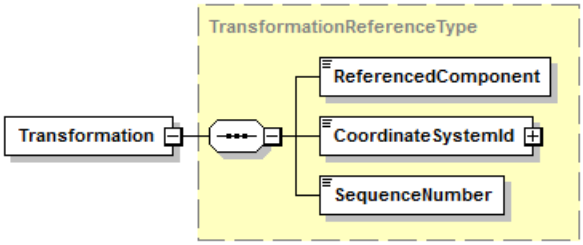
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType

children	**NominalsCalculated** **BaseCuboid** **Transformation**
used by	element **CuboidConstructionMethodType/Transform**
annotation	documentation The CuboidTransformType defines a cuboid construction by the transformation of a cuboid through the specified nominal or actual coordinate system.

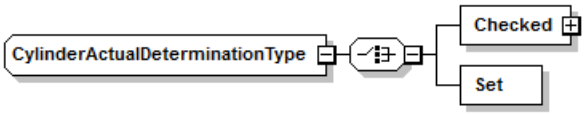
element **CuboidTransformType/BaseCuboid**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseCuboid element identifies the cuboid to be transformed.

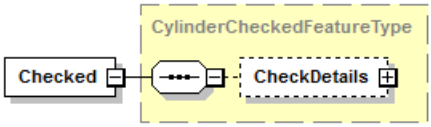
element **CuboidTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the base cuboid.

complexType **CylinderActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **CylinderFeatureItemType/DeterminationMode**
annotation	documentation The CylinderActualDeterminationType defines how the cylinder actual is determined, either by being set or by being checked (measured or constructed).

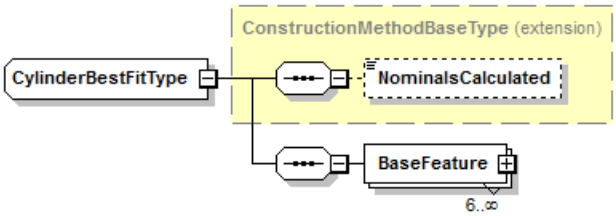
element **CylinderActualDeterminationType/Checked**

diagram	
type	**CylinderCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the cylinder is checked from actual data, either measured or constructed.

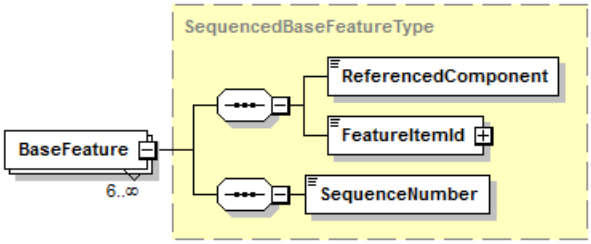
element **CylinderActualDeterminationType/Set**

diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the cylinder actual is set to its nominal value.

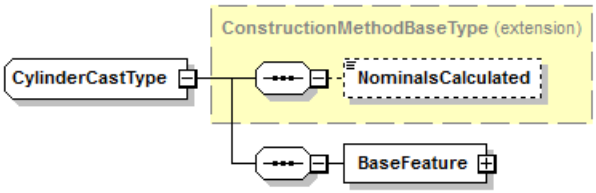
complexType **CylinderBestFitType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **CylinderConstructionMethodType/BestFit**
annotation	documentation The CylinderBestFitType defines the information for a best-fit cylinder which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the cylinder.

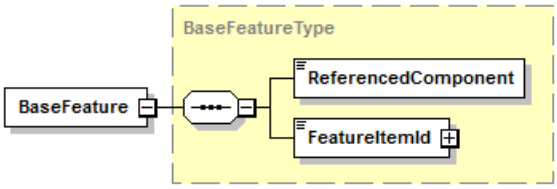
element **CylinderBestFitType/BaseFeature**

diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 6 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of a cylinder. The number of base features must be 6 or greater.

complexType **CylinderCastType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **CylinderConstructionMethodType/Cast**
annotation	documentation The CylinderCastType defines a cylinder construction by the casting of another feature type to a cylinder. The location, vector and size are copied from the base feature. Any information not available on the base feature will remain at nominal.

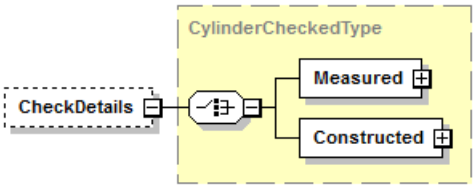
element **CylinderCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to a cylinder.

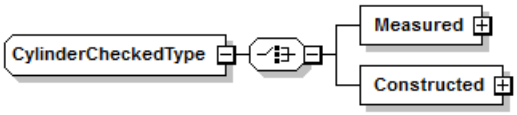
complexType **CylinderCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **CylinderActualDeterminationType/Checked**
annotation	documentation The CylinderCheckedFeatureType defines that a cylinder feature is checked.

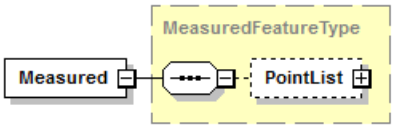
element **CylinderCheckedFeatureType/CheckDetails**

diagram	
type	**CylinderCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured** **Constructed**
annotation	documentation The optional CheckDetails element gives details about the cylinder check (measurement or construction).

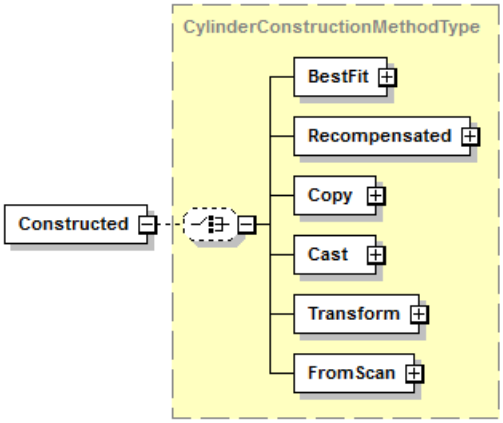
complexType **CylinderCheckedType**

diagram	
children	**Measured** **Constructed**
used by	element **CylinderCheckedFeatureType/CheckDetails**
annotation	documentation The CylinderCheckedType defines how the cylinder actual is checked, either by measurement or by construction.

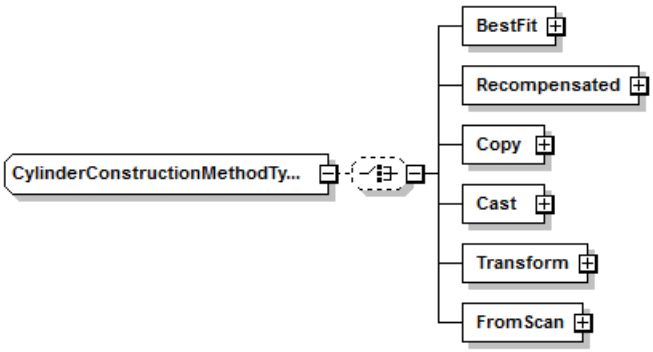
element **CylinderCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the cylinder is measured.

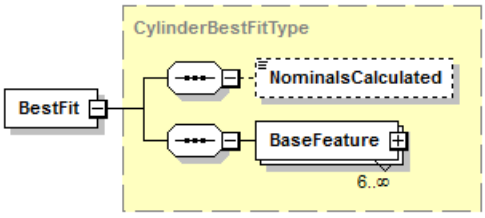
element **CylinderCheckedType/Constructed**

diagram	
type	**CylinderConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform** **FromScan**
annotation	documentation The Constructed element signifies that the cylinder is constructed.

complexType **CylinderConstructionMethodType**

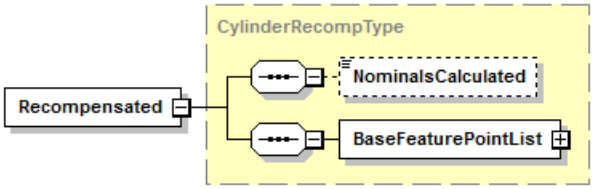
diagram	
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform** **FromScan**
used by	element **CylinderCheckedType/Constructed**
annotation	documentation The CylinderConstructionMethodType defines the method for constructing a unique nominal or actual cylinder feature.

element **CylinderConstructionMethodType/BestFit**

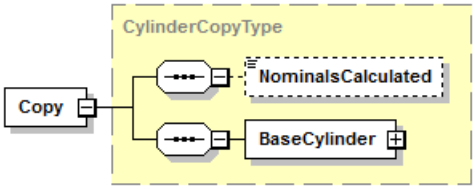
diagram	

type	**CylinderBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of a cylinder from 6 or more point-reducible base features. This element is in an optional choice.

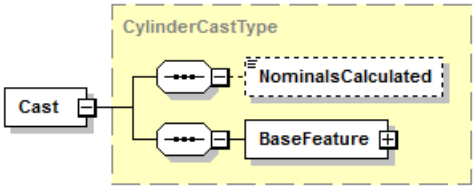
element **CylinderConstructionMethodType/Recompensated**

diagram	
type	**CylinderRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of a cylinder from 6 or more base feature points. This element is in an optional choice.

element **CylinderConstructionMethodType/Copy**

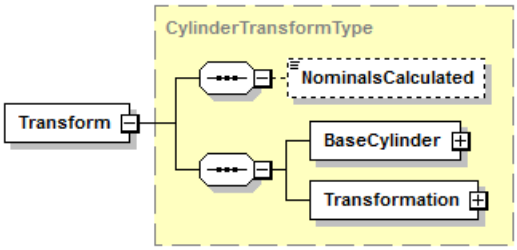
diagram	
type	**CylinderCopyType**
properties	content complex
children	**NominalsCalculated** **BaseCylinder**
annotation	documentation The Copy element describes the construction of a cylinder by the copying of a base cylinder. This element is in an optional choice. This element is in an optional choice.

element **CylinderConstructionMethodType/Cast**

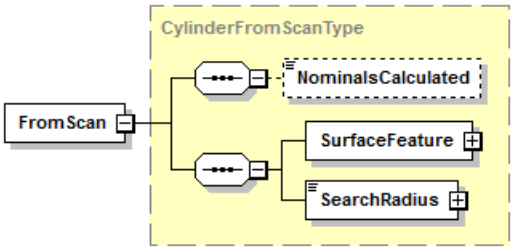
diagram	
type	**CylinderCastType**
properties	content complex

children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of a cylinder by the casting of a base feature. This element is in an optional choice.

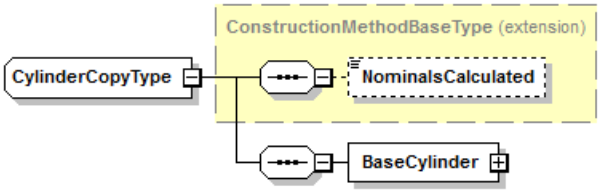
element **CylinderConstructionMethodType/Transform**

diagram	
type	**CylinderTransformType**
properties	content complex
children	**NominalsCalculated** **BaseCylinder** **Transformation**
annotation	documentation The Transform element describes the construction of a cylinder by the transformation of a base cylinder. This element is in an optional choice.

element **CylinderConstructionMethodType/FromScan**

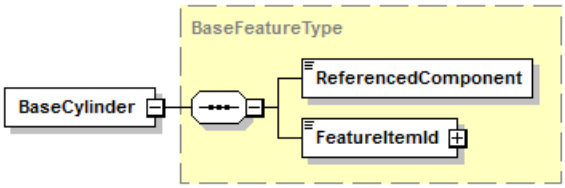
diagram	
type	**CylinderFromScanType**
properties	content complex
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius**
annotation	documentation The FromScan element describes the construction of a cylinder from scan data. This element is in an optional choice.

complexType **CylinderCopyType**

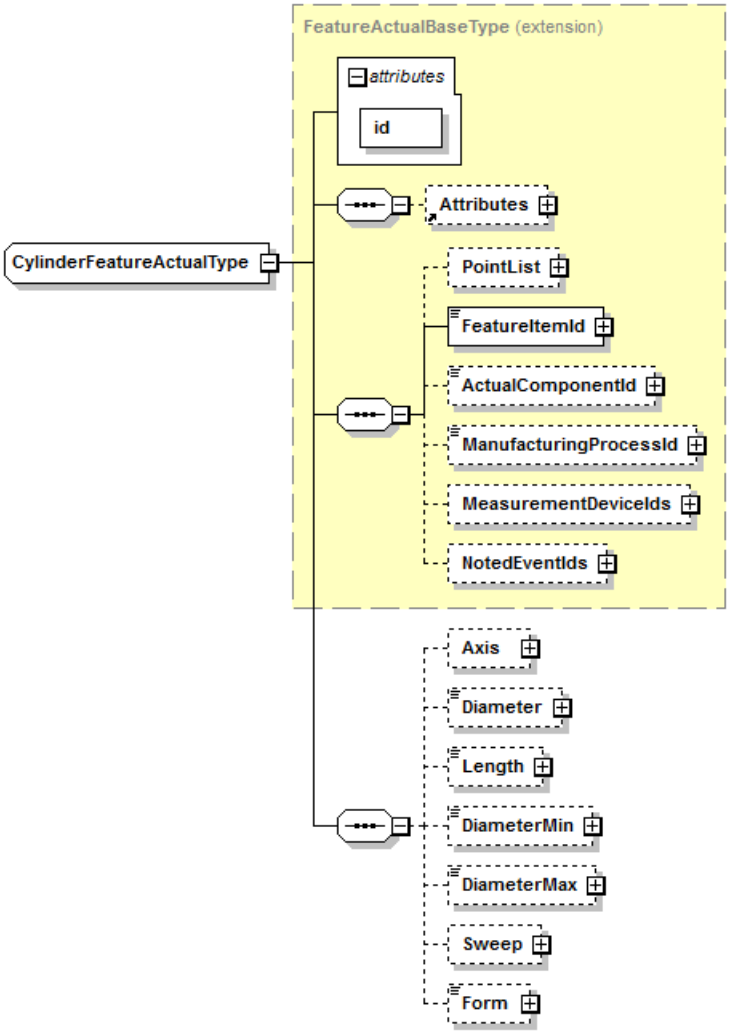
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType

children	**NominalsCalculated** **BaseCylinder**
used by	element **CylinderConstructionMethodType/Copy**
annotation	documentation The CylinderCopyType defines a copied cylinder construction.

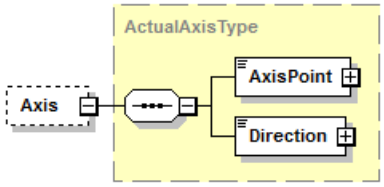
element **CylinderCopyType/BaseCylinder**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseCylinder element identifies the cylinder to be copied.

complexType **CylinderFeatureActualType**

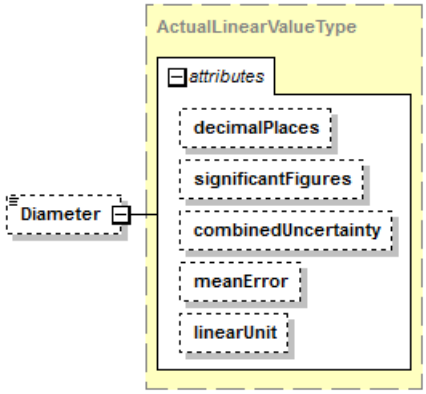
diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **Axis** **Diameter** **Length** **DiameterMin** **DiameterMax** **Sweep** **Form**
used by	element **CylinderFeatureActual**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CylinderFeatureActualType defines the cylinder feature actual information for an individual cylinder feature.

element **CylinderFeatureActualType/Axis**

diagram	
type	**ActualAxisType**
properties	minOcc 0 maxOcc 1 content complex
children	**AxisPoint Direction**
annotation	documentation The optional Axis element gives the actual location of the start point and the actual unit vector of the cylinder axis. The direction of the axis vector points into the cylinder. The cylinder does not extend from the start point in the direction opposite the axis vector.

element **CylinderFeatureActualType/Diameter**

diagram



type **ActualLinearValueType**

properties: minOcc 0; maxOcc 1; content complex

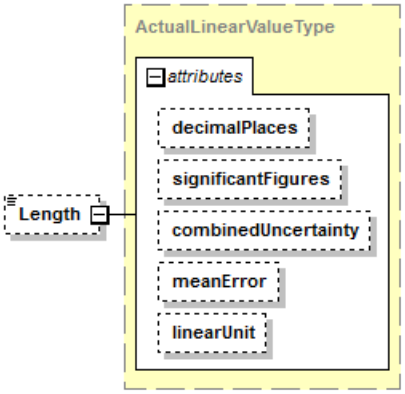
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.

	linearUnit	**xs:token**	documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Diameter element is the actual diameter of the cylinder based on the substitute feature data fitting algorithm setting.		

element **CylinderFeatureActualType/Length**

diagram



type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

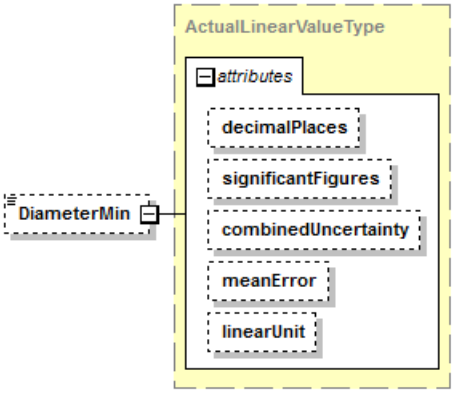
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

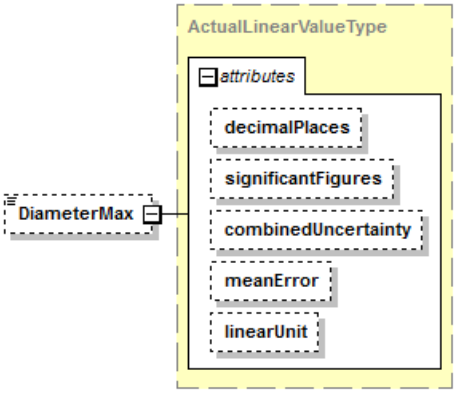
annotation

documentation
The optional Length element is the actual length of the cylinder from the start point in the direction of the cylinder axis.

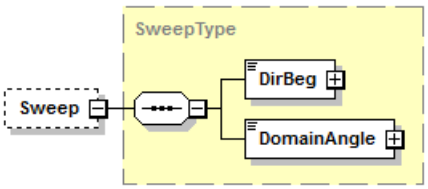
element **CylinderFeatureActualType/DiameterMin**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional DiameterMin element is the minimum diameter of the cylinder from a report or an analysis.

element **CylinderFeatureActualType/DiameterMax**

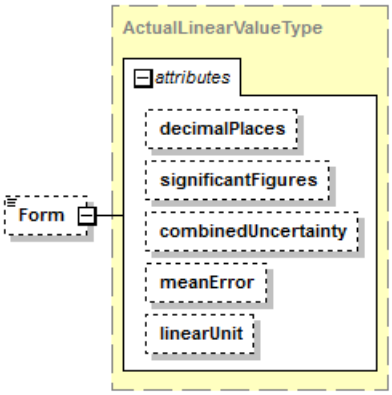
diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional DiameterMax element is the maximum diameter of the cylinder from a report or an analysis.

element **CylinderFeatureActualType/Sweep**

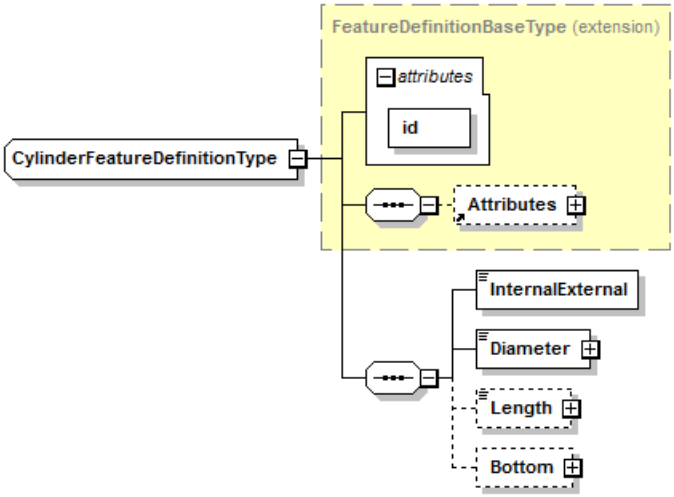
diagram	
type	**SweepType**
properties	minOcc 0 maxOcc 1

	content complex
children	**DirBeg DomainAngle**
annotation	documentation The optional Sweep element gives the start direction and the swept angle for a partial cylinder. The StartVector of the Sweep must lie in a plane normal to the axis of the cylinder.

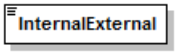
element **CylinderFeatureActualType/Form**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Form element is the form error (cylindricity) of the cylinder from a report or an analysis.

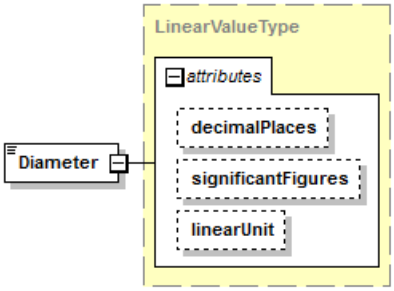
complexType **CylinderFeatureDefinitionType**

diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes** **InternalExternal** **Diameter** **Length** **Bottom**
used by	element **CylinderFeatureDefinition**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CylinderFeatureDefinitionType defines the cylinder feature nominal information that can be common to one or more cylinder features.

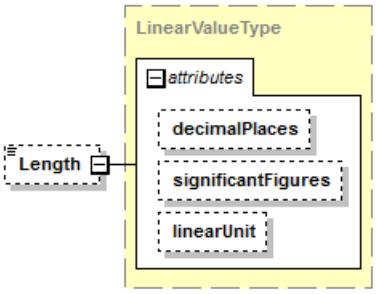
element **CylinderFeatureDefinitionType/InternalExternal**

diagram	
type	**InternalExternalEnumType**
properties	content simple
facets	Kind: enumeration, Value: INTERNAL; Kind: enumeration, Value: EXTERNAL; Kind: enumeration, Value: NOT_APPLICABLE; Annotation:
annotation	documentation The InternalExternal element indicates whether the feature is internal or external.

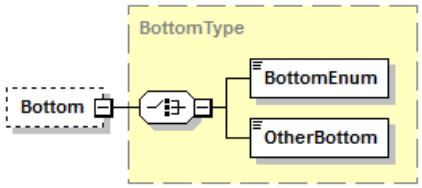
element **CylinderFeatureDefinitionType/Diameter**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Diameter element is the nominal diameter of the cylinder.

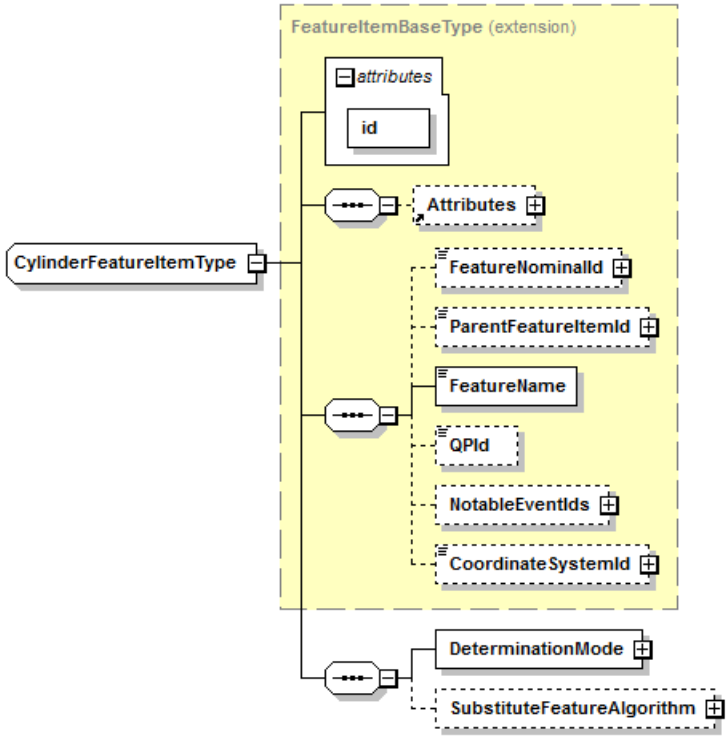
element **CylinderFeatureDefinitionType/Length**

diagram	
type	**LinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The optional Length element is the nominal length of the cylinder from the start point in the direction of the cylinder axis.

element **CylinderFeatureDefinitionType/Bottom**

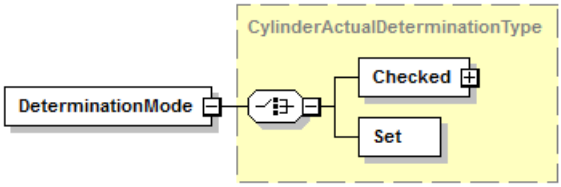
diagram	
type	**BottomType**
properties	minOcc 0 maxOcc 1 content complex
children	**BottomEnum OtherBottom**
annotation	documentation The optional Bottom element describes the bottom type of the cylinder.

complexType **CylinderFeatureItemType**

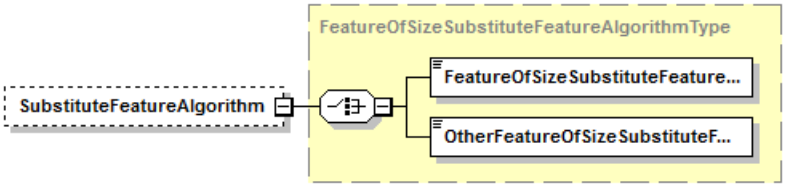
diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes FeatureNominalId ParentFeatureItemId FeatureName QPId NotableEventIds CoordinateSystemId DeterminationMode SubstituteFeatureAlgorithm**
used by	element **CylinderFeatureItem**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the

	QIF id of the feature, used for referencing.
annotation	documentation The CylinderFeatureItemType defines an individual cylinder feature.

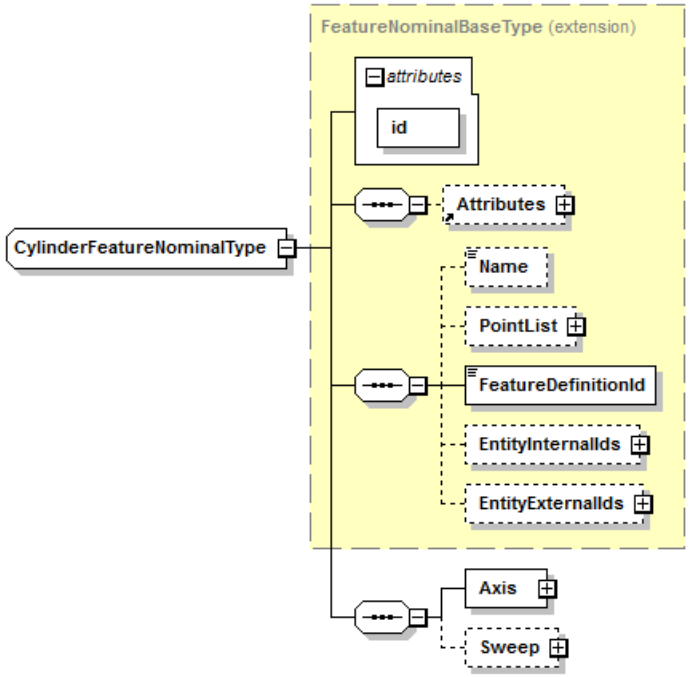
element **CylinderFeatureItemType/DeterminationMode**

diagram	
type	**CylinderActualDeterminationType**
properties	content complex
children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the cylinder feature actual is determined.

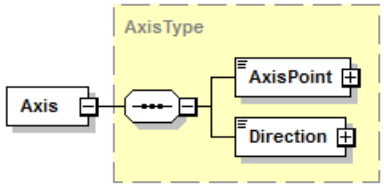
element **CylinderFeatureItemType/SubstituteFeatureAlgorithm**

diagram	
type	**FeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**FeatureOfSizeSubstituteFeatureAlgorithmEnum OtherFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the cylinder feature.

complexType **CylinderFeatureNominalType**

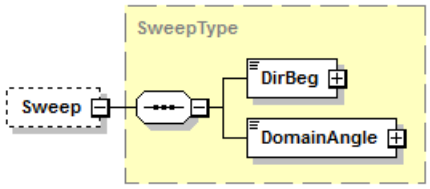
diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes Name PointList FeatureDefinitionId EntityInternalIds EntityExternalIds Axis Sweep**
used by	element **CylinderFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CylinderFeatureNominalType defines the cylinder feature nominal information for an individual cylinder feature.

element **CylinderFeatureNominalType/Axis**

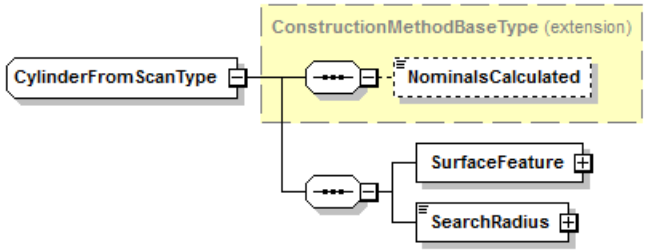
diagram	
type	**AxisType**
properties	content complex
children	**AxisPoint Direction**
annotation	documentation The Axis element gives the nominal location of the start point and the nominal unit cylinder axis vector. The direction of the axis vector points into the cylinder. The cylinder does not extend from the start point in the direction opposite the axis

	vector.

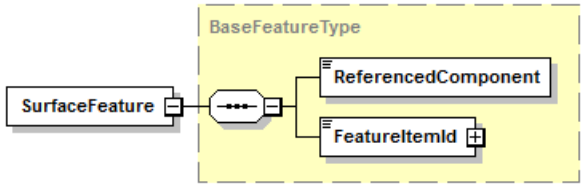
element **CylinderFeatureNominalType/Sweep**

diagram	
type	**SweepType**
properties	minOcc 0 maxOcc 1 content complex
children	**DirBeg DomainAngle**
annotation	documentation The optional Sweep element gives the start direction and the swept angle for a partial cylinder. The swept angle is typically greater than 180 degrees for a feature of size. If the sweep is not specified the feature subtends a full 360 degrees. The StartVector of the Sweep must lie in a plane normal to the axis of the cylinder.

complexType **CylinderFromScanType**

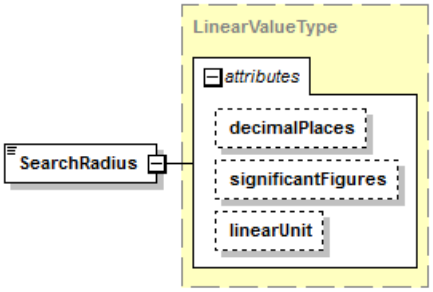
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius**
used by	element **CylinderConstructionMethodType/FromScan**
annotation	documentation The CylinderFromScanType defines a cylinder construction by the retrieval of a cylinder from a scanned surface feature (point cloud).

element **CylinderFromScanType/SurfaceFeature**

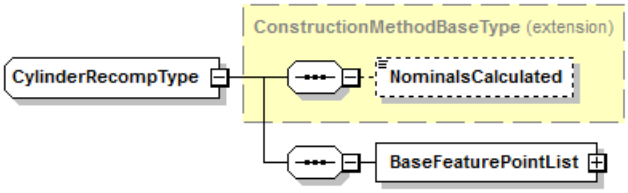
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**

annotation	documentation The SurfaceFeature element identifies the scanned surface feature from which the cylinder is retrieved.

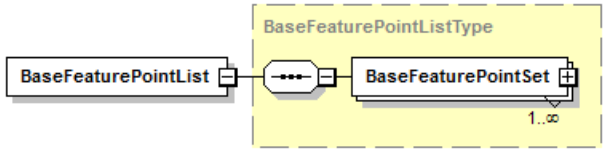
element **CylinderFromScanType/SearchRadius**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The SearchRadius element is the radius around the nominal feature, wherein the actual feature can be expected. The SearchRadius is the radius added to and subtracted from the nominal feature radius defining a cylindrical shell. All scanned points within this cylindrical shell are used for the retrieval of the feature. The cylindrical shell's axis is defined by the feature's direction and the cylindrical shell's axis passes through the feature's center point.

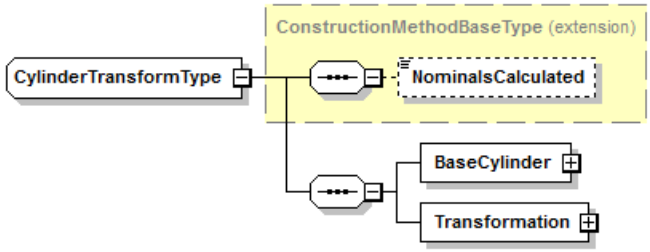
complexType **CylinderRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **CylinderConstructionMethodType/Recompensated**
annotation	documentation The CylinderRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit cylinder through the measurement points of base features.

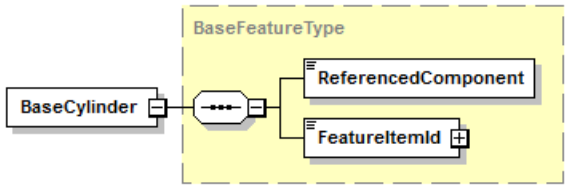
element **CylinderRecompType/BaseFeaturePointList**

diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit cylinder. The total number of points in the BaseFeaturePointSets in the list must be 6 or greater.

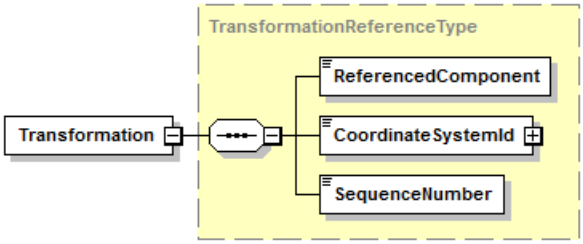
complexType **CylinderTransformType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseCylinder** **Transformation**
used by	element **CylinderConstructionMethodType/Transform**
annotation	documentation The CylinderTransformType defines a cylinder construction by the transformation of a base cylinder through the specified nominal or actual coordinate system.

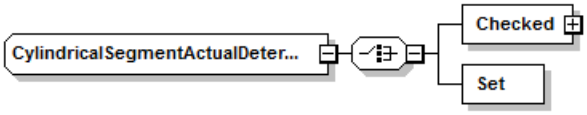
element **CylinderTransformType/BaseCylinder**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseCylinder element identifies the cylinder to be transformed.

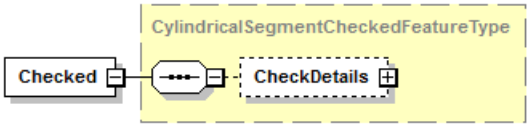
element **CylinderTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the base cylinder.

complexType **CylindricalSegmentActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **CylindricalSegmentFeatureItemType/DeterminationMode**
annotation	documentation The CylindricalSegmentActualDeterminationType defines how the cylindrical segment feature actual is determined, either by being set or by being checked (measured or constructed).

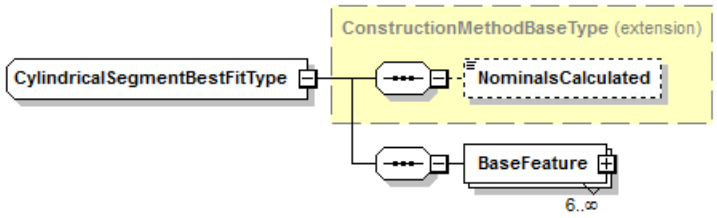
element **CylindricalSegmentActualDeterminationType/Checked**

diagram	
type	**CylindricalSegmentCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the cylindrical segment feature is checked from actual data, either measured or constructed.

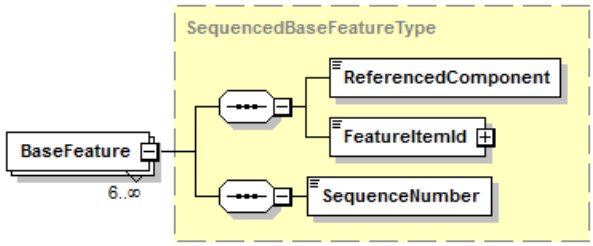
element **CylindricalSegmentActualDeterminationType/Set**

diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the cylindrical segment feature actual is set to its nominal value.

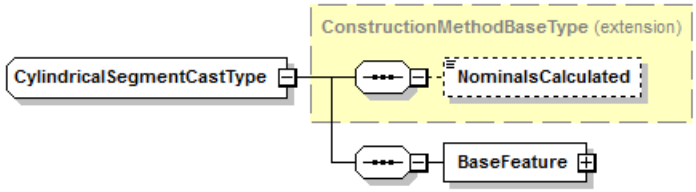
complexType **CylindricalSegmentBestFitType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **CylindricalSegmentConstructionMethodType/BestFit**
annotation	documentation The CylindricalSegmentBestFitType defines the information for a best-fit cylindrical segment which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the cylindrical segment.

element **CylindricalSegmentBestFitType/BaseFeature**

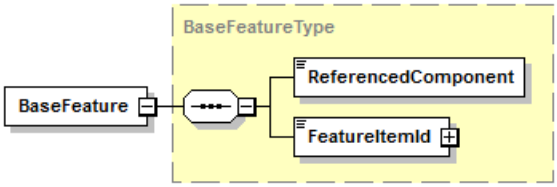
diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 6 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of a cylindrical segment. The number of base features must be 6 or greater.

complexType **CylindricalSegmentCastType**

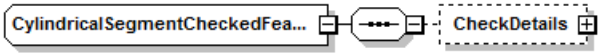
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**

used by	element **CylindricalSegmentConstructionMethodType/Cast**
annotation	documentation The CylindricalSegmentCastType defines a cylindrical segment construction by the casting of another feature type to a cylindrical segment. The location, vector and size are copied from the base feature. Any information not available on the base feature will remain at nominal.

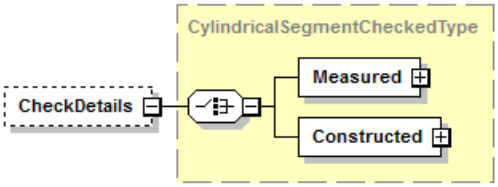
element **CylindricalSegmentCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to a cylindrical segment.

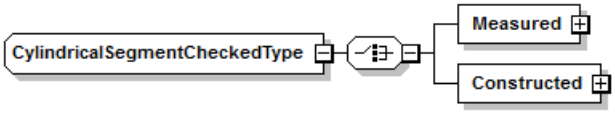
complexType **CylindricalSegmentCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **CylindricalSegmentActualDeterminationType/Checked**
annotation	documentation The CylindricalSegmentCheckedFeatureType defines that a cylindrical segment feature is checked.

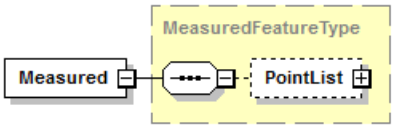
element **CylindricalSegmentCheckedFeatureType/CheckDetails**

diagram	
type	**CylindricalSegmentCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured Constructed**
annotation	documentation The optional CheckDetails element gives details about the cylindrical segment feature check (measurement or construction).

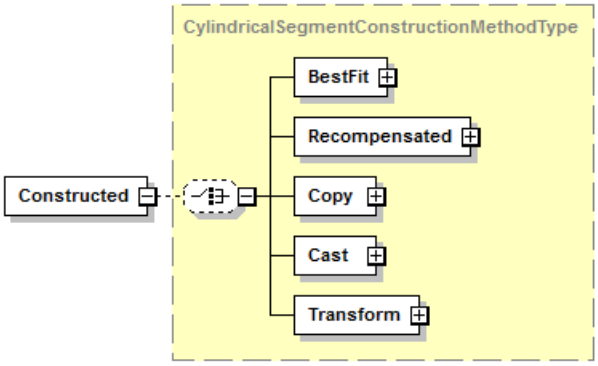
complexType **CylindricalSegmentCheckedType**

diagram	
children	**Measured** **Constructed**
used by	element **CylindricalSegmentCheckedFeatureType/CheckDetails**
annotation	documentation The CylindricalSegmentCheckedType defines how the cylindrical segment feature actual is checked, either by measurement or by construction.

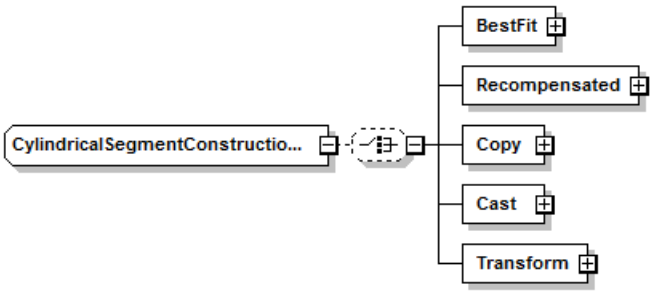
element **CylindricalSegmentCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the cylindrical segment feature is measured.

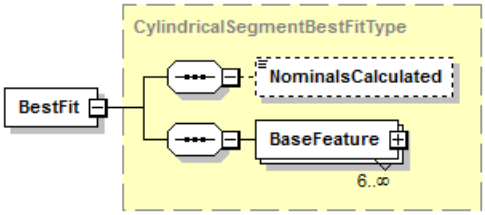
element **CylindricalSegmentCheckedType/Constructed**

diagram	
type	**CylindricalSegmentConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform**
annotation	documentation The Constructed element signifies that the cylindrical segment feature is constructed.

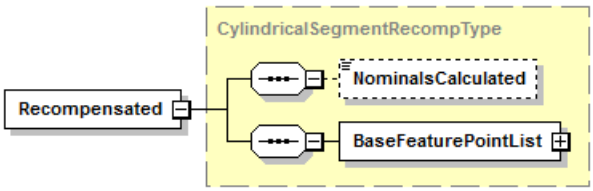
complexType **CylindricalSegmentConstructionMethodType**

diagram	
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform**
used by	element **CylindricalSegmentCheckedType/Constructed**
annotation	documentation The CylindricalSegmentConstructionMethodType defines the method for constructing a unique nominal or actual cylindrical segment feature.

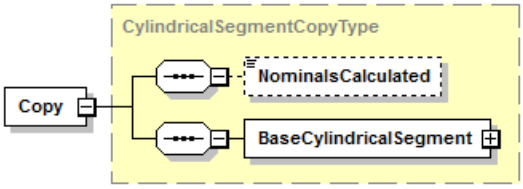
element **CylindricalSegmentConstructionMethodType/BestFit**

diagram	
type	**CylindricalSegmentBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of a cylindrical segment from 6 or more point-reducible base features. This element is in an optional choice.

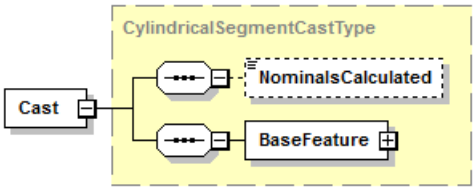
element **CylindricalSegmentConstructionMethodType/Recompensated**

diagram	
type	**CylindricalSegmentRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of a cylindrical segment from 6 or more base feature points. This element is in an optional choice.

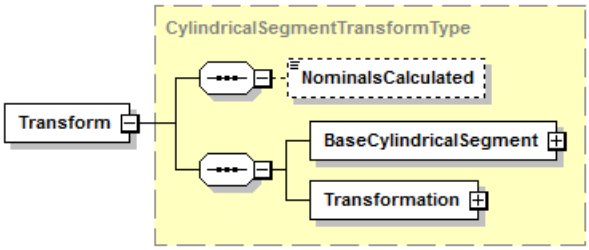
element **CylindricalSegmentConstructionMethodType/Copy**

diagram	
type	**CylindricalSegmentCopyType**
properties	content complex
children	**NominalsCalculated** **BaseCylindricalSegment**
annotation	documentation The Copy element describes the construction of a cylindrical segment by the copying of a base cylindrical segment. This element is in an optional choice.

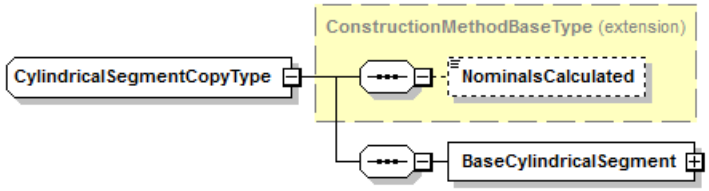
element **CylindricalSegmentConstructionMethodType/Cast**

diagram	
type	**CylindricalSegmentCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of a cylindrical segment by the casting of a base feature. This element is in an optional choice. This element is in an optional choice.

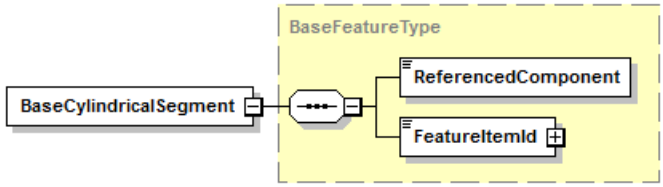
element **CylindricalSegmentConstructionMethodType/Transform**

diagram	
type	**CylindricalSegmentTransformType**
properties	content complex
children	**NominalsCalculated** **BaseCylindricalSegment** **Transformation**
annotation	documentation The Transform element describes the construction of a cylindrical segment by the transformation of a base cylindrical segment. This element is in an optional choice.

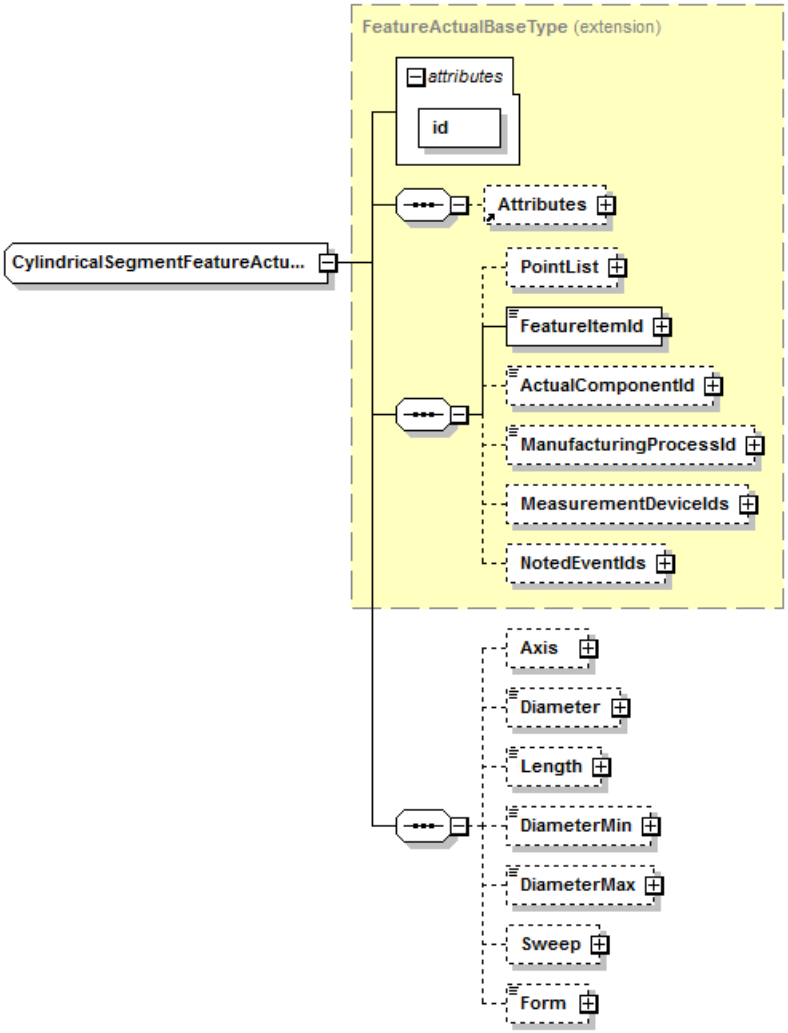
complexType **CylindricalSegmentCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseCylindricalSegment**
used by	element **CylindricalSegmentConstructionMethodType/Copy**
annotation	documentation The CylindricalSegmentCopyType defines a copied cylindrical segment construction.

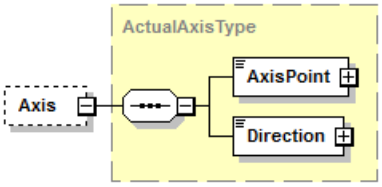
element **CylindricalSegmentCopyType/BaseCylindricalSegment**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseCylindricalSegment element identifies the cylindrical segment to be copied.

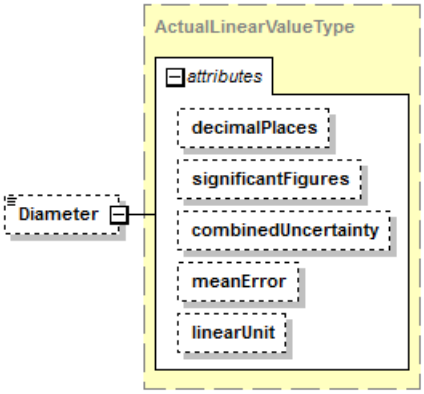
complexType **CylindricalSegmentFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **Axis** **Diameter** **Length** **DiameterMin** **DiameterMax** **Sweep** **Form**
used by	element **CylindricalSegmentFeatureActual**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CylindricalSegmentFeatureActualType defines the cylindrical segment feature actual information for an individual cylindrical segment feature.

element **CylindricalSegmentFeatureActualType/Axis**

diagram	
type	**ActualAxisType**
properties	minOcc 0 maxOcc 1 content complex
children	**AxisPoint Direction**
annotation	documentation The optional Axis element gives the actual location of the start point and the nominal unit vector of the cylindrical segment axis.

element **CylindricalSegmentFeatureActualType/Diameter**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

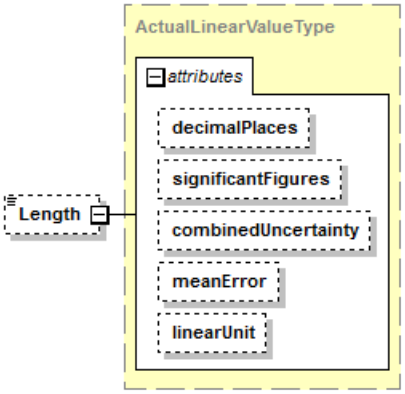
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.

	linearUnit	**xs:token**	documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Diameter element is the actual diameter of the cylindrical segment based on the substitute feature data fitting algorithm setting.		

element **CylindricalSegmentFeatureActualType/Length**

diagram



type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

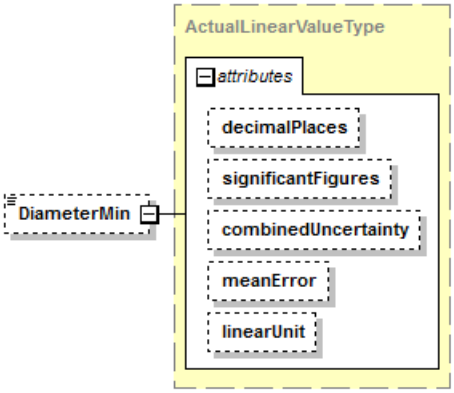
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

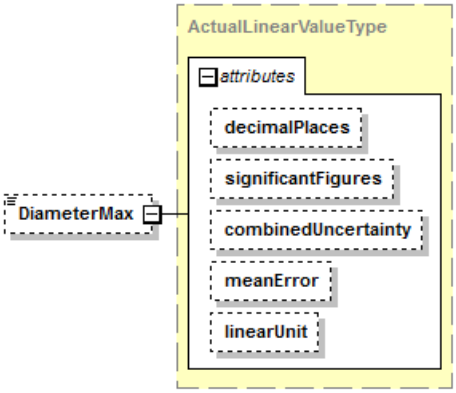
annotation

documentation
The optional Length element is the actual length of the cylindrical segment from the start point in the direction of the cylindrical segment axis.

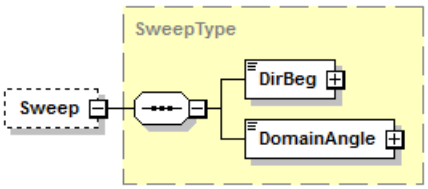
element **CylindricalSegmentFeatureActualType/DiameterMin**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional DiameterMin element is the minimum diameter of the cylindrical segment from a report or an analysis.

element **CylindricalSegmentFeatureActualType/DiameterMax**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional DiameterMax element is the maximum diameter of the cylindrical segment from a report or an analysis.

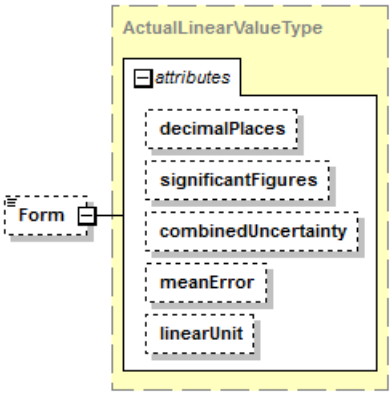
element **CylindricalSegmentFeatureActualType/Sweep**

diagram	
type	**SweepType**
properties	minOcc 0 maxOcc 1

	content complex
children	**DirBeg DomainAngle**
annotation	documentation The optional Sweep element gives the start direction and the swept angle for a partial cylindrical segment. The StartVector of the Sweep must lie in a plane normal to the axis of the cylinder.

element **CylindricalSegmentFeatureActualType/Form**

diagram



type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

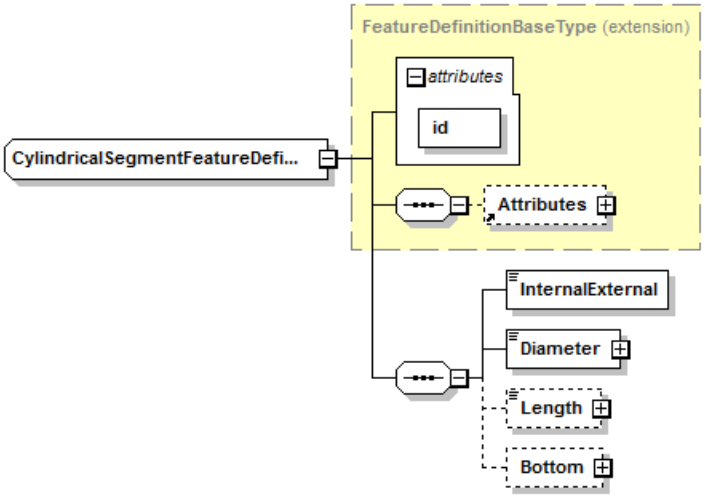
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

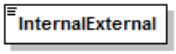
annotation

documentation
The optional Form element is the form error (cylindricity) of the cylindrical segment from a report or an analysis.

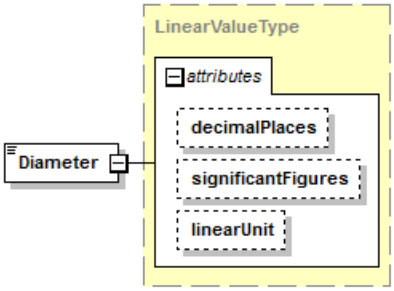
complexType **CylindricalSegmentFeatureDefinitionType**

diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes** **InternalExternal** **Diameter** **Length** **Bottom**
used by	element **CylindricalSegmentFeatureDefinition**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CylindricalSegmentFeatureDefinitionType defines the cylindrical segment feature nominal information that can be common to one or more cylindrical segment features.

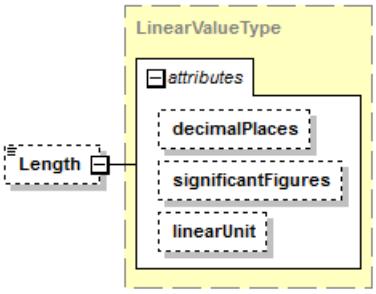
element **CylindricalSegmentFeatureDefinitionType/InternalExternal**

diagram	
type	**InternalExternalEnumType**
properties	content simple
facets	Kind: enumeration, Value: INTERNAL; Kind: enumeration, Value: EXTERNAL; Kind: enumeration, Value: NOT_APPLICABLE; Annotation:
annotation	documentation The InternalExternal element indicates whether the feature is internal or external.

element **CylindricalSegmentFeatureDefinitionType/Diameter**

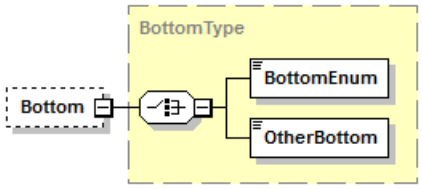
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Diameter element is the nominal diameter of the cylindrical segment.

element **CylindricalSegmentFeatureDefinitionType/Length**

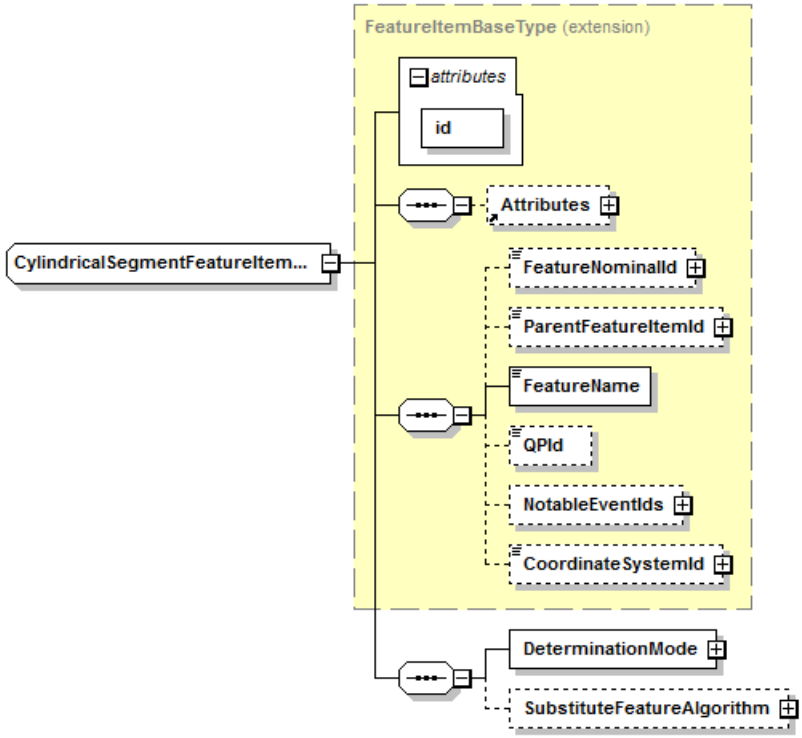
diagram	
type	**LinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The optional Length element is the nominal length of the cylindrical segment from the start point in the direction of the

	cylindrical segment axis.

element **CylindricalSegmentFeatureDefinitionType/Bottom**

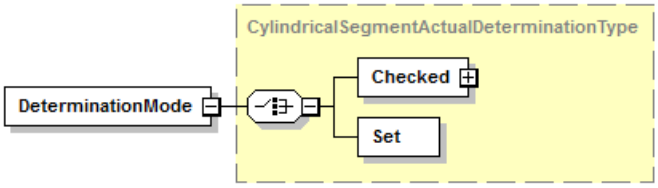
diagram	
type	**BottomType**
properties	minOcc 0 maxOcc 1 content complex
children	**BottomEnum OtherBottom**
annotation	documentation The optional Bottom element is the bottom type of the cylindrical segment.

complexType **CylindricalSegmentFeatureItemType**

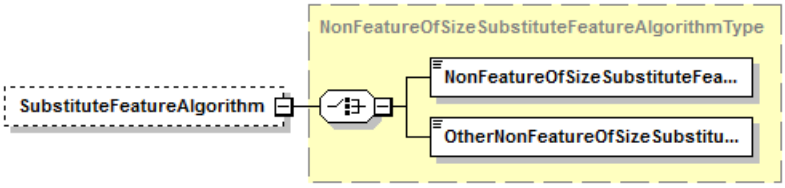
diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes FeatureNominalId ParentFeatureItemId FeatureName QPId NotableEventIds CoordinateSystemId DeterminationMode SubstituteFeatureAlgorithm**
used by	element **CylindricalSegmentFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation The id

	attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CylindricalSegmentFeatureItemType defines an individual cylindrical segment feature. A cylindrical segment feature is a partial cylinder like the surface in the corner of a rounded pocket.

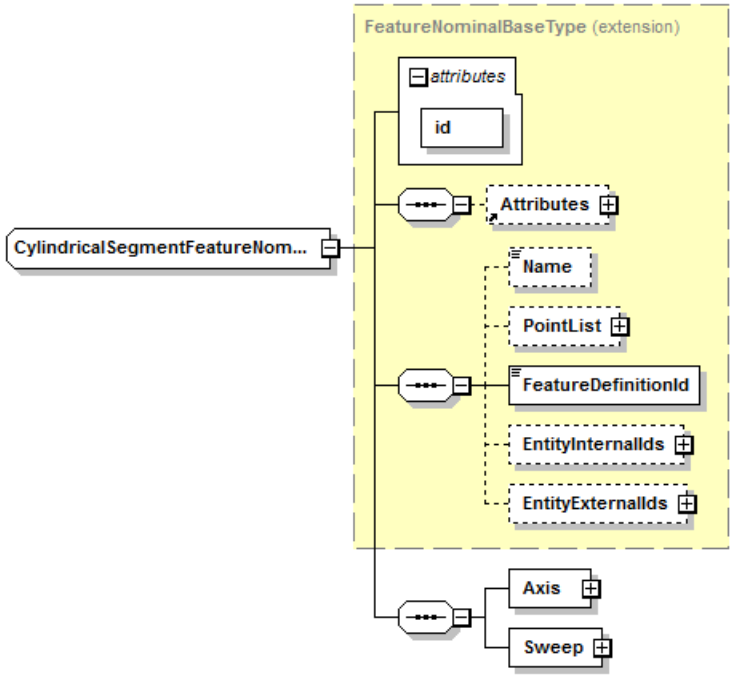
element **CylindricalSegmentFeatureItemType/DeterminationMode**

diagram	
type	**CylindricalSegmentActualDeterminationType**
properties	content complex
children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the cylindrical segment feature actual is determined.

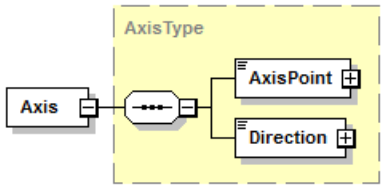
element **CylindricalSegmentFeatureItemType/SubstituteFeatureAlgorithm**

diagram	
type	**NonFeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**NonFeatureOfSizeSubstituteFeatureAlgorithmEnum OtherNonFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the cylindrical segment feature.

complexType **CylindricalSegmentFeatureNominalType**

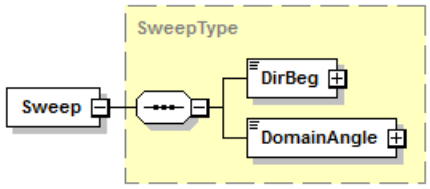
diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes Name PointList FeatureDefinitionId EntityInternalIds EntityExternalIds Axis Sweep**
used by	element **CylindricalSegmentFeatureNominal**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The CylindricalSegmentFeatureNominalType defines the cylindrical segment feature nominal information for an individual cylindrical segment feature.

element **CylindricalSegmentFeatureNominalType/Axis**

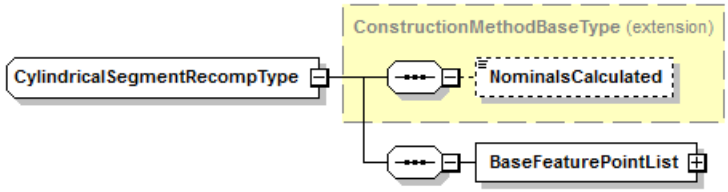
diagram	
type	**AxisType**
properties	content complex
children	**AxisPoint Direction**
annotation	documentation The Axis element gives the nominal location of the start point and the nominal unit cylindrical segment axis vector. The

	direction of the axis vector points into the cylindrical segment.

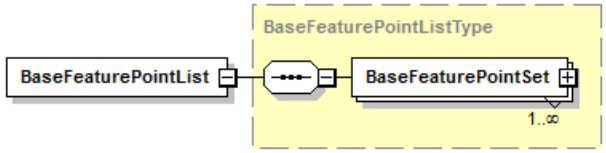
element **CylindricalSegmentFeatureNominalType/Sweep**

diagram	
type	**SweepType**
properties	content complex
children	**DirBeg DomainAngle**
annotation	documentation The Sweep element gives the start direction and swept angle for a cylindrical segment. The StartVector of the Sweep must lie in a plane normal to the axis of the cylinder.

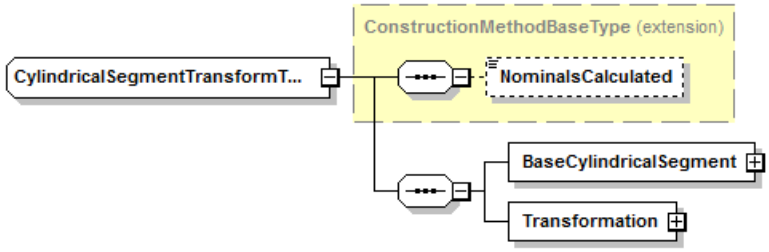
complexType **CylindricalSegmentRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **CylindricalSegmentConstructionMethodType/Recompensated**
annotation	documentation The CylindricalSegmentRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit cylindrical segment through the measurement points of base features.

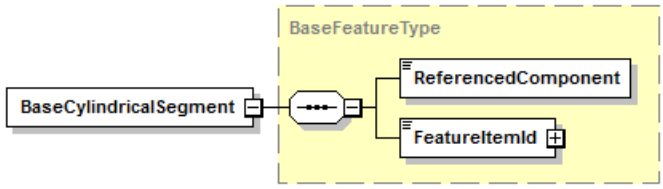
element **CylindricalSegmentRecompType/BaseFeaturePointList**

diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit cylindrical segment. The total number of points in the BaseFeaturePointSets in the list must be 6 or greater.

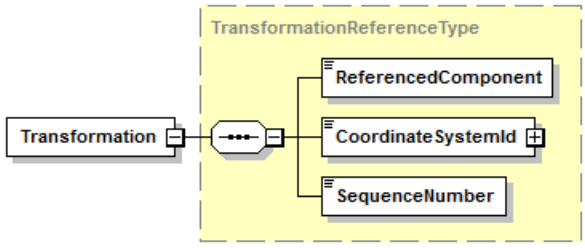
complexType **CylindricalSegmentTransformType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseCylindricalSegment** **Transformation**
used by	element **CylindricalSegmentConstructionMethodType/Transform**
annotation	documentation The CylindricalSegmentTransformType defines a cylindrical segment construction by the transformation of a base cylindrical segment through the specified nominal or actual coordinate system.

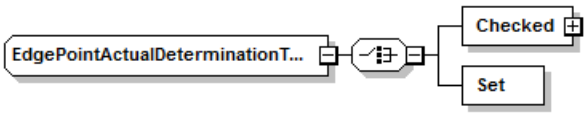
element **CylindricalSegmentTransformType/BaseCylindricalSegment**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseCylindricalSegment element identifies the cylindrical segment to be transformed.

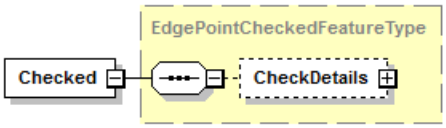
element **CylindricalSegmentTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the base cylindrical segment.

complexType **EdgePointActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **EdgePointFeatureItemType/DeterminationMode**
annotation	documentation The EdgePointActualDeterminationType defines how the edge-point actual is determined, either by being set or by being checked (measured or constructed).

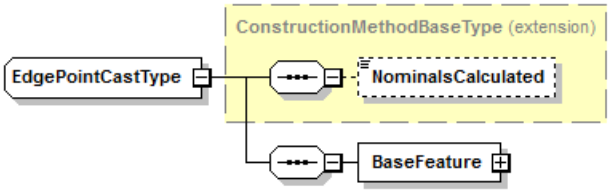
element **EdgePointActualDeterminationType/Checked**

diagram	
type	**EdgePointCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the edge-point is checked from actual data, either measured or constructed.

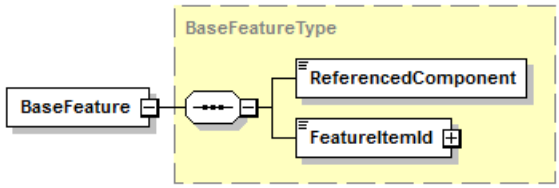
element **EdgePointActualDeterminationType/Set**

diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the edge-point actual is set to its nominal value.

complexType **EdgePointCastType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **EdgePointConstructionMethodType/Cast**
annotation	documentation The EdgePointCastType defines an edge-point construction by the casting of another feature type to an edge-point. The location is copied from the base feature.

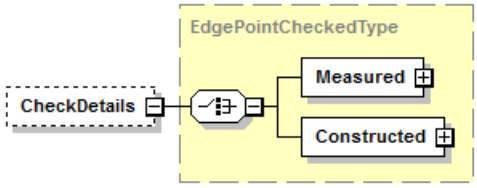
element **EdgePointCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to an edge-point.

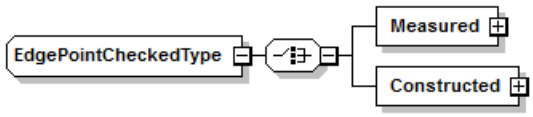
complexType **EdgePointCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **EdgePointActualDeterminationType/Checked**
annotation	documentation The EdgePointCheckedFeatureType defines that an edge-point feature is checked.

element **EdgePointCheckedFeatureType/CheckDetails**

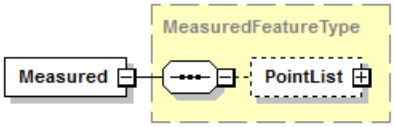
diagram	
type	**EdgePointCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured Constructed**
annotation	documentation The optional CheckDetails element gives details about the edge-point check (measurement or construction).

complexType **EdgePointCheckedType**

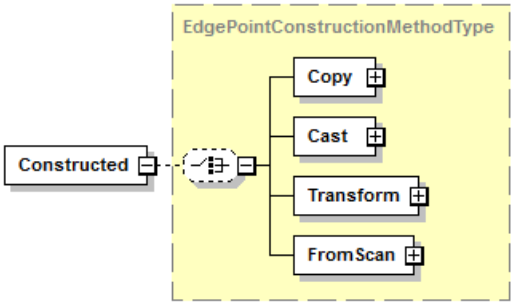
diagram	
children	**Measured Constructed**
used by	element **EdgePointCheckedFeatureType/CheckDetails**

annotation	documentation The EdgePointCheckedType defines how the edge-point actual is checked, either by measurement or by construction.

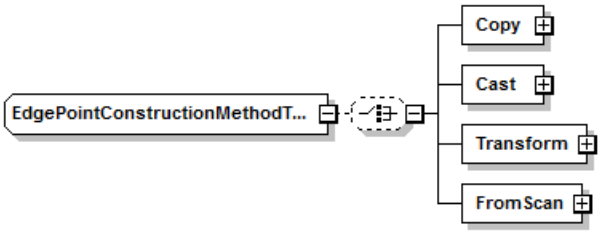
element **EdgePointCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the edge-point is measured.

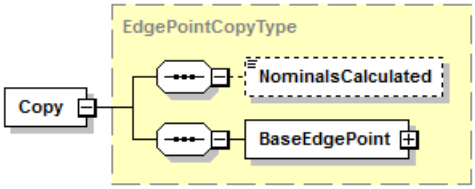
element **EdgePointCheckedType/Constructed**

diagram	
type	**EdgePointConstructionMethodType**
properties	content complex
children	**Copy** **Cast** **Transform** **FromScan**
annotation	documentation The Constructed element signifies that the edge-point is constructed.

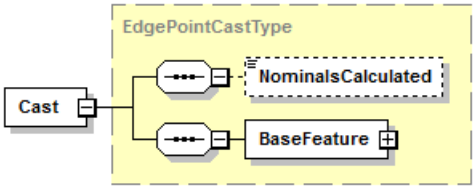
complexType **EdgePointConstructionMethodType**

diagram	
children	**Copy** **Cast** **Transform** **FromScan**
used by	element **EdgePointCheckedType/Constructed**
annotation	documentation The EdgePointConstructionMethodType defines the method for constructing a unique nominal or actual edge-point feature.

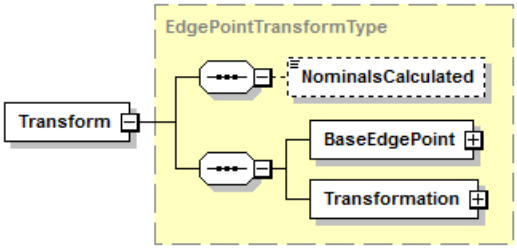
element **EdgePointConstructionMethodType/Copy**

diagram	
type	**EdgePointCopyType**
properties	content complex
children	**NominalsCalculated** **BaseEdgePoint**
annotation	documentation The Copy element describes the construction of an edge-point by the copying of a base edge-point. This element is in an optional choice.

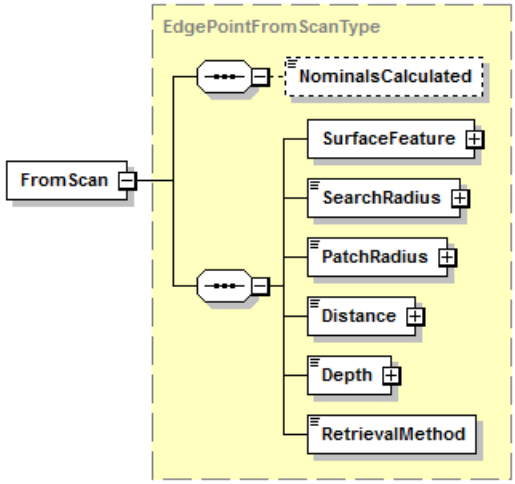
element **EdgePointConstructionMethodType/Cast**

diagram	
type	**EdgePointCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of an edge-point by the casting of a base feature. This element is in an optional choice.

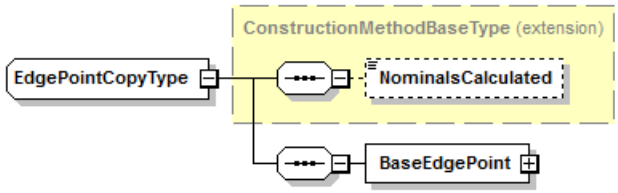
element **EdgePointConstructionMethodType/Transform**

diagram	
type	**EdgePointTransformType**
properties	content complex
children	**NominalsCalculated** **BaseEdgePoint** **Transformation**
annotation	documentation The Transform element describes the construction of an edge-point by the transformation of a base edge-point. This element is in an optional choice.

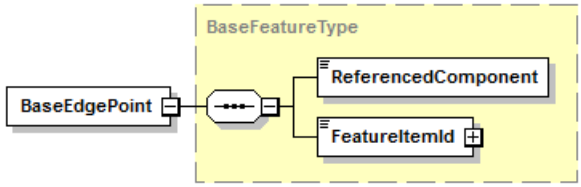
element **EdgePointConstructionMethodType/FromScan**

diagram	
type	**EdgePointFromScanType**
properties	content complex
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius** **PatchRadius** **Distance** **Depth** **RetrievalMethod**
annotation	documentation The FromScan element describes the construction of an edge-point from scan data. This element is in an optional choice.

complexType **EdgePointCopyType**

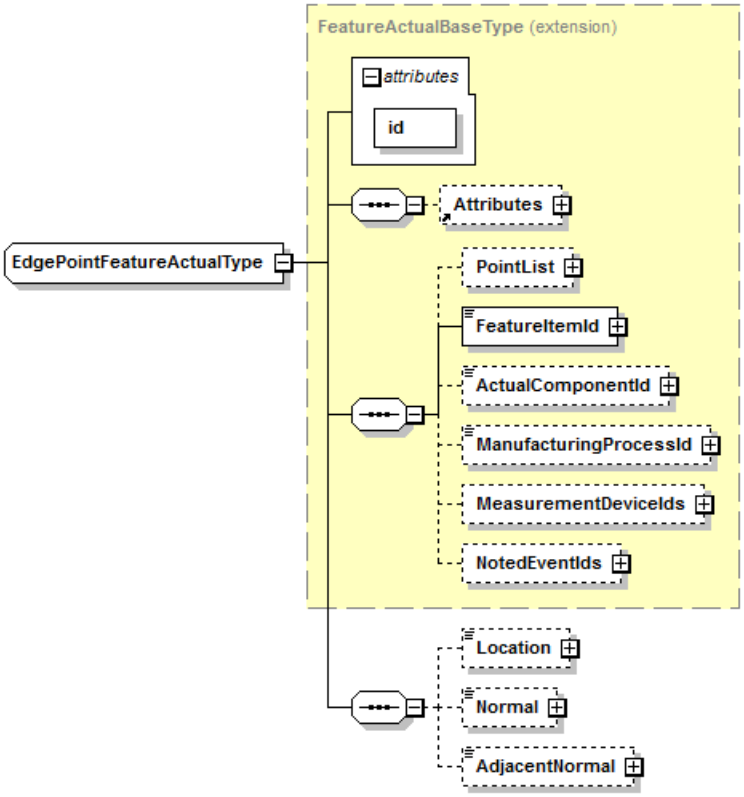
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseEdgePoint**
used by	element **EdgePointConstructionMethodType/Copy**
annotation	documentation The EdgePointCopyType defines a copied edge-point construction.

element **EdgePointCopyType/BaseEdgePoint**

diagram	
type	**BaseFeatureType**
properties	content complex

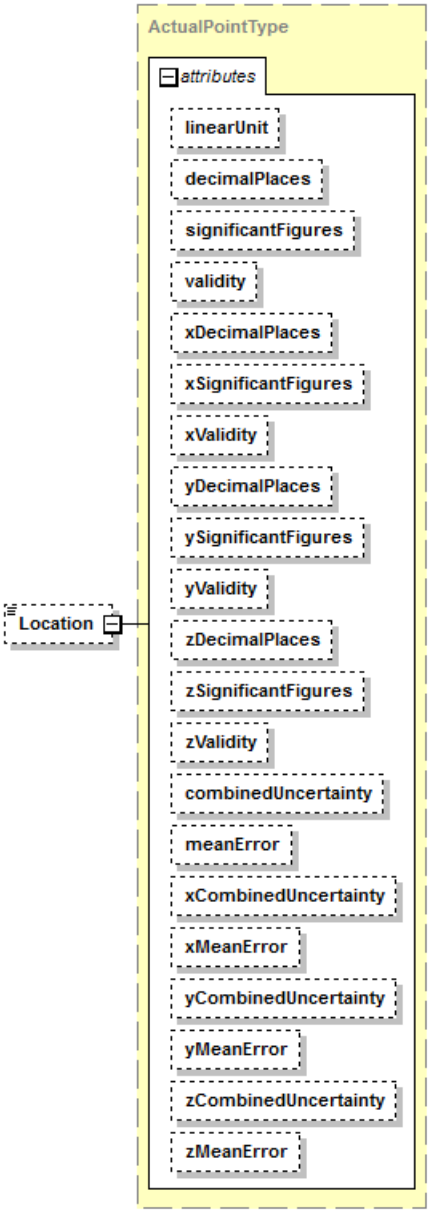
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseEdgePoint element identifies the edge-point to be copied.

complexType **EdgePointFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes PointList FeatureItemId ActualComponentId ManufacturingProcessId MeasurementDeviceIds NotedEventIds Location Normal AdjacentNormal**
used by	element **EdgePointFeatureActual**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The EdgePointFeatureActualType defines the edge-point feature actual information for an individual edge-point feature.

element **EdgePointFeatureActualType/Location**

diagram



type	**ActualPointType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

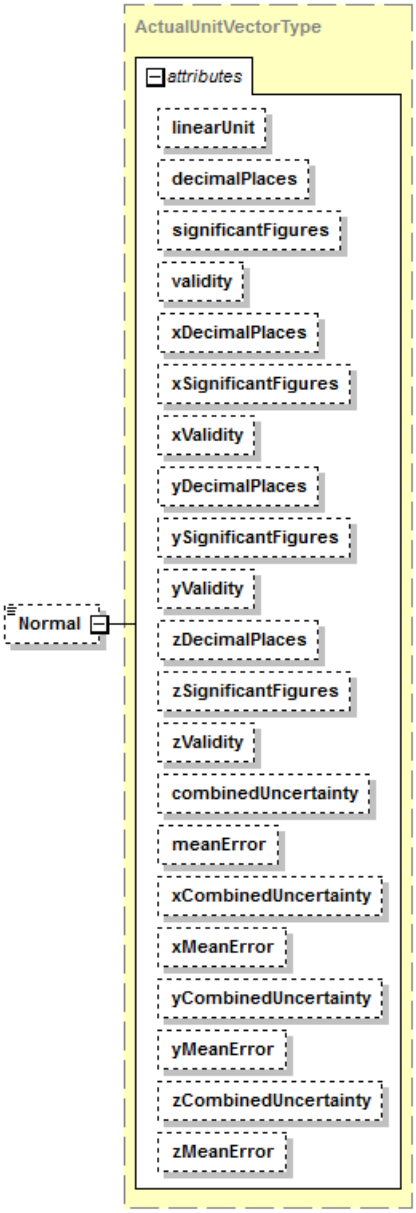
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Location element is the actual location of a point on the edge between two surfaces.	

element **EdgePointFeatureActualType/Normal**

diagram



type **ActualUnitVectorType**

properties

minOcc	0
maxOcc	1
content	complex

facets

Kind	Value	Annotation
length	3	

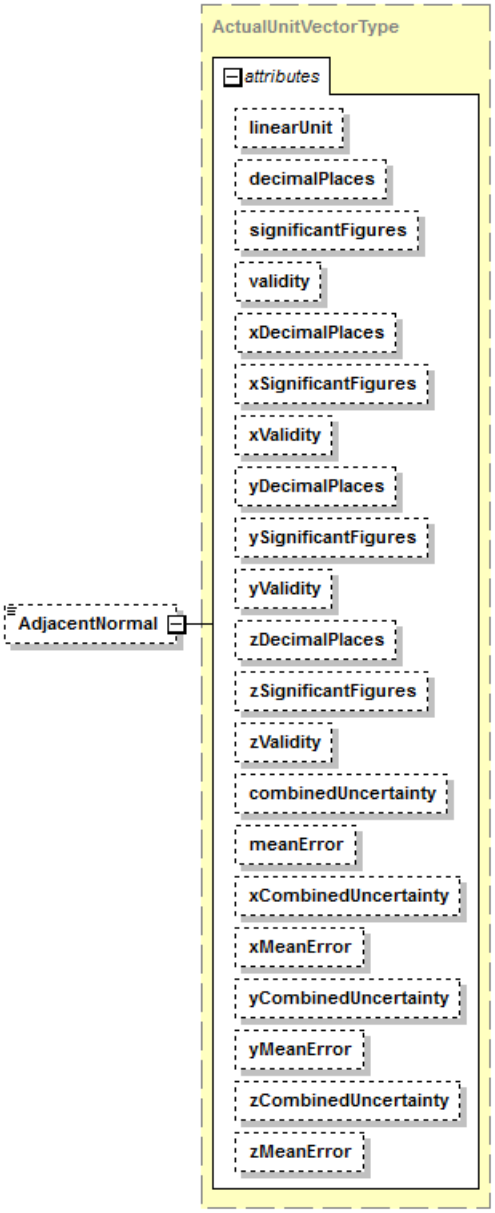
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Normal element is the actual unit normal vector of the edge surface.	

element **EdgePointFeatureActualType/AdjacentNormal**

diagram



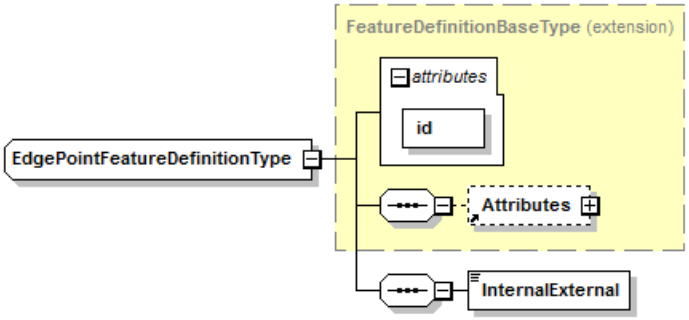
type	**ActualUnitVectorType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional AdjacentNormal element is the actual unit normal vector of the surface adjacent to the edge surface.	

complexType **EdgePointFeatureDefinitionType**

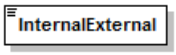
diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes InternalExternal**
used by	element **EdgePointFeatureDefinition**

attributes

Name	Type	Use	Default	Fixed	Annotation
id	**QIFIdType**	required			documentation The id attribute is the QIF id of the feature, used for referencing.

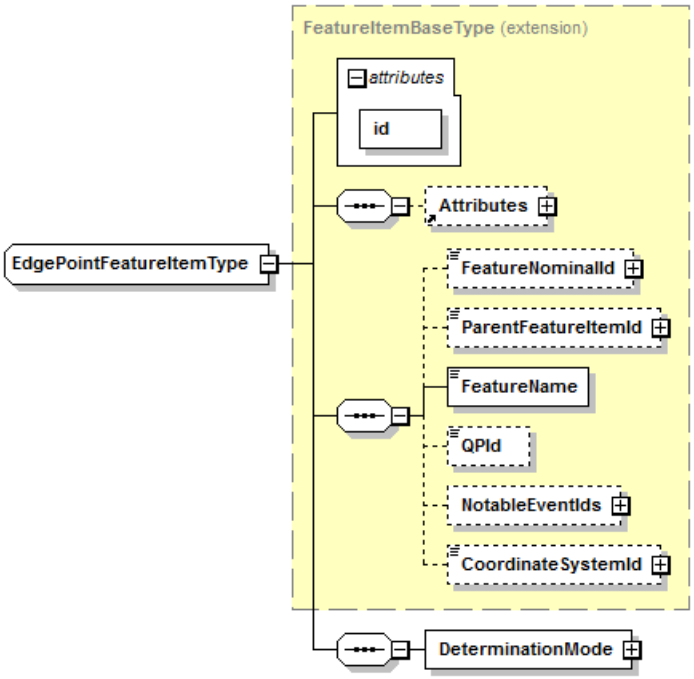
annotation	documentation The EdgePointFeatureDefinitionType defines the edge-point feature nominal information that can be common to one or more edge point features.

element **EdgePointFeatureDefinitionType/InternalExternal**

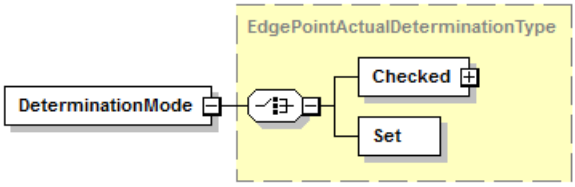
diagram	

type	**InternalExternalEnumType**
properties	content simple
facets	Kind / Value / Annotation enumeration INTERNAL enumeration EXTERNAL enumeration NOT_APPLICABLE
annotation	documentation The InternalExternal element indicates whether the feature is internal or external. For example, an edge point on the edge of a desk would be external, and an edge point where a floor meets a wall would be internal.

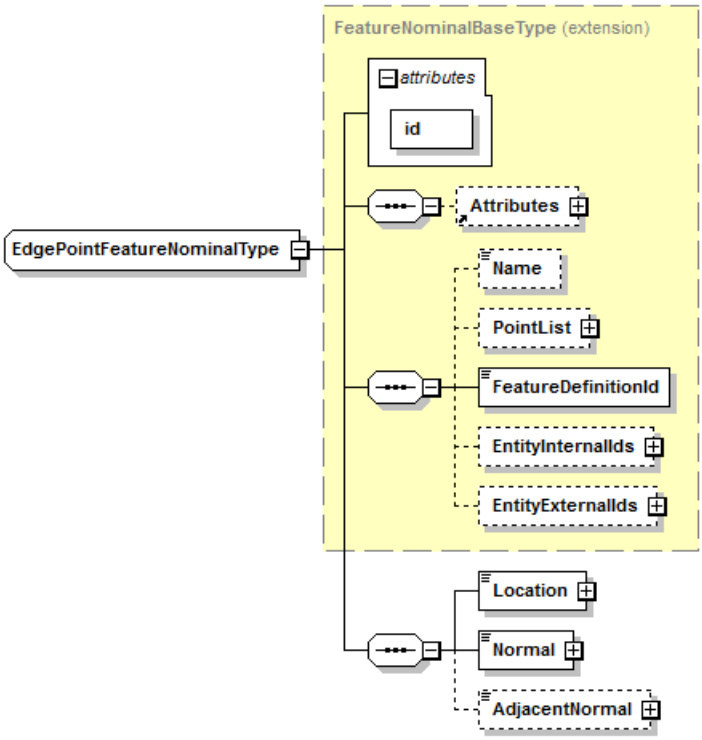
complexType **EdgePointFeatureItemType**

diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes FeatureNominalId ParentFeatureItemId FeatureName QPId NotableEventIds CoordinateSystemId DeterminationMode**
used by	element **EdgePointFeatureItem**
attributes	Name / Type / Use / Default / Fixed / Annotation id / **QIFIdType** / required / / / documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The EdgePointFeatureItemType defines an individual edge-point feature. An edge-point feature is a point on the intersection curve of two faces.

element **EdgePointFeatureItemType/DeterminationMode**

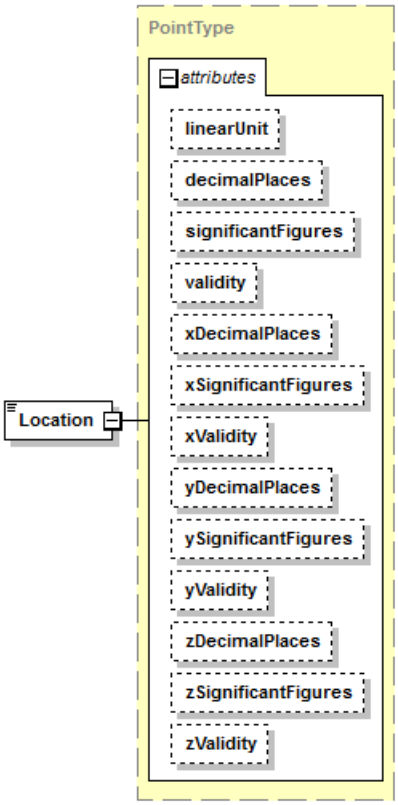
diagram	
type	**EdgePointActualDeterminationType**
properties	content complex
children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the edge-point feature actual is determined.

complexType **EdgePointFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **Location** **Normal** **AdjacentNormal**
used by	element **EdgePointFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.

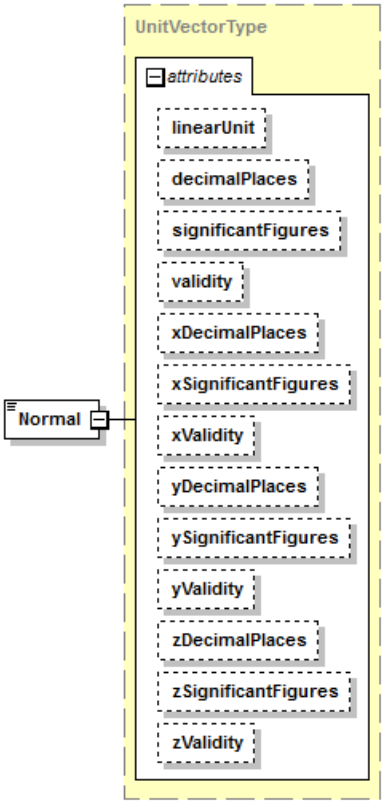
annotation	documentation The EdgePointFeatureNominalType defines the edge-point feature nominal information for an individual edge-point feature.

element **EdgePointFeatureNominalType/Location**

diagram	
type	**PointType**
properties	content complex
facets	Kind Value Annotation length 3
attributes	Name Type Use Default Fixed Annotation linearUnit **xs:token** decimalPlaces **xs:nonNegativeInteger** significantFigures **xs:nonNegativeInteger** validity **ValidityEnumType** xDecimalPlaces **xs:nonNegativeInteger** xSignificantFigures **xs:nonNegativeInteger** xValidity **ValidityEnumType** yDecimalPlaces **xs:nonNegativeInteger** ySignificantFigures **xs:nonNegativeInteger** yValidity **ValidityEnumType** zDecimalPlaces **xs:nonNegativeInteger** zSignificantFigures **xs:nonNegativeInteger** zValidity **ValidityEnumType**

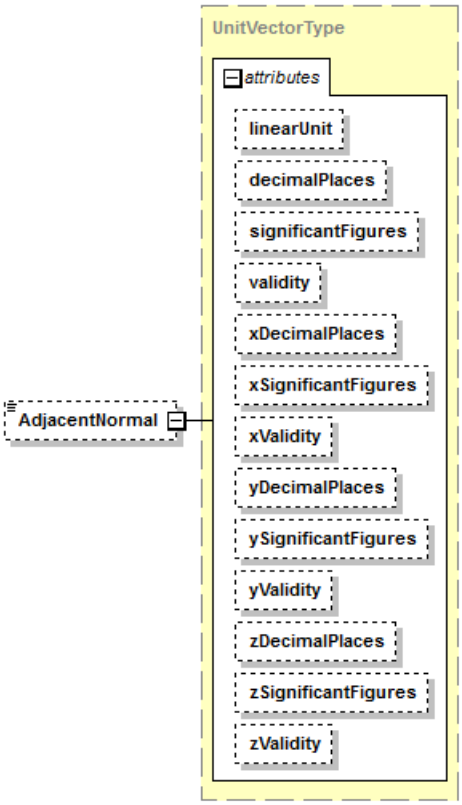
annotation	documentation The Location element is the nominal location of a point on the edge between two surfaces.

element **EdgePointFeatureNominalType/Normal**

diagram	
type	**UnitVectorType**
properties	content complex
facets	Kind Value Annotation length 3
attributes	Name Type Use Default Fixed Annotation linearUnit **xs:token** decimalPlaces **xs:nonNegativeInteger** significantFigures **xs:nonNegativeInteger** validity **ValidityEnumType** xDecimalPlaces **xs:nonNegativeInteger** xSignificantFigures **xs:nonNegativeInteger** xValidity **ValidityEnumType** yDecimalPlaces **xs:nonNegativeInteger** ySignificantFigures **xs:nonNegativeInteger** yValidity **ValidityEnumType** zDecimalPlaces **xs:nonNegativeInteger** zSignificantFigures **xs:nonNegativeInteger** zValidity **ValidityEnumType**
annotation	documentation The Normal element is the nominal unit normal vector of the edge surface.

element **EdgePointFeatureNominalType/AdjacentNormal**

diagram



type **UnitVectorType**

properties

minOcc	0
maxOcc	1
content	complex

facets

Kind	Value	Annotation
length	3	

attributes

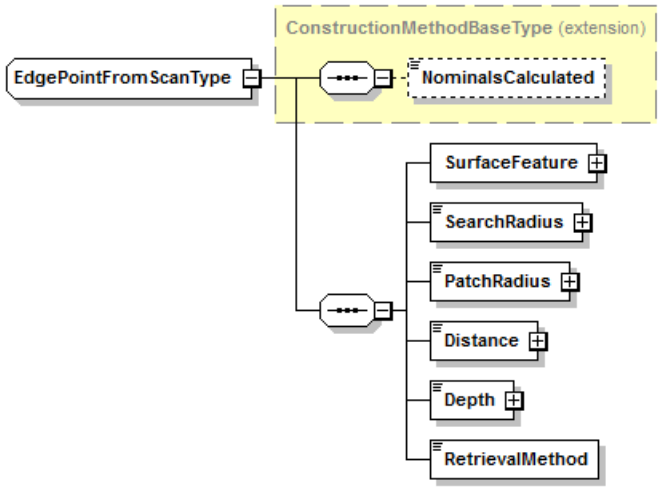
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

annotation

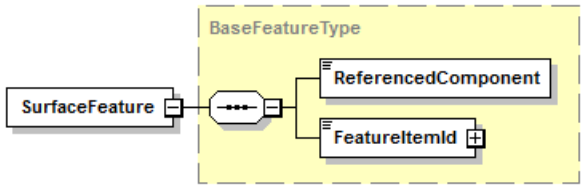
documentation

The optional AdjacentNormal element is the nominal unit normal vector of the surface adjacent to the edge surface.

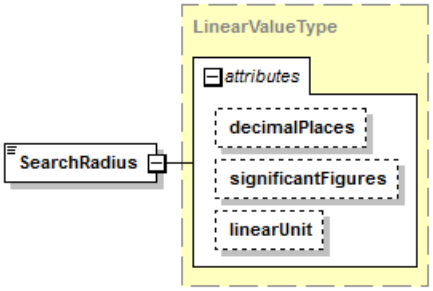
complexType **EdgePointFromScanType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated SurfaceFeature SearchRadius PatchRadius Distance Depth RetrievalMethod**
used by	element **EdgePointConstructionMethodType/FromScan**
annotation	documentation The EdgePointFromScanType defines an edge-point construction by the retrieval of an edge-point from a scanned surface feature (point cloud).

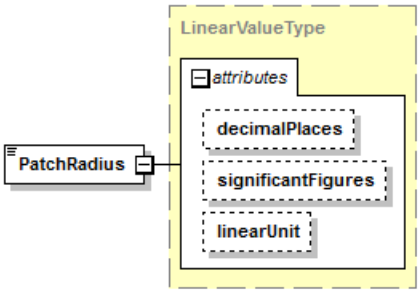
element **EdgePointFromScanType/SurfaceFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The SurfaceFeature element identifies the scanned surface feature from which the edge-point is retrieved.

element **EdgePointFromScanType/SearchRadius**

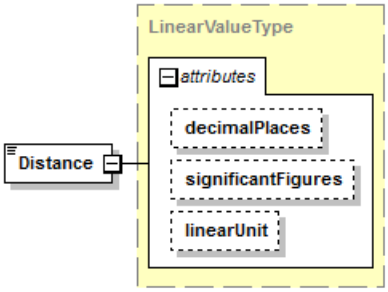
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The SearchRadius element is the radius around the nominal feature (adjusted for depth), wherein the actual feature can be expected. The SearchRadius is the radius of a cylinder. All scanned points within this cylinder are examined for the retrieval of the feature. The cylinder's axis is defined by the feature's normal and the cylinder's axis passes through the feature's location point adjusted by the Depth element.

element **EdgePointFromScanType/PatchRadius**

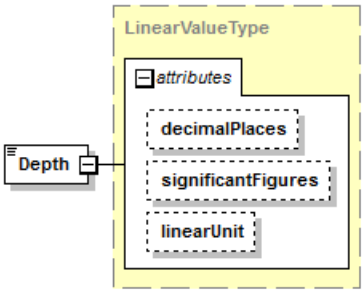
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.

annotation	documentation The PatchRadius element is the radius around the edge-point reference used to adjust location and orientation.

element **EdgePointFromScanType/Distance**

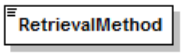
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Distance element is the distance from the surface's edge where measurements to adjust orientation and location are taken.

element **EdgePointFromScanType/Depth**

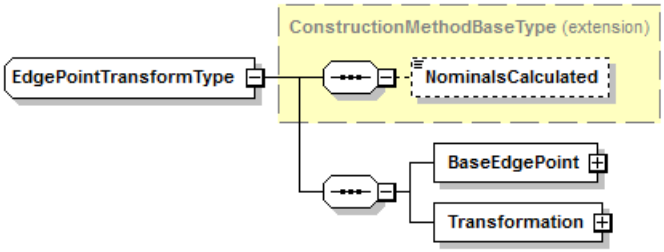
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit

	attribute defines the UnitName for the LinearValueType.
annotation	documentation The Depth element is the measuring depth at which the edge point is to be retrieved.

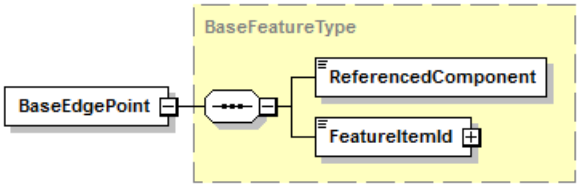
element **EdgePointFromScanType/RetrievalMethod**

diagram	
type	**RetrievalMethodEnumType**
properties	content simple
facets	Kind / Value / Annotation enumeration AVERAGE enumeration MAXEXTREME enumeration MINEXTREME enumeration CLOSEST1D enumeration CLOSEST2D enumeration CLOSEST3D
annotation	documentation The RetrievalMethod element is the method used for retrieving the edge point from the acceptance cylinder.

complexType **EdgePointTransformType**

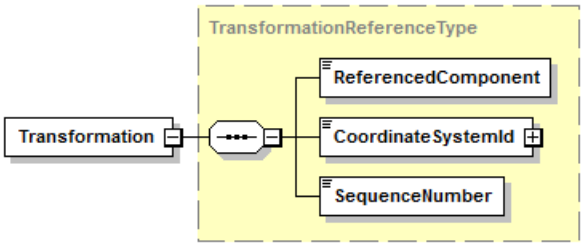
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseEdgePoint** **Transformation**
used by	element **EdgePointConstructionMethodType/Transform**
annotation	documentation The EdgePointTransformType defines an edge-point construction by the transformation of an edge-point through the specified nominal or actual coordinate system.

element **EdgePointTransformType/BaseEdgePoint**

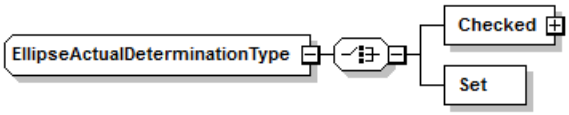
diagram	
type	**BaseFeatureType**

properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseEdgePoint element identifies the edge-point to be transformed.

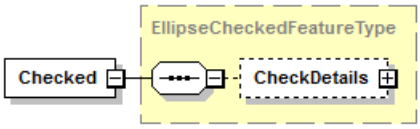
element **EdgePointTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent CoordinateSystemId SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the base edge-point.

complexType **EllipseActualDeterminationType**

diagram	
children	**Checked Set**
used by	element **EllipseFeatureItemType/DeterminationMode**
annotation	documentation The EllipseActualDeterminationType defines how the ellipse actual is determined, either by being set or by being checked (measured or constructed).

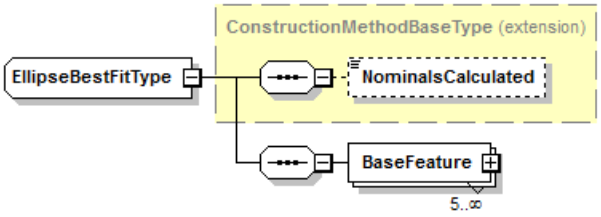
element **EllipseActualDeterminationType/Checked**

diagram	
type	**EllipseCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the ellipse is checked from actual data, either measured or constructed.

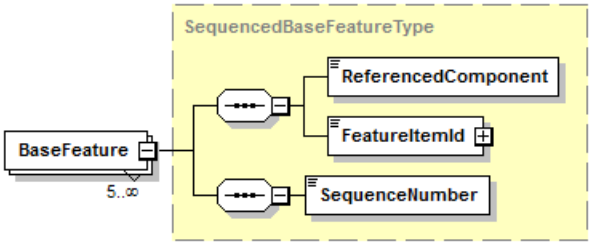
element **EllipseActualDeterminationType/Set**

diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the ellipse actual is set to its nominal value.

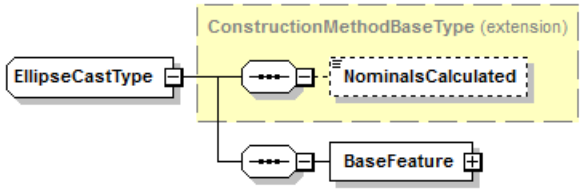
complexType **EllipseBestFitType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **EllipseConstructionMethodType/BestFit**
annotation	documentation The EllipseBestFitType defines the information for a best-fit ellipse which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the ellipse.

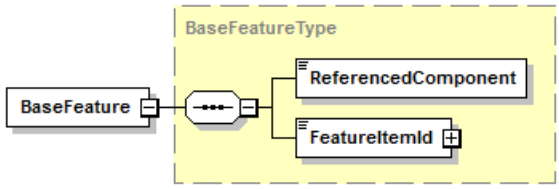
element **EllipseBestFitType/BaseFeature**

diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 5 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of an ellipse. The number of base features must be 5 or greater.

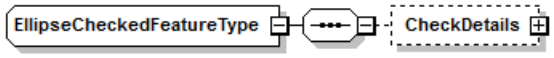
complexType **EllipseCastType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **EllipseConstructionMethodType/Cast**
annotation	documentation The EllipseCastType defines an ellipse construction by the casting of another feature type to an ellipse. The location, vectors and sizes are copied from the base feature. Any information not available on the base feature will remain at nominal.

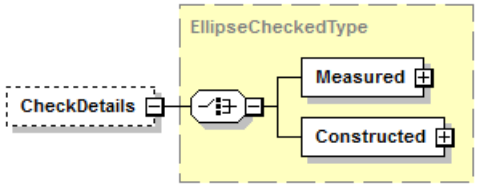
element **EllipseCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to an ellipse.

complexType **EllipseCheckedFeatureType**

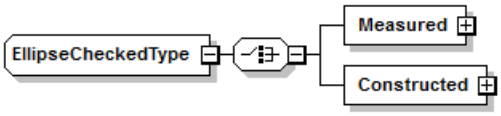
diagram	
children	**CheckDetails**
used by	element **EllipseActualDeterminationType/Checked**
annotation	documentation The EllipseCheckedFeatureType defines that an ellipse feature is checked.

element **EllipseCheckedFeatureType/CheckDetails**

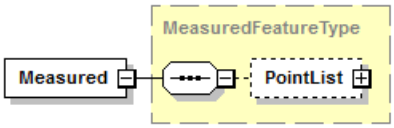
diagram	

type	**EllipseCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured** **Constructed**
annotation	documentation The optional CheckDetails element gives details about the ellipse check (measurement or construction).

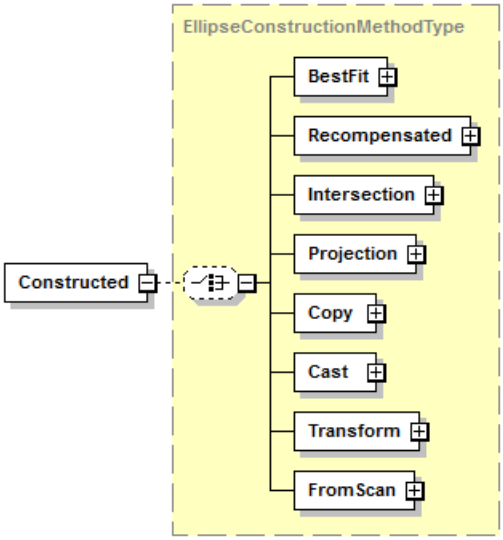
complexType **EllipseCheckedType**

diagram	
children	**Measured** **Constructed**
used by	element **EllipseCheckedFeatureType/CheckDetails**
annotation	documentation The EllipseCheckedType defines how the ellipse actual is checked, either by measurement or by construction.

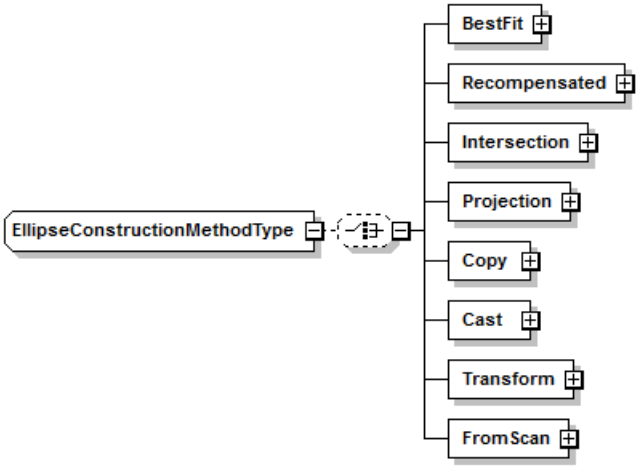
element **EllipseCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the ellipse is measured.

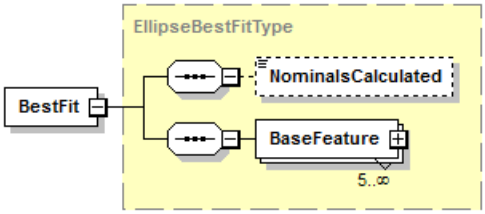
element **EllipseCheckedType/Constructed**

diagram	
type	**EllipseConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Intersection** **Projection** **Copy** **Cast** **Transform** **FromScan**
annotation	documentation The Constructed element signifies that the ellipse is constructed.

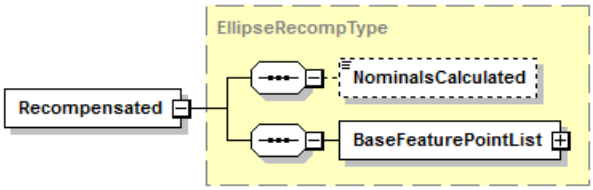
complexType **EllipseConstructionMethodType**

diagram	
children	**BestFit** **Recompensated** **Intersection** **Projection** **Copy** **Cast** **Transform** **FromScan**
used by	element **EllipseCheckedType/Constructed**
annotation	documentation The EllipseConstructionMethodType defines the method for constructing a unique nominal or actual ellipse feature.

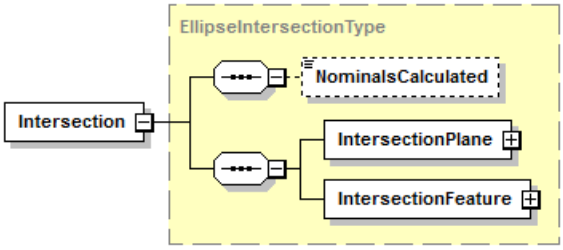
element **EllipseConstructionMethodType/BestFit**

diagram	
type	**EllipseBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of an ellipse from 5 or more point-reducible base features. This element is in an optional choice.

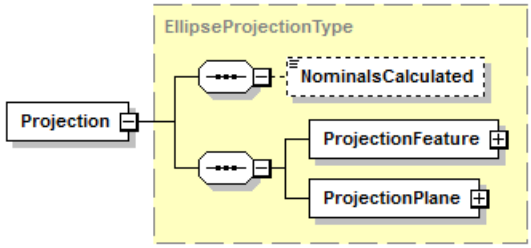
element **EllipseConstructionMethodType/Recompensated**

diagram	
type	**EllipseRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of an ellipse from 5 or more base feature points. This element is in an optional choice.

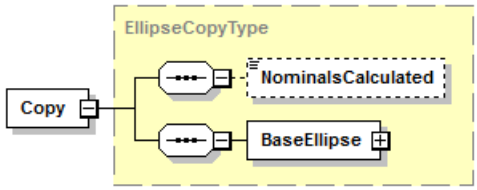
element **EllipseConstructionMethodType/Intersection**

diagram	
type	**EllipseIntersectionType**
properties	content complex
children	**NominalsCalculated** **IntersectionPlane** **IntersectionFeature**
annotation	documentation The Intersection element describes the construction of an ellipse by the intersection of a plane with a cylinder, cone, or other feature which has an elliptical cross section. This element is in an optional choice.

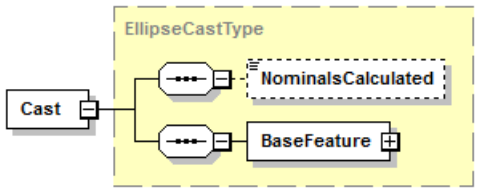
element **EllipseConstructionMethodType/Projection**

diagram	
type	**EllipseProjectionType**
properties	content complex
children	**NominalsCalculated** **ProjectionFeature** **ProjectionPlane**
annotation	documentation The Projection element describes the construction of an ellipse by the projection of a base ellipse onto a plane. This element is in an optional choice.

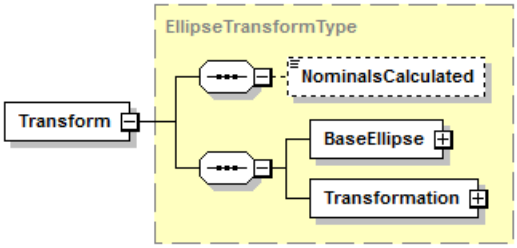
element **EllipseConstructionMethodType/Copy**

diagram	
type	**EllipseCopyType**
properties	content complex
children	**NominalsCalculated** **BaseEllipse**
annotation	documentation The Copy element describes the construction of an ellipse by the copying of a base ellipse. This element is in an optional choice.

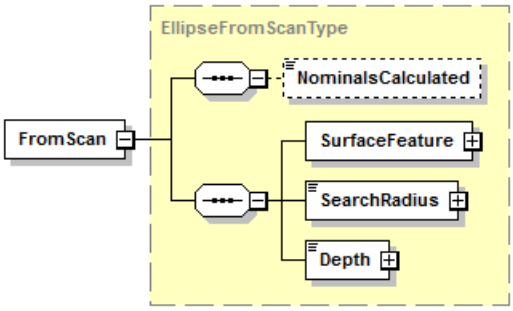
element **EllipseConstructionMethodType/Cast**

diagram	
type	**EllipseCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of an ellipse by the casting of a base feature. This element is in an optional choice.

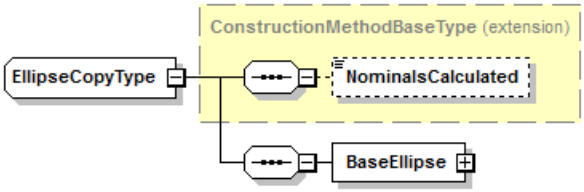
element **EllipseConstructionMethodType/Transform**

diagram	
type	**EllipseTransformType**
properties	content complex
children	**NominalsCalculated** **BaseEllipse** **Transformation**
annotation	documentation The Transform element describes the construction of an ellipse by the transformation of a base ellipse. This element is in an optional choice.

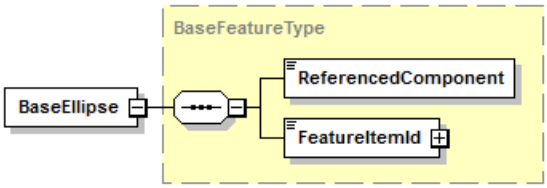
element **EllipseConstructionMethodType/FromScan**

diagram	
type	**EllipseFromScanType**
properties	content complex
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius** **Depth**
annotation	documentation The FromScan element describes the construction of an ellipse from scan data. This element is in an optional choice.

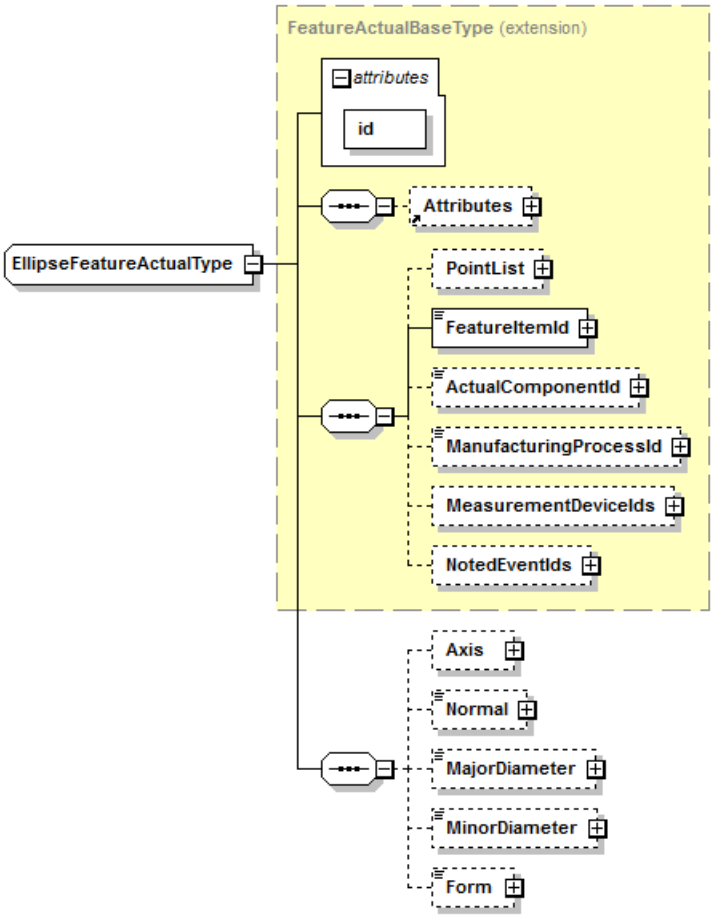
complexType **EllipseCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseEllipse**
used by	element **EllipseConstructionMethodType/Copy**
annotation	documentation The EllipseCopyType defines a copied ellipse construction.

element **EllipseCopyType/BaseEllipse**

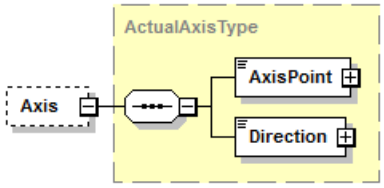
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseEllipse element identifies the ellipse to be copied.

complexType **EllipseFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes PointList FeatureItemId ActualComponentId ManufacturingProcessId MeasurementDeviceIds NotedEventIds Axis Normal MajorDiameter MinorDiameter Form**

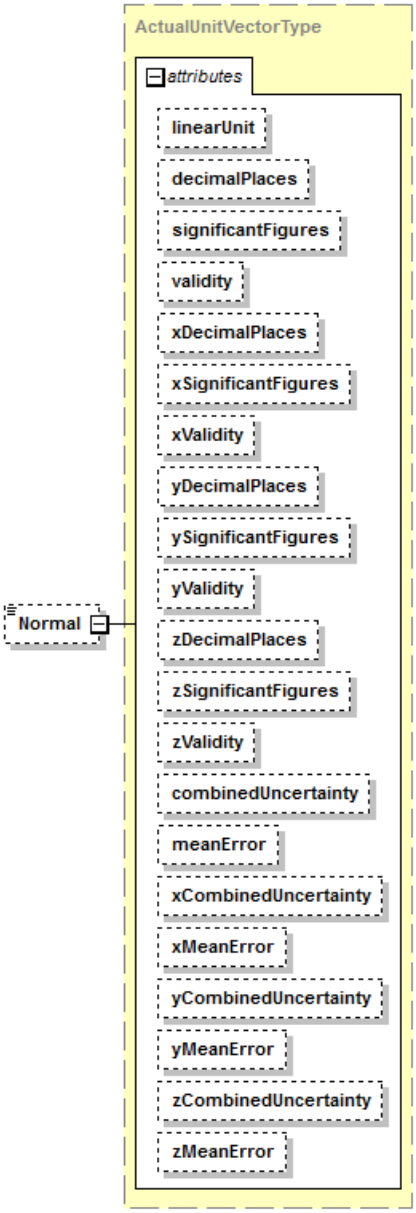
used by	element **EllipseFeatureActual**					
attributes	Name id	Type **QIFIdType**	Use required	Default	Fixed	Annotation documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The EllipseFeatureActualType defines the ellipse feature actual information for an individual ellipse feature.					

element **EllipseFeatureActualType/Axis**

diagram	
type	**ActualAxisType**
properties	minOcc 0 maxOcc 1 content complex
children	**AxisPoint Direction**
annotation	documentation The optional Axis element is the actual center point and actual axis vector along the long axis of the ellipse.

element **EllipseFeatureActualType/Normal**

diagram



type **ActualUnitVectorType**

properties

minOcc	0
maxOcc	1
content	complex

facets

Kind	Value	Annotation
length	3	

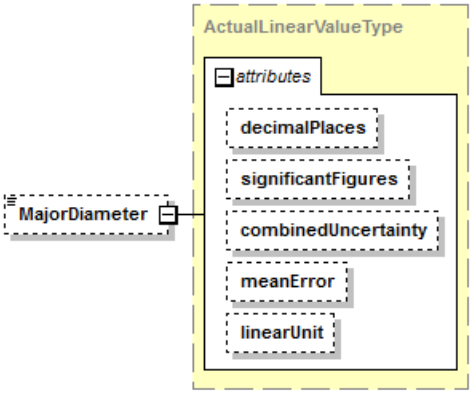
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Normal element is the actual unit normal vector of the plane of the ellipse.	

element **EllipseFeatureActualType/MajorDiameter**

diagram



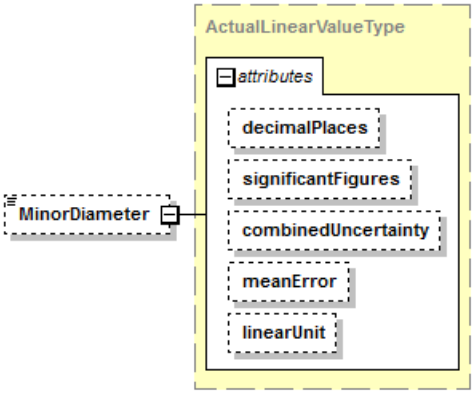
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is

	linearUnit	**xs:token**	a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional MajorDiameter element is the actual major diameter of the ellipse.		

element **EllipseFeatureActualType/MinorDiameter**

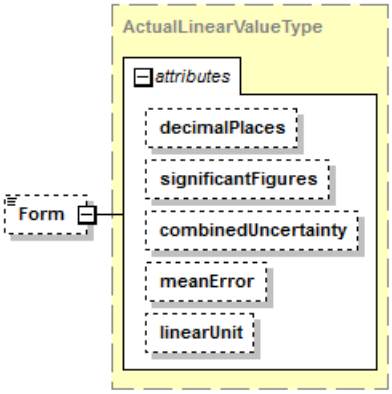
diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

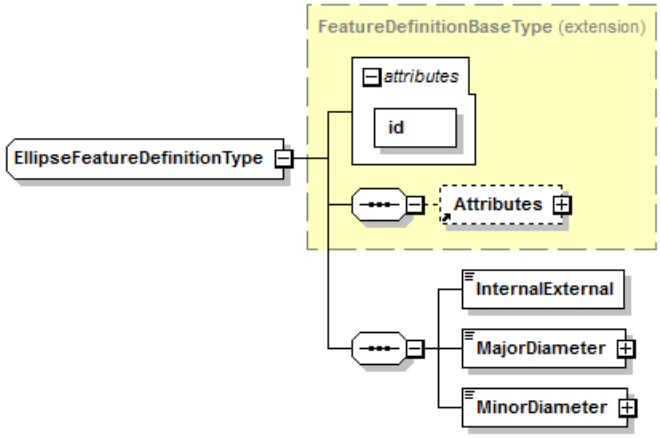
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation	documentation The optional MinorDiameter element is the actual minor diameter of the ellipse.

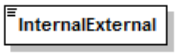
element **EllipseFeatureActualType/Form**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** — documentation: The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** — documentation: The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Form element is the form error (ellipticity) of the ellipse from a report or an analysis.

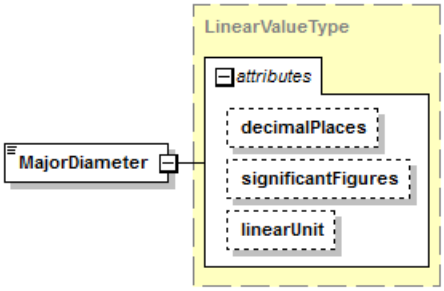
complexType **EllipseFeatureDefinitionType**

diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes** **InternalExternal** **MajorDiameter** **MinorDiameter**
used by	element **EllipseFeatureDefinition**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The EllipseFeatureDefinitionType defines the ellipse feature nominal information that can be common to one or more ellipse features.

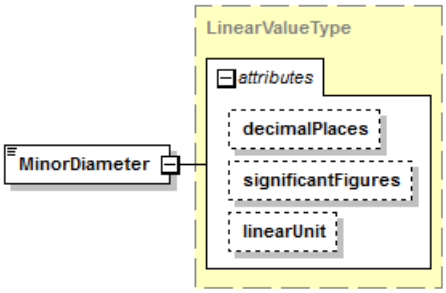
element **EllipseFeatureDefinitionType/InternalExternal**

diagram	
type	**InternalExternalEnumType**
properties	content simple
facets	Kind: enumeration, Value: INTERNAL enumeration, EXTERNAL enumeration, NOT_APPLICABLE Annotation:
annotation	documentation The InternalExternal element indicates whether the feature is internal or external.

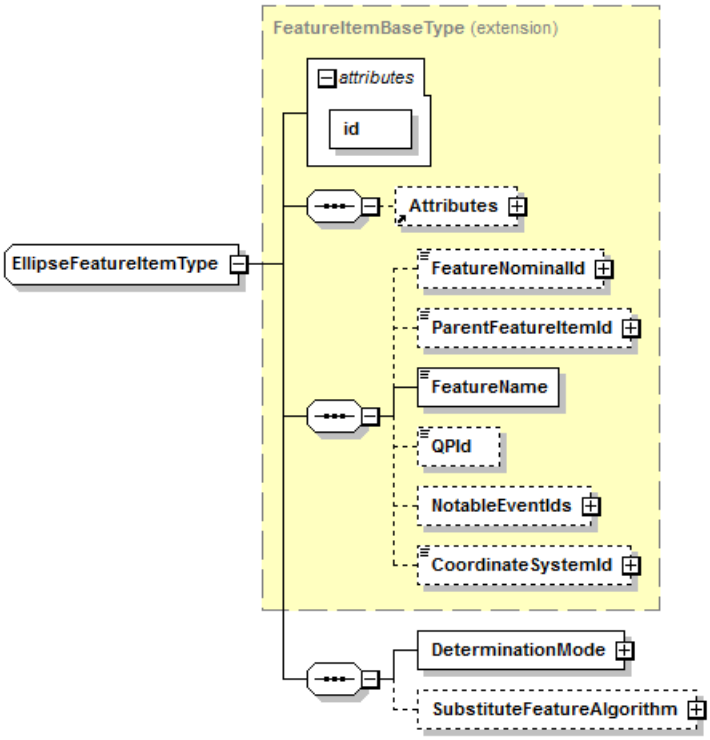
element **EllipseFeatureDefinitionType/MajorDiameter**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The MajorDiameter element is the nominal major diameter of the ellipse.

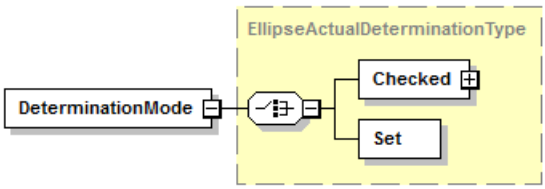
element **EllipseFeatureDefinitionType/MinorDiameter**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The MinorDiameter element is the nominal minor diameter of the ellipse.

complexType **EllipseFeatureItemType**

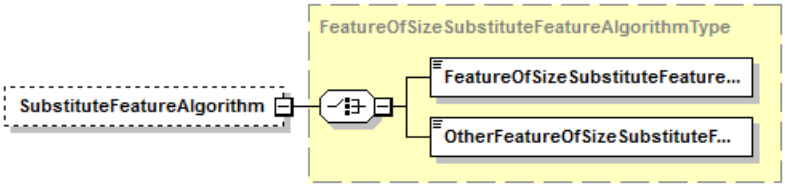
diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **EllipseFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The EllipseFeatureItemType defines an individual ellipse feature.

element **EllipseFeatureItemType/DeterminationMode**

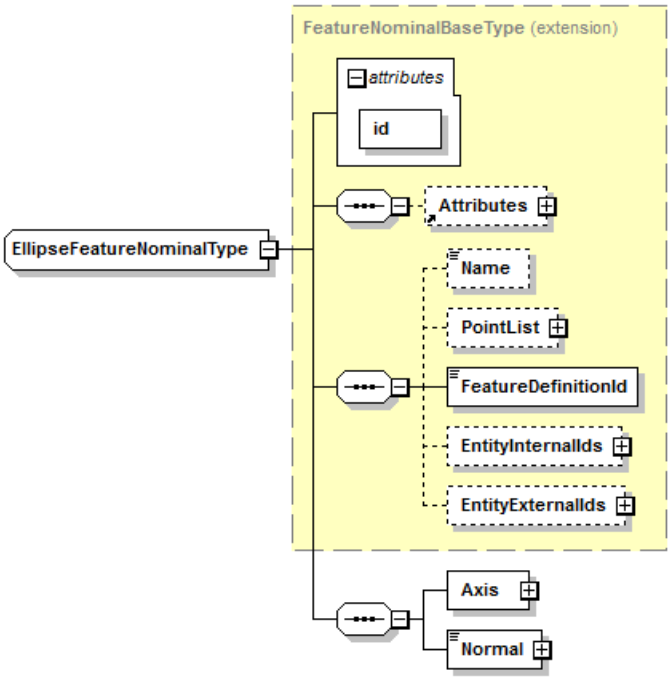
diagram	
type	**EllipseActualDeterminationType**

properties	content complex
children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the ellipse feature actual is determined.

element **EllipseFeatureItemType/SubstituteFeatureAlgorithm**

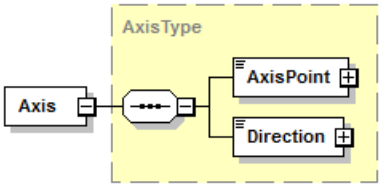
diagram	
type	**FeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**FeatureOfSizeSubstituteFeatureAlgorithmEnum OtherFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the ellipse feature.

complexType **EllipseFeatureNominalType**

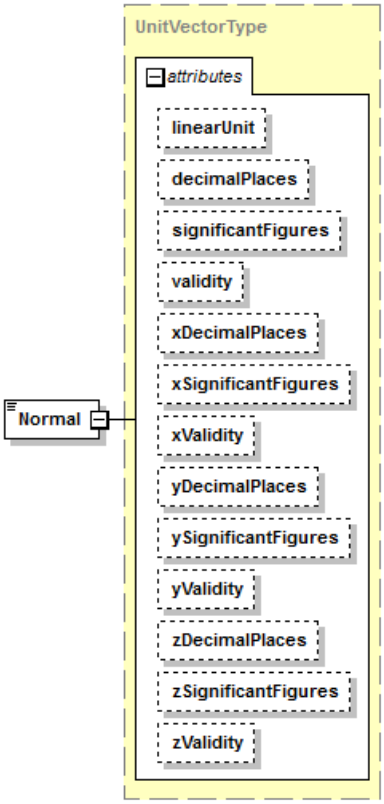
diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **Axis** **Normal**
used by	element **EllipseFeatureNominal**
attributes	Name Type Use Default Fixed Annotation

	id	**QIFIdType**	required	documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The EllipseFeatureNominalType defines the ellipse feature nominal information for an individual ellipse feature.			

element **EllipseFeatureNominalType/Axis**

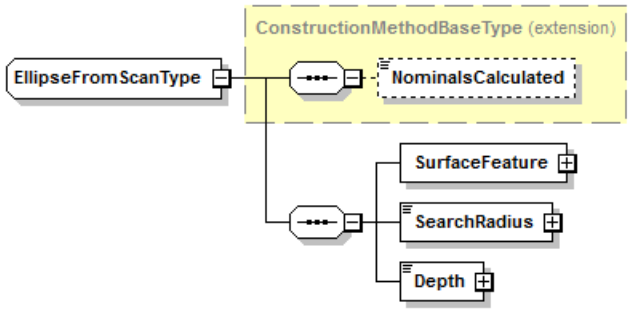
diagram	
type	**AxisType**
properties	content complex
children	**AxisPoint Direction**
annotation	documentation The Axis element is the nominal center point and nominal axis vector along the long axis of the ellipse.

element **EllipseFeatureNominalType/Normal**

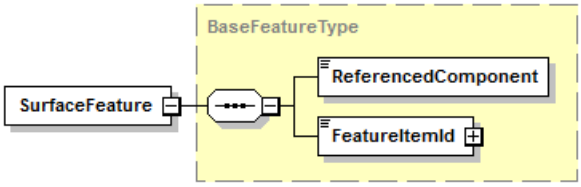
diagram	

type	**UnitVectorType**
properties	content complex
facets	Kind Value Annotation length 3
attributes	Name Type Use Default Fixed Annotation linearUnit **xs:token** decimalPlaces **xs:nonNegativeInteger** significantFigures **xs:nonNegativeInteger** validity **ValidityEnumType** xDecimalPlaces **xs:nonNegativeInteger** xSignificantFigures **xs:nonNegativeInteger** xValidity **ValidityEnumType** yDecimalPlaces **xs:nonNegativeInteger** ySignificantFigures **xs:nonNegativeInteger** yValidity **ValidityEnumType** zDecimalPlaces **xs:nonNegativeInteger** zSignificantFigures **xs:nonNegativeInteger** zValidity **ValidityEnumType**
annotation	documentation The Normal element is the nominal unit normal vector of the plane of the ellipse.

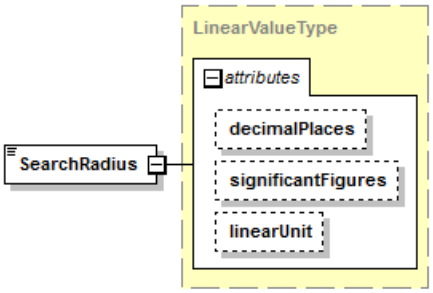
complexType **EllipseFromScanType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius** **Depth**
used by	element **EllipseConstructionMethodType/FromScan**
annotation	documentation The EllipseFromScanType defines an ellipse construction by the retrieval of an ellipse from a scanned surface feature (point cloud).

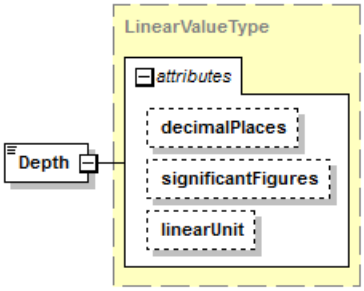
element **EllipseFromScanType/SurfaceFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The SurfaceFeature element identifies the scanned surface feature from which the ellipse is retrieved.

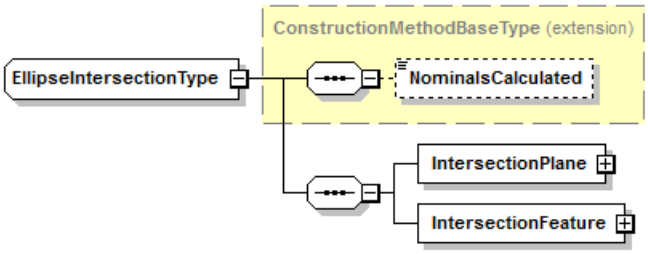
element **EllipseFromScanType/SearchRadius**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. significantFigures / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. linearUnit / **xs:token** / / / / documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The SearchRadius element is the radius around the nominal feature, wherein the actual feature can be expected. The SearchRadius is the radius added to and subtracted from the nominal feature size defining an elliptical cylindrical shell. All scanned points within this elliptical cylindrical shell are used for the retrieval of the feature. The elliptical cylindrical shell's extrusion axis is defined by the feature's normal direction and the elliptical cylindrical shell's axis passes through the feature's center point. The elliptical cylindrical shell is evenly disposed about the nominal ellipse.

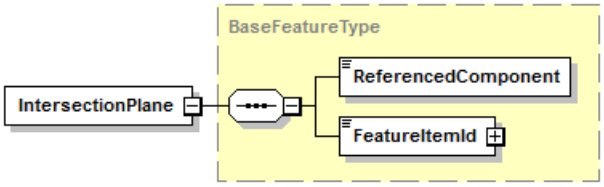
element **EllipseFromScanType/Depth**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Depth element is the measuring depth at which the ellipse is to be retrieved.

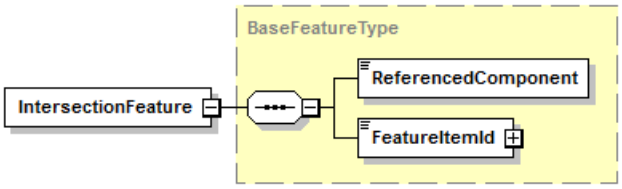
complexType **EllipseIntersectionType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **IntersectionPlane** **IntersectionFeature**
used by	element **EllipseConstructionMethodType/Intersection**
annotation	documentation The EllipseIntersectionType defines the construction of an ellipse by the intersection of a plane with a base feature that may be a cylinder, cone, or other feature with an elliptical cross section.

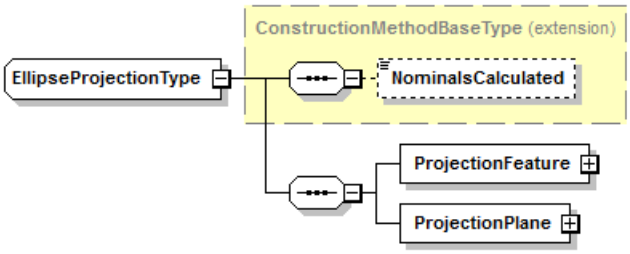
element **EllipseIntersectionType/IntersectionPlane**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The IntersectionPlane element identifies the intersecting plane.

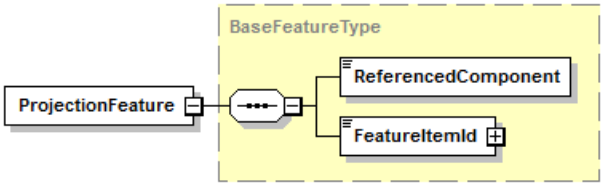
element **EllipseIntersectionType/IntersectionFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The IntersectionFeature element identifies a cylinder, cone, or other feature with an elliptical cross section.

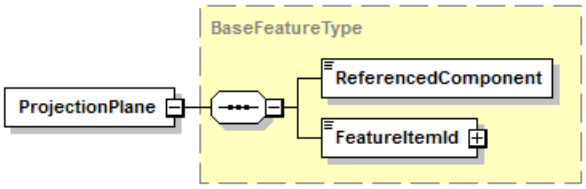
complexType **EllipseProjectionType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated ProjectionFeature ProjectionPlane**
used by	element **EllipseConstructionMethodType/Projection**
annotation	documentation The EllipseProjectionType defines a projected ellipse construction with the ellipse to be projected and the projection plane.

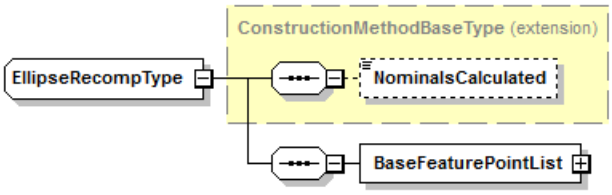
element **EllipseProjectionType/ProjectionFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The ProjectionFeature element identifies the ellipse, circle or arc to be projected.

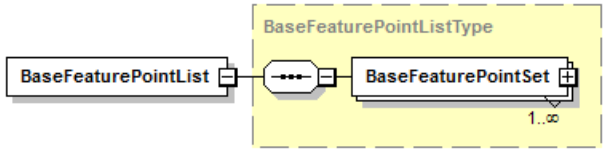
element **EllipseProjectionType/ProjectionPlane**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The ProjectionPlane element identifies the plane onto which the base ellipse, circle or arc is to be projected.

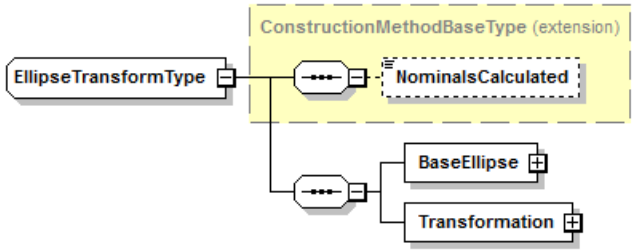
complexType **EllipseRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **EllipseConstructionMethodType/Recompensated**
annotation	documentation The EllipseRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit ellipse through the measurement points of base features.

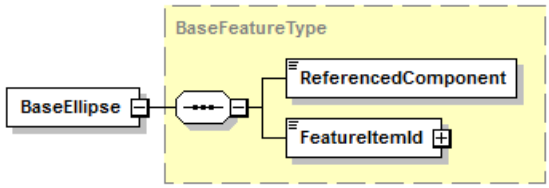
element **EllipseRecompType/BaseFeaturePointList**

diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit ellipse. The total number of points in the BaseFeaturePointSets in the list must be 5 or greater.

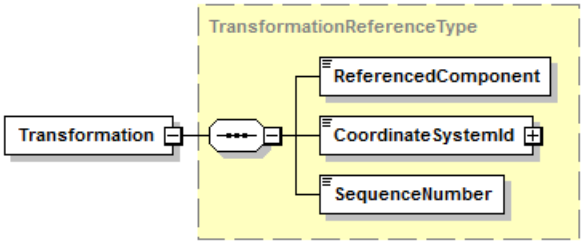
complexType **EllipseTransformType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseEllipse** **Transformation**
used by	element **EllipseConstructionMethodType/Transform**
annotation	documentation The EllipseTransformType defines an ellipse construction by the transformation of an ellipse through the specified nominal or actual coordinate system.

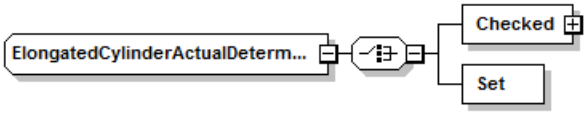
element **EllipseTransformType/BaseEllipse**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseEllipse element identifies the ellipse to be transformed.

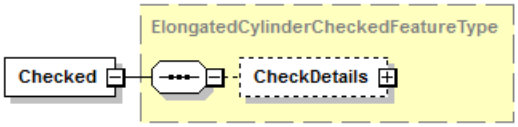
element **EllipseTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the ellipse.

complexType **ElongatedCylinderActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **ElongatedCylinderFeatureItemType/DeterminationMode**
annotation	documentation The ElongatedCylinderActualDeterminationType defines how the elongated cylinder actual is determined, either by being set or by being checked (measured or constructed).

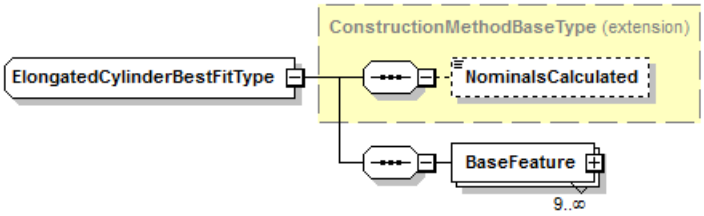
element **ElongatedCylinderActualDeterminationType/Checked**

diagram	
type	**ElongatedCylinderCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the elongated cylinder is checked from actual data, either measured or constructed.

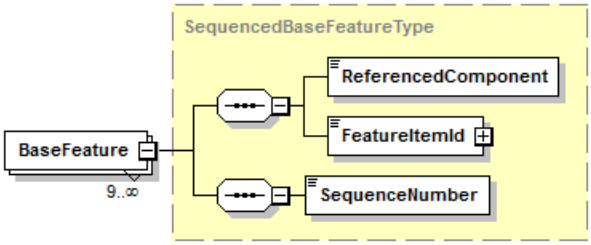
element **ElongatedCylinderActualDeterminationType/Set**

diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the elongated cylinder actual is set to its nominal value.

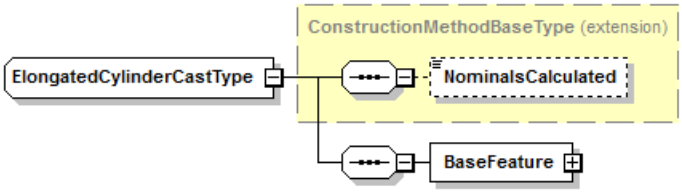
complexType **ElongatedCylinderBestFitType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **ElongatedCylinderConstructionMethodType/BestFit**
annotation	documentation The ElongatedCylinderBestFitType defines the information for a best-fit elongated cylinder which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the elongated cylinder.

element **ElongatedCylinderBestFitType/BaseFeature**

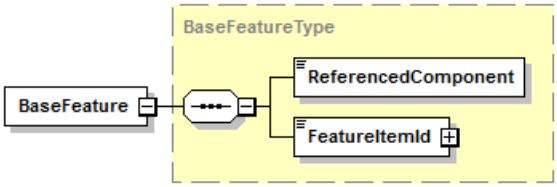
diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 9 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of an elongated cylinder. The number of base features must be 9 or greater.

complexType **ElongatedCylinderCastType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**

used by	element **ElongatedCylinderConstructionMethodType/Cast**
annotation	documentation The ElongatedCylinderCastType defines an elongated cylinder construction by the casting of another feature type to an elongated cylinder. The location, vectors and size are copied from the base feature. Any information not available on the base feature will remain at nominal.

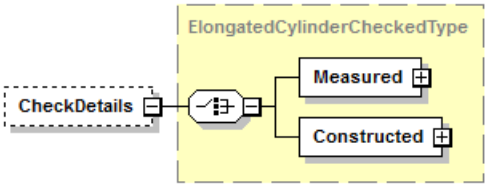
element **ElongatedCylinderCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to an elongated cylinder.

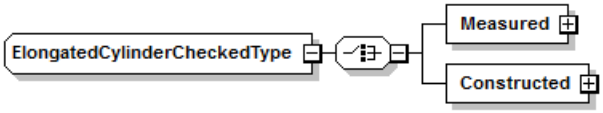
complexType **ElongatedCylinderCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **ElongatedCylinderActualDeterminationType/Checked**
annotation	documentation The ElongatedCylinderCheckedFeatureType defines that an elongated cylinder feature is checked.

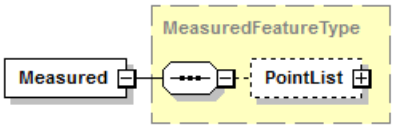
element **ElongatedCylinderCheckedFeatureType/CheckDetails**

diagram	
type	**ElongatedCylinderCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured Constructed**
annotation	documentation The optional CheckDetails element gives details about the elongated cylinder check (measurement or construction).

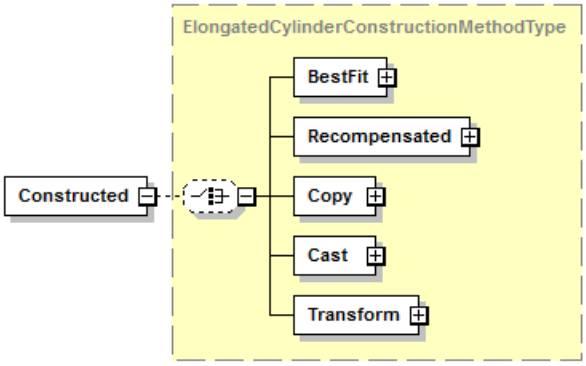
complexType **ElongatedCylinderCheckedType**

diagram	
children	**Measured** **Constructed**
used by	element **ElongatedCylinderCheckedFeatureType/CheckDetails**
annotation	documentation The ElongatedCylinderCheckedType defines how the elongated cylinder actual is checked, either by measurement or by construction.

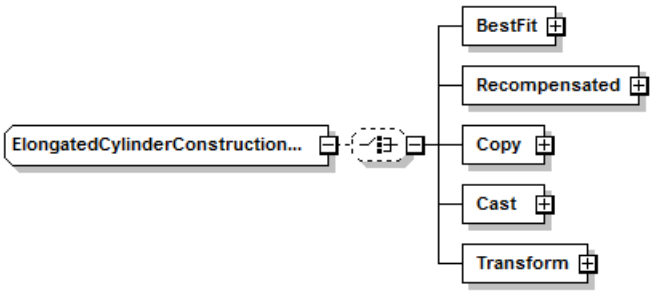
element **ElongatedCylinderCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the elongated cylinder is measured.

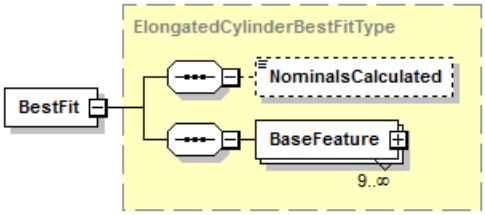
element **ElongatedCylinderCheckedType/Constructed**

diagram	
type	**ElongatedCylinderConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform**
annotation	documentation The Constructed element signifies that the elongated cylinder is constructed.

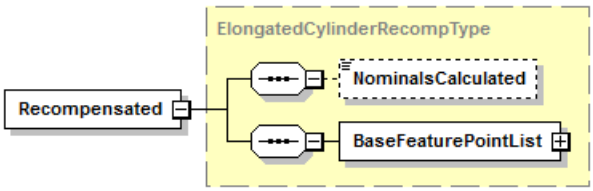
complexType **ElongatedCylinderConstructionMethodType**

diagram	
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform**
used by	element **ElongatedCylinderCheckedType/Constructed**
annotation	documentation The ElongatedCylinderConstructionMethodType defines the method for constructing a unique nominal or actual elongated cylinder.

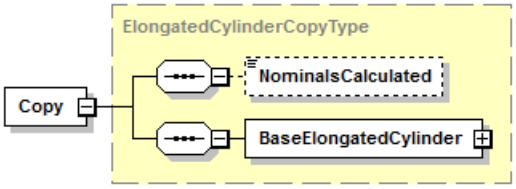
element **ElongatedCylinderConstructionMethodType/BestFit**

diagram	
type	**ElongatedCylinderBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of an elongated cylinder from 9 or more point-reducible base features. This element is in an optional choice.

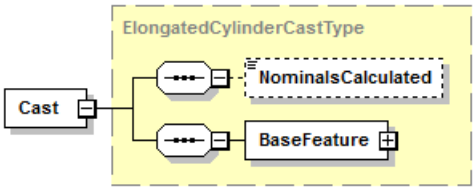
element **ElongatedCylinderConstructionMethodType/Recompensated**

diagram	
type	**ElongatedCylinderRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of an elongated cylinder from 9 or more base feature points. This element is in an optional choice.

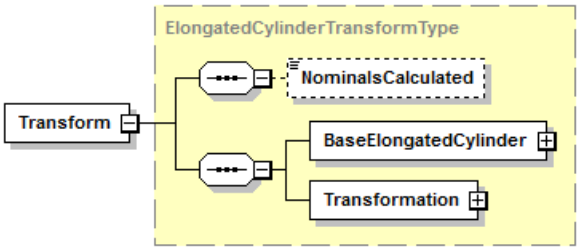
element **ElongatedCylinderConstructionMethodType/Copy**

diagram	
type	**ElongatedCylinderCopyType**
properties	content complex
children	**NominalsCalculated** **BaseElongatedCylinder**
annotation	documentation The Copy element describes the construction of an elongated cylinder by the copying of a base elongated cylinder. This element is in an optional choice.

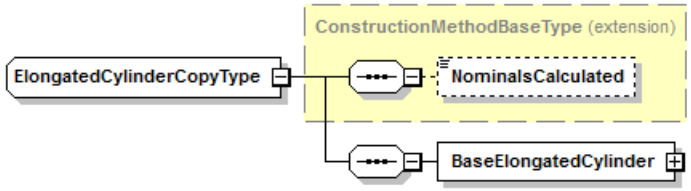
element **ElongatedCylinderConstructionMethodType/Cast**

diagram	
type	**ElongatedCylinderCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of an elongated cylinder by the casting of a base feature. This element is in an optional choice.

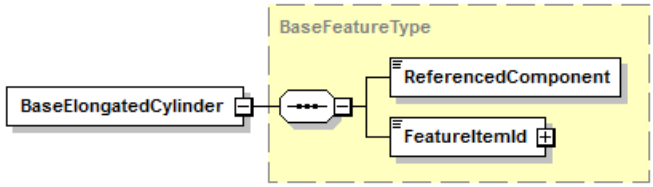
element **ElongatedCylinderConstructionMethodType/Transform**

diagram	
type	**ElongatedCylinderTransformType**
properties	content complex
children	**NominalsCalculated** **BaseElongatedCylinder** **Transformation**
annotation	documentation The Transform element describes the construction of an elongated cylinder by the transformation of a base elongated cylinder. This element is in an optional choice.

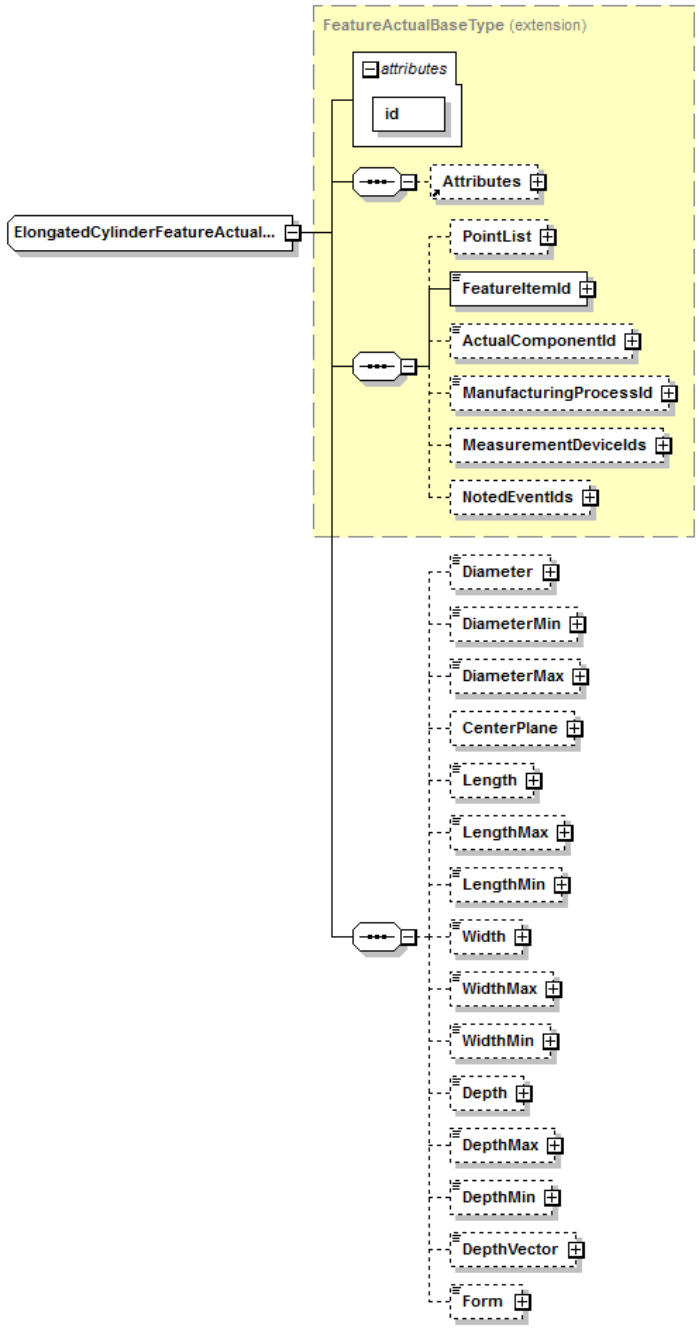
complexType **ElongatedCylinderCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseElongatedCylinder**
used by	element **ElongatedCylinderConstructionMethodType/Copy**
annotation	documentation The ElongatedCylinderCopyType defines a copied elongated cylinder construction.

element **ElongatedCylinderCopyType/BaseElongatedCylinder**

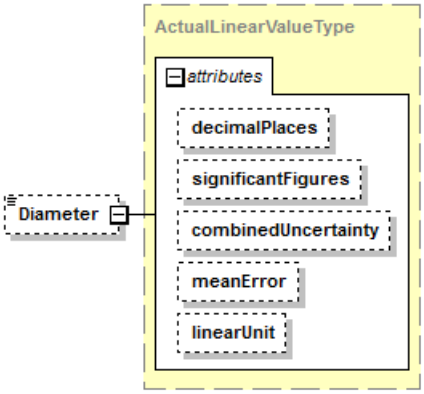
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseElongatedCylinder element identifies the elongated cylinder to be copied.

complexType **ElongatedCylinderFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **Diameter** **DiameterMin** **DiameterMax** **CenterPlane** **Length** **LengthMax** **LengthMin** **Width** **WidthMax** **WidthMin** **Depth** **DepthMax** **DepthMin** **DepthVector** **Form**
used by	element **ElongatedCylinderFeatureActual**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation The id attribute is the

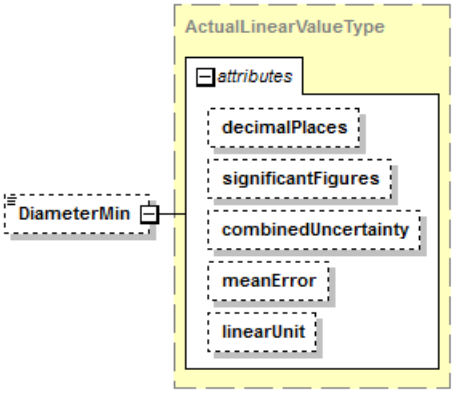
	QIF id of the feature, used for referencing.
annotation	documentation The ElongatedCylinderFeatureActualType defines the elongated cylinder feature actual information for an individual elongated cylinder feature.

element **ElongatedCylinderFeatureActualType/Diameter**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Diameter element is the actual diameter of the elongated cylinder based on the substitute feature data fitting algorithm setting.

element **ElongatedCylinderFeatureActualType/DiameterMin**

diagram



type **ActualLinearValueType**

properties

minOcc	0
maxOcc	1
content	complex

attributes

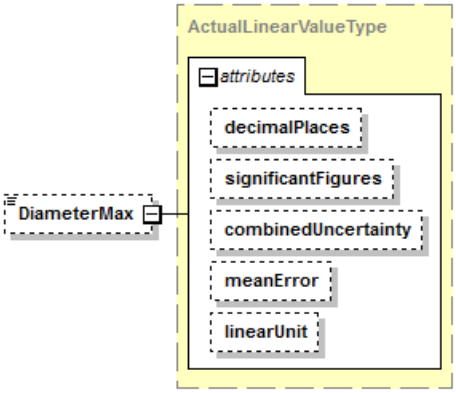
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation

documentation
The optional DiameterMin element is the minimum actual diameter of the elongated cylinder from a report or an analysis.

element **ElongatedCylinderFeatureActualType/DiameterMax**

diagram



type **ActualLinearValueType**

properties

minOcc	0
maxOcc	1
content	complex

attributes

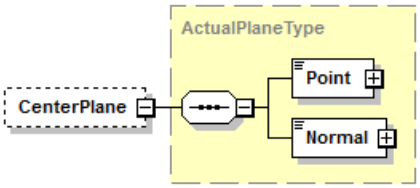
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation

documentation
The optional DiameterMax element is the maximum actual diameter of the elongated cylinder from a report or an analysis.

element **ElongatedCylinderFeatureActualType/CenterPlane**

diagram

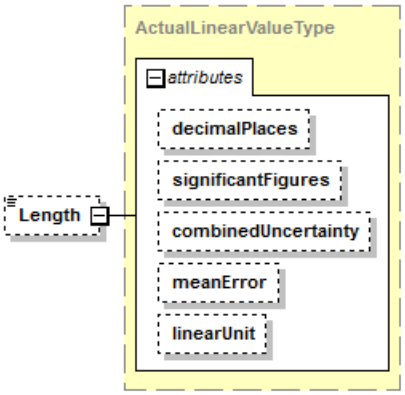


type **ActualPlaneType**

properties	minOcc 0 maxOcc 1 content complex
children	**Point Normal**
annotation	documentation The optional CenterPlane element gives the actual location point and unit vector normal of the center plane of the actual elongated cylinder feature. The location point of the center plane is also the actual location point of the actual elongated cylinder feature and lies midway between the cylindrical ends.

element **ElongatedCylinderFeatureActualType/Length**

diagram



type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

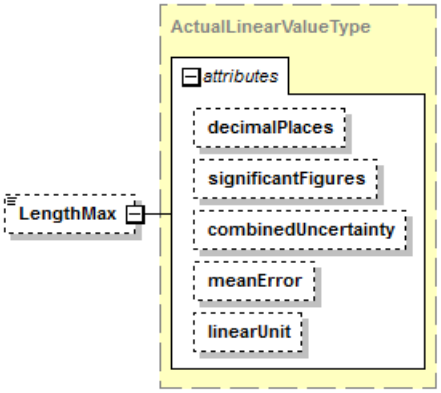
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation

documentation
The optional Length element is the actual length (i.e., size) of the elongated cylinder.

element **ElongatedCylinderFeatureActualType/LengthMax**

diagram



type **ActualLinearValueType**

properties

minOcc	0
maxOcc	1
content	complex

attributes

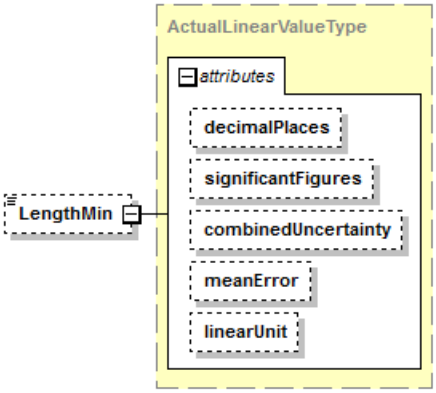
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation

documentation
The optional LengthMax element is the maximum length of the elongated cylinder from a report or an analysis.

element **ElongatedCylinderFeatureActualType/LengthMin**

diagram



type **ActualLinearValueType**

properties

minOcc	0
maxOcc	1
content	complex

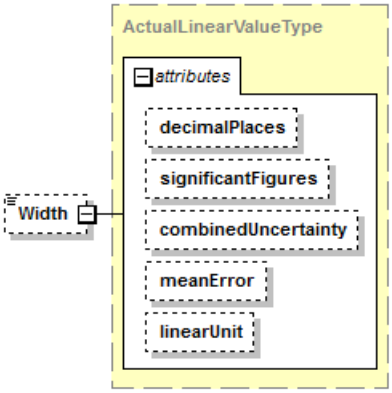
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation

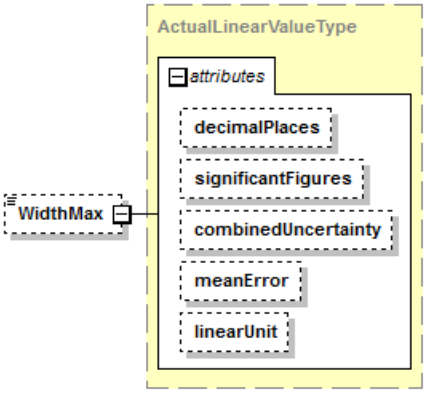
documentation
The optional LengthMin element is the minimum length of the elongated cylinder from a report or an analysis.

element **ElongatedCylinderFeatureActualType/Width**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Width element is the actual width of the elongated cylinder.

element **ElongatedCylinderFeatureActualType/WidthMax**

diagram



type **ActualLinearValueType**

properties

minOcc	0
maxOcc	1
content	complex

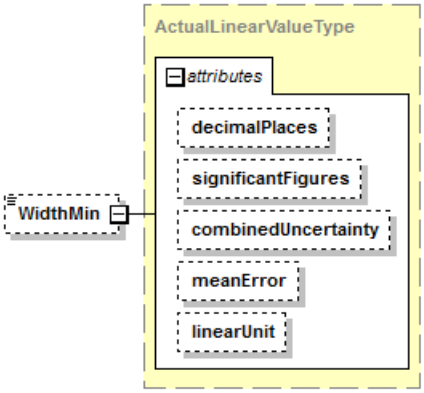
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

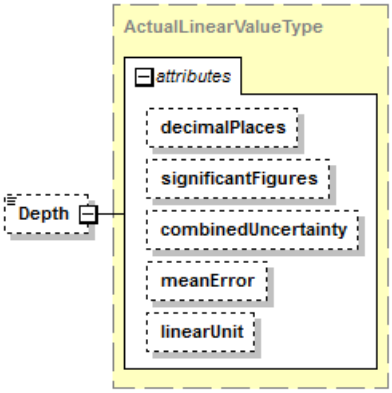
annotation

documentation
The optional WidthMax element is the maximum width of the elongated cylinder from a report or an analysis.

element **ElongatedCylinderFeatureActualType/WidthMin**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional WidthMin element is the minimum width of the elongated cylinder from a report or an analysis.

element **ElongatedCylinderFeatureActualType/Depth**

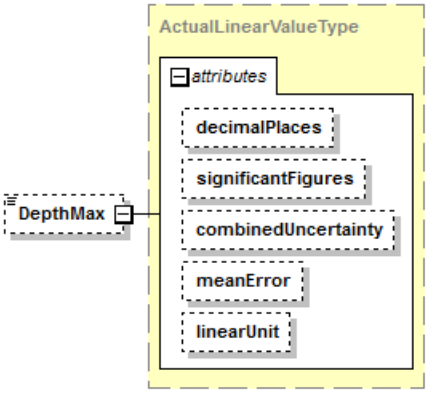
diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation	documentation The optional Depth element is the actual depth of the elongated cylinder.

element **ElongatedCylinderFeatureActualType/DepthMax**

diagram



type **ActualLinearValueType**

properties

minOcc	0
maxOcc	1
content	complex

attributes

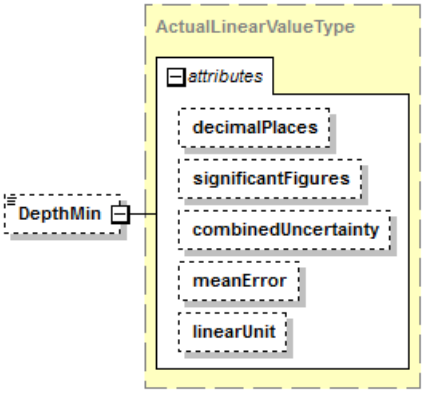
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation

documentation
The optional DepthMax element is the maximum depth of the elongated cylinder from a report or an analysis.

element **ElongatedCylinderFeatureActualType/DepthMin**

diagram



type **ActualLinearValueType**

properties

minOcc	0
maxOcc	1
content	complex

attributes

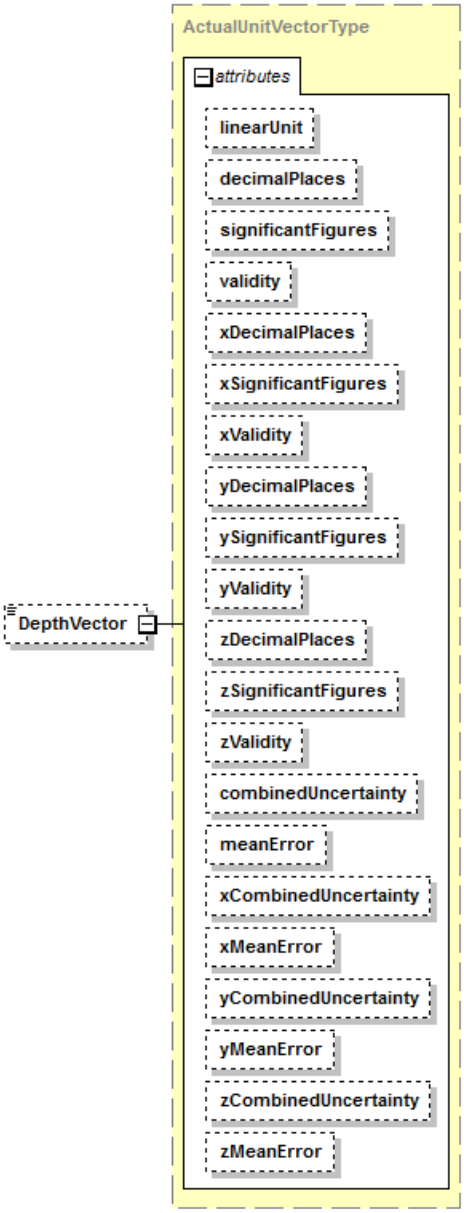
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation

documentation
The optional DepthMin element is the minimum depth of the elongated cylinder from a report or an analysis.

element **ElongatedCylinderFeatureActualType/DepthVector**

diagram



type	**ActualUnitVectorType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

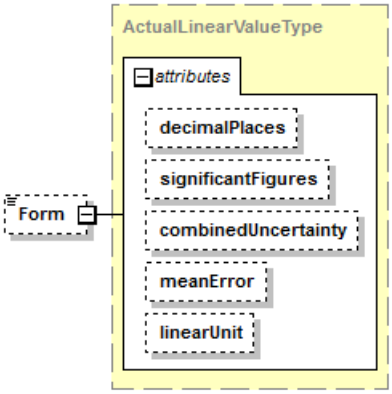
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional DepthVector element is the actual unit vector direction of the depth of the actual elongated cylinder. The depth vector is parallel to the axis vector of each cylindrical end and points into the elongated cylinder. The elongated cylinder does not extend from the location point in the direction opposite the depth vector.	

element **ElongatedCylinderFeatureActualType/Form**

diagram



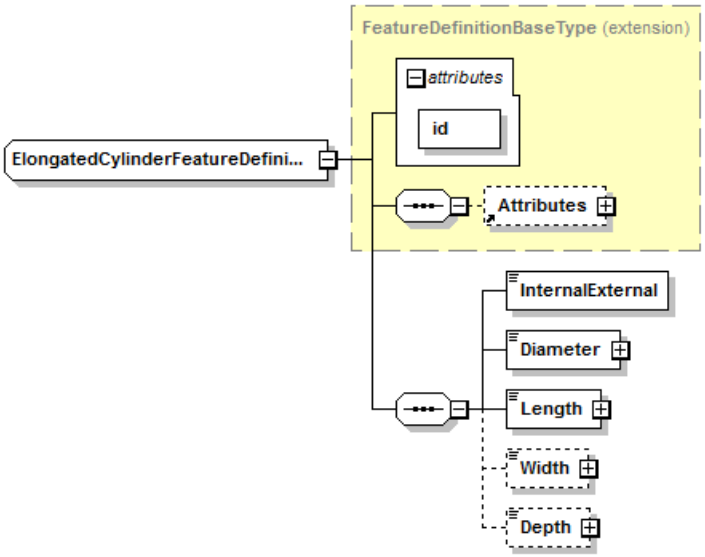
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

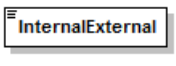
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation

	linearUnit **xs:token**	The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Form element is the form error (cylindricity) of the elongated cylinder from a report or an analysis.	

complexType **ElongatedCylinderFeatureDefinitionType**

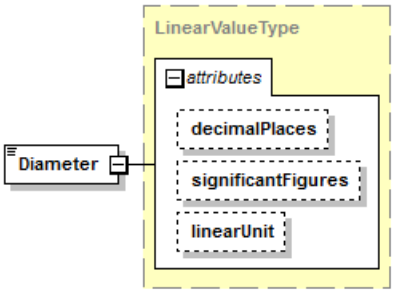
diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes** **InternalExternal** **Diameter** **Length** **Width** **Depth**
used by	element **ElongatedCylinderFeatureDefinition**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ElongatedCylinderFeatureDefinitionType defines the elongated cylinder feature nominal information that can be common to one or more elongated cylinder features.

element **ElongatedCylinderFeatureDefinitionType/InternalExternal**

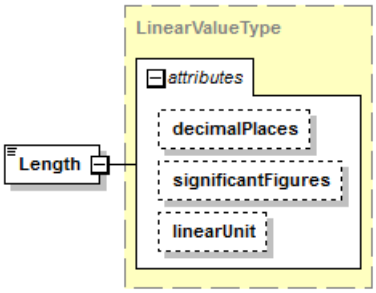
diagram	
type	**InternalExternalEnumType**

properties	content simple
facets	Kind / Value / Annotation enumeration INTERNAL enumeration EXTERNAL enumeration NOT_APPLICABLE
annotation	documentation The InternalExternal element indicates whether the feature is internal or external.

element **ElongatedCylinderFeatureDefinitionType/Diameter**

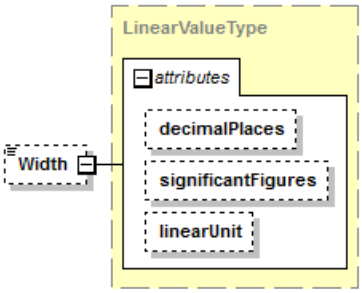
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Diameter element is the nominal diameter of the elongated cylinder.

element **ElongatedCylinderFeatureDefinitionType/Length**

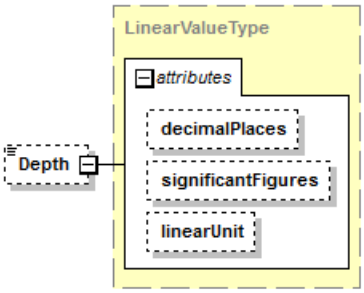
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation

	significantFigures	**xs:nonNegativeInteger**	See documentation of SpecifiedDecimalType. documentation
	linearUnit	**xs:token**	See documentation of SpecifiedDecimalType. documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Length element is the length (i.e., size) of the elongated cylinder from cylindrical end to cylindrical end.		

element **ElongatedCylinderFeatureDefinitionType/Width**

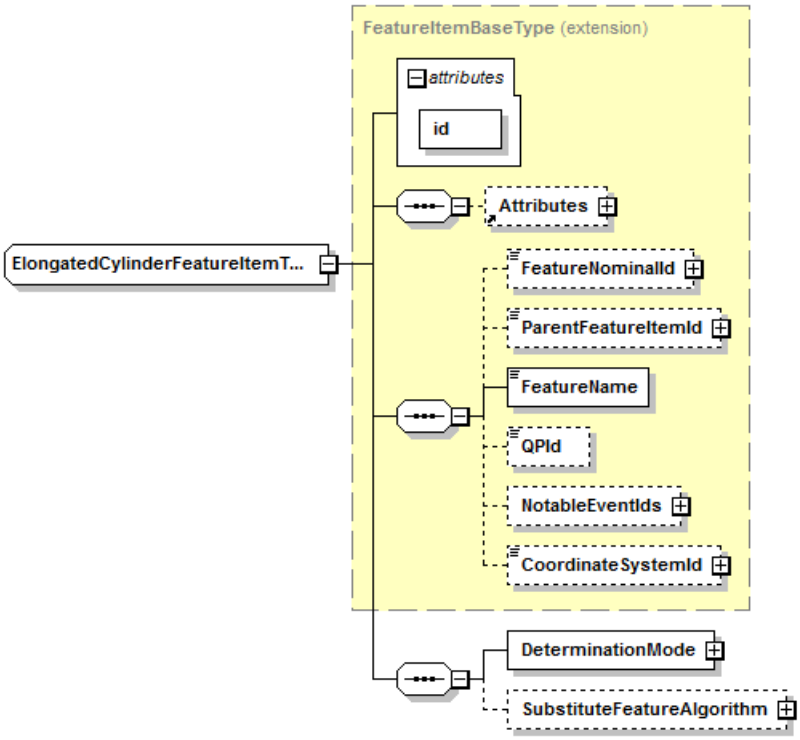
diagram						
type	**LinearValueType**					
properties	minOcc 0 maxOcc 1 content complex					
attributes	Name	Type	Use	Default	Fixed	Annotation
	decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The optional Width element is the width of the elongated cylinder with cylindrical ends. The width is no greater than the diameter of each cylindrical end.					

element **ElongatedCylinderFeatureDefinitionType/Depth**

diagram	
type	**LinearValueType**

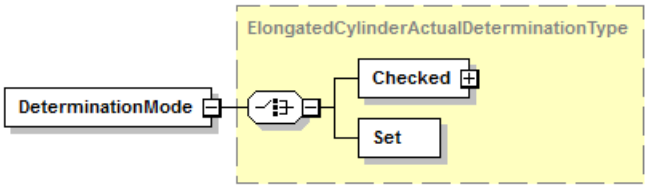
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The optional Depth element is the depth of the elongated cylinder.

complexType **ElongatedCylinderFeatureItemType**

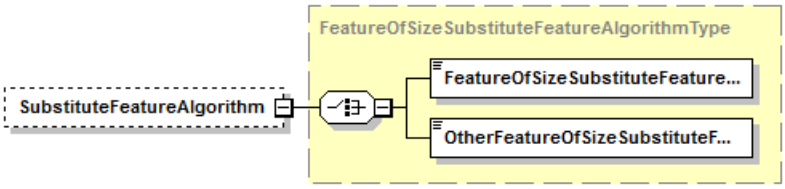
diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes FeatureNominalId ParentFeatureItemId FeatureName QPId NotableEventIds CoordinateSystemId DeterminationMode SubstituteFeatureAlgorithm**
used by	element **ElongatedCylinderFeatureItem**
attributes	Name / Type / Use / Default / Fixed / Annotation id **QIFIdType** required — documentation: The id attribute is the QIF id of the feature, used for referencing.

annotation	documentation The ElongatedCylinderFeatureItemType defines an individual feature-of-size elongated cylinder feature, located by its center plane. An elongated cylinder feature can represent the ends of a round-ended slot in the case where the slot has independent tolerance requirements for its sides and ends.

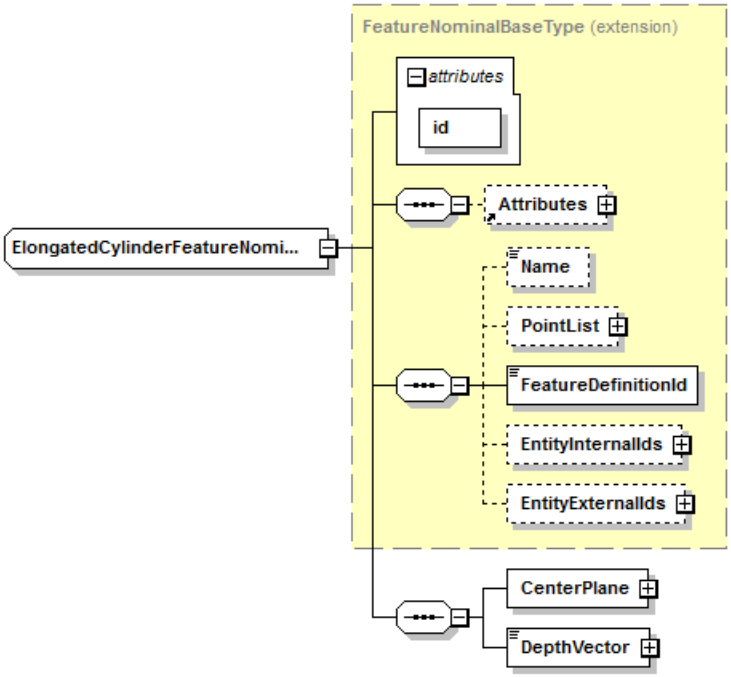
element **ElongatedCylinderFeatureItemType/DeterminationMode**

diagram	
type	**ElongatedCylinderActualDeterminationType**
properties	content complex
children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the elongated cylinder feature actual is determined.

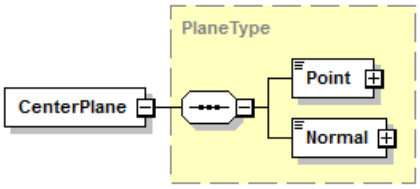
element **ElongatedCylinderFeatureItemType/SubstituteFeatureAlgorithm**

diagram	
type	**FeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**FeatureOfSizeSubstituteFeatureAlgorithmEnum OtherFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the elongated cylinder feature.

complexType **ElongatedCylinderFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **CenterPlane** **DepthVector**
used by	element **ElongatedCylinderFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ElongatedCylinderFeatureNominalType defines the elongated cylinder feature nominal information for an individual elongated cylinder feature.

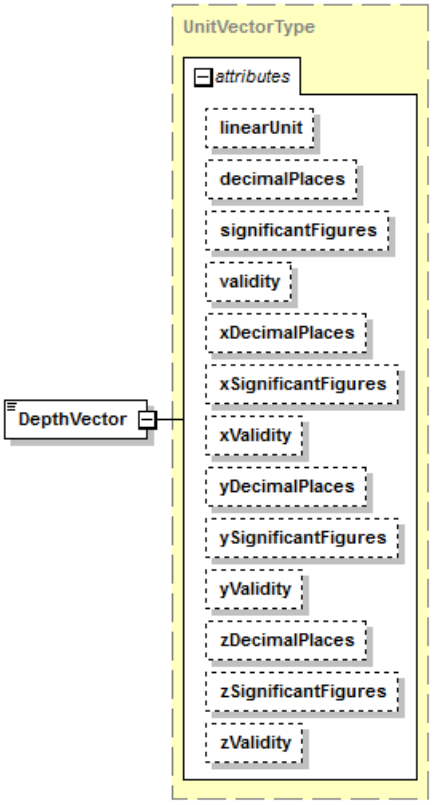
element **ElongatedCylinderFeatureNominalType/CenterPlane**

diagram	
type	**PlaneType**
properties	content complex
children	**Point Normal**
annotation	documentation The CenterPlane element gives the nominal location point and unit vector normal of the center plane of the elongated

	cylinder feature. The location point of the center plane is also the nominal location point of the elongated cylinder feature and lies midway between the cylindrical ends.

element **ElongatedCylinderFeatureNominalType/DepthVector**

diagram



type **UnitVectorType**

properties content complex

facets

Kind	Value	Annotation
length	3	

attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

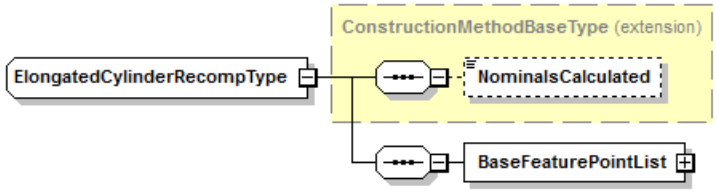
annotation

documentation

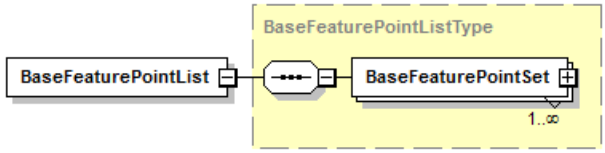
The DepthVector element is the nominal unit vector direction of the depth of the elongated cylinder. The depth vector is

	parallel to the axis vector of each cylindrical end and points into the elongated cylinder. The elongated cylinder does not extend from the location point in the direction opposite the depth vector.

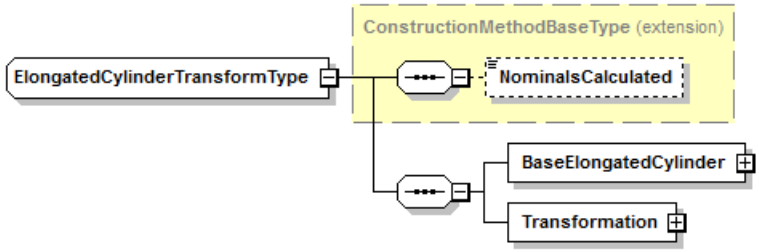
complexType **ElongatedCylinderRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **ElongatedCylinderConstructionMethodType/Recompensated**
annotation	documentation The ElongatedCylinderRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit elongated cylinder through the measurement points of base features.

element **ElongatedCylinderRecompType/BaseFeaturePointList**

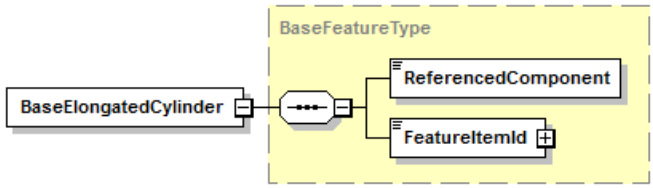
diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit elongated cylinder. The total number of points in the BaseFeaturePointSets in the list must be 9 or greater.

complexType **ElongatedCylinderTransformType**

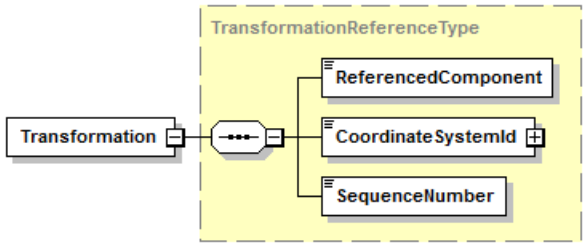
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseElongatedCylinder** **Transformation**
used by	element **ElongatedCylinderConstructionMethodType/Transform**

annotation	documentation The ElongatedCylinderTransformType defines an elongated cylinder construction by the transformation of an elongated cylinder through the specified nominal or actual coordinate system.

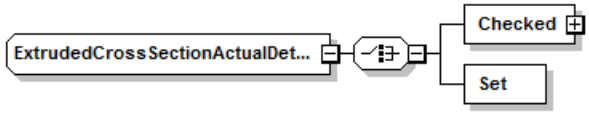
element **ElongatedCylinderTransformType/BaseElongatedCylinder**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseElongatedCylinder element identifies the elongated cylinder to be transformed.

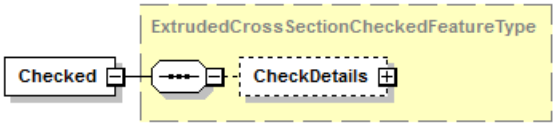
element **ElongatedCylinderTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent CoordinateSystemId SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the elongated cylinder.

complexType **ExtrudedCrossSectionActualDeterminationType**

diagram	
children	**Checked Set**
used by	element **ExtrudedCrossSectionFeatureItemType/DeterminationMode**
annotation	documentation The ElongatedCylinderActualDeterminationType defines how the extruded cross-section actual is determined, either by being set or by being checked (measured or constructed).

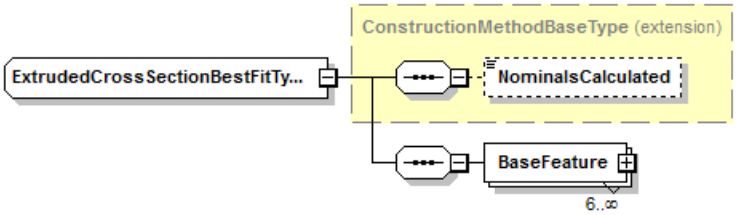
element **ExtrudedCrossSectionActualDeterminationType/Checked**

diagram	
type	**ExtrudedCrossSectionCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the extruded cross-section is checked from actual data, either measured or constructed.

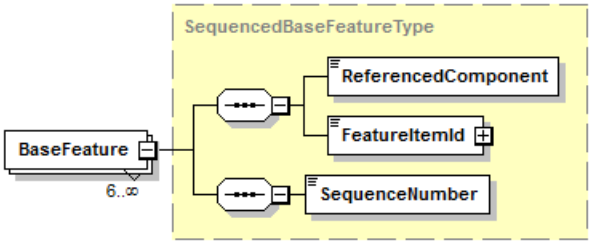
element **ExtrudedCrossSectionActualDeterminationType/Set**

diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the extruded cross-section actual is set to its nominal value.

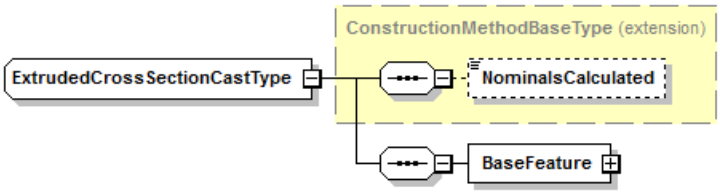
complexType **ExtrudedCrossSectionBestFitType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **ExtrudedCrossSectionConstructionMethodType/BestFit**
annotation	documentation The ExtrudedCrossSectionBestFitType defines the information for a best-fit extruded cross section which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the extruded cross section.

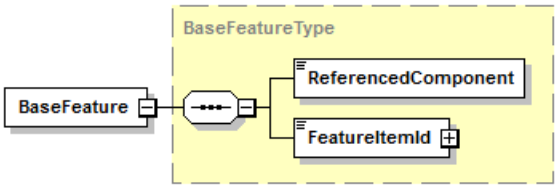
element **ExtrudedCrossSectionBestFitType/BaseFeature**

diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 6 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of an extruded cross section. The number of base features must be 6 or greater.

complexType **ExtrudedCrossSectionCastType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **ExtrudedCrossSectionConstructionMethodType/Cast**
annotation	documentation The ExtrudedCrossSectionCastType defines the cast of another feature type to an extruded cross section. The location, axis and size are copied from the base feature.

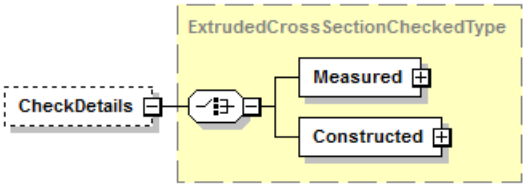
element **ExtrudedCrossSectionCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to an extruded cross section.

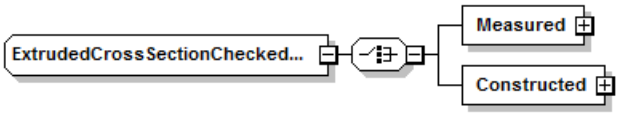
complexType **ExtrudedCrossSectionCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **ExtrudedCrossSectionActualDeterminationType/Checked**
annotation	documentation The ExtrudedCrossSectionCheckedFeatureType defines that an extruded cross-section feature is checked.

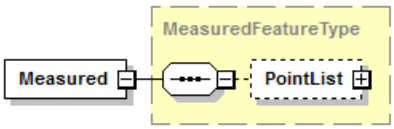
element **ExtrudedCrossSectionCheckedFeatureType/CheckDetails**

diagram	
type	**ExtrudedCrossSectionCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured** **Constructed**
annotation	documentation The optional CheckDetails element gives details about the extruded cross-section check (measurement or construction).

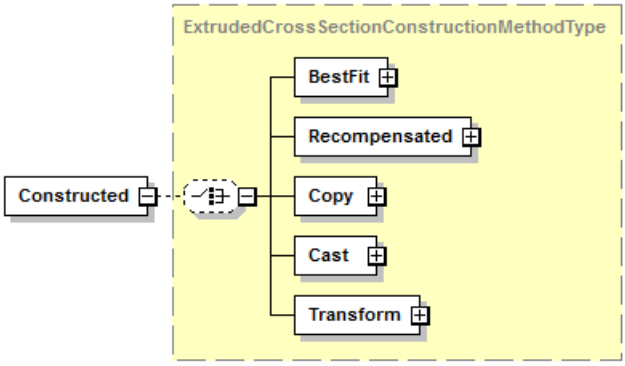
complexType **ExtrudedCrossSectionCheckedType**

diagram	
children	**Measured** **Constructed**
used by	element **ExtrudedCrossSectionCheckedFeatureType/CheckDetails**
annotation	documentation The ExtrudedCrossSectionCheckedType defines how the extruded cross section actual is checked, either by measurement or by construction.

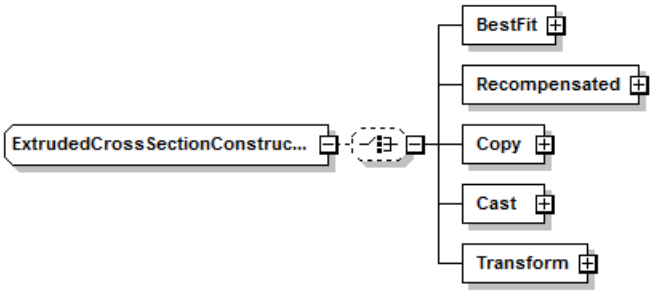
element **ExtrudedCrossSectionCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the extruded cross-section is measured.

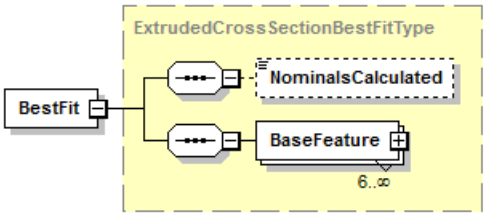
element **ExtrudedCrossSectionCheckedType/Constructed**

diagram	
type	**ExtrudedCrossSectionConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform**
annotation	documentation The Constructed element signifies that the extruded cross-section is constructed.

complexType **ExtrudedCrossSectionConstructionMethodType**

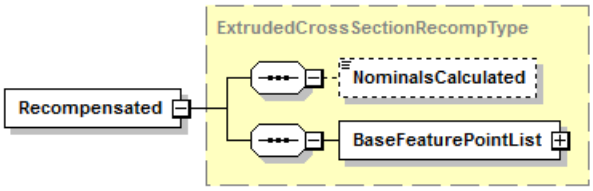
diagram	
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform**
used by	element **ExtrudedCrossSectionCheckedType/Constructed**
annotation	documentation The ExtrudedCrossSectionConstructionMethodType defines the method for constructing a unique nominal or actual extruded cross section feature.

element **ExtrudedCrossSectionConstructionMethodType/BestFit**

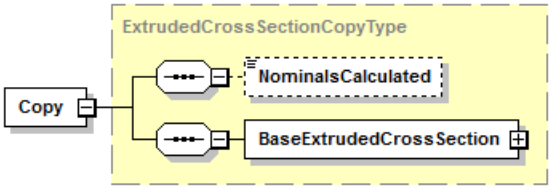
diagram	
type	**ExtrudedCrossSectionBestFitType**
properties	content complex

children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of an extruded cross section from 6 or more point-reducible base features. This element is in an optional choice.

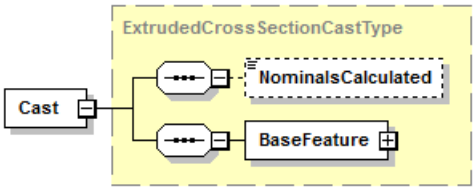
element **ExtrudedCrossSectionConstructionMethodType/Recompensated**

diagram	
type	**ExtrudedCrossSectionRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of an extruded cross section from 6 or more base feature points. This element is in an optional choice.

element **ExtrudedCrossSectionConstructionMethodType/Copy**

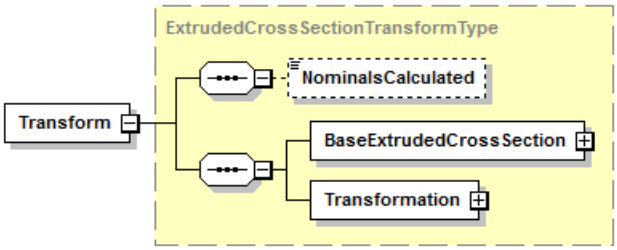
diagram	
type	**ExtrudedCrossSectionCopyType**
properties	content complex
children	**NominalsCalculated** **BaseExtrudedCrossSection**
annotation	documentation The Copy element describes the construction of an extruded cross section by the copying of a base extruded cross section. This element is in an optional choice.

element **ExtrudedCrossSectionConstructionMethodType/Cast**

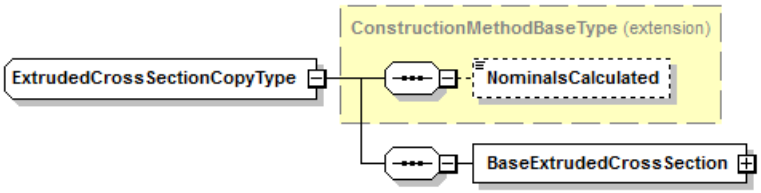
diagram	
type	**ExtrudedCrossSectionCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of an extruded cross section by the casting of a base feature. This element

	is in an optional choice.

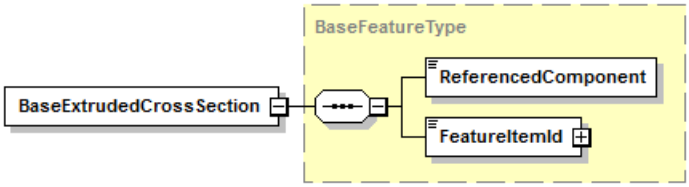
element **ExtrudedCrossSectionConstructionMethodType/Transform**

diagram	
type	**ExtrudedCrossSectionTransformType**
properties	content complex
children	**NominalsCalculated** **BaseExtrudedCrossSection** **Transformation**
annotation	documentation The Transform element describes the construction of an extruded cross section by the transformation of a base extruded cross section. This element is in an optional choice.

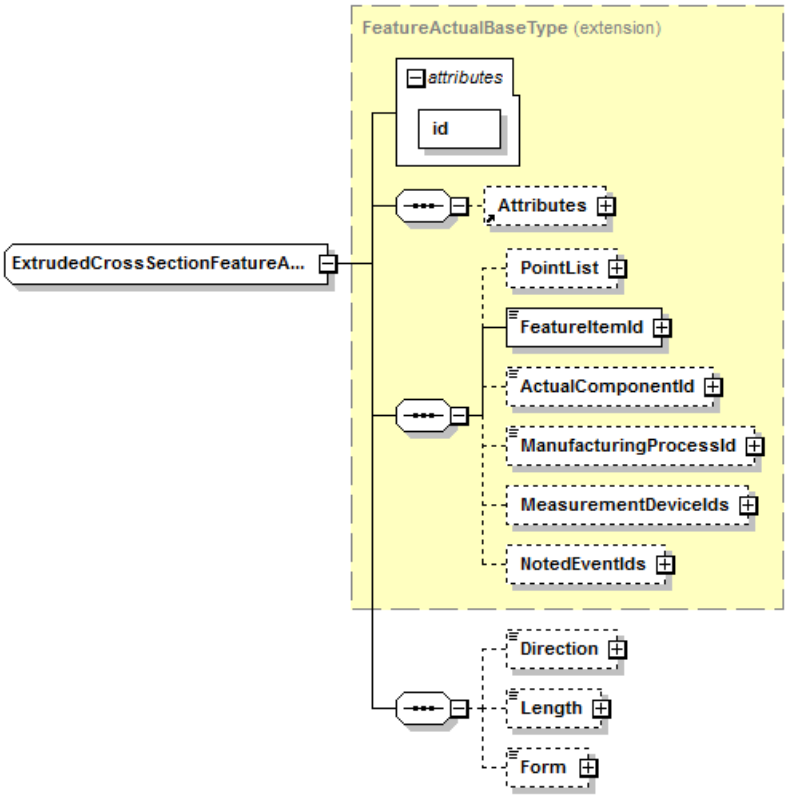
complexType **ExtrudedCrossSectionCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseExtrudedCrossSection**
used by	element **ExtrudedCrossSectionConstructionMethodType/Copy**
annotation	documentation The ExtrudedCrossSectionCopyType defines a copied extruded cross section construction.

element **ExtrudedCrossSectionCopyType/BaseExtrudedCrossSection**

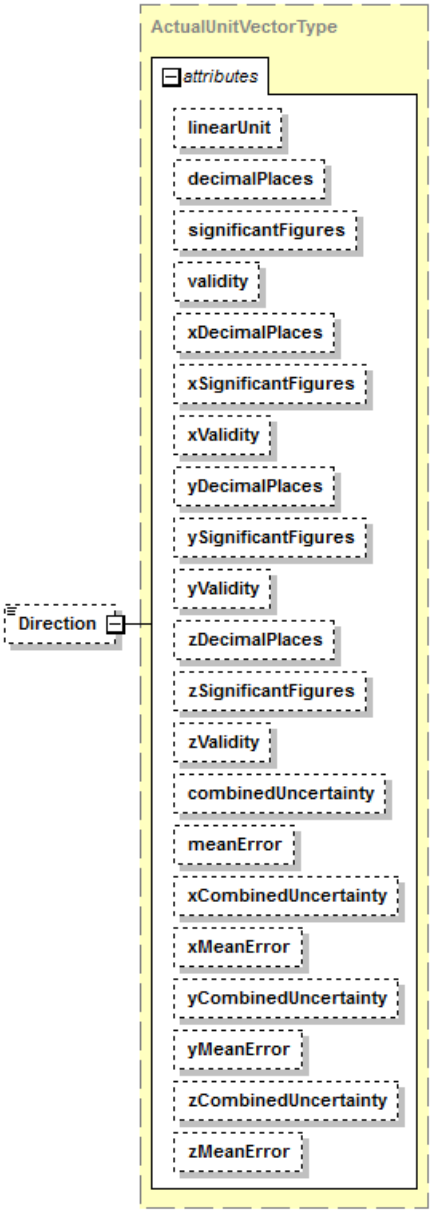
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseExtrudedCrossSection element identifies the extruded cross section to be copied.

complexType **ExtrudedCrossSectionFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **Direction** **Length** **Form**
used by	element **ExtrudedCrossSectionFeatureActual**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ExtrudedCrossSectionFeatureActualType defines the extruded cross-section feature actual information for an individual extruded cross-section feature.

element **ExtrudedCrossSectionFeatureActualType/Direction**

diagram



type	**ActualUnitVectorType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

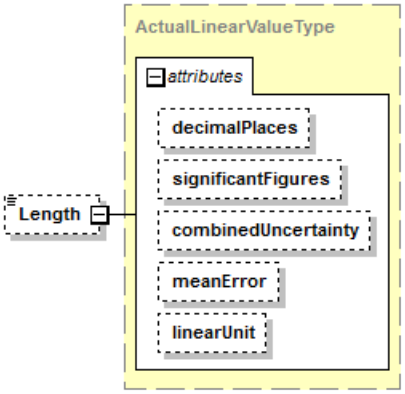
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Direction element is the vector representing the direction along which the cross-section is extruded.	

element **ExtrudedCrossSectionFeatureActualType/Length**

diagram



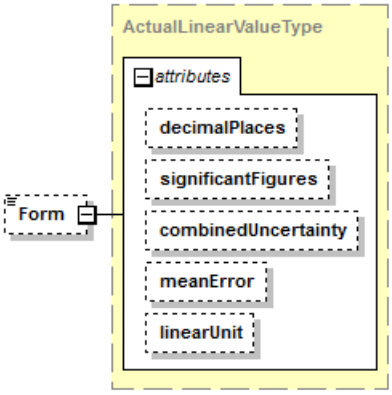
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

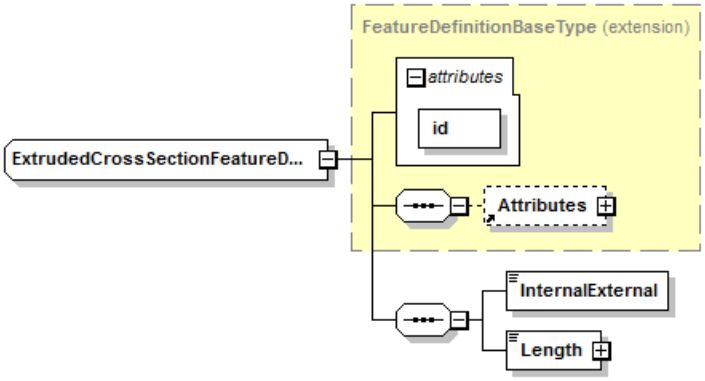
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is

	linearUnit **xs:token**	a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Length element is the length over which the extruded cross-section is extruded.	

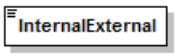
element **ExtrudedCrossSectionFeatureActualType/Form**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Form element is the form error (straightness) of the extruded cross-section from a report or an analysis.

complexType **ExtrudedCrossSectionFeatureDefinitionType**

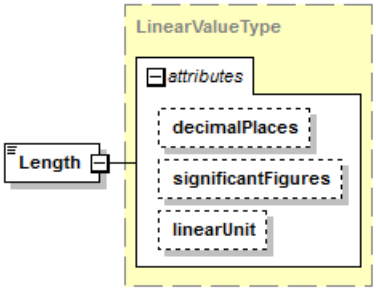
diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes** **InternalExternal** **Length**
used by	element **ExtrudedCrossSectionFeatureDefinition**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ExtrudedCrossSectionFeatureDefinitionType defines the extruded cross-section feature nominal information that can be common to one or more extruded cross-section features.

element **ExtrudedCrossSectionFeatureDefinitionType/InternalExternal**

diagram	
type	**InternalExternalEnumType**
properties	content simple
facets	Kind: enumeration, Value: INTERNAL; Kind: enumeration, Value: EXTERNAL; Kind: enumeration, Value: NOT_APPLICABLE; Annotation:
annotation	documentation The InternalExternal element indicates whether the feature is internal or external.

element **ExtrudedCrossSectionFeatureDefinitionType/Length**

diagram



type **LinearValueType**

properties content complex

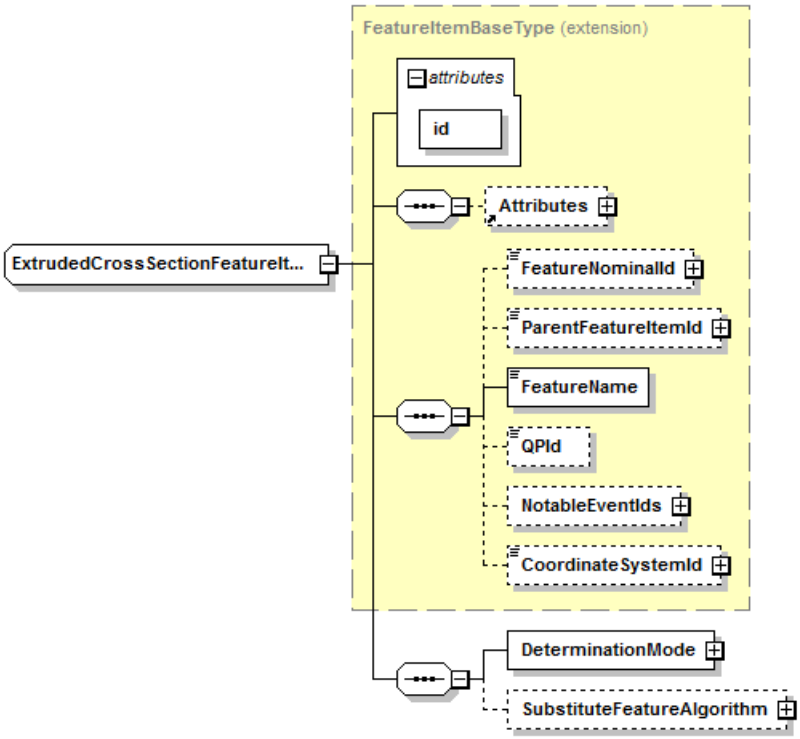
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.

annotation documentation
The Length element is the nominal length of the feature in the direction of extrusion.

complexType **ExtrudedCrossSectionFeatureItemType**

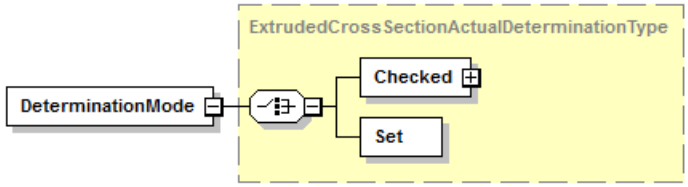
diagram



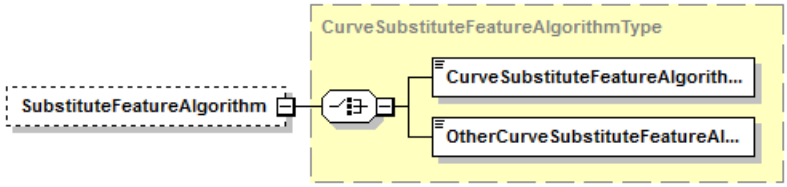
type extension of **FeatureItemBaseType**

properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **ExtrudedCrossSectionFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ExtrudedCrossSectionFeatureItemType defines an individual extruded cross-section feature. An extruded cross-section feature is formed by extruding a planar curve a distance along a vector normal to the plane of the curve.

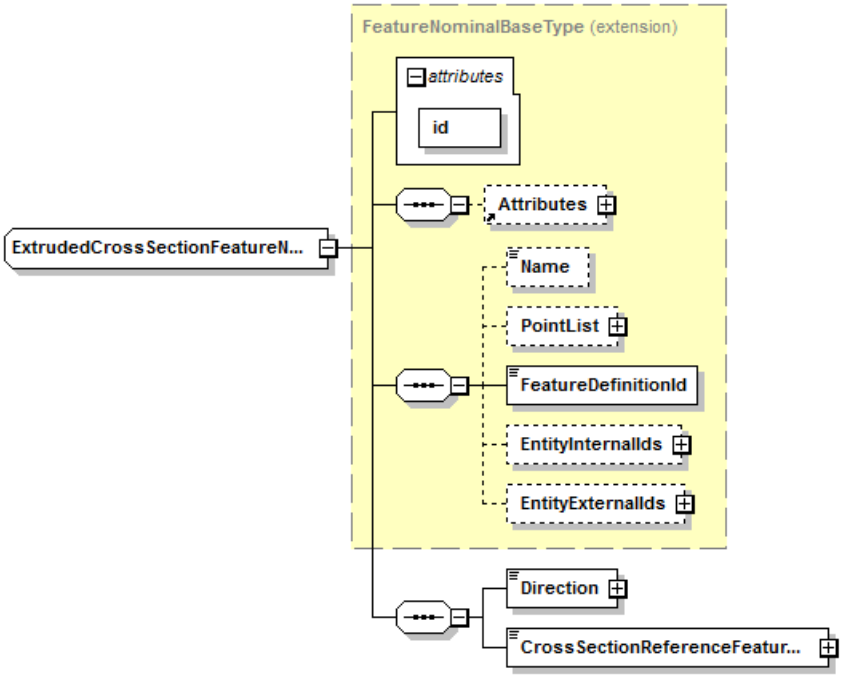
element **ExtrudedCrossSectionFeatureItemType/DeterminationMode**

diagram	
type	**ExtrudedCrossSectionActualDeterminationType**
properties	content complex
children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the extruded cross-section feature actual is determined.

element **ExtrudedCrossSectionFeatureItemType/SubstituteFeatureAlgorithm**

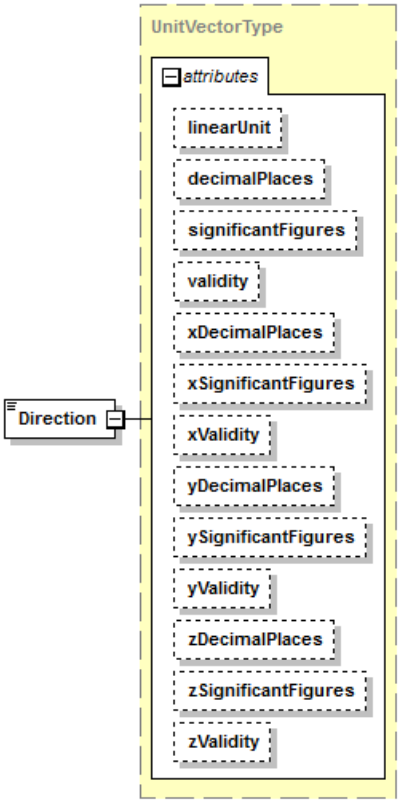
diagram	
type	**CurveSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**CurveSubstituteFeatureAlgorithmEnum** **OtherCurveSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the extruded cross-section feature.

complexType **ExtrudedCrossSectionFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **Direction** **CrossSectionReferenceFeatureId**
used by	element **ExtrudedCrossSectionFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ExtrudedCrossSectionFeatureNominalType defines the extruded cross-section feature nominal information for an individual extruded cross-section feature.

element **ExtrudedCrossSectionFeatureNominalType/Direction**

diagram



type **UnitVectorType**

properties content complex

facets

Kind	Value	Annotation
length	3	

attributes

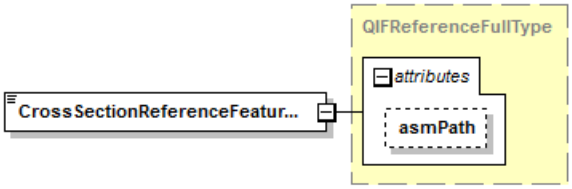
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

annotation

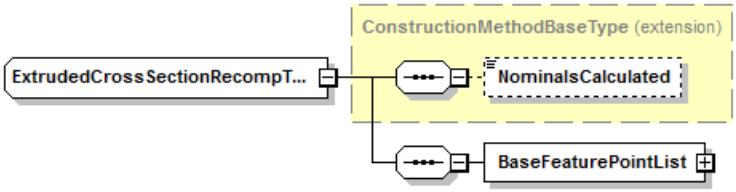
documentation

The Direction element is the unit vector representing the extrusion direction.

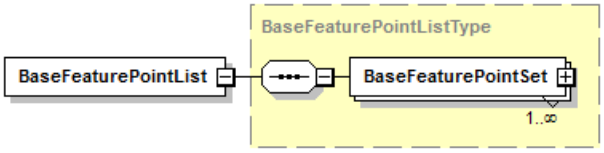
element **ExtrudedCrossSectionFeatureNominalType/CrossSectionReferenceFeatureId**

diagram	
type	**QIFReferenceFullType**
properties	content complex
attributes	Name: asmPath Type: **QIFIdType** Use: Default: Fixed: Annotation: documentation: The optional asmPath attribute is an id which must be used for locating of the assembly path within the AsmPaths. The assembly path (instantiation chain) unambiguously identifies a model entity within an assembly.
annotation	documentation The CrossSectionReferenceFeatureId element is the QIF id of the nominal feature defining the base cross section. This feature is extruded by Length from the location of the base cross-section in the extrusion direction. The value of the element must be the QIF id of a nominal feature.

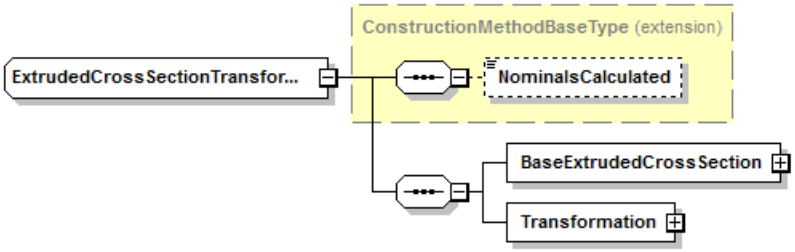
complexType **ExtrudedCrossSectionRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **ExtrudedCrossSectionConstructionMethodType/Recompensated**
annotation	documentation The ExtrudedCrossSectionRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit extruded cross section through the measurement points of base features.

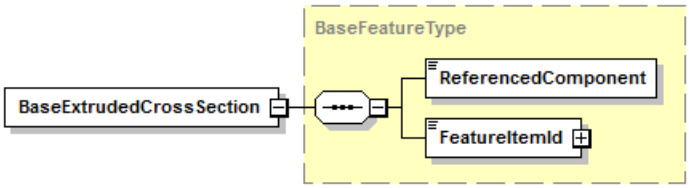
element **ExtrudedCrossSectionRecompType/BaseFeaturePointList**

diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit extruded cross section. The total number of points in the BaseFeaturePointSets in the list must be 6 or greater.

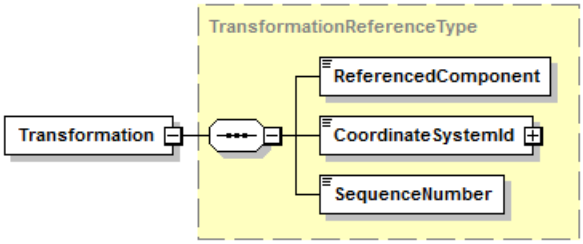
complexType **ExtrudedCrossSectionTransformType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseExtrudedCrossSection** **Transformation**
used by	element **ExtrudedCrossSectionConstructionMethodType/Transform**
annotation	documentation The ExtrudedCrossSectionTransformType defines an extruded cross section construction by the transformation of an extruded cross section through the specified nominal or actual coordinate system.

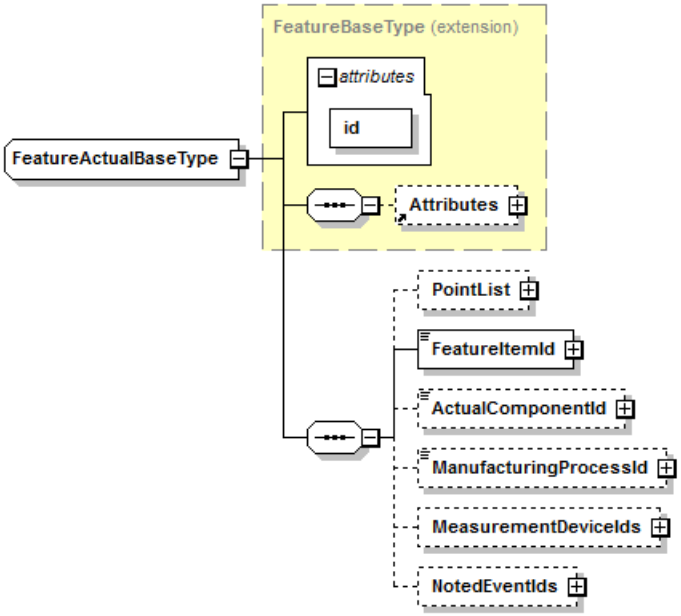
element **ExtrudedCrossSectionTransformType/BaseExtrudedCrossSection**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseExtrudedCrossSection element identifies the extruded cross section to be transformed.

element **ExtrudedCrossSectionTransformType/Transformation**

diagram	
type	TransformationReferenceType
properties	content complex
children	ReferencedComponent CoordinateSystemId SequenceNumber
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the extruded cross section.

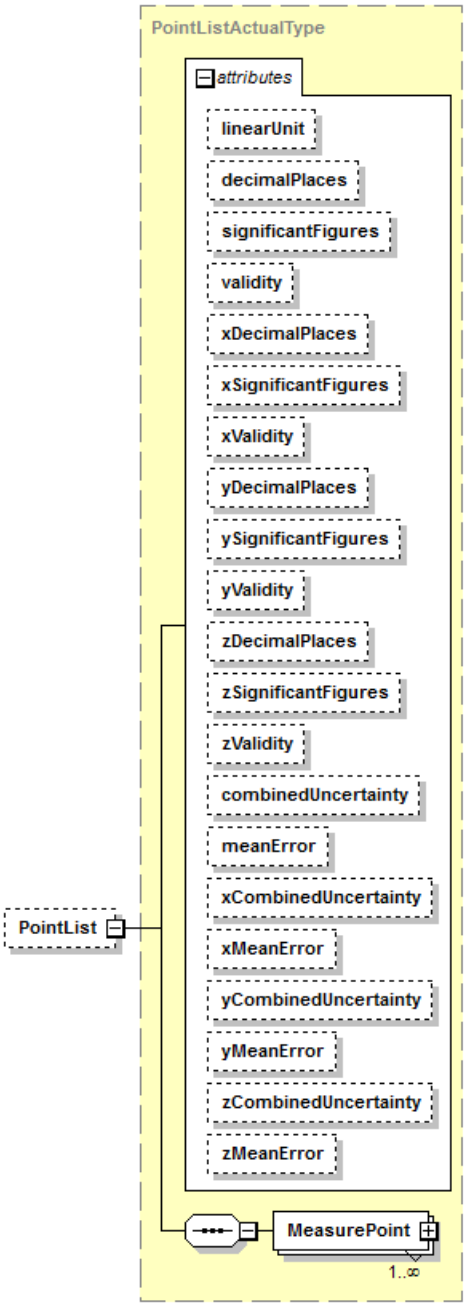
complexType **FeatureActualBaseType**

diagram	
type	extension of FeatureBaseType
properties	base FeatureBaseType abstract true
children	**Attributes** PointList FeatureItemId ActualComponentId ManufacturingProcessId MeasurementDeviceIds NotedEventIds
used by	element **FeatureActual** complexTypes ArcFeatureActualType CircleFeatureActualType CompositeFeatureActualBaseType ConeFeatureActualType ConicalSegmentFeatureActualType CuboidFeatureActualType CylinderFeatureActualType CylindricalSegmentFeatureActualType EdgePointFeatureActualType EllipseFeatureActualType ElongatedCylinderFeatureActualType ExtrudedCrossSectionFeatureActualType GenericFeatureActualType LineFeatureActualType OppositeLinesFeatureActualType OppositePlanesFeatureActualType PlaneFeatureActualType PointDefinedCurveFeatureActualType PointDefinedSurfaceFeatureActualType PointFeatureActualType SphereFeatureActualType SphericalSegmentFeatureActualType SurfaceOfRevolutionFeatureActualType ThreadedFeatureActualType ToroidalSegmentFeatureActualType TorusFeatureActualType
attributes	Name Type Use Default Fixed Annotation

	id	**QIFIdType**	required	documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The FeatureActualBaseType is the abstract base type for feature actuals. A feature actual holds all information for a measured or constructed feature, e.g. feature size and feature location.			

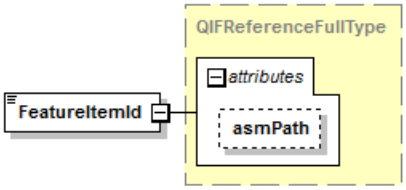
element **FeatureActualBaseType/PointList**

diagram



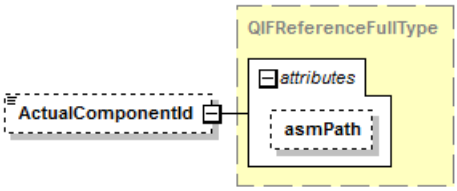
type	**PointListActualType**
properties	minOcc 0 maxOcc 1 content complex
children	**MeasurePoint**
attributes	Name / Type / Use / Default / Fixed / Annotation linearUnit **xs:token** decimalPlaces **xs:nonNegativeInteger** significantFigures **xs:nonNegativeInteger** validity **ValidityEnumType** xDecimalPlaces **xs:nonNegativeInteger** xSignificantFigures **xs:nonNegativeInteger** xValidity **ValidityEnumType** yDecimalPlaces **xs:nonNegativeInteger** ySignificantFigures **xs:nonNegativeInteger** yValidity **ValidityEnumType** zDecimalPlaces **xs:nonNegativeInteger** zSignificantFigures **xs:nonNegativeInteger** zValidity **ValidityEnumType** combinedUncertainty **xs:decimal** meanError **xs:decimal** xCombinedUncertainty **xs:decimal** xMeanError **xs:decimal** yCombinedUncertainty **xs:decimal** yMeanError **xs:decimal** zCombinedUncertainty **xs:decimal** zMeanError **xs:decimal**
annotation	documentation The optional PointList element is a list of actual measurement points for the feature.

element **FeatureActualBaseType/FeatureItemId**

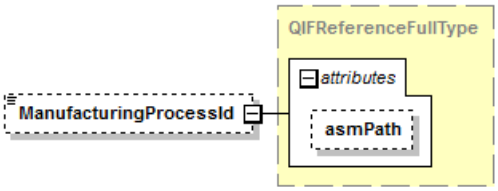
diagram	
type	**QIFReferenceFullType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation asmPath **QIFIdType** documentation The optional asmPath attribute is an id which must be used for locating of the assembly path within the AsmPaths.

	The assembly path (instantiation chain) unambiguously identifies a model entity within an assembly.
annotation	documentation The FeatureItemId element is the QIF id of the associated feature item which may or may not reference feature nominal information.

element **FeatureActualBaseType/ActualComponentId**

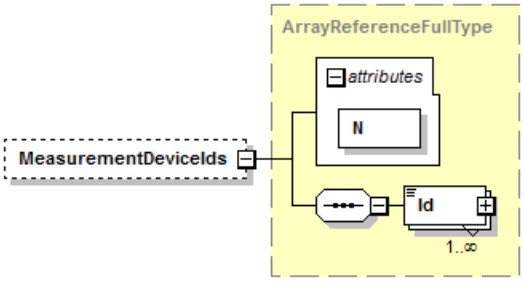
diagram	
type	**QIFReferenceFullType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name: asmPath Type: **QIFIdType** Use: Default: Fixed: Annotation: documentation The optional asmPath attribute is an id which must be used for locating of the assembly path within the AsmPaths. The assembly path (instantiation chain) unambiguously identifies a model entity within an assembly.
annotation	documentation The optional ActualComponentId element is the QIF id of the actual component to which this feature actual belongs.

element **FeatureActualBaseType/ManufacturingProcessId**

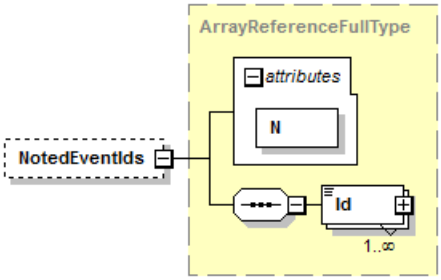
diagram	
type	**QIFReferenceFullType**

properties	minOcc 0 maxOcc 1 content complex
attributes	Name: asmPath Type: **QIFIdType** Use: Default: Fixed: Annotation documentation: The optional asmPath attribute is an id which must be used for locating of the assembly path within the AsmPaths. The assembly path (instantiation chain) unambiguously identifies a model entity within an assembly.
annotation	documentation The optional ManufacturingProcessId element is a reference to the traceability information for the process used to manufacture this feature.

element **FeatureActualBaseType/MeasurementDeviceIds**

diagram	
type	**ArrayReferenceFullType**
properties	minOcc 0 maxOcc 1 content complex
children	**Id**
attributes	Name: N Type: **NaturalType** Use: required Default: Fixed: Annotation documentation: The required N attribute shows how many Id elements are present in this array.
annotation	documentation The optional MeasurementDeviceIds element is a list of references to the measurement devices used in the inspection of the feature.

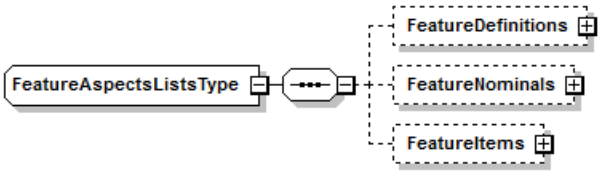
element **FeatureActualBaseType/NotedEventIds**

diagram	
type	**ArrayReferenceFullType**
properties	minOcc 0 maxOcc 1 content complex
children	**Id**
attributes	Name: N Type: **NaturalType** Use: required Default: Fixed: Annotation: documentation: The required N attribute shows how many Id elements are present in this array.
annotation	documentation The optional NotedEventIds element is a list of QIF ids of noted events that happened during the measurement of this feature.

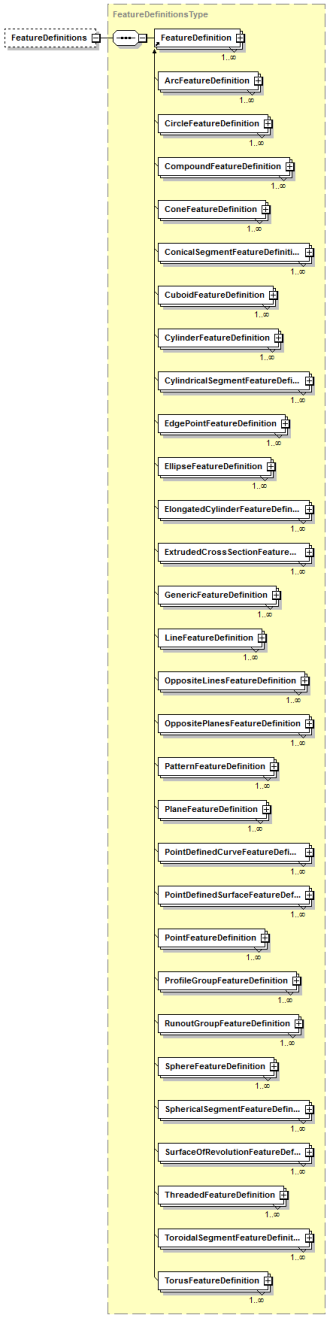
complexType **FeatureActualsType**

diagram	
children	**FeatureActual**
used by	element **MeasuredFeaturesType/FeatureActuals**
annotation	documentation The FeatureActualsType defines a list of feature actuals.

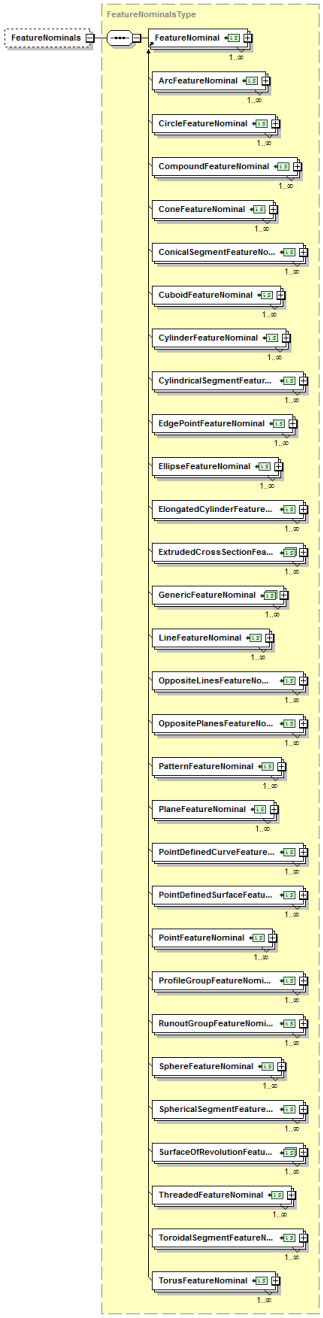
complexType **FeatureAspectsListsType**

diagram	
children	**FeatureDefinitions** **FeatureNominals** **FeatureItems**
used by	element **Features**
annotation	documentation The FeaturesAspectsListsType defines lists of the four aspects of a set of inspection features.

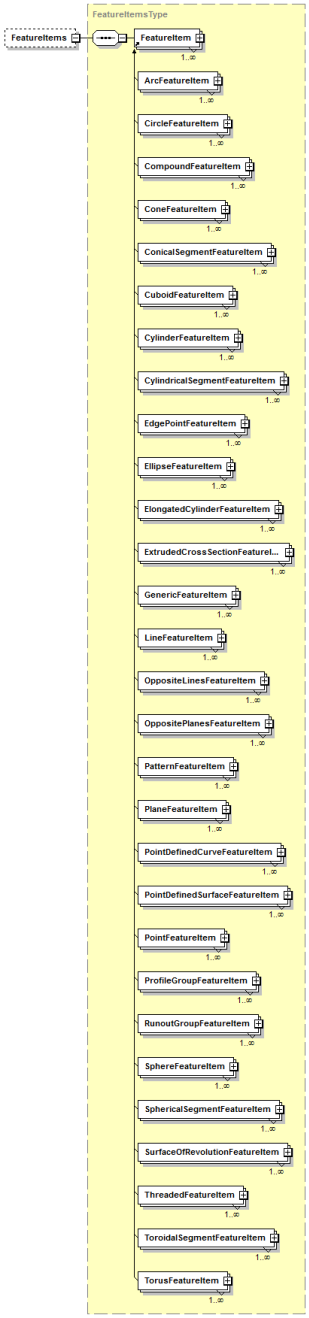
element **FeatureAspectsListsType/FeatureDefinitions**

diagram	
type	**FeatureDefinitionsType**
properties	minOcc 0 maxOcc 1 content complex
children	**FeatureDefinition**
annotation	documentation The optional FeatureDefinitions element is a list of definitions of the inspection features.

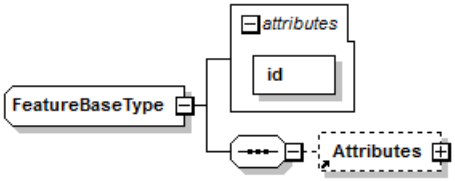
element **FeatureAspectsListsType/FeatureNominals**

diagram	
type	**FeatureNominalsType**
properties	minOcc 0 maxOcc 1 content complex
children	**FeatureNominal**
annotation	documentation The optional FeatureNominals element is a list of Nominal inspection features.

element **FeatureAspectsListsType/FeatureItems**

diagram	
type	**FeatureItemsType**
properties	minOcc 0 maxOcc 1 content complex
children	**FeatureItem**
annotation	documentation The optional FeatureItems element is a list of instances of inspection features.

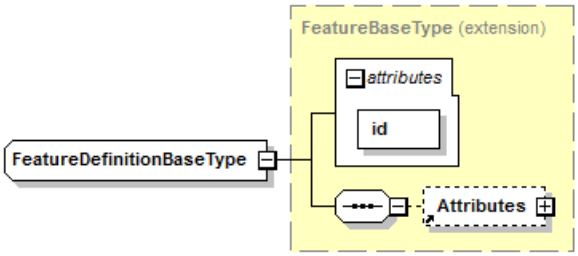
complexType **FeatureBaseType**

diagram	
properties	abstract true
children	**Attributes**
used by	complexTypes **FeatureActualBaseType** **FeatureDefinitionBaseType** **FeatureItemBaseType** **FeatureNominalBaseType**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The FeatureBaseType is the abstract base type for feature definitions, feature nominals, feature items, and feature actuals. It describes a subset of information common to all features.

attribute **FeatureBaseType/@id**

type	**QIFIdType**
properties	use required
annotation	documentation The id attribute is the QIF id of the feature, used for referencing.

complexType **FeatureDefinitionBaseType**

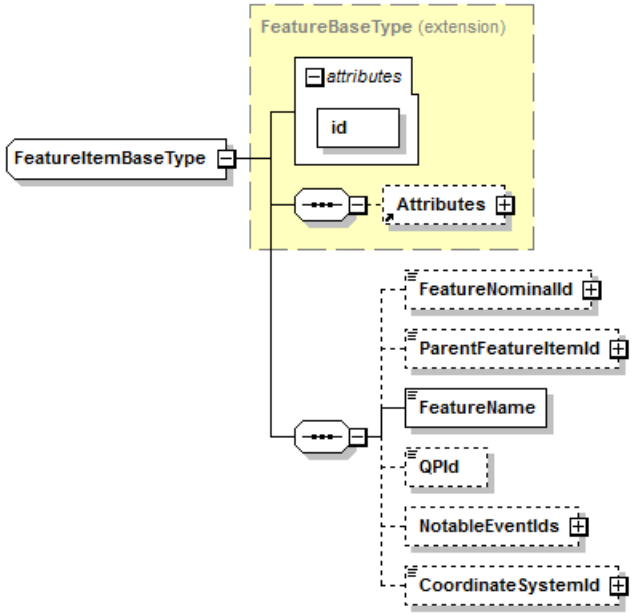
diagram	
type	extension of **FeatureBaseType**
properties	base FeatureBaseType abstract true
children	**Attributes**
used by	element **FeatureDefinition** complexTypes **ArcFeatureDefinitionType** **CircleFeatureDefinitionType** **CompositeFeatureDefinitionBaseType** **ConeFeatureDefinitionType** **ConicalSegmentFeatureDefinitionType** **CuboidFeatureDefinitionType** **CylinderFeatureDefinitionType** **CylindricalSegmentFeatureDefinitionType** **EdgePointFeatureDefinitionType** **EllipseFeatureDefinitionType** **ElongatedCylinderFeatureDefinitionType** **ExtrudedCrossSectionFeatureDefinitionType** **GenericFeatureDefinitionType** **LineFeatureDefinitionType** **OppositeLinesFeatureDefinitionType** **OppositePlanesFeatureDefinitionType** **PlaneFeatureDefinitionType** **PointDefinedCurveFeatureDefinitionType** **PointDefinedSurfaceFeatureDefinitionType** **PointFeatureDefinitionType** **SphereFeatureDefinitionType** **SphericalSegmentFeatureDefinitionType** **SurfaceOfRevolutionFeatureDefinitionType**

	ThreadedFeatureDefinitionType **ToroidalSegmentFeatureDefinitionType** **TorusFeatureDefinitionType**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The FeatureDefinitionBaseType is the abstract base type for feature definitions. A feature definition holds that portion of feature nominal information which can be shared among several features, e.g. feature size.

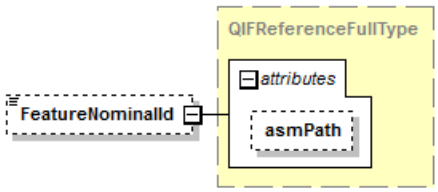
complexType **FeatureDefinitionsType**

diagram	
children	**FeatureDefinition**
used by	element **FeatureAspectsListsType/FeatureDefinitions**
annotation	documentation The FeatureDefinitionsType defines a list of definitions of inspection features.

complexType **FeatureItemBaseType**

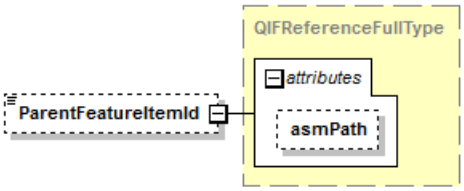
diagram	
type	extension of **FeatureBaseType**
properties	base FeatureBaseType abstract true
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId**
used by	element **FeatureItem** complexTypes **ArcFeatureItemType** **CircleFeatureItemType** **CompositeFeatureItemBaseType** **ConeFeatureItemType** **ConicalSegmentFeatureItemType** **CuboidFeatureItemType** **CylinderFeatureItemType** **CylindricalSegmentFeatureItemType** **EdgePointFeatureItemType** **EllipseFeatureItemType** **ElongatedCylinderFeatureItemType** **ExtrudedCrossSectionFeatureItemType** **GenericFeatureItemType** **LineFeatureItemType** **OppositeLinesFeatureItemType** **OppositePlanesFeatureItemType** **PlaneFeatureItemType** **PointDefinedCurveFeatureItemType** **PointDefinedSurfaceFeatureItemType** **PointFeatureItemType** **SphereFeatureItemType** **SphericalSegmentFeatureItemType** **SurfaceOfRevolutionFeatureItemType** **ThreadedFeatureItemType** **ToroidalSegmentFeatureItemType** **TorusFeatureItemType**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The FeatureItemBaseType is the abstract base type for feature items. A feature item represents a single feature with optional nominal data.

element **FeatureItemBaseType/FeatureNominalId**

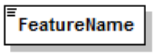
diagram	

type	**QIFReferenceFullType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name: asmPath Type: **QIFIdType** Use: Default: Fixed: Annotation documentation: The optional asmPath attribute is an id which must be used for locating of the assembly path within the AsmPaths. The assembly path (instantiation chain) unambiguously identifies a model entity within an assembly.
annotation	documentation The optional FeatureNominalId element is the QIF id of the feature nominal.

element **FeatureItemBaseType/ParentFeatureItemId**

diagram	
type	**QIFReferenceFullType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name: asmPath Type: **QIFIdType** Use: Default: Fixed: Annotation documentation: The optional asmPath attribute is an id which must be used for locating of the assembly path within the AsmPaths. The assembly path (instantiation chain) unambiguously identifies a model entity within an assembly.
annotation	documentation The optional ParentFeatureItemId element is the QIF id of the parent feature item when this feature item is derived from another feature item.

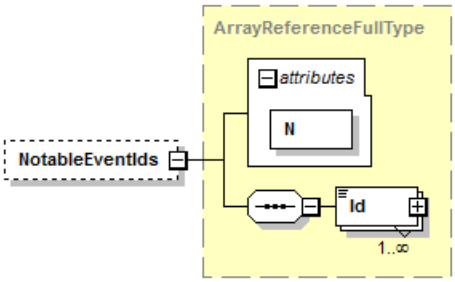
element **FeatureItemBaseType/FeatureName**

diagram	
type	**xs:token**
properties	content simple
annotation	documentation The FeatureName element is the name of the feature, e.g. CIRC1, PLANE_3.

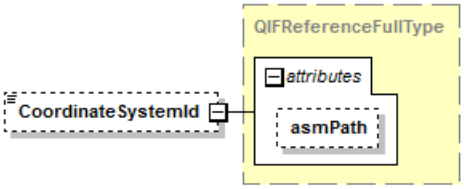
element **FeatureItemBaseType/QPId**

diagram	
type	**QPIdType**
properties	minOcc 0 maxOcc 1 content simple
annotation	documentation The optional QPId element is a persistent identifier for the feature item. If used, it should be generated using a widely accepted UUID generator.

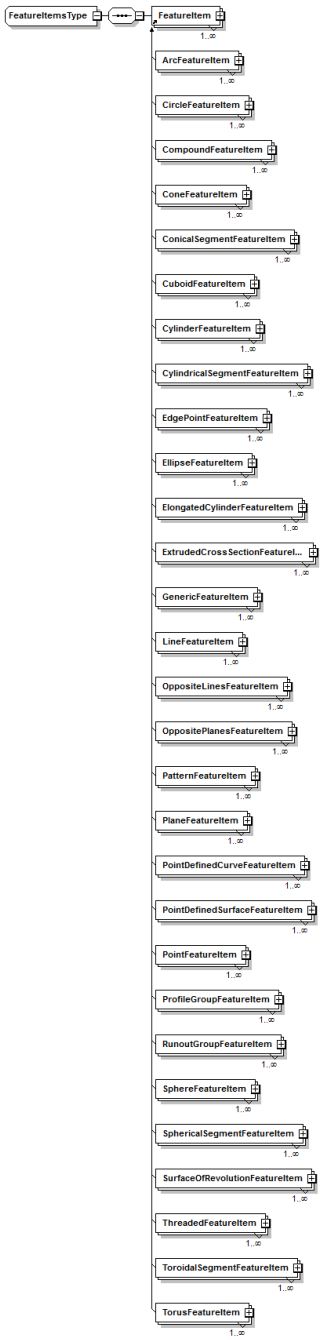
element **FeatureItemBaseType/NotableEventIds**

diagram	
type	**ArrayReferenceFullType**
properties	minOcc 0 maxOcc 1 content complex
children	**Id**
attributes	Name: N Type: **NaturalType** Use: required Default: Fixed: Annotation: documentation The required N attribute shows how many Id elements are present in this array.
annotation	documentation The optional NotableEventIds element is a list of the QIF ids of notable events associated with the measurement of this feature.

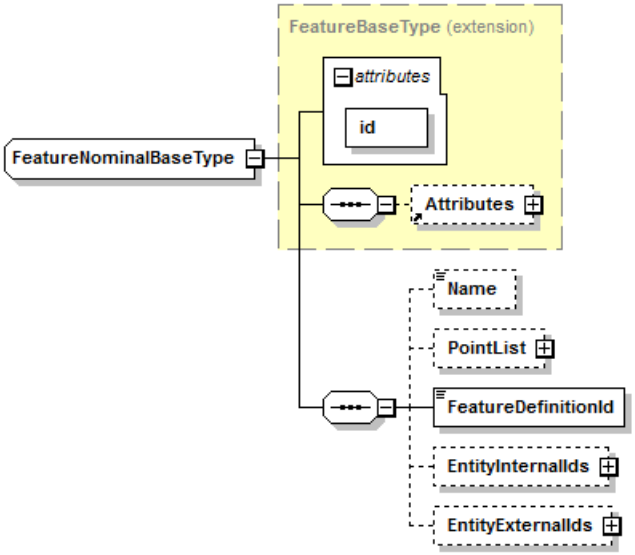
element **FeatureItemBaseType/CoordinateSystemId**

diagram	
type	**QIFReferenceFullType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name: asmPath Type: **QIFIdType** Use: Default: Fixed: Annotation: documentation: The optional asmPath attribute is an id which must be used for locating of the assembly path within the AsmPaths. The assembly path (instantiation chain) unambiguously identifies a model entity within an assembly.
annotation	documentation The optional CoordinateSystemId element is the QIF id of the coordinate system in which the feature is checked or set.

complexType **FeatureItemsType**

diagram	
children	**FeatureItem**
used by	element **FeatureAspectsListsType/FeatureItems**
annotation	documentation The FeatureItemsType defines a list of feature items.

complexType **FeatureNominalBaseType**

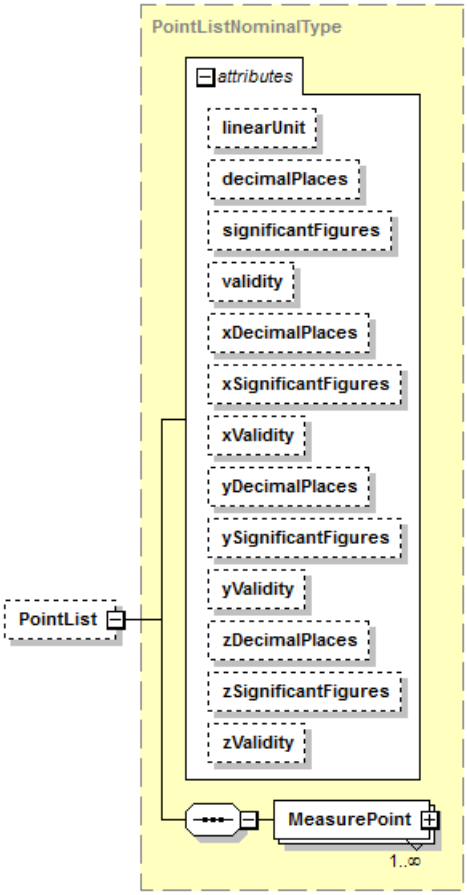
diagram	
type	extension of **FeatureBaseType**
properties	base FeatureBaseType abstract true
children	**Attributes Name PointList FeatureDefinitionId EntityInternalIds EntityExternalIds**
used by	element **FeatureNominal** complexTypes **ArcFeatureNominalType CircleFeatureNominalType CompositeFeatureNominalBaseType ConeFeatureNominalType ConicalSegmentFeatureNominalType CuboidFeatureNominalType CylinderFeatureNominalType CylindricalSegmentFeatureNominalType EdgePointFeatureNominalType EllipseFeatureNominalType ElongatedCylinderFeatureNominalType ExtrudedCrossSectionFeatureNominalType GenericFeatureNominalType LineFeatureNominalType OppositeLinesFeatureNominalType OppositePlanesFeatureNominalType PlaneFeatureNominalType PointDefinedCurveFeatureNominalType PointDefinedSurfaceFeatureNominalType PointFeatureNominalType SphereFeatureNominalType SphericalSegmentFeatureNominalType SurfaceOfRevolutionFeatureNominalType ThreadedFeatureNominalType ToroidalSegmentFeatureNominalType TorusFeatureNominalType**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The FeatureNominalBaseType is the abstract base type for feature nominals. A feature nominal holds that portion of feature nominal information which cannot be shared among several features, e.g. feature location.

element **FeatureNominalBaseType/Name**

diagram	
type	**xs:token**
properties	minOcc 0 maxOcc 1 content simple
annotation	documentation The optional Name element is the name of the feature nominal.

element **FeatureNominalBaseType/PointList**

diagram



type	**PointListNominalType**
properties	minOcc 0 maxOcc 1 content complex
children	**MeasurePoint**

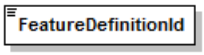
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

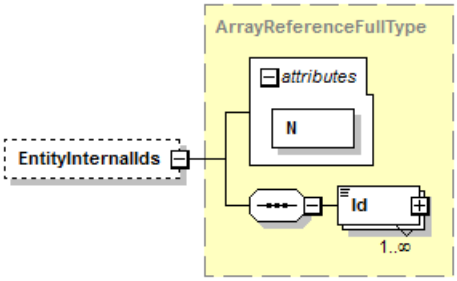
annotation

documentation
The optional PointList element is a list of target measurement points for the feature.

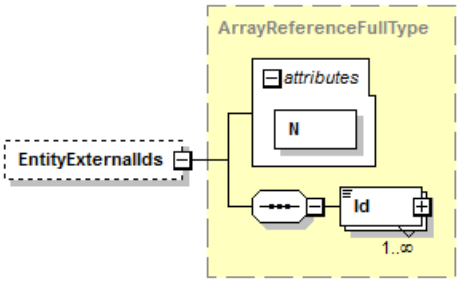
element **FeatureNominalBaseType/FeatureDefinitionId**

diagram	
type	**QIFReferenceType**
properties	content complex
annotation	documentation The FeatureDefinitionId element is the QIF id of the associated feature definition.

element **FeatureNominalBaseType/EntityInternalIds**

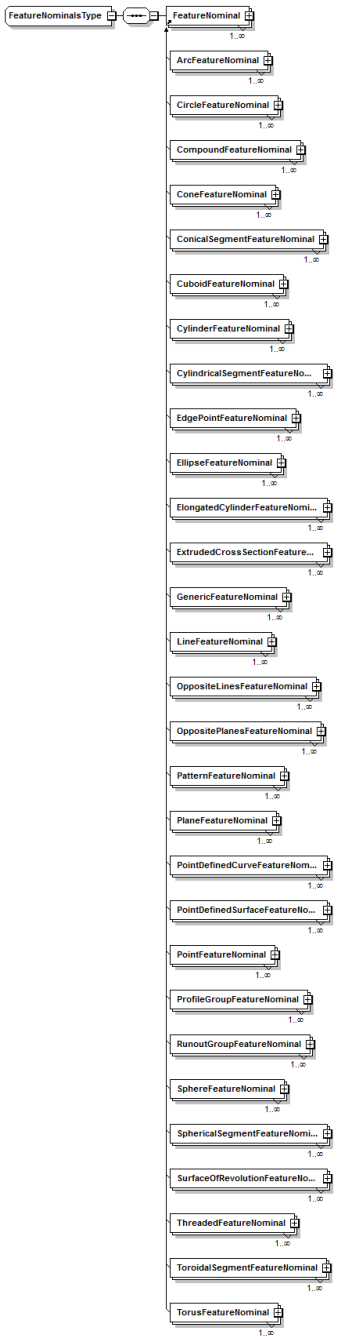
diagram	
type	**ArrayReferenceFullType**
properties	minOcc 0 maxOcc 1 content complex
children	**Id**
attributes	Name: N; Type: **NaturalType**; Use: required; Default: ; Fixed: ; Annotation: documentation The required N attribute shows how many Id elements are present in this array.
annotation	documentation The EntityInternalIds element is a list of the QIF ids of internally-defined CAD entities associated with this feature nominal.

element **FeatureNominalBaseType/EntityExternalIds**

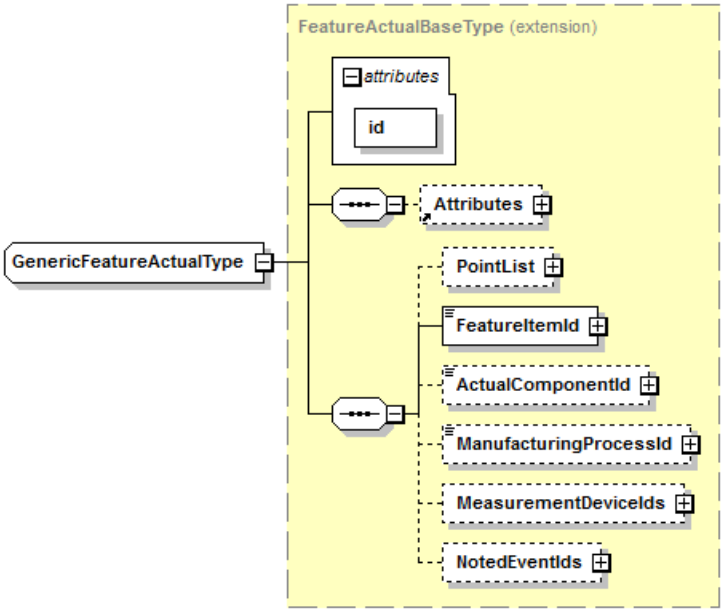
diagram	
type	**ArrayReferenceFullType**
properties	minOcc 0 maxOcc 1

	content complex					
children	**Id**					
attributes	Name N	Type **NaturalType**	Use required	Default	Fixed	Annotation documentation The required N attribute shows how many Id elements are present in this array.
annotation	documentation The EntityExternalIds element is a list of the QIF ids of instances of EntityExternalType associated with this feature nominal.					

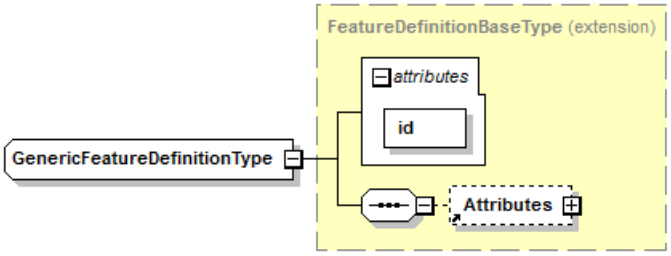
complexType **FeatureNominalsType**

diagram	
children	**FeatureNominal**
used by	element **FeatureAspectsListsType/FeatureNominals**
annotation	documentation The FeatureNominalsType defines a list of nominal definitions of inspection features.

complexType **GenericFeatureActualType**

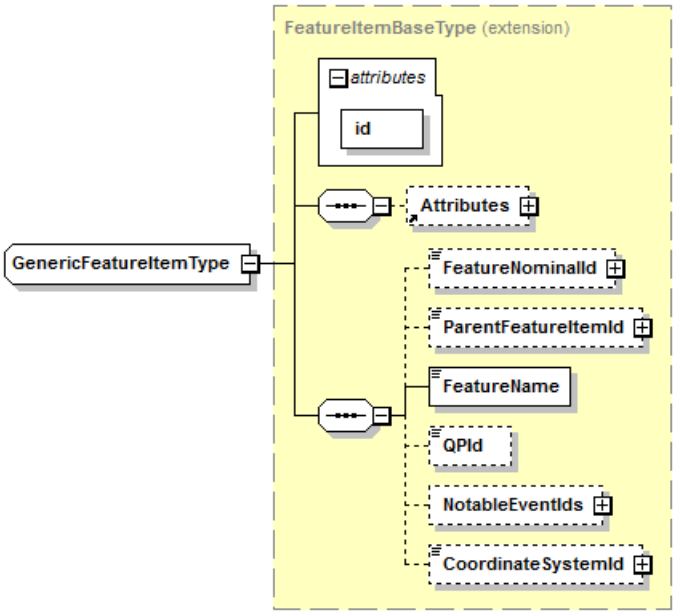
diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds**
used by	element **GenericFeatureActual**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The GenericFeatureActualType defines the actual values of a generic feature.

complexType **GenericFeatureDefinitionType**

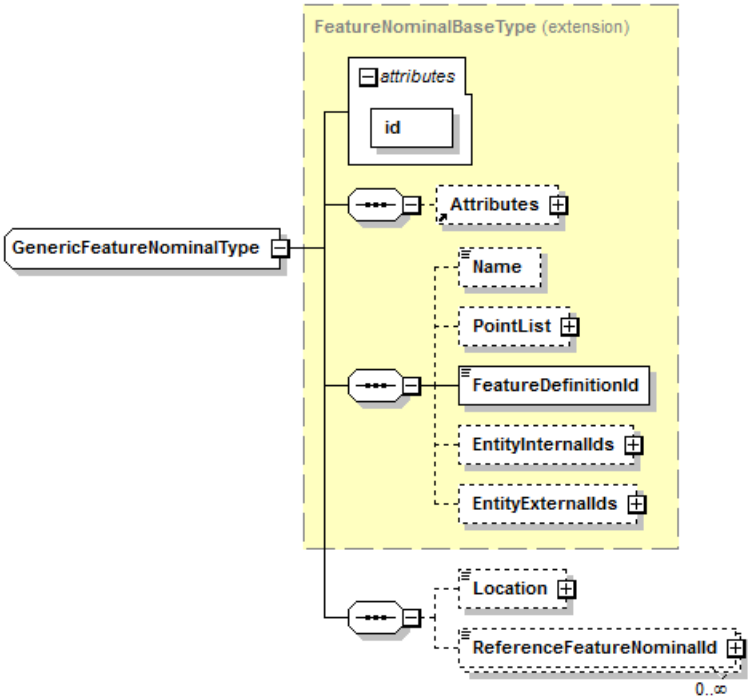
diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes**
used by	element **GenericFeatureDefinition**

attributes	Name id	Type **QIFIdType**	Use required	Default	Fixed	Annotation documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The GenericFeatureDefinitionType defines a generic feature definition.					

complexType **GenericFeatureItemType**

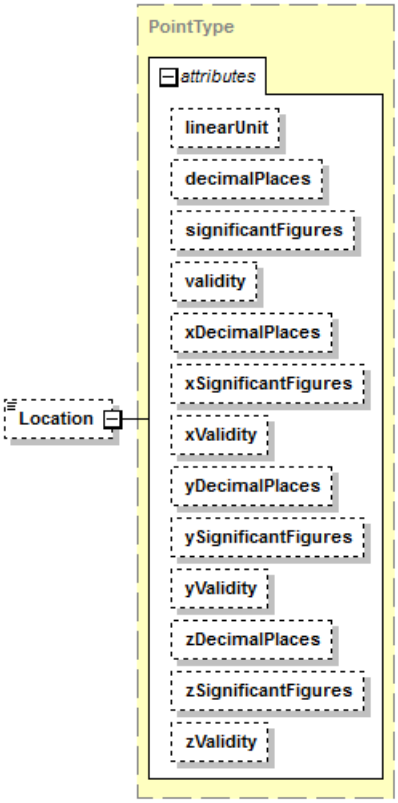
diagram						
type	extension of **FeatureItemBaseType**					
properties	base FeatureItemBaseType					
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId**					
used by	element **GenericFeatureItem**					
attributes	Name id	Type **QIFIdType**	Use required	Default	Fixed	Annotation documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The GenericFeatureItemType defines a generic feature item, usually associated with a non-dimensional characteristic.					

complexType **GenericFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **Location** **ReferenceFeatureNominalId**
used by	element **GenericFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The GenericFeatureNominalType defines the nominal values of a generic feature.

element **GenericFeatureNominalType/Location**

diagram



type	**PointType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

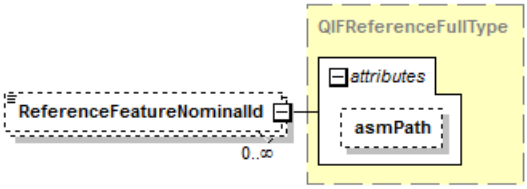
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

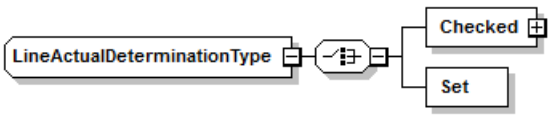
annotation

documentation
The optional Location element is the location of the generic feature. It is intended for use with characteristics (such as color or hardness), that have a value at a particular location on a product.

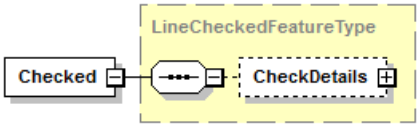
element **GenericFeatureNominalType/ReferenceFeatureNominalId**

diagram	
type	**QIFReferenceFullType**
properties	minOcc 0 maxOcc unbounded content complex
attributes	Name: asmPath Type: **QIFIdType** Use: Default: Fixed: Annotation: documentation: The optional asmPath attribute is an id which must be used for locating of the assembly path within the AsmPaths. The assembly path (instantiation chain) unambiguously identifies a model entity within an assembly.
annotation	documentation Each optional ReferenceFeatureNominalId element is the QIF id of an associated nominal feature.

complexType **LineActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **LineFeatureItemType/DeterminationMode**
annotation	documentation The LineActualDeterminationType defines how the line actual is determined, either by being set or by being checked (measured or constructed).

element **LineActualDeterminationType/Checked**

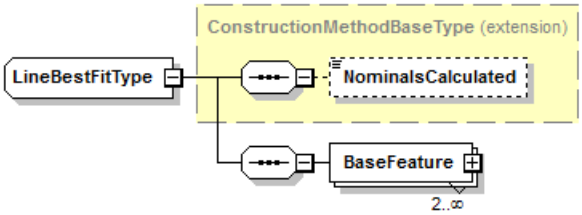
diagram	
type	**LineCheckedFeatureType**
properties	content complex

children	**CheckDetails**
annotation	documentation The Checked element signifies that the line is checked from actual data, either measured or constructed.

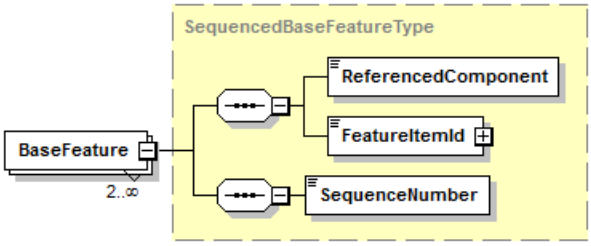
element **LineActualDeterminationType/Set**

diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the line actual is set to its nominal value.

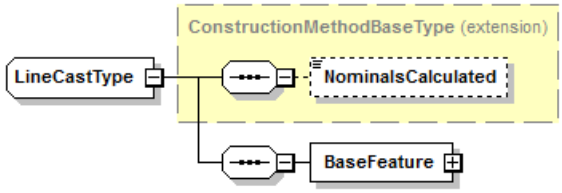
complexType **LineBestFitType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **LineConstructionMethodType/BestFit**
annotation	documentation The LineBestFitType defines the information for a best-fit line which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the line.

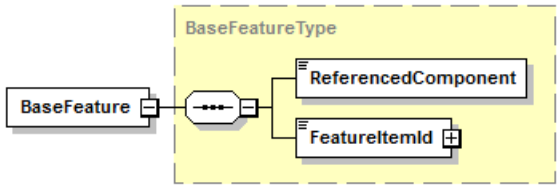
element **LineBestFitType/BaseFeature**

diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 2 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of a line. The number of base features must be 2 or greater.

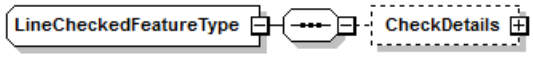
complexType **LineCastType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **LineConstructionMethodType/Cast**
annotation	documentation The LineCastType defines the cast of another feature type to a line. The location and vector are copied from the base feature.

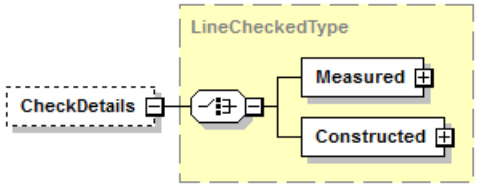
element **LineCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to a line.

complexType **LineCheckedFeatureType**

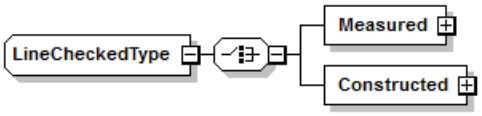
diagram	
children	**CheckDetails**
used by	element **LineActualDeterminationType/Checked**
annotation	documentation The LineCheckedFeatureType defines that a line feature is checked.

element **LineCheckedFeatureType/CheckDetails**

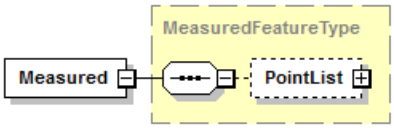
diagram	

type	**LineCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured** **Constructed**
annotation	documentation The optional CheckDetails element gives details about the line check (measurement or construction).

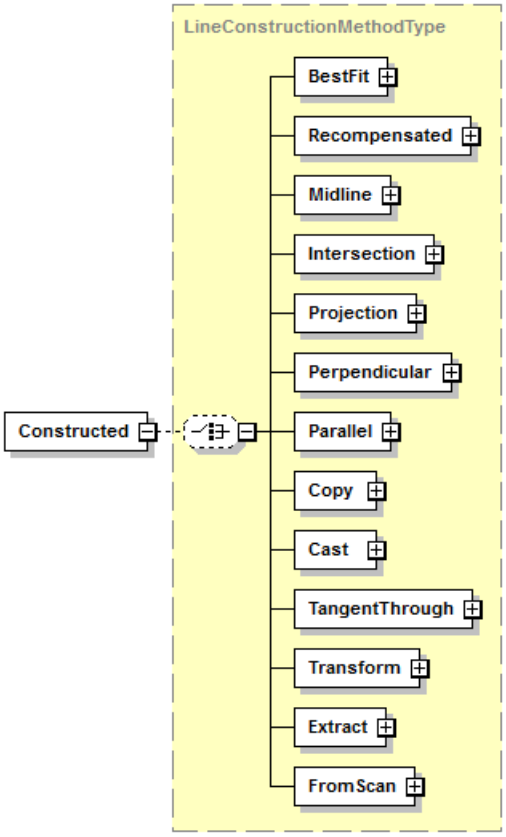
complexType **LineCheckedType**

diagram	
children	**Measured** **Constructed**
used by	element **LineCheckedFeatureType/CheckDetails**
annotation	documentation The LineCheckedType defines how the line actual is checked, either by measurement or by construction.

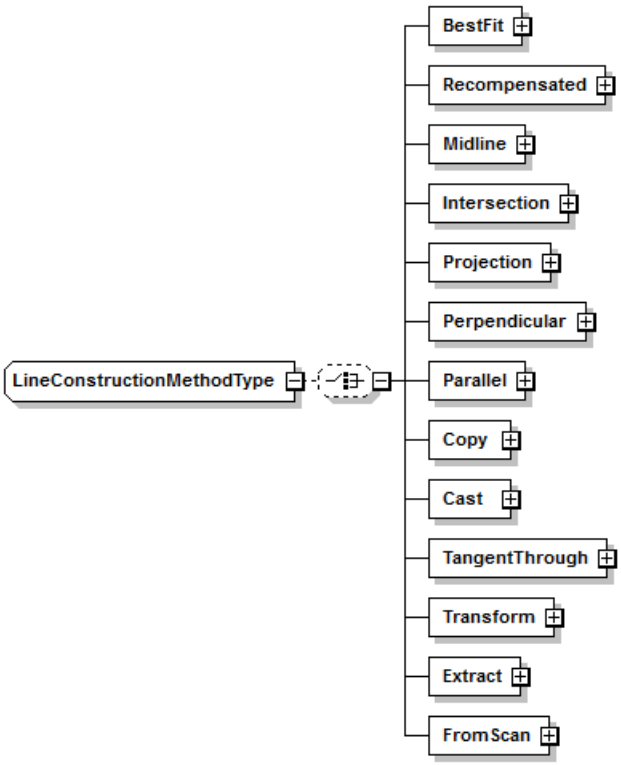
element **LineCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the line is measured.

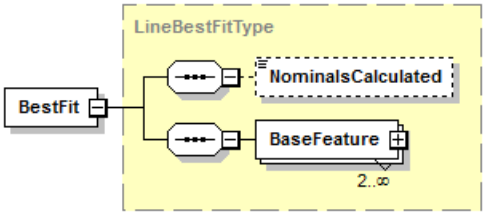
element **LineCheckedType/Constructed**

diagram	
type	**LineConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Midline** **Intersection** **Projection** **Perpendicular** **Parallel** **Copy** **Cast** **TangentThrough** **Transform** **Extract** **FromScan**
annotation	documentation The Constructed element signifies that the line is constructed.

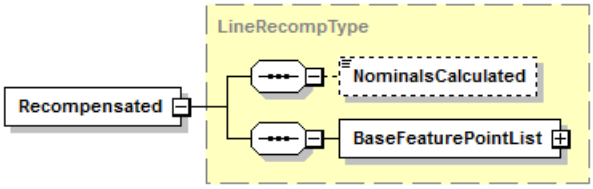
complexType **LineConstructionMethodType**

diagram	
children	**BestFit** **Recompensated** **Midline** **Intersection** **Projection** **Perpendicular** **Parallel** **Copy** **Cast** **TangentThrough** **Transform** **Extract** **FromScan**
used by	element **LineCheckedType/Constructed**
annotation	documentation The LineConstructionMethodType defines the method for constructing a unique nominal or actual line feature.

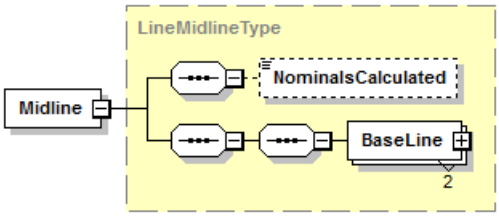
element **LineConstructionMethodType/BestFit**

diagram	
type	**LineBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of a line from 2 or more point-reducible base features. This element is in an optional choice.

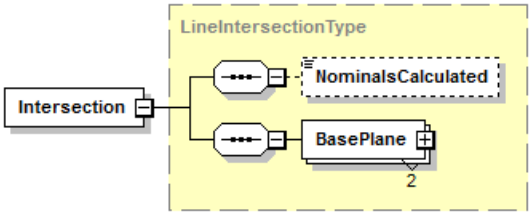
element **LineConstructionMethodType/Recompensated**

diagram	
type	**LineRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of a line from 2 or more base feature points. This element is in an optional choice.

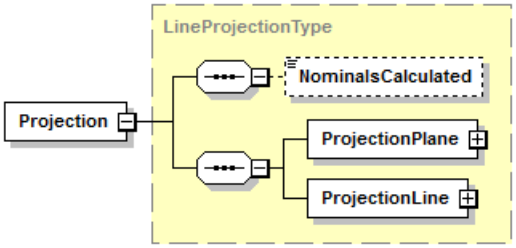
element **LineConstructionMethodType/Midline**

diagram	
type	**LineMidlineType**
properties	content complex
children	**NominalsCalculated** **BaseLine**
annotation	documentation The Midline element describes the construction of a line that is everywhere at equal distance from each of a pair of base lines. This element is in an optional choice.

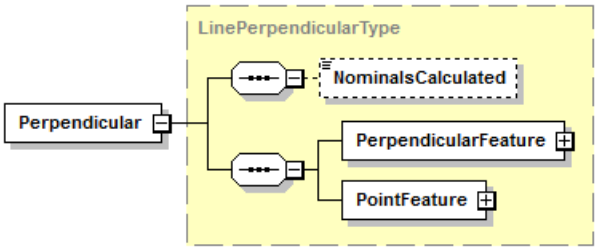
element **LineConstructionMethodType/Intersection**

diagram	
type	**LineIntersectionType**
properties	content complex
children	**NominalsCalculated** **BasePlane**
annotation	documentation The Intersection element describes the construction of a line by the intersection of two planes. This element is in an optional choice.

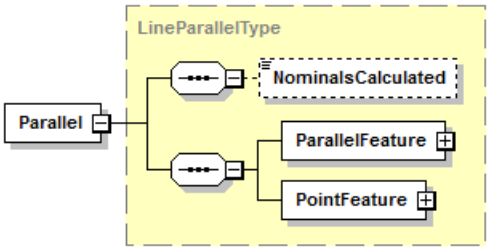
element **LineConstructionMethodType/Projection**

diagram	
type	**LineProjectionType**
properties	content complex
children	**NominalsCalculated** **ProjectionPlane** **ProjectionLine**
annotation	documentation The Projection element describes the construction of a line by the projection of a base line onto a plane. This element is in an optional choice.

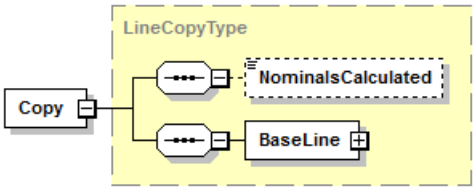
element **LineConstructionMethodType/Perpendicular**

diagram	
type	**LinePerpendicularType**
properties	content complex
children	**NominalsCalculated** **PerpendicularFeature** **PointFeature**
annotation	documentation The Perpendicular element describes the construction of a line perpendicular to one base feature and passing through a point feature. This element is in an optional choice.

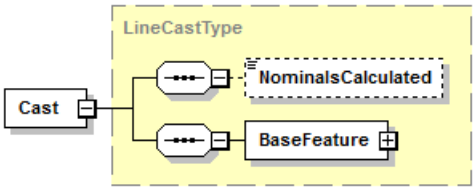
element **LineConstructionMethodType/Parallel**

diagram	
type	**LineParallelType**
properties	content complex
children	**NominalsCalculated** **ParallelFeature** **PointFeature**
annotation	documentation The Parallel element describes the construction of a line parallel to a base feature and passing through a point feature. This element is in an optional choice.

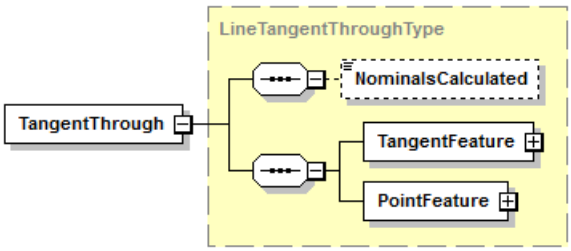
element **LineConstructionMethodType/Copy**

diagram	
type	**LineCopyType**
properties	content complex
children	**NominalsCalculated** **BaseLine**
annotation	documentation The Copy element describes the construction of a line by the copying of a base line. This element is in an optional choice.

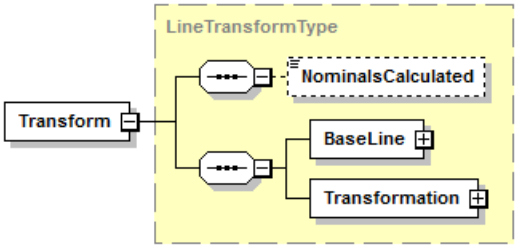
element **LineConstructionMethodType/Cast**

diagram	
type	**LineCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of a line by the casting of a base feature. This element is in an optional choice.

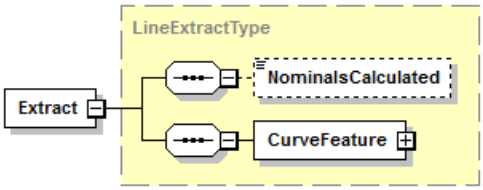
element **LineConstructionMethodType/TangentThrough**

diagram	
type	**LineTangentThroughType**
properties	content complex
children	**NominalsCalculated** **TangentFeature** **PointFeature**
annotation	documentation The TangentThrough element describes the construction of a line tangent to a base feature and passing through a point feature. This element is in an optional choice.

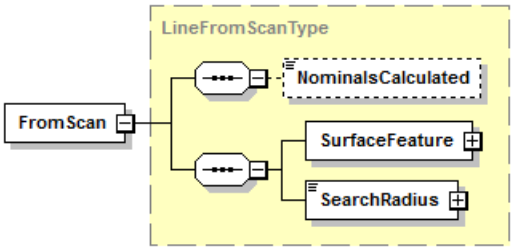
element **LineConstructionMethodType/Transform**

diagram	
type	**LineTransformType**
properties	content complex
children	**NominalsCalculated** **BaseLine** **Transformation**
annotation	documentation The Transform element describes the construction of a line by the transformation of a base line. This element is in an optional choice.

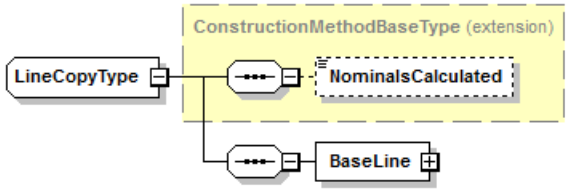
element **LineConstructionMethodType/Extract**

diagram	
type	**LineExtractType**
properties	content complex
children	**NominalsCalculated** **CurveFeature**
annotation	documentation The Extract element describes the extraction of a line from a curve. This element is in an optional choice.

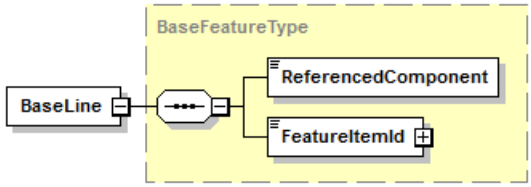
element **LineConstructionMethodType/FromScan**

diagram	
type	**LineFromScanType**
properties	content complex
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius**
annotation	documentation The FromScan element describes the construction of a line from scan data. This element is in an optional choice.

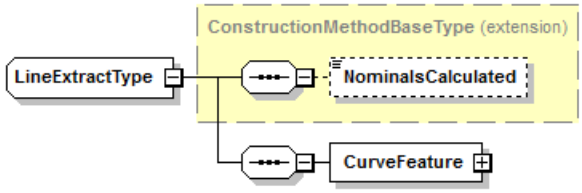
complexType **LineCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseLine**
used by	element **LineConstructionMethodType/Copy**
annotation	documentation The LineCopyType defines a copied line construction.

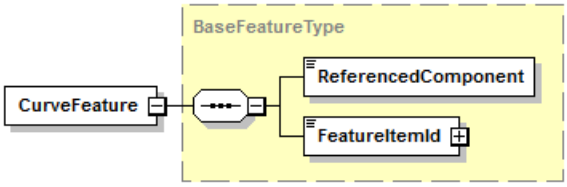
element **LineCopyType/BaseLine**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseLine element identifies the line to be copied.

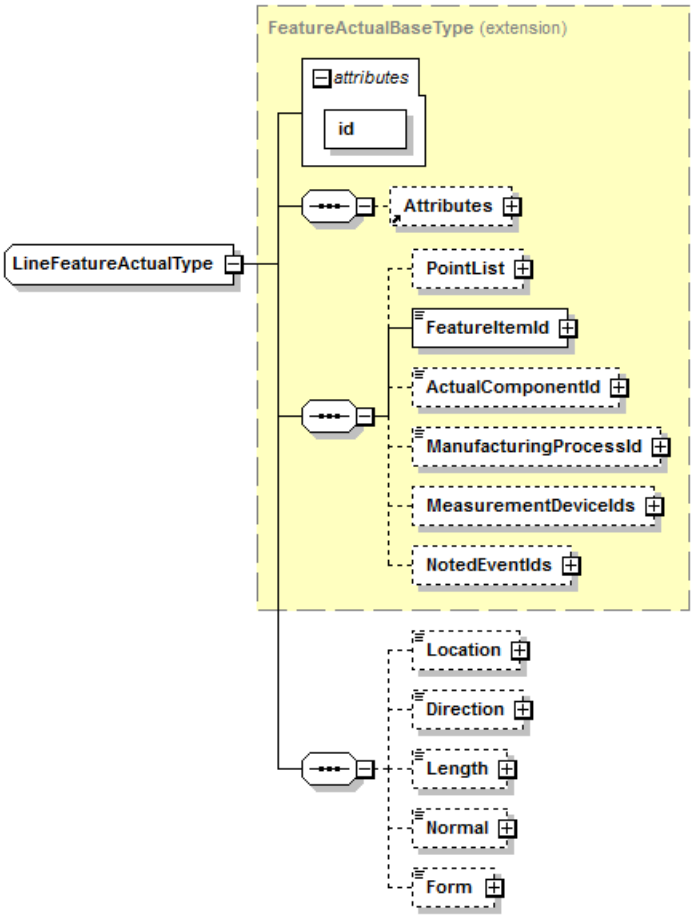
complexType **LineExtractType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **CurveFeature**
used by	element **LineConstructionMethodType/Extract**
annotation	documentation The LineExtractType defines a line construction by the extraction of a line from a curve feature.

element **LineExtractType/CurveFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The CurveFeature element identifies the curve from which the line is extracted.

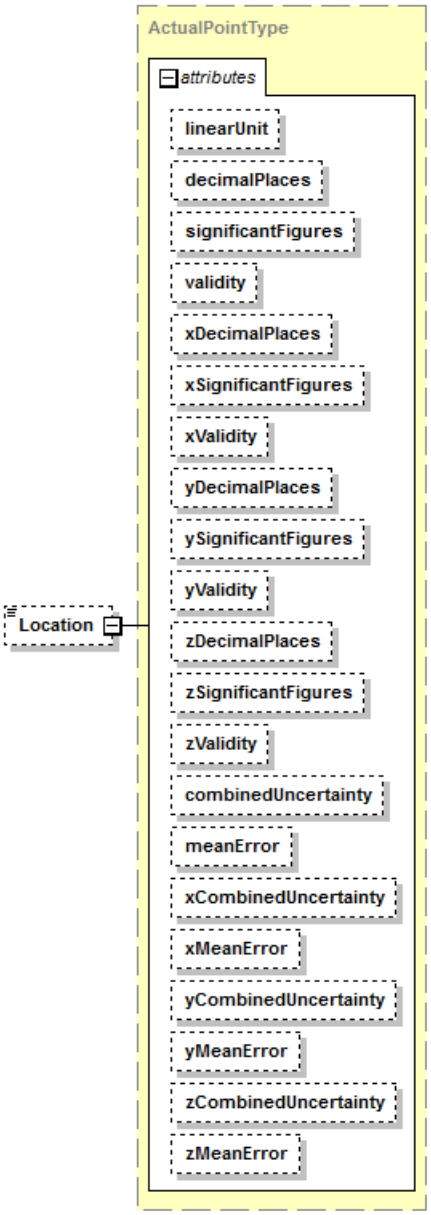
complexType **LineFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes PointList FeatureItemId ActualComponentId ManufacturingProcessId MeasurementDeviceIds NotedEventIds Location Direction Length Normal Form**
used by	element **LineFeatureActual**

attributes	Name id	Type **QIFIdType**	Use required	Default	Fixed	Annotation documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The LineFeatureActualType defines the line feature actual information for an individual line feature.					

element **LineFeatureActualType/Location**

diagram

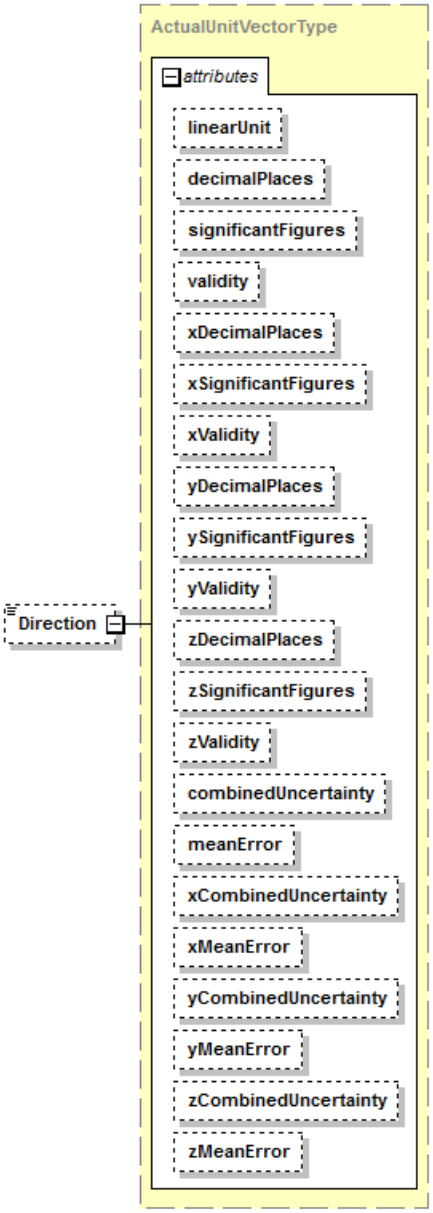


type	**ActualPointType**
properties	minOcc 0 maxOcc 1

	content complex
facets	Kind Value Annotation length 3
attributes	Name Type Use Default Fixed Annotation linearUnit **xs:token** decimalPlaces **xs:nonNegativeInteger** significantFigures **xs:nonNegativeInteger** validity **ValidityEnumType** xDecimalPlaces **xs:nonNegativeInteger** xSignificantFigures **xs:nonNegativeInteger** xValidity **ValidityEnumType** yDecimalPlaces **xs:nonNegativeInteger** ySignificantFigures **xs:nonNegativeInteger** yValidity **ValidityEnumType** zDecimalPlaces **xs:nonNegativeInteger** zSignificantFigures **xs:nonNegativeInteger** zValidity **ValidityEnumType** combinedUncertainty **xs:decimal** meanError **xs:decimal** xCombinedUncertainty **xs:decimal** xMeanError **xs:decimal** yCombinedUncertainty **xs:decimal** yMeanError **xs:decimal** zCombinedUncertainty **xs:decimal** zMeanError **xs:decimal**
annotation	documentation The optional Location element is the actual location of the start point of the line.

element **LineFeatureActualType/Direction**

diagram



type	**ActualUnitVectorType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

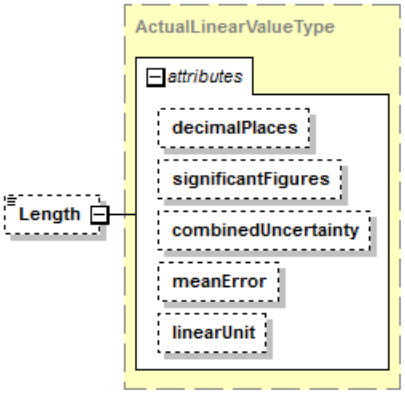
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Direction element is the actual unit vector representing the direction of the line.	

element **LineFeatureActualType/Length**

diagram



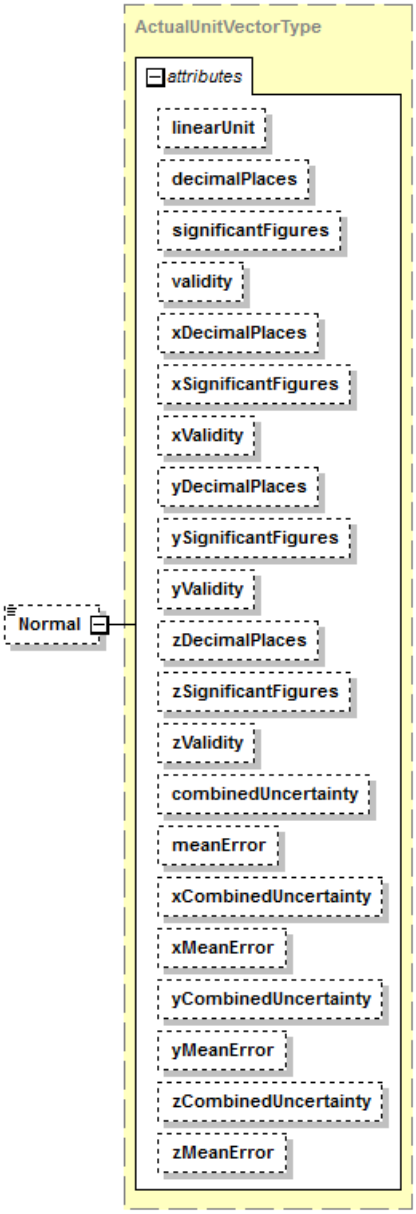
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is

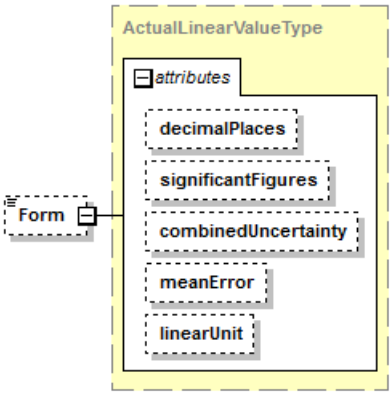
	linearUnit **xs:token**	a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Length element is the actual length of the line from the starting point in the line direction.	

element **LineFeatureActualType/Normal**

diagram	
type	**ActualUnitVectorType**

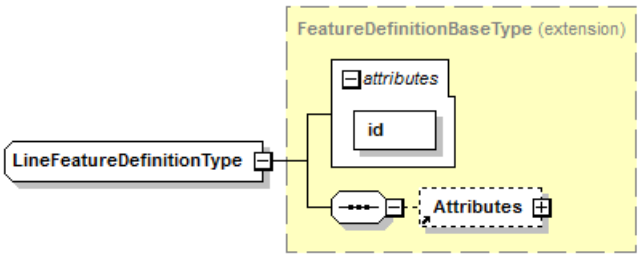
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3
attributes	Name Type Use Default Fixed Annotation linearUnit **xs:token** decimalPlaces **xs:nonNegativeInteger** significantFigures **xs:nonNegativeInteger** validity **ValidityEnumType** xDecimalPlaces **xs:nonNegativeInteger** xSignificantFigures **xs:nonNegativeInteger** xValidity **ValidityEnumType** yDecimalPlaces **xs:nonNegativeInteger** ySignificantFigures **xs:nonNegativeInteger** yValidity **ValidityEnumType** zDecimalPlaces **xs:nonNegativeInteger** zSignificantFigures **xs:nonNegativeInteger** zValidity **ValidityEnumType** combinedUncertainty **xs:decimal** meanError **xs:decimal** xCombinedUncertainty **xs:decimal** xMeanError **xs:decimal** yCombinedUncertainty **xs:decimal** yMeanError **xs:decimal** zCombinedUncertainty **xs:decimal** zMeanError **xs:decimal**
annotation	documentation The optional Normal element is the actual unit normal of the surface in which the line lies.

element **LineFeatureActualType/Form**

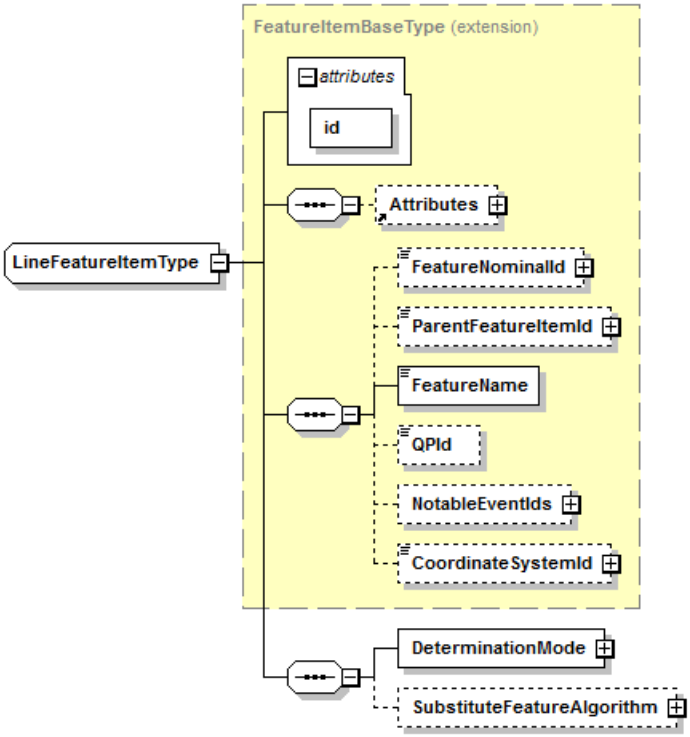
diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name Type Use Default Fixed Annotation decimalPlaces **xs:nonNegativeInteger** documentation

	significantFigures	**xs:nonNegativeInteger**	See documentation of SpecifiedDecimalType. documentation See documentation of SpecifiedDecimalType.
	combinedUncertainty	**NonNegativeDecimalType**	documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
	meanError	**NonNegativeDecimalType**	documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
	linearUnit	**xs:token**	documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Form element is the form error (straightness) of the line from a report or an analysis.		

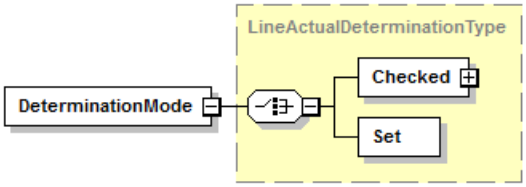
complexType **LineFeatureDefinitionType**

diagram						
type	extension of **FeatureDefinitionBaseType**					
properties	base FeatureDefinitionBaseType					
children	**Attributes**					
used by	element **LineFeatureDefinition**					
attributes	Name id	Type **QIFIdType**	Use required	Default	Fixed	Annotation documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The LineFeatureDefinitionType defines the line feature nominal information that can be common to one or more line features.					

complexType **LineFeatureItemType**

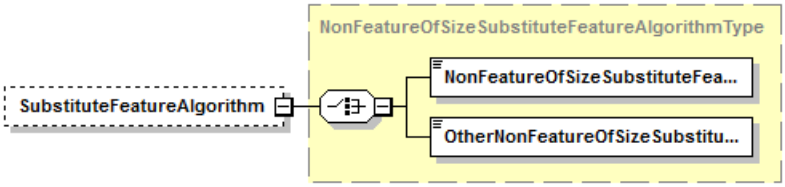
diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **LineFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The LineFeatureItemType defines an individual line feature.

element **LineFeatureItemType/DeterminationMode**

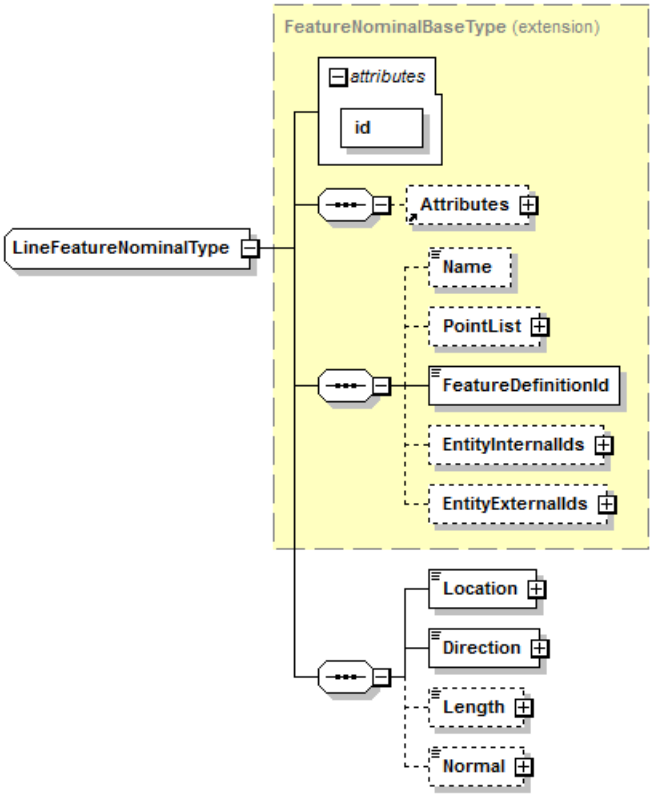
diagram	
type	**LineActualDeterminationType**
properties	content complex
children	**Checked** **Set**

annotation	documentation The DeterminationMode element is the means by which the line feature actual is determined.

element **LineFeatureItemType/SubstituteFeatureAlgorithm**

diagram	
type	**NonFeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**NonFeatureOfSizeSubstituteFeatureAlgorithmEnum OtherNonFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the line feature.

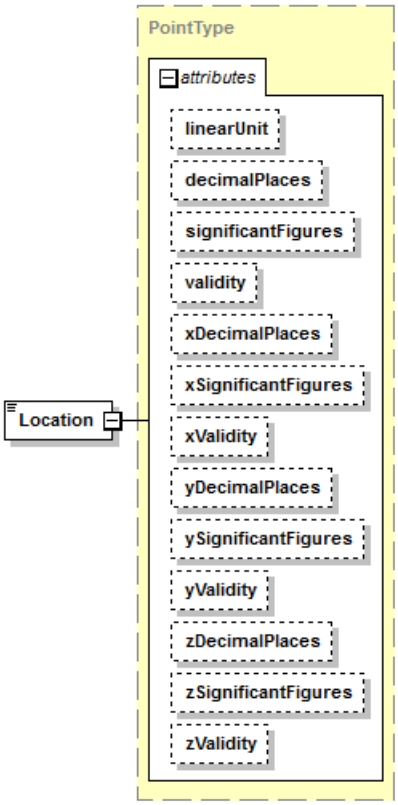
complexType **LineFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes Name PointList FeatureDefinitionId EntityInternalIds EntityExternalIds Location Direction Length Normal**
used by	element **LineFeatureNominal**

attributes	Name	Type	Use	Default	Fixed	Annotation
	id	**QIFIdType**	required			documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The LineFeatureNominalType defines the line feature nominal information for an individual line feature.					

element **LineFeatureNominalType/Location**

diagram



type	**PointType**
properties	content complex
facets	Kind: length; Value: 3; Annotation

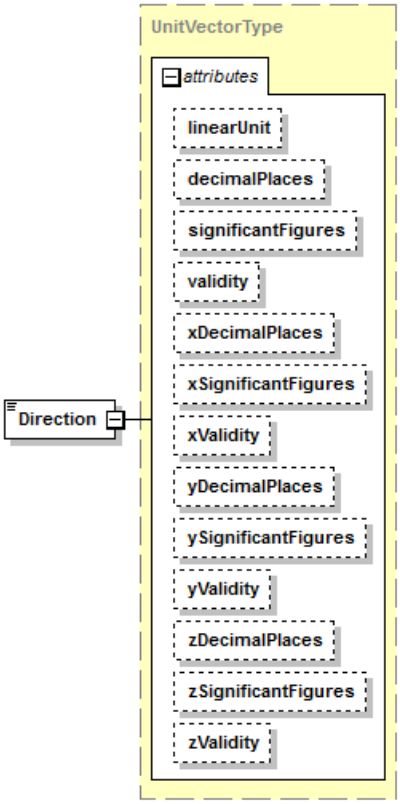
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				

	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
annotation	documentation The Location element is the nominal location of the start point of the line.	

element **LineFeatureNominalType/Direction**

diagram



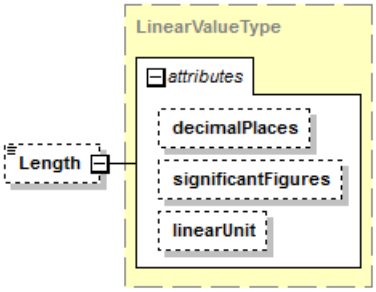
type	**UnitVectorType**
properties	content complex
facets	Kind Value Annotation length 3

attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				

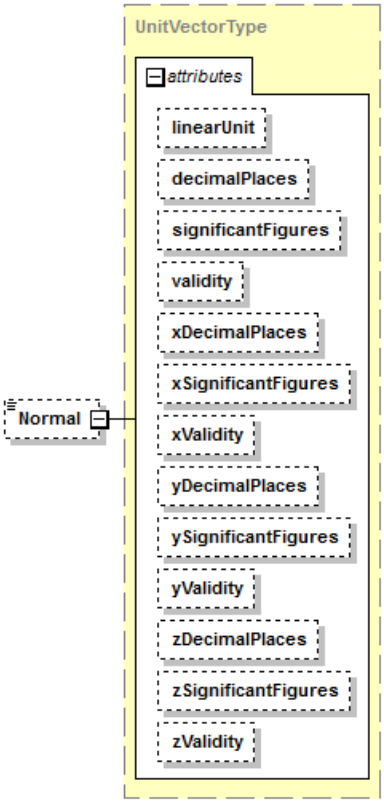
	zDecimalPlaces **xs:nonNegativeInteger** zSignificantFigures **xs:nonNegativeInteger** zValidity **ValidityEnumType**
annotation	documentation The Direction element is the nominal unit vector representing the direction of the line.

element **LineFeatureNominalType/Length**

diagram	
type	**LinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The optional Length element is the nominal length of the line from the starting point in the line direction.

element **LineFeatureNominalType/Normal**

diagram



type **UnitVectorType**

properties

minOcc	0
maxOcc	1
content	complex

facets

Kind	Value	Annotation
length	3	

attributes

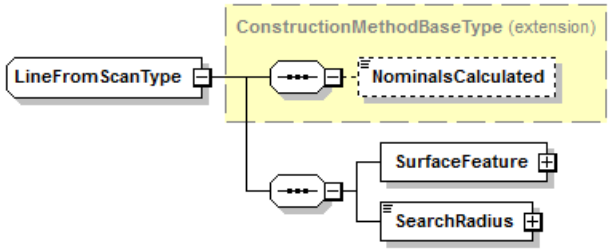
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

annotation

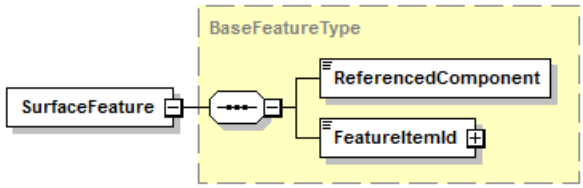
documentation

The optional Normal element is the nominal unit normal of the surface in which the line lies.

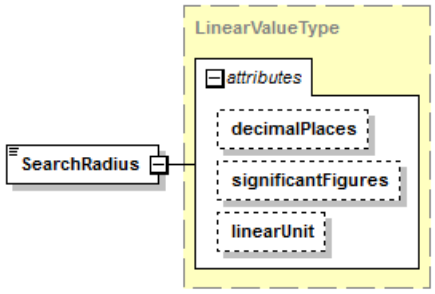
complexType **LineFromScanType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius**
used by	element **LineConstructionMethodType/FromScan**
annotation	documentation The LineFromScanType defines a line construction by the retrieval of a line from a scanned surface feature (point cloud).

element **LineFromScanType/SurfaceFeature**

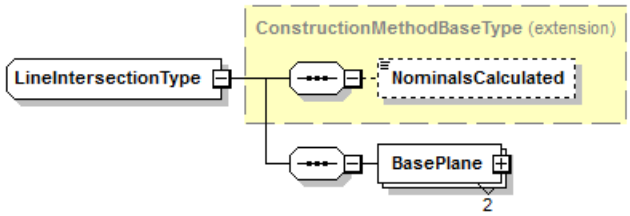
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The SurfaceFeature element identifies the scanned surface feature from which the line is retrieved.

element **LineFromScanType/SearchRadius**

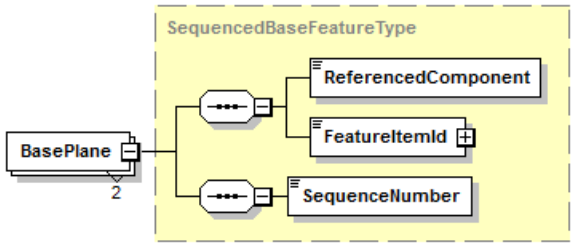
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name: decimalPlaces; Type: **xs:nonNegativeInteger**; Use; Default; Fixed; Annotation: documentation: See documentation of SpecifiedDecimalType.

	significantFigures	**xs:nonNegativeInteger**	documentation See documentation of SpecifiedDecimalType.
	linearUnit	**xs:token**	documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The SearchRadius element is the radius around the nominal feature, wherein the actual feature can be expected. The SearchRadius is the radius of a cylinder. All scanned points within this cylinder are used for the retrieval of the feature. The cylinder's axis is defined by the feature's direction and the cylinder's axis passes through the feature's locating point.		

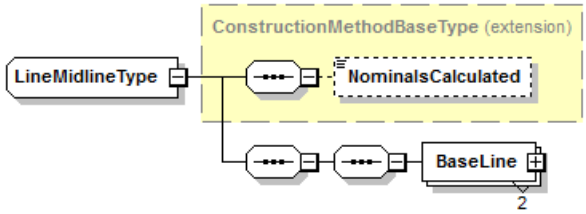
complexType **LineIntersectionType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BasePlane**
used by	element **LineConstructionMethodType/Intersection**
annotation	documentation The LineIntersectionType defines the construction of a line that is constructed by the intersection of two planes.

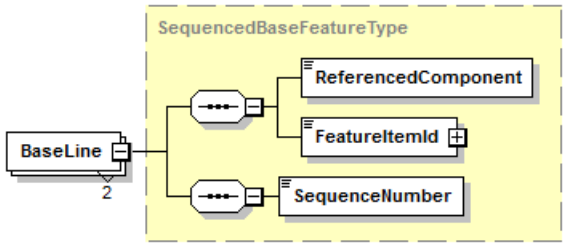
element **LineIntersectionType/BasePlane**

diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 2 maxOcc 2 content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BasePlane element identifies a plane to be used to construct the line of intersection.

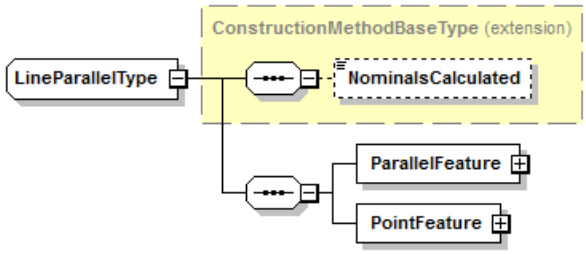
complexType **LineMidlineType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseLine**
used by	element **LineConstructionMethodType/Midline**
annotation	documentation The LineMidlineType defines the construction of a line that is the midline of two base lines.

element **LineMidlineType/BaseLine**

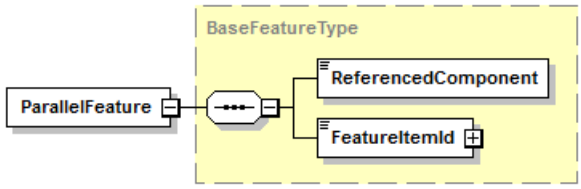
diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 2 maxOcc 2 content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseLine element identifies one of a pair of base lines used to construct a midline.

complexType **LineParallelType**

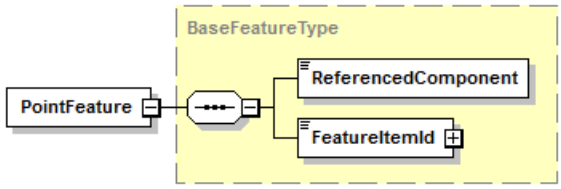
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **ParallelFeature** **PointFeature**
used by	element **LineConstructionMethodType/Parallel**
annotation	documentation

	The LineParallelType defines the construction of a line that is parallel to a feature and passing through a point.

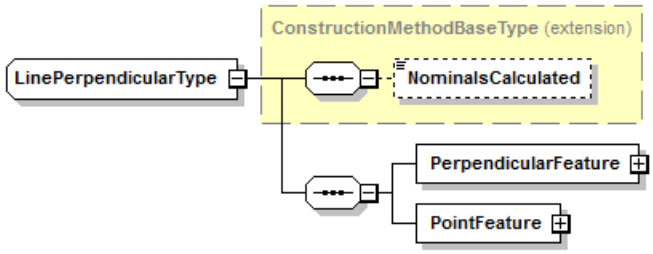
element **LineParallelType/ParallelFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The ParallelFeature element identifies the feature to which the constructed line must be parallel.

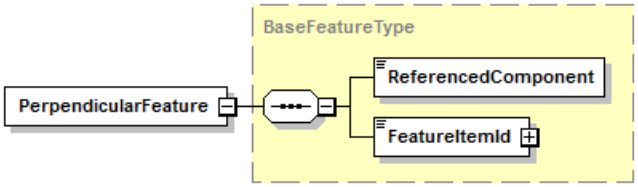
element **LineParallelType/PointFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The PointFeature element identifies the point through which the constructed line must pass.

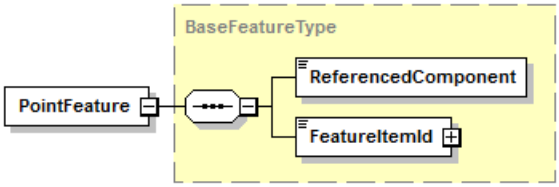
complexType **LinePerpendicularType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **PerpendicularFeature** **PointFeature**
used by	element **LineConstructionMethodType/Perpendicular**
annotation	documentation The LinePerpendicularType defines the construction of a line that is perpendicular to a feature and passing through a point.

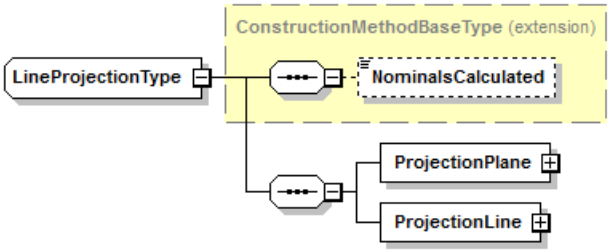
element **LinePerpendicularType/PerpendicularFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The PerpendicularFeature element identifies the feature to which the constructed line must be perpendicular.

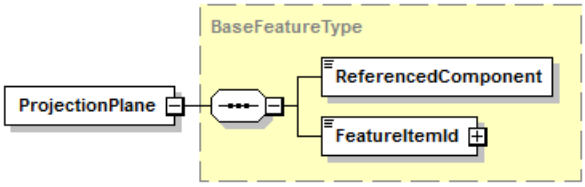
element **LinePerpendicularType/PointFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The PointFeature element identifies the point through which the constructed line must pass.

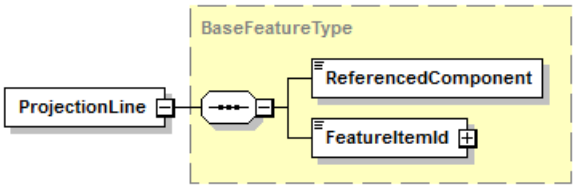
complexType **LineProjectionType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **ProjectionPlane** **ProjectionLine**
used by	element **LineConstructionMethodType/Projection**
annotation	documentation The LineProjectionType defines a projected line construction with the line to be projected and the projection plane.

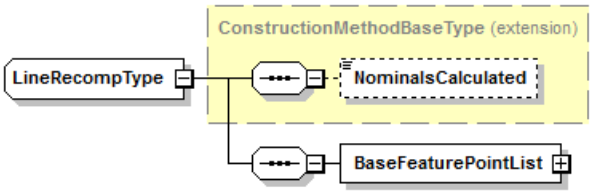
element **LineProjectionType/ProjectionPlane**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The ProjectionPlane element identifies the plane onto which the line is to be projected.

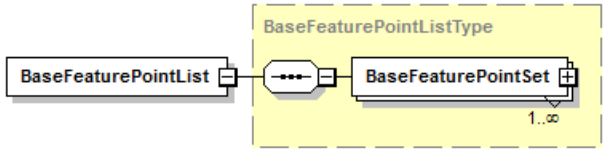
element **LineProjectionType/ProjectionLine**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The ProjectionLine element identifies the line to be projected.

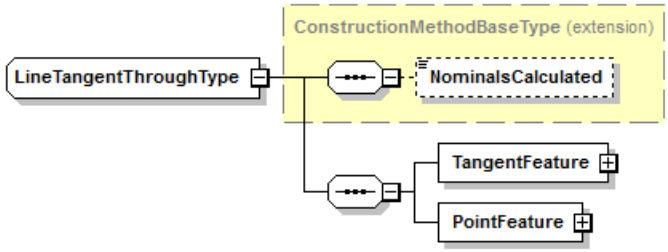
complexType **LineRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **LineConstructionMethodType/Recompensated**
annotation	documentation The LineRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit line through the measurement points of base features.

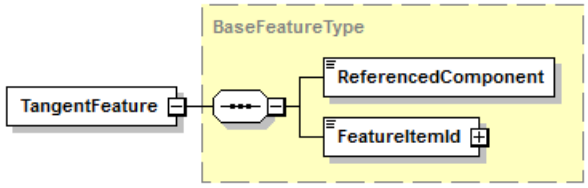
element **LineRecompType/BaseFeaturePointList**

diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit line. The total number of points in the BaseFeaturePointSets in the list must be 2 or greater.

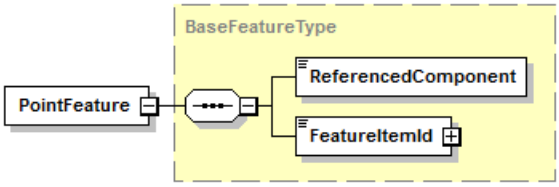
complexType **LineTangentThroughType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **TangentFeature** **PointFeature**
used by	element **LineConstructionMethodType/TangentThrough**
annotation	documentation The LineTangentThroughType defines the construction of a line through a point and tangent to a base feature.

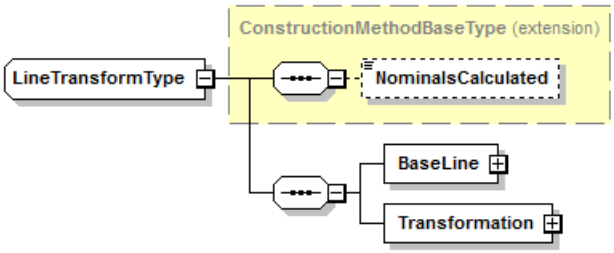
element **LineTangentThroughType/TangentFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The TangentFeature element identifies the base feature to which the line is tangent.

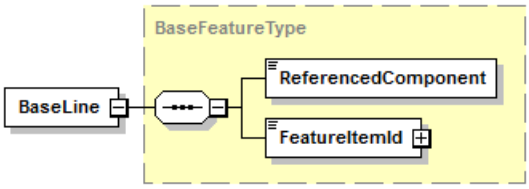
element **LineTangentThroughType/PointFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The PointFeature element identifies the point through which the line must pass.

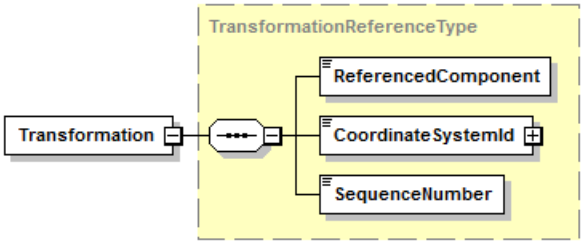
complexType **LineTransformType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseLine** **Transformation**
used by	element **LineConstructionMethodType/Transform**
annotation	documentation The LineTransformType defines a line construction by the transformation of a line through the specified nominal or actual coordinate system.

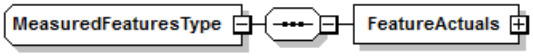
element **LineTransformType/BaseLine**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseLine element identifies the line feature to be transformed.

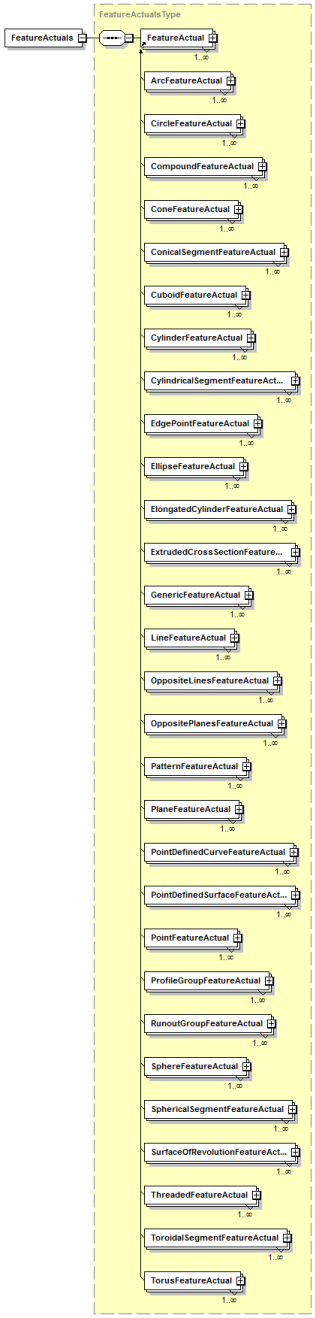
element **LineTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the line.

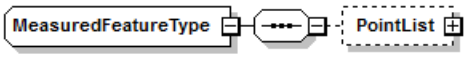
complexType **MeasuredFeaturesType**

diagram	
children	**FeatureActuals**
used by	element **MeasuredFeatures**

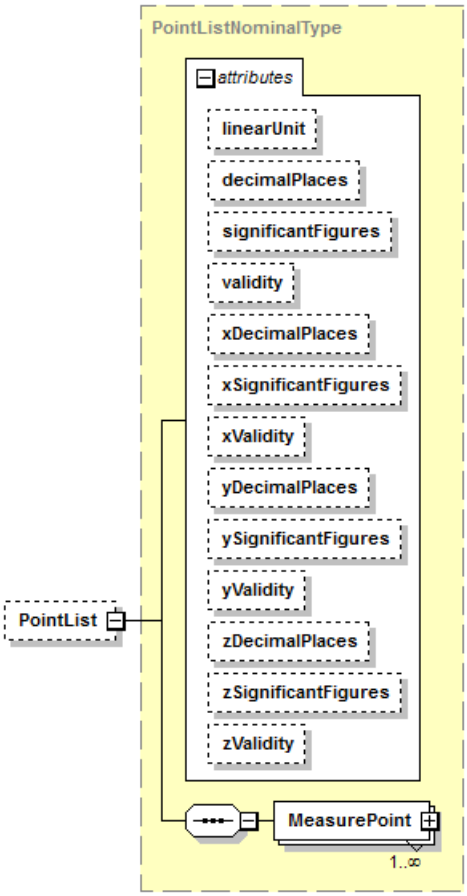
element **MeasuredFeaturesType/FeatureActuals**

diagram	
type	**FeatureActualsType**
properties	content complex
children	**FeatureActual**
annotation	documentation The FeatureActuals element is a list of actual inspection features.

complexType **MeasuredFeatureType**

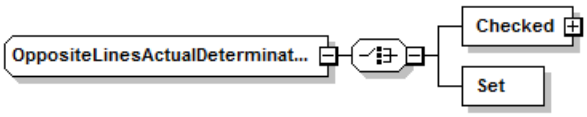
diagram	
children	**PointList**
used by	elements **ArcCheckedType/Measured** **CircleCheckedType/Measured** **ConeCheckedType/Measured** **ConicalSegmentCheckedType/Measured** **CuboidCheckedType/Measured** **CylinderCheckedType/Measured** **CylindricalSegmentCheckedType/Measured** **EdgePointCheckedType/Measured** **EllipseCheckedType/Measured** **ElongatedCylinderCheckedType/Measured** **ExtrudedCrossSectionCheckedType/Measured** **LineCheckedType/Measured** **OppositeLinesCheckedType/Measured** **OppositePlanesCheckedType/Measured** **PlaneCheckedType/Measured** **PointDefinedCurveCheckedType/Measured** **PointDefinedSurfaceCheckedType/Measured** **PointCheckedType/Measured** **SphereCheckedType/Measured** **SphericalSegmentCheckedType/Measured** **SurfaceOfRevolutionCheckedType/Measured** **ThreadedFeatureCheckedType/Measured** **ToroidalSegmentCheckedType/Measured** **TorusCheckedType/Measured**
annotation	documentation The MeasuredFeatureType defines that a feature is measured.

element **MeasuredFeatureType/PointList**

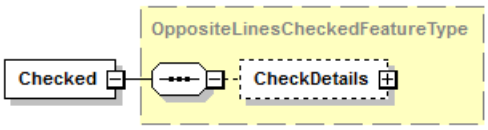
diagram	
type	**PointListNominalType**
properties	minOcc 0 maxOcc 1 content complex
children	**MeasurePoint**

attributes	Name	Type	Use	Default	Fixed	Annotation
	linearUnit	**xs:token**				
	decimalPlaces	**xs:nonNegativeInteger**				
	significantFigures	**xs:nonNegativeInteger**				
	validity	**ValidityEnumType**				
	xDecimalPlaces	**xs:nonNegativeInteger**				
	xSignificantFigures	**xs:nonNegativeInteger**				
	xValidity	**ValidityEnumType**				
	yDecimalPlaces	**xs:nonNegativeInteger**				
	ySignificantFigures	**xs:nonNegativeInteger**				
	yValidity	**ValidityEnumType**				
	zDecimalPlaces	**xs:nonNegativeInteger**				
	zSignificantFigures	**xs:nonNegativeInteger**				
	zValidity	**ValidityEnumType**				
annotation	documentation The optional PointList element is a list of target measurement points for the feature.					

complexType **OppositeLinesActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **OppositeLinesFeatureItemType/DeterminationMode**
annotation	documentation The OppositeLinesActualDeterminationType defines how the opposite lines feature actual is determined, either by being set or by being checked (measured or constructed).

element **OppositeLinesActualDeterminationType/Checked**

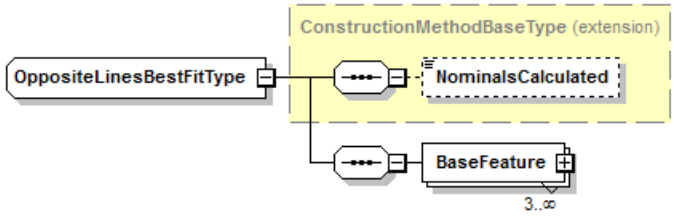
diagram	
type	**OppositeLinesCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the opposite lines feature is checked from actual data, either measured or constructed.

element **OppositeLinesActualDeterminationType/Set**

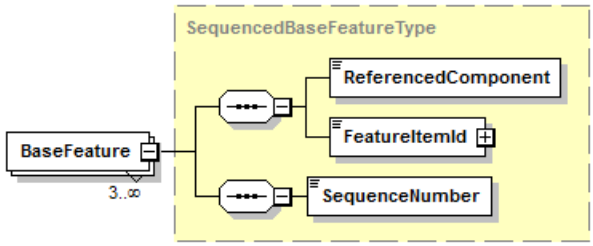
diagram	
type	**SetFeatureType**
properties	content complex

annotation	documentation The Set element signifies that the opposite lines feature actual is set to its nominal value.

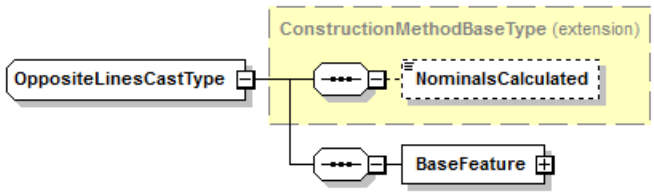
complexType **OppositeLinesBestFitType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **OppositeLinesConstructionMethodType/BestFit**
annotation	documentation The OppositeLinesBestFitType defines the information for a best-fit opposite lines feature which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the opposite lines feature.

element **OppositeLinesBestFitType/BaseFeature**

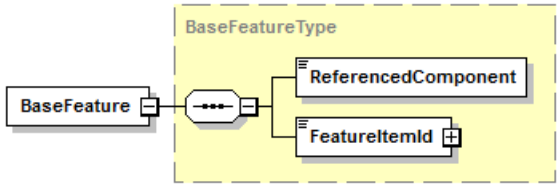
diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 3 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of an opposite lines feature. The number of base features must be 3 or greater.

complexType **OppositeLinesCastType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType

children	**NominalsCalculated** **BaseFeature**
used by	element **OppositeLinesConstructionMethodType/Cast**
annotation	documentation The OppositeLinesCastType defines the cast of another feature type to an opposite lines feature. The location, vector and size are copied from the base feature. Any information not available on the base feature will remain at nominal.

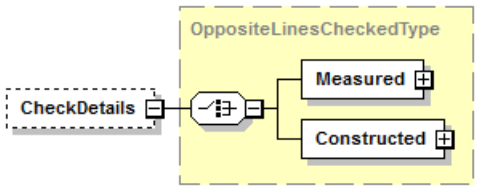
element **OppositeLinesCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to an opposite line feature.

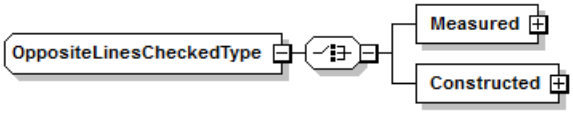
complexType **OppositeLinesCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **OppositeLinesActualDeterminationType/Checked**
annotation	documentation The OppositeLinesCheckedFeatureType defines that an opposite lines feature is checked.

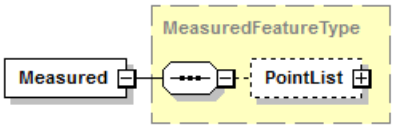
element **OppositeLinesCheckedFeatureType/CheckDetails**

diagram	
type	**OppositeLinesCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured** **Constructed**
annotation	documentation The optional CheckDetails element gives details about the opposite lines feature check (measurement or construction).

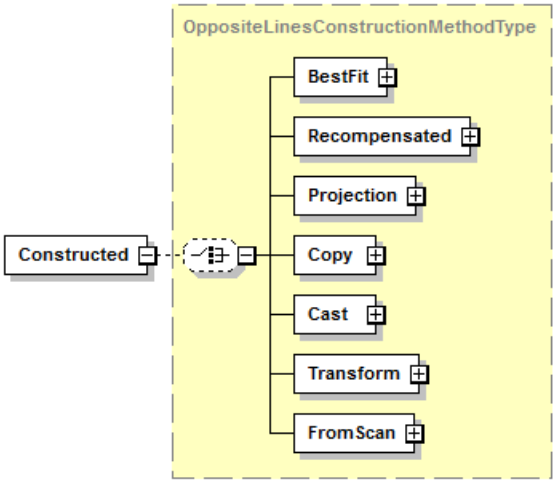
complexType **OppositeLinesCheckedType**

diagram	
children	**Measured** **Constructed**
used by	element **OppositeLinesCheckedFeatureType/CheckDetails**
annotation	documentation The OppositeLinesCheckedType defines how the opposite lines feature actual is checked, either by measurement or by construction.

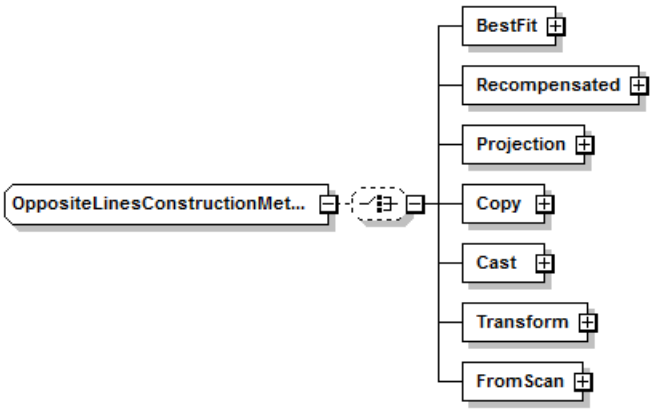
element **OppositeLinesCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the opposite lines feature is measured.

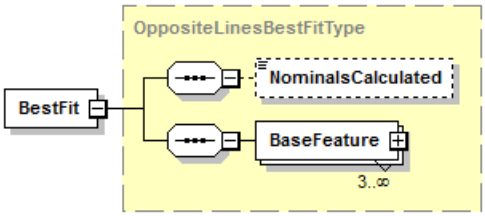
element **OppositeLinesCheckedType/Constructed**

diagram	
type	**OppositeLinesConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Projection** **Copy** **Cast** **Transform** **FromScan**
annotation	documentation The Constructed element signifies that the opposite lines feature is constructed.

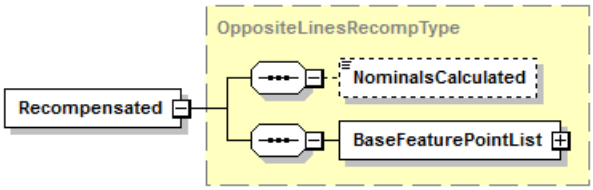
complexType **OppositeLinesConstructionMethodType**

diagram	
children	**BestFit** **Recompensated** **Projection** **Copy** **Cast** **Transform** **FromScan**
used by	element **OppositeLinesCheckedType/Constructed**
annotation	documentation The OppositeLinesConstructionMethodType defines the method for constructing a unique nominal or actual opposite lines feature.

element **OppositeLinesConstructionMethodType/BestFit**

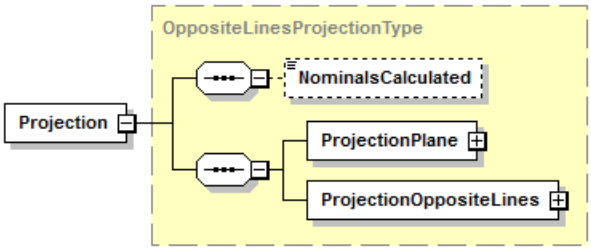
diagram	
type	**OppositeLinesBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of an opposite lines feature from 3 or more point-reducible base features. This element is in an optional choice.

element **OppositeLinesConstructionMethodType/Recompensated**

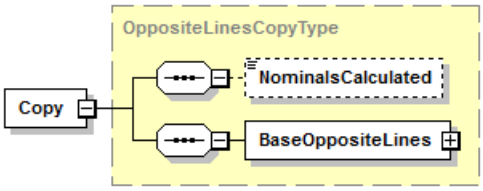
diagram	
type	**OppositeLinesRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of an opposite lines

	feature from 3 or more base feature points. This element is in an optional choice.

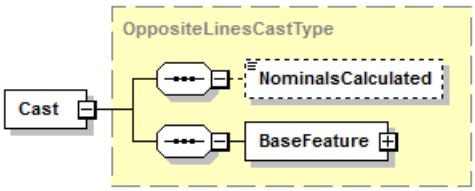
element **OppositeLinesConstructionMethodType/Projection**

diagram	
type	**OppositeLinesProjectionType**
properties	content complex
children	**NominalsCalculated** **ProjectionPlane** **ProjectionOppositeLines**
annotation	documentation The Projection element describes the construction of an opposite lines feature by the projection of a base opposite lines feature onto a plane. This element is in an optional choice.

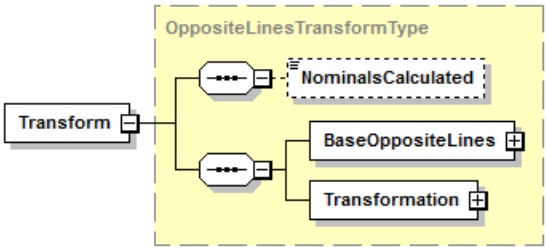
element **OppositeLinesConstructionMethodType/Copy**

diagram	
type	**OppositeLinesCopyType**
properties	content complex
children	**NominalsCalculated** **BaseOppositeLines**
annotation	documentation The Copy element describes the construction of an opposite lines feature by the copying of a base opposite lines feature. This element is in an optional choice.

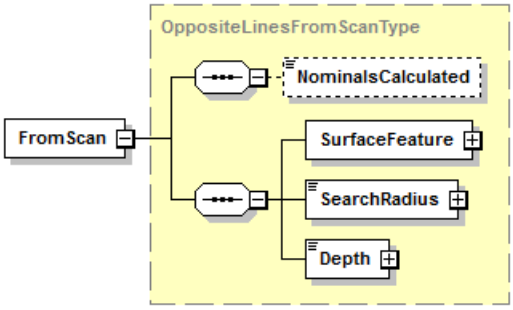
element **OppositeLinesConstructionMethodType/Cast**

diagram	
type	**OppositeLinesCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of an opposite lines feature by the casting of a base feature. This element is in an optional choice.

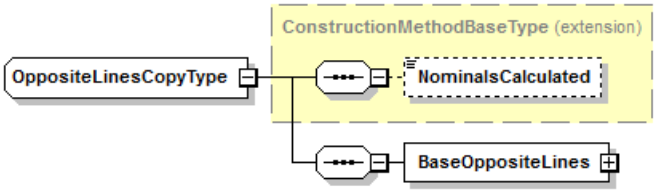
element **OppositeLinesConstructionMethodType/Transform**

diagram	
type	**OppositeLinesTransformType**
properties	content complex
children	**NominalsCalculated** **BaseOppositeLines** **Transformation**
annotation	documentation The Transform element describes the construction of an opposite lines feature by the transformation of a base opposite lines feature. This element is in an optional choice.

element **OppositeLinesConstructionMethodType/FromScan**

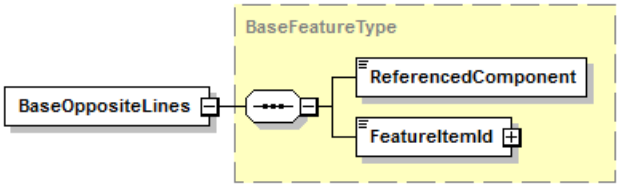
diagram	
type	**OppositeLinesFromScanType**
properties	content complex
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius** **Depth**
annotation	documentation The FromScan element describes the construction of an opposite lines feature from scan data. This element is in an optional choice.

complexType **OppositeLinesCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseOppositeLines**

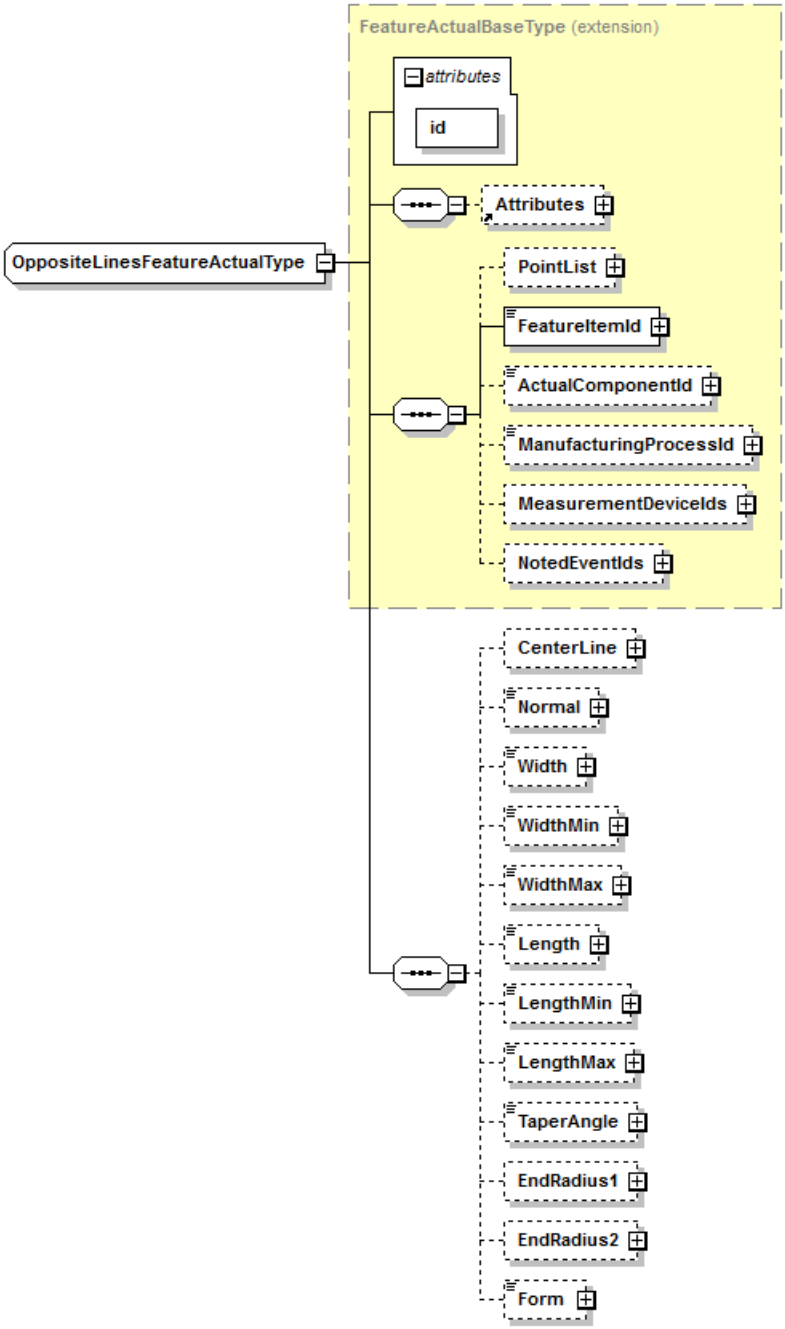
used by	element **OppositeLinesConstructionMethodType/Copy**
annotation	documentation The OppositeLinesCopyType defines a copied opposite lines feature construction.

element **OppositeLinesCopyType/BaseOppositeLines**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseOppositeLines element identifies the opposite lines feature to be copied.

complexType **OppositeLinesFeatureActualType**

diagram



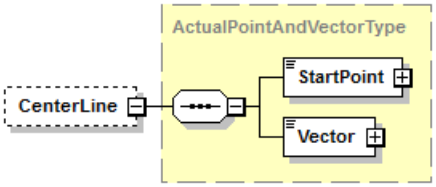
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **CenterLine** **Normal** **Width** **WidthMin** **WidthMax** **Length** **LengthMin** **LengthMax** **TaperAngle** **EndRadius1** **EndRadius2** **Form**
used by	element **OppositeLinesFeatureActual**

attributes

Name	Type	Use	Default	Fixed	Annotation
id	**QIFIdType**	required			documentation The id attribute is the

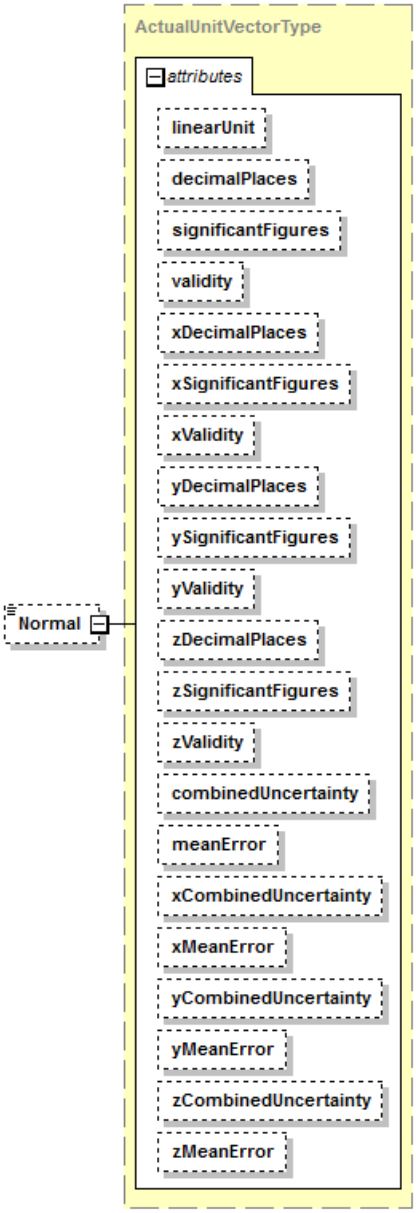
	QIF id of the feature, used for referencing.
annotation	documentation The OppositeLinesFeatureActualType defines the opposite parallel lines feature actual information for an individual opposite lines feature.

element **OppositeLinesFeatureActualType/CenterLine**

diagram	
type	**ActualPointAndVectorType**
properties	minOcc 0 maxOcc 1 content complex
children	**StartPoint Vector**
annotation	documentation The optional CenterLine element is the actual location point and a unit vector direction of the centerline of the opposite lines feature.

element **OppositeLinesFeatureActualType/Normal**

diagram



type	**ActualUnitVectorType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

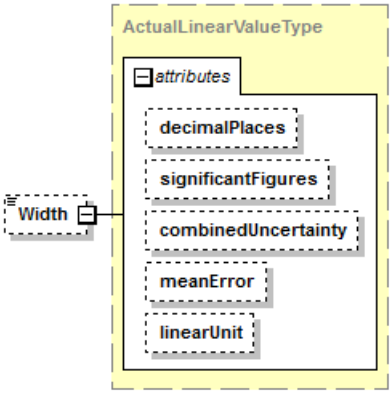
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Normal element is the actual unit normal vector of the plane of the opposite lines feature.	

element **OppositeLinesFeatureActualType/Width**

diagram



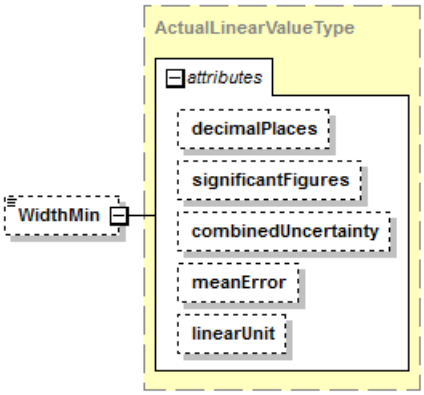
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

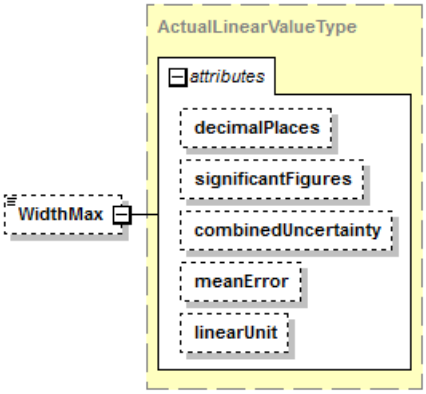
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is

	linearUnit **xs:token**	a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Width element is the actual width between the opposite lines of the feature per the substitute feature data fitting algorithm setting. If the opposite lines are tapered then the width applies at the locating point.	

element **OppositeLinesFeatureActualType/WidthMin**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** — documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** — documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** — documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional WidthMin element is the minimum width of the opposite lines feature from a report or an analysis.

element **OppositeLinesFeatureActualType/WidthMax**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

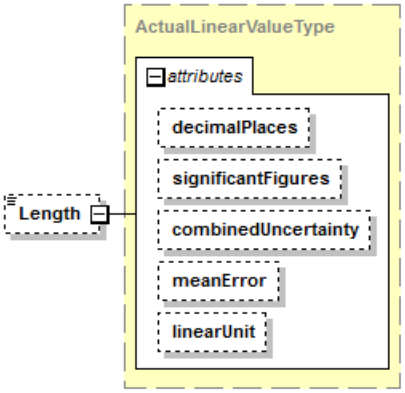
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

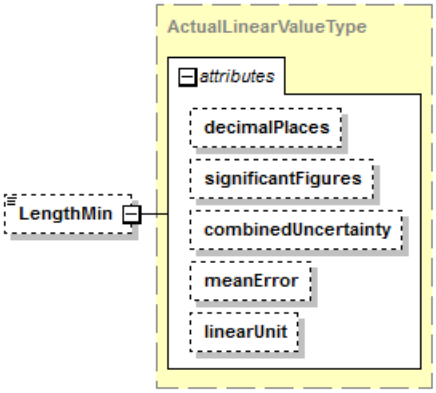
annotation

documentation
The optional WidthMax element is the maximum width of the opposite lines feature from a report or an analysis.

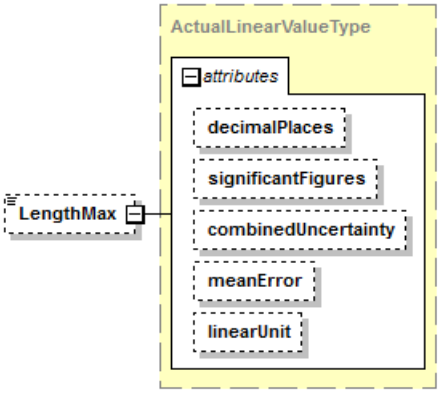
element **OppositeLinesFeatureActualType/Length**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Length element is the actual length of the centerline of the opposite lines feature based on the substitute feature data fitting algorithm setting.

element **OppositeLinesFeatureActualType/LengthMin**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional LengthMin element is the minimum length of the opposite lines feature from a report or an analysis.

element **OppositeLinesFeatureActualType/LengthMax**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

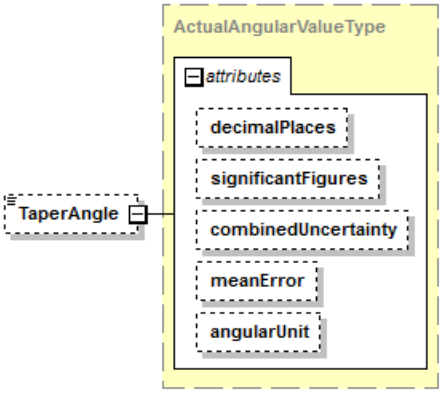
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation

documentation
The optional LengthMax element is the maximum length of the opposite lines feature from a report or an analysis.

element **OppositeLinesFeatureActualType/TaperAngle**

diagram



type **ActualAngularValueType**

properties
minOcc 0
maxOcc 1
content complex

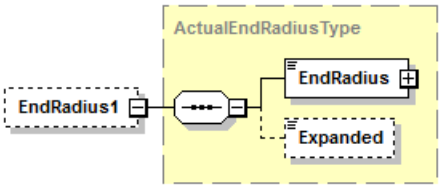
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
angularUnit	**xs:token**				documentation The optional angularUnit attribute defines the unit used by ActualAngularValueType.

annotation
documentation
The optional TaperAngle element is the actual taper angle of the tapered opposite lines feature.

element **OppositeLinesFeatureActualType/EndRadius1**

diagram

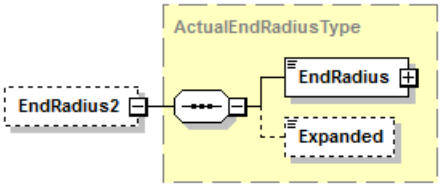


type **ActualEndRadiusType**

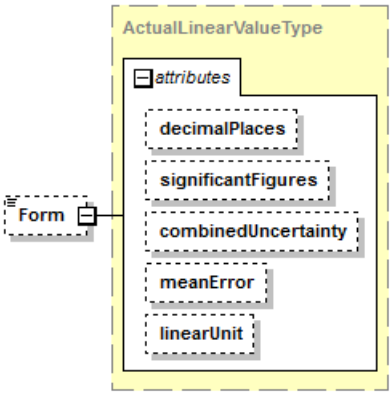
properties
minOcc 0
maxOcc 1
content complex

children	**EndRadius Expanded**
annotation	documentation The optional EndRadius1 element is the actual radius of the rounded end in the direction opposite the centerline vector.

element **OppositeLinesFeatureActualType/EndRadius2**

diagram	
type	**ActualEndRadiusType**
properties	minOcc 0 maxOcc 1 content complex
children	**EndRadius Expanded**
annotation	documentation The optional EndRadius2 element is the actual radius of the rounded end in the direction of the centerline vector.

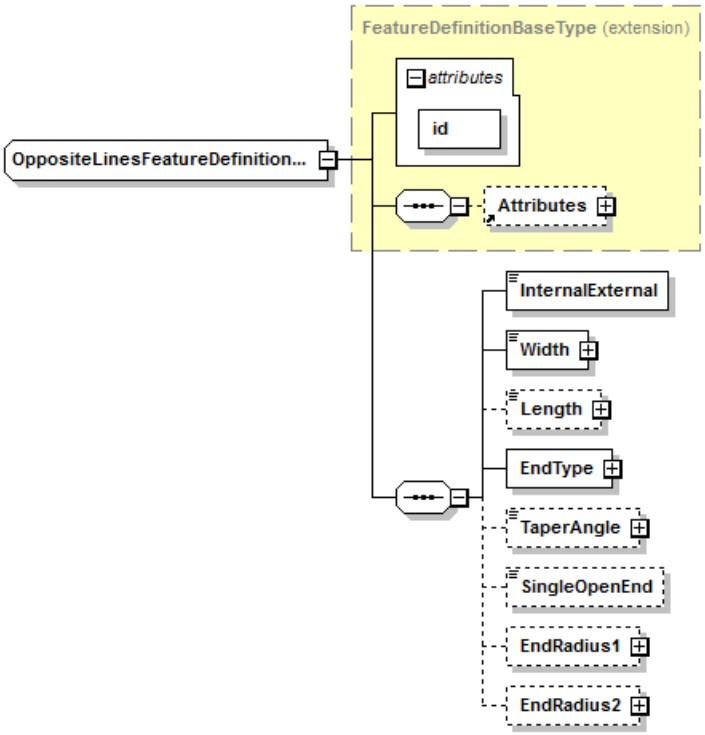
element **OppositeLinesFeatureActualType/Form**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional

	linearUnit **xs:token**	meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Form element is the form error of the opposite lines feature from a report or an analysis.	

complexType **OppositeLinesFeatureDefinitionType**

diagram



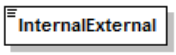
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes** **InternalExternal** **Width** **Length** **EndType** **TaperAngle** **SingleOpenEnd** **EndRadius1** **EndRadius2**
used by	element **OppositeLinesFeatureDefinition**

attributes

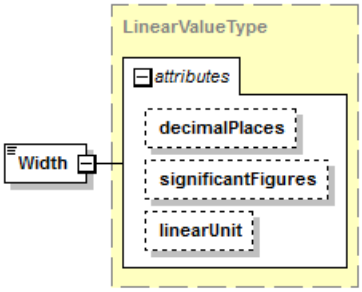
Name	Type	Use	Default	Fixed	Annotation
id	**QIFIdType**	required			documentation The id attribute is the QIF id of the feature, used for referencing.

annotation	documentation The OppositeLinesFeatureDefinitionType defines the nominal information that can be common to one or more opposite line features.

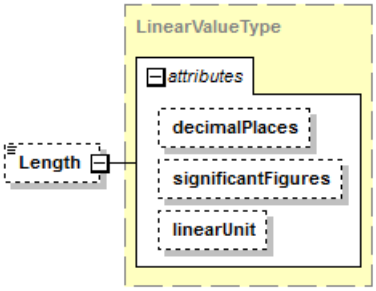
element **OppositeLinesFeatureDefinitionType/InternalExternal**

diagram	
type	**InternalExternalEnumType**
properties	content simple
facets	Kind / Value / Annotation enumeration INTERNAL enumeration EXTERNAL enumeration NOT_APPLICABLE
annotation	documentation The InternalExternal element indicates whether the feature is internal (slot, groove) or external (rib, web, block).

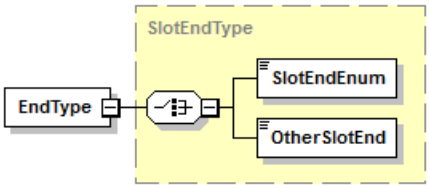
element **OppositeLinesFeatureDefinitionType/Width**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Width element is the nominal width of this feature of size. When the feature is tapered the width applies at the locating point.

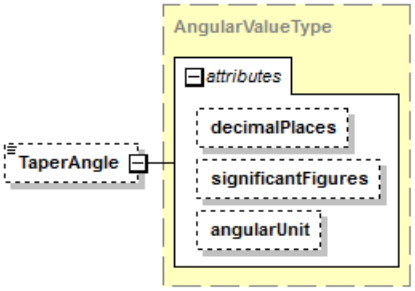
element **OppositeLinesFeatureDefinitionType/Length**

diagram	
type	**LinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The optional Length element is the nominal length of the feature from end to end along the centerline.

element **OppositeLinesFeatureDefinitionType/EndType**

diagram	
type	**SlotEndType**
properties	content complex
children	**SlotEndEnum OtherSlotEnd**
annotation	documentation The EndType element is the type of the opposite lines feature's ends: round, flat, expanded, or open.

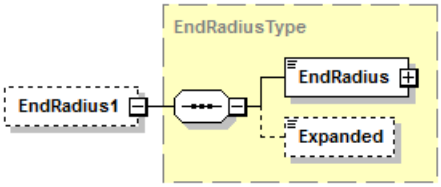
element **OppositeLinesFeatureDefinitionType/TaperAngle**

diagram	
type	**AngularValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. angularUnit **xs:token** documentation The optional angularUnit attribute defines the UnitName for the AngularValueType.
annotation	documentation The optional TaperAngle element is the nominal taper angle of the feature. If positive, the opposite lines of the feature open in the direction of the centerline vector, and if negative, the opposite lines close in the direction of the centerline vector.

element **OppositeLinesFeatureDefinitionType/SingleOpenEnd**

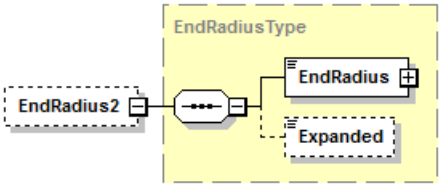
diagram	
type	**xs:boolean**
properties	minOcc 0 maxOcc 1 content simple
annotation	documentation The optional SingleOpenEnd element is a designator that this feature has one open end. It has meaning only with FLAT, ROUND or EXPANDED end types. If this element exists and is set to "true" then the end in the direction of the centerline vector is open and the other end is closed.

element **OppositeLinesFeatureDefinitionType/EndRadius1**

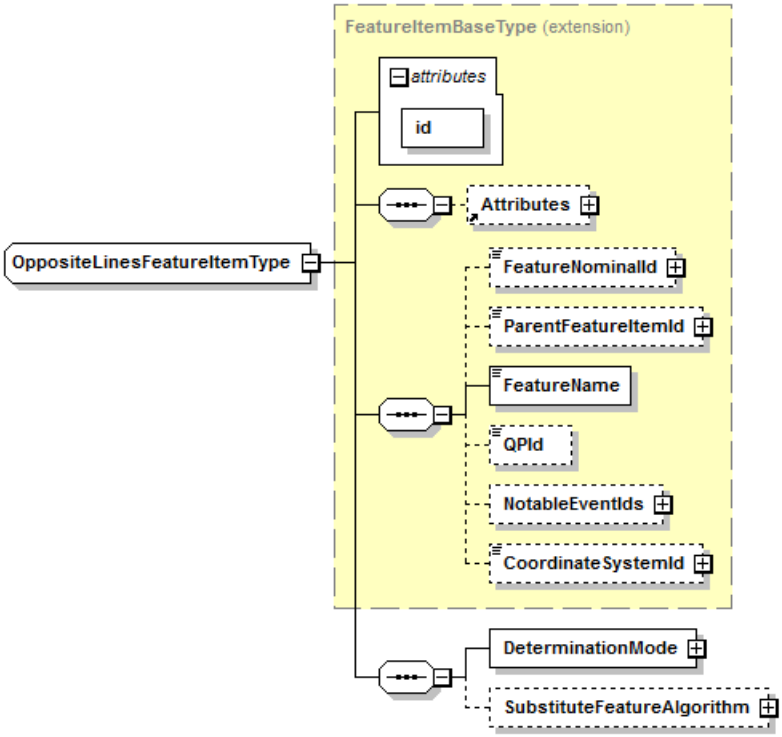
diagram	
type	**EndRadiusType**

properties	minOcc 0 maxOcc 1 content complex
children	**EndRadius Expanded**
annotation	documentation The optional EndRadius1 element is the radius of a complex end in the direction opposite the centerline vector. If the end type is flat, then the opposite lines feature has a filleted flat end, and the value must be small enough that a portion of the end is flat. If the end type is round, this value must be such that the end is an outward circular arc. If the end radius is greater than that of a tangent round end then whether the end expands in size like a dumbbell or not is defined by the Expanded element.

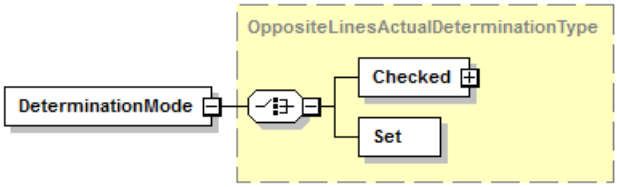
element **OppositeLinesFeatureDefinitionType/EndRadius2**

diagram	
type	**EndRadiusType**
properties	minOcc 0 maxOcc 1 content complex
children	**EndRadius Expanded**
annotation	documentation The optional EndRadius2 element is the radius of the complex end in the direction of the centerline vector. If the end type is flat, then the opposite lines feature has a filleted flat end, and the value must be small enough that a portion of the end is flat. If the end type is round, this value must be such that the end is an outward circular arc. If the end radius is greater than that of a tangent round end then whether the end expands in size like a dumbbell or not is defined by the Expanded element.

complexType **OppositeLinesFeatureItemType**

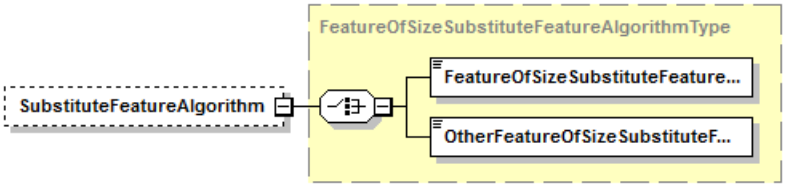
diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **OppositeLinesFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The OppositeLinesFeatureItemType defines an individual feature-of-size opposite lines feature, either parallel or tapered, located by its centerline. This feature can be used to describe a slot or groove (internal feature) or a rib, web, or block (external feature).

element **OppositeLinesFeatureItemType/DeterminationMode**

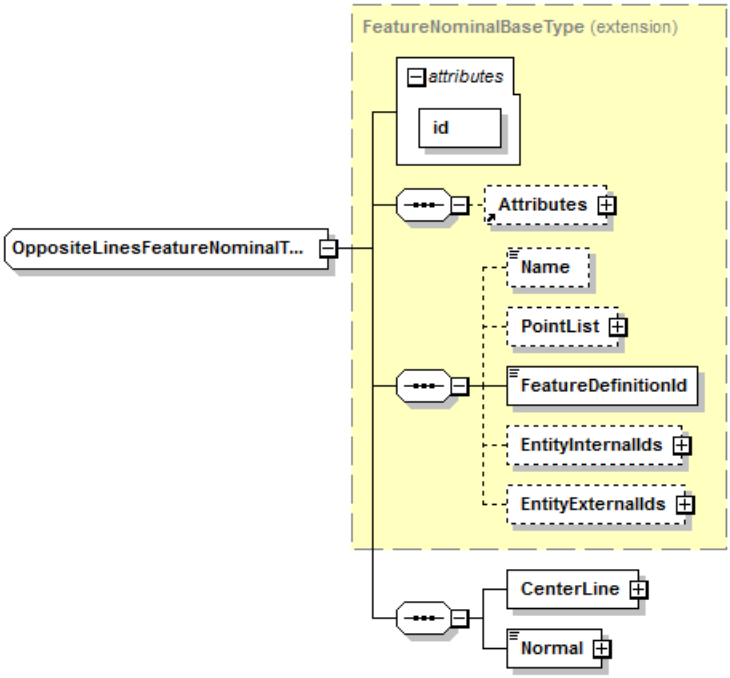
diagram	
type	**OppositeLinesActualDeterminationType**
properties	content complex

children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the opposite lines feature actual is determined.

element **OppositeLinesFeatureItemType/SubstituteFeatureAlgorithm**

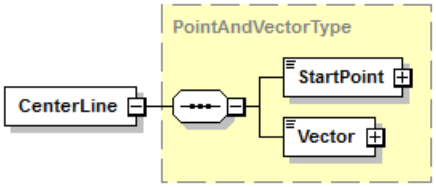
diagram	
type	**FeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**FeatureOfSizeSubstituteFeatureAlgorithmEnum OtherFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the opposite lines feature.

complexType **OppositeLinesFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **CenterLine** **Normal**
used by	element **OppositeLinesFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation

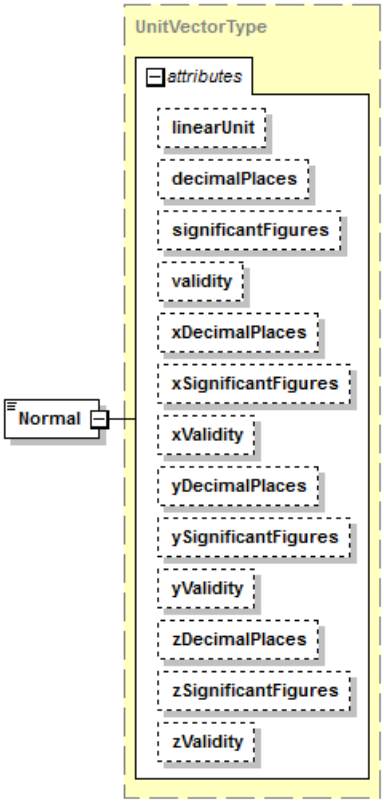
	The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The OppositeLinesFeatureNominalType defines the opposite lines feature nominal information for an individual opposite lines feature.

element **OppositeLinesFeatureNominalType/CenterLine**

diagram	
type	**PointAndVectorType**
properties	content complex
children	**StartPoint Vector**
annotation	documentation The CenterLine element is the nominal location point and a unit vector direction of the centerline of the opposite lines feature. The location point is both midway between the sides and between the ends (real or virtual). Or in other words, the sides are located half the width away from the location point in directions perpendicular to both the centerline vector and the normal vector. The ends are located half the length away from the location point in directions along and against the centerline vector.

element **OppositeLinesFeatureNominalType/Normal**

diagram



type **UnitVectorType**

properties content complex

facets

Kind	Value	Annotation
length	3	

attributes

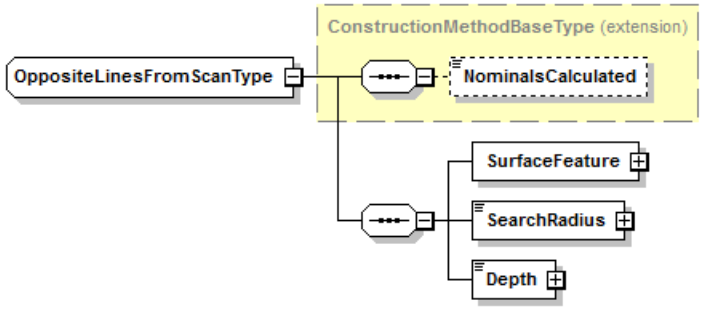
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

annotation

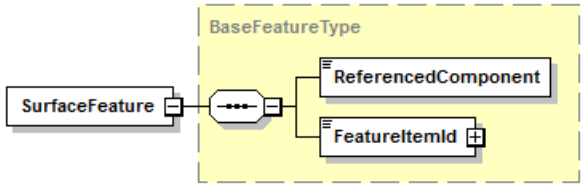
documentation

The Normal element is the nominal unit normal vector of the plane in which the opposite lines feature lies.

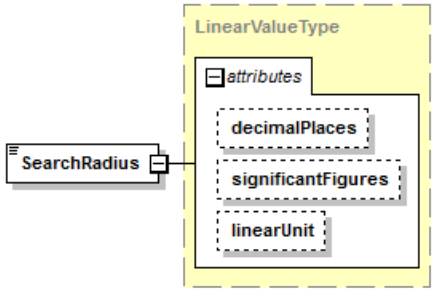
complexType **OppositeLinesFromScanType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius** **Depth**
used by	element **OppositeLinesConstructionMethodType/FromScan**
annotation	documentation The OppositeLinesFromScanType defines an opposite lines feature construction by the retrieval of an opposite lines feature from a scanned surface feature (point cloud).

element **OppositeLinesFromScanType/SurfaceFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The SurfaceFeature element identifies the scanned surface feature from which the opposite lines feature is retrieved.

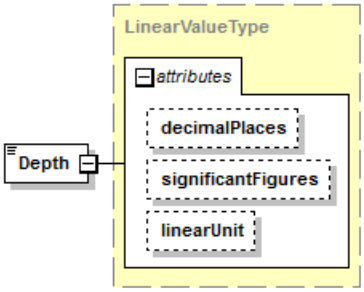
element **OppositeLinesFromScanType/SearchRadius**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name Type Use Default Fixed Annotation

	decimalPlaces	**xs:nonNegativeInteger**	documentation See documentation of SpecifiedDecimalType.
	significantFigures	**xs:nonNegativeInteger**	documentation See documentation of SpecifiedDecimalType.
	linearUnit	**xs:token**	documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The SearchRadius element is the radius around the nominal feature, wherein the actual feature can be expected. The SearchRadius is the radius added to and subtracted from the size of the nominal feature defining an extruded shell. All scanned points within this extruded shell are used for the retrieval of the feature. The extruded shell's axis is defined by the feature's normal and the extruded shell's axis passes through the feature's center point. The extruded shell is evenly disposed about the nominal opposite lines feature.		

element **OppositeLinesFromScanType/Depth**

diagram



type **LinearValueType**

properties content complex

attributes

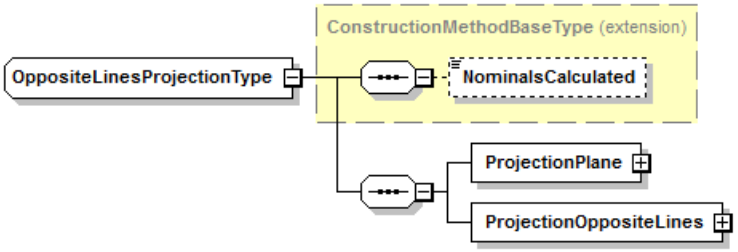
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.

annotation

documentation
The Depth element is the measuring depth at which the opposite lines feature is to be retrieved.

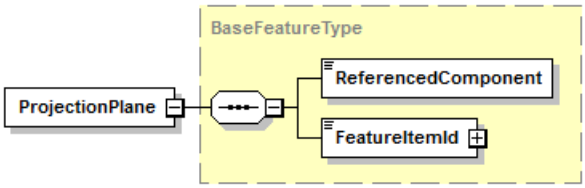
complexType **OppositeLinesProjectionType**

diagram

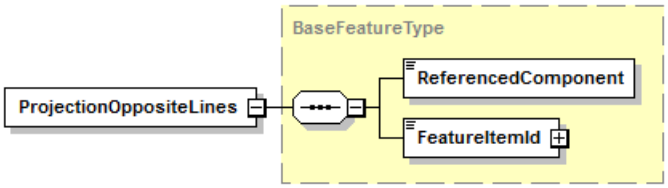


type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **ProjectionPlane** **ProjectionOppositeLines**
used by	element **OppositeLinesConstructionMethodType/Projection**
annotation	documentation The OppositeLinesProjectionType defines a projected opposite lines feature construction with the opposite lines feature to be projected and the projection plane.

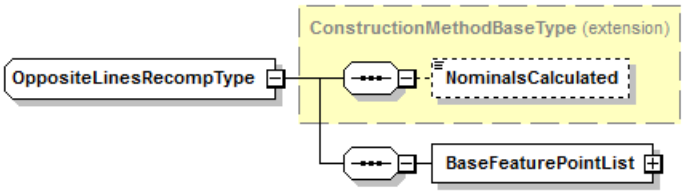
element **OppositeLinesProjectionType/ProjectionPlane**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The ProjectionPlane element identifies the plane onto which the opposite lines feature is to be projected.

element **OppositeLinesProjectionType/ProjectionOppositeLines**

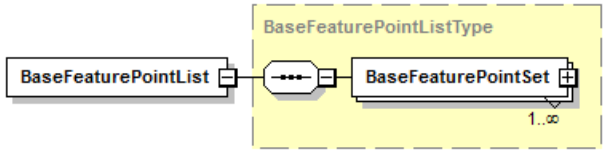
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The ProjectionOppositeLines element identifies the opposite lines feature to be projected.

complexType **OppositeLinesRecompType**

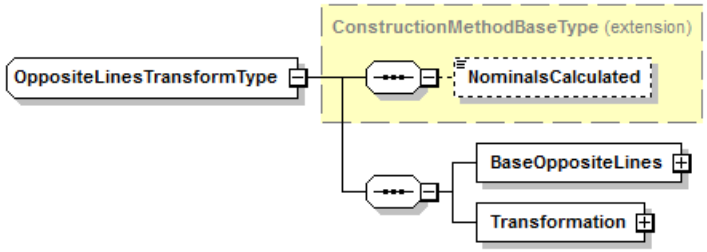
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType

children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **OppositeLinesConstructionMethodType/Recompensated**
annotation	documentation The OppositeLinesRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit opposite lines feature through the measurement points of base features.

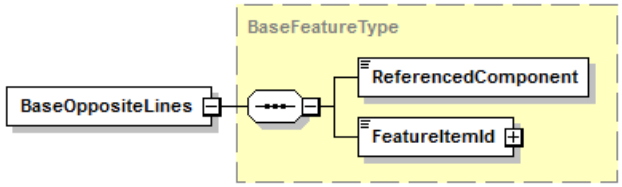
element **OppositeLinesRecompType/BaseFeaturePointList**

diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit opposite lines feature. The total number of points in the BaseFeaturePointSets in the list must be 3 or greater for an opposite lines feature with open ends and 5 or greater for an opposite lines feature with closed ends.

complexType **OppositeLinesTransformType**

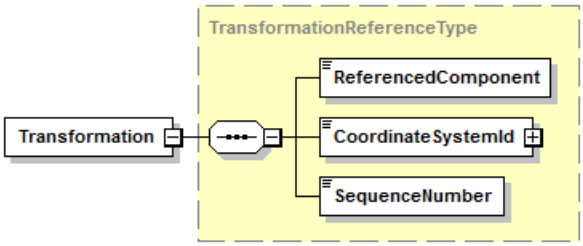
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseOppositeLines** **Transformation**
used by	element **OppositeLinesConstructionMethodType/Transform**
annotation	documentation The OppositeLinesTransformType defines an opposite lines feature construction by the transformation of an opposite lines feature through the specified nominal or actual coordinate system.

element **OppositeLinesTransformType/BaseOppositeLines**

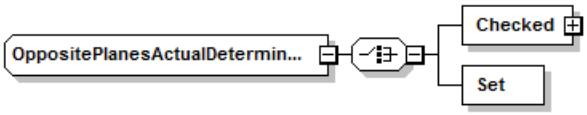
diagram	
type	**BaseFeatureType**

properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseOppositeLines element identifies the opposite lines feature to be transformed.

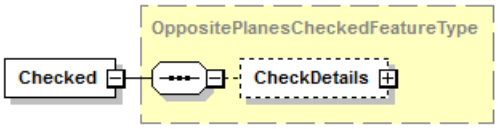
element **OppositeLinesTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent CoordinateSystemId SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the opposite lines feature.

complexType **OppositePlanesActualDeterminationType**

diagram	
children	**Checked Set**
used by	element **OppositePlanesFeatureItemType/DeterminationMode**
annotation	documentation The OppositePlanesActualDeterminationType defines how the opposite planes feature actual is determined, either by being set or by being checked (measured or constructed).

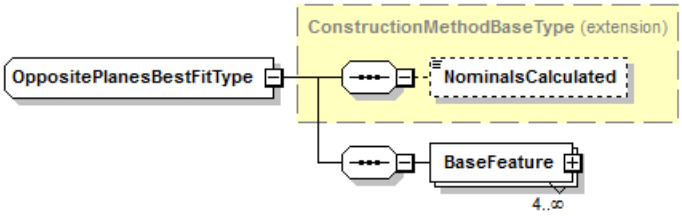
element **OppositePlanesActualDeterminationType/Checked**

diagram	
type	**OppositePlanesCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the opposite planes feature is checked from actual data, either measured or constructed.

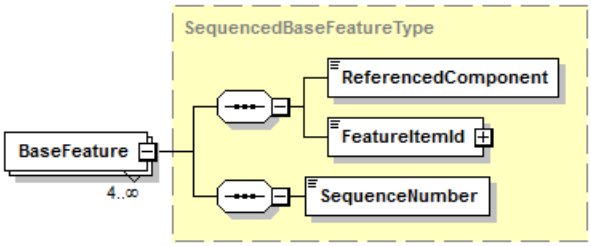
element **OppositePlanesActualDeterminationType/Set**

diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the opposite planes feature actual is set to its nominal value.

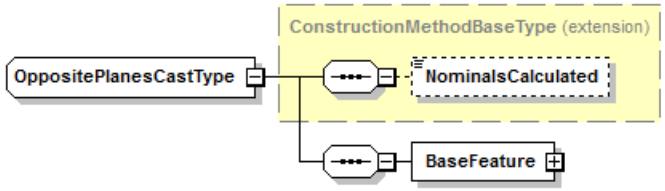
complexType **OppositePlanesBestFitType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **OppositePlanesConstructionMethodType/BestFit**
annotation	documentation The OppositePlanesBestFitType defines the information for a best-fit opposite planes feature which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the opposite planes feature.

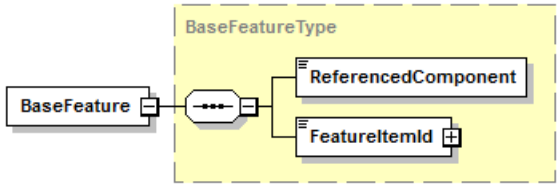
element **OppositePlanesBestFitType/BaseFeature**

diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 4 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of an opposite planes feature. The number of base features must be 4 or greater.

complexType **OppositePlanesCastType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **OppositePlanesConstructionMethodType/Cast**
annotation	documentation The OppositePlanesCastType defines the cast of another feature type to an opposite planes feature. The location and size are copied from the base feature.

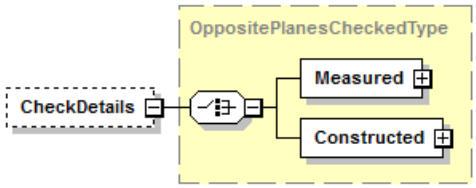
element **OppositePlanesCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to an opposite planes feature.

complexType **OppositePlanesCheckedFeatureType**

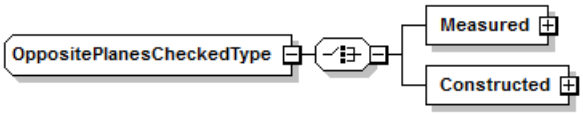
diagram	
children	**CheckDetails**
used by	element **OppositePlanesActualDeterminationType/Checked**
annotation	documentation The OppositePlanesCheckedFeatureType defines that an opposite planes feature is checked.

element **OppositePlanesCheckedFeatureType/CheckDetails**

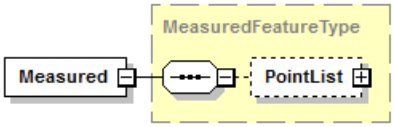
diagram	
type	**OppositePlanesCheckedType**

properties	minOcc 0 maxOcc 1 content complex
children	**Measured** **Constructed**
annotation	documentation The optional CheckDetails element gives details about the opposite planes feature check (measurement or construction).

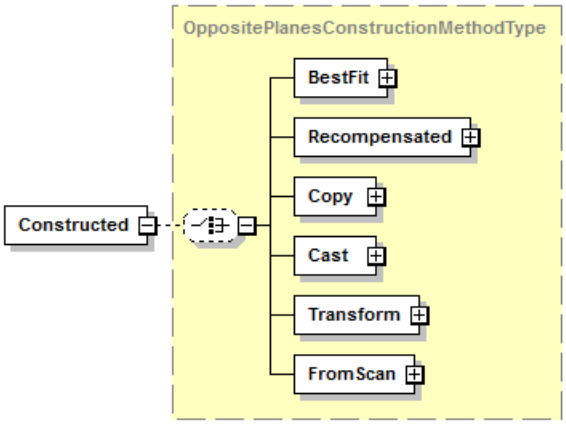
complexType **OppositePlanesCheckedType**

diagram	
children	**Measured** **Constructed**
used by	element **OppositePlanesCheckedFeatureType/CheckDetails**
annotation	documentation The OppositePlanesCheckedType defines how the opposite planes feature actual is checked, either by measurement or by construction.

element **OppositePlanesCheckedType/Measured**

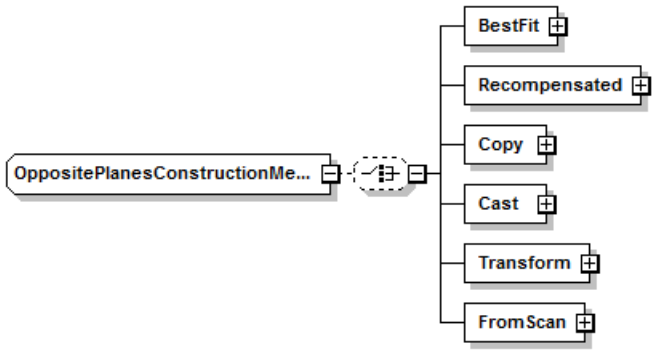
diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the opposite planes feature is measured.

element **OppositePlanesCheckedType/Constructed**

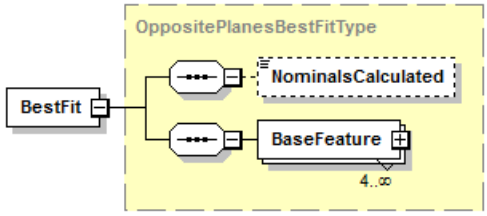
diagram	
type	**OppositePlanesConstructionMethodType**
properties	content complex

children	**BestFit** **Recompensated** **Copy** **Cast** **Transform** **FromScan**
annotation	documentation The Constructed element signifies that the opposite planes feature is constructed.

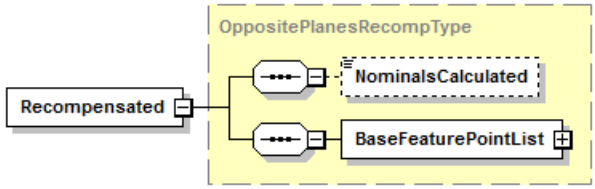
complexType **OppositePlanesConstructionMethodType**

diagram	
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform** **FromScan**
used by	element **OppositePlanesCheckedType/Constructed**
annotation	documentation The OppositePlanesConstructionMethodType defines the method for constructing a unique nominal or actual opposite planes feature.

element **OppositePlanesConstructionMethodType/BestFit**

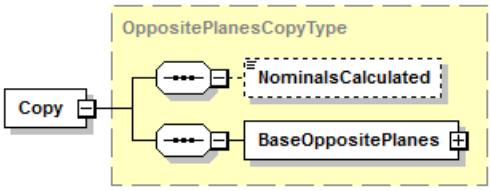
diagram	
type	**OppositePlanesBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of an opposite planes feature from 4 or more point-reducible base features. This element is in an optional choice.

element **OppositePlanesConstructionMethodType/Recompensated**

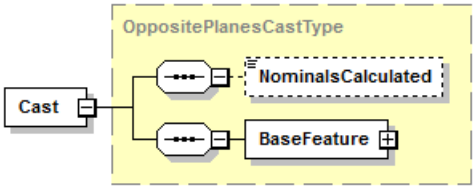
diagram	
type	**OppositePlanesRecompType**
properties	content complex

children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of an opposite planes feature from 4 or more base feature points. This element is in an optional choice.

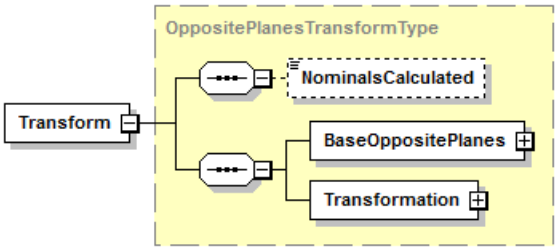
element **OppositePlanesConstructionMethodType/Copy**

diagram	
type	**OppositePlanesCopyType**
properties	content complex
children	**NominalsCalculated** **BaseOppositePlanes**
annotation	documentation The Copy element describes the construction of an opposite planes feature by the copying of a base opposite planes feature. This element is in an optional choice.

element **OppositePlanesConstructionMethodType/Cast**

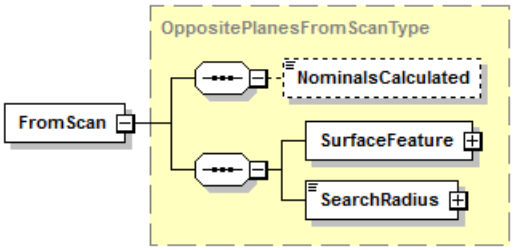
diagram	
type	**OppositePlanesCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of an opposite planes feature by the casting of a base feature. This element is in an optional choice.

element **OppositePlanesConstructionMethodType/Transform**

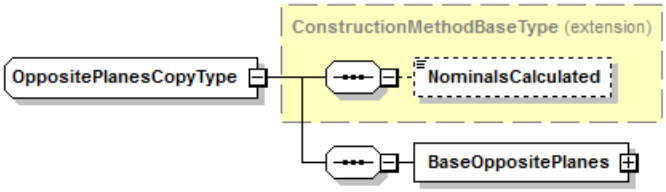
diagram	
type	**OppositePlanesTransformType**
properties	content complex
children	**NominalsCalculated** **BaseOppositePlanes** **Transformation**

annotation	documentation The Transform element describes the construction of an opposite planes feature by the transformation of a base opposite planes feature. This element is in an optional choice.

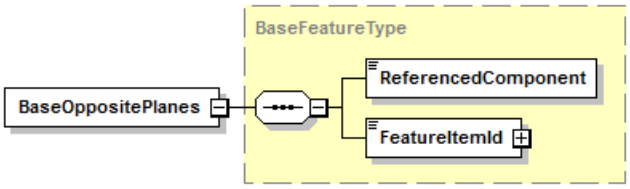
element **OppositePlanesConstructionMethodType/FromScan**

diagram	
type	**OppositePlanesFromScanType**
properties	content complex
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius**
annotation	documentation The FromScan element describes the construction of an opposite planes feature from scan data. This element is in an optional choice.

complexType **OppositePlanesCopyType**

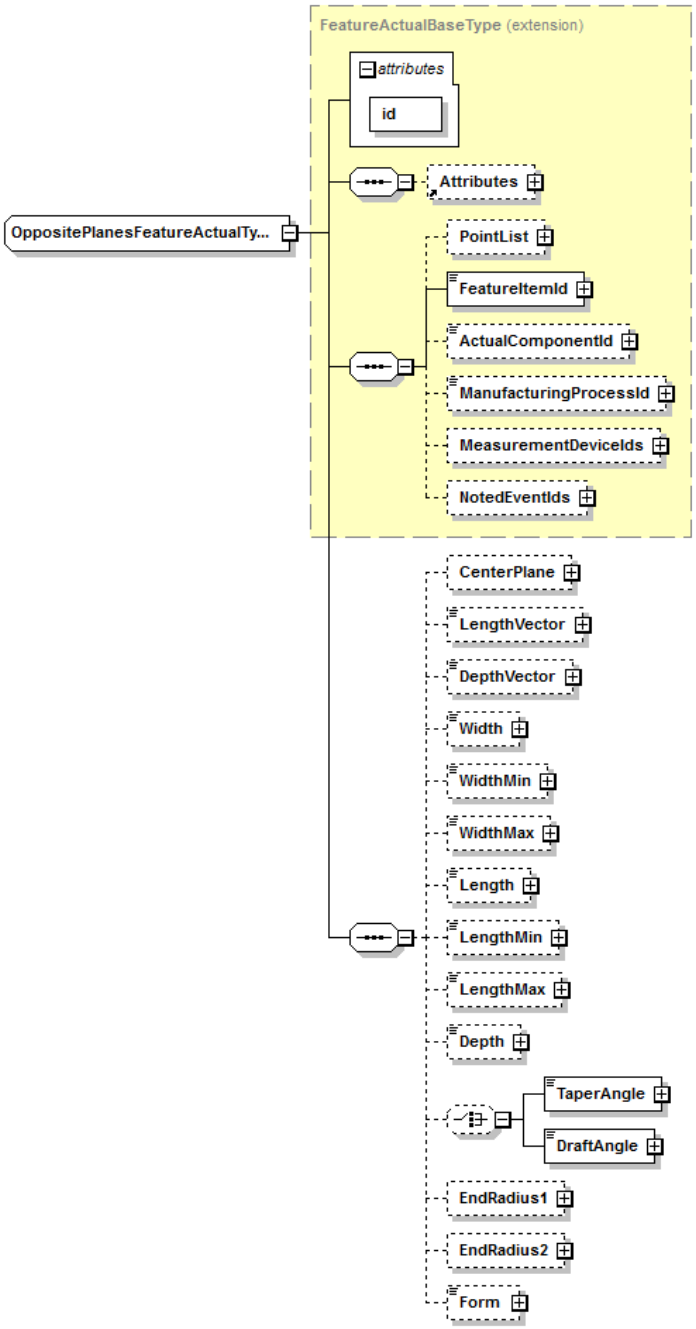
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseOppositePlanes**
used by	element **OppositePlanesConstructionMethodType/Copy**
annotation	documentation The OppositePlanesCopyType defines a copied opposite planes feature construction.

element **OppositePlanesCopyType/BaseOppositePlanes**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**

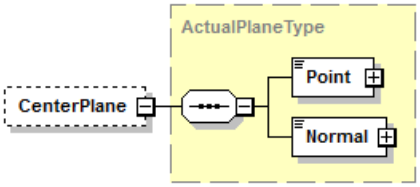
annotation	documentation The BaseOppositePlanes element identifies the opposite planes to be copied.

complexType **OppositePlanesFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **CenterPlane** **LengthVector** **DepthVector** **Width** **WidthMin** **WidthMax** **Length** **LengthMin** **LengthMax** **Depth** **TaperAngle** **DraftAngle** **EndRadius1** **EndRadius2** **Form**

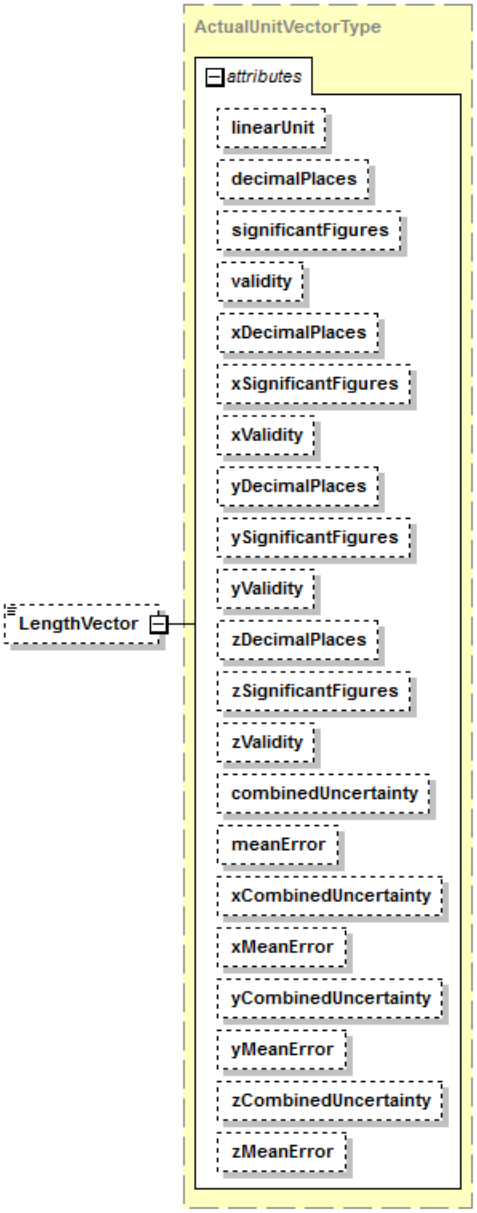
used by	element **OppositePlanesFeatureActual**					
attributes	Name id	Type **QIFIdType**	Use required	Default	Fixed	Annotation documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The OppositePlanesFeatureActualType defines the opposite planes feature actual information for an individual opposite planes feature.					

element **OppositePlanesFeatureActualType/CenterPlane**

diagram	
type	**ActualPlaneType**
properties	minOcc 0 maxOcc 1 content complex
children	**Point Normal**
annotation	documentation The optional CenterPlane element is the actual location point and a unit vector normal of the center plane of the opposite planes feature.

element **OppositePlanesFeatureActualType/LengthVector**

diagram



type	**ActualUnitVectorType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

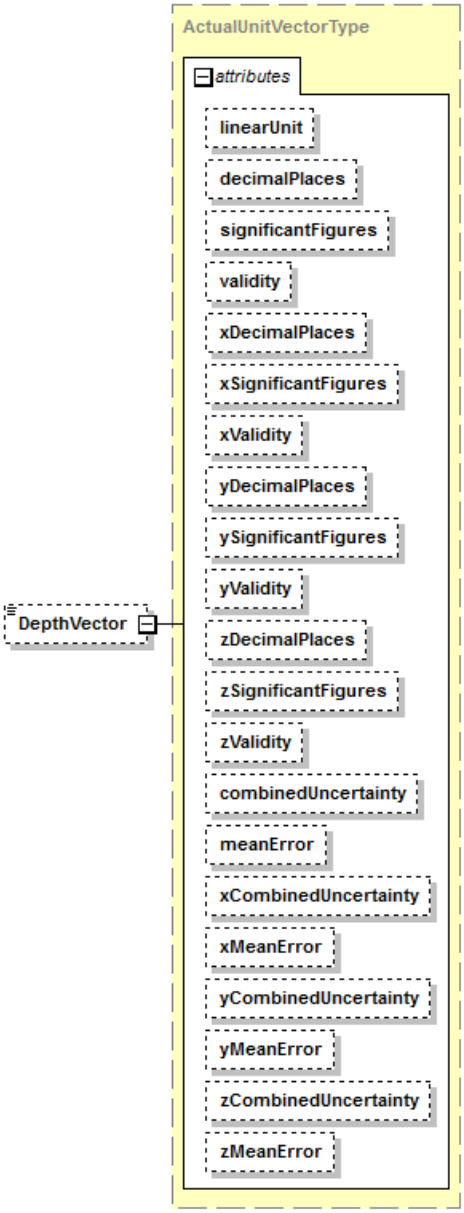
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional LengthVector element is the actual unit vector of the long axis of the feature.	

element **OppositePlanesFeatureActualType/DepthVector**

diagram



type	**ActualUnitVectorType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

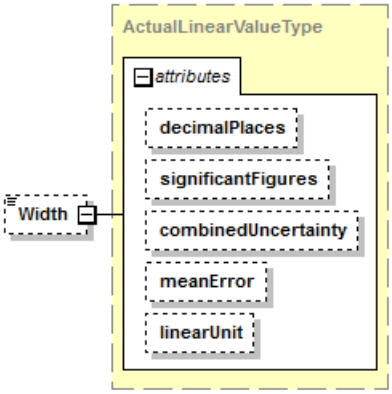
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional DepthVector element is the actual unit vector of the depth axis of the feature.	

element **OppositePlanesFeatureActualType/Width**

diagram



type **ActualLinearValueType**

properties

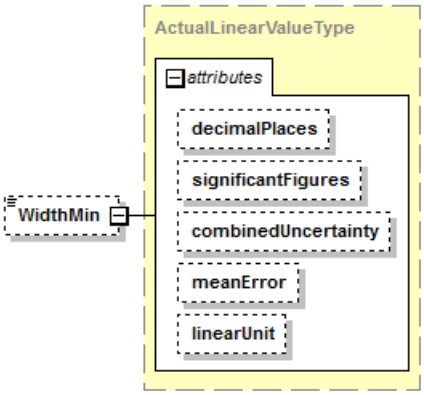
minOcc	0
maxOcc	1
content	complex

attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is

	linearUnit	**xs:token**	a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Width element is the actual width between the opposite planes per the substitute feature data fitting algorithm setting. If the feature is tapered or has draft the width applies at the locating point.		

element **OppositePlanesFeatureActualType/WidthMin**

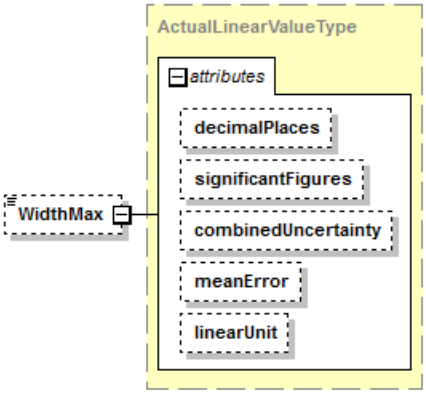
diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

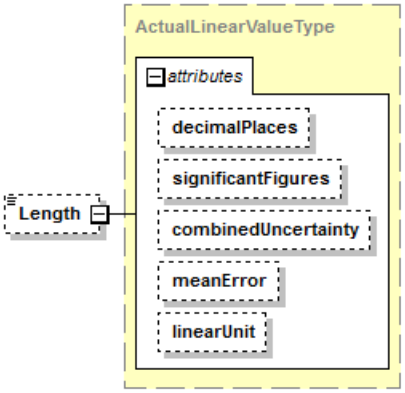
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation	documentation The optional WidthMin element is the minimum width of the opposite planes feature from a report or an analysis.

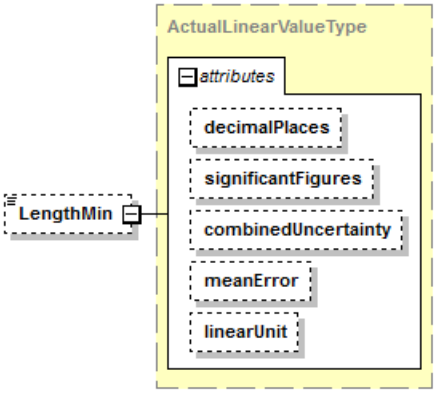
element **OppositePlanesFeatureActualType/WidthMax**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional WidthMax element is the maximum width of the opposite planes feature from a report or an analysis.

element **OppositePlanesFeatureActualType/Length**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Length element is the actual length of the opposite planes feature based on the substitute feature data fitting algorithm setting.

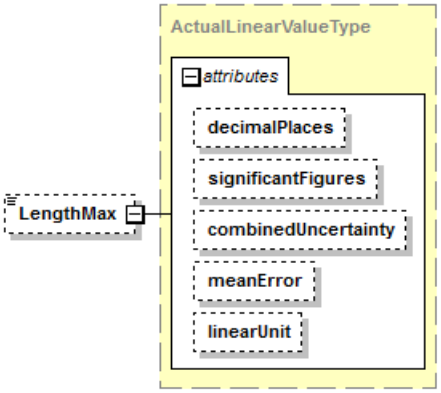
element **OppositePlanesFeatureActualType/LengthMin**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation	documentation The optional LengthMin element is the minimum length of the opposite planes feature from a report or an analysis.

element **OppositePlanesFeatureActualType/LengthMax**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

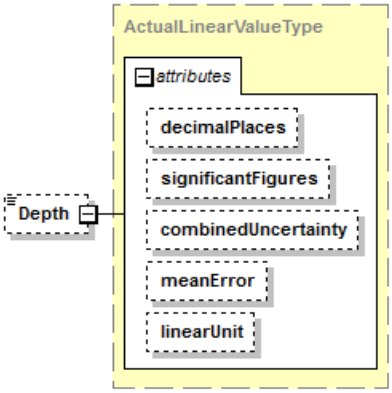
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation

documentation
The optional LengthMax element is the maximum length of the opposite planes feature from a report or an analysis.

element **OppositePlanesFeatureActualType/Depth**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

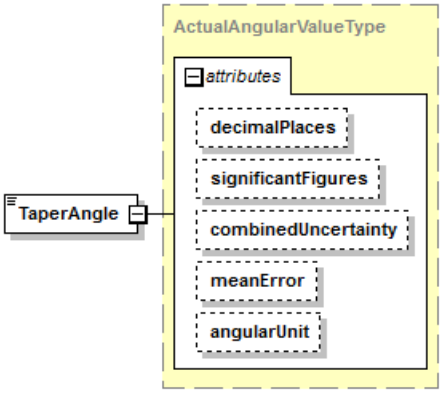
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation

documentation
The optional Depth element is the actual depth of opposite planes feature in the direction of the depth vector.

element **OppositePlanesFeatureActualType/TaperAngle**

diagram



type **ActualAngularValueType**

properties content complex

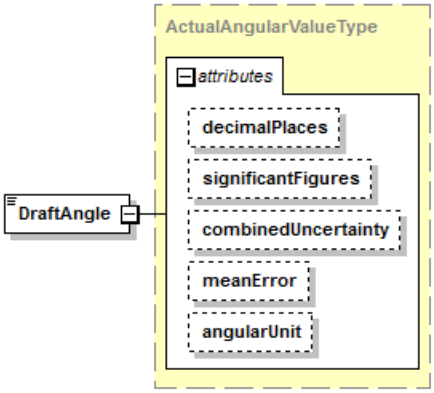
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
angularUnit	**xs:token**				documentation The optional angularUnit attribute defines the unit used by ActualAngularValueType.

annotation documentation
The optional TaperAngle element is the actual taper angle of the feature. This element is in an optional choice.

element **OppositePlanesFeatureActualType/DraftAngle**

diagram



type **ActualAngularValueType**

properties content complex

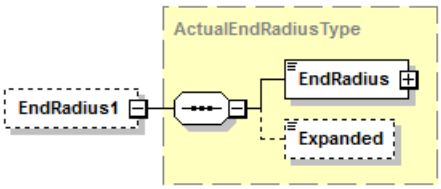
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
angularUnit	**xs:token**				documentation The optional angularUnit attribute defines the unit used by ActualAngularValueType.

annotation documentation
The optional DraftAngle element is the actual draft angle of the feature. This element is in an optional choice.

element **OppositePlanesFeatureActualType/EndRadius1**

diagram

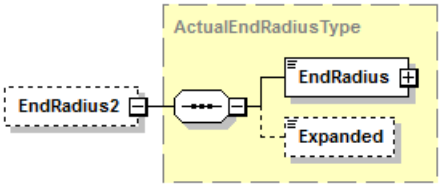


type **ActualEndRadiusType**

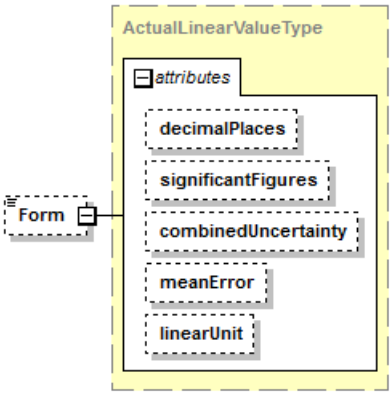
properties minOcc 0
maxOcc 1
content complex

children	**EndRadius Expanded**
annotation	documentation The optional EndRadius1 element is the actual radius of the rounded end in the direction opposite the length vector.

element **OppositePlanesFeatureActualType/EndRadius2**

diagram	
type	**ActualEndRadiusType**
properties	minOcc 0 maxOcc 1 content complex
children	**EndRadius Expanded**
annotation	documentation The optional EndRadius2 element is the actual radius of the rounded end in the direction of the length vector.

element **OppositePlanesFeatureActualType/Form**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

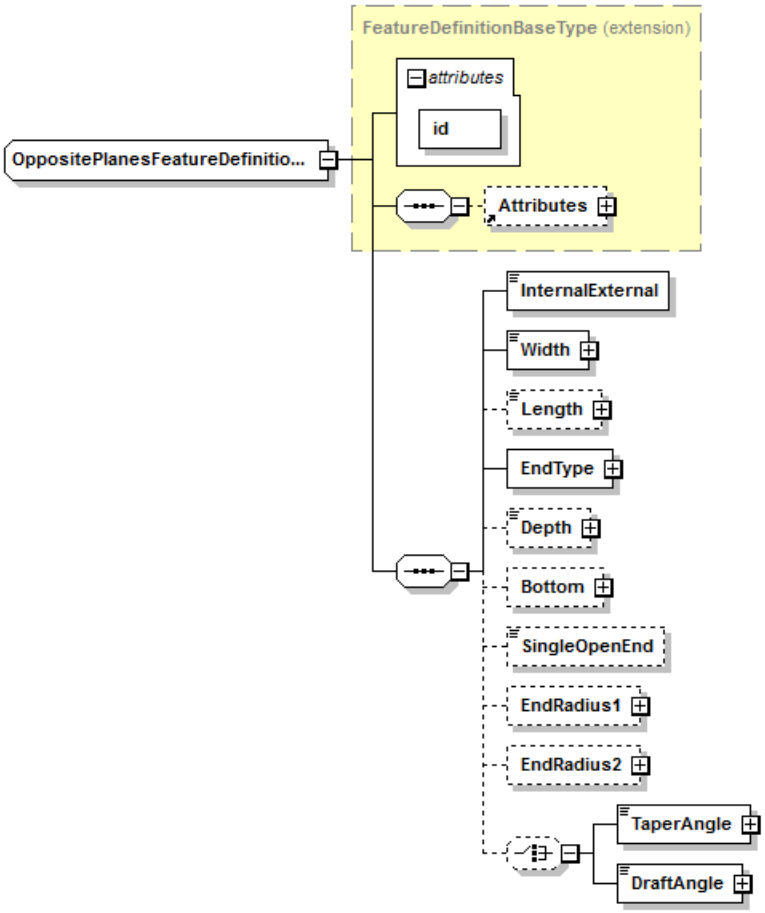
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional

	linearUnit **xs:token**	meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Form element is the form error of the opposite planes feature from a report or an analysis.	

complexType **OppositePlanesFeatureDefinitionType**

diagram



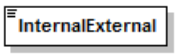
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes** **InternalExternal** **Width** **Length** **EndType** **Depth** **Bottom** **SingleOpenEnd** **EndRadius1** **EndRadius2** **TaperAngle** **DraftAngle**
used by	element **OppositePlanesFeatureDefinition**

attributes

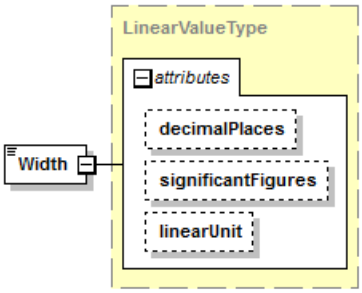
Name	Type	Use	Default	Fixed	Annotation
id	**QIFIdType**	required			documentation The id attribute is the QIF id of the feature, used for

	referencing.
annotation	documentation The OppositePlanesFeatureDefinitionType defines the nominal information that can be common to one or more opposite planes features.

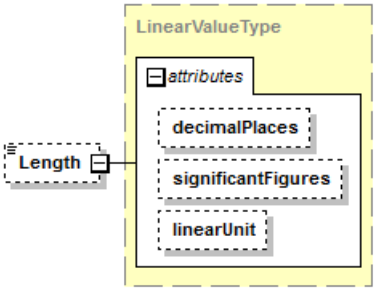
element **OppositePlanesFeatureDefinitionType/InternalExternal**

diagram	
type	**InternalExternalEnumType**
properties	content simple
facets	Kind / Value / Annotation enumeration INTERNAL enumeration EXTERNAL enumeration NOT_APPLICABLE
annotation	documentation The InternalExternal element indicates whether the feature is internal (slot, groove) or external (rib, web, block).

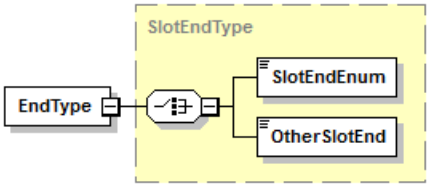
element **OppositePlanesFeatureDefinitionType/Width**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Width element is the nominal width of this feature of size. If the opposite planes of the feature are tapered or have a draft angle then the width applies at the locating point.

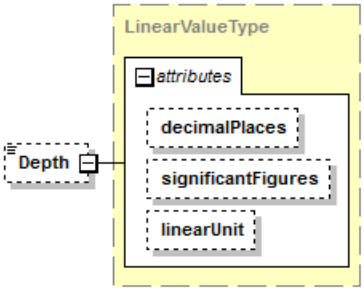
element **OppositePlanesFeatureDefinitionType/Length**

diagram	
type	**LinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The optional Length element is the nominal length of the feature parallel to the length vector in the center-plane. If the opposite planes feature has a draft angle then the length applies at the depth of the locating point.

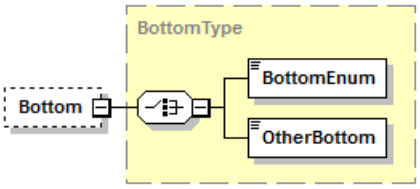
element **OppositePlanesFeatureDefinitionType/EndType**

diagram	
type	**SlotEndType**
properties	content complex
children	**SlotEndEnum OtherSlotEnd**
annotation	documentation The EndType element is the type of the opposite planes feature's ends: round, flat, expanded, or open. A flat end is formed by a plane perpendicular to the LengthVector passing through the location point of the center plane.

element **OppositePlanesFeatureDefinitionType/Depth**

diagram	
type	**LinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The optional Depth element is the depth of the opposite planes feature.

element **OppositePlanesFeatureDefinitionType/Bottom**

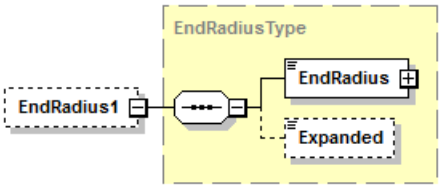
diagram	
type	**BottomType**
properties	minOcc 0 maxOcc 1 content complex
children	**BottomEnum OtherBottom**
annotation	documentation The optional Bottom element is the type of bottom of the slot. If present, it must be BLIND or THROUGH. The bottom type affects the region available for probing. If the InternalExternal given in the opposite planes feature item is INTERNAL, the opposite planes feature fits the intuitive description of a slot, and in that case BLIND means that the slot has material at the bottom, while THROUGH means that the slot goes all the way through the product. If the InternalExternal is EXTERNAL, the slot is actually a boss with parallel planes for sides, and in that case BLIND means that there is material outside the boss at the base of the boss, while THROUGH means that there is no material there.

element **OppositePlanesFeatureDefinitionType/SingleOpenEnd**

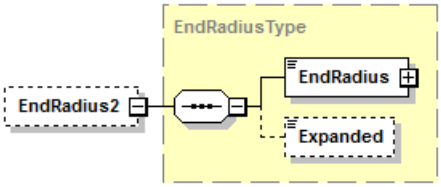
diagram	

type	**xs:boolean**
properties	minOcc 0 maxOcc 1 content simple
annotation	documentation The optional SingleOpenEnd element signifies that this feature has one open end. It has meaning only with FLAT, ROUND or EXPANDED end types. If this element exists and is set to "true" then the end in the direction of the length vector is open.

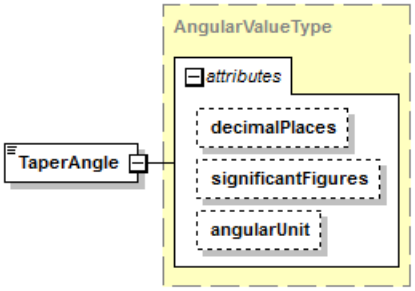
element **OppositePlanesFeatureDefinitionType/EndRadius1**

diagram	
type	**EndRadiusType**
properties	minOcc 0 maxOcc 1 content complex
children	**EndRadius Expanded**
annotation	documentation The optional EndRadius1 element is the radius of a complex end in the direction opposite the centerline vector. The radius is measured in a plane passing through the location point and containing the LengthVector and the normal to the center plane. If the end type is flat, then the opposite planes feature has a filleted flat end, and the value must be small enough that a portion of the end is flat. If the end type is round, this value must be such that the end is an outward cylindrical segment (or a conical segment if there is a taper). If the end radius is greater than that of a tangent round end then whether the end expands in size like a dumbbell or not is defined by the Expanded element.

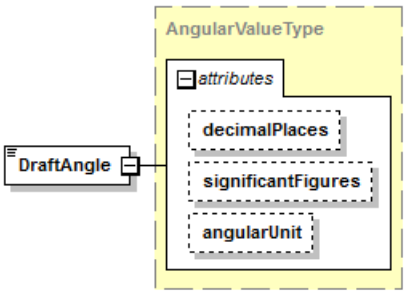
element **OppositePlanesFeatureDefinitionType/EndRadius2**

diagram	
type	**EndRadiusType**
properties	minOcc 0 maxOcc 1 content complex
children	**EndRadius Expanded**
annotation	documentation The optional EndRadius2 element is the radius of the complex end in the direction of the centerline vector. The radius is measured in a plane passing through the location point and containing the LengthVector and the normal to the center plane. If the end type is flat, then the opposite planes feature has a filleted flat end, and the value must be small enough that a portion of the end is flat. If the end type is round, this value must be such that the end is an outward cylindrical segment (or a conical segment if there is a taper). If the end radius is greater than that of a tangent round end then whether the end expands in size like a dumbbell or not is defined by the Expanded element.

element **OppositePlanesFeatureDefinitionType/TaperAngle**

diagram	
type	**AngularValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. angularUnit **xs:token** — documentation: The optional angularUnit attribute defines the UnitName for the AngularValueType.
annotation	documentation The TaperAngle element is the nominal angle between each side of the feature and the center plane (i.e. half of the angle between the two sides). If positive, the opposite planes of the feature open in the direction of the length vector, and if negative, the opposite planes close in the direction of the length vector. For a taper angle, the normal vector of each side is parallel to a plane containing the normal to the center plane and the length vector. This element is in an optional choice.

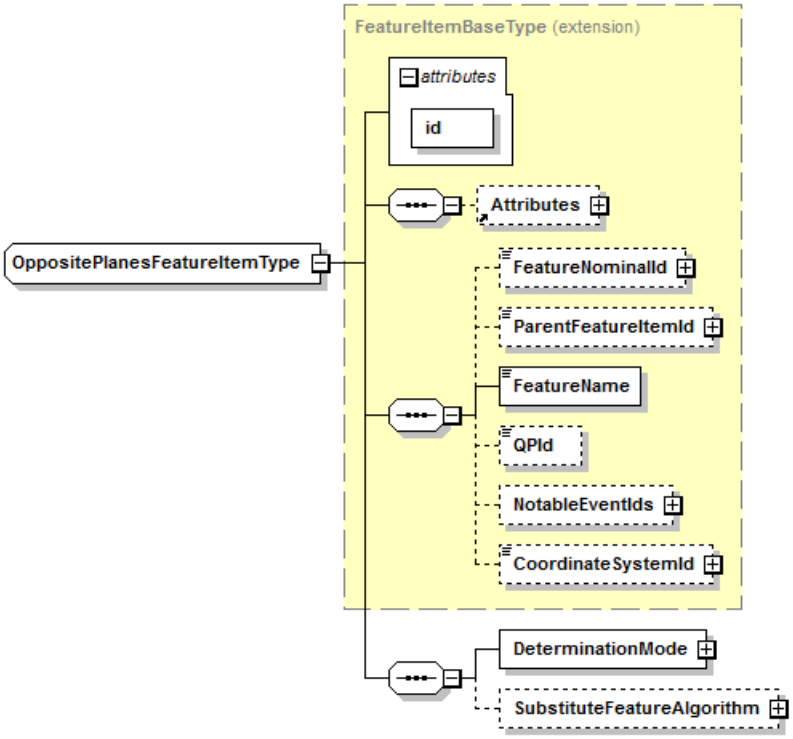
element **OppositePlanesFeatureDefinitionType/DraftAngle**

diagram	
type	**AngularValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. angularUnit **xs:token** — documentation: The optional angularUnit attribute

	defines the UnitName for the AngularValueType.
annotation	documentation The DraftAngle element is the nominal angle between the center plane of the feature and each side of the feature (i.e. half of the angle between the two sides). If positive, the opposite planes of the feature open in the direction of the depth vector, and if negative, the opposite planes close in the direction of the depth vector. The ends of the feature, if there are any, will be similarly drafted. This element is in an optional choice.

complexType **OppositePlanesFeatureItemType**

diagram

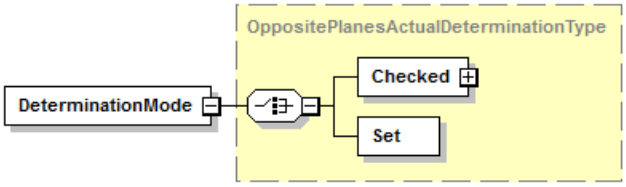


type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **OppositePlanesFeatureItem**

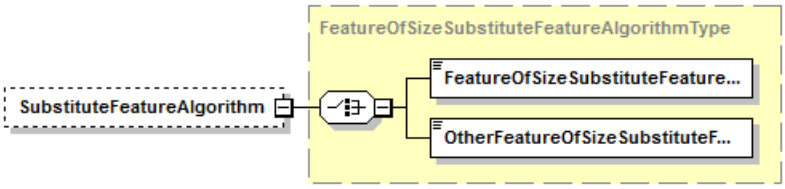
attributes	Name	Type	Use	Default	Fixed	Annotation
	id	**QIFIdType**	required			documentation The id attribute is the QIF id of the feature, used for referencing.

annotation	documentation The OppositePlanesFeatureItemType defines an individual, three dimensional feature-of-size opposite planes feature, located by its center plane. This feature can be used to describe a slot or groove (internal feature) or a rib, web, or block (external feature).

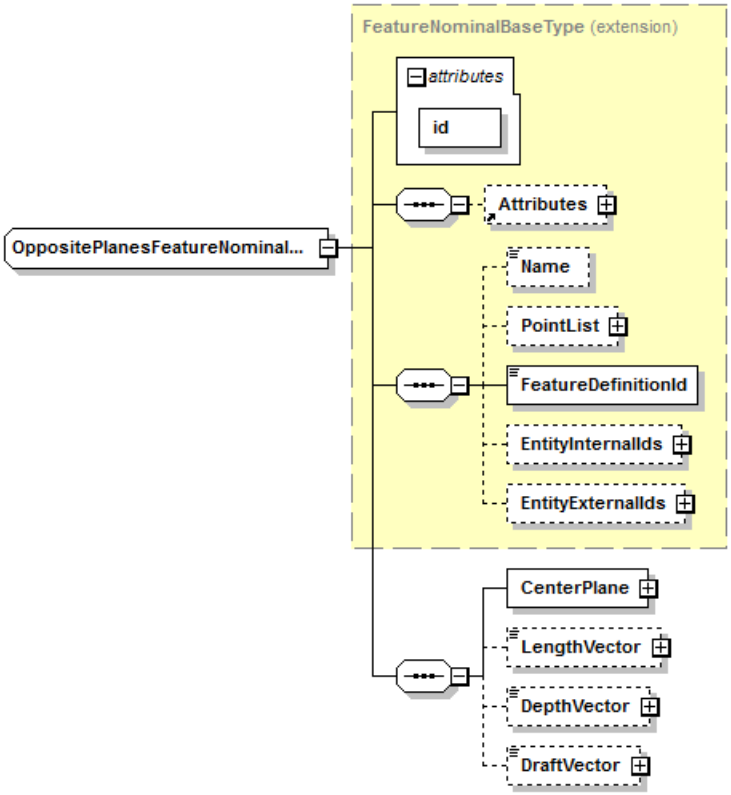
element **OppositePlanesFeatureItemType/DeterminationMode**

diagram	
type	**OppositePlanesActualDeterminationType**
properties	content complex
children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the opposite planes feature actual is determined.

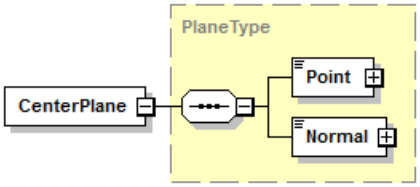
element **OppositePlanesFeatureItemType/SubstituteFeatureAlgorithm**

diagram	
type	**FeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**FeatureOfSizeSubstituteFeatureAlgorithmEnum OtherFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the opposite planes feature.

complexType **OppositePlanesFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **CenterPlane** **LengthVector** **DepthVector** **DraftVector**
used by	element **OppositePlanesFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The OppositePlanesFeatureNominalType defines the opposite planes feature nominal information for an individual opposite planes feature.

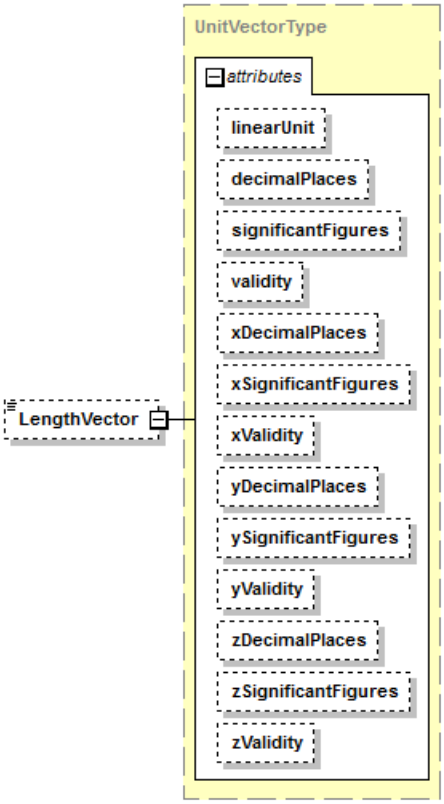
element **OppositePlanesFeatureNominalType/CenterPlane**

diagram	
type	**PlaneType**

properties	content complex
children	**Point Normal**
annotation	documentation The CenterPlane element is the nominal location point and a unit vector normal of the center plane of the opposite planes feature. The location point is both midway between the sides and between the ends (real or virtual). Or in other words, the sides are located half the width away from the location point in directions along and against the center plane normal. The ends are located half the length away from the location point in directions along and against the length vector.

element **OppositePlanesFeatureNominalType/LengthVector**

diagram



type	**UnitVectorType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

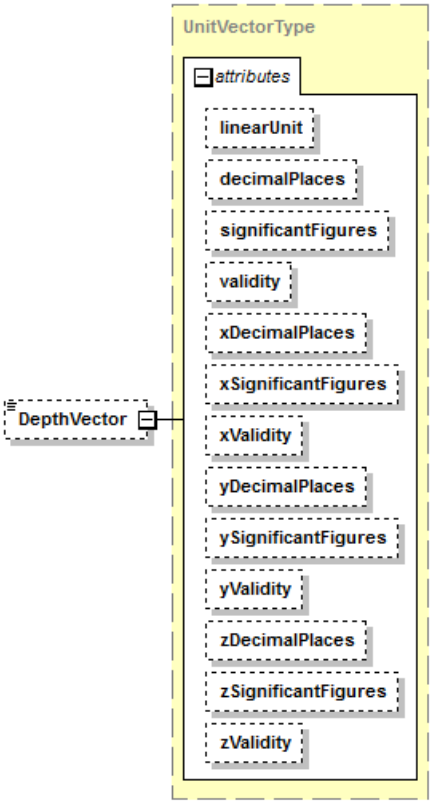
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				

	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
annotation	documentation The optional LengthVector element is the nominal unit vector of the long axis of the feature.	

element **OppositePlanesFeatureNominalType/DepthVector**

diagram



type	**UnitVectorType**
properties	minOcc 0 maxOcc 1 content complex

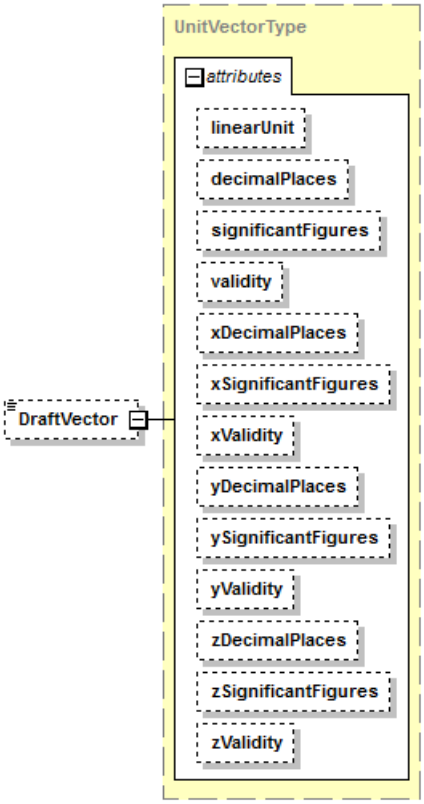
facets	Kind	Value	Annotation
	length	3	

attributes	Name	Type	Use	Default	Fixed	Annotation
	linearUnit	**xs:token**				
	decimalPlaces	**xs:nonNegativeInteger**				
	significantFigures	**xs:nonNegativeInteger**				
	validity	**ValidityEnumType**				
	xDecimalPlaces	**xs:nonNegativeInteger**				
	xSignificantFigures	**xs:nonNegativeInteger**				
	xValidity	**ValidityEnumType**				
	yDecimalPlaces	**xs:nonNegativeInteger**				
	ySignificantFigures	**xs:nonNegativeInteger**				

	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
annotation	documentation The optional DepthVector element is the nominal unit vector pointing out of the feature (away from the bottom if there is one) and is perpendicular to both the LengthVector and the normal to the center plane.	

element **OppositePlanesFeatureNominalType/DraftVector**

diagram



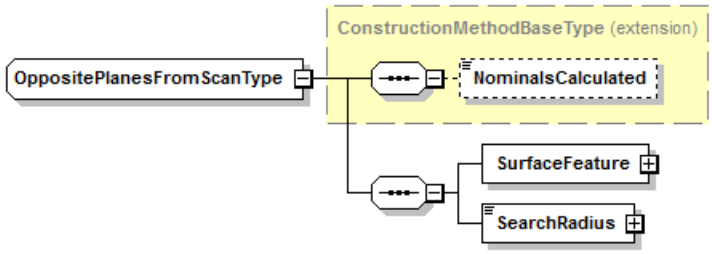
type	**UnitVectorType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

attributes

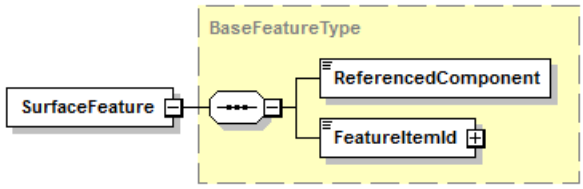
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				

	yValidity **ValidityEnumType** zDecimalPlaces **xs:nonNegativeInteger** zSignificantFigures **xs:nonNegativeInteger** zValidity **ValidityEnumType**
annotation	documentation The optional DraftVector element is the nominal unit vector defining the direction in which the draft angle is applied when it is different than the depth vector and like the depth vector generally points out of the feature. It is not necessarily perpendicular to either the LengthVector or the normal to the center plane.

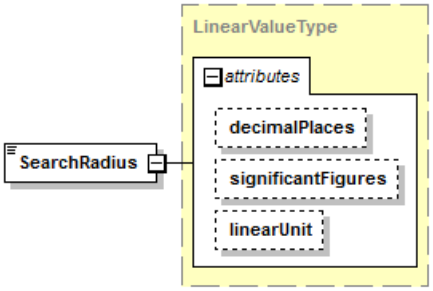
complexType **OppositePlanesFromScanType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius**
used by	element **OppositePlanesConstructionMethodType/FromScan**
annotation	documentation The OppositePlanesFromScanType defines an opposite planes feature construction by the retrieval of an opposite planes feature from a scanned surface feature (point cloud).

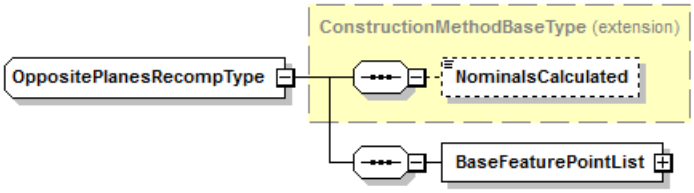
element **OppositePlanesFromScanType/SurfaceFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The SurfaceFeature element identifies the scanned surface feature from which the opposite planes feature is retrieved.

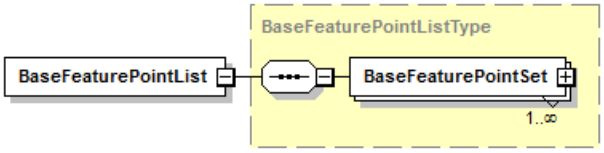
element **OppositePlanesFromScanType/SearchRadius**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The SearchRadius element is the radius around the nominal feature, wherein the actual feature can be expected. The SearchRadius is the radius added to and subtracted from the nominal feature size defining a shell. All scanned points within this shell are used for the retrieval of the feature. The shell's axis is defined by the DepthVector direction and the shell's axis passes through the feature's center point. The shell is even disposed about the nominal opposite planes feature.

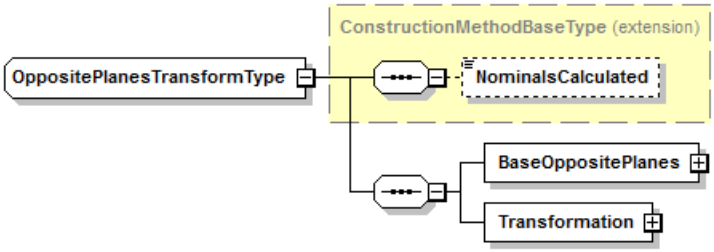
complexType **OppositePlanesRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **OppositePlanesConstructionMethodType/Recompensated**
annotation	documentation The OppositePlanesRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit opposite planes through the measurement points of base features.

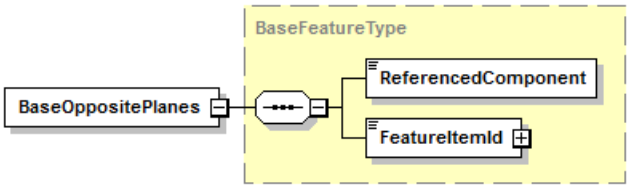
element **OppositePlanesRecompType/BaseFeaturePointList**

diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit opposite planes. The total number of points in the BaseFeaturePointSets in the list must be 4 or greater.

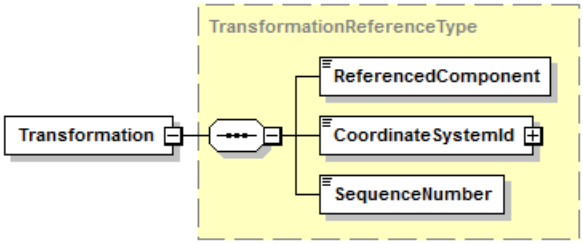
complexType **OppositePlanesTransformType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseOppositePlanes** **Transformation**
used by	element **OppositePlanesConstructionMethodType/Transform**
annotation	documentation The OppositePlanesTransformType defines an opposite planes feature construction by the transformation of an opposite planes feature through the specified nominal or actual coordinate system.

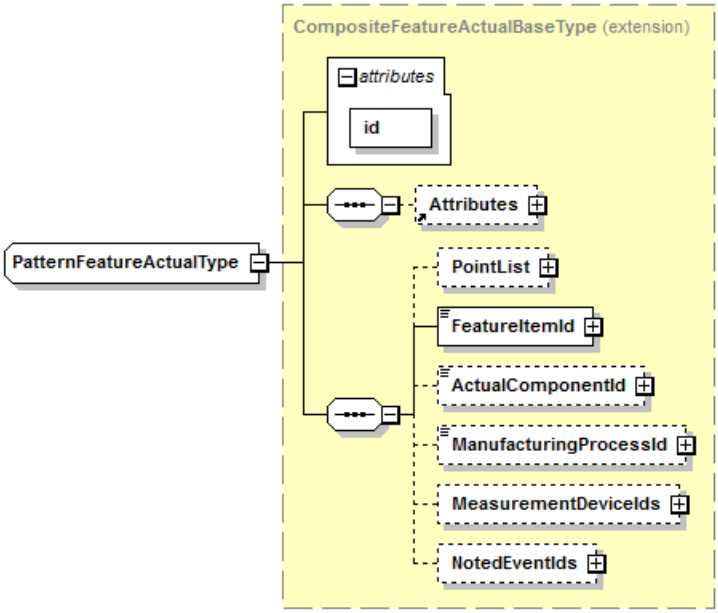
element **OppositePlanesTransformType/BaseOppositePlanes**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseOppositePlanes element identifies the opposite planes feature to be transformed.

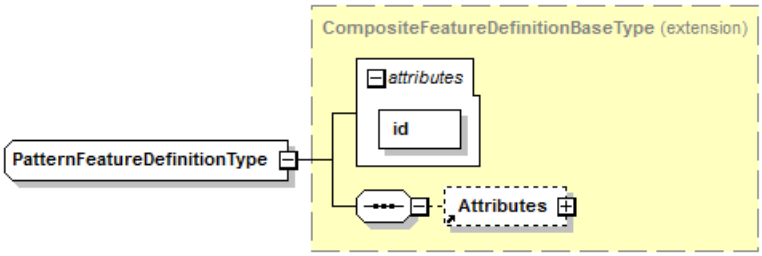
element **OppositePlanesTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the opposite planes.

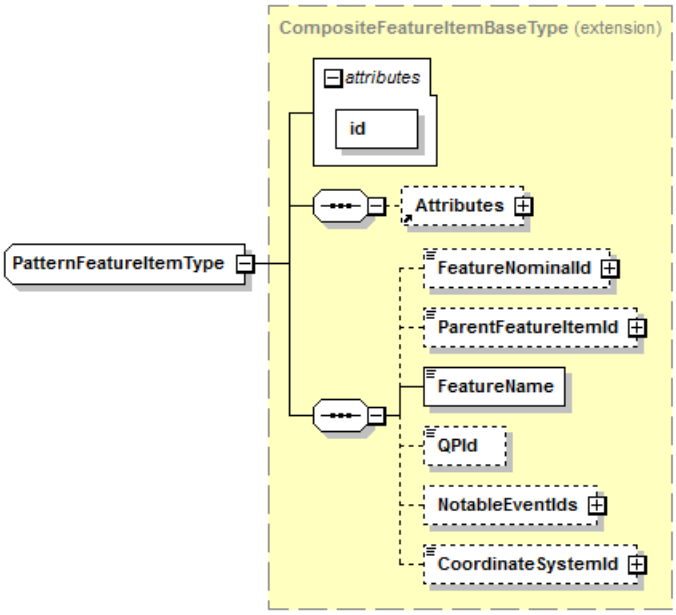
complexType **PatternFeatureActualType**

diagram	
type	extension of **CompositeFeatureActualBaseType**
properties	base CompositeFeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds**
used by	element **PatternFeatureActual**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The PatternFeatureActualType defines the pattern feature actual information for an individual pattern feature.

complexType **PatternFeatureDefinitionType**

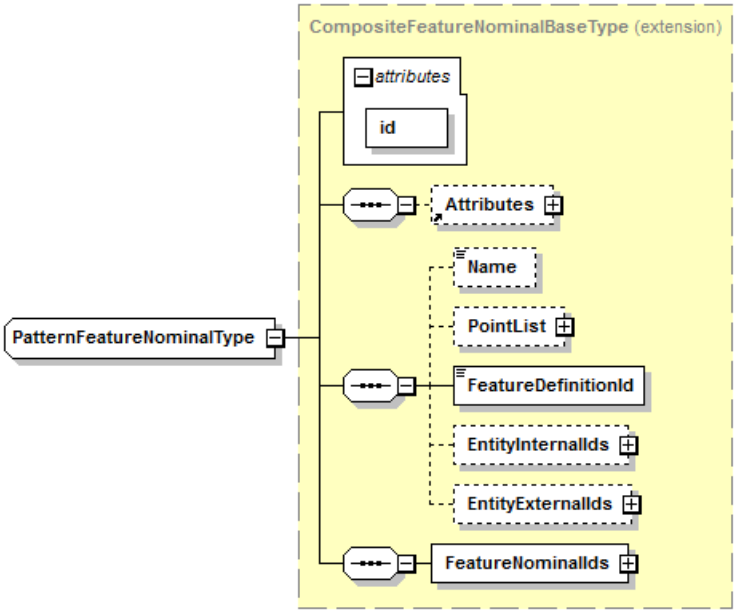
diagram	
type	extension of **CompositeFeatureDefinitionBaseType**
properties	base CompositeFeatureDefinitionBaseType
children	**Attributes**
used by	element **PatternFeatureDefinition**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The PatternFeatureDefinitionType defines the pattern feature nominal information that can be common to one or more pattern features.

complexType **PatternFeatureItemType**

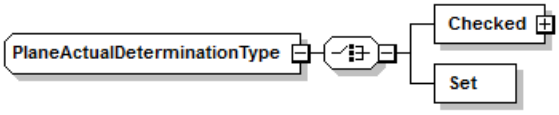
diagram	
type	extension of **CompositeFeatureItemBaseType**
properties	base CompositeFeatureItemBaseType

children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId**
used by	element **PatternFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation: The PatternFeatureItemType defines an individual pattern feature. A pattern feature is a complex feature defined by a set of similar feature of size features (e.g., holes, bosses, slots, tabs) in a pattern (e.g., bolt hole circle) and to which a composite pattern tolerance may be applied.

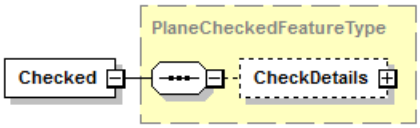
complexType **PatternFeatureNominalType**

diagram	
type	extension of **CompositeFeatureNominalBaseType**
properties	base CompositeFeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **FeatureNominalIds**
used by	element **PatternFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation: The PatternFeatureNominalType defines the pattern feature nominal information for an individual pattern feature.

complexType **PlaneActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **PlaneFeatureItemType/DeterminationMode**
annotation	documentation The PlaneActualDeterminationType defines how the plane actual is determined, either by being set or by being checked (measured or constructed).

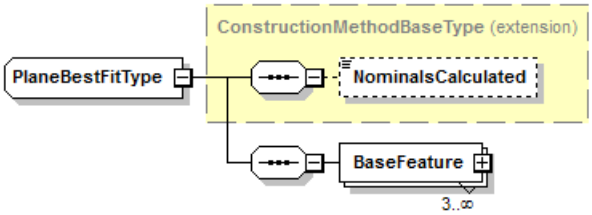
element **PlaneActualDeterminationType/Checked**

diagram	
type	**PlaneCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the plane is checked from actual data, either measured or constructed.

element **PlaneActualDeterminationType/Set**

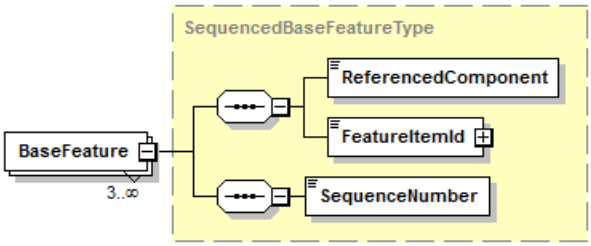
diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the plane actual is set to its nominal value.

complexType **PlaneBestFitType**

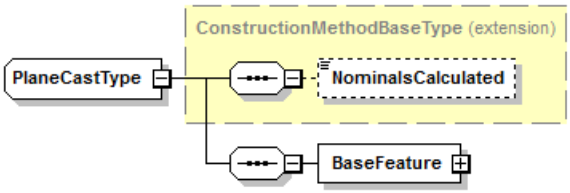
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **PlaneConstructionMethodType/BestFit**
annotation	documentation The PlaneBestFitType defines the information for a best-fit plane which includes a list of point-reducible base features;

	the points to which those features reduce are used in the best-fit construction of the plane.

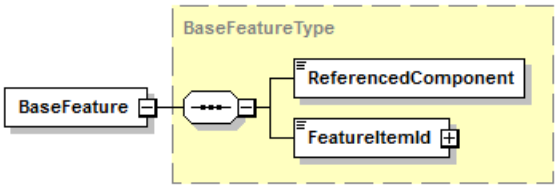
element **PlaneBestFitType/BaseFeature**

diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 3 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of a plane. The number of base features must be 3 or greater.

complexType **PlaneCastType**

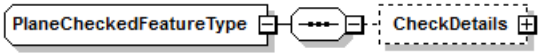
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **PlaneConstructionMethodType/Cast**
annotation	documentation The PlaneCastType defines the cast of another feature type to a plane. The location and vector are copied from the base feature.

element **PlaneCastType/BaseFeature**

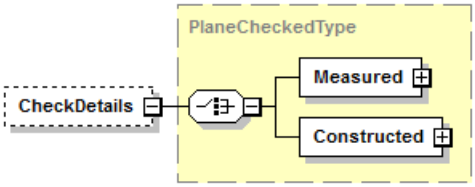
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**

annotation	documentation The BaseFeature element identifies the base feature to be cast to a plane.

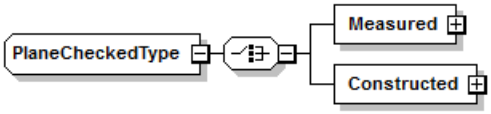
complexType **PlaneCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **PlaneActualDeterminationType/Checked**
annotation	documentation The PlaneCheckedFeatureType defines that a plane feature is checked.

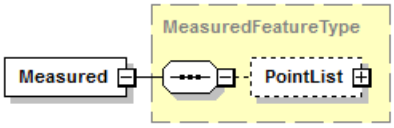
element **PlaneCheckedFeatureType/CheckDetails**

diagram	
type	**PlaneCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured** **Constructed**
annotation	documentation The optional CheckDetails element gives details about the plane check (measurement or construction).

complexType **PlaneCheckedType**

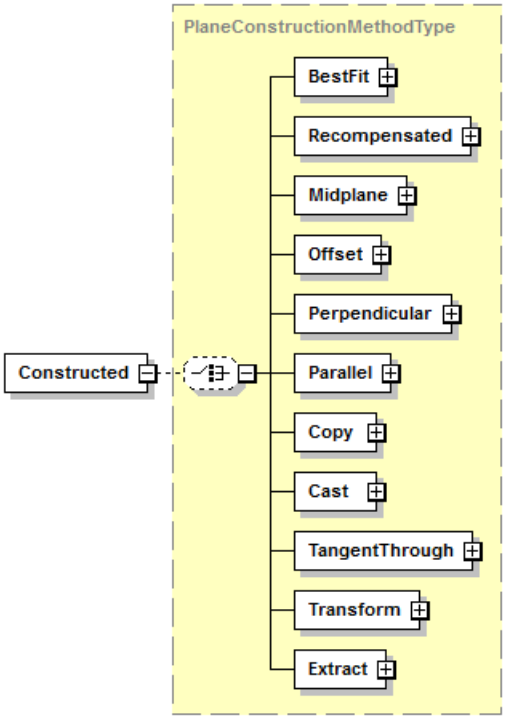
diagram	
children	**Measured** **Constructed**
used by	element **PlaneCheckedFeatureType/CheckDetails**
annotation	documentation The PlaneCheckedType defines how the plane actual is checked, either by measurement or by construction.

element **PlaneCheckedType/Measured**

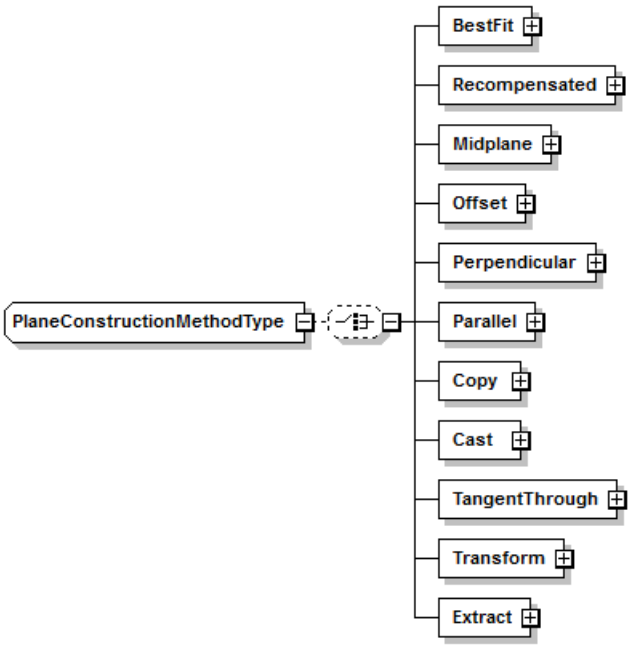
diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**

annotation	documentation The Measured element signifies that the plane is measured.

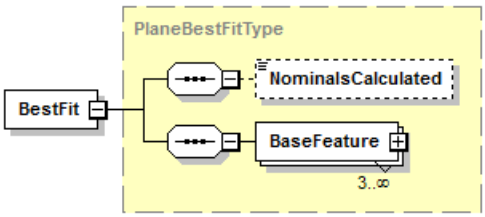
element **PlaneCheckedType/Constructed**

diagram	
type	**PlaneConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Midplane** **Offset** **Perpendicular** **Parallel** **Copy** **Cast** **TangentThrough** **Transform** **Extract**
annotation	documentation The Constructed element signifies that the plane is constructed.

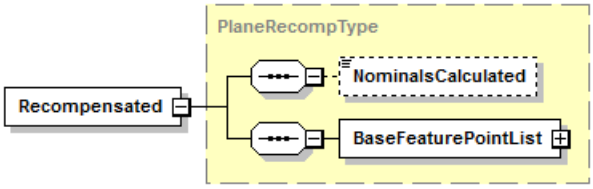
complexType **PlaneConstructionMethodType**

diagram	
children	**BestFit** **Recompensated** **Midplane** **Offset** **Perpendicular** **Parallel** **Copy** **Cast** **TangentThrough** **Transform** **Extract**
used by	element **PlaneCheckedType/Constructed**
annotation	documentation The PlaneConstructionMethodType defines the method for constructing a unique nominal or actual plane feature.

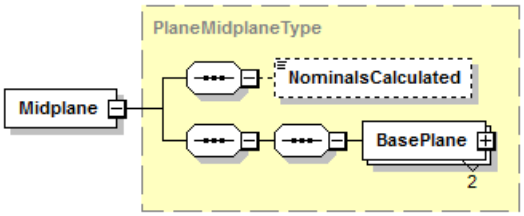
element **PlaneConstructionMethodType/BestFit**

diagram	
type	**PlaneBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of a plane from 3 or more point-reducible base features. This element is in an optional choice.

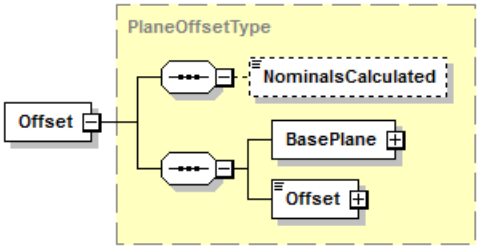
element **PlaneConstructionMethodType/Recompensated**

diagram	
type	**PlaneRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of a plane from 3 or more base feature points. This element is in an optional choice.

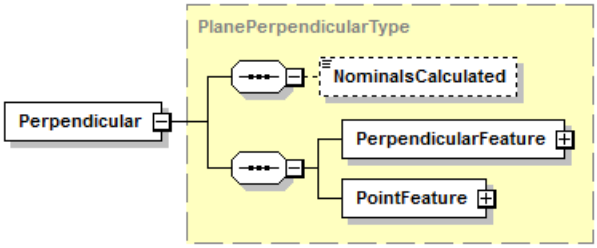
element **PlaneConstructionMethodType/Midplane**

diagram	
type	**PlaneMidplaneType**
properties	content complex
children	**NominalsCalculated** **BasePlane**
annotation	documentation The Midplane element describes the construction of a plane that is everywhere equidistant from each of two base planes. This element is in an optional choice.

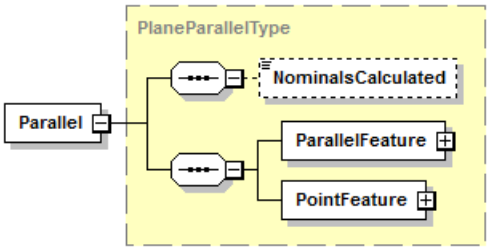
element **PlaneConstructionMethodType/Offset**

diagram	
type	**PlaneOffsetType**
properties	content complex
children	**NominalsCalculated** **BasePlane** **Offset**
annotation	documentation The Offset element describes the construction of a plane that is offset from a base plane by a specified offset distance along the normal vector of the base plane. This element is in an optional choice.

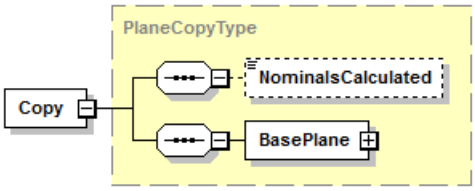
element **PlaneConstructionMethodType/Perpendicular**

diagram	
type	**PlanePerpendicularType**
properties	content complex
children	**NominalsCalculated** **PerpendicularFeature** **PointFeature**
annotation	documentation The Perpendicular element describes the construction of a plane perpendicular to a line-reducible base feature and passing through a point feature. This element is in an optional choice.

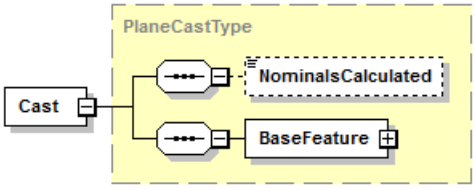
element **PlaneConstructionMethodType/Parallel**

diagram	
type	**PlaneParallelType**
properties	content complex
children	**NominalsCalculated** **ParallelFeature** **PointFeature**
annotation	documentation The Parallel element describes the construction of a plane parallel to a base feature and passing through a point feature. This element is in an optional choice.

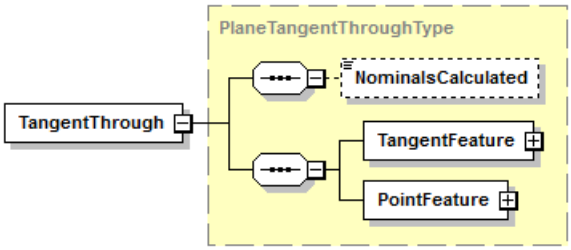
element **PlaneConstructionMethodType/Copy**

diagram	
type	**PlaneCopyType**
properties	content complex
children	**NominalsCalculated** **BasePlane**
annotation	documentation The Copy element describes the construction of a plane by the copying of a base plane. This element is in an optional choice.

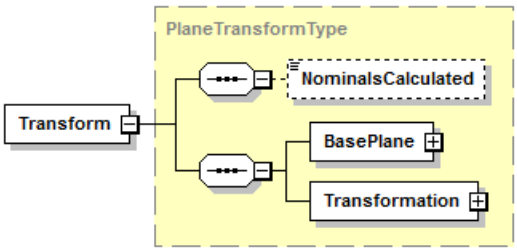
element **PlaneConstructionMethodType/Cast**

diagram	
type	**PlaneCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of a plane by the casting of a base feature. This element is in an optional choice.

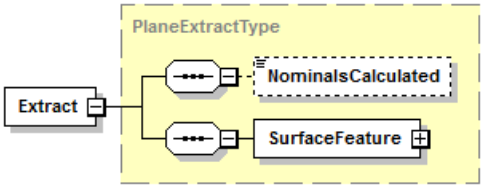
element **PlaneConstructionMethodType/TangentThrough**

diagram	
type	**PlaneTangentThroughType**
properties	content complex
children	**NominalsCalculated** **TangentFeature** **PointFeature**
annotation	documentation The TangentThrough element describes the construction of a plane tangent to a base feature and passing through a point feature. This element is in an optional choice.

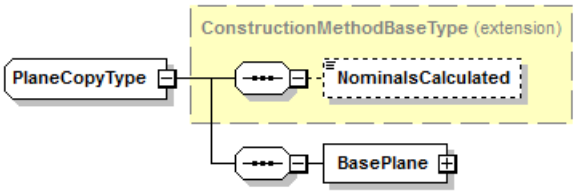
element **PlaneConstructionMethodType/Transform**

diagram	
type	**PlaneTransformType**
properties	content complex
children	**NominalsCalculated** **BasePlane** **Transformation**
annotation	documentation The Transform element describes the construction of a plane by the transformation of a base plane. This element is in an optional choice.

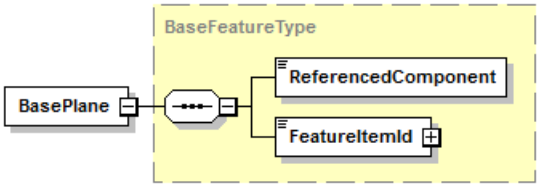
element **PlaneConstructionMethodType/Extract**

diagram	
type	**PlaneExtractType**
properties	content complex
children	**NominalsCalculated** **SurfaceFeature**
annotation	documentation The Extract element describes the extraction of a plane from a surface. This element is in an optional choice.

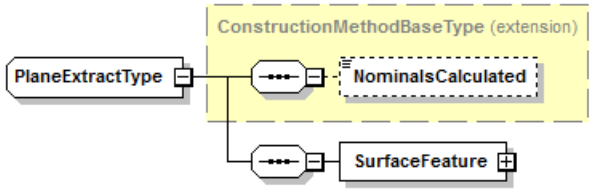
complexType **PlaneCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BasePlane**
used by	element **PlaneConstructionMethodType/Copy**
annotation	documentation The PlaneCopyType defines a copied plane construction.

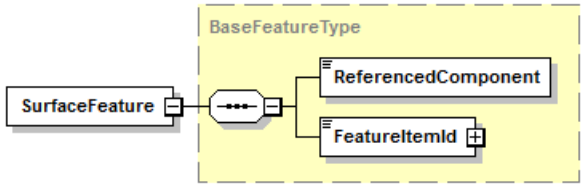
element **PlaneCopyType/BasePlane**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BasePlane element identifies the plane to be copied.

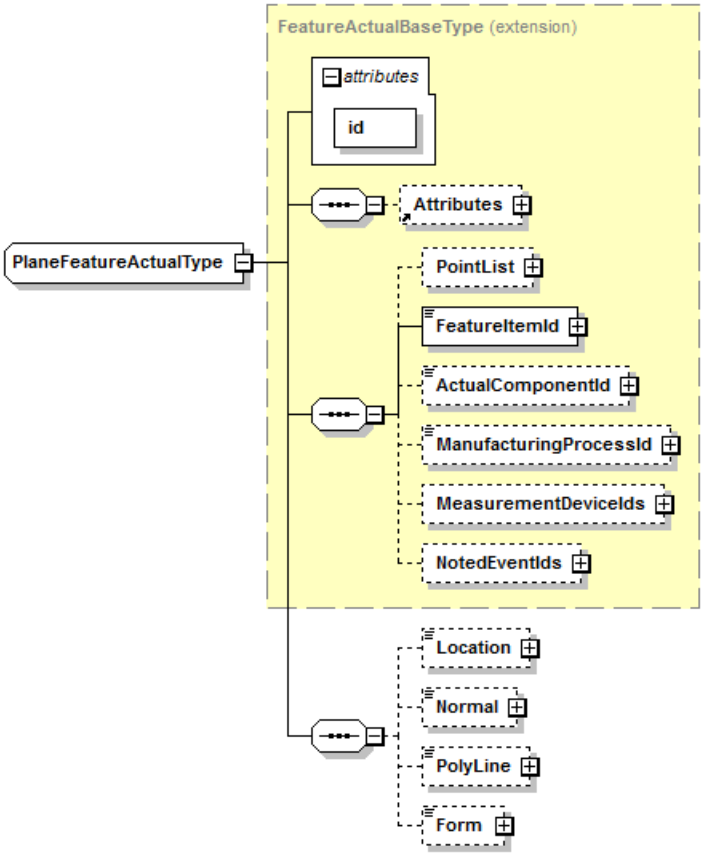
complexType **PlaneExtractType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **SurfaceFeature**
used by	element **PlaneConstructionMethodType/Extract**
annotation	documentation The PlaneExtractType defines a plane construction by the extraction of a plane from a surface feature.

element **PlaneExtractType/SurfaceFeature**

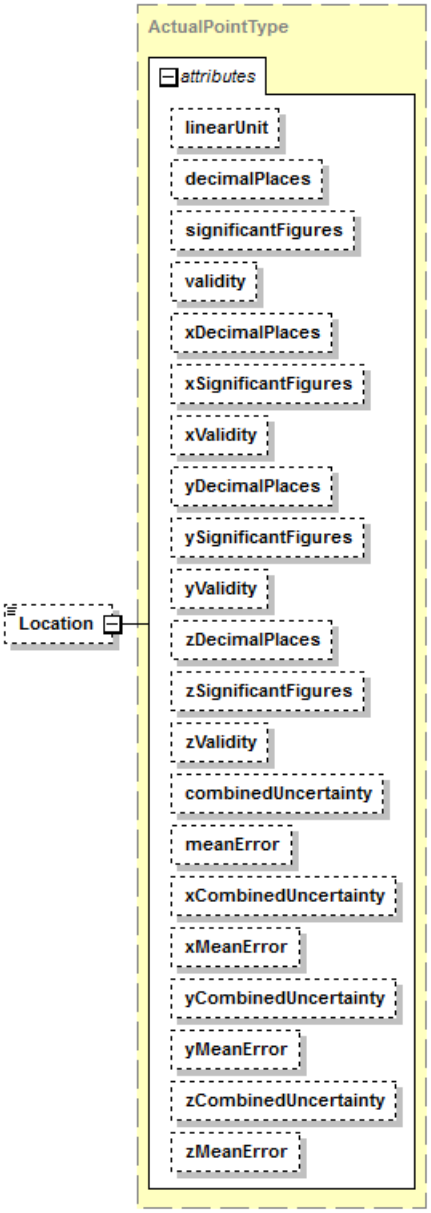
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The SurfaceFeature element identifies the surface from which the plane is extracted.

complexType **PlaneFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **Location** **Normal** **PolyLine** **Form**
used by	element **PlaneFeatureActual**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The PlaneFeatureActualType defines the plane feature actual information for an individual plane feature.

element **PlaneFeatureActualType/Location**

diagram



type	**ActualPointType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

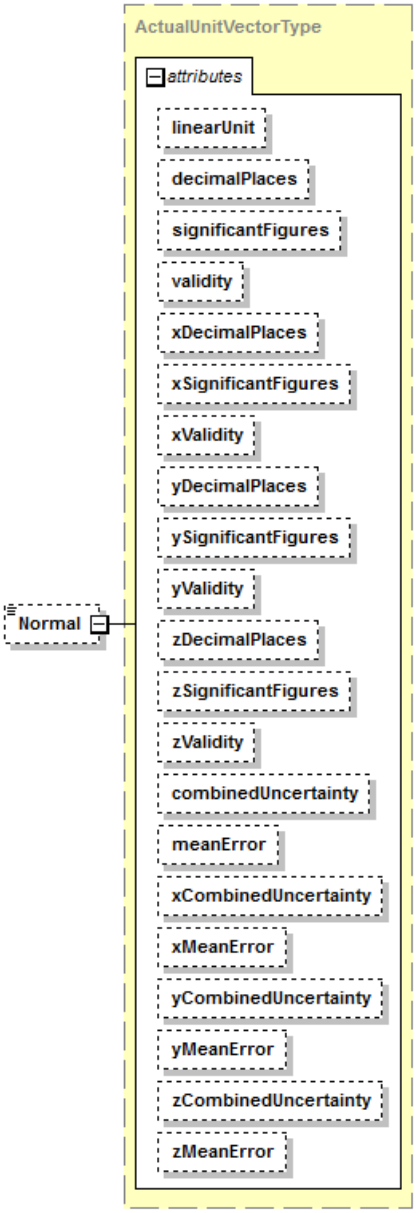
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Location element is the actual XYZ location of a point on the plane.	

element **PlaneFeatureActualType/Normal**

diagram



type	**ActualUnitVectorType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

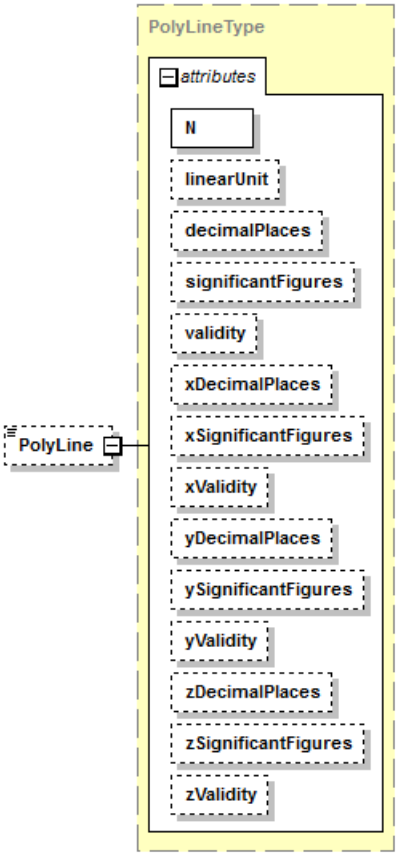
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Normal element is the actual unit normal vector of the plane.	

element **PlaneFeatureActualType/PolyLine**

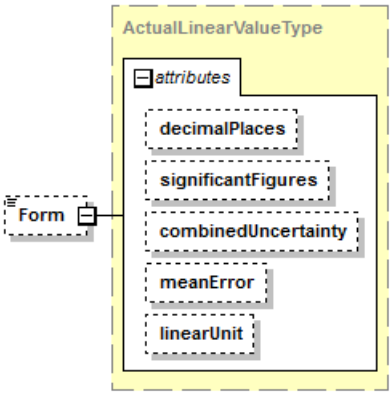
diagram



type	**PolyLineType**
properties	minOcc 0 maxOcc 1

	content complex					
attributes	Name	Type	Use	Default	Fixed	Annotation
	N	**xs:positiveInteger**	required			documentation The required N attribute gives the number of points represented by the array. The number of entries in the array must be 3N.
	linearUnit	**xs:token**				
	decimalPlaces	**xs:nonNegativeInteger**				
	significantFigures	**xs:nonNegativeInteger**				
	validity	**ValidityEnumType**				
	xDecimalPlaces	**xs:nonNegativeInteger**				
	xSignificantFigures	**xs:nonNegativeInteger**				
	xValidity	**ValidityEnumType**				
	yDecimalPlaces	**xs:nonNegativeInteger**				
	ySignificantFigures	**xs:nonNegativeInteger**				
	yValidity	**ValidityEnumType**				
	zDecimalPlaces	**xs:nonNegativeInteger**				
	zSignificantFigures	**xs:nonNegativeInteger**				
	zValidity	**ValidityEnumType**				
annotation	documentation The optional PolyLine element gives a polyline representing the extent and boundary of the plane.					

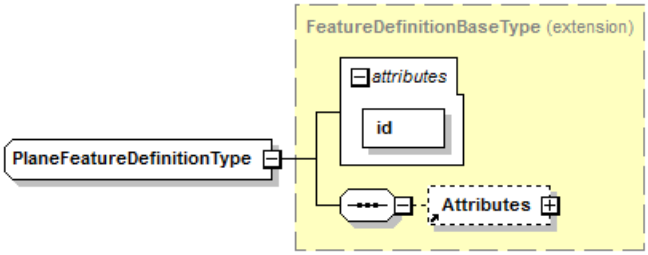
element **PlaneFeatureActualType/Form**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

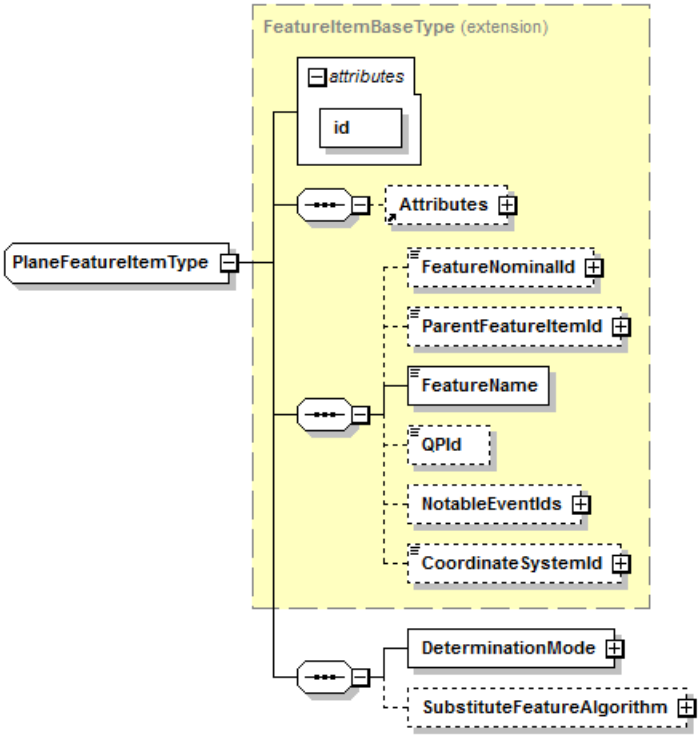
attributes	Name	Type	Use	Default	Fixed	Annotation
	decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.

	combinedUncertainty	**NonNegativeDecimalType**	documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
	meanError	**NonNegativeDecimalType**	documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
	linearUnit	**xs:token**	documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Form element is the form error (flatness) of the plane from a report or an analysis.		

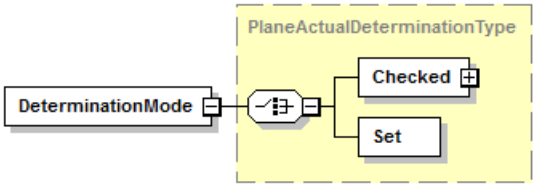
complexType **PlaneFeatureDefinitionType**

diagram						
type	extension of **FeatureDefinitionBaseType**					
properties	base FeatureDefinitionBaseType					
children	**Attributes**					
used by	element **PlaneFeatureDefinition**					
attributes	Name id	Type **QIFIdType**	Use required	Default	Fixed	Annotation documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The PlaneFeatureDefinitionType defines the plane feature nominal information that can be common to one or more plane features.					

complexType **PlaneFeatureItemType**

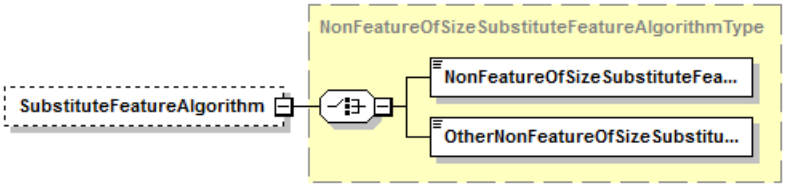
diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **PlaneFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The PlaneFeatureItemType defines an individual plane feature.

element **PlaneFeatureItemType/DeterminationMode**

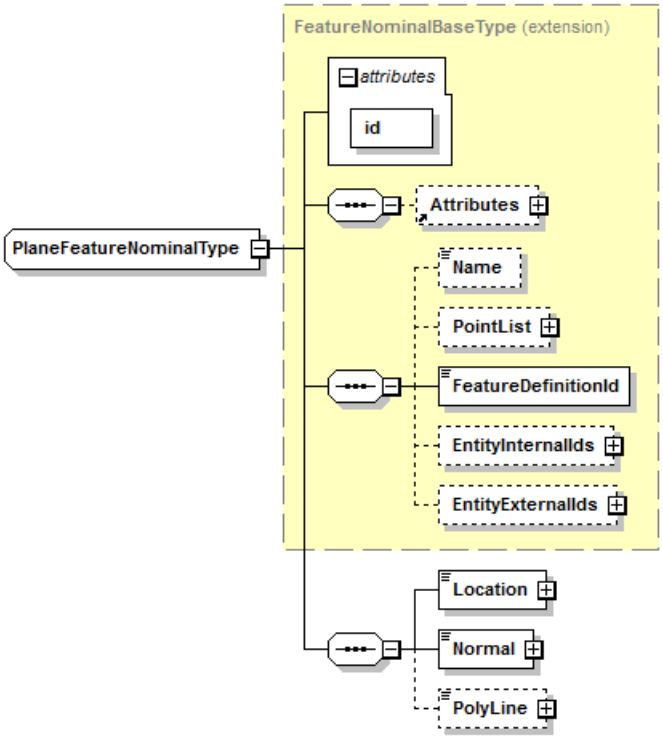
diagram	
type	**PlaneActualDeterminationType**
properties	content complex
children	**Checked** **Set**

annotation	documentation The DeterminationMode element is the means by which the plane feature actual is determined.

element **PlaneFeatureItemType/SubstituteFeatureAlgorithm**

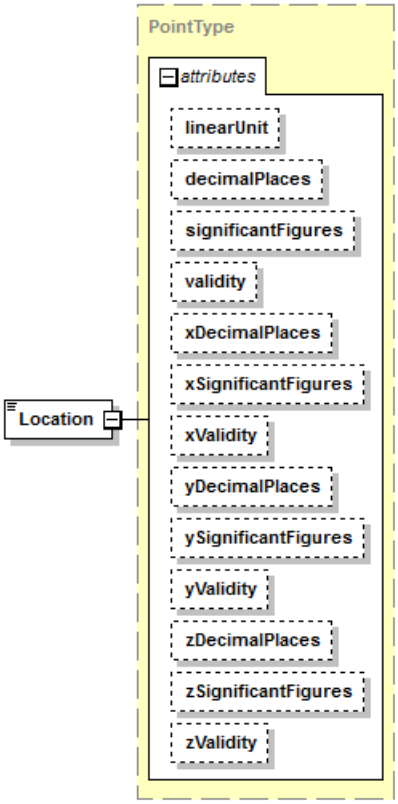
diagram	
type	**NonFeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**NonFeatureOfSizeSubstituteFeatureAlgorithmEnum OtherNonFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the plane feature.

complexType **PlaneFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes Name PointList FeatureDefinitionId EntityInternalIds EntityExternalIds Location Normal PolyLine**
used by	element **PlaneFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation The id

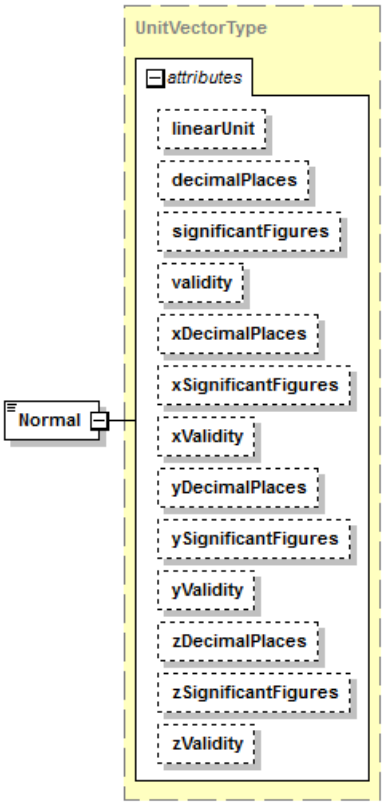
	attribute is the QIF id of the feature, used for referencing.
annotation	documentation The PlaneFeatureNominalType defines the plane feature nominal information for an individual plane feature.

element **PlaneFeatureNominalType/Location**

diagram	
type	**PointType**
properties	content complex
facets	Kind Value Annotation length 3
attributes	Name Type Use Default Fixed Annotation linearUnit **xs:token** decimalPlaces **xs:nonNegativeInteger** significantFigures **xs:nonNegativeInteger** validity **ValidityEnumType** xDecimalPlaces **xs:nonNegativeInteger** xSignificantFigures **xs:nonNegativeInteger** xValidity **ValidityEnumType** yDecimalPlaces **xs:nonNegativeInteger** ySignificantFigures **xs:nonNegativeInteger** yValidity **ValidityEnumType** zDecimalPlaces **xs:nonNegativeInteger**

	zSignificantFigures **xs:nonNegativeInteger** zValidity **ValidityEnumType**
annotation	documentation The Location element is the nominal location of a point on the plane.

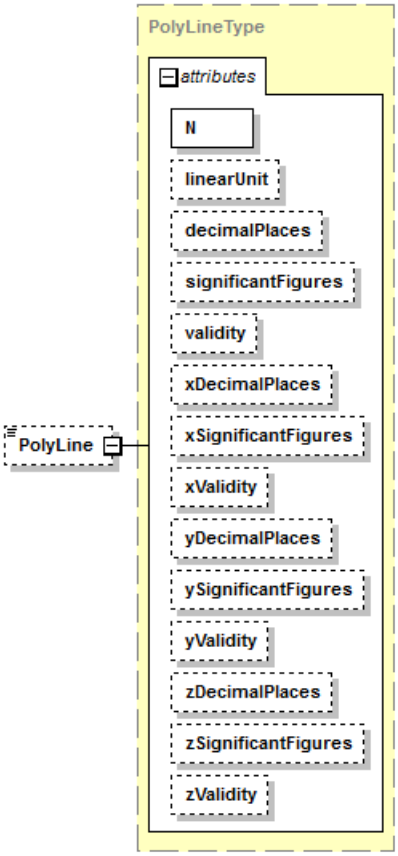
element **PlaneFeatureNominalType/Normal**

diagram	
type	**UnitVectorType**
properties	content complex
facets	Kind Value Annotation length 3
attributes	Name Type Use Default Fixed Annotation linearUnit **xs:token** decimalPlaces **xs:nonNegativeInteger** significantFigures **xs:nonNegativeInteger** validity **ValidityEnumType** xDecimalPlaces **xs:nonNegativeInteger** xSignificantFigures **xs:nonNegativeInteger** xValidity **ValidityEnumType** yDecimalPlaces **xs:nonNegativeInteger** ySignificantFigures **xs:nonNegativeInteger** yValidity **ValidityEnumType** zDecimalPlaces **xs:nonNegativeInteger** zSignificantFigures **xs:nonNegativeInteger**

	zValidity	**ValidityEnumType**
annotation	documentation The Normal element is the nominal unit normal vector of the plane.	

element **PlaneFeatureNominalType/PolyLine**

diagram



type **PolyLineType**

properties

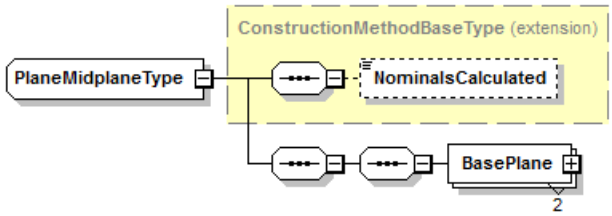
minOcc	0
maxOcc	1
content	complex

attributes

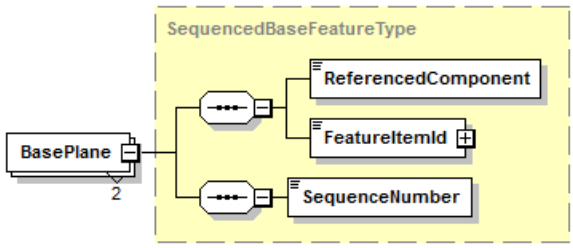
Name	Type	Use	Default	Fixed	Annotation
N	**xs:positiveInteger**	required			documentation The required N attribute gives the number of points represented by the array. The number of entries in the array must be 3N.
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				

	xSignificantFigures **xs:nonNegativeInteger** xValidity **ValidityEnumType** yDecimalPlaces **xs:nonNegativeInteger** ySignificantFigures **xs:nonNegativeInteger** yValidity **ValidityEnumType** zDecimalPlaces **xs:nonNegativeInteger** zSignificantFigures **xs:nonNegativeInteger** zValidity **ValidityEnumType**
annotation	documentation The optional PolyLine element gives a polyline representing the extent and boundary of the plane.

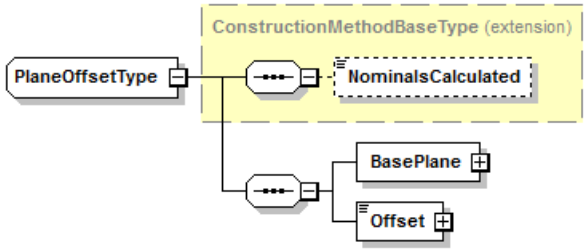
complexType **PlaneMidplaneType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated BasePlane**
used by	element **PlaneConstructionMethodType/Midplane**
annotation	documentation The PlaneMidplaneType defines the construction of a plane that is everywhere equidistant from two base planes.

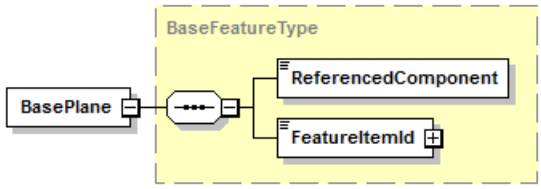
element **PlaneMidplaneType/BasePlane**

diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 2 maxOcc 2 content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BasePlane element identifies a base plane for construction of a mid-plane.

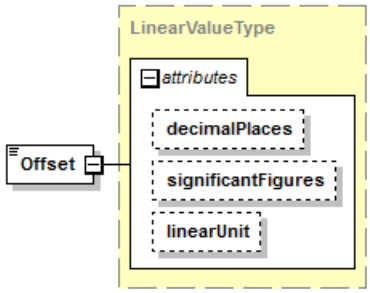
complexType **PlaneOffsetType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BasePlane** **Offset**
used by	element **PlaneConstructionMethodType/Offset**
annotation	documentation The PlaneOffsetType defines the construction of a plane created by translating a base plane by a specified offset distance along its normal vector. If the Offset is negative, the offset is in a direction opposite that of the plane vector.

element **PlaneOffsetType/BasePlane**

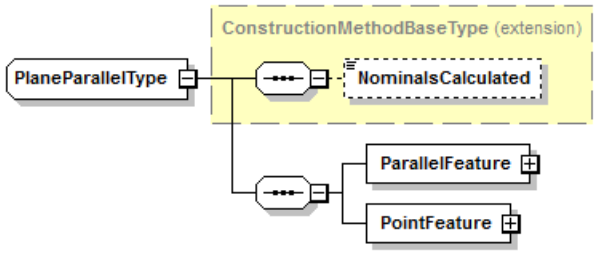
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BasePlane element identifies the plane whose normal vector determines the translation direction.

element **PlaneOffsetType/Offset**

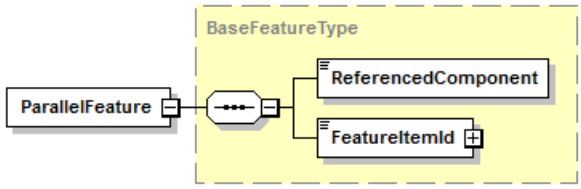
diagram						
type	**LinearValueType**					
properties	content complex					
attributes	Name decimalPlaces	Type **xs:nonNegativeInteger**	Use	Default	Fixed	Annotation documentation See documentation of SpecifiedDecimalType.

	significantFigures	**xs:nonNegativeInteger**	documentation See documentation of SpecifiedDecimalType.
	linearUnit	**xs:token**	documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Offset element is the distance by which the base plane is translated.		

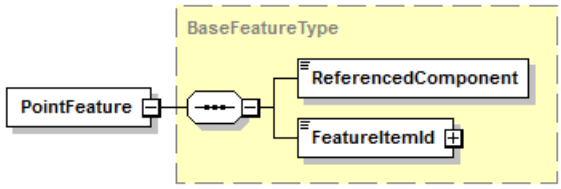
complexType **PlaneParallelType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **ParallelFeature** **PointFeature**
used by	element **PlaneConstructionMethodType/Parallel**
annotation	documentation The PlaneParallelType defines the construction of a plane parallel to a base feature, through a point feature.

element **PlaneParallelType/ParallelFeature**

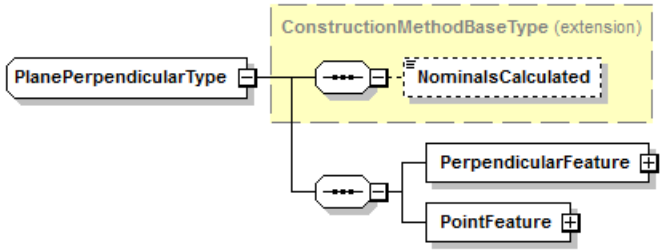
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The ParallelFeature element identifies the base feature to which the constructed plane must be parallel.

element **PlaneParallelType/PointFeature**

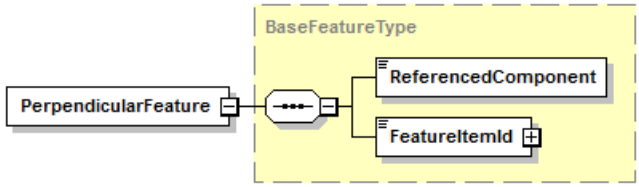
diagram	

type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The PointFeature element identifies the point through which the constructed plane must pass.

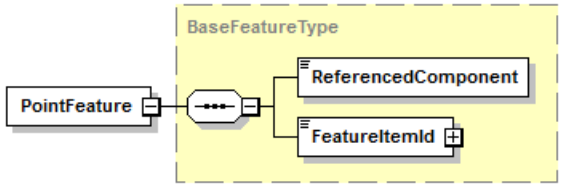
complexType **PlanePerpendicularType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated PerpendicularFeature PointFeature**
used by	element **PlaneConstructionMethodType/Perpendicular**
annotation	documentation The PlanePerpendicularType defines the construction of a plane perpendicular to a line-reducible base feature, through a point feature.

element **PlanePerpendicularType/PerpendicularFeature**

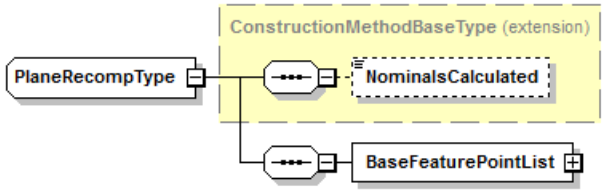
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The PerpendicularFeature element identifies the line-reducible feature to which the constructed plane must be perpendicular.

element **PlanePerpendicularType/PointFeature**

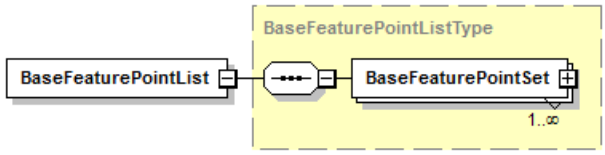
diagram	

type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The PointFeature element identifies the point through which the constructed plane must pass.

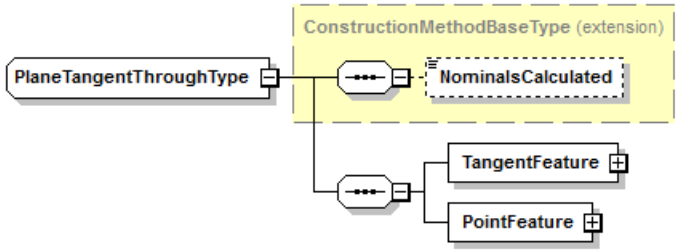
complexType **PlaneRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **PlaneConstructionMethodType/Recompensated**
annotation	documentation The PlaneRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit plane through the measurement points of base features.

element **PlaneRecompType/BaseFeaturePointList**

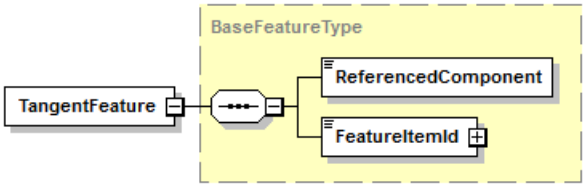
diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit plane. The total number of points in the BaseFeaturePointSets in the list must be 3 or greater.

complexType **PlaneTangentThroughType**

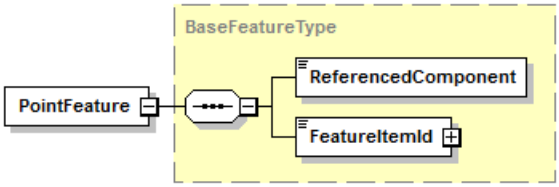
diagram	
type	extension of **ConstructionMethodBaseType**

properties	base ConstructionMethodBaseType
children	**NominalsCalculated TangentFeature PointFeature**
used by	element **PlaneConstructionMethodType/TangentThrough**
annotation	documentation The PlaneTangentThroughType defines the construction of a plane through a point and tangent to a base feature.

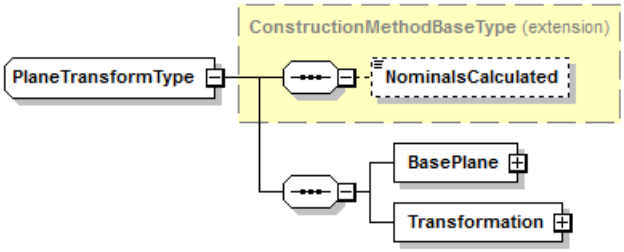
element **PlaneTangentThroughType/TangentFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The TangentFeature element identifies the base feature to which the point is tangent.

element **PlaneTangentThroughType/PointFeature**

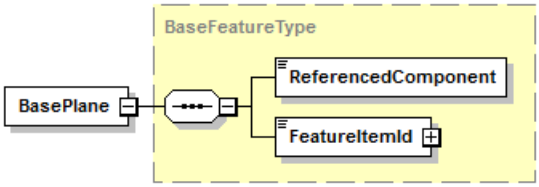
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The PointFeature element identifies the point through which the plane must pass.

complexType **PlaneTransformType**

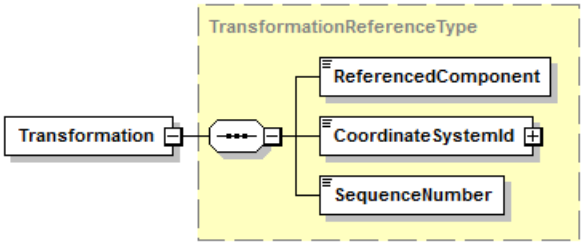
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType

children	**NominalsCalculated** **BasePlane** **Transformation**
used by	element **PlaneConstructionMethodType/Transform**
annotation	documentation The PlaneTransformType defines a plane construction by the transformation of a plane through the specified nominal or actual coordinate system.

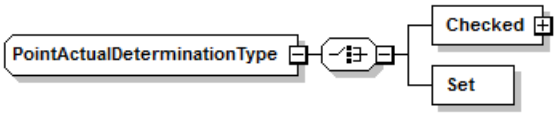
element **PlaneTransformType/BasePlane**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BasePlane element identifies the plane to be transformed.

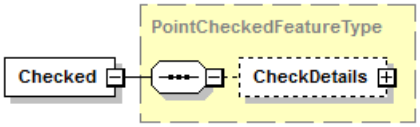
element **PlaneTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the plane.

complexType **PointActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **PointFeatureItemType/DeterminationMode**
annotation	documentation The PointActualDeterminationType defines how the point actual is determined, either by being set or by being checked (measured or constructed).

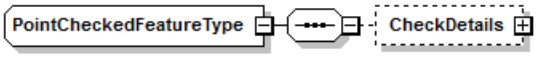
element **PointActualDeterminationType/Checked**

diagram	
type	**PointCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the point is checked from actual data, either measured or constructed.

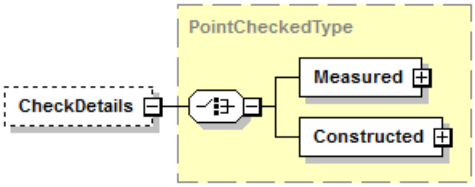
element **PointActualDeterminationType/Set**

diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the point actual is set to its nominal value.

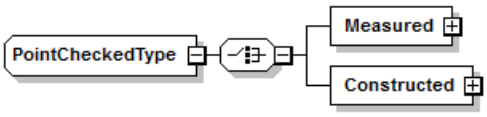
complexType **PointCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **PointActualDeterminationType/Checked**
annotation	documentation The PointCheckedFeatureType defines that a point feature is checked.

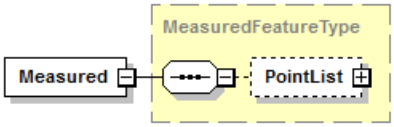
element **PointCheckedFeatureType/CheckDetails**

diagram	
type	**PointCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured** **Constructed**
annotation	documentation The optional CheckDetails element gives details about the point check (measurement or construction).

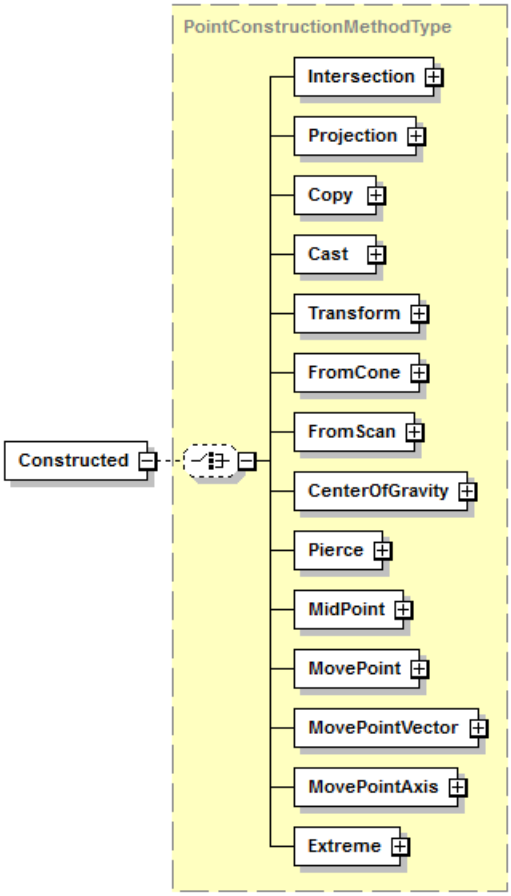
complexType **PointCheckedType**

diagram	
children	**Measured** **Constructed**
used by	element **PointCheckedFeatureType/CheckDetails**
annotation	documentation The PointCheckedType defines how the point actual is checked, either by measurement or by construction.

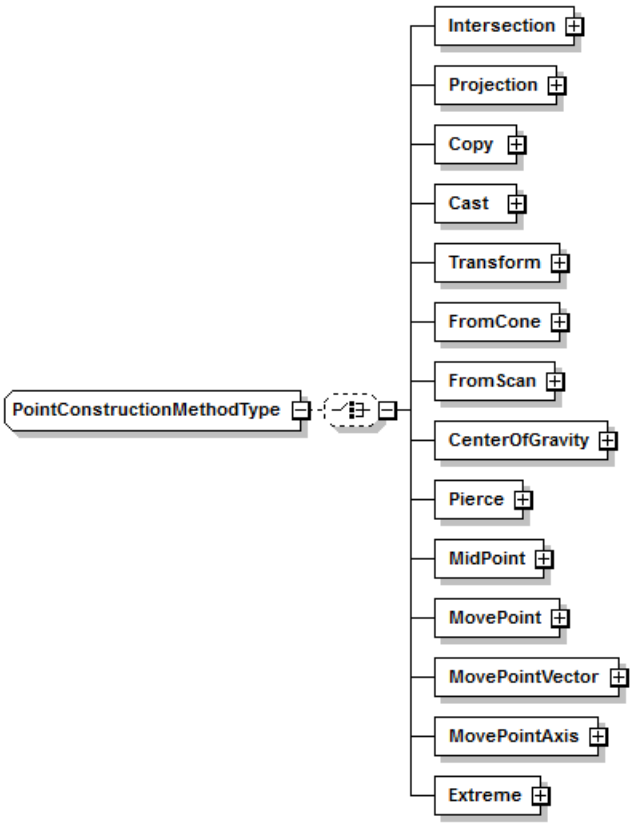
element **PointCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the point is measured.

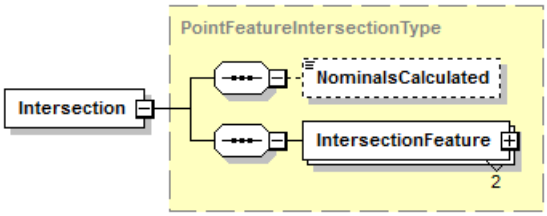
element **PointCheckedType/Constructed**

diagram	
type	**PointConstructionMethodType**
properties	content complex
children	**Intersection** **Projection** **Copy** **Cast** **Transform** **FromCone** **FromScan** **CenterOfGravity** **Pierce** **MidPoint** **MovePoint** **MovePointVector** **MovePointAxis** **Extreme**
annotation	documentation The Constructed element signifies that the point is constructed.

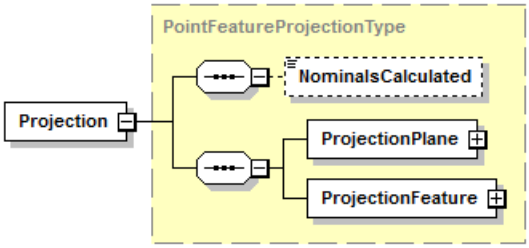
complexType **PointConstructionMethodType**

diagram	
children	**Intersection** **Projection** **Copy** **Cast** **Transform** **FromCone** **FromScan** **CenterOfGravity** **Pierce** **MidPoint** **MovePoint** **MovePointVector** **MovePointAxis** **Extreme**
used by	element **PointCheckedType/Constructed**
annotation	documentation The PointConstructionMethodType defines the method for constructing a unique nominal or actual point feature.

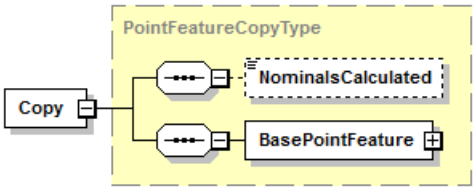
element **PointConstructionMethodType/Intersection**

diagram	
type	**PointFeatureIntersectionType**
properties	content complex
children	**NominalsCalculated** **IntersectionFeature**
annotation	documentation The Intersection element describes the construction of a point feature by the intersection of two base features. This element is in an optional choice.

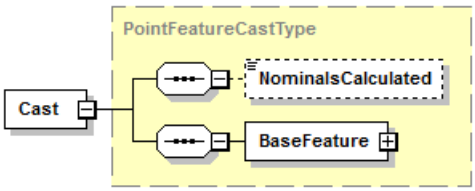
element **PointConstructionMethodType/Projection**

diagram	
type	**PointFeatureProjectionType**
properties	content complex
children	**NominalsCalculated** **ProjectionPlane** **ProjectionFeature**
annotation	documentation The Projection element describes the construction of a point feature by the projection of a base point feature onto a plane. This element is in an optional choice.

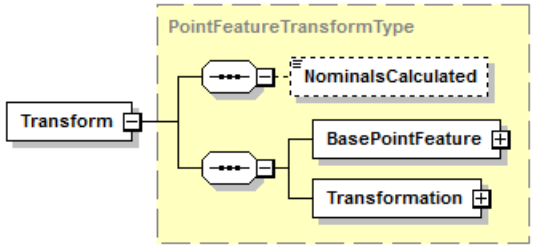
element **PointConstructionMethodType/Copy**

diagram	
type	**PointFeatureCopyType**
properties	content complex
children	**NominalsCalculated** **BasePointFeature**
annotation	documentation The Copy element describes the construction of a point feature by the copying of a base point feature. This element is in an optional choice.

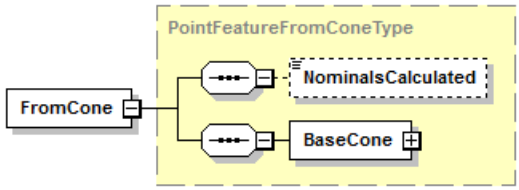
element **PointConstructionMethodType/Cast**

diagram	
type	**PointFeatureCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of a point feature by the casting of a base feature. This element is in an optional choice.

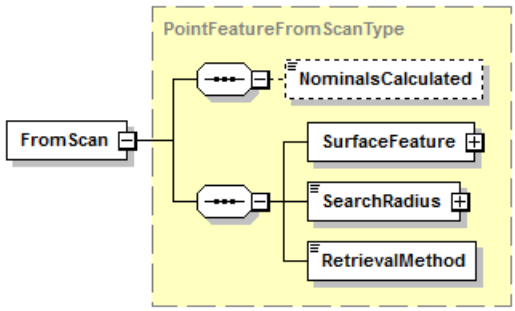
element **PointConstructionMethodType/Transform**

diagram	
type	**PointFeatureTransformType**
properties	content complex
children	**NominalsCalculated** **BasePointFeature** **Transformation**
annotation	documentation The Transform element describes the construction of a point feature by the transformation of a base point feature. This element is in an optional choice.

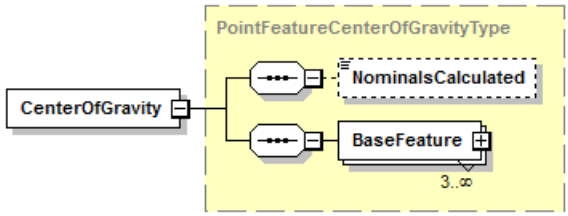
element **PointConstructionMethodType/FromCone**

diagram	
type	**PointFeatureFromConeType**
properties	content complex
children	**NominalsCalculated** **BaseCone**
annotation	documentation The FromCone element describes the construction of a point feature at the vertex point of a base cone. This element is in an optional choice.

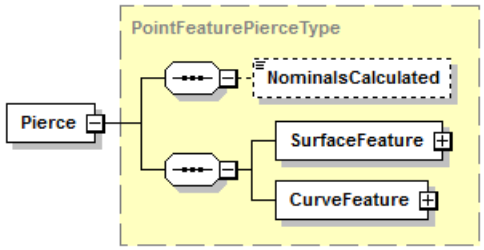
element **PointConstructionMethodType/FromScan**

diagram	
type	**PointFeatureFromScanType**
properties	content complex
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius** **RetrievalMethod**
annotation	documentation The FromScan element describes the construction of a point feature from scan data. This element is in an optional choice.

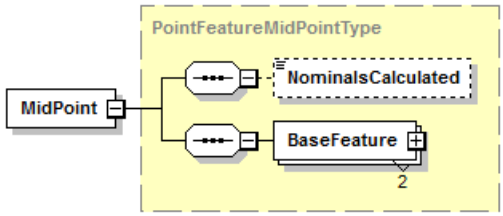
element **PointConstructionMethodType/CenterOfGravity**

diagram	
type	**PointFeatureCenterOfGravityType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The CenterOfGravity element describes the construction of a point feature at the center of gravity of the locations of a set of 3 or more base features. This element is in an optional choice.

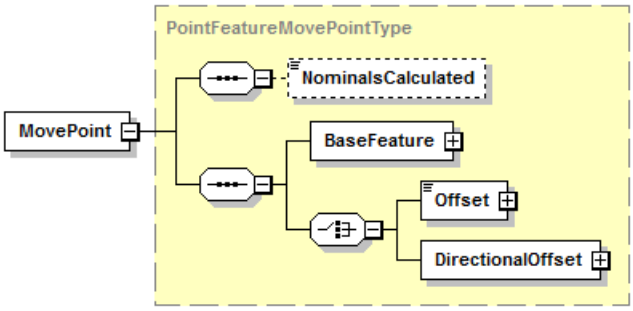
element **PointConstructionMethodType/Pierce**

diagram	
type	**PointFeaturePierceType**
properties	content complex
children	**NominalsCalculated** **SurfaceFeature** **CurveFeature**
annotation	documentation The Pierce element describes the construction of a point feature at the location where a curve pierces a surface. This element is in an optional choice.

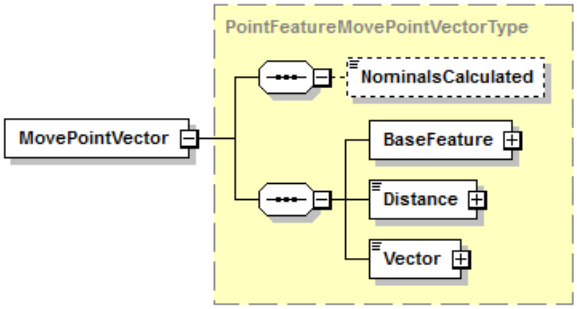
element **PointConstructionMethodType/MidPoint**

diagram	
type	**PointFeatureMidPointType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The MidPoint element describes the construction of a point feature at the midpoint of the locations of 2 base features. This element is in an optional choice.

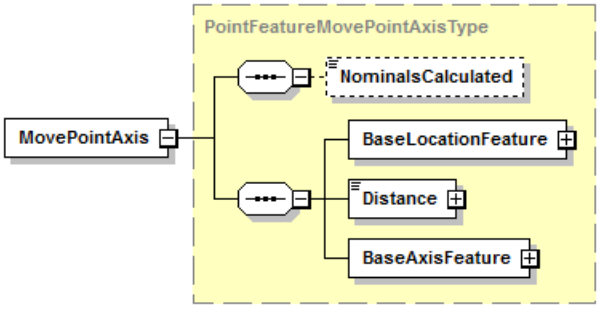
element **PointConstructionMethodType/MovePoint**

diagram	
type	**PointFeatureMovePointType**
properties	content complex
children	**NominalsCalculated** **BaseFeature** **Offset** **DirectionalOffset**
annotation	documentation The MovePoint element describes the construction of a point feature by translating the location of a base feature by a specified 3D offset. This element is in an optional choice.

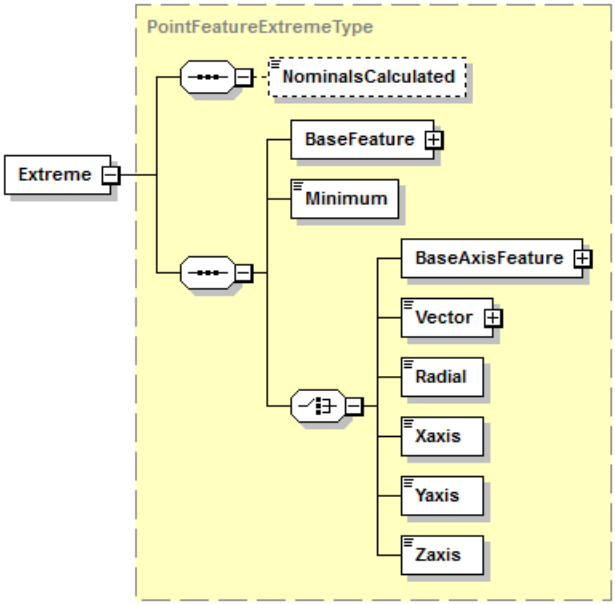
element **PointConstructionMethodType/MovePointVector**

diagram	
type	**PointFeatureMovePointVectorType**
properties	content complex
children	**NominalsCalculated** **BaseFeature** **Distance** **Vector**
annotation	documentation The MovePointVector element describes the construction of a point feature by translating the location of a base feature by a specified distance in the direction of a specified unit vector. This element is in an optional choice.

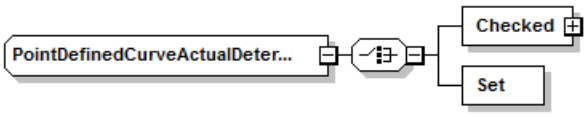
element **PointConstructionMethodType/MovePointAxis**

diagram	
type	**PointFeatureMovePointAxisType**
properties	content complex
children	**NominalsCalculated** **BaseLocationFeature** **Distance** **BaseAxisFeature**
annotation	documentation The MovePointAxis element describes the construction of a point feature by translating the location of a base feature a specified distance in a direction specified by a base axis feature. This element is in an optional choice.

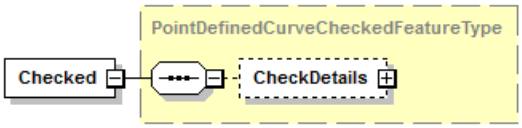
element **PointConstructionMethodType/Extreme**

diagram	
type	**PointFeatureExtremeType**
properties	content complex
children	**NominalsCalculated** **BaseFeature** **Minimum** **BaseAxisFeature** **Vector** **Radial** **Xaxis** **Yaxis** **Zaxis**
annotation	documentation The Extreme element describes the construction of a point feature at an extreme location of a base feature along a specified direction. This element is in an optional choice.

complexType **PointDefinedCurveActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **PointDefinedCurveFeatureItemType/DeterminationMode**
annotation	documentation The PointDefinedCurveActualDeterminationType defines how the point-defined curve actual is determined, either by being set or by being checked (measured or constructed).

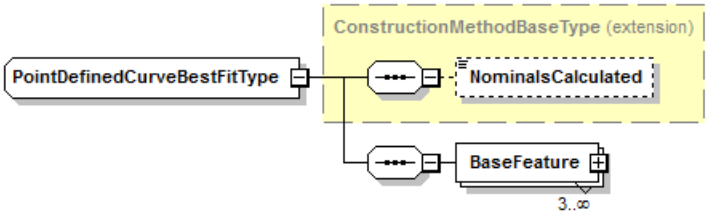
element **PointDefinedCurveActualDeterminationType/Checked**

diagram	
type	**PointDefinedCurveCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the point-defined curve is checked from actual data, either measured or constructed.

element **PointDefinedCurveActualDeterminationType/Set**

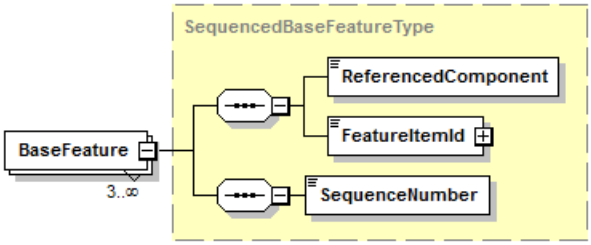
diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the point-defined curve actual is set to its nominal value.

complexType **PointDefinedCurveBestFitType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **PointDefinedCurveConstructionMethodType/BestFit**
annotation	documentation The PointDefinedCurveBestFitType defines the information for a best-fit point-defined curve which includes a list of point-

	reducible base features; the points to which those features reduce are used in the best-fit construction of the point-defined curve.

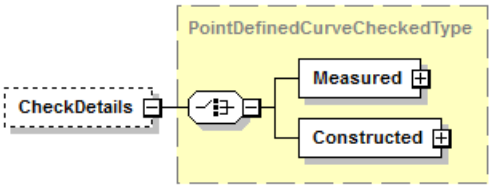
element **PointDefinedCurveBestFitType/BaseFeature**

diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 3 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of a point-defined curve. The number of base features must be 3 or greater.

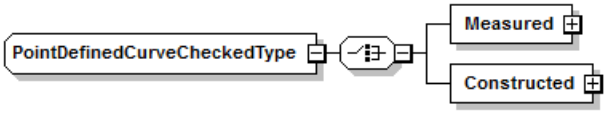
complexType **PointDefinedCurveCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **PointDefinedCurveActualDeterminationType/Checked**
annotation	documentation The PointDefinedCurveCheckedFeatureType defines that a point-defined curve feature is checked.

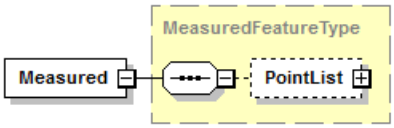
element **PointDefinedCurveCheckedFeatureType/CheckDetails**

diagram	
type	**PointDefinedCurveCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured Constructed**
annotation	documentation The optional CheckDetails element gives details about the point-defined curve check (measurement or construction).

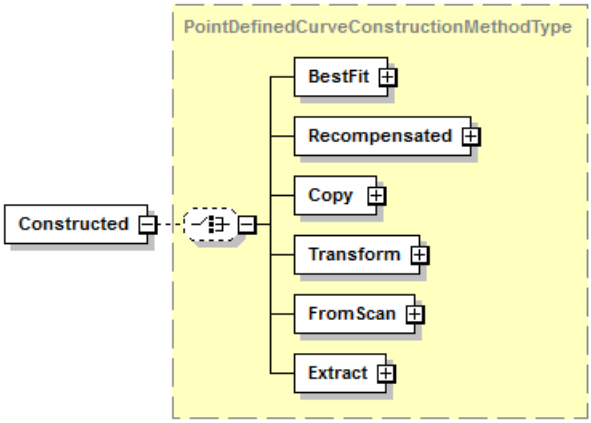
complexType **PointDefinedCurveCheckedType**

diagram	
children	**Measured** **Constructed**
used by	element **PointDefinedCurveCheckedFeatureType/CheckDetails**
annotation	documentation The PointDefinedCurveCheckedType defines how the point-defined curve actual is checked, either by measurement or by construction.

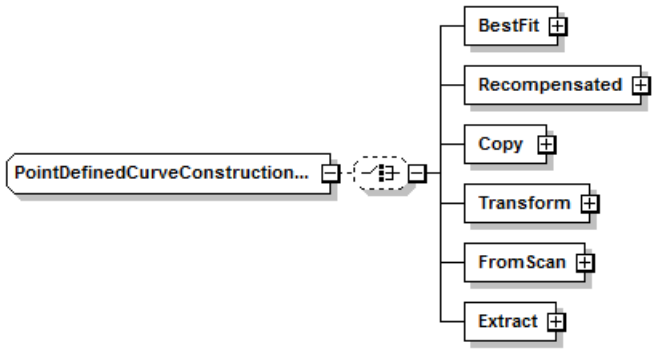
element **PointDefinedCurveCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the point-defined curve is measured.

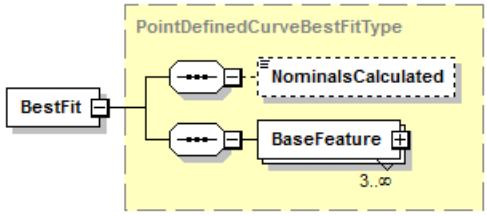
element **PointDefinedCurveCheckedType/Constructed**

diagram	
type	**PointDefinedCurveConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Copy** **Transform** **FromScan** **Extract**
annotation	documentation The Constructed element signifies that the point-defined curve is constructed.

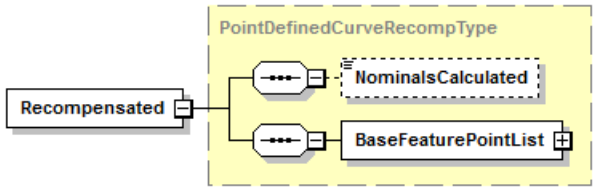
complexType **PointDefinedCurveConstructionMethodType**

diagram	
children	**BestFit** **Recompensated** **Copy** **Transform** **FromScan** **Extract**
used by	element **PointDefinedCurveCheckedType/Constructed**
annotation	documentation The PointDefinedCurveConstructionMethodType defines the method for constructing a unique nominal or actual point-defined curve feature.

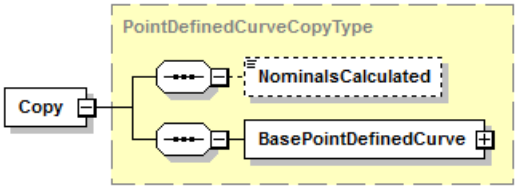
element **PointDefinedCurveConstructionMethodType/BestFit**

diagram	
type	**PointDefinedCurveBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of a point-defined curve from 3 or more point-reducible base features. This element is in an optional choice.

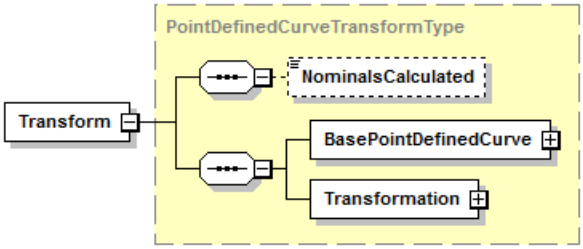
element **PointDefinedCurveConstructionMethodType/Recompensated**

diagram	
type	**PointDefinedCurveRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of a point-defined curve from 3 or more base feature points. This element is in an optional choice.

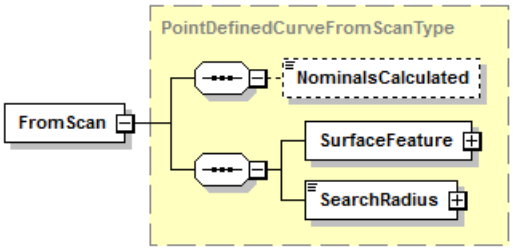
element **PointDefinedCurveConstructionMethodType/Copy**

diagram	
type	**PointDefinedCurveCopyType**
properties	content complex
children	**NominalsCalculated** **BasePointDefinedCurve**
annotation	documentation The Copy element describes the construction of a point-defined curve by the copying of a base point-defined curve. This element is in an optional choice.

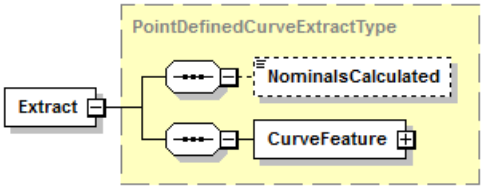
element **PointDefinedCurveConstructionMethodType/Transform**

diagram	
type	**PointDefinedCurveTransformType**
properties	content complex
children	**NominalsCalculated** **BasePointDefinedCurve** **Transformation**
annotation	documentation The Transform element describes the construction of a point-defined curve by the transformation of a base point-defined curve. This element is in an optional choice.

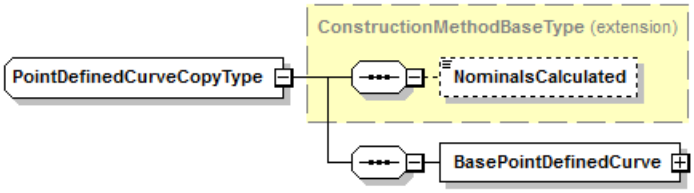
element **PointDefinedCurveConstructionMethodType/FromScan**

diagram	
type	**PointDefinedCurveFromScanType**
properties	content complex
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius**
annotation	documentation The FromScan element describes the construction of a point-defined curve from scan data. This element is in an optional choice.

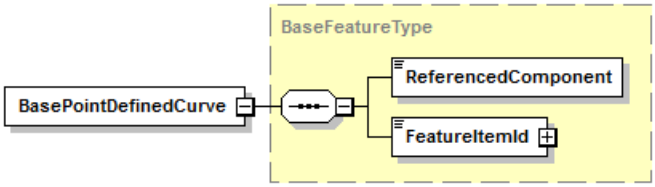
element **PointDefinedCurveConstructionMethodType/Extract**

diagram	
type	**PointDefinedCurveExtractType**
properties	content complex
children	**NominalsCalculated** **CurveFeature**
annotation	documentation The Extract element describes the extraction of a point-defined curve from a curve. This element is in an optional choice.

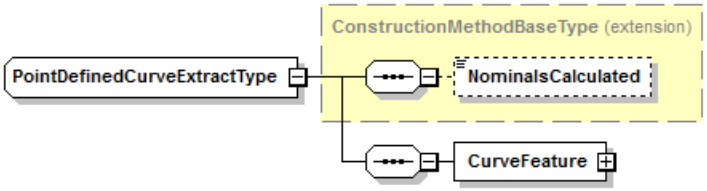
complexType **PointDefinedCurveCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BasePointDefinedCurve**
used by	element **PointDefinedCurveConstructionMethodType/Copy**
annotation	documentation The PointDefinedCurveCopyType defines a copied point-defined curve construction.

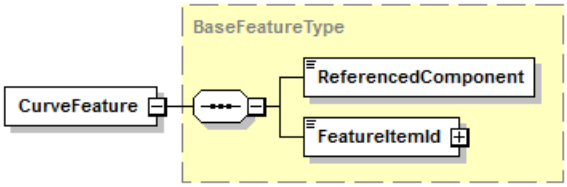
element **PointDefinedCurveCopyType/BasePointDefinedCurve**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BasePointDefinedCurve element identifies the point-defined curve to be copied.

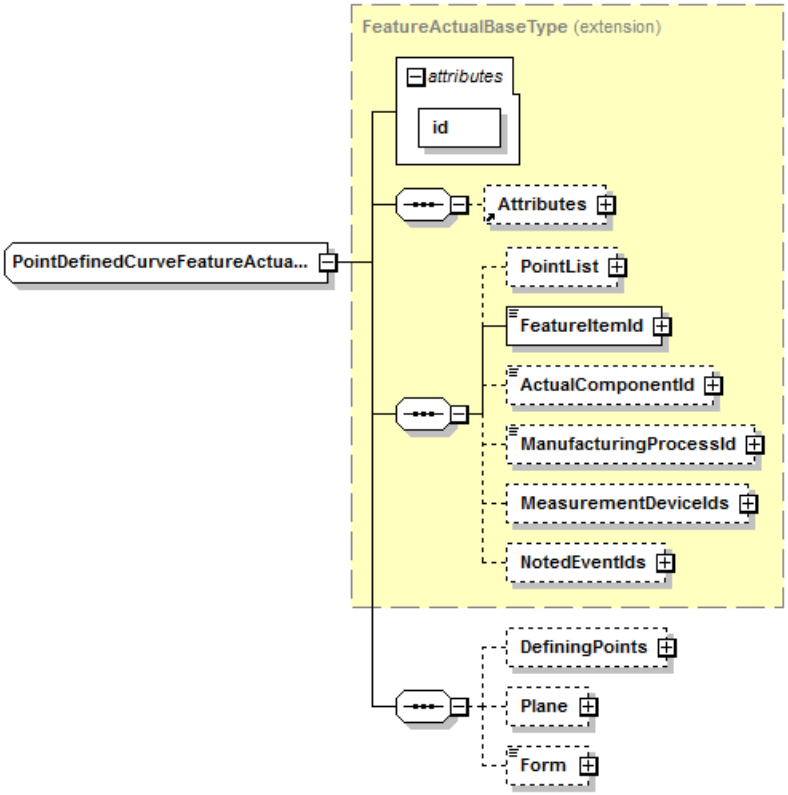
complexType **PointDefinedCurveExtractType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **CurveFeature**
used by	element **PointDefinedCurveConstructionMethodType/Extract**
annotation	documentation The PointDefinedCurveExtractType defines a point-defined curve construction by the extraction of a point-defined curve from a curve feature.

element **PointDefinedCurveExtractType/CurveFeature**

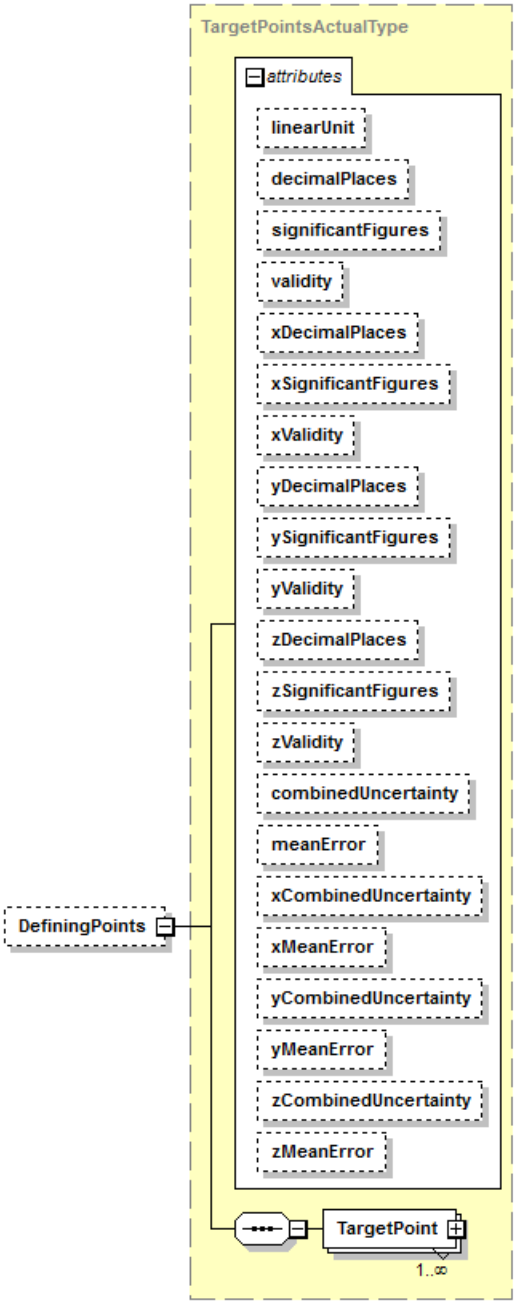
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The CurveFeature element identifies the curve or surface from which the point-defined curve is extracted.

complexType **PointDefinedCurveFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **DefiningPoints** **Plane** **Form**
used by	element **PointDefinedCurveFeatureActual**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The PointDefinedCurveFeatureActualType defines the point-defined curve feature actual information for an individual point-defined curve feature.

element **PointDefinedCurveFeatureActualType/DefiningPoints**

diagram



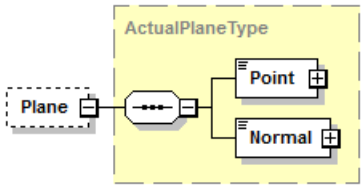
type	**TargetPointsActualType**
properties	minOcc 0 maxOcc 1 content complex
children	**TargetPoint**

attributes

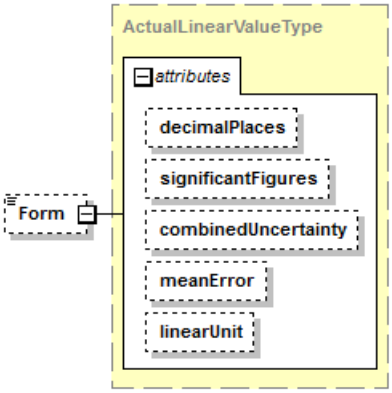
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				

	xDecimalPlaces	**xs:nonNegativeInteger**
	xSignificantFigures	**xs:nonNegativeInteger**
	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional DefiningPoints element gives a list of points which defines the actual point-defined curve. The actual point-defined curve passes through these points.	

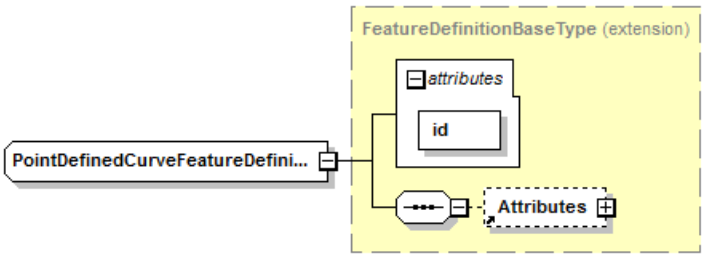
element **PointDefinedCurveFeatureActualType/Plane**

diagram	
type	**ActualPlaneType**
properties	minOcc 0 maxOcc 1 content complex
children	**Point Normal**
annotation	documentation The optional Plane element is the actual plane in which the actual point-defined curve feature lies.

element **PointDefinedCurveFeatureActualType/Form**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Form element is the form error of the point-defined curve feature from a report or an analysis.

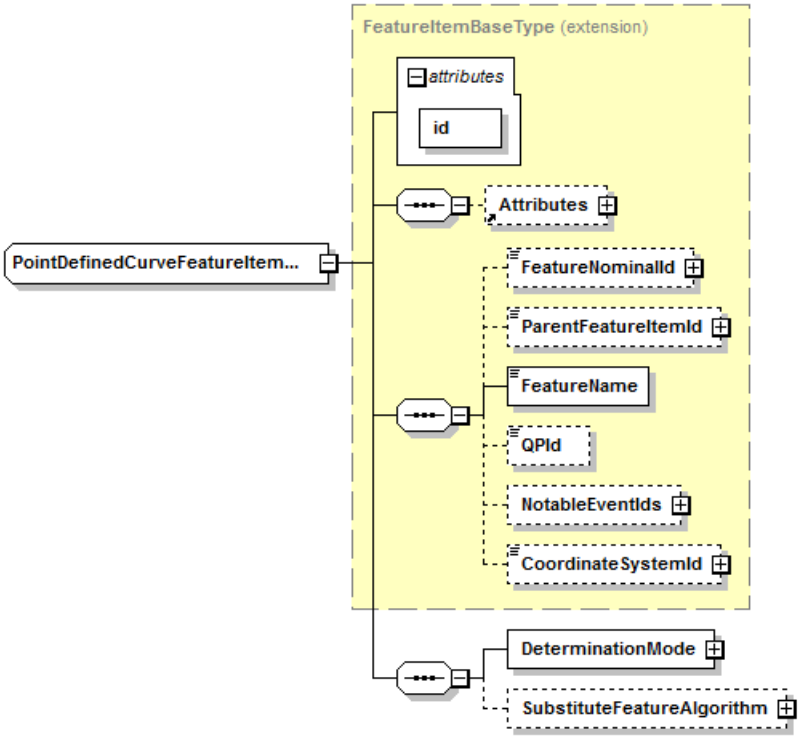
complexType **PointDefinedCurveFeatureDefinitionType**

diagram	

type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes**
used by	element **PointDefinedCurveFeatureDefinition**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation: The PointDefinedCurveFeatureDefinitionType defines the point-defined curve feature nominal information that can be common to one or more point-defined curve features.

complexType **PointDefinedCurveFeatureItemType**

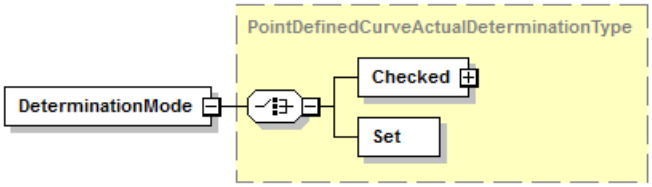
diagram



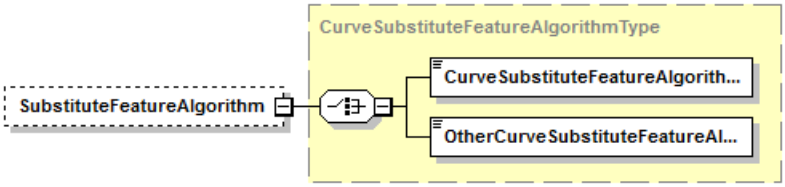
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **PointDefinedCurveFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for

	referencing.
annotation	documentation The PointDefinedCurveFeatureItemType defines an individual point-defined curve feature. A point-defined curve feature is defined by a set of points and may be a planar curve or a free-form curve not in a plane.

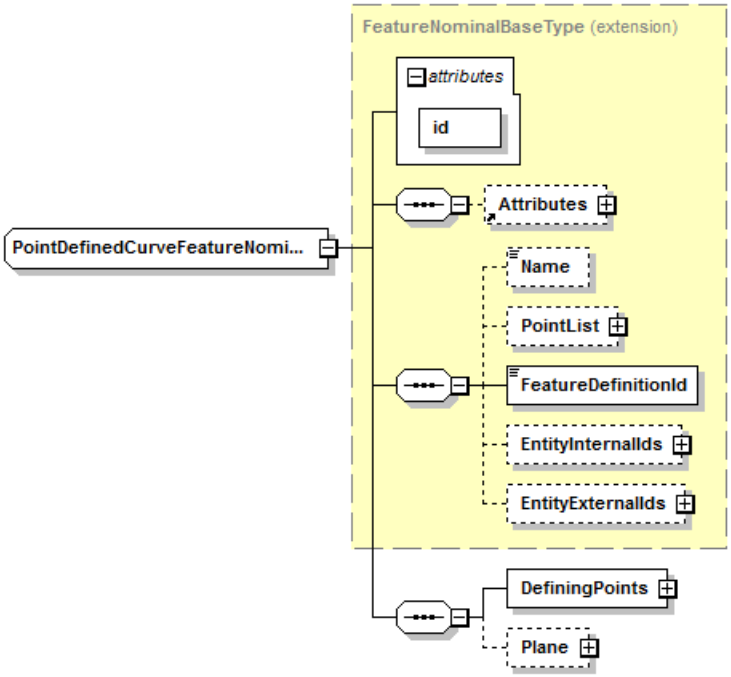
element **PointDefinedCurveFeatureItemType/DeterminationMode**

diagram	
type	**PointDefinedCurveActualDeterminationType**
properties	content complex
children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the point-defined curve feature actual is determined.

element **PointDefinedCurveFeatureItemType/SubstituteFeatureAlgorithm**

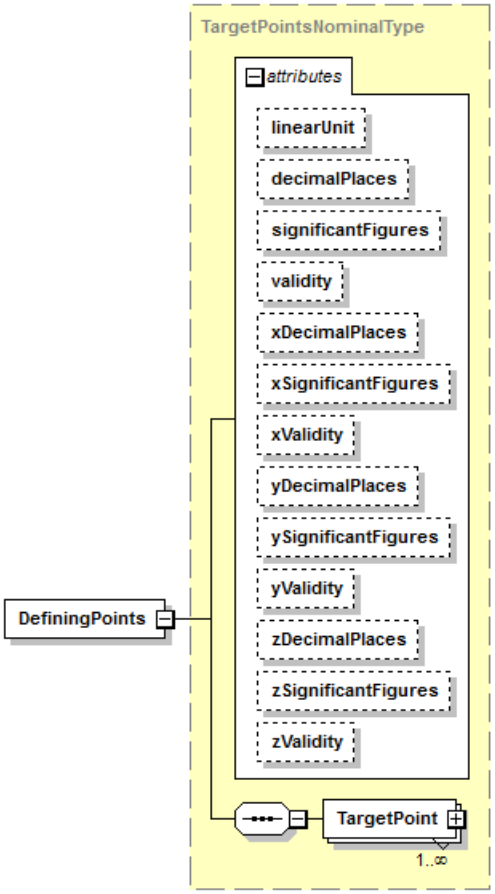
diagram	
type	**CurveSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**CurveSubstituteFeatureAlgorithmEnum OtherCurveSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the point curve feature.

complexType **PointDefinedCurveFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **DefiningPoints** **Plane**
used by	element **PointDefinedCurveFeatureNominal**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The PointDefinedCurveFeatureNominalType defines the point-defined curve feature nominal information for an individual point-defined curve feature.

element **PointDefinedCurveFeatureNominalType/DefiningPoints**

diagram



type **TargetPointsNominalType**

properties content complex

children **TargetPoint**

attributes

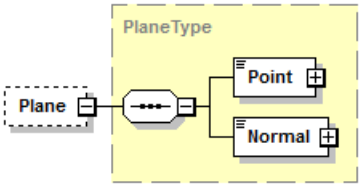
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

annotation

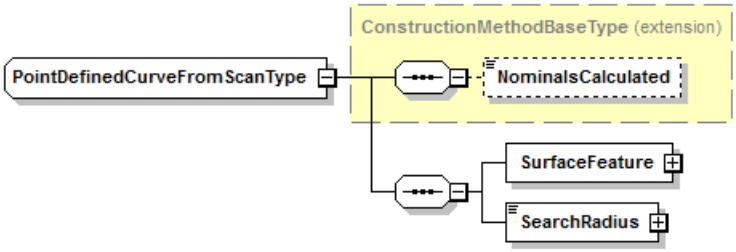
documentation

The DefiningPoints element gives a list of points which defines the nominal point-defined curve. The nominal point-defined curve passes through these points.

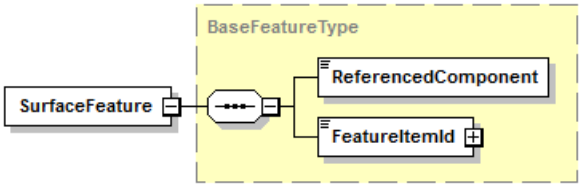
element **PointDefinedCurveFeatureNominalType/Plane**

diagram	
type	**PlaneType**
properties	minOcc 0 maxOcc 1 content complex
children	**Point Normal**
annotation	documentation The optional Plane element is the plane in which the point-defined curve feature lies.

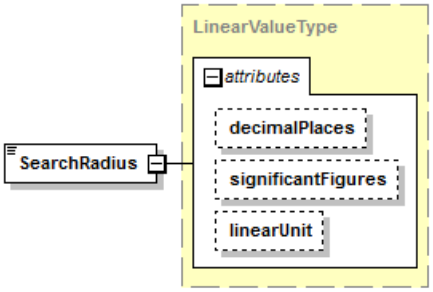
complexType **PointDefinedCurveFromScanType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius**
used by	element **PointDefinedCurveConstructionMethodType/FromScan**
annotation	documentation The PointDefinedCurveFromScanType defines a point-defined curve construction by the retrieval of a point-defined curve from a scanned surface feature (point cloud).

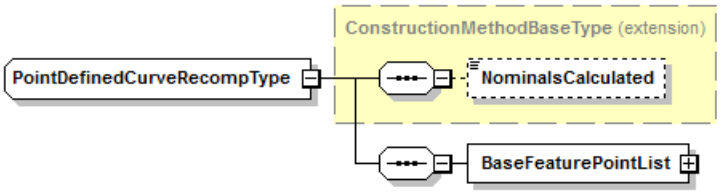
element **PointDefinedCurveFromScanType/SurfaceFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The SurfaceFeature element identifies the scanned surface feature from which the point-defined curve is retrieved.

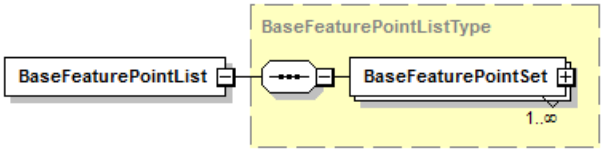
element **PointDefinedCurveFromScanType/SearchRadius**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The SearchRadius element is the radius around the nominal feature, wherein the actual feature can be expected. The SearchRadius is the radius of a tube following the curve. All scanned points within this tube are used for the retrieval of the feature. The tube is evenly disposed about the nominal point defined curve.

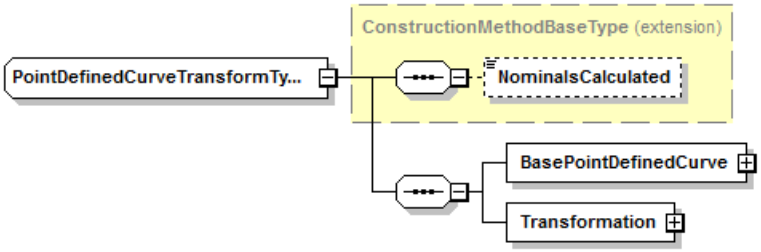
complexType **PointDefinedCurveRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **PointDefinedCurveConstructionMethodType/Recompensated**
annotation	documentation The PointDefinedCurveRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit point-defined curve through the measurement points of base features.

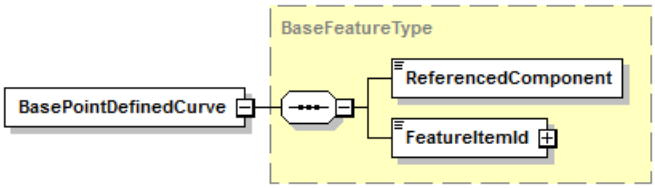
element **PointDefinedCurveRecompType/BaseFeaturePointList**

diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit point-defined curve. The total number of points in the BaseFeaturePointSets in the list must be 3 or greater.

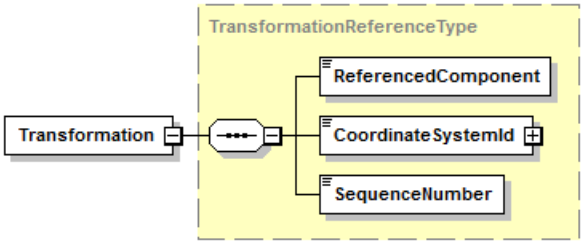
complexType **PointDefinedCurveTransformType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BasePointDefinedCurve** **Transformation**
used by	element **PointDefinedCurveConstructionMethodType/Transform**
annotation	documentation The PointDefinedCurveTransformType defines a point-defined curve construction by the transformation of a point-defined curve through the specified nominal or actual coordinate system.

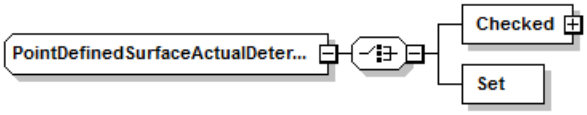
element **PointDefinedCurveTransformType/BasePointDefinedCurve**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BasePointDefinedCurve element identifies the point-defined curve to be transformed.

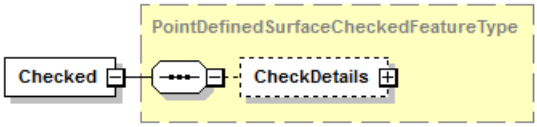
element **PointDefinedCurveTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the point-defined curve.

complexType **PointDefinedSurfaceActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **PointDefinedSurfaceFeatureItemType/DeterminationMode**
annotation	documentation The PointDefinedSurfaceActualDeterminationType defines how the point-defined surface actual is determined, either by being set or by being checked (measured or constructed).

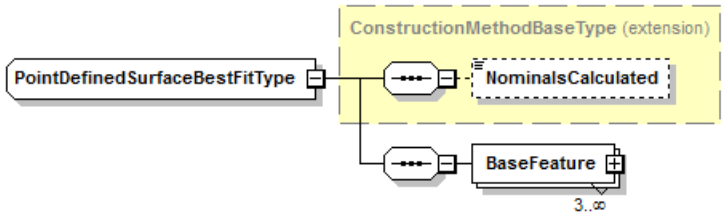
element **PointDefinedSurfaceActualDeterminationType/Checked**

diagram	
type	**PointDefinedSurfaceCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the point-defined surface is checked from actual data, either measured or constructed.

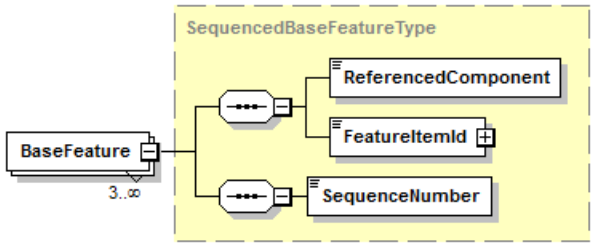
element **PointDefinedSurfaceActualDeterminationType/Set**

diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the point-defined surface actual is set to its nominal value.

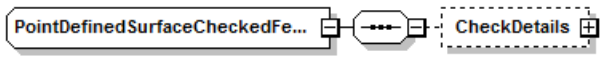
complexType **PointDefinedSurfaceBestFitType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **PointDefinedSurfaceConstructionMethodType/BestFit**
annotation	documentation The PointDefinedSurfaceBestFitType defines the information for a best-fit point-defined surface which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the point-defined surface.

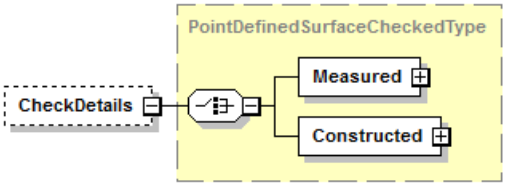
element **PointDefinedSurfaceBestFitType/BaseFeature**

diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 3 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of a point-defined surface. The number of base features must be 3 or greater.

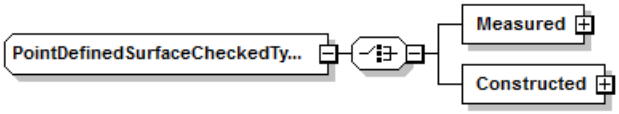
complexType **PointDefinedSurfaceCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **PointDefinedSurfaceActualDeterminationType/Checked**
annotation	documentation The PointDefinedSurfaceCheckedFeatureType defines that a point-defined surface feature is checked.

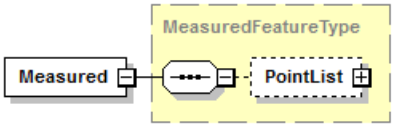
element **PointDefinedSurfaceCheckedFeatureType/CheckDetails**

diagram	
type	**PointDefinedSurfaceCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured** **Constructed**
annotation	documentation The optional CheckDetails element gives details about the point-defined surface check (measurement or construction).

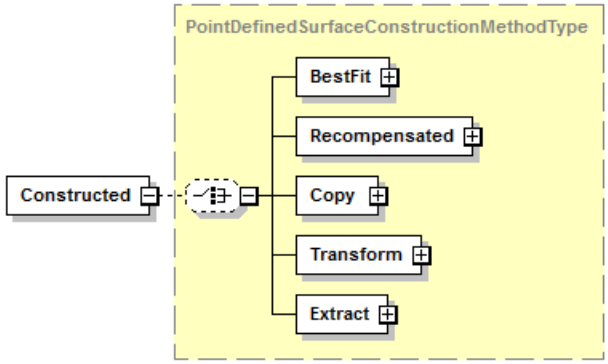
complexType **PointDefinedSurfaceCheckedType**

diagram	
children	**Measured** **Constructed**
used by	element **PointDefinedSurfaceCheckedFeatureType/CheckDetails**
annotation	documentation The PointDefinedSurfaceCheckedType defines how the point-defined surface actual is checked, either by measurement or by construction.

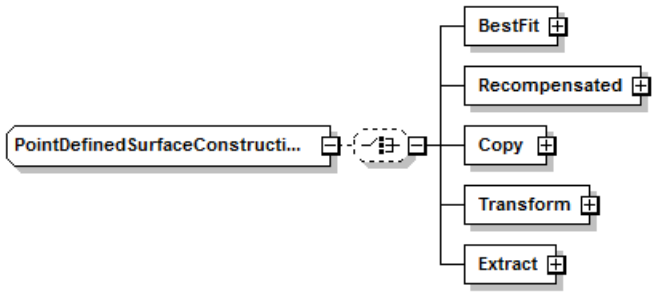
element **PointDefinedSurfaceCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the point-defined surface is measured.

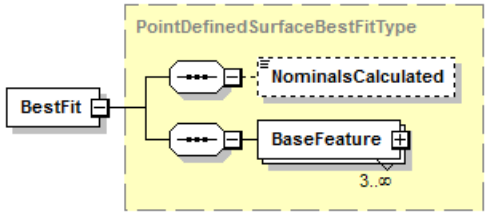
element **PointDefinedSurfaceCheckedType/Constructed**

diagram	
type	PointDefinedSurfaceConstructionMethodType
properties	content complex
children	BestFit Recompensated Copy Transform Extract
annotation	documentation The Constructed element signifies that the point-defined surface is constructed.

complexType **PointDefinedSurfaceConstructionMethodType**

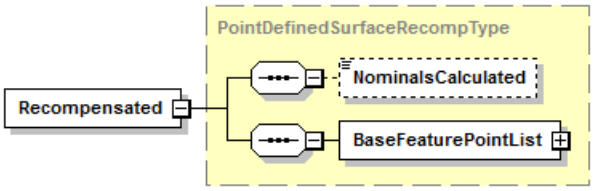
diagram	
children	BestFit Recompensated Copy Transform Extract
used by	element PointDefinedSurfaceCheckedType/Constructed
annotation	documentation The PointDefinedSurfaceConstructionMethodType defines the method for constructing a unique nominal or actual point-defined surface feature.

element **PointDefinedSurfaceConstructionMethodType/BestFit**

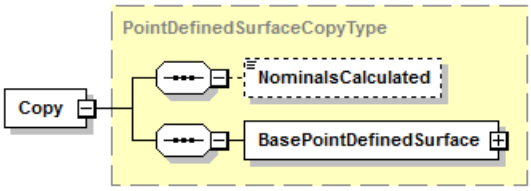
diagram	
type	PointDefinedSurfaceBestFitType
properties	content complex
children	NominalsCalculated BaseFeature

annotation	documentation The BestFit element describes the best-fit construction of a point-defined surface from 3 or more point-reducible base features. This element is in an optional choice.

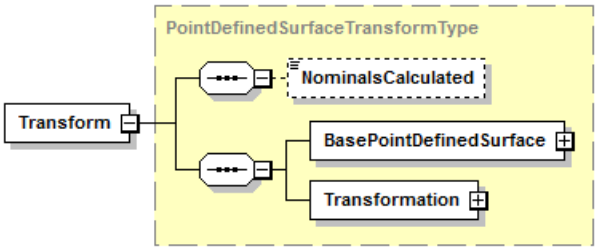
element **PointDefinedSurfaceConstructionMethodType/Recompensated**

diagram	
type	**PointDefinedSurfaceRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of a point-defined surface from 3 or more base feature points. This element is in an optional choice.

element **PointDefinedSurfaceConstructionMethodType/Copy**

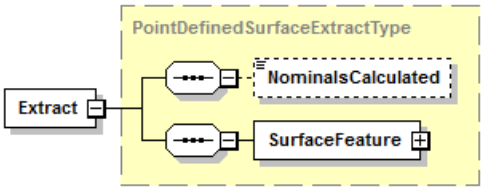
diagram	
type	**PointDefinedSurfaceCopyType**
properties	content complex
children	**NominalsCalculated** **BasePointDefinedSurface**
annotation	documentation The Copy element describes the construction of a point-defined surface by the copying of a base point-defined surface. This element is in an optional choice.

element **PointDefinedSurfaceConstructionMethodType/Transform**

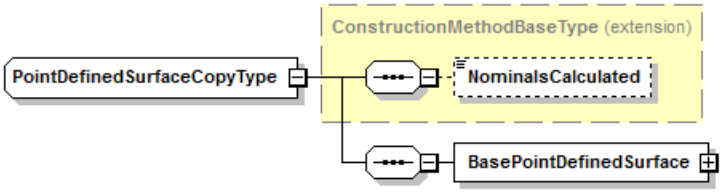
diagram	
type	**PointDefinedSurfaceTransformType**
properties	content complex
children	**NominalsCalculated** **BasePointDefinedSurface** **Transformation**
annotation	documentation The Transform element describes the construction of a point-defined surface by the transformation of a base point-

	defined surface. This element is in an optional choice.

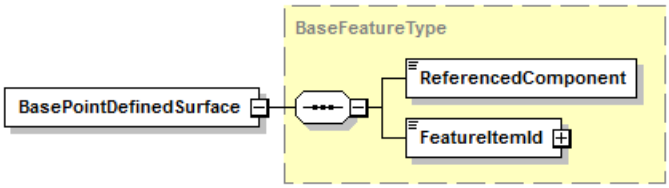
element **PointDefinedSurfaceConstructionMethodType/Extract**

diagram	
type	**PointDefinedSurfaceExtractType**
properties	content complex
children	**NominalsCalculated** **SurfaceFeature**
annotation	documentation The Extract element describes the extraction of a point-defined surface from a surface. This element is in an optional choice.

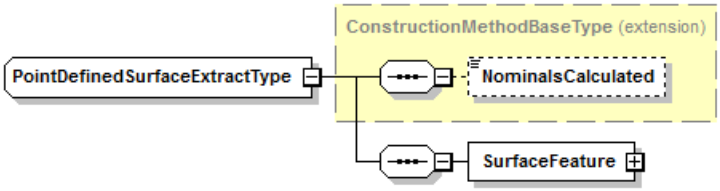
complexType **PointDefinedSurfaceCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BasePointDefinedSurface**
used by	element **PointDefinedSurfaceConstructionMethodType/Copy**
annotation	documentation The PointDefinedSurfaceCopyType defines a copied point-defined surface construction.

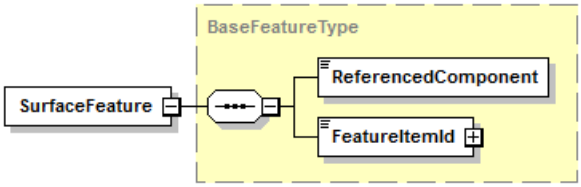
element **PointDefinedSurfaceCopyType/BasePointDefinedSurface**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BasePointDefinedSurface element identifies the point-defined surface to be copied.

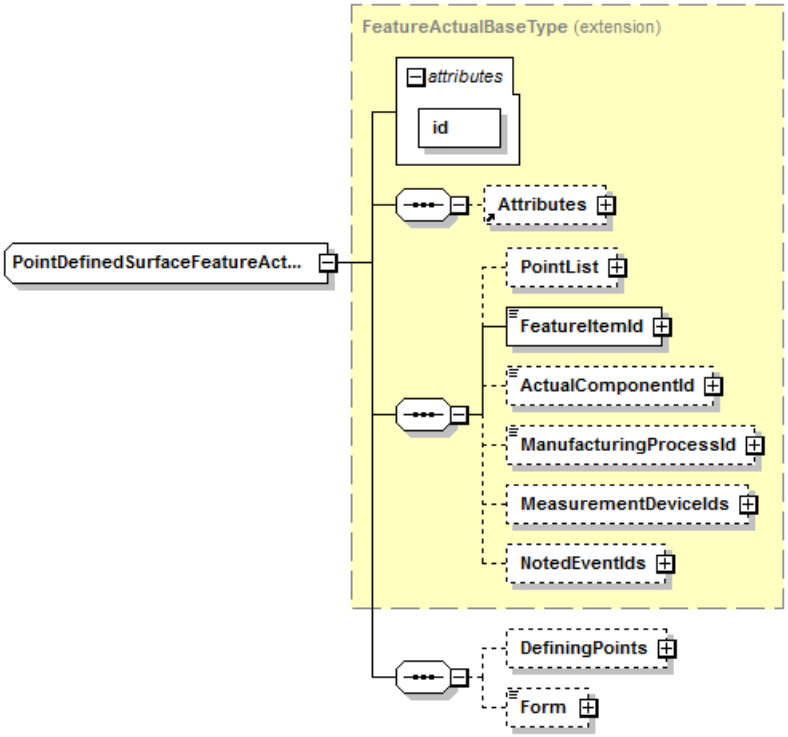
complexType **PointDefinedSurfaceExtractType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **SurfaceFeature**
used by	element **PointDefinedSurfaceConstructionMethodType/Extract**
annotation	documentation The PointDefinedSurfaceExtractType defines a point-defined surface construction by the extraction of a point-defined surface from a surface.

element **PointDefinedSurfaceExtractType/SurfaceFeature**

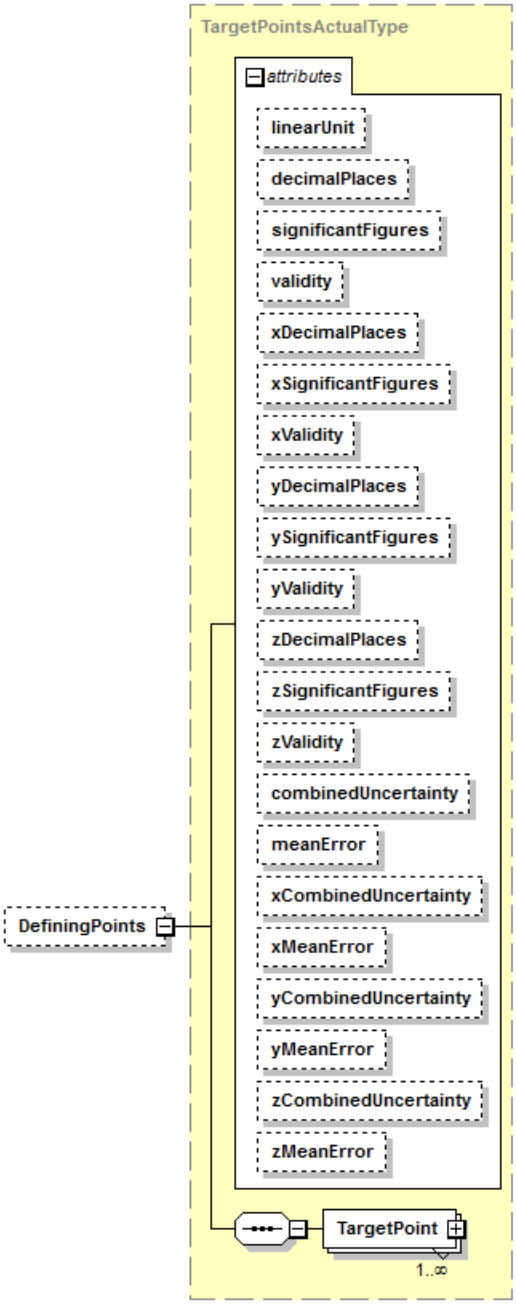
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The SurfaceFeature element identifies the surface from which the point-defined surface is extracted.

complexType **PointDefinedSurfaceFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **DefiningPoints** **Form**
used by	element **PointDefinedSurfaceFeatureActual**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The PointDefinedSurfaceFeatureActualType defines the point-defined surface feature actual information for an individual point-defined surface feature.

element **PointDefinedSurfaceFeatureActualType/DefiningPoints**

diagram



type	**TargetPointsActualType**
properties	minOcc 0 maxOcc 1 content complex
children	**TargetPoint**

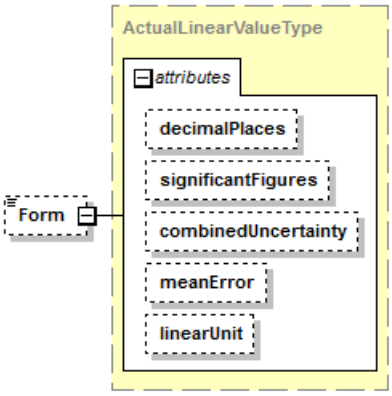
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				

	xDecimalPlaces	**xs:nonNegativeInteger**
	xSignificantFigures	**xs:nonNegativeInteger**
	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional DefiningPoints element gives a list of actual points defining the actual point-surface. The actual point-defined surface passes through these points.	

element **PointDefinedSurfaceFeatureActualType/Form**

diagram



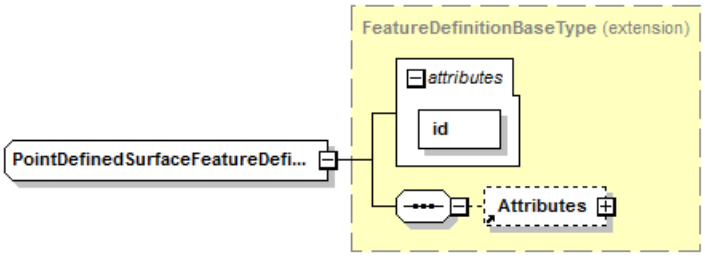
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

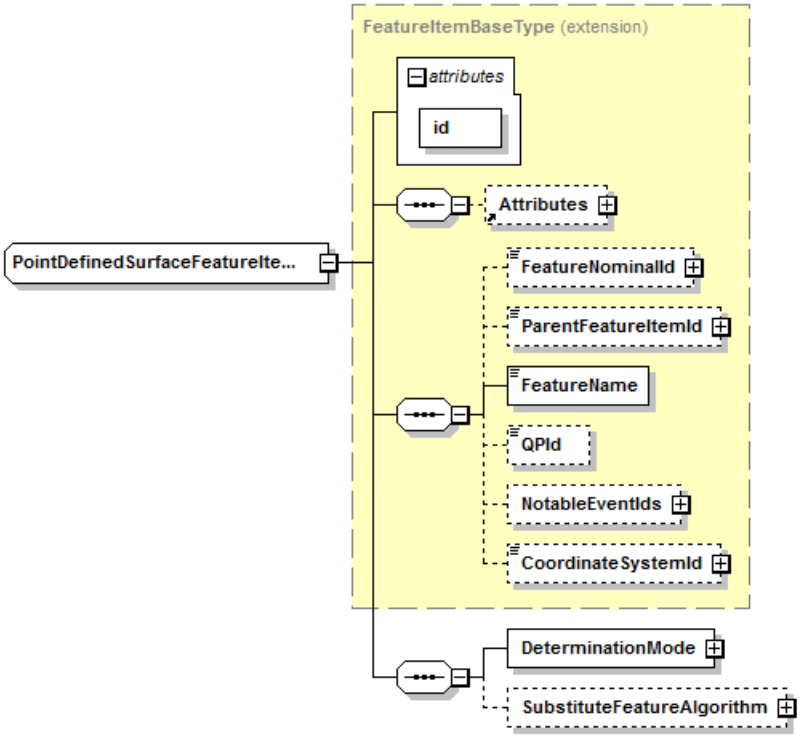
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the

	meanError	**NonNegativeDecimalType**	SpecifiedDecimalType. documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
	linearUnit	**xs:token**	documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Form element is the form error of the point-defined surface feature from a report or an analysis.		

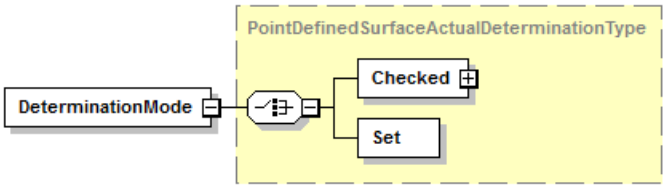
complexType **PointDefinedSurfaceFeatureDefinitionType**

diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes**
used by	element **PointDefinedSurfaceFeatureDefinition**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The PointDefinedSurfaceDefinitionType defines the point-defined surface feature nominal information that can be common to one or more point-defined surface features.

complexType **PointDefinedSurfaceFeatureItemType**

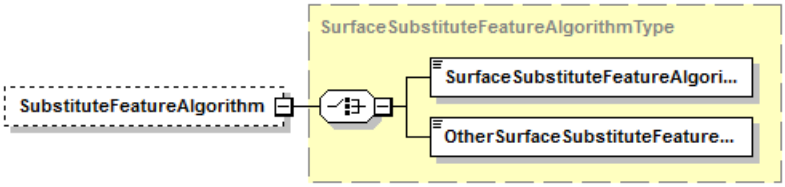
diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **PointDefinedSurfaceFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The PointDefinedSurfaceFeatureItemType defines an individual point-defined surface feature. A point-defined surface feature is defined by a set of points on a surface.

element **PointDefinedSurfaceFeatureItemType/DeterminationMode**

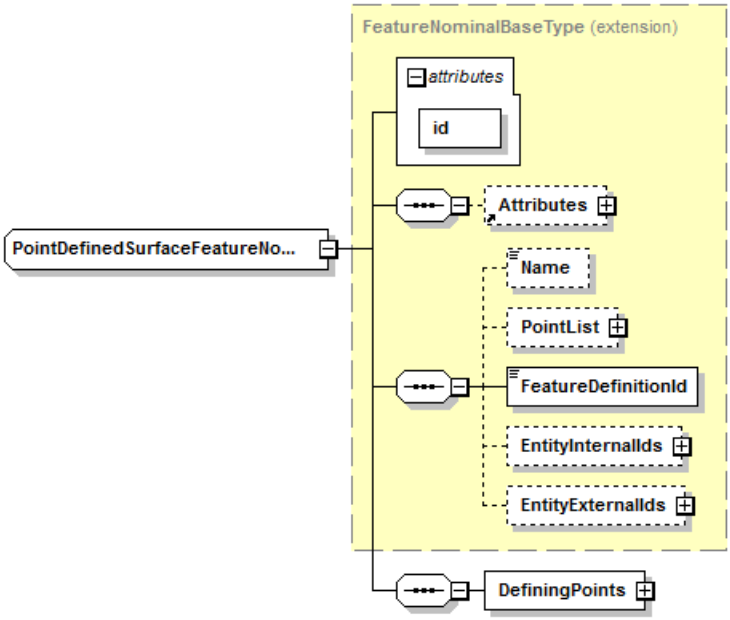
diagram	
type	**PointDefinedSurfaceActualDeterminationType**
properties	content complex

children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the point-defined surface feature actual is determined.

element **PointDefinedSurfaceFeatureItemType/SubstituteFeatureAlgorithm**

diagram	
type	**SurfaceSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**SurfaceSubstituteFeatureAlgorithmEnum OtherSurfaceSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the point-defined surface feature.

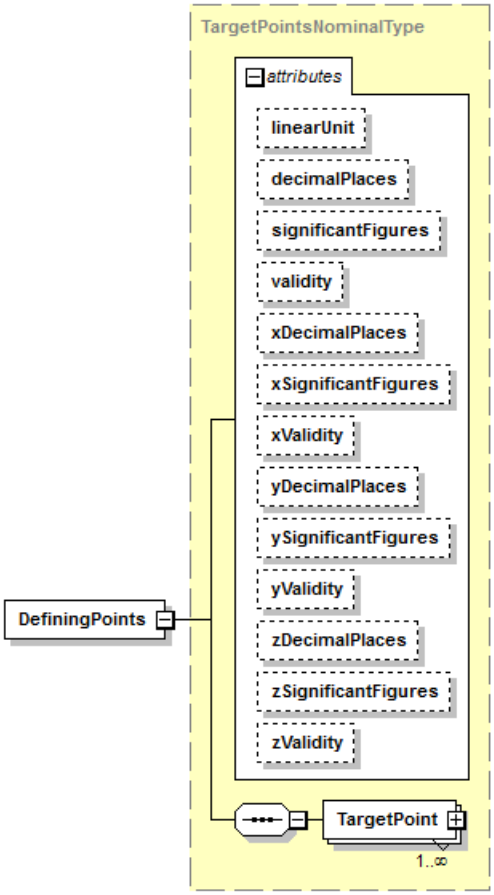
complexType **PointDefinedSurfaceFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **DefiningPoints**
used by	element **PointDefinedSurfaceFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the

	feature, used for referencing.
annotation	documentation The PointDefinedSurfaceFeatureNominalType defines the point-defined surface feature nominal information for an individual point-defined surface feature.

element **PointDefinedSurfaceFeatureNominalType/DefiningPoints**

diagram



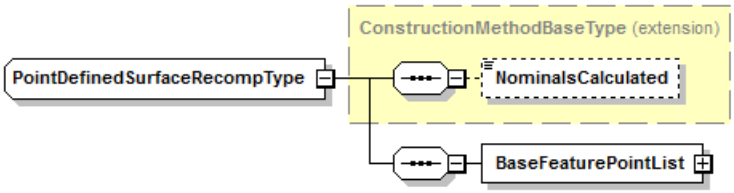
type	**TargetPointsNominalType**
properties	content complex
children	**TargetPoint**

attributes

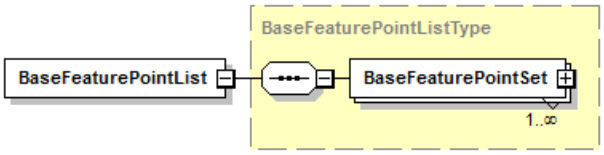
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				

	zDecimalPlaces **xs:nonNegativeInteger** zSignificantFigures **xs:nonNegativeInteger** zValidity **ValidityEnumType**
annotation	documentation The DefiningPoints element is a list of nominal points defining the nominal point-defined surface. The nominal point-defined surface passes through these points.

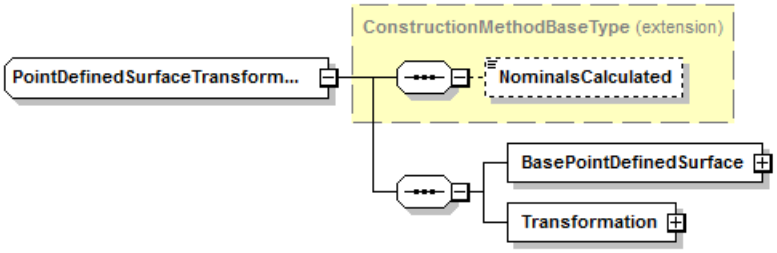
complexType **PointDefinedSurfaceRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **PointDefinedSurfaceConstructionMethodType/Recompensated**
annotation	documentation The PointDefinedSurfaceRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit point-defined surface through the measurement points of base features.

element **PointDefinedSurfaceRecompType/BaseFeaturePointList**

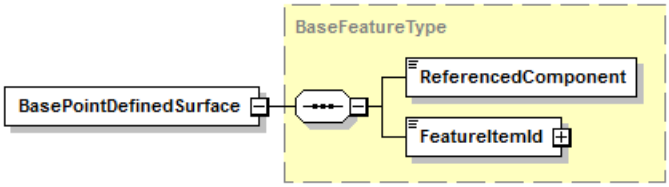
diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit point-defined surface. The total number of points in the BaseFeaturePointSets in the list must be 3 or greater.

complexType **PointDefinedSurfaceTransformType**

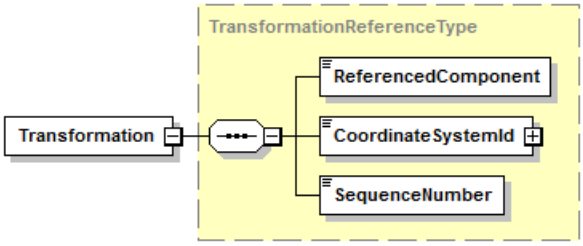
diagram	
type	extension of **ConstructionMethodBaseType**

properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BasePointDefinedSurface** **Transformation**
used by	element **PointDefinedSurfaceConstructionMethodType/Transform**
annotation	documentation The PointDefinedSurfaceTransformType defines a point-defined surface construction by the transformation of a point-defined surface through the specified nominal or actual coordinate system.

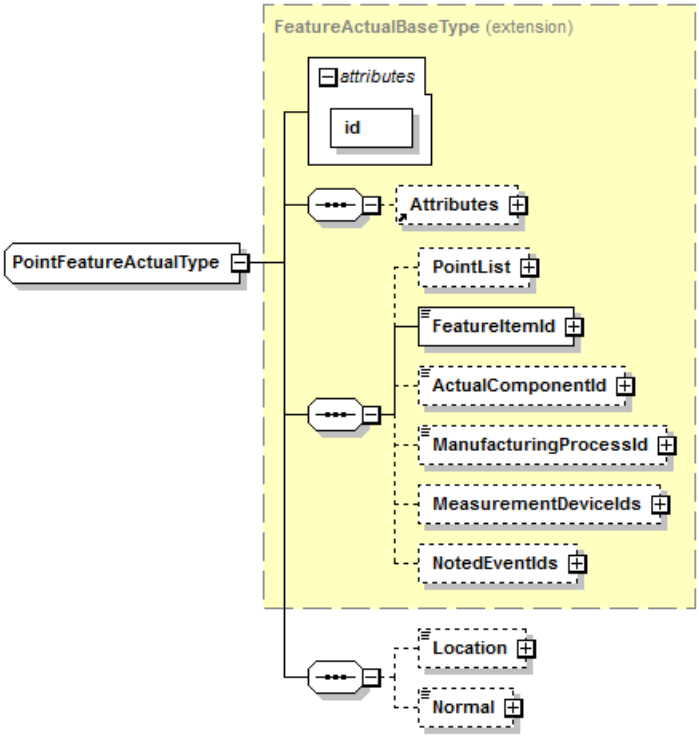
element **PointDefinedSurfaceTransformType/BasePointDefinedSurface**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BasePointDefinedSurface element identifies the point-defined surface to be transformed.

element **PointDefinedSurfaceTransformType/Transformation**

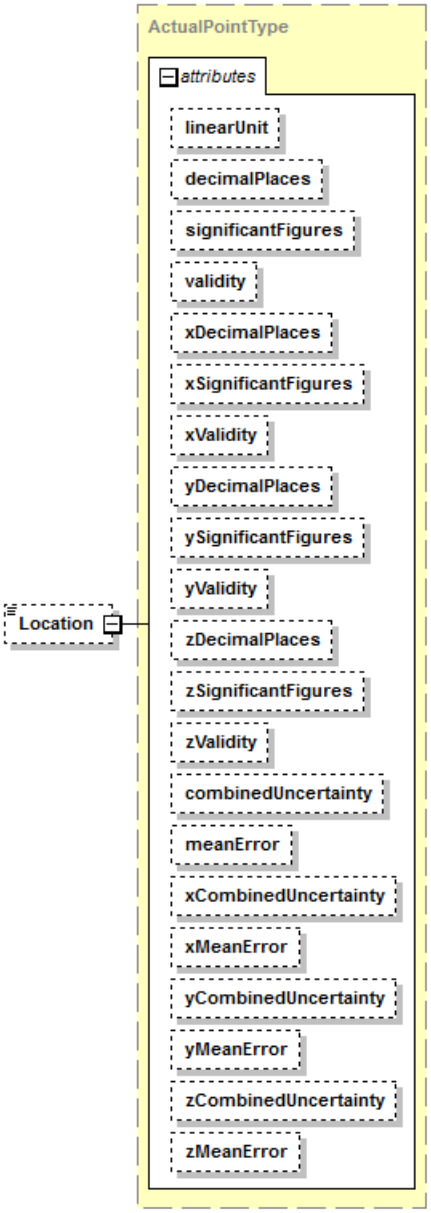
diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the point-defined surface.

complexType **PointFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **Location** **Normal**
used by	element **PointFeatureActual**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The PointFeatureActualType defines the point feature actual information for an individual point feature.

element **PointFeatureActualType/Location**

diagram



type	**ActualPointType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

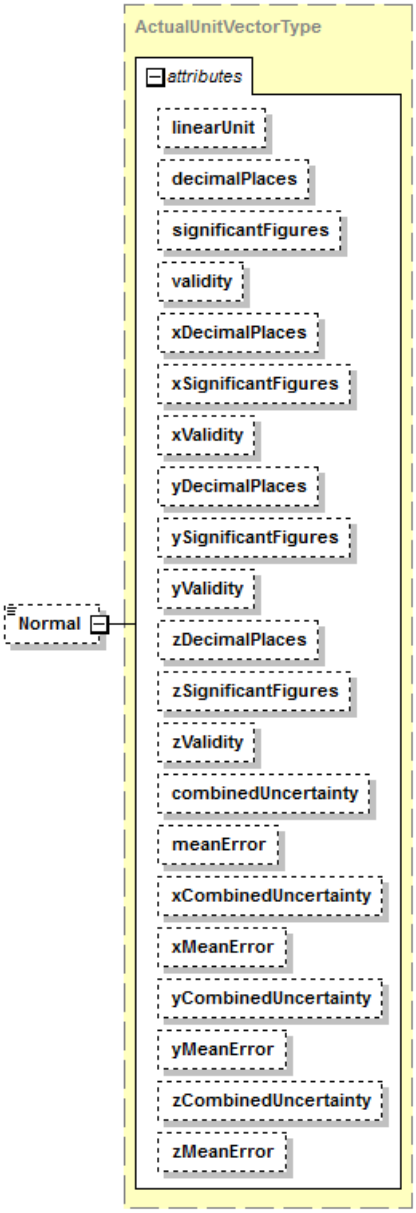
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Location element is the actual location of the point.	

element **PointFeatureActualType/Normal**

diagram



type **ActualUnitVectorType**

properties

minOcc	0
maxOcc	1
content	complex

facets

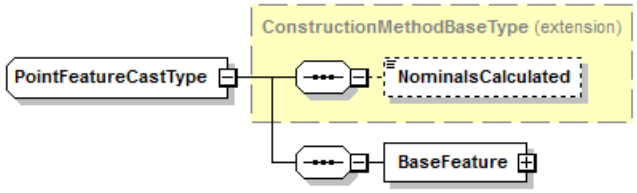
Kind	Value	Annotation
length	3	

attributes

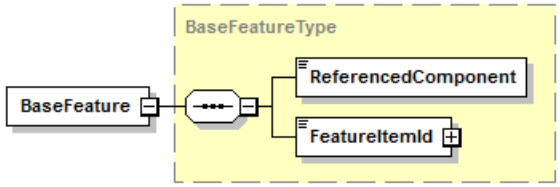
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Normal element is the actual unit normal vector of the point.	

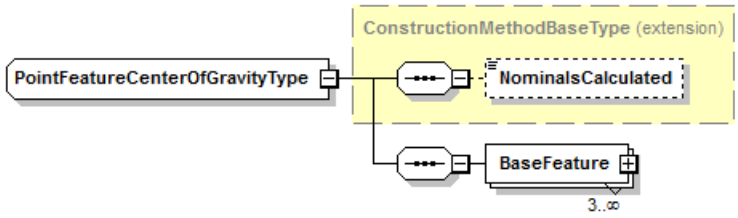
complexType **PointFeatureCastType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **PointConstructionMethodType/Cast**
annotation	documentation The PointFeatureCastType defines the cast of another feature type to a point feature. The location is copied from the base feature.

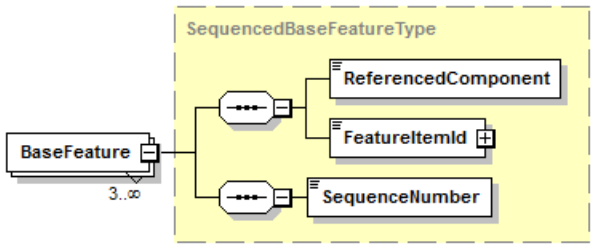
element **PointFeatureCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to a point feature.

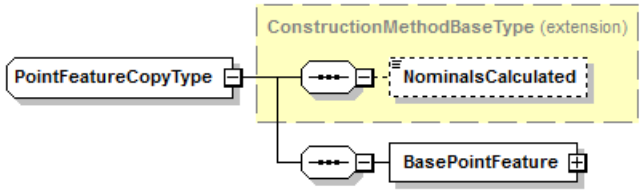
complexType **PointFeatureCenterOfGravityType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **PointConstructionMethodType/CenterOfGravity**
annotation	documentation The PointFeatureCenterOfGravityType defines the construction of a point which is the center of gravity of the base feature locations.

element **PointFeatureCenterOfGravityType/BaseFeature**

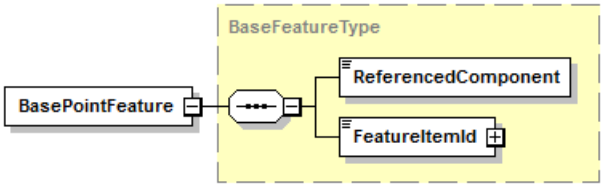
diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 3 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature whose location is taken as one of the set for computation of the center of gravity.

complexType **PointFeatureCopyType**

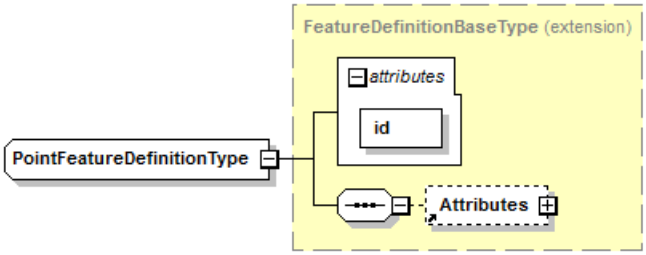
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BasePointFeature**

used by	element **PointConstructionMethodType/Copy**
annotation	documentation The PointFeatureCopyType defines a copied point feature construction.

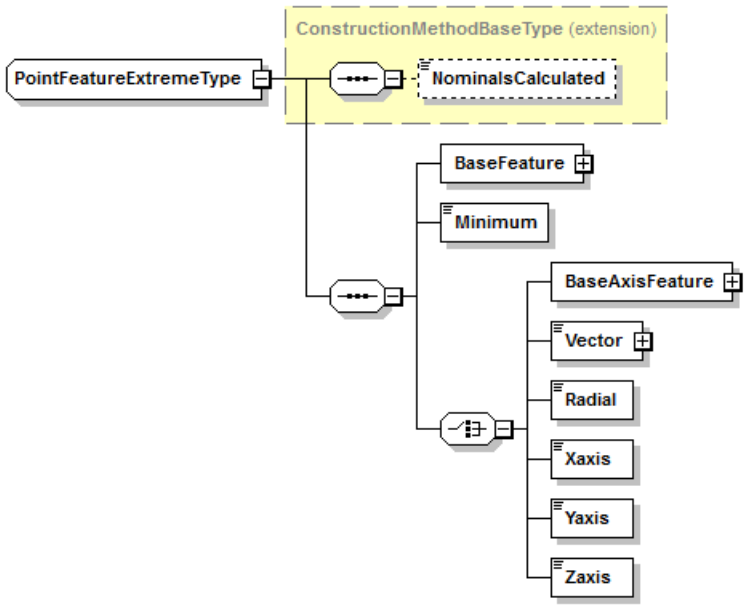
element **PointFeatureCopyType/BasePointFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BasePointFeature element identifies the point to be copied.

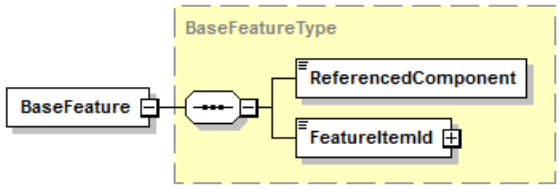
complexType **PointFeatureDefinitionType**

diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes**
used by	element **PointFeatureDefinition**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The PointFeatureDefinitionType defines the point feature nominal information that can be common to one or more point features.

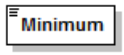
complexType **PointFeatureExtremeType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature** **Minimum** **BaseAxisFeature** **Vector** **Radial** **Xaxis** **Yaxis** **Zaxis**
used by	element **PointConstructionMethodType/Extreme**
annotation	documentation The PointFeatureExtremeType defines the construction of the extreme point on a feature in the specified direction. Except in the case of Radial, the point is the point at which a plane approaching the feature from the given direction first touches the feature.

element **PointFeatureExtremeType/BaseFeature**

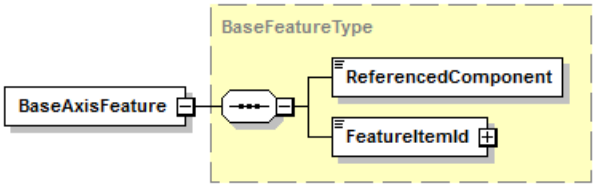
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the feature whose extreme location is to be used in a construction.

element **PointFeatureExtremeType/Minimum**

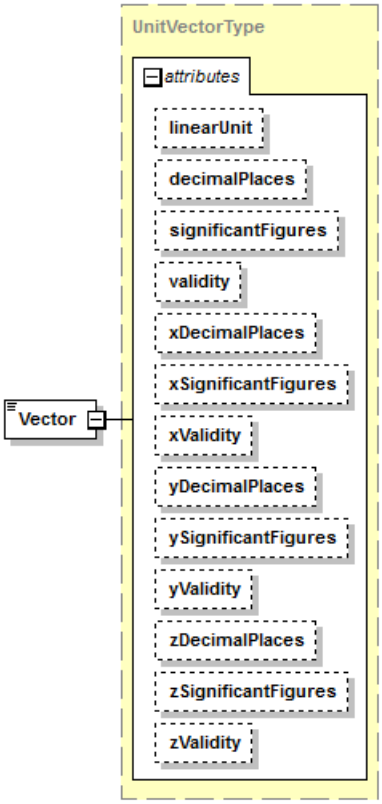
diagram	
type	**xs:boolean**

properties	content simple default false
annotation	documentation The Minimum element specifies whether the minimum or the maximum extreme of the base feature is to be used. It is set to "false" for the maximum extreme point in the specified direction, or set to "true" for the minimum.

element **PointFeatureExtremeType/BaseAxisFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseAxisFeature element identifies a feature whose axis defines the direction along which the extreme point is to be located.

element **PointFeatureExtremeType/Vector**

diagram	
type	**UnitVectorType**
properties	content complex

facets	Kind Value Annotation length 3
attributes	Name Type Use Default Fixed Annotation linearUnit **xs:token** decimalPlaces **xs:nonNegativeInteger** significantFigures **xs:nonNegativeInteger** validity **ValidityEnumType** xDecimalPlaces **xs:nonNegativeInteger** xSignificantFigures **xs:nonNegativeInteger** xValidity **ValidityEnumType** yDecimalPlaces **xs:nonNegativeInteger** ySignificantFigures **xs:nonNegativeInteger** yValidity **ValidityEnumType** zDecimalPlaces **xs:nonNegativeInteger** zSignificantFigures **xs:nonNegativeInteger** zValidity **ValidityEnumType**
annotation	documentation The Vector element is a unit vector which defines the direction along which the extreme point is to be located.

element **PointFeatureExtremeType/Radial**

diagram	
type	**xs:token**
properties	content simple fixed Radial
annotation	documentation The Radial element specifies that the extreme point is the point at which a large cylinder coaxial with the feature and containing the feature first touches the feature as its radius shrinks. The Radial element applies only if the base feature is axially symmetric.

element **PointFeatureExtremeType/Xaxis**

diagram	
type	**xs:token**
properties	content simple fixed Xaxis
annotation	documentation The Xaxis element specifies that the extreme point is to be taken along the X axis of the current coordinate system.

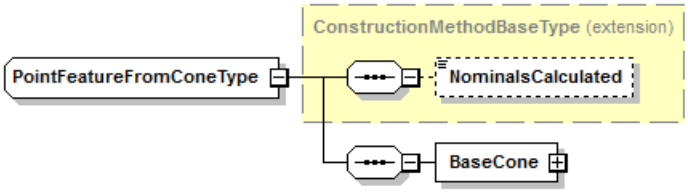
element **PointFeatureExtremeType/Yaxis**

diagram	
type	**xs:token**
properties	content simple fixed Yaxis
annotation	documentation The Yaxis element specifies that the extreme point is to be taken along the Y axis of the current coordinate system.

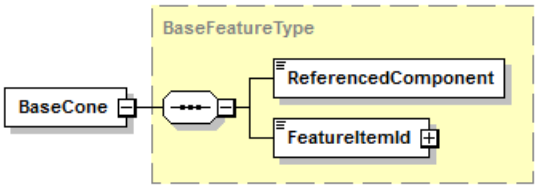
element **PointFeatureExtremeType/Zaxis**

diagram	
type	**xs:token**
properties	content simple fixed Zaxis
annotation	documentation The Zaxis element specifies that the extreme point is to be taken along the Z axis of the current coordinate system.

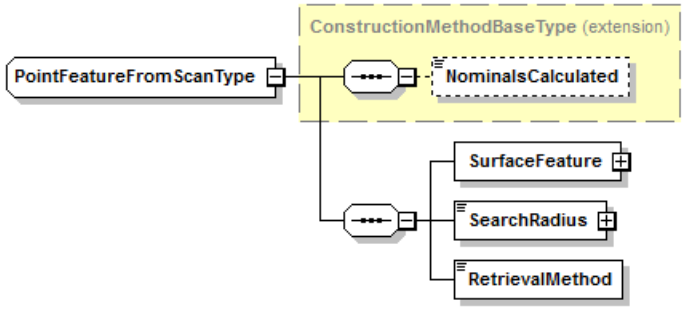
complexType **PointFeatureFromConeType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseCone**
used by	element **PointConstructionMethodType/FromCone**
annotation	documentation The PointFeatureFromConeType defines the construction of a point which is the vertex of a cone.

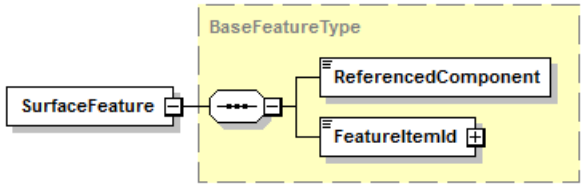
element **PointFeatureFromConeType/BaseCone**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseCone element identifies a cone from which the vertex point will be extracted.

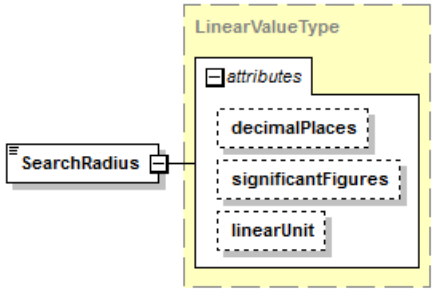
complexType **PointFeatureFromScanType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius** **RetrievalMethod**
used by	element **PointConstructionMethodType/FromScan**
annotation	documentation The PointFeatureFromScanType defines a point feature construction by the retrieval of a point feature from a scanned surface feature (point cloud).

element **PointFeatureFromScanType/SurfaceFeature**

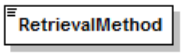
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The SurfaceFeature element identifies the scanned surface feature from which the point feature is retrieved.

element **PointFeatureFromScanType/SearchRadius**

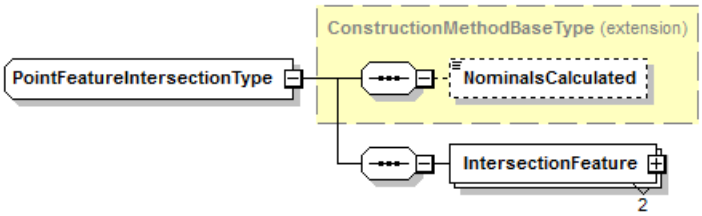
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name Type Use Default Fixed Annotation

	decimalPlaces	**xs:nonNegativeInteger**	documentation See documentation of SpecifiedDecimalType.
	significantFigures	**xs:nonNegativeInteger**	documentation See documentation of SpecifiedDecimalType.
	linearUnit	**xs:token**	documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The SearchRadius element is the radius around the nominal feature, wherein the actual feature can be expected. The SearchRadius is the radius of a cylinder. All scanned points within this cylinder are examined for the retrieval of the feature. The cylinder's axis is defined by the feature's normal direction and the cylinder's axis passes through the feature's location point.		

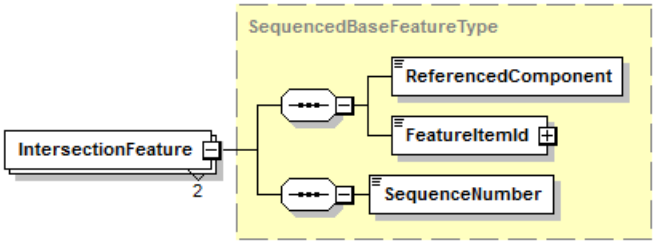
element **PointFeatureFromScanType/RetrievalMethod**

diagram			
type	**RetrievalMethodEnumType**		
properties	content simple		
facets	Kind	Value	Annotation
	enumeration	AVERAGE	
	enumeration	MAXEXTREME	
	enumeration	MINEXTREME	
	enumeration	CLOSEST1D	
	enumeration	CLOSEST2D	
	enumeration	CLOSEST3D	
annotation	documentation The RetrievalMethod element defines the method for extracting the point feature from the points within the acceptance cylinder.		

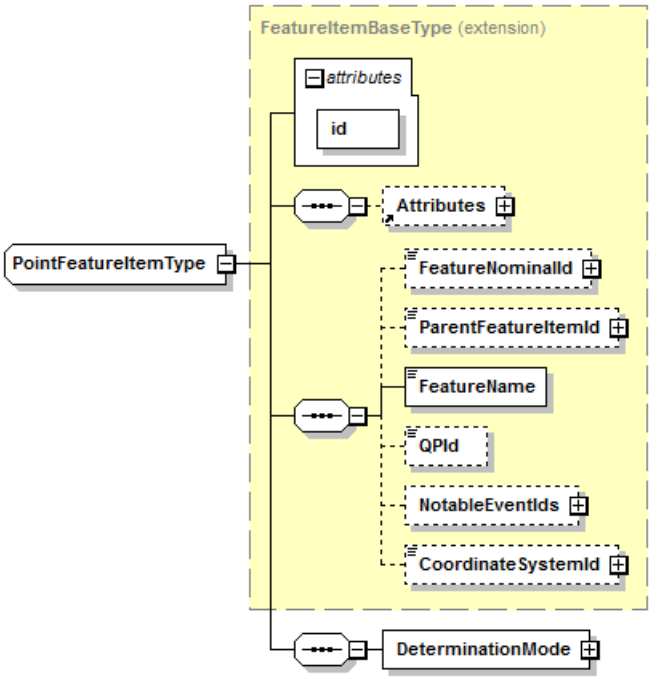
complexType **PointFeatureIntersectionType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **IntersectionFeature**
used by	element **PointConstructionMethodType/Intersection**
annotation	documentation The PointFeatureIntersectionType defines a point that is the intersection of two features.

element **PointFeatureIntersectionType/IntersectionFeature**

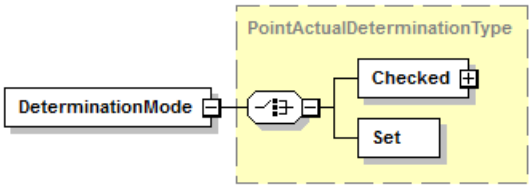
diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 2 maxOcc 2 content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each IntersectionFeature element identifies a feature that intersects the other feature at a point.

complexType **PointFeatureItemType**

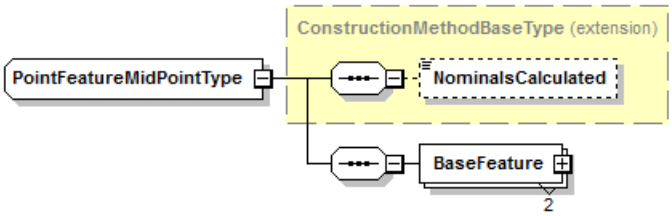
diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes FeatureNominalId ParentFeatureItemId FeatureName QPId NotableEventIds CoordinateSystemId DeterminationMode**
used by	element **PointFeatureItem**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the QIF id of the feature, used for

	referencing.
annotation	documentation The PointFeatureItemType defines an individual point feature.

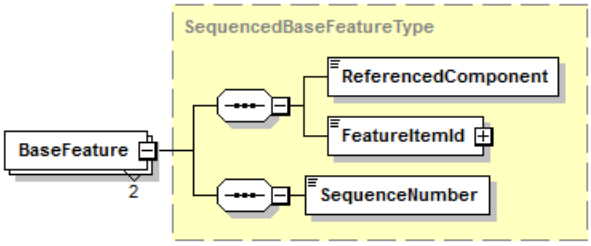
element **PointFeatureItemType/DeterminationMode**

diagram	
type	**PointActualDeterminationType**
properties	content complex
children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the point feature actual is determined.

complexType **PointFeatureMidPointType**

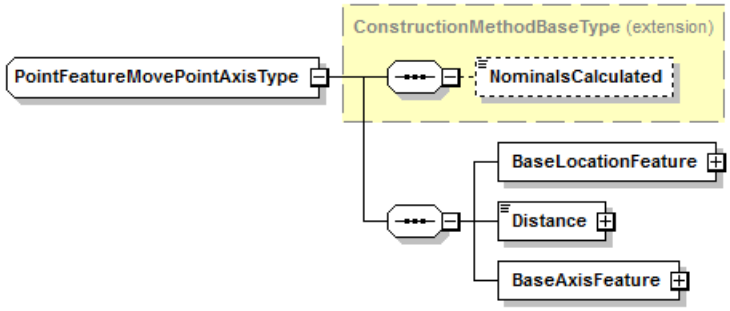
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **PointConstructionMethodType/MidPoint**
annotation	documentation The PointFeatureMidPointType defines the construction of a point which is the midpoint of two base feature locations.

element **PointFeatureMidPointType/BaseFeature**

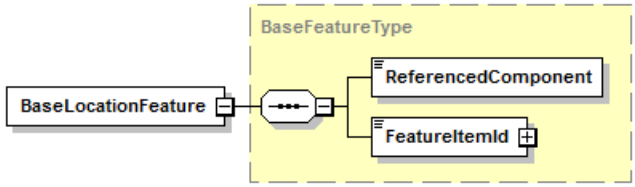
diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 2 maxOcc 2 content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**

annotation	documentation Each BaseFeature element identifies a base feature whose location will be used to compute a midpoint.

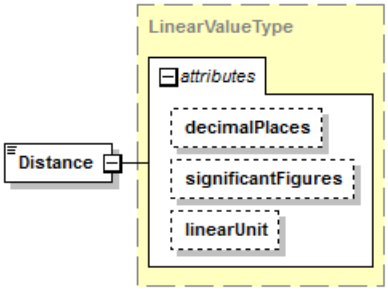
complexType **PointFeatureMovePointAxisType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseLocationFeature** **Distance** **BaseAxisFeature**
used by	element **PointConstructionMethodType/MovePointAxis**
annotation	documentation The PointFeatureMovePointAxisType defines the construction of a point by translating a point by a specified distance along a feature axis from another feature location. If the Distance is negative, the point moves in the opposite direction to the feature axis.

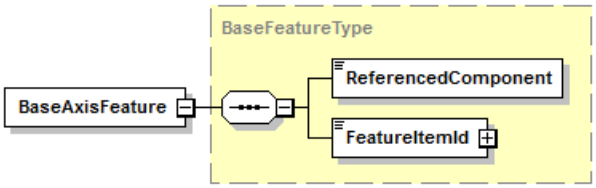
element **PointFeatureMovePointAxisType/BaseLocationFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseLocationFeature element identifies the feature whose location point is to be translated.

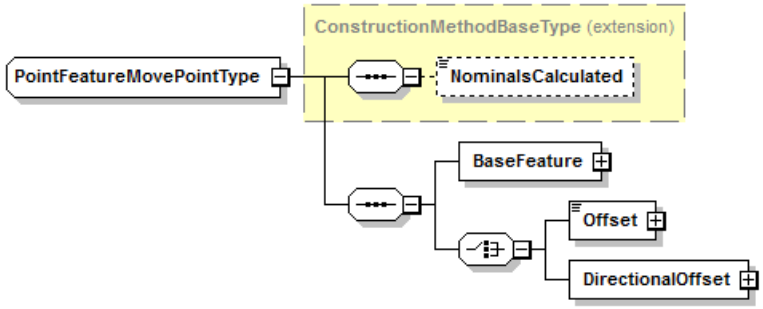
element **PointFeatureMovePointAxisType/Distance**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Distance element is the distance by which the base location is to be translated.

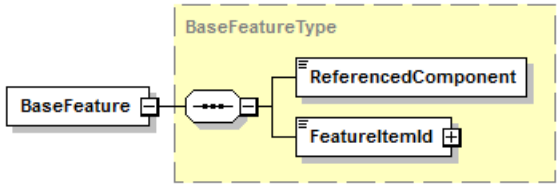
element **PointFeatureMovePointAxisType/BaseAxisFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseAxisFeature element identifies the feature whose axis defines the translation direction.

complexType **PointFeatureMovePointType**

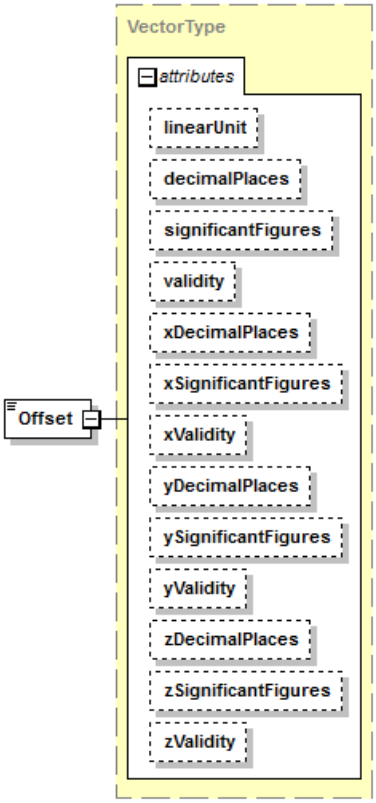
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature** **Offset** **DirectionalOffset**
used by	element **PointConstructionMethodType/MovePoint**
annotation	documentation The PointFeatureMovePointType defines the construction of a point by translating a base point by a specified offset.

element **PointFeatureMovePointType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the feature that defines the base point that is to be translated.

element **PointFeatureMovePointType/Offset**

diagram



type **VectorType**

properties content complex

facets

Kind	Value	Annotation
length	3	

attributes

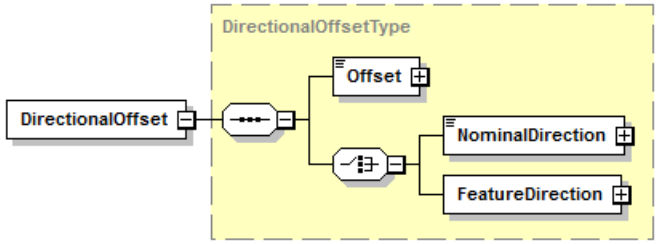
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

annotation

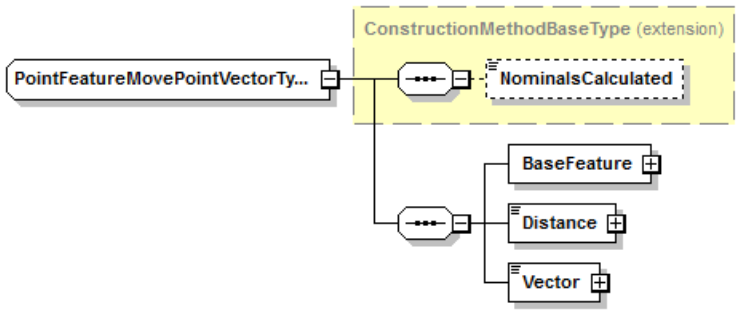
documentation

The Offset element specifies the XYZ amount by which the base point is to be translated in the current coordinate system.

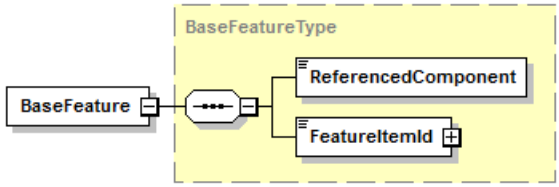
element **PointFeatureMovePointType/DirectionalOffset**

diagram	
type	**DirectionalOffsetType**
properties	content complex
children	**Offset NominalDirection FeatureDirection**
annotation	documentation The DirectionalOffset element specifies the offset distance and direction by which the base point is to be translated in the current coordinate system.

complexType **PointFeatureMovePointVectorType**

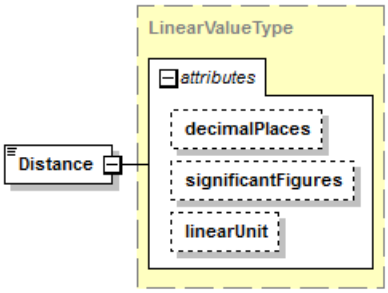
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated BaseFeature Distance Vector**
used by	element **PointConstructionMethodType/MovePointVector**
annotation	documentation The PointFeatureMovePointVectorType defines the construction of a point by translating a base point a specified distance in a specified direction. If the Distance is negative, the point moves in the opposite direction to the vector.

element **PointFeatureMovePointVectorType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation

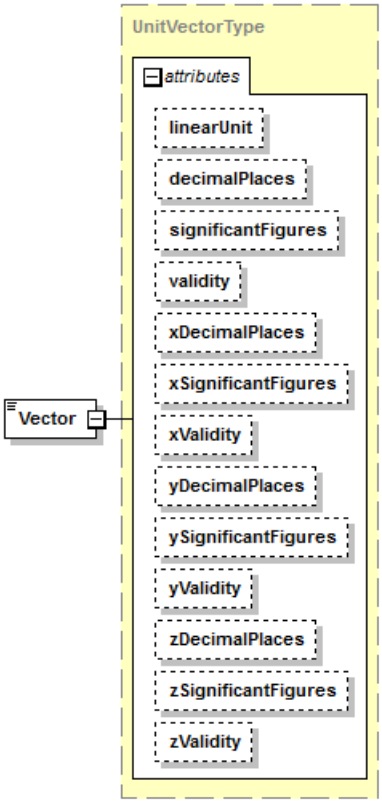
	The BaseFeature element identifies the point to be translated.

element **PointFeatureMovePointVectorType/Distance**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. significantFigures / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. linearUnit / **xs:token** / / / / documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Distance element is the distance by which the base point is to be translated.

element **PointFeatureMovePointVectorType/Vector**

diagram



type **UnitVectorType**

properties content complex

facets

Kind	Value	Annotation
length	3	

attributes

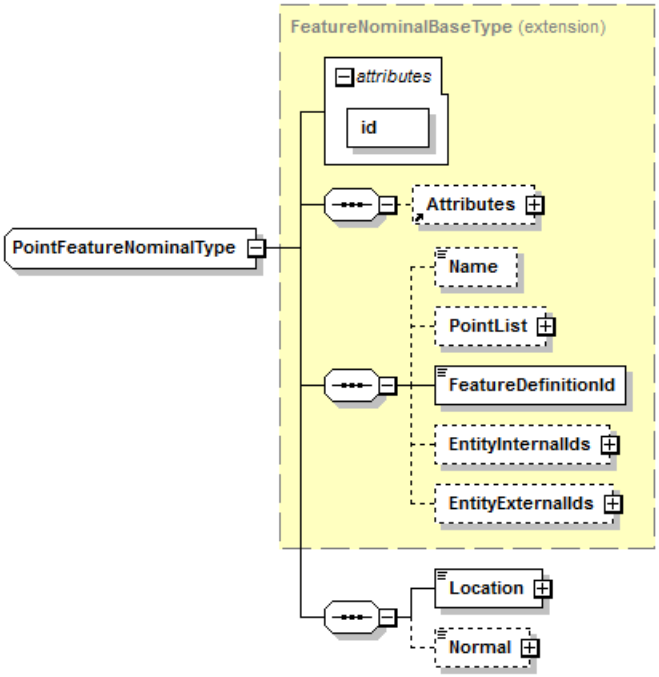
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

annotation

documentation

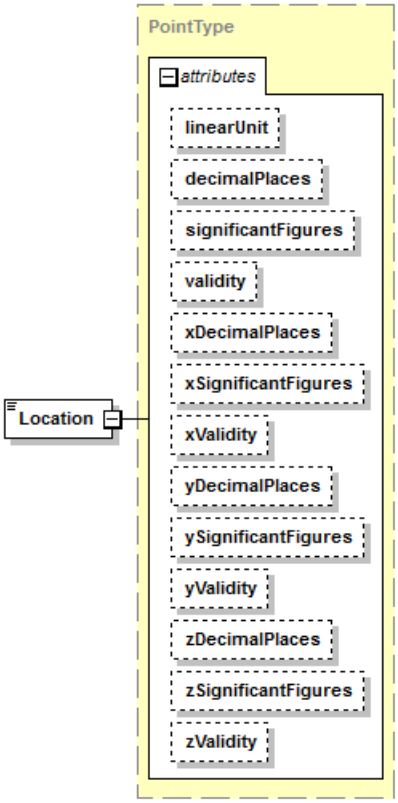
The Vector element is the unit vector specifying the translation direction.

complexType **PointFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **Location** **Normal**
used by	element **PointFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The PointFeatureNominalType defines the point feature nominal information for an individual point feature.

element **PointFeatureNominalType/Location**

diagram



type **PointType**

properties content complex

facets

Kind	Value	Annotation
length	3	

attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

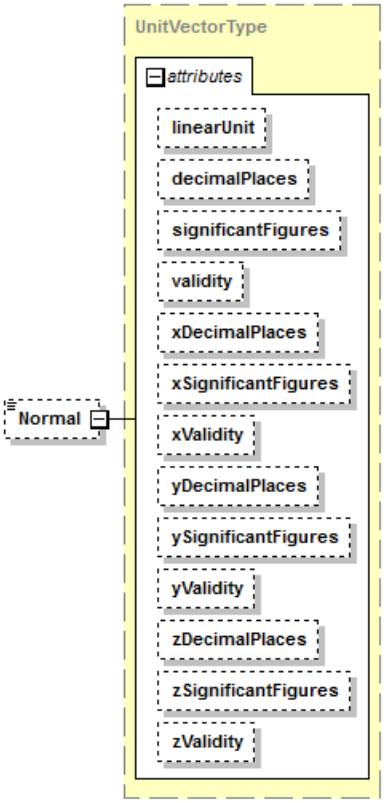
annotation

documentation

The Location element is the nominal location of the point.

element **PointFeatureNominalType/Normal**

diagram



type **UnitVectorType**

properties

minOcc	0
maxOcc	1
content	complex

facets

Kind	Value	Annotation
length	3	

attributes

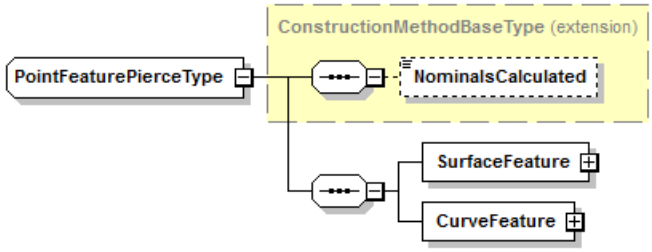
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

annotation

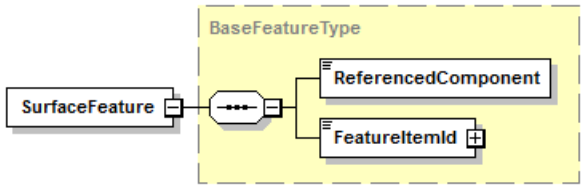
documentation

The optional Normal element is the nominal unit normal vector at the point of a surface on which the point lies.

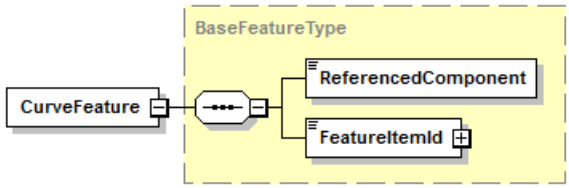
complexType **PointFeaturePierceType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **SurfaceFeature** **CurveFeature**
used by	element **PointConstructionMethodType/Pierce**
annotation	documentation The PointFeaturePierceType defines the construction of a point created by the intersection of a surface with a line or curve.

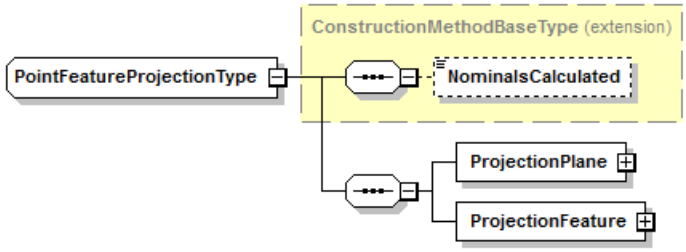
element **PointFeaturePierceType/SurfaceFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The SurfaceFeature element identifies a feature representing a surface such as a plane, cylinder, point-defined surface, etc.

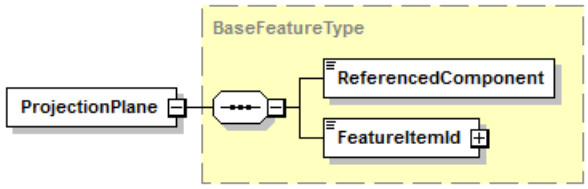
element **PointFeaturePierceType/CurveFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The CurveFeature element identifies a feature representing a curve such as a line, cylinder axis, point-defined curve, etc.

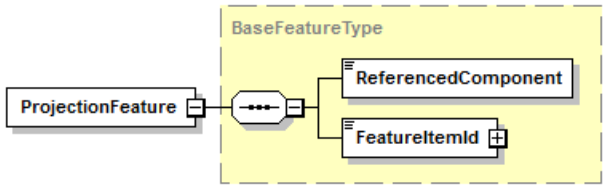
complexType **PointFeatureProjectionType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **ProjectionPlane** **ProjectionFeature**
used by	element **PointConstructionMethodType/Projection**
annotation	documentation The PointFeatureProjectionType defines a projected point construction with the point to be projected and the projection plane.

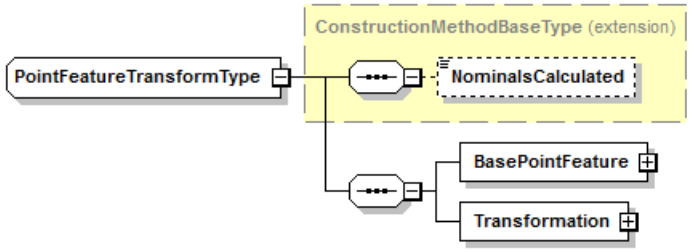
element **PointFeatureProjectionType/ProjectionPlane**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The ProjectionPlane element identifies the plane onto which the point is to be projected.

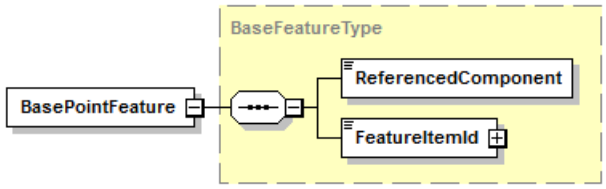
element **PointFeatureProjectionType/ProjectionFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The ProjectionFeature element identifies the point-reducible feature to be projected.

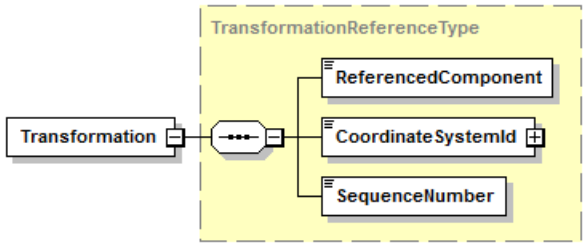
complexType **PointFeatureTransformType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BasePointFeature** **Transformation**
used by	element **PointConstructionMethodType/Transform**
annotation	documentation The PointFeatureTransformType defines a point feature construction by the transformation of a point feature through the specified nominal or actual coordinate system.

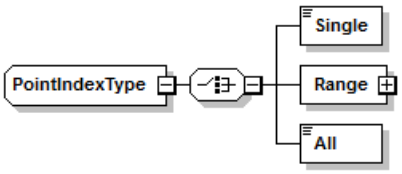
element **PointFeatureTransformType/BasePointFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BasePointFeature element identifies the point feature to be transformed.

element **PointFeatureTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the point feature.

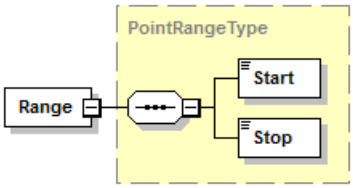
complexType **PointIndexType**

diagram	
children	**Single** **Range** **All**
used by	element **BaseFeaturePointSetType/PointIndex**
annotation	documentation The PointIndexType defines a point, a range of points, or all points.

element **PointIndexType/Single**

diagram	
type	**xs:positiveInteger**
properties	content simple
annotation	documentation The Single element is the index number of a single point. Index numbers start at 1 for the first point on a feature.

element **PointIndexType/Range**

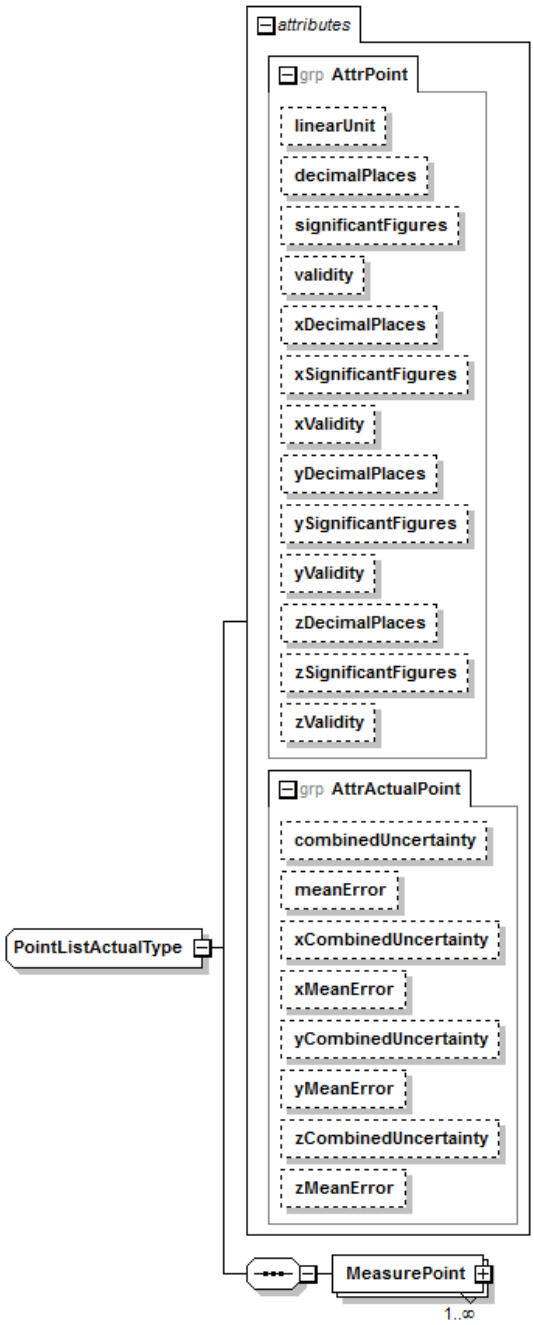
diagram	
type	**PointRangeType**
properties	content complex
children	**Start** **Stop**
annotation	documentation The Range element is the range of point locations.

element **PointIndexType/All**

diagram	
type	**xs:token**
properties	content simple fixed All
annotation	documentation The All element indicates all points are to be used.

complexType **PointListActualType**

diagram



children **MeasurePoint**

used by element **FeatureActualBaseType/PointList**

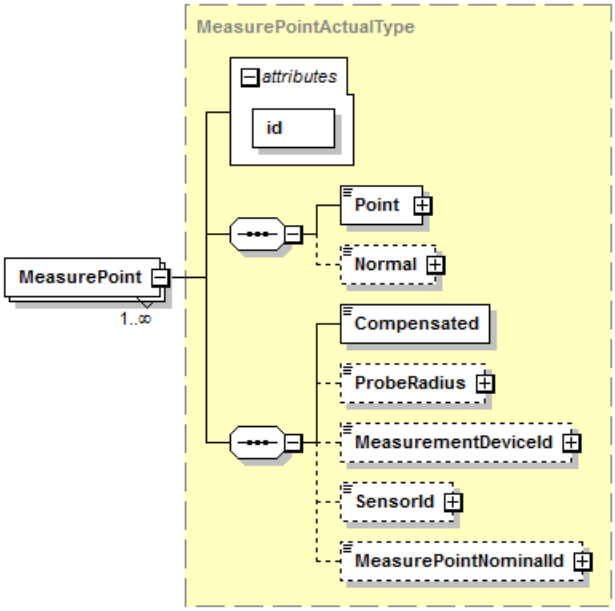
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The PointListActualType defines a list of ordered actual measurement points for a feature.	

element **PointListActualType/MeasurePoint**

diagram



type	**MeasurePointActualType**
properties	minOcc 1 maxOcc unbounded content complex
children	**Point Normal Compensated ProbeRadius MeasurementDeviceId SensorId MeasurePointNominalId**

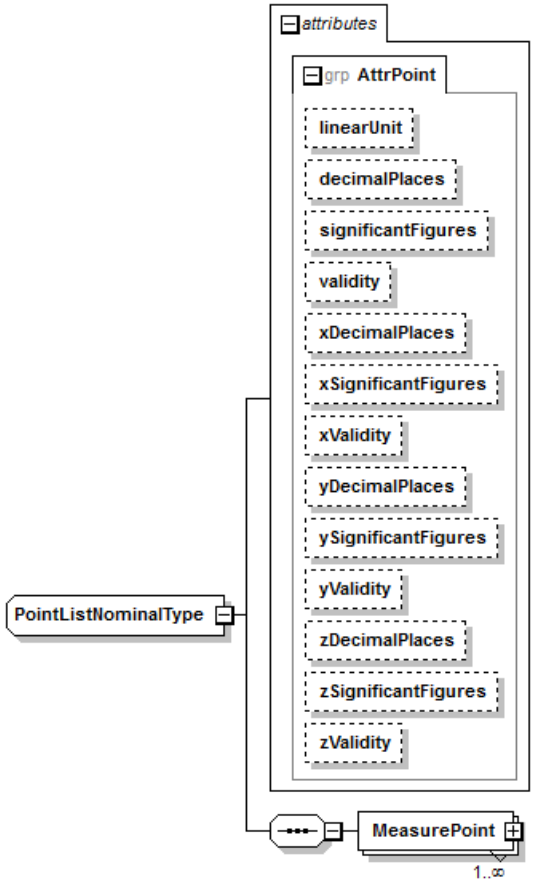
attributes

Name	Type	Use	Default	Fixed	Annotation
id	**QIFIdType**	required			documentation The id attribute is the QIF id of the point, used for referencing.

annotation	documentation Each MeasurePoint element is an individual actual measurement point for a feature.

complexType **PointListNominalType**

diagram



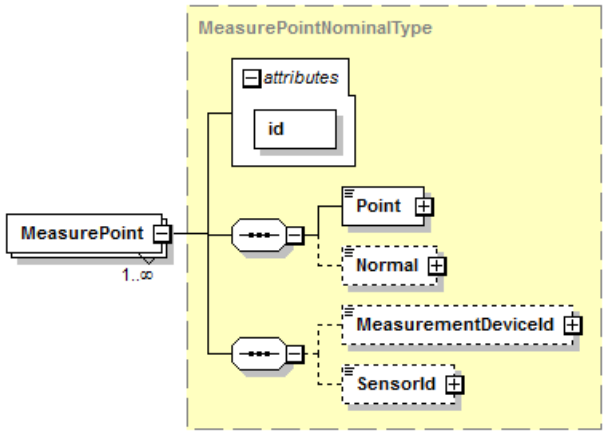
children	**MeasurePoint**
used by	elements **FeatureNominalBaseType/PointList** **MeasuredFeatureType/PointList**

attributes

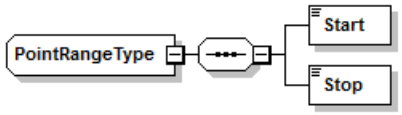
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

annotation	documentation The PointListNominalType defines a list of ordered nominal measurement points for a feature.

element **PointListNominalType/MeasurePoint**

diagram	
type	**MeasurePointNominalType**
properties	minOcc 1 maxOcc unbounded content complex
children	**Point Normal MeasurementDeviceId SensorId**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation: The id attribute is the QIF id of the point, used for referencing.
annotation	documentation Each MeasurePoint element is an individual nominal measurement point for a feature.

complexType **PointRangeType**

diagram	
children	**Start** **Stop**
used by	element **PointIndexType/Range**
annotation	documentation The PointRangeType defines a range of point index numbers. The points at the start and stop indexes are included. Index numbers start at 1 for the first point on a feature.

element **PointRangeType/Start**

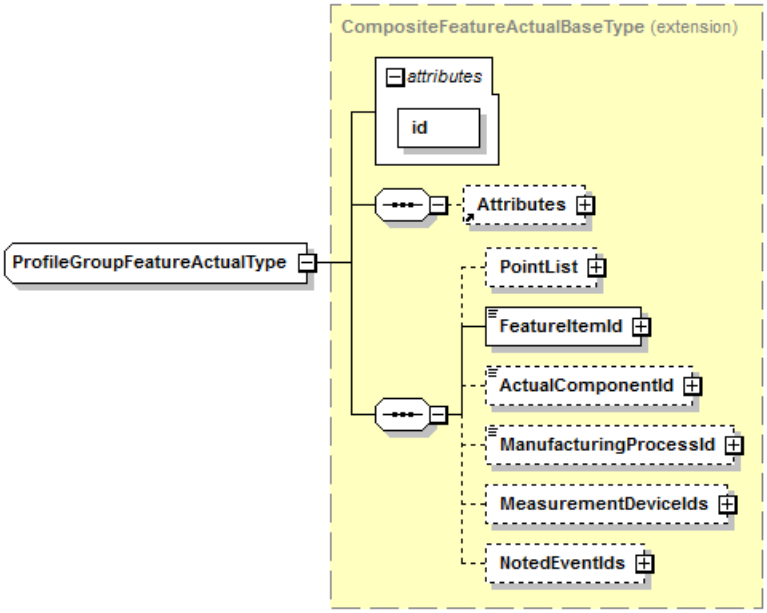
diagram	
type	**xs:positiveInteger**
properties	content simple
annotation	documentation The Start element is the index number of the starting point in the range. The value of the Start element must be 1 or

	greater and smaller than the value of the Stop element.

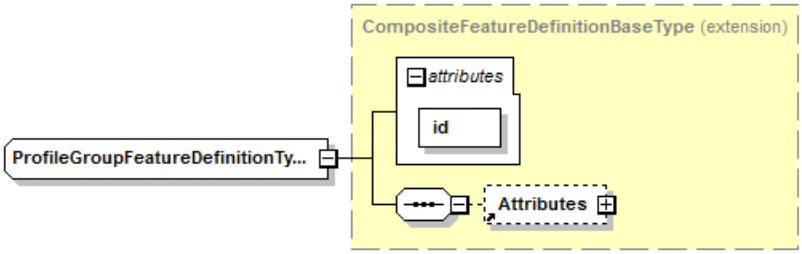
element **PointRangeType/Stop**

diagram	
type	**xs:positiveInteger**
properties	content simple
annotation	documentation The Stop element is the index number of the stopping point in the range. The value of the Stop element must be greater than the value of the Start element and less than or equal to the number of points in the feature measurement point list.

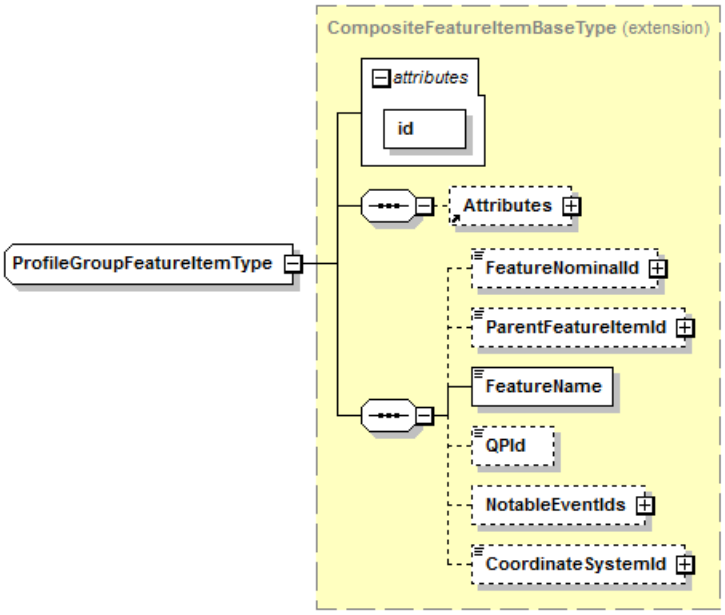
complexType **ProfileGroupFeatureActualType**

diagram	
type	extension of **CompositeFeatureActualBaseType**
properties	base CompositeFeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds**
used by	element **ProfileGroupFeatureActual**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ProfileGroupFeatureActualType defines the profile group feature actual information for an individual profile group feature.

complexType **ProfileGroupFeatureDefinitionType**

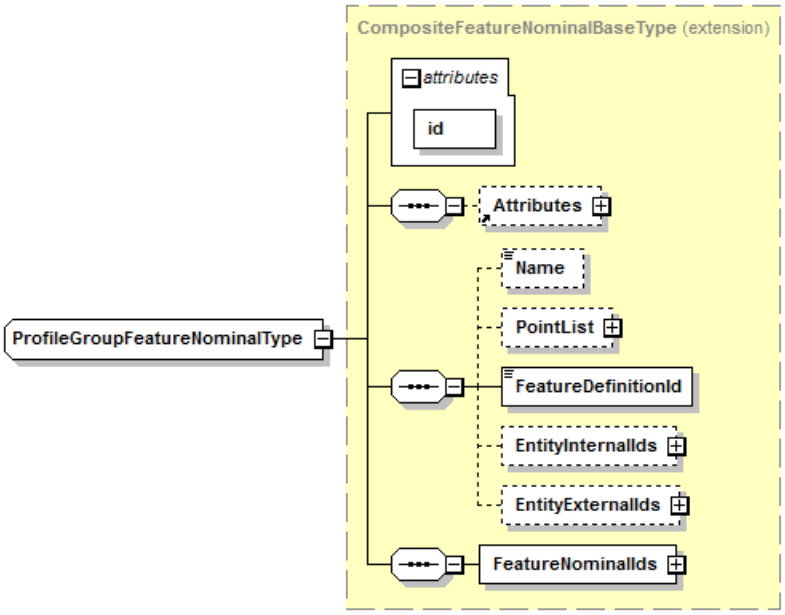
diagram	
type	extension of **CompositeFeatureDefinitionBaseType**
properties	base CompositeFeatureDefinitionBaseType
children	**Attributes**
used by	element **ProfileGroupFeatureDefinition**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ProfileGroupFeatureDefinitionType defines the profile group feature nominal information that can be common to one or more profile group features.

complexType **ProfileGroupFeatureItemType**

diagram	
type	extension of **CompositeFeatureItemBaseType**
properties	base CompositeFeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId**
used by	element **ProfileGroupFeatureItem**

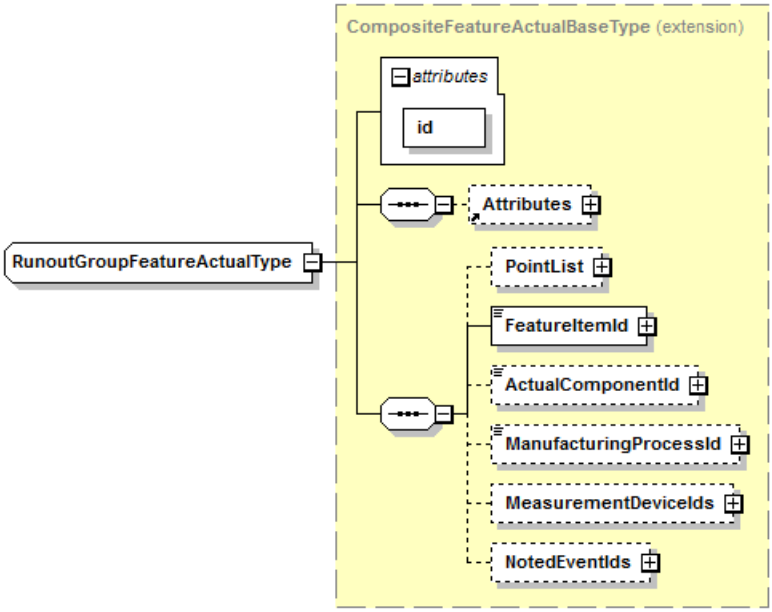
attributes	Name id	Type **QIFIdType**	Use required	Default	Fixed	Annotation documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ProfileGroupFeatureItemType defines an individual profile group feature. A profile group feature is a complex feature defined by a set of simple features grouped together (e.g., all sides of an inner pocket), to which a common profile tolerance may be applied.					

complexType **ProfileGroupFeatureNominalType**

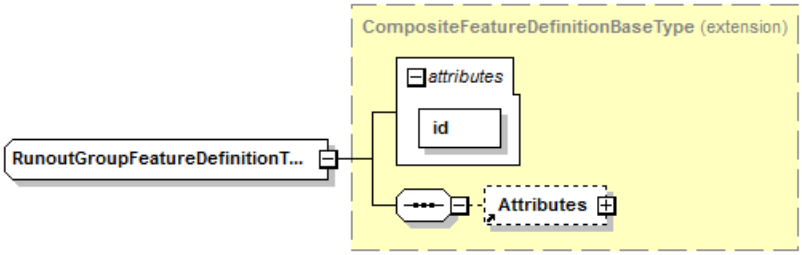
diagram	
type	extension of **CompositeFeatureNominalBaseType**
properties	base CompositeFeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **FeatureNominalIds**
used by	element **ProfileGroupFeatureNominal**

attributes	Name id	Type **QIFIdType**	Use required	Default	Fixed	Annotation documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ProfileGroupFeatureNominalType defines the profile group feature nominal information for an individual profile group feature.					

complexType **RunoutGroupFeatureActualType**

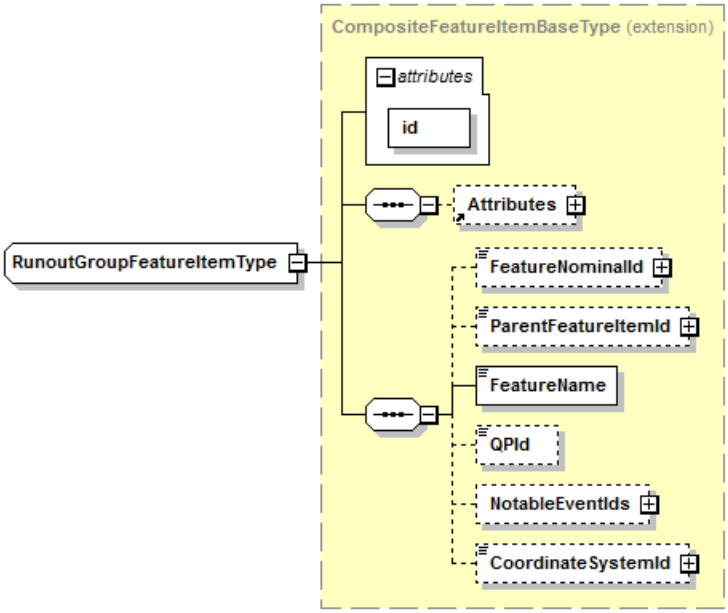
diagram	
type	extension of **CompositeFeatureActualBaseType**
properties	base CompositeFeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds**
used by	element **RunoutGroupFeatureActual**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The RunoutGroupFeatureActualType defines the runout group feature actual information for an individual runout group feature.

complexType **RunoutGroupFeatureDefinitionType**

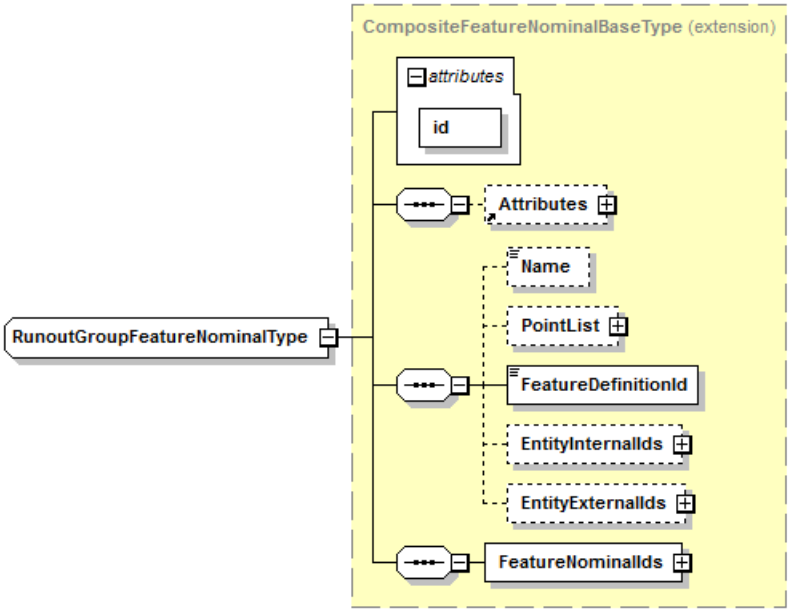
diagram	
type	extension of **CompositeFeatureDefinitionBaseType**
properties	base CompositeFeatureDefinitionBaseType
children	**Attributes**
used by	element **RunoutGroupFeatureDefinition**

attributes	Name id	Type **QIFIdType**	Use required	Default	Fixed	Annotation documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The RunoutGroupFeatureDefinitionType defines the runout group feature nominal information that can be common to one or more runout group features.					

complexType **RunoutGroupFeatureItemType**

diagram						
type	extension of **CompositeFeatureItemBaseType**					
properties	base CompositeFeatureItemBaseType					
children	**Attributes FeatureNominalId ParentFeatureItemId FeatureName QPId NotableEventIds CoordinateSystemId**					
used by	element **RunoutGroupFeatureItem**					
attributes	Name id	Type **QIFIdType**	Use required	Default	Fixed	Annotation documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The RunoutGroupFeatureItemType defines an individual runout group feature. A runout group feature is a complex feature defined by a set of simple features grouped together (e.g., all entities that rotate about or at right angle to a single axis) to which a common runout tolerance may be applied.					

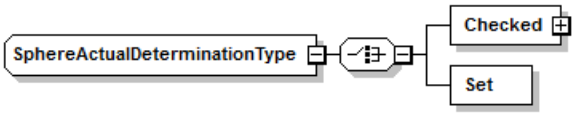
complexType **RunoutGroupFeatureNominalType**

diagram	
type	extension of **CompositeFeatureNominalBaseType**
properties	base CompositeFeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **FeatureNominalIds**
used by	element **RunoutGroupFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The RunoutGroupFeatureNominalType defines the runout group feature nominal information for an individual runout group feature.

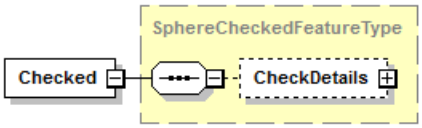
complexType **SetFeatureType**

diagram	
used by	elements **ArcActualDeterminationType/Set** **CircleActualDeterminationType/Set** **ConeActualDeterminationType/Set** **ConicalSegmentActualDeterminationType/Set** **CuboidActualDeterminationType/Set** **CylinderActualDeterminationType/Set** **CylindricalSegmentActualDeterminationType/Set** **EdgePointActualDeterminationType/Set** **EllipseActualDeterminationType/Set** **ElongatedCylinderActualDeterminationType/Set** **ExtrudedCrossSectionActualDeterminationType/Set** **LineActualDeterminationType/Set** **OppositeLinesActualDeterminationType/Set** **OppositePlanesActualDeterminationType/Set** **PlaneActualDeterminationType/Set** **PointDefinedCurveActualDeterminationType/Set** **PointDefinedSurfaceActualDeterminationType/Set** **PointActualDeterminationType/Set** **SphereActualDeterminationType/Set** **SphericalSegmentActualDeterminationType/Set** **SurfaceOfRevolutionActualDeterminationType/Set** **ThreadedFeatureActualDeterminationType/Set** **ToroidalSegmentActualDeterminationType/Set** **TorusActualDeterminationType/Set**
annotation	documentation The SetFeatureType defines that a feature has a set value rather than a checked (measured or constructed) value. The set feature type is used in cases where a non-measurable basic value needs to be tracked by virtue of appearing on a product print, For example, a circle representing the area in which weld splatter is not allowed.

complexType **SphereActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **SphereFeatureItemType/DeterminationMode**
annotation	documentation The SphereActualDeterminationType defines how the sphere actual is determined, either by being set or by being checked (measured or constructed).

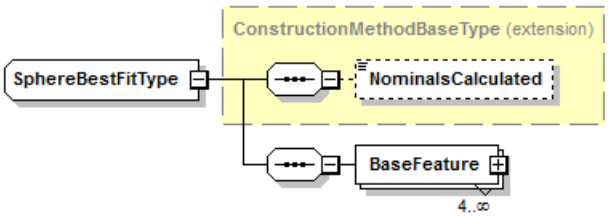
element **SphereActualDeterminationType/Checked**

diagram	
type	**SphereCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the sphere is checked from actual data, either measured or constructed.

element **SphereActualDeterminationType/Set**

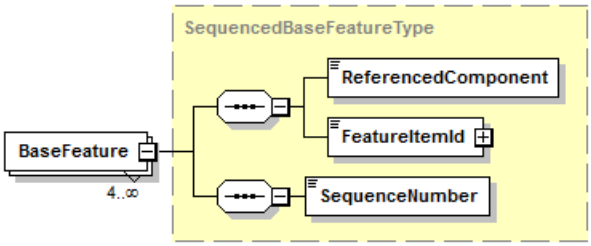
diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the sphere actual is set to its nominal value.

complexType **SphereBestFitType**

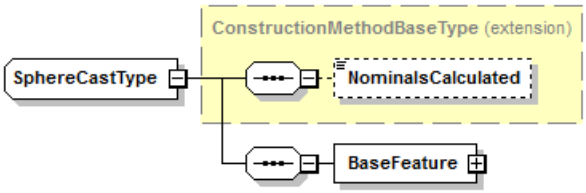
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**

used by	element **SphereConstructionMethodType/BestFit**
annotation	documentation The SphereBestFitType defines the information for a best-fit sphere which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the sphere.

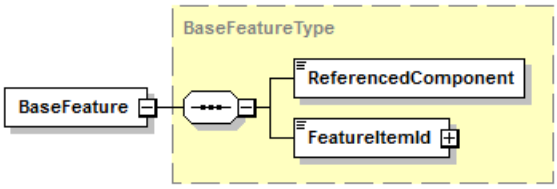
element **SphereBestFitType/BaseFeature**

diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 4 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of a sphere. The number of base features must be 4 or greater.

complexType **SphereCastType**

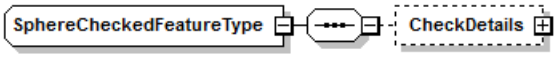
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated BaseFeature**
used by	element **SphereConstructionMethodType/Cast**
annotation	documentation The SphereCastType defines the cast of another feature type to a sphere. The location and size are copied from the base feature.

element **SphereCastType/BaseFeature**

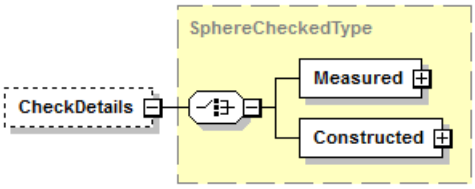
diagram	
type	**BaseFeatureType**

properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to a sphere.

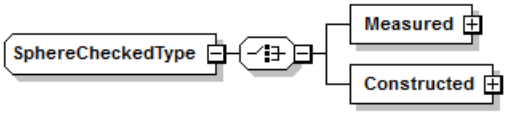
complexType **SphereCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **SphereActualDeterminationType/Checked**
annotation	documentation The SphereCheckedFeatureType defines that a sphere feature is checked.

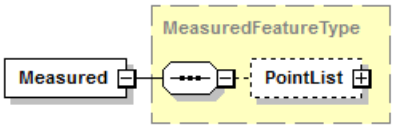
element **SphereCheckedFeatureType/CheckDetails**

diagram	
type	**SphereCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured** **Constructed**
annotation	documentation The optional CheckDetails element gives details about the sphere check method (measurement or construction).

complexType **SphereCheckedType**

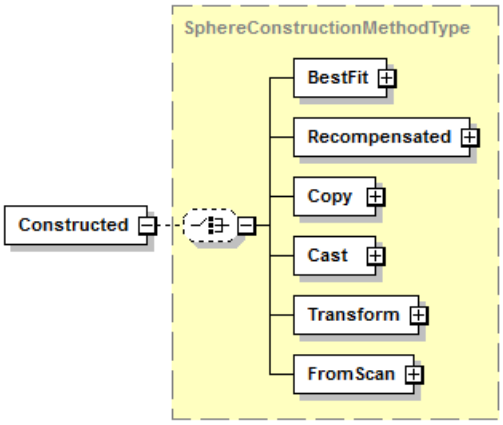
diagram	
children	**Measured** **Constructed**
used by	element **SphereCheckedFeatureType/CheckDetails**
annotation	documentation The SphereCheckedType defines how the sphere actual is checked, either by measurement or by construction.

element **SphereCheckedType/Measured**

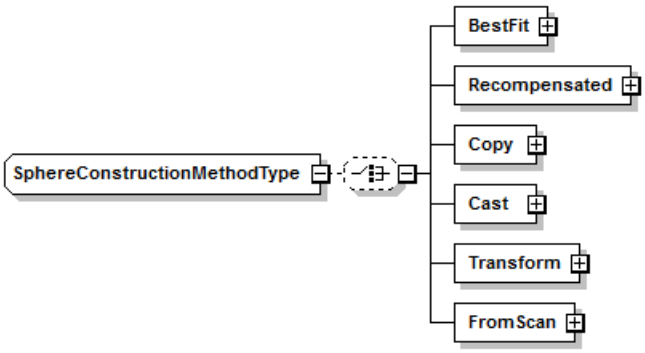
diagram	
type	**MeasuredFeatureType**

properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the sphere is measured.

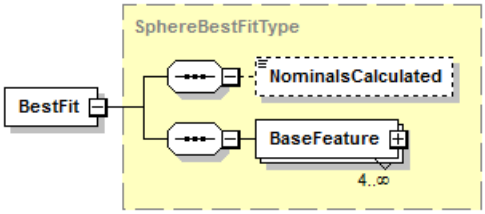
element **SphereCheckedType/Constructed**

diagram	
type	**SphereConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform** **FromScan**
annotation	documentation The Constructed element signifies that the sphere is constructed.

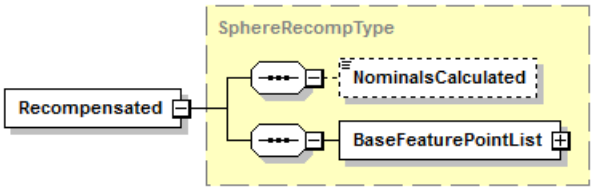
complexType **SphereConstructionMethodType**

diagram	
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform** **FromScan**
used by	element **SphereCheckedType/Constructed**
annotation	documentation The SphereConstructionMethodType defines the method for constructing a unique nominal or actual sphere feature.

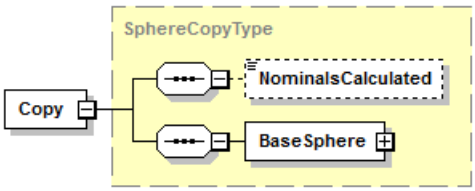
element **SphereConstructionMethodType/BestFit**

diagram	
type	**SphereBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of a sphere from 4 or more point-reducible base features. This element is in an optional choice.

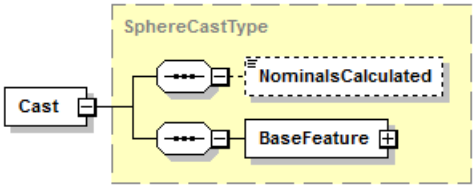
element **SphereConstructionMethodType/Recompensated**

diagram	
type	**SphereRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of a sphere from 4 or more base feature points. This element is in an optional choice.

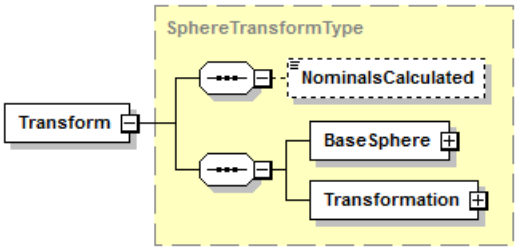
element **SphereConstructionMethodType/Copy**

diagram	
type	**SphereCopyType**
properties	content complex
children	**NominalsCalculated** **BaseSphere**
annotation	documentation The Copy element describes the construction of a sphere by the copying of a base sphere. This element is in an optional choice.

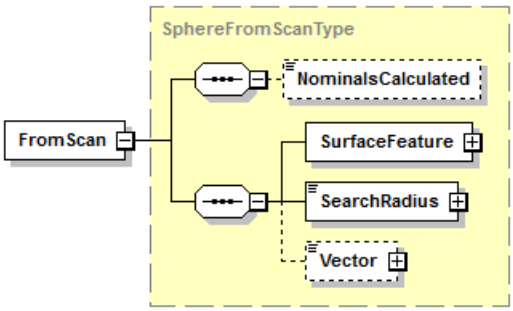
element **SphereConstructionMethodType/Cast**

diagram	
type	**SphereCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of a sphere by the casting of a base feature. This element is in an optional choice.

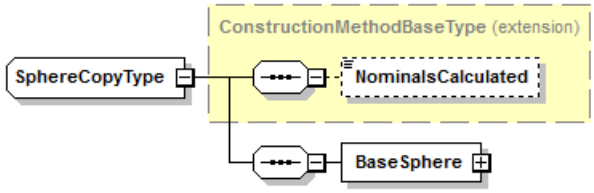
element **SphereConstructionMethodType/Transform**

diagram	
type	**SphereTransformType**
properties	content complex
children	**NominalsCalculated** **BaseSphere** **Transformation**
annotation	documentation The Transform element describes the construction of a sphere by the transformation of a base sphere. This element is in an optional choice.

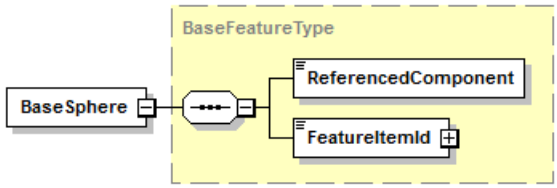
element **SphereConstructionMethodType/FromScan**

diagram	
type	**SphereFromScanType**
properties	content complex
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius** **Vector**
annotation	documentation The FromScan element describes the construction of a sphere from scan data. This element is in an optional choice.

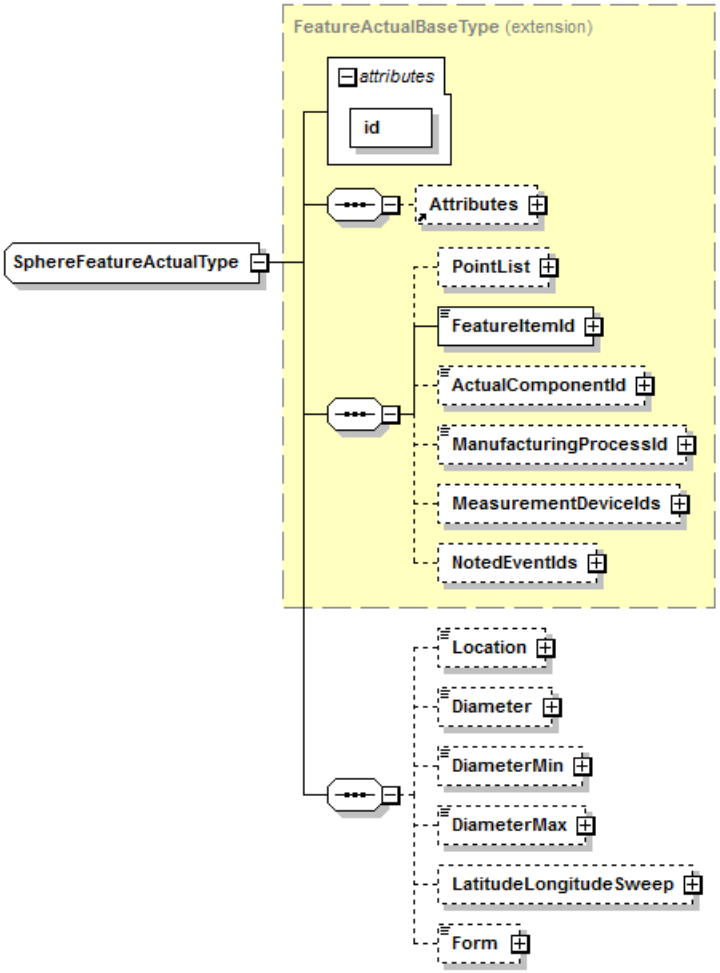
complexType **SphereCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseSphere**
used by	element **SphereConstructionMethodType/Copy**
annotation	documentation The SphereCopyType defines a copied sphere construction.

element **SphereCopyType/BaseSphere**

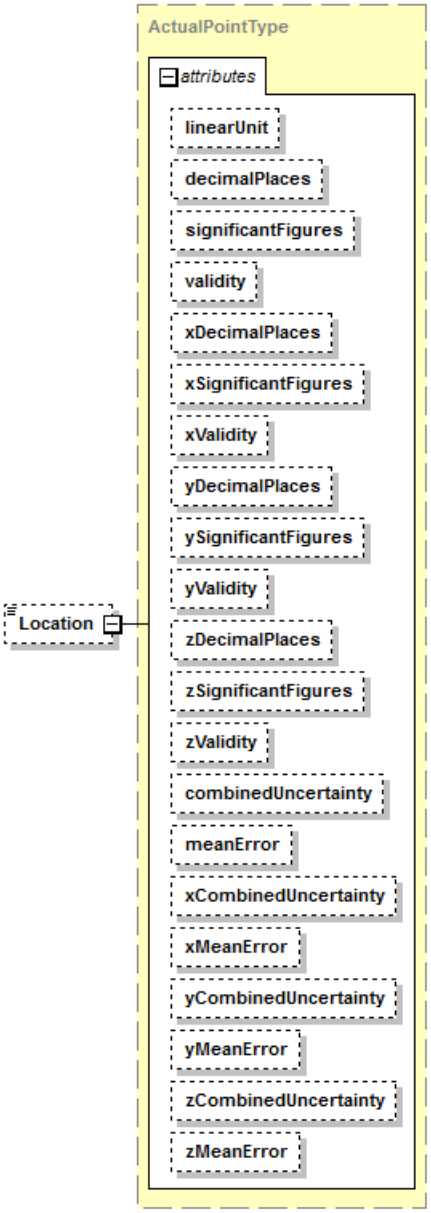
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseSphere element identifies the sphere to be copied.

complexType **SphereFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **Location** **Diameter** **DiameterMin** **DiameterMax** **LatitudeLongitudeSweep** **Form**
used by	element **SphereFeatureActual**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The SphereFeatureActualType defines the sphere feature actual information for an individual sphere feature.

element **SphereFeatureActualType/Location**

diagram



type	**ActualPointType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

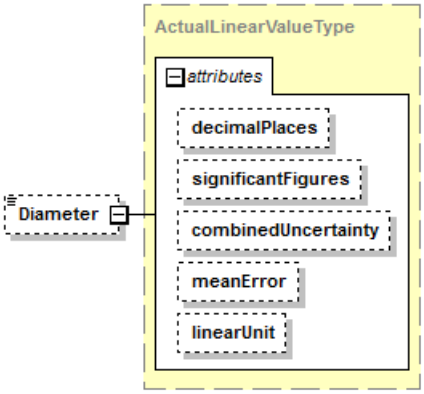
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Location element is the actual center of the sphere.	

element **SphereFeatureActualType/Diameter**

diagram



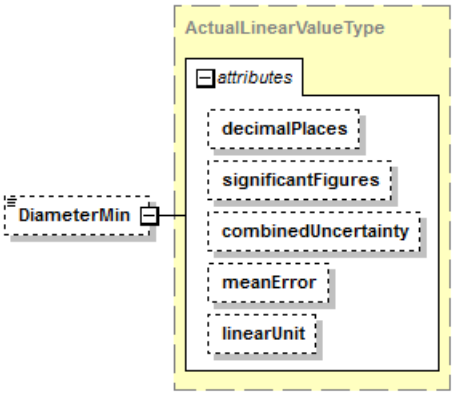
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is

	linearUnit **xs:token**	a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Diameter element is the actual diameter of the sphere based on the substitute feature data fitting algorithm setting.	

element **SphereFeatureActualType/DiameterMin**

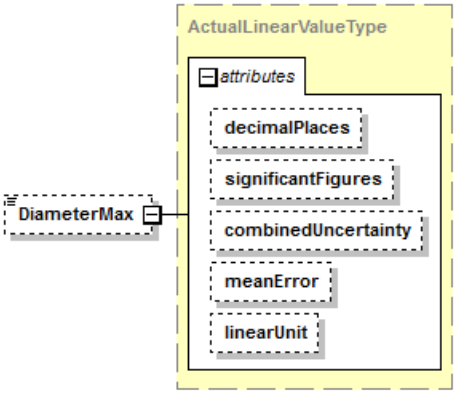
diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation	documentation The optional DiameterMin element is the minimum diameter of the sphere from a report or an analysis.

element **SphereFeatureActualType/DiameterMax**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

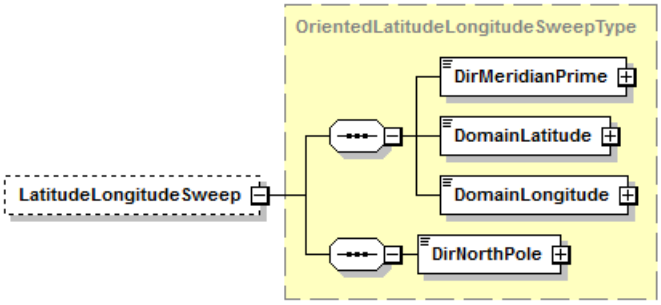
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

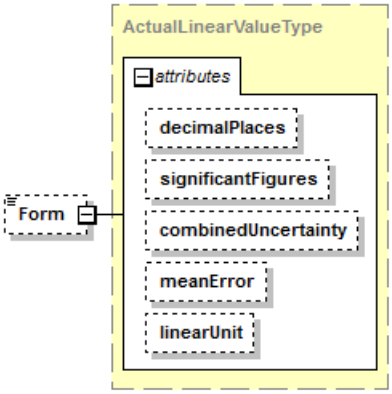
annotation

documentation
The optional DiameterMax element is the maximum diameter of the sphere from a report or an analysis.

element **SphereFeatureActualType/LatitudeLongitudeSweep**

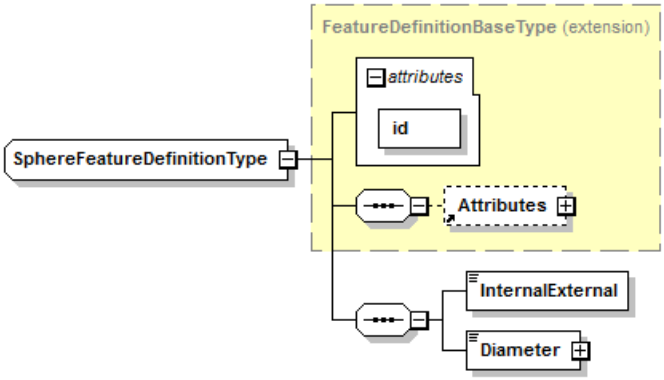
diagram	
type	**OrientedLatitudeLongitudeSweepType**
properties	minOcc 0 maxOcc 1 content complex
children	**DirMeridianPrime DomainLatitude DomainLongitude DirNorthPole**
annotation	documentation The optional LatitudeLongitudeSweep element gives the extent of an actual partial sphere with angular sweep in two directions analogous to terrestrial latitude and longitude.

element **SphereFeatureActualType/Form**

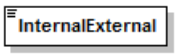
diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is

	linearUnit **xs:token**	a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Form element is the form error (sphericity) of the sphere from a report or an analysis.	

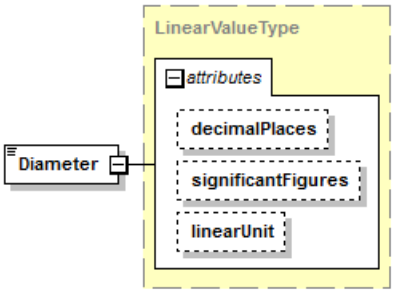
complexType **SphereFeatureDefinitionType**

diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes** **InternalExternal** **Diameter**
used by	element **SphereFeatureDefinition**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The SphereFeatureDefinitionType defines the sphere feature nominal information that can be common to one or more sphere features.

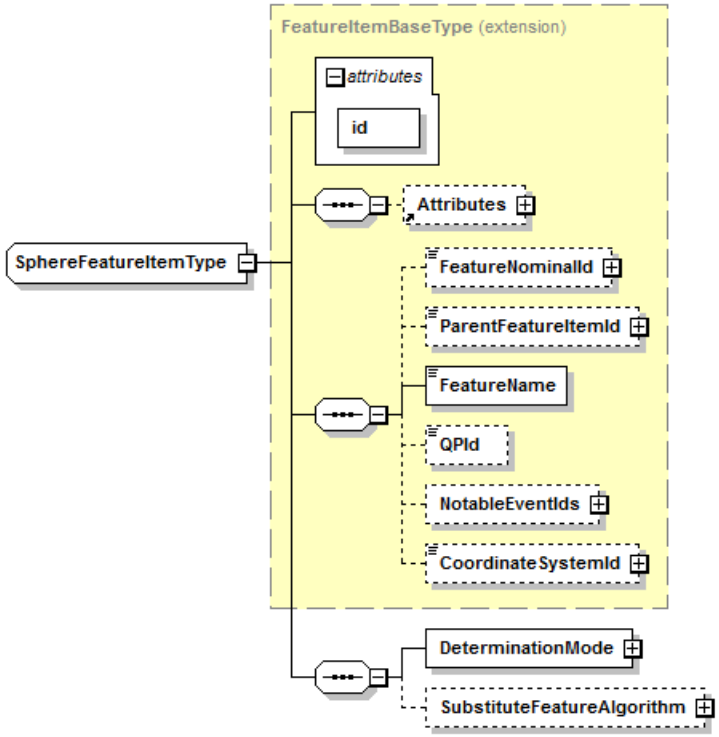
element **SphereFeatureDefinitionType/InternalExternal**

diagram	
type	**InternalExternalEnumType**
properties	content simple
facets	Kind / Value / Annotation enumeration INTERNAL enumeration EXTERNAL enumeration NOT_APPLICABLE
annotation	documentation The InternalExternal element indicates whether the feature is internal or external.

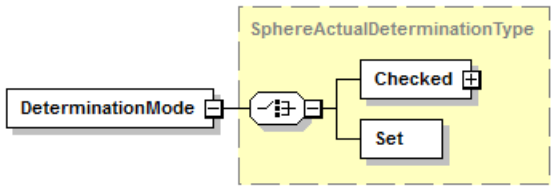
element **SphereFeatureDefinitionType/Diameter**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Diameter element is the nominal diameter of the sphere.

complexType **SphereFeatureItemType**

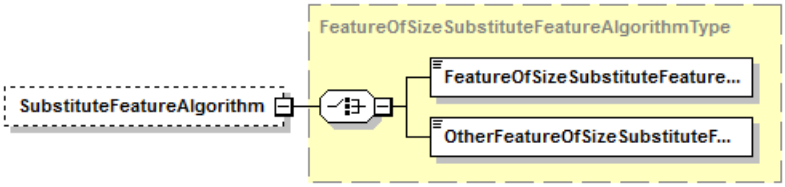
diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **SphereFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The SphereFeatureItemType defines an individual sphere feature.

element **SphereFeatureItemType/DeterminationMode**

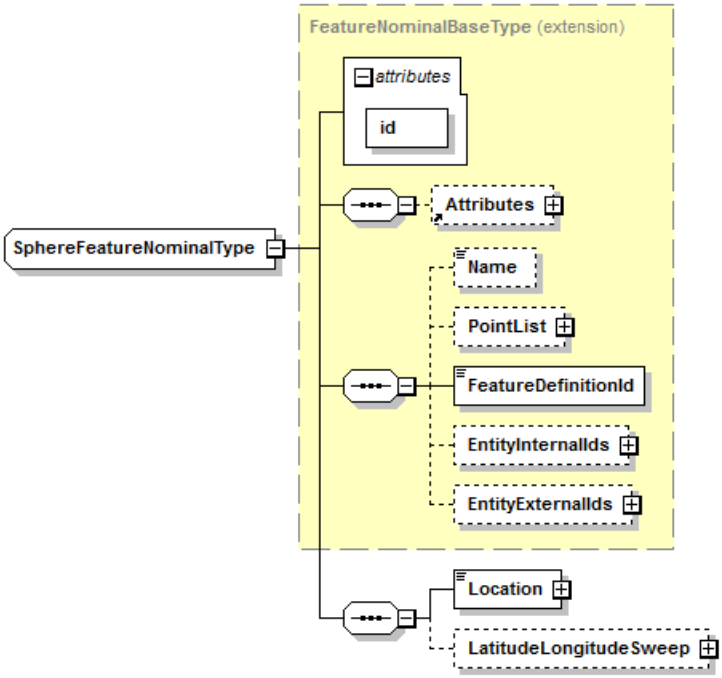
diagram	
type	**SphereActualDeterminationType**
properties	content complex
children	**Checked** **Set**

annotation	documentation The DeterminationMode element is the means by which the sphere feature actual is determined.

element **SphereFeatureItemType/SubstituteFeatureAlgorithm**

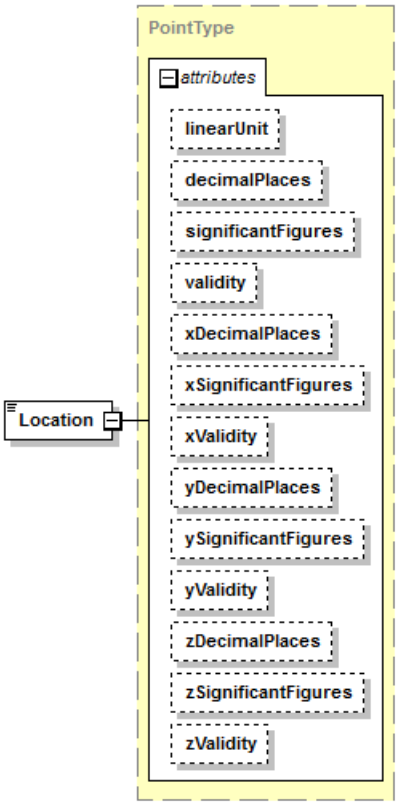
diagram	
type	**FeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**FeatureOfSizeSubstituteFeatureAlgorithmEnum OtherFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the sphere feature.

complexType **SphereFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes Name PointList FeatureDefinitionId EntityInternalIds EntityExternalIds Location LatitudeLongitudeSweep**
used by	element **SphereFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the

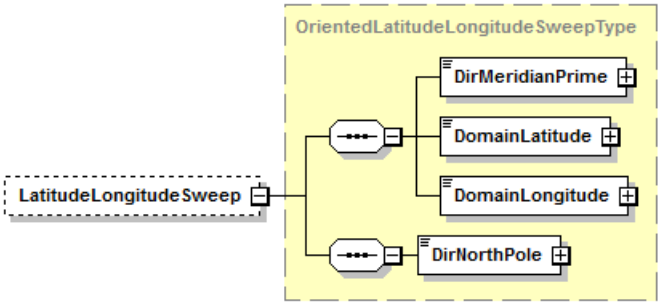
	feature, used for referencing.
annotation	documentation The SphereFeatureNominalType defines the sphere feature nominal information for an individual sphere feature.

element **SphereFeatureNominalType/Location**

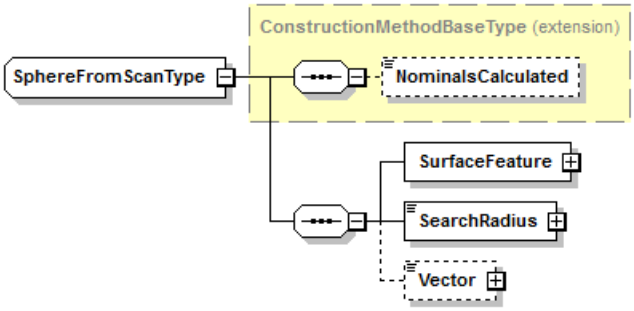
diagram	
type	**PointType**
properties	content complex
facets	Kind Value Annotation length 3
attributes	Name Type Use Default Fixed Annotation linearUnit **xs:token** decimalPlaces **xs:nonNegativeInteger** significantFigures **xs:nonNegativeInteger** validity **ValidityEnumType** xDecimalPlaces **xs:nonNegativeInteger** xSignificantFigures **xs:nonNegativeInteger** xValidity **ValidityEnumType** yDecimalPlaces **xs:nonNegativeInteger** ySignificantFigures **xs:nonNegativeInteger** yValidity **ValidityEnumType** zDecimalPlaces **xs:nonNegativeInteger** zSignificantFigures **xs:nonNegativeInteger**

	zValidity **ValidityEnumType**
annotation	documentation The Location element is the nominal center of the sphere.

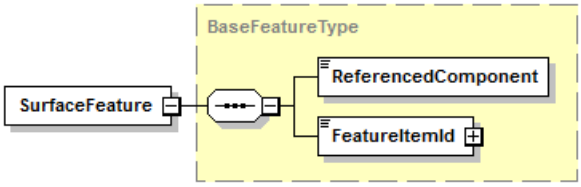
element **SphereFeatureNominalType/LatitudeLongitudeSweep**

diagram	
type	**OrientedLatitudeLongitudeSweepType**
properties	minOcc 0 maxOcc 1 content complex
children	**DirMeridianPrime DomainLatitude DomainLongitude DirNorthPole**
annotation	documentation The optional LatitudeLongitude Sweep element gives the partial sphere with angular sweep in two directions analogous to terrestrial latitude and longitude.

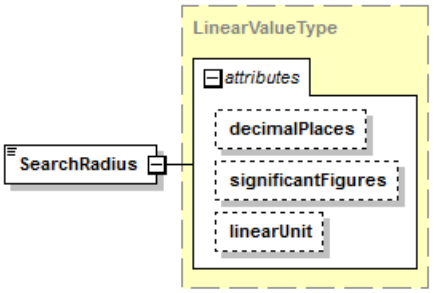
complexType **SphereFromScanType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated SurfaceFeature SearchRadius Vector**
used by	element **SphereConstructionMethodType/FromScan**
annotation	documentation The SphereFromScanType defines a sphere construction by the retrieval of a sphere from a scanned surface feature (point cloud).

element **SphereFromScanType/SurfaceFeature**

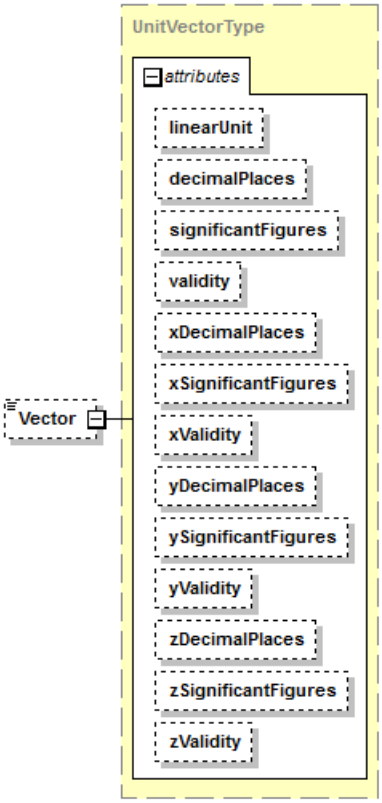
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The SurfaceFeature element identifies the scanned surface feature from which the sphere is retrieved.

element **SphereFromScanType/SearchRadius**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces / **xs:nonNegativeInteger** / / / / documentation See documentation of SpecifiedDecimalType. significantFigures / **xs:nonNegativeInteger** / / / / documentation See documentation of SpecifiedDecimalType. linearUnit / **xs:token** / / / / documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The SearchRadius element is the radius around the nominal feature, wherein the actual feature can be expected. The SearchRadius is the radius added to and subtracted from the nominal feature radius defining a spherical shell. All scanned points within this spherical shell are used for the retrieval of the feature. The spherical shell's center coincides with the sphere feature's nominal center point.

element **SphereFromScanType/Vector**

diagram



type **UnitVectorType**

properties

minOcc	0
maxOcc	1
content	complex

facets

Kind	Value	Annotation
length	3	

attributes

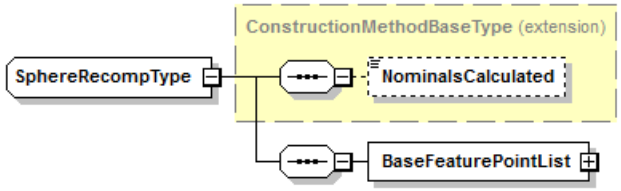
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

annotation

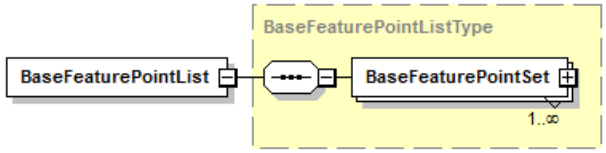
documentation

The optional Vector element is the axis of the search radius cylinder when it cannot be determined by the sphere nominal information.

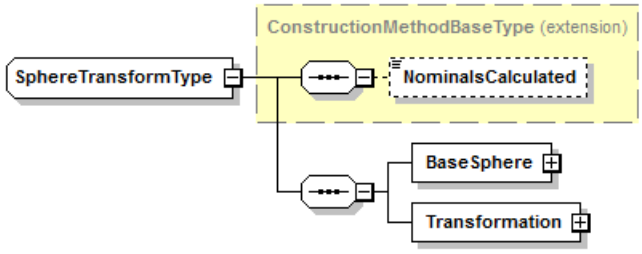
complexType **SphereRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **SphereConstructionMethodType/Recompensated**
annotation	documentation The SphereRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit sphere through the measurement points of base features.

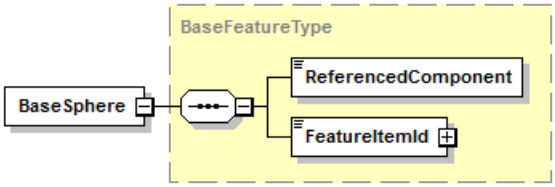
element **SphereRecompType/BaseFeaturePointList**

diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit sphere. The total number of points in the BaseFeaturePointSets in the list must be 4 or greater.

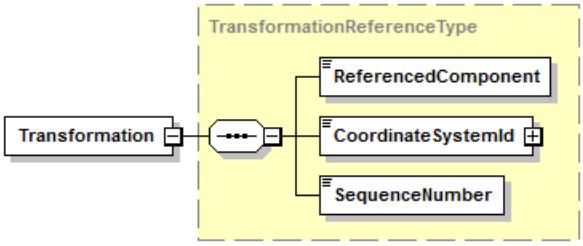
complexType **SphereTransformType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseSphere** **Transformation**
used by	element **SphereConstructionMethodType/Transform**
annotation	documentation The SphereTransformType defines a sphere construction by the transformation of a sphere through the specified nominal or actual coordinate system.

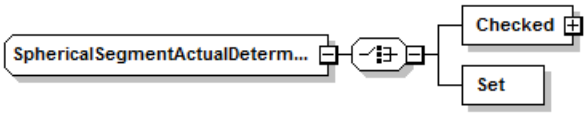
element **SphereTransformType/BaseSphere**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseSphere element identifies the sphere to be transformed.

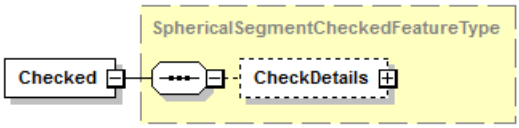
element **SphereTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent CoordinateSystemId SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the sphere.

complexType **SphericalSegmentActualDeterminationType**

diagram	
children	**Checked Set**
used by	element **SphericalSegmentFeatureItemType/DeterminationMode**
annotation	documentation The SphericalSegmentActualDeterminationType defines how the spherical segment actual is determined, either by being set or by being checked (measured or constructed).

element **SphericalSegmentActualDeterminationType/Checked**

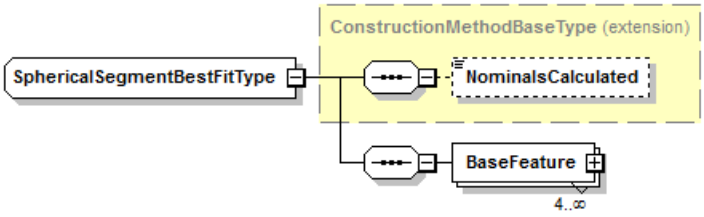
diagram	

type	**SphericalSegmentCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the spherical segment is checked from actual data, either measured or constructed.

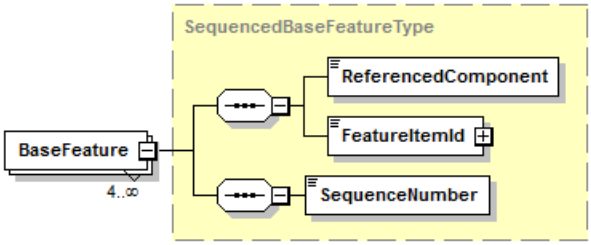
element **SphericalSegmentActualDeterminationType/Set**

diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the spherical segment actual is set to its nominal value.

complexType **SphericalSegmentBestFitType**

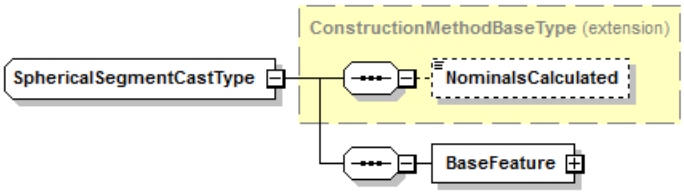
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **SphericalSegmentConstructionMethodType/BestFit**
annotation	documentation The SphericalSegmentBestFitType defines the information for a best-fit spherical segment which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the spherical segment.

element **SphericalSegmentBestFitType/BaseFeature**

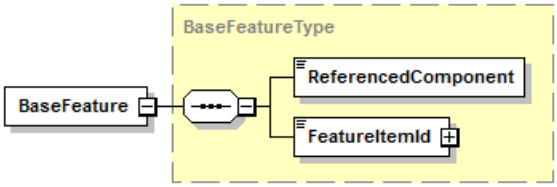
diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 4 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**

annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of a spherical segment. The number of base features must be 4 or greater.

complexType **SphericalSegmentCastType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **SphericalSegmentConstructionMethodType/Cast**
annotation	documentation The SphericalSegmentCastType defines the cast of another feature type to a spherical segment. The location, axis and size are copied from the base feature.

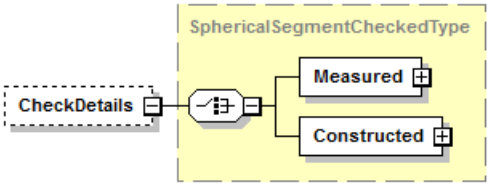
element **SphericalSegmentCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to a spherical segment.

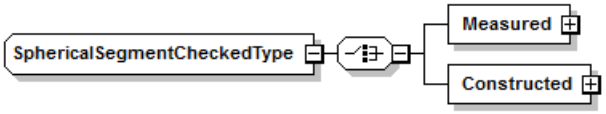
complexType **SphericalSegmentCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **SphericalSegmentActualDeterminationType/Checked**
annotation	documentation The SphericalSegmentCheckedFeatureType defines that a spherical segment feature is checked.

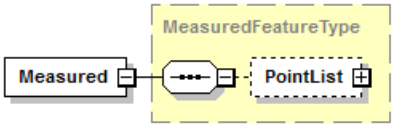
element **SphericalSegmentCheckedFeatureType/CheckDetails**

diagram	
type	**SphericalSegmentCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured** **Constructed**
annotation	documentation The optional CheckDetails element gives details about the spherical segment check method (measurement or construction).

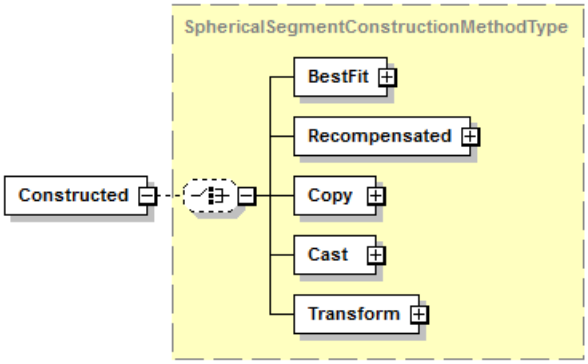
complexType **SphericalSegmentCheckedType**

diagram	
children	**Measured** **Constructed**
used by	element **SphericalSegmentCheckedFeatureType/CheckDetails**
annotation	documentation The SphericalSegmentCheckedType defines how the spherical segment actual is checked, either by measurement or by construction.

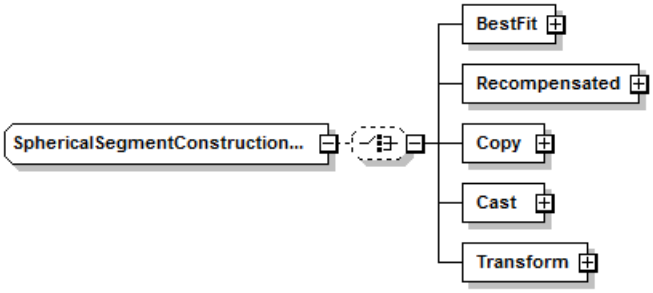
element **SphericalSegmentCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the spherical segment is measured.

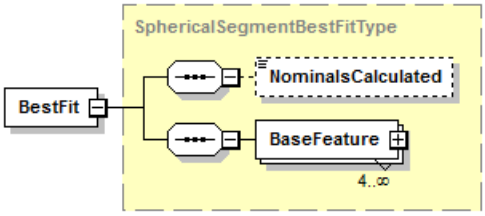
element **SphericalSegmentCheckedType/Constructed**

diagram	
type	SphericalSegmentConstructionMethodType
properties	content complex
children	BestFit Recompensated Copy Cast Transform
annotation	documentation The Constructed element signifies that the spherical segment is constructed.

complexType **SphericalSegmentConstructionMethodType**

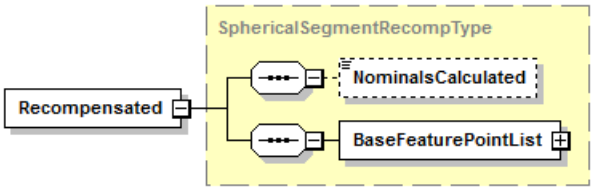
diagram	
children	BestFit Recompensated Copy Cast Transform
used by	element SphericalSegmentCheckedType/Constructed
annotation	documentation The SphericalSegmentConstructionMethodType defines the method for constructing a unique nominal or actual spherical segment feature.

element **SphericalSegmentConstructionMethodType/BestFit**

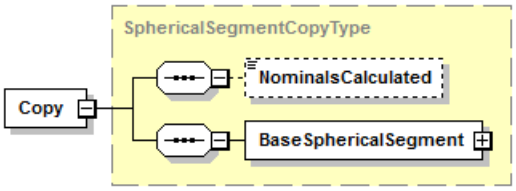
diagram	
type	SphericalSegmentBestFitType
properties	content complex
children	NominalsCalculated BaseFeature

annotation	documentation The BestFit element describes the best-fit construction of a spherical segment from 4 or more point-reducible base features. This element is in an optional choice.

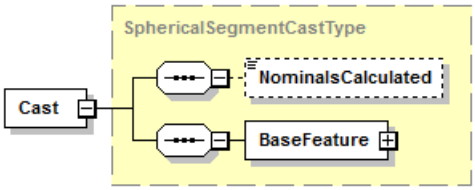
element **SphericalSegmentConstructionMethodType/Recompensated**

diagram	
type	**SphericalSegmentRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of a spherical segment from 4 or more base feature points. This element is in an optional choice.

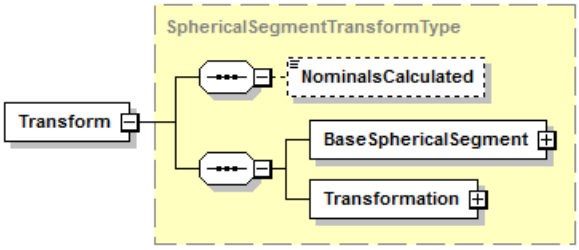
element **SphericalSegmentConstructionMethodType/Copy**

diagram	
type	**SphericalSegmentCopyType**
properties	content complex
children	**NominalsCalculated** **BaseSphericalSegment**
annotation	documentation The Copy element describes the construction of a spherical segment by the copying of a base spherical segment. This element is in an optional choice.

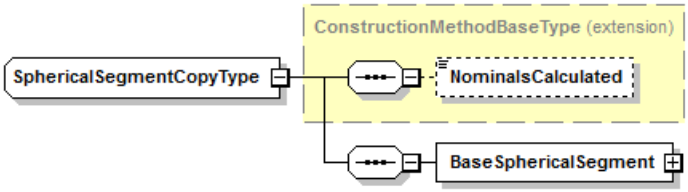
element **SphericalSegmentConstructionMethodType/Cast**

diagram	
type	**SphericalSegmentCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of a spherical segment by the casting of a base feature. This element is in an optional choice.

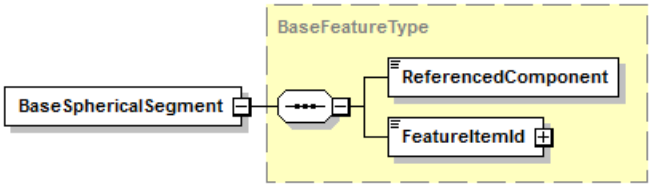
element **SphericalSegmentConstructionMethodType/Transform**

diagram	
type	**SphericalSegmentTransformType**
properties	content complex
children	**NominalsCalculated** **BaseSphericalSegment** **Transformation**
annotation	documentation The Transform element describes the construction of a spherical segment by the transformation of a base spherical segment. This element is in an optional choice.

complexType **SphericalSegmentCopyType**

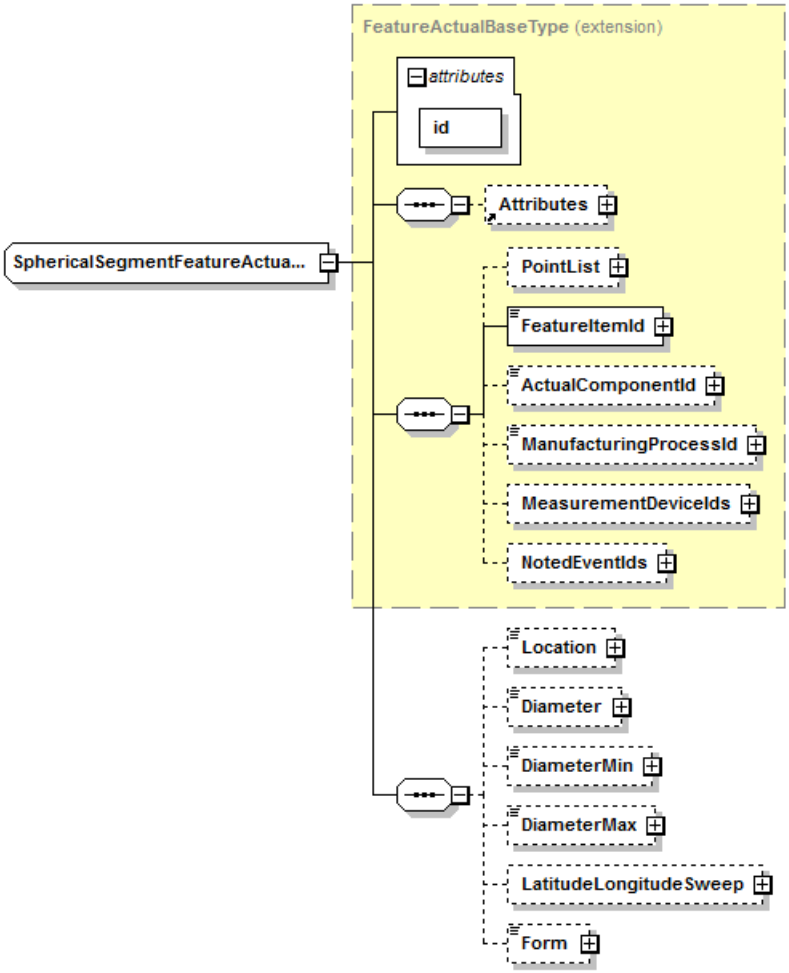
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseSphericalSegment**
used by	element **SphericalSegmentConstructionMethodType/Copy**
annotation	documentation The SphericalSegmentCopyType defines a copied spherical segment construction.

element **SphericalSegmentCopyType/BaseSphericalSegment**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseSphericalSegment element identifies the spherical segment to be copied.

complexType **SphericalSegmentFeatureActualType**

diagram



type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **Location** **Diameter** **DiameterMin** **DiameterMax** **LatitudeLongitudeSweep** **Form**
used by	element **SphericalSegmentFeatureActual**

attributes

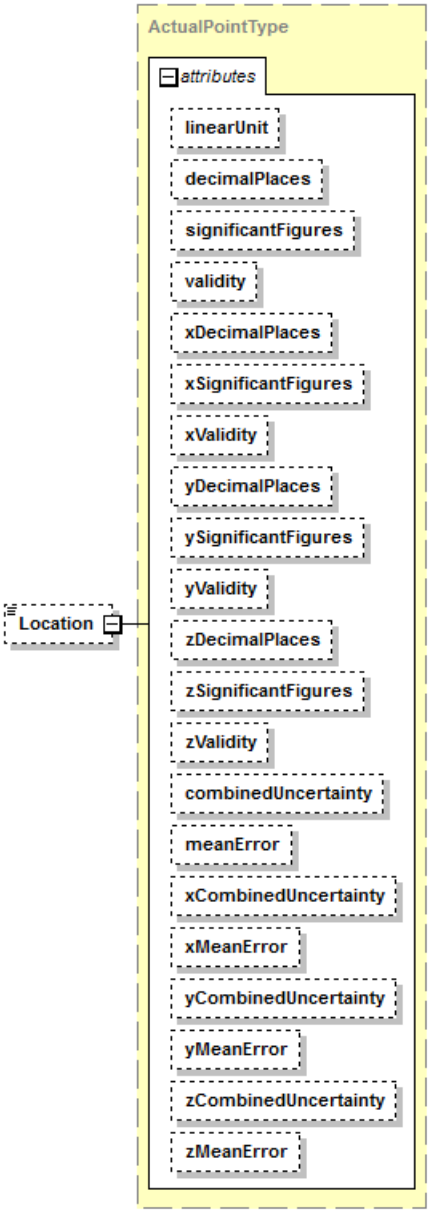
Name	Type	Use	Default	Fixed	Annotation
id	**QIFIdType**	required			documentation The id attribute is the QIF id of the feature, used for referencing.

annotation

documentation
The SphericalSegmentFeatureActualType defines the spherical segment feature actual information for an individual spherical segment feature.

element **SphericalSegmentFeatureActualType/Location**

diagram



type	**ActualPointType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

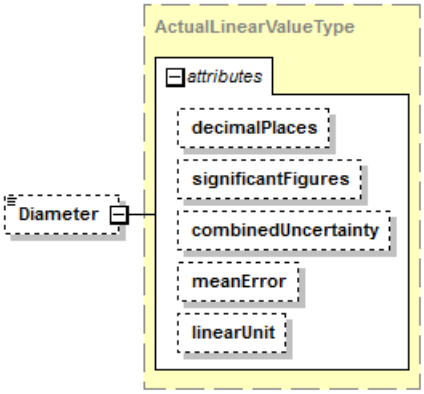
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Location element is the actual center of the spherical segment.	

element **SphericalSegmentFeatureActualType/Diameter**

diagram



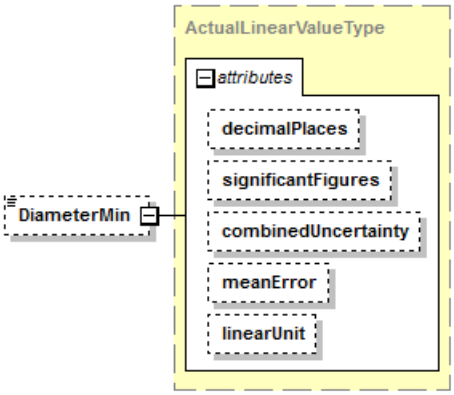
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

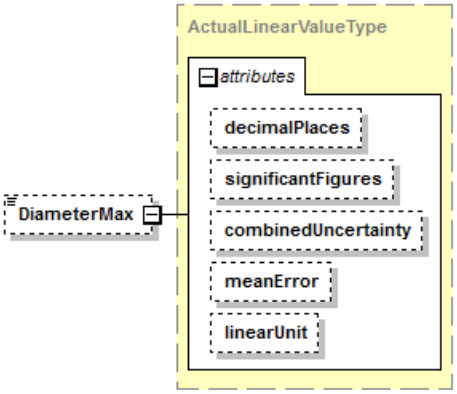
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is

	linearUnit	**xs:token**
		a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Diameter element is the actual diameter of the spherical segment based on the substitute feature data fitting algorithm setting.	

element **SphericalSegmentFeatureActualType/DiameterMin**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional DiameterMin element is the minimum diameter of the spherical segment from a report or an analysis.

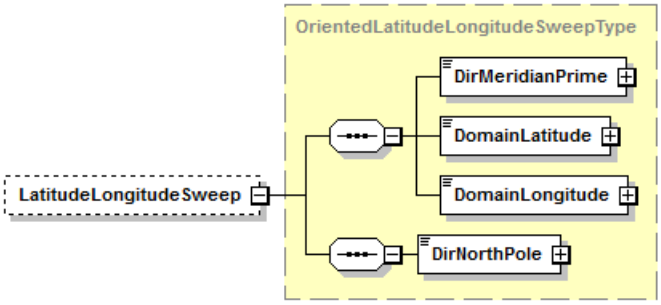
element **SphericalSegmentFeatureActualType/DiameterMax**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	

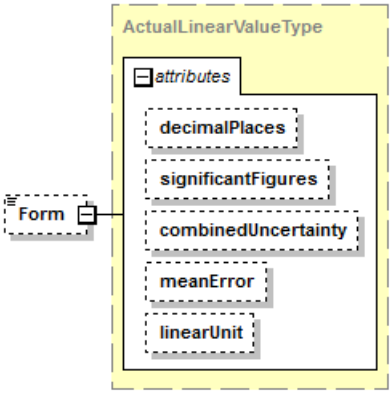
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation	documentation The optional DiameterMax element is the maximum diameter of the spherical segment from a report or an analysis.

element **SphericalSegmentFeatureActualType/LatitudeLongitudeSweep**

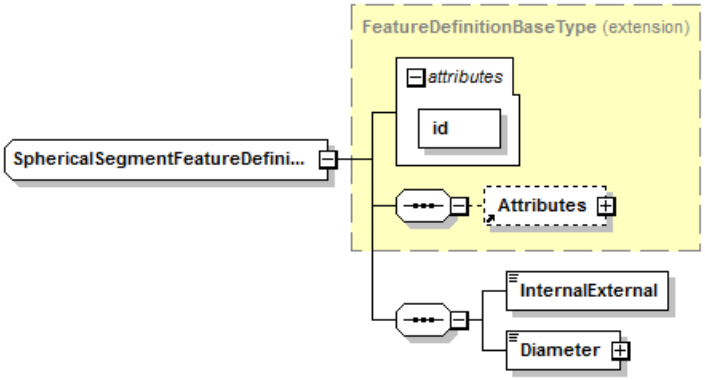
diagram	
type	**OrientedLatitudeLongitudeSweepType**
properties	minOcc 0 maxOcc 1 content complex
children	**DirMeridianPrime DomainLatitude DomainLongitude DirNorthPole**
annotation	documentation The optional LatitudeLongitudeSweep element gives the extent of an actual spherical segment with angular sweep in two directions analogous to terrestrial latitude and longitude.

element **SphericalSegmentFeatureActualType/Form**

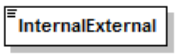
diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is

	linearUnit **xs:token**	a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Form element is the form error (sphericity) of the spherical segment from a report or an analysis.	

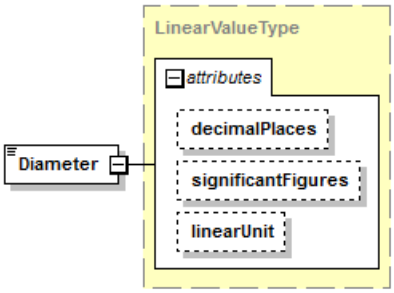
complexType **SphericalSegmentFeatureDefinitionType**

diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes InternalExternal Diameter**
used by	element **SphericalSegmentFeatureDefinition**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The SphericalSegmentFeatureDefinitionType defines the spherical segment feature nominal information that can be common to one or more spherical segment features.

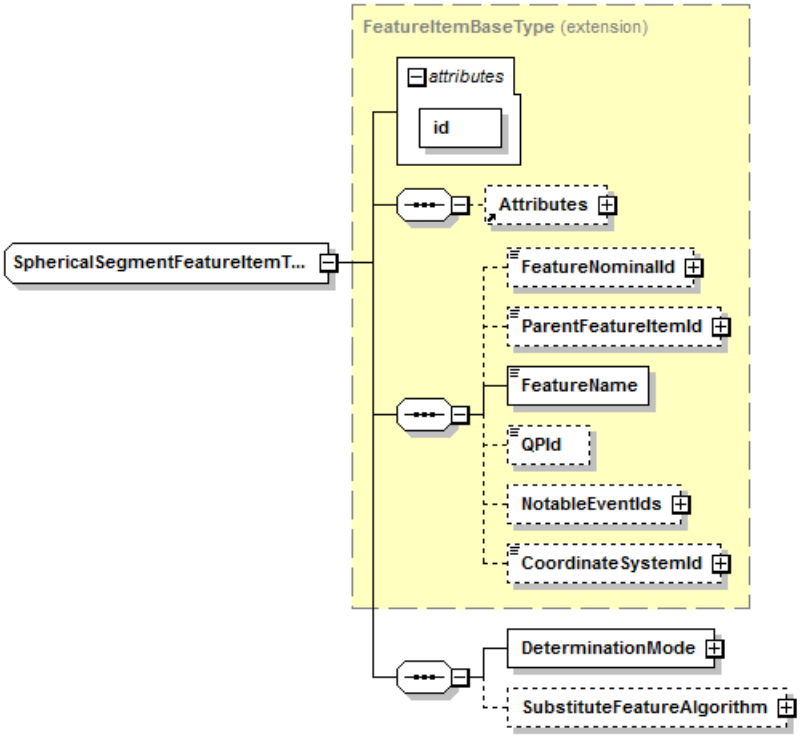
element **SphericalSegmentFeatureDefinitionType/InternalExternal**

diagram	
type	**InternalExternalEnumType**
properties	content simple
facets	Kind / Value / Annotation enumeration INTERNAL enumeration EXTERNAL enumeration NOT_APPLICABLE
annotation	documentation The InternalExternal element indicates whether the feature is internal or external.

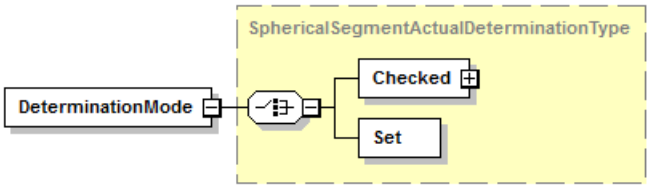
element **SphericalSegmentFeatureDefinitionType/Diameter**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The Diameter element is the nominal diameter of the spherical segment.

complexType **SphericalSegmentFeatureItemType**

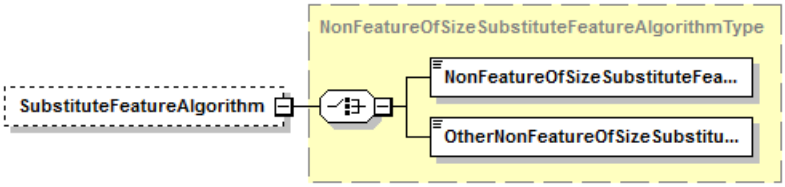
diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **SphericalSegmentFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The SphericalSegmentFeatureItemType defines an individual spherical segment feature. A spherical segment is a portion of a sphere like the surface in the corner intersection of three filleted planes.

element **SphericalSegmentFeatureItemType/DeterminationMode**

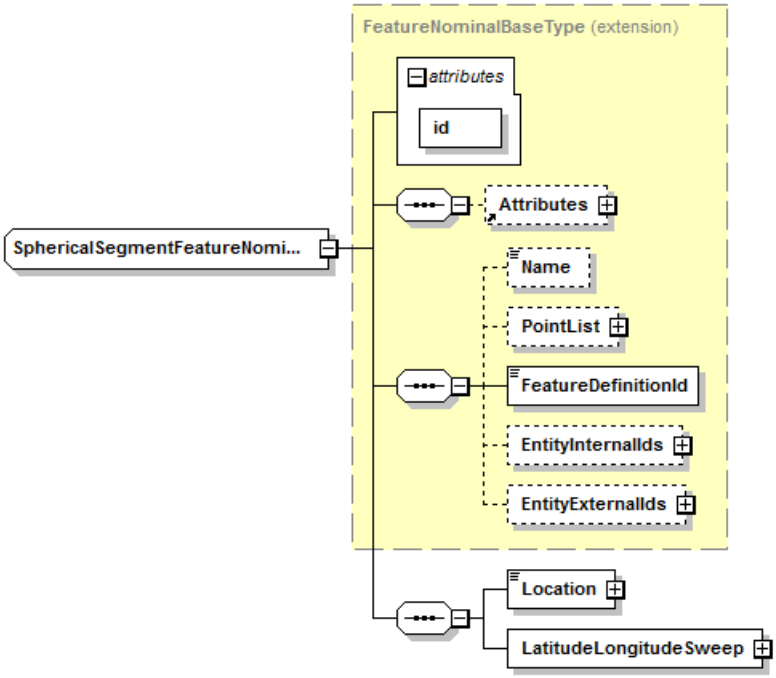
diagram	
type	**SphericalSegmentActualDeterminationType**
properties	content complex

children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the spherical segment feature actual is determined.

element **SphericalSegmentFeatureItemType/SubstituteFeatureAlgorithm**

diagram	
type	**NonFeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**NonFeatureOfSizeSubstituteFeatureAlgorithmEnum OtherNonFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the spherical segment feature.

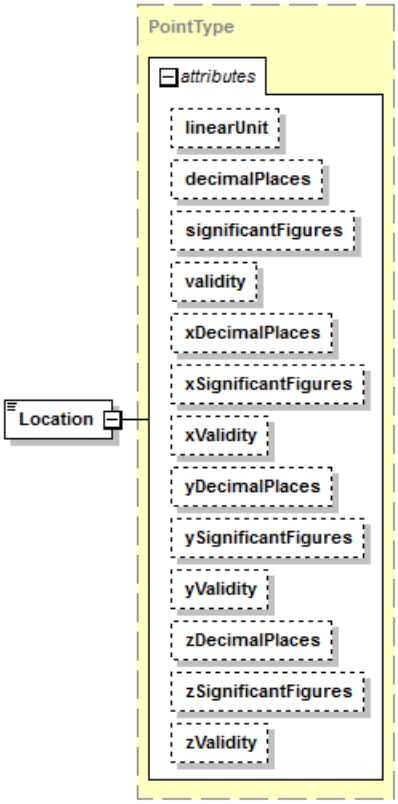
complexType **SphericalSegmentFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **Location** **LatitudeLongitudeSweep**
used by	element **SphericalSegmentFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation

	The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The SphericalSegmentFeatureNominalType defines the spherical segment feature nominal information for an individual spherical segment feature.

element **SphericalSegmentFeatureNominalType/Location**

diagram



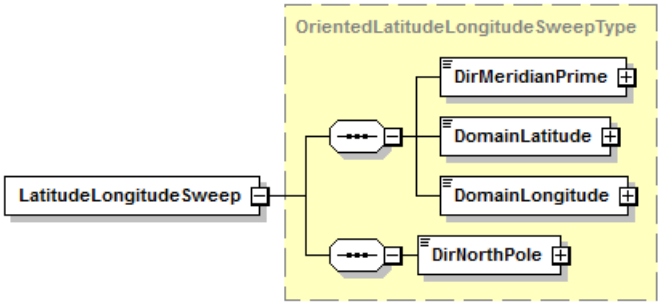
type	**PointType**
properties	content complex
facets	Kind Value Annotation length 3

attributes

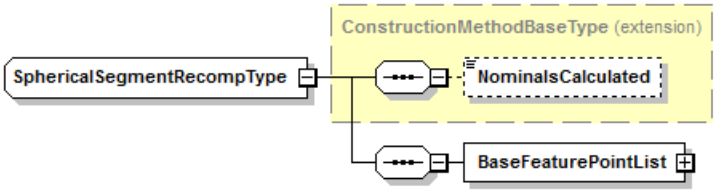
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				

	yValidity **ValidityEnumType** zDecimalPlaces **xs:nonNegativeInteger** zSignificantFigures **xs:nonNegativeInteger** zValidity **ValidityEnumType**
annotation	documentation The Location element is the nominal center of the spherical segment.

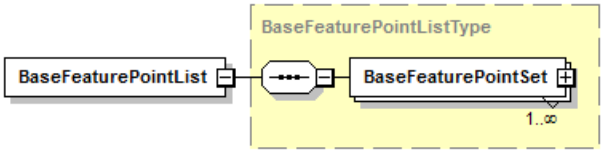
element **SphericalSegmentFeatureNominalType/LatitudeLongitudeSweep**

diagram	
type	**OrientedLatitudeLongitudeSweepType**
properties	content complex
children	**DirMeridianPrime DomainLatitude DomainLongitude DirNorthPole**
annotation	documentation The LatitudeLongitudeSweep element gives the extent of a spherical segment with angular sweep in two directions analogous to terrestrial latitude and longitude.

complexType **SphericalSegmentRecompType**

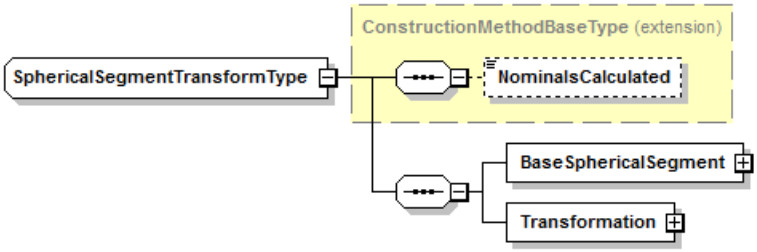
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **SphericalSegmentConstructionMethodType/Recompensated**
annotation	documentation The SphericalSegmentRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit spherical segment through the measurement points of base features.

element **SphericalSegmentRecompType/BaseFeaturePointList**

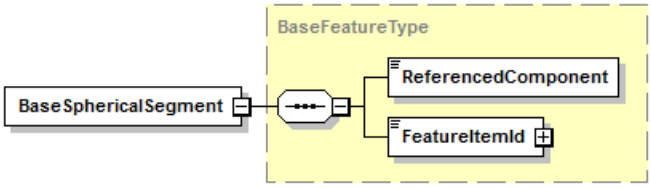
diagram	

type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit spherical segment. The total number of points in the BaseFeaturePointSets in the list must be 4 or greater.

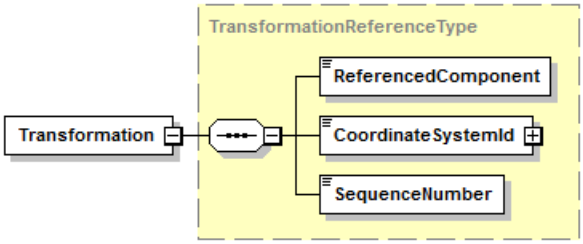
complexType **SphericalSegmentTransformType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseSphericalSegment** **Transformation**
used by	element **SphericalSegmentConstructionMethodType/Transform**
annotation	documentation The SphericalSegmentTransformType defines a spherical segment construction by the transformation of a spherical segment through the specified nominal or actual coordinate system.

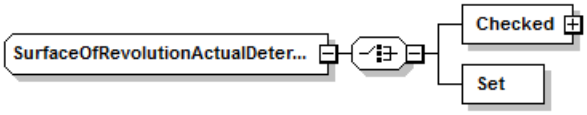
element **SphericalSegmentTransformType/BaseSphericalSegment**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseSphericalSegment element identifies the spherical segment feature to be transformed.

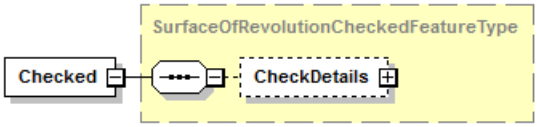
element **SphericalSegmentTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the spherical segment.

complexType **SurfaceOfRevolutionActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **SurfaceOfRevolutionFeatureItemType/DeterminationMode**
annotation	documentation The PointDefinedSurfaceActualDeterminationType defines how the surface of revolution actual is determined, either by being set or by being checked (measured or constructed).

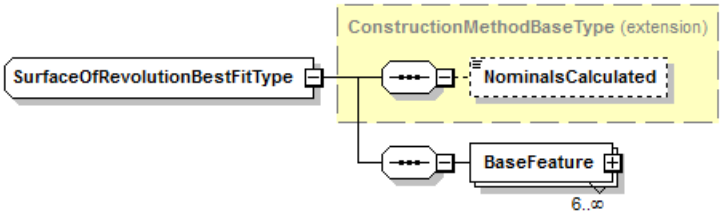
element **SurfaceOfRevolutionActualDeterminationType/Checked**

diagram	
type	**SurfaceOfRevolutionCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the surface of revolution is checked from actual data, either measured or constructed.

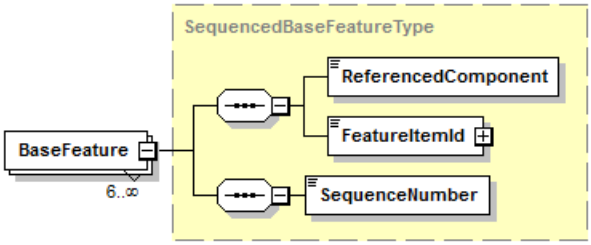
element **SurfaceOfRevolutionActualDeterminationType/Set**

diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the surface of revolution actual is set to its nominal value.

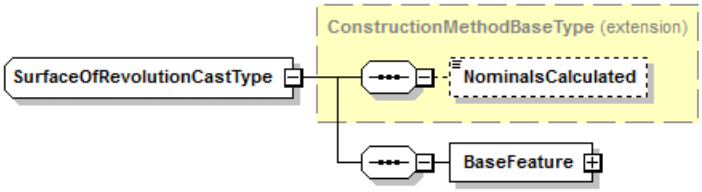
complexType **SurfaceOfRevolutionBestFitType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **SurfaceOfRevolutionConstructionMethodType/BestFit**
annotation	documentation The SurfaceOfRevolutionBestFitType defines the information for a best-fit surface of revolution which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the surface of revolution.

element **SurfaceOfRevolutionBestFitType/BaseFeature**

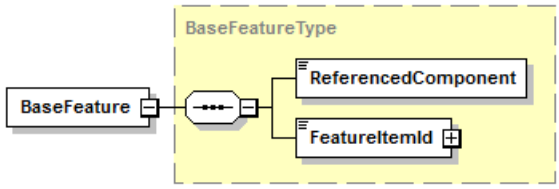
diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 6 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of a surface of revolution. The number of base features must be 6 or greater.

complexType **SurfaceOfRevolutionCastType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**

used by	element **SurfaceOfRevolutionConstructionMethodType/Cast**
annotation	documentation The SurfaceOfRevolutionCastType defines the cast of another feature type to a surface of revolution. The location, axis and size are copied from the base feature.

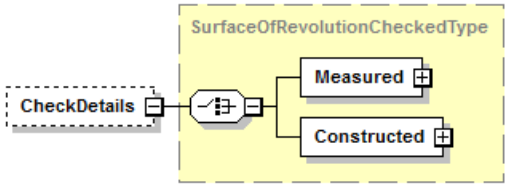
element **SurfaceOfRevolutionCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to a surface of revolution.

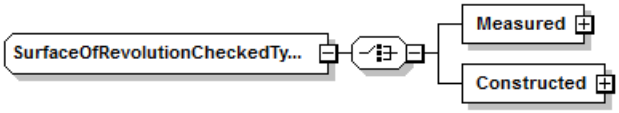
complexType **SurfaceOfRevolutionCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **SurfaceOfRevolutionActualDeterminationType/Checked**
annotation	documentation The SurfaceOfRevolutionCheckedFeatureType defines that a surface of revolution feature is checked.

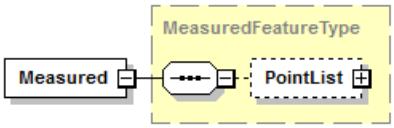
element **SurfaceOfRevolutionCheckedFeatureType/CheckDetails**

diagram	
type	**SurfaceOfRevolutionCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured Constructed**
annotation	documentation The optional CheckDetails element gives details about the surface of revolution check (measurement or construction).

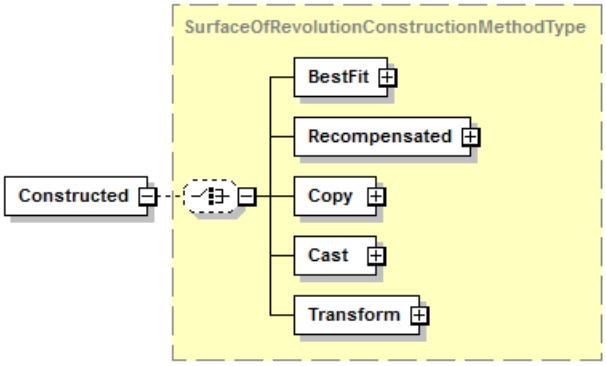
complexType **SurfaceOfRevolutionCheckedType**

diagram	
children	**Measured** **Constructed**
used by	element **SurfaceOfRevolutionCheckedFeatureType/CheckDetails**
annotation	documentation The SurfaceOfRevolutionCheckedType defines how the surface of revolution actual is checked, either by measurement or by construction.

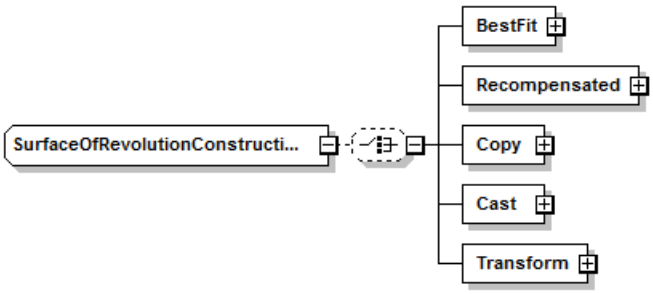
element **SurfaceOfRevolutionCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the surface of revolution is measured.

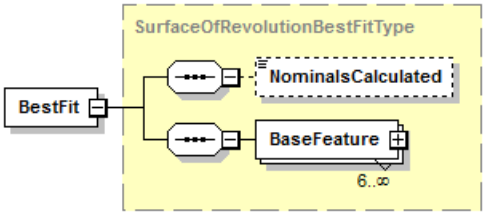
element **SurfaceOfRevolutionCheckedType/Constructed**

diagram	
type	**SurfaceOfRevolutionConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform**
annotation	documentation The Constructed element signifies that the surface of revolution is constructed.

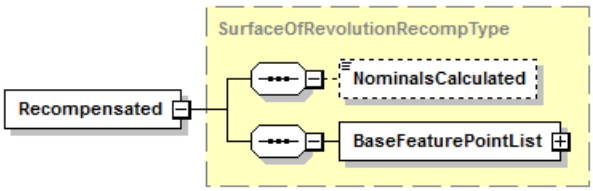
complexType **SurfaceOfRevolutionConstructionMethodType**

diagram	
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform**
used by	element **SurfaceOfRevolutionCheckedType/Constructed**
annotation	documentation The SurfaceOfRevolutionConstructionMethodType defines the method for constructing a unique nominal or actual surface of revolution feature.

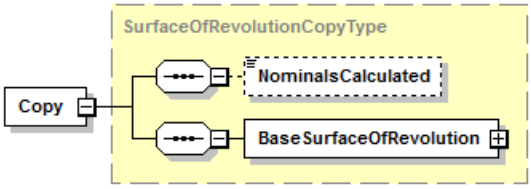
element **SurfaceOfRevolutionConstructionMethodType/BestFit**

diagram	
type	**SurfaceOfRevolutionBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of a surface of revolution from 6 or more point-reducible base features. This element is in an optional choice.

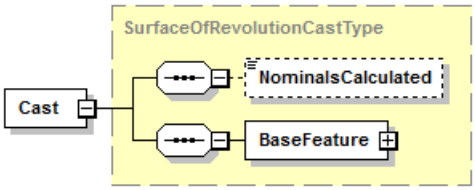
element **SurfaceOfRevolutionConstructionMethodType/Recompensated**

diagram	
type	**SurfaceOfRevolutionRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of a surface of revolution from 6 or more base feature points. This element is in an optional choice.

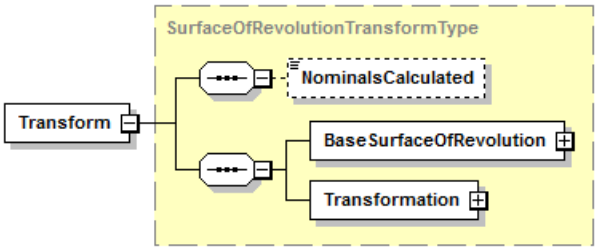
element **SurfaceOfRevolutionConstructionMethodType/Copy**

diagram	
type	**SurfaceOfRevolutionCopyType**
properties	content complex
children	**NominalsCalculated** **BaseSurfaceOfRevolution**
annotation	documentation The Copy element describes the construction of a surface of revolution by the copying of a base surface of revolution. This element is in an optional choice.

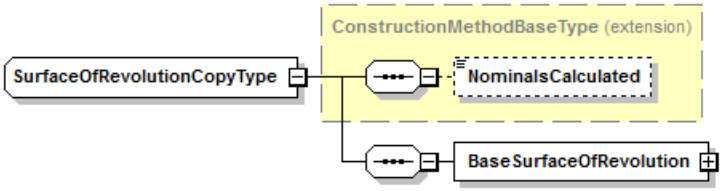
element **SurfaceOfRevolutionConstructionMethodType/Cast**

diagram	
type	**SurfaceOfRevolutionCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of a surface of revolution by the casting of a base feature. This element is in an optional choice.

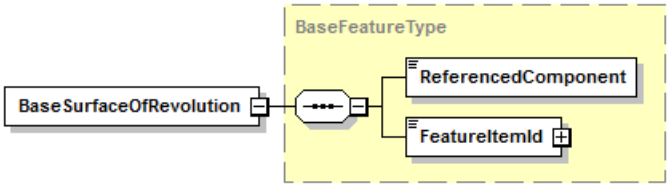
element **SurfaceOfRevolutionConstructionMethodType/Transform**

diagram	
type	**SurfaceOfRevolutionTransformType**
properties	content complex
children	**NominalsCalculated** **BaseSurfaceOfRevolution** **Transformation**
annotation	documentation The Transform element describes the construction of a surface of revolution by the transformation of a base surface of revolution. This element is in an optional choice.

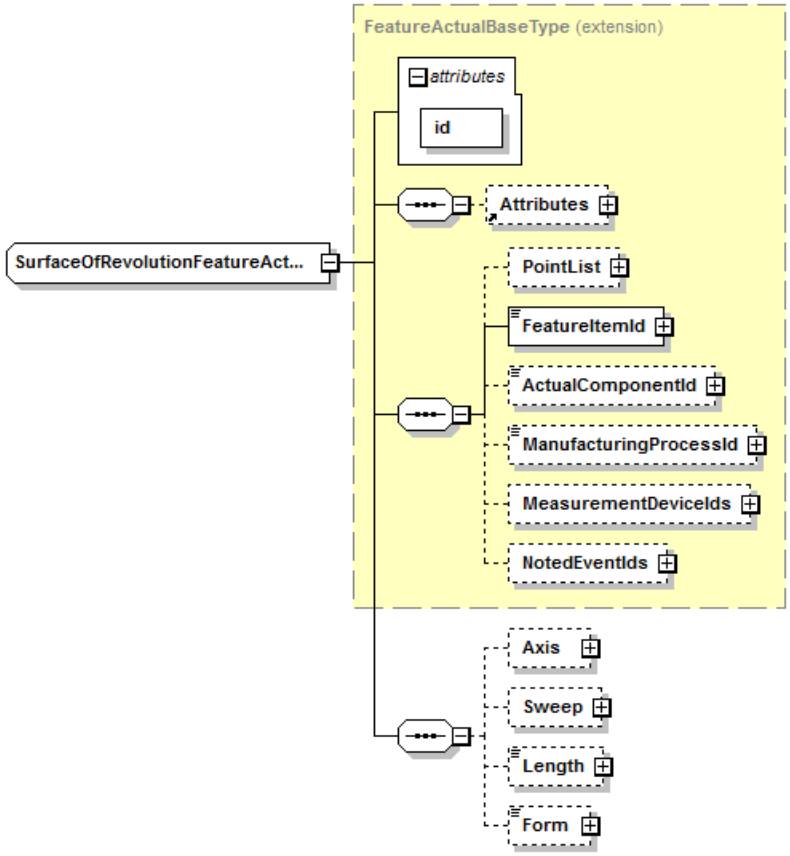
complexType **SurfaceOfRevolutionCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseSurfaceOfRevolution**
used by	element **SurfaceOfRevolutionConstructionMethodType/Copy**
annotation	documentation The SurfaceOfRevolutionCopyType defines a copied surface of revolution construction.

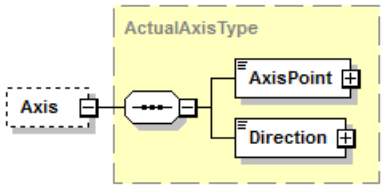
element **SurfaceOfRevolutionCopyType/BaseSurfaceOfRevolution**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseSurfaceOfRevolution element identifies the surface of revolution to be copied.

complexType **SurfaceOfRevolutionFeatureActualType**

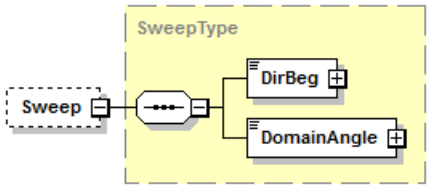
diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **Axis** **Sweep** **Length** **Form**
used by	element **SurfaceOfRevolutionFeatureActual**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The SurfaceOfRevolutionFeatureActualType defines the surface of revolution feature actual information for an individual surface of revolution feature.

element **SurfaceOfRevolutionFeatureActualType/Axis**

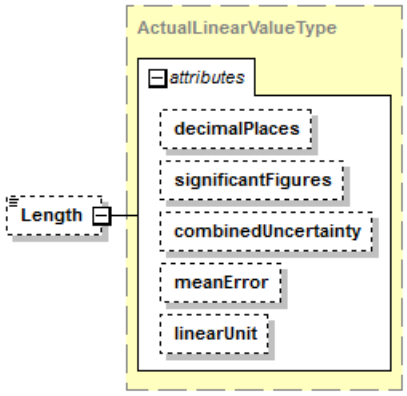
diagram	

type	**ActualAxisType**
properties	minOcc 0 maxOcc 1 content complex
children	**AxisPoint Direction**
annotation	documentation The optional Axis element gives the actual location of the start point and the actual unit axis vector of the surface of revolution.

element **SurfaceOfRevolutionFeatureActualType/Sweep**

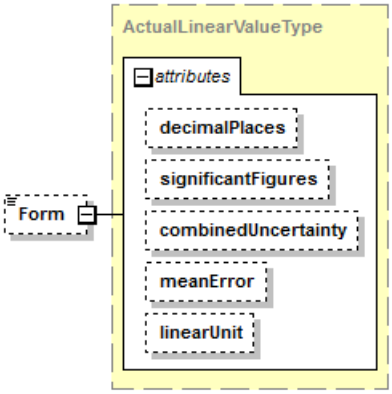
diagram	
type	**SweepType**
properties	minOcc 0 maxOcc 1 content complex
children	**DirBeg DomainAngle**
annotation	documentation The optional Sweep element gives the actual start direction and actual swept angle for a partial surface of revolution.

element **SurfaceOfRevolutionFeatureActualType/Length**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces / **xs:nonNegativeInteger** / / / / documentation See documentation of SpecifiedDecimalType. significantFigures / **xs:nonNegativeInteger** / / / / documentation See documentation of SpecifiedDecimalType. combinedUncertainty / **NonNegativeDecimalType** / / / / documentation The optional combinedUncertainty attribute is a value

			expressing the combined uncertainty assigned to the SpecifiedDecimalType.
	meanError	**NonNegativeDecimalType**	documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
	linearUnit	**xs:token**	documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Length element gives the actual length of the surface of revolution from the actual start point in the direction of the axis of the surface of revolution.		

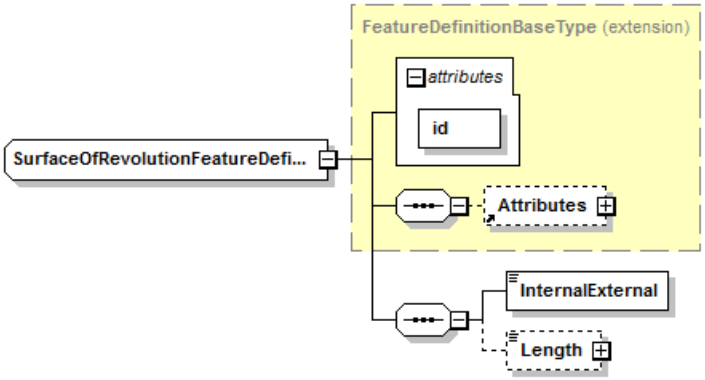
element **SurfaceOfRevolutionFeatureActualType/Form**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

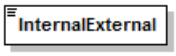
attributes	Name	Type	Use	Default	Fixed	Annotation
	decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
	combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
	meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
	linearUnit	**xs:token**				documentation The optional linearUnit

	attribute defines the unit used by LinearValueType.
annotation	documentation The optional Form element is the form error (roundness) of the surface of revolution from a report or an analysis.

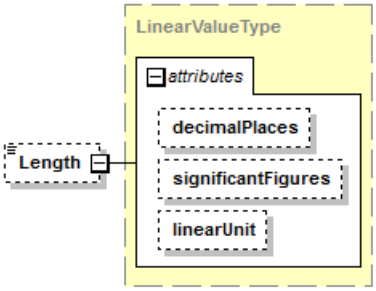
complexType **SurfaceOfRevolutionFeatureDefinitionType**

diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes InternalExternal Length**
used by	element **SurfaceOfRevolutionFeatureDefinition**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The SurfaceOfRevolutionFeatureDefinitionType defines the surface of revolution feature nominal information that can be common to one or more surface of revolution features.

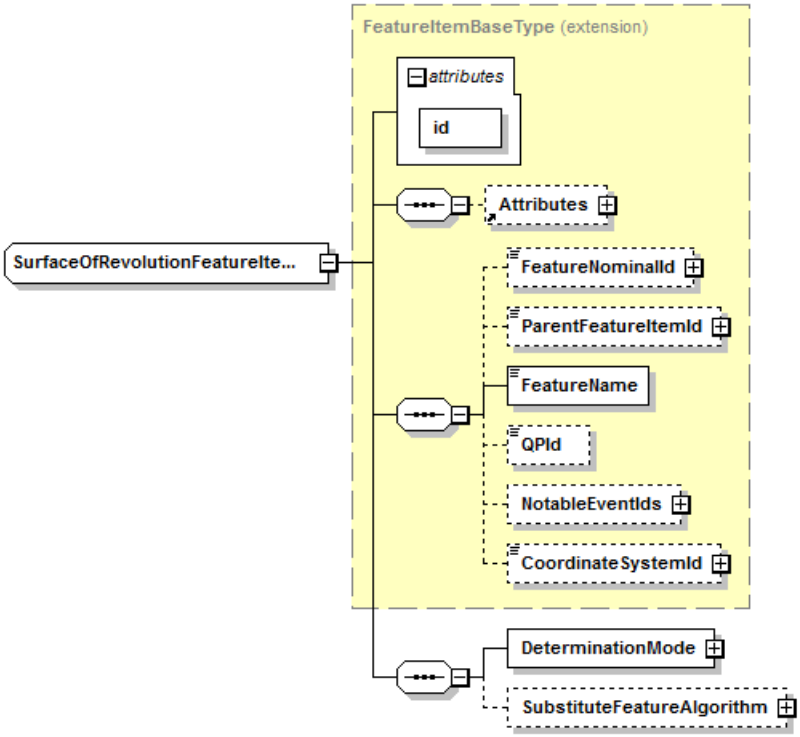
element **SurfaceOfRevolutionFeatureDefinitionType/InternalExternal**

diagram	
type	**InternalExternalEnumType**
properties	content simple
facets	Kind / Value / Annotation enumeration INTERNAL enumeration EXTERNAL enumeration NOT_APPLICABLE
annotation	documentation The InternalExternal element indicates whether the feature is internal or external.

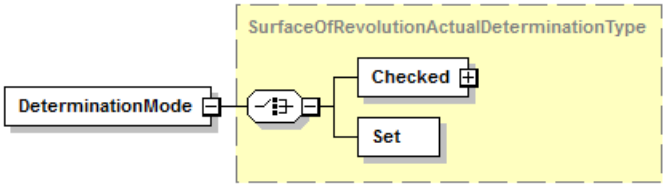
element **SurfaceOfRevolutionFeatureDefinitionType/Length**

diagram	
type	**LinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** — documentation: See documentation of SpecifiedDecimalType. linearUnit **xs:token** — documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The optional Length element is the nominal length of the surface of revolution from the starting point in the direction of the axis of the surface of revolution.

complexType **SurfaceOfRevolutionFeatureItemType**

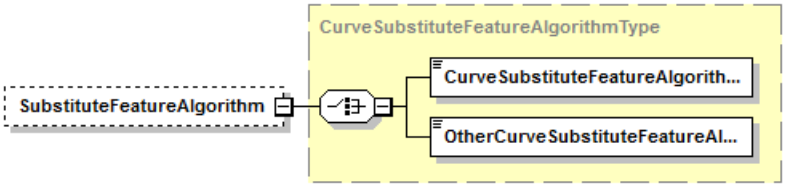
diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **SurfaceOfRevolutionFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The SurfaceOfRevolutionFeatureItemType defines an individual surface of revolution feature. A surface of revolution feature is defined by sweeping a planar curve through an angle about an axis. The angle may be a full circle. The axis has a start point. The surface has a length that is measured along the axis. The curve being swept must lie in a plane that contains the axis of the surface of revolution. The line which is perpendicular to the axis at the start point of the axis and lies in the plane of the curve must intersect or be tangent to the curve. The surface that is formed consists of those points that lie on the surface formed by sweeping the curve and also lie between (1) the plane perpendicular to the axis at the start point and (2) the plane perpendicular to the axis a distance length from the start point in the direction of the axis.

element **SurfaceOfRevolutionFeatureItemType/DeterminationMode**

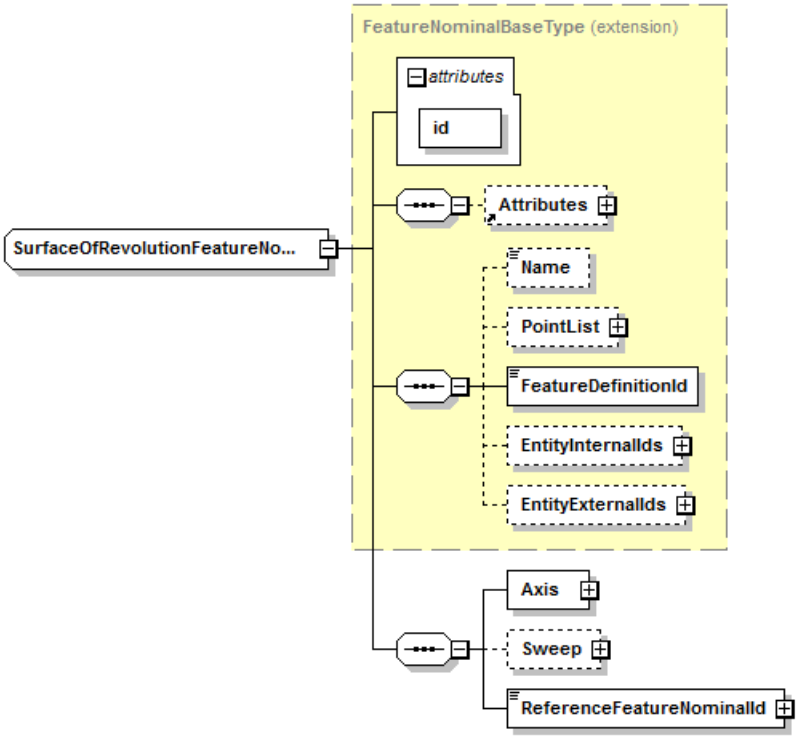
diagram	

type	**SurfaceOfRevolutionActualDeterminationType**
properties	content complex
children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the surface of revolution feature actual is determined.

element **SurfaceOfRevolutionFeatureItemType/SubstituteFeatureAlgorithm**

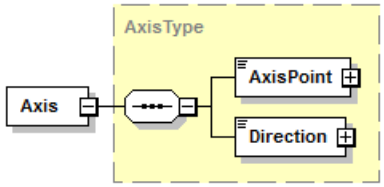
diagram	
type	**CurveSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**CurveSubstituteFeatureAlgorithmEnum OtherCurveSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the surface of revolution feature.

complexType **SurfaceOfRevolutionFeatureNominalType**

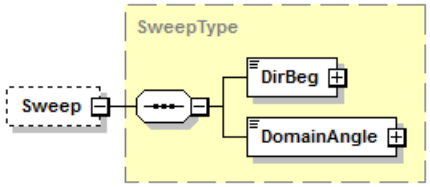
diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType

children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **Axis** **Sweep** **ReferenceFeatureNominalId**
used by	element **SurfaceOfRevolutionFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation: The SurfaceOfRevolutionFeatureNominalType defines the nominal information for an individual surface of revolution feature.

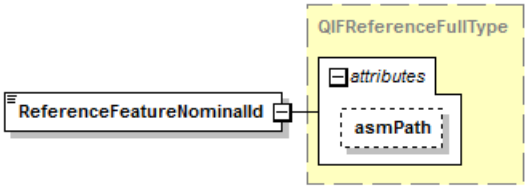
element **SurfaceOfRevolutionFeatureNominalType/Axis**

diagram	
type	**AxisType**
properties	content complex
children	**AxisPoint Direction**
annotation	documentation: The Axis element gives the nominal location of the start point and the nominal unit axis vector of the surface of revolution.

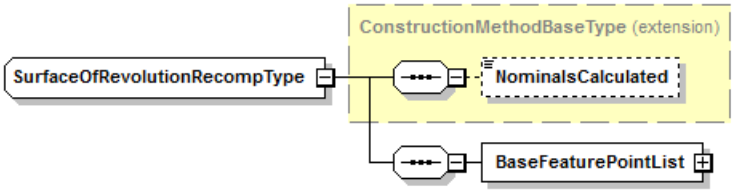
element **SurfaceOfRevolutionFeatureNominalType/Sweep**

diagram	
type	**SweepType**
properties	minOcc 0 maxOcc 1 content complex
children	**DirBeg DomainAngle**
annotation	documentation: The optional Sweep element gives the nominal start direction and the swept angle for a partial surface of revolution. The swept angle is typically greater than 180 degrees for a feature of size. If the sweep is not specified, the feature subtends a full 360 degrees. The StartVector of the Sweep must lie in a plane normal to the axis of the surface of revolution.

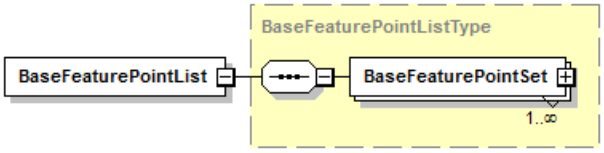
element **SurfaceOfRevolutionFeatureNominalType/ReferenceFeatureNominalId**

diagram	
type	**QIFReferenceFullType**
properties	content complex
attributes	Name: asmPath; Type: **QIFIdType**; Use; Default; Fixed; Annotation: documentation: The optional asmPath attribute is an id which must be used for locating of the assembly path within the AsmPaths. The assembly path (instantiation chain) unambiguously identifies a model entity within an assembly.
annotation	documentation The ReferenceFeatureNominalId element is the QIF id of the nominal feature that is the curve being swept. The value of the element must be the QIF id of a nominal feature.

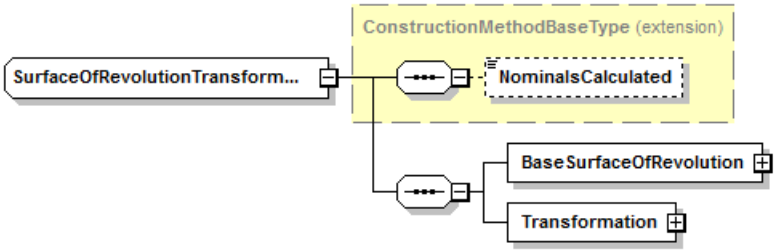
complexType **SurfaceOfRevolutionRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **SurfaceOfRevolutionConstructionMethodType/Recompensated**
annotation	documentation The SurfaceOfRevolutionRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit surface of revolution through the measurement points of base features.

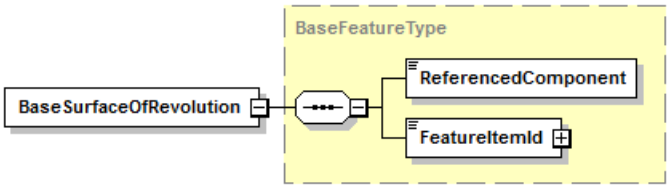
element **SurfaceOfRevolutionRecompType/BaseFeaturePointList**

diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit surface of revolution. The total number of points in the BaseFeaturePointSets in the list must be 6 or greater.

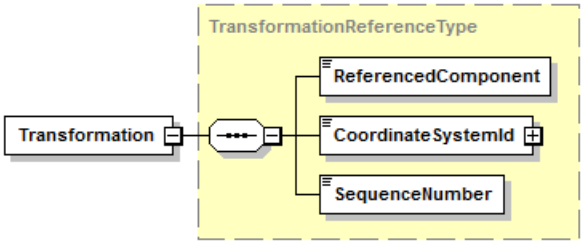
complexType **SurfaceOfRevolutionTransformType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseSurfaceOfRevolution** **Transformation**
used by	element **SurfaceOfRevolutionConstructionMethodType/Transform**
annotation	documentation The SurfaceOfRevolutionTransformType defines a surface of revolution construction by the transformation of a surface of revolution through the specified nominal or actual coordinate system.

element **SurfaceOfRevolutionTransformType/BaseSurfaceOfRevolution**

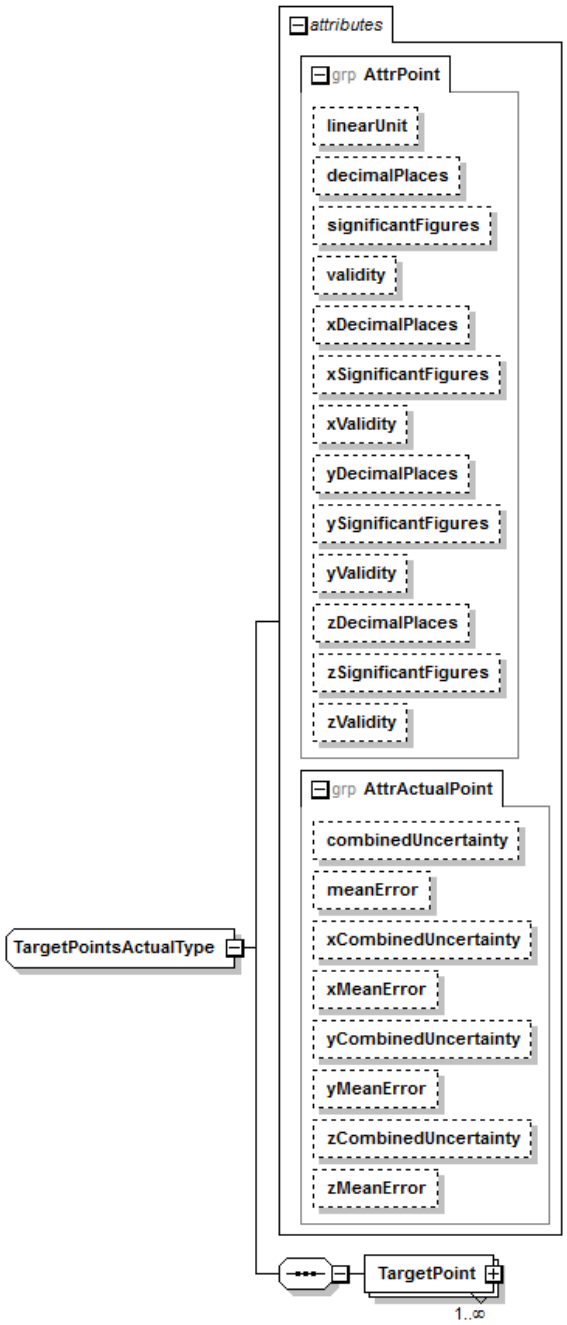
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseSurfaceOfRevolution element identifies the surface of revolution to be transformed.

element **SurfaceOfRevolutionTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the surface of revolution.

complexType **TargetPointsActualType**

diagram



children **TargetPoint**

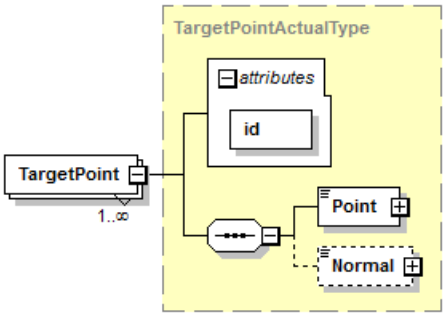
used by elements **PointDefinedCurveFeatureActualType/DefiningPoints**
PointDefinedSurfaceFeatureActualType/DefiningPoints

attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				

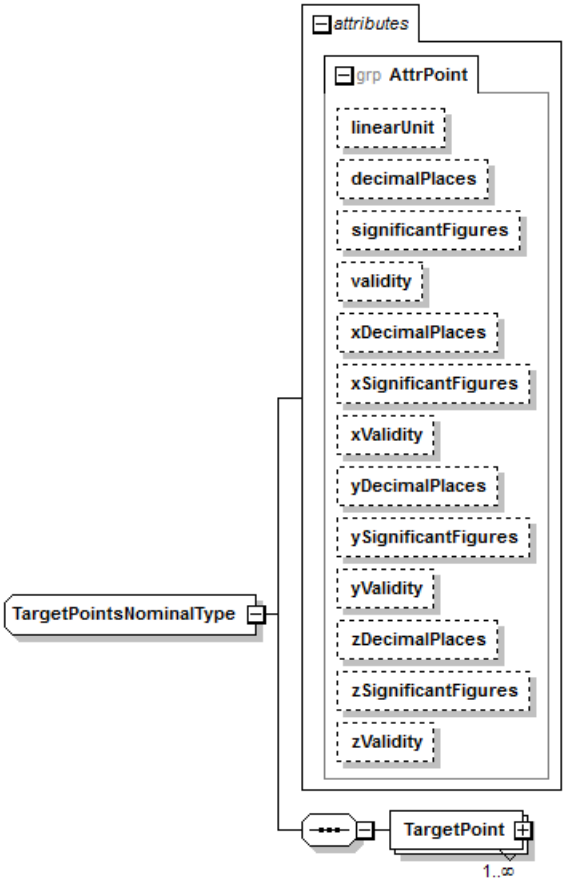
	xSignificantFigures **xs:nonNegativeInteger** xValidity **ValidityEnumType** yDecimalPlaces **xs:nonNegativeInteger** ySignificantFigures **xs:nonNegativeInteger** yValidity **ValidityEnumType** zDecimalPlaces **xs:nonNegativeInteger** zSignificantFigures **xs:nonNegativeInteger** zValidity **ValidityEnumType** combinedUncertainty **xs:decimal** meanError **xs:decimal** xCombinedUncertainty **xs:decimal** xMeanError **xs:decimal** yCombinedUncertainty **xs:decimal** yMeanError **xs:decimal** zCombinedUncertainty **xs:decimal** zMeanError **xs:decimal**
annotation	documentation The TargetPointsActualType defines a list of ordered actual target points.

element **TargetPointsActualType/TargetPoint**

diagram	
type	**TargetPointActualType**
properties	minOcc 1 maxOcc unbounded content complex
children	**Point Normal**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the QIF id of the point, used for referencing.
annotation	documentation Each TargetPoint element is a point on an actual point-defined curve or an actual point-defined surface.

complexType **TargetPointsNominalType**

diagram



children **TargetPoint**

used by elements **PointDefinedCurveFeatureNominalType/DefiningPoints**
PointDefinedSurfaceFeatureNominalType/DefiningPoints

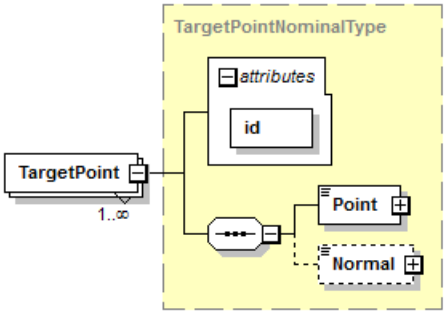
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

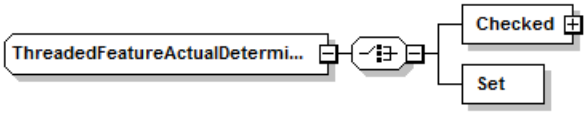
annotation

documentation
The TargetPointsNominalType defines an ordered list of nominal target points.

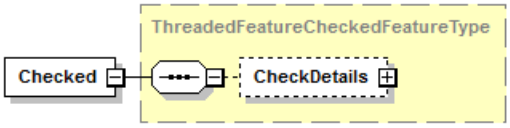
element **TargetPointsNominalType/TargetPoint**

diagram	
type	**TargetPointNominalType**
properties	minOcc 1 maxOcc unbounded content complex
children	**Point Normal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the point, used for referencing.
annotation	documentation Each TargetPoint element is a nominal point on a nominal point-defined curve or a nominal point-defined surface.

complexType **ThreadedFeatureActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **ThreadedFeatureItemType/DeterminationMode**
annotation	documentation The ThreadedFeatureActualDeterminationType defines how the threaded feature actual is determined, either by being set or by being checked (measured or constructed).

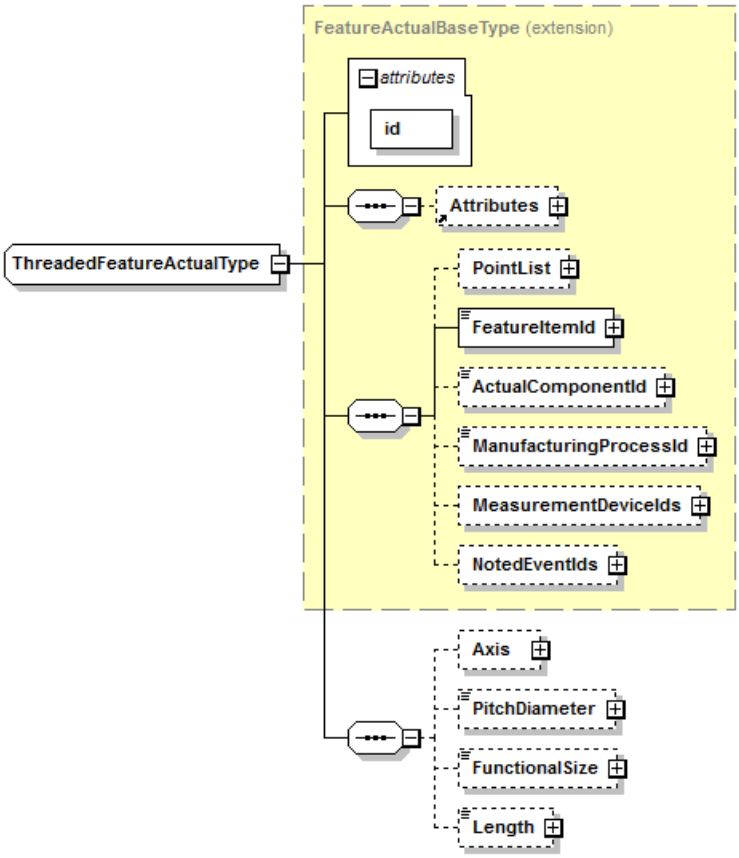
element **ThreadedFeatureActualDeterminationType/Checked**

diagram	
type	**ThreadedFeatureCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the threaded feature is checked from actual data, either measured or constructed.

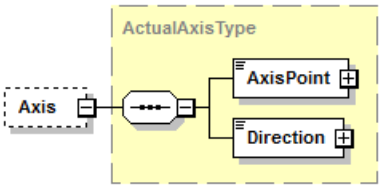
element **ThreadedFeatureActualDeterminationType/Set**

diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the threaded feature actual is set to its nominal value.

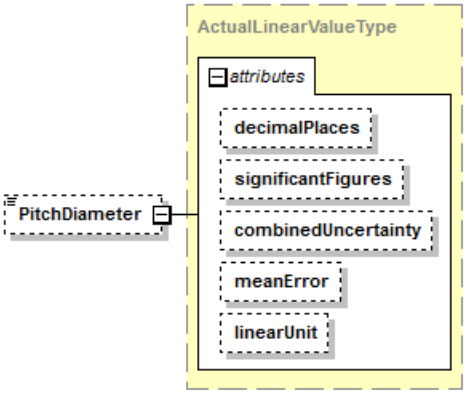
complexType **ThreadedFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **Axis** **PitchDiameter** **FunctionalSize** **Length**
used by	element **ThreadedFeatureActual**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ThreadedFeatureActualType defines the threaded feature actual information for an individual threaded feature.

element **ThreadedFeatureActualType/Axis**

diagram	
type	**ActualAxisType**
properties	minOcc 0 maxOcc 1 content complex
children	**AxisPoint Direction**
annotation	documentation The optional Axis element gives the actual location of the start point and the actual unit vector of the threaded feature axis.

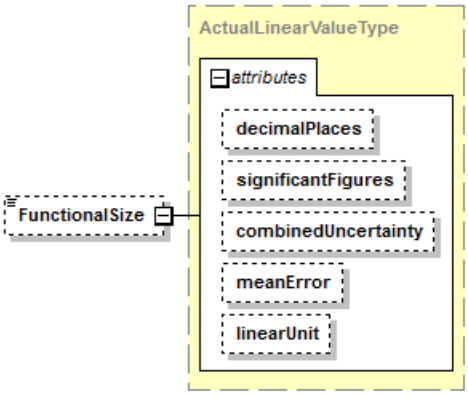
element **ThreadedFeatureActualType/PitchDiameter**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional meanError attribute is a value expressing the mean error assigned

	linearUnit	**xs:token**	to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional PitchDiameter element is the actual pitch diameter of the threaded feature based on the substitute feature data fitting algorithm setting.		

element **ThreadedFeatureActualType/FunctionalSize**

diagram



type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

attributes

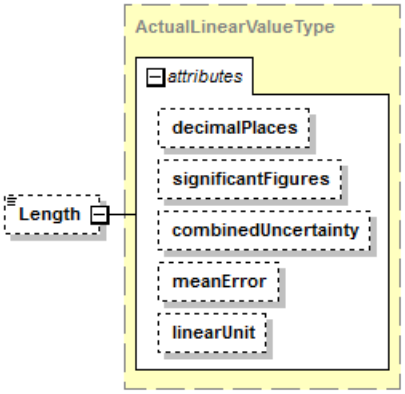
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation

documentation
The optional FunctionalSize element is the actual functional size of the threaded feature based on the substitute feature data fitting algorithm setting.

element **ThreadedFeatureActualType/Length**

diagram



type **ActualLinearValueType**

properties

minOcc	0
maxOcc	1
content	complex

attributes

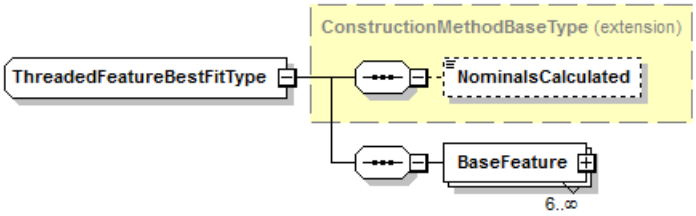
Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

annotation

documentation
The optional Length element is the actual length of the threaded feature from the starting point in the direction of the threaded feature axis.

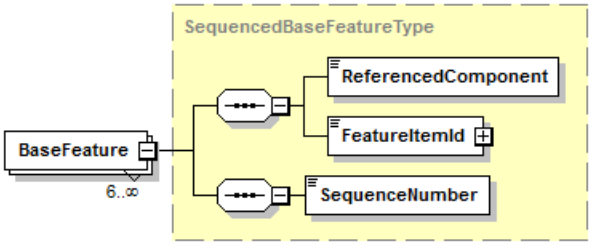
complexType **ThreadedFeatureBestFitType**

diagram

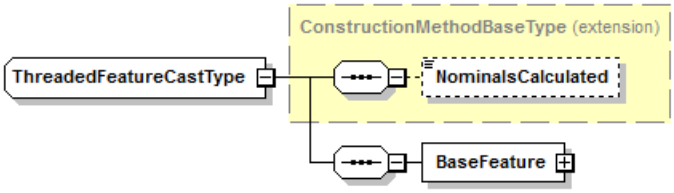


type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **ThreadedFeatureConstructionMethodType/BestFit**
annotation	documentation The ThreadedFeatureBestFitType defines the information for a best-fit threaded feature which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the threaded feature.

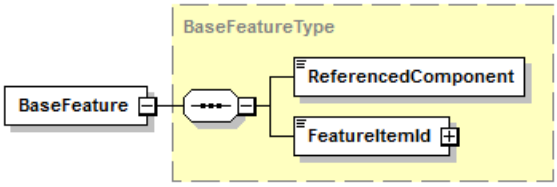
element **ThreadedFeatureBestFitType/BaseFeature**

diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 6 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of a threaded feature. The number of base features must be 6 or greater.

complexType **ThreadedFeatureCastType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **ThreadedFeatureConstructionMethodType/Cast**
annotation	documentation The ThreadedFeatureCastType defines the cast of another feature type to a threaded feature. The location, axis and size are copied from the base feature.

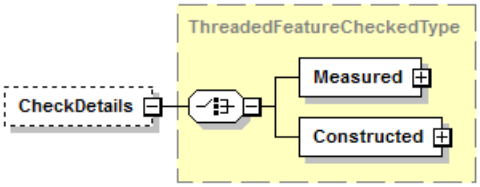
element **ThreadedFeatureCastType/BaseFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to a threaded feature.

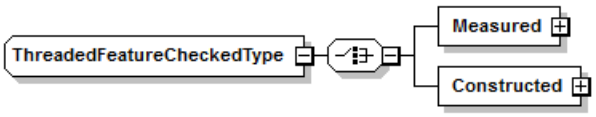
complexType **ThreadedFeatureCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **ThreadedFeatureActualDeterminationType/Checked**
annotation	documentation The ThreadedFeatureCheckedFeatureType defines that a threaded feature is checked.

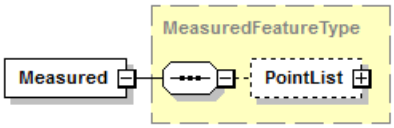
element **ThreadedFeatureCheckedFeatureType/CheckDetails**

diagram	
type	**ThreadedFeatureCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured Constructed**
annotation	documentation The optional CheckDetails element gives details about the threaded feature check (measurement or construction).

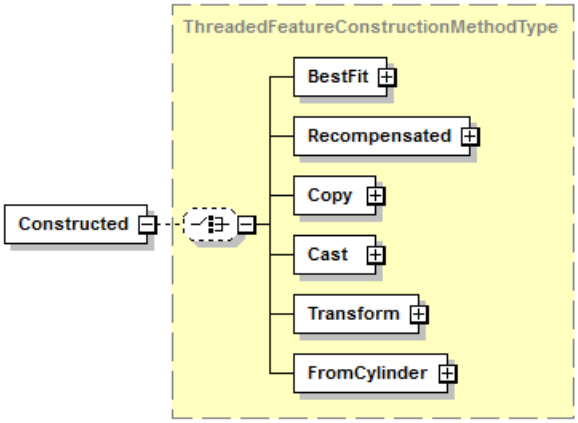
complexType **ThreadedFeatureCheckedType**

diagram	
children	**Measured Constructed**
used by	element **ThreadedFeatureCheckedFeatureType/CheckDetails**
annotation	documentation The ThreadedFeatureCheckedType defines how the threaded feature actual is checked, either by measurement or by construction.

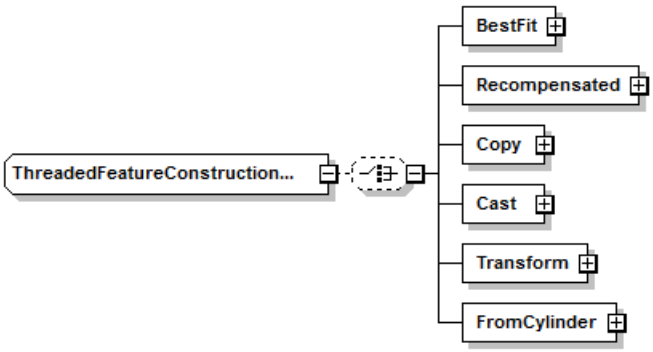
element **ThreadedFeatureCheckedType/Measured**

diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the threaded feature is measured directly.

element **ThreadedFeatureCheckedType/Constructed**

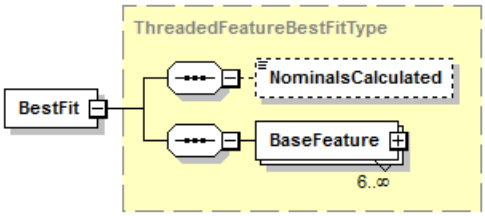
diagram	
type	**ThreadedFeatureConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform** **FromCylinder**
annotation	documentation The Constructed element signifies that the threaded feature is constructed.

complexType **ThreadedFeatureConstructionMethodType**

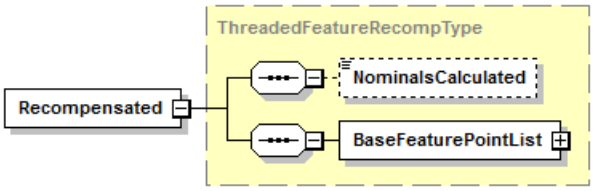
diagram	
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform** **FromCylinder**

used by	element **ThreadedFeatureCheckedType/Constructed**
annotation	documentation The ThreadedFeatureConstructionMethodType defines the method for constructing a unique nominal or actual threaded feature.

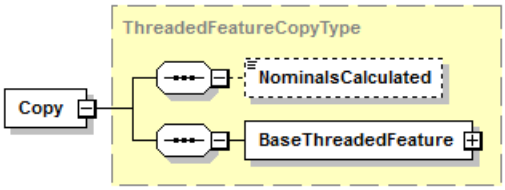
element **ThreadedFeatureConstructionMethodType/BestFit**

diagram	
type	**ThreadedFeatureBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of a threaded feature from 9 or more point-reducible base features. This element is in an optional choice.

element **ThreadedFeatureConstructionMethodType/Recompensated**

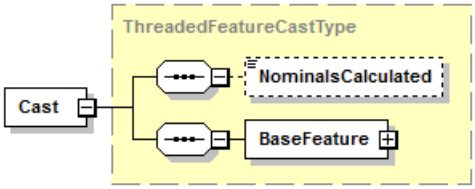
diagram	
type	**ThreadedFeatureRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of a threaded feature from 9 or more base feature points. This element is in an optional choice.

element **ThreadedFeatureConstructionMethodType/Copy**

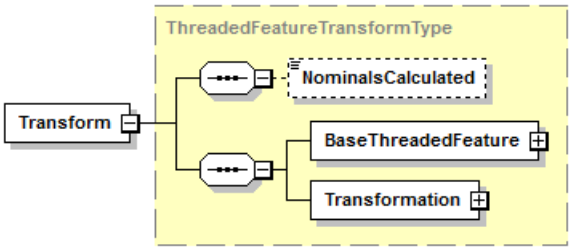
diagram	
type	**ThreadedFeatureCopyType**
properties	content complex
children	**NominalsCalculated** **BaseThreadedFeature**
annotation	documentation

	The Copy element describes the construction of a threaded feature by the copying of a base threaded feature. This element is in an optional choice.

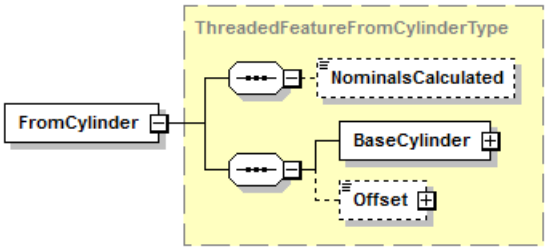
element **ThreadedFeatureConstructionMethodType/Cast**

diagram	
type	**ThreadedFeatureCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of a threaded feature by the casting of a base feature. This element is in an optional choice.

element **ThreadedFeatureConstructionMethodType/Transform**

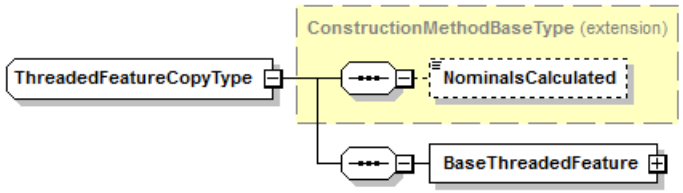
diagram	
type	**ThreadedFeatureTransformType**
properties	content complex
children	**NominalsCalculated** **BaseThreadedFeature** **Transformation**
annotation	documentation The Transform element describes the construction of a threaded feature by the transformation of a base threaded feature. This element is in an optional choice.

element **ThreadedFeatureConstructionMethodType/FromCylinder**

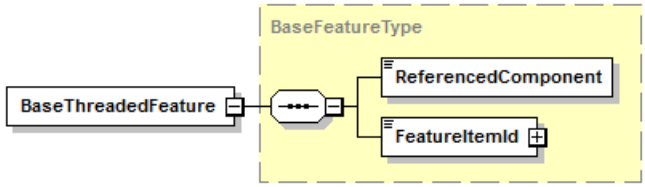
diagram	
type	**ThreadedFeatureFromCylinderType**
properties	content complex
children	**NominalsCalculated** **BaseCylinder** **Offset**

annotation	documentation The FromCylinder element describes the construction of a threaded feature from a base cylinder. This element is in an optional choice.

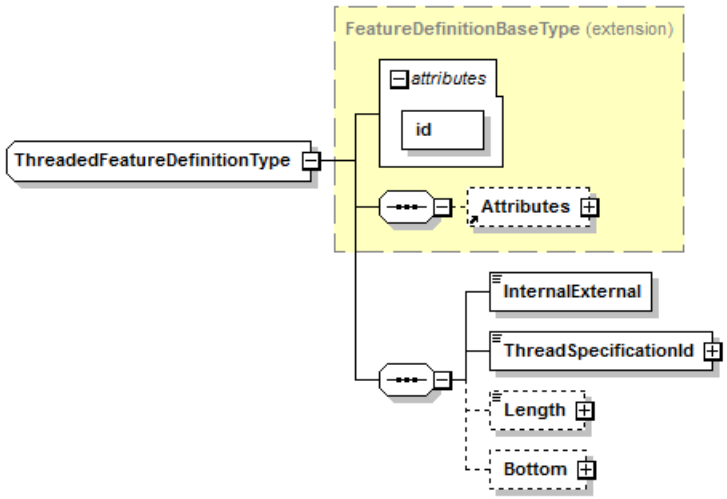
complexType **ThreadedFeatureCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseThreadedFeature**
used by	element **ThreadedFeatureConstructionMethodType/Copy**
annotation	documentation The ThreadedFeatureCopyType defines a copied threaded feature construction.

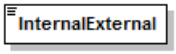
element **ThreadedFeatureCopyType/BaseThreadedFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseThreadedFeature element identifies the threaded feature to be copied.

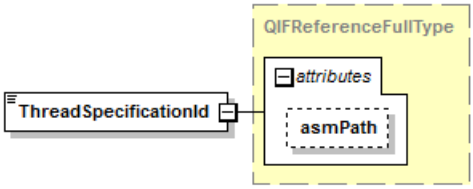
complexType **ThreadedFeatureDefinitionType**

diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes** **InternalExternal** **ThreadSpecificationId** **Length** **Bottom**
used by	element **ThreadedFeatureDefinition**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ThreadedFeatureDefinitionType defines the threaded feature nominal information that can be common to one or more threaded features.

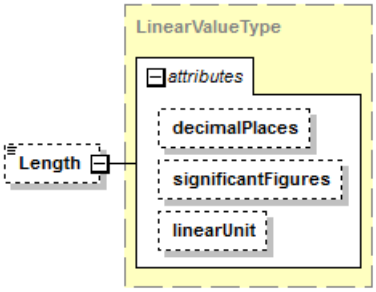
element **ThreadedFeatureDefinitionType/InternalExternal**

diagram	
type	**InternalExternalEnumType**
properties	content simple
facets	Kind: enumeration, Value: INTERNAL; Kind: enumeration, Value: EXTERNAL; Kind: enumeration, Value: NOT_APPLICABLE; Annotation:
annotation	documentation The InternalExternal element indicates whether the feature is internal or external.

element **ThreadedFeatureDefinitionType/ThreadSpecificationId**

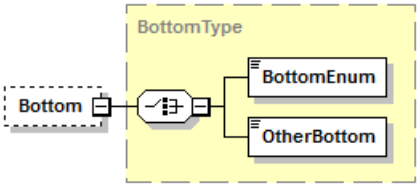
diagram	
type	**QIFReferenceFullType**
properties	content complex
attributes	Name: asmPath Type: **QIFIdType** Use: Default: Fixed: Annotation: documentation: The optional asmPath attribute is an id which must be used for locating of the assembly path within the AsmPaths. The assembly path (instantiation chain) unambiguously identifies a model entity within an assembly.
annotation	documentation The ThreadSpecificationId element is the QIF id of the thread specification for the thread characteristic. This must be the QIF id of a thread specification.

element **ThreadedFeatureDefinitionType/Length**

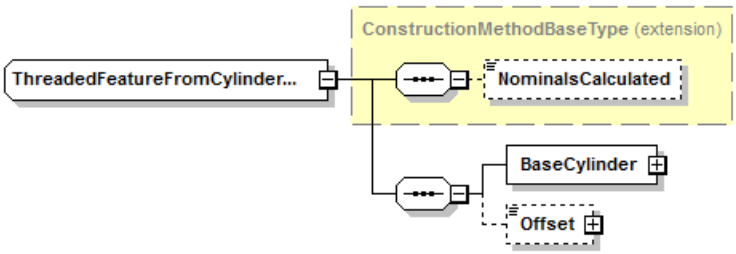
diagram	
type	**LinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name: decimalPlaces Type: **xs:nonNegativeInteger** Use: Default: Fixed: Annotation: documentation: See documentation of SpecifiedDecimalType. Name: significantFigures Type: **xs:nonNegativeInteger** Annotation: documentation: See documentation of SpecifiedDecimalType. Name: linearUnit Type: **xs:token** Annotation: documentation: The optional linearUnit

	attribute defines the UnitName for the LinearValueType.
annotation	documentation The optional Length element is the nominal length of the threaded feature from the starting point in the direction of the threaded feature axis.

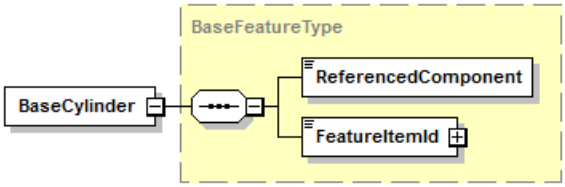
element **ThreadedFeatureDefinitionType/Bottom**

diagram	
type	**BottomType**
properties	minOcc 0 maxOcc 1 content complex
children	**BottomEnum OtherBottom**
annotation	documentation The optional Bottom element describes the bottom type of the threaded feature.

complexType **ThreadedFeatureFromCylinderType**

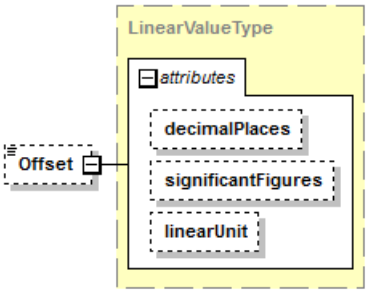
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated BaseCylinder Offset**
used by	element **ThreadedFeatureConstructionMethodType/FromCylinder**
annotation	documentation The ThreadedFeatureFromCylinderType defines the construction of a threaded feature from a cylinder. This construction is used to associate the location and axis of a measured joe plug with a threaded feature.

element **ThreadedFeatureFromCylinderType/BaseCylinder**

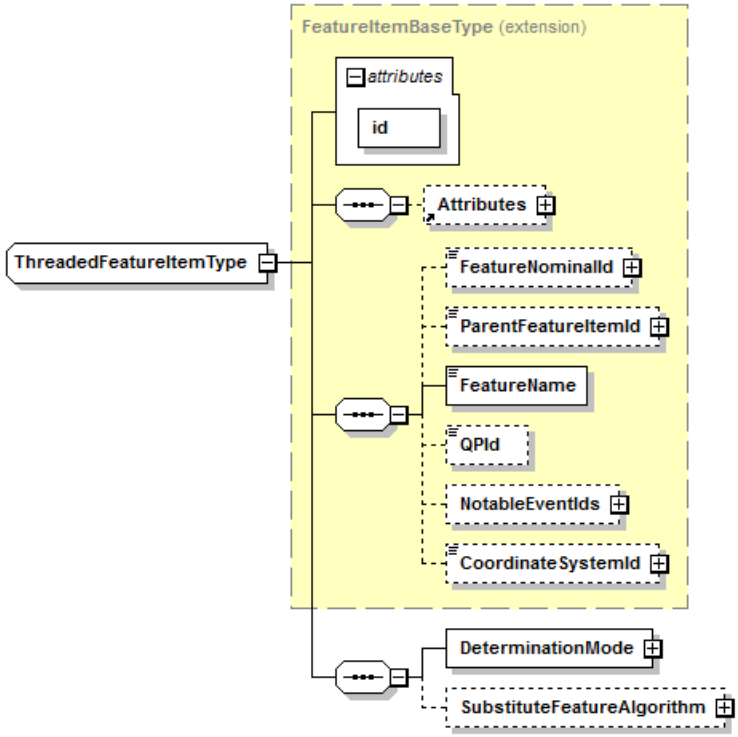
diagram	
type	**BaseFeatureType**

properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseCylinder element identifies the cylinder from which the threaded feature is constructed.

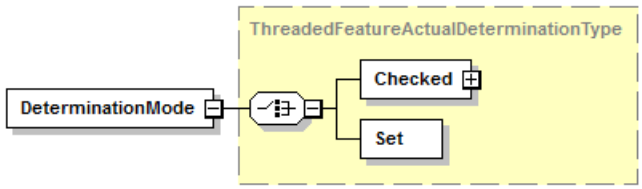
element **ThreadedFeatureFromCylinderType/Offset**

diagram	
type	**LinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. significantFigures / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. linearUnit / **xs:token** / / / / documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The optional Offset element is the distance from the cylinder locating point along the cylinder axis to the thread feature locating point.

complexType **ThreadedFeatureItemType**

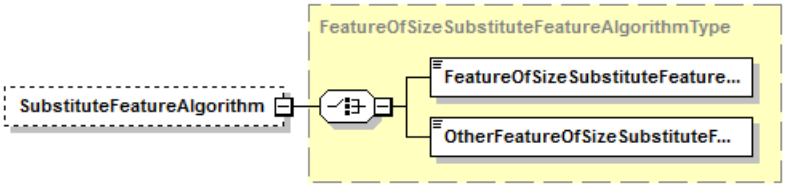
diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **ThreadedFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ThreadedFeatureItemType defines an individual threaded feature.

element **ThreadedFeatureItemType/DeterminationMode**

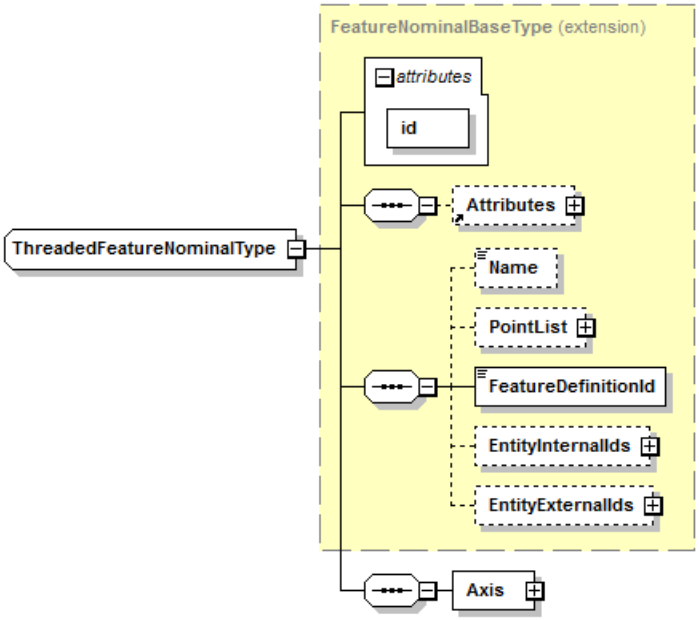
diagram	
type	**ThreadedFeatureActualDeterminationType**
properties	content complex
children	**Checked** **Set**

annotation	documentation The DeterminationMode element is the means by which the threaded feature actual is determined.

element **ThreadedFeatureItemType/SubstituteFeatureAlgorithm**

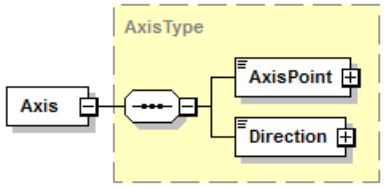
diagram	
type	**FeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**FeatureOfSizeSubstituteFeatureAlgorithmEnum OtherFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the threaded feature.

complexType **ThreadedFeatureNominalType**

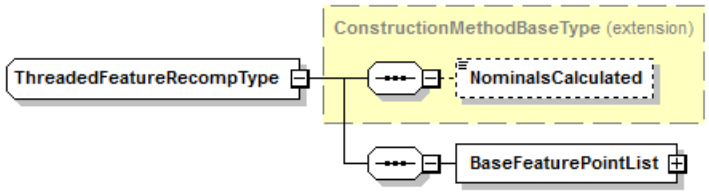
diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes Name PointList FeatureDefinitionId EntityInternalIds EntityExternalIds Axis**
used by	element **ThreadedFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.

annotation	documentation The ThreadedFeatureNominalType defines the threaded feature nominal information for an individual threaded feature.

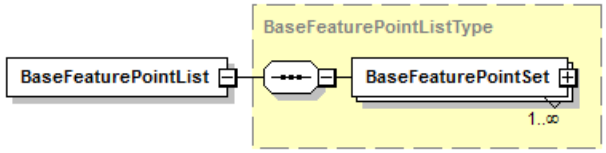
element **ThreadedFeatureNominalType/Axis**

diagram	
type	**AxisType**
properties	content complex
children	**AxisPoint Direction**
annotation	documentation The Axis element gives the nominal location of the start point and the nominal unit threaded feature axis vector. The direction of the axis vector points into the threaded feature.

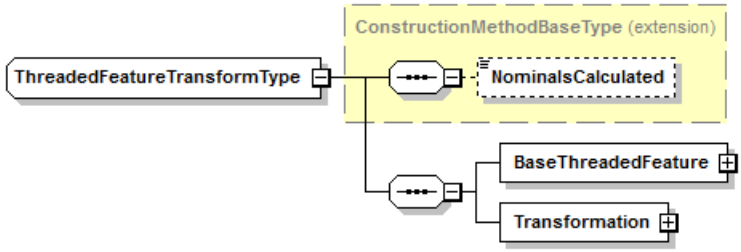
complexType **ThreadedFeatureRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **ThreadedFeatureConstructionMethodType/Recompensated**
annotation	documentation The ThreadedFeatureRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit threaded feature through the measurement points of base features.

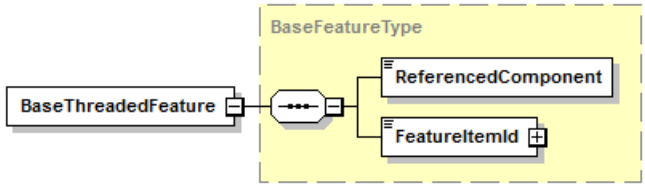
element **ThreadedFeatureRecompType/BaseFeaturePointList**

diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit threaded feature. The total number of points in the BaseFeaturePointSets in the list must be 6 or greater.

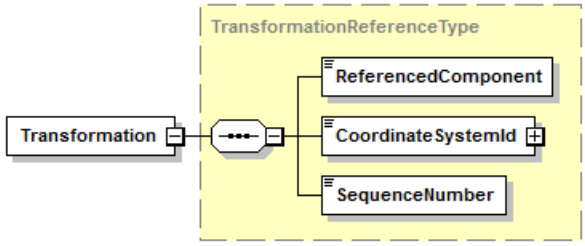
complexType **ThreadedFeatureTransformType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseThreadedFeature** **Transformation**
used by	element **ThreadedFeatureConstructionMethodType/Transform**
annotation	documentation The ThreadedFeatureTransformType defines a threaded feature construction by the transformation of a threaded feature through the specified nominal or actual coordinate system.

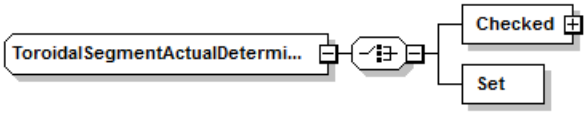
element **ThreadedFeatureTransformType/BaseThreadedFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseThreadedFeature element identifies the threaded feature to be transformed.

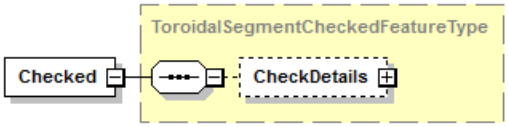
element **ThreadedFeatureTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the threaded feature.

complexType **ToroidalSegmentActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **ToroidalSegmentFeatureItemType/DeterminationMode**
annotation	documentation The ToroidalSegmentActualDeterminationType defines how the toroidal segment actual is determined, either by being set or by being checked (measured or constructed).

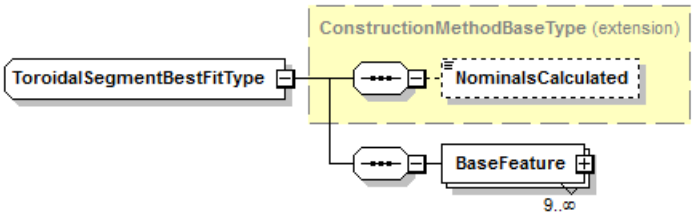
element **ToroidalSegmentActualDeterminationType/Checked**

diagram	
type	**ToroidalSegmentCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the toroidal segment is checked from actual data, either measured or constructed.

element **ToroidalSegmentActualDeterminationType/Set**

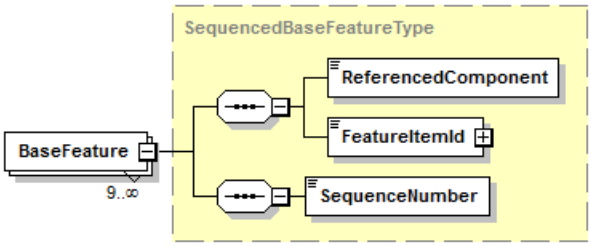
diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the toroidal segment actual is set to its nominal value.

complexType **ToroidalSegmentBestFitType**

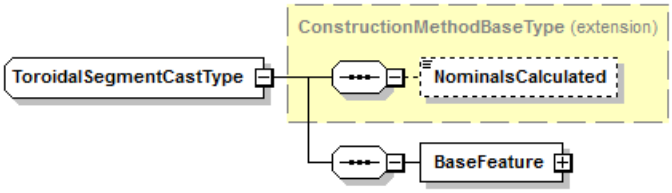
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **ToroidalSegmentConstructionMethodType/BestFit**

annotation	documentation The ToroidalSegmentBestFitType defines the information for a best-fit toroidal segment which includes a list of point-reducible base features; the points to which those features reduce are used in the best-fit construction of the toroidal segment.

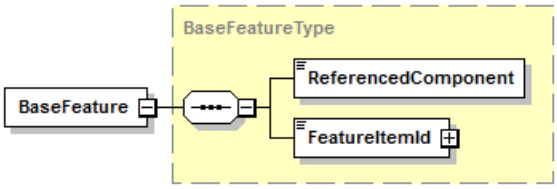
element **ToroidalSegmentBestFitType/BaseFeature**

diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 9 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of a toroidal segment. The number of base features must be 9 or greater.

complexType **ToroidalSegmentCastType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **ToroidalSegmentConstructionMethodType/Cast**
annotation	documentation The ToroidalSegmentCastType defines the cast of another feature type to a toroidal segment. The location, axis and sizes are copied from the base feature.

element **ToroidalSegmentCastType/BaseFeature**

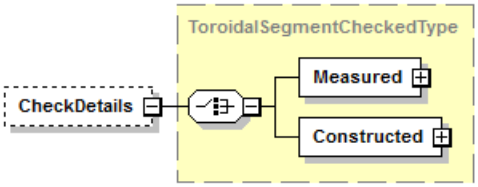
diagram	
type	**BaseFeatureType**
properties	content complex

children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseFeature element identifies the base feature to be cast to a toroidal segment.

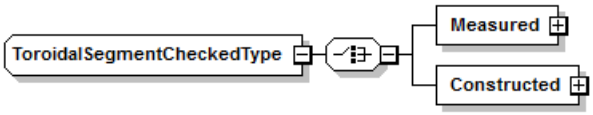
complexType **ToroidalSegmentCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **ToroidalSegmentActualDeterminationType/Checked**
annotation	documentation The ToroidalSegmentCheckedFeatureType defines that a toroidal segment feature is checked.

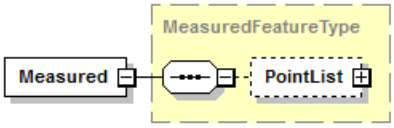
element **ToroidalSegmentCheckedFeatureType/CheckDetails**

diagram	
type	**ToroidalSegmentCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured** **Constructed**
annotation	documentation The optional CheckDetails element gives details about the toroidal segment check (measurement or construction).

complexType **ToroidalSegmentCheckedType**

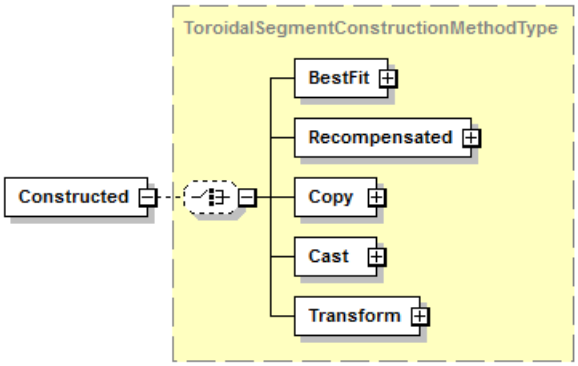
diagram	
children	**Measured** **Constructed**
used by	element **ToroidalSegmentCheckedFeatureType/CheckDetails**
annotation	documentation The ToroidalSegmentCheckedType defines how the toroidal segment actual is checked, either by measurement or by construction.

element **ToroidalSegmentCheckedType/Measured**

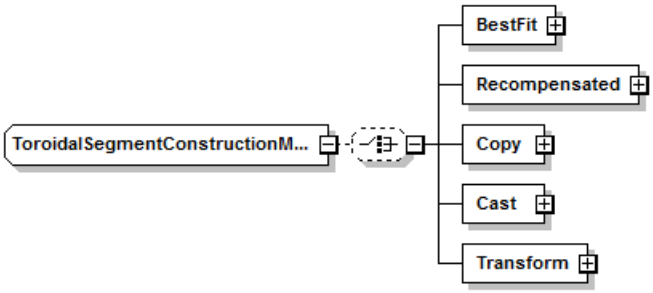
diagram	
type	**MeasuredFeatureType**

properties	content complex
children	**PointList**
annotation	documentation The Measured element signifies that the toroidal segment is measured.

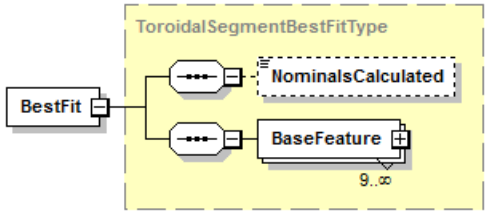
element **ToroidalSegmentCheckedType/Constructed**

diagram	
type	**ToroidalSegmentConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform**
annotation	documentation The Constructed element signifies that the toroidal segment is constructed.

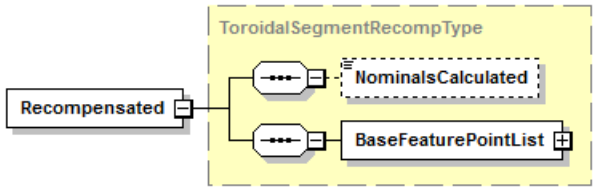
complexType **ToroidalSegmentConstructionMethodType**

diagram	
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform**
used by	element **ToroidalSegmentCheckedType/Constructed**
annotation	documentation The ToroidalSegmentConstructionMethodType defines the method for constructing a unique nominal or actual toroidal segment feature.

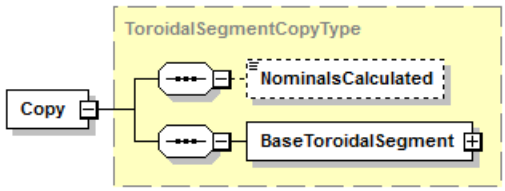
element **ToroidalSegmentConstructionMethodType/BestFit**

diagram	
type	**ToroidalSegmentBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of a toroidal segment from 9 or more point-reducible base features. This element is in an optional choice.

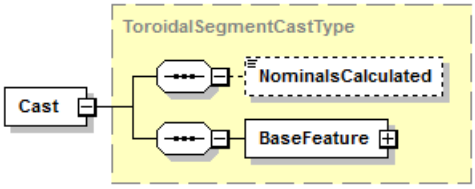
element **ToroidalSegmentConstructionMethodType/Recompensated**

diagram	
type	**ToroidalSegmentRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of a toroidal segment from 9 or more base feature points. This element is in an optional choice.

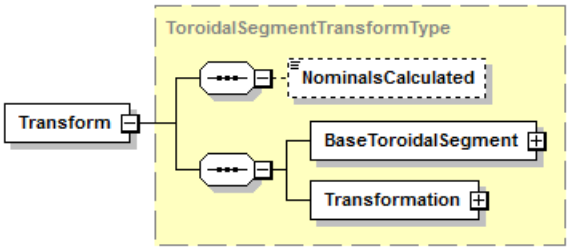
element **ToroidalSegmentConstructionMethodType/Copy**

diagram	
type	**ToroidalSegmentCopyType**
properties	content complex
children	**NominalsCalculated** **BaseToroidalSegment**
annotation	documentation The Copy element describes the construction of a toroidal segment by the copying of a base toroidal segment. This element is in an optional choice. This element is in an optional choice.

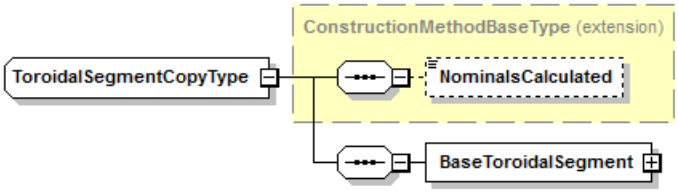
element **ToroidalSegmentConstructionMethodType/Cast**

diagram	
type	**ToroidalSegmentCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of a toroidal segment by the casting of a base feature. This element is in an optional choice.

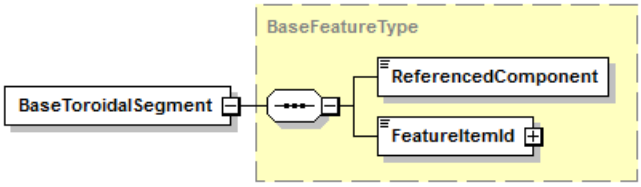
element **ToroidalSegmentConstructionMethodType/Transform**

diagram	
type	**ToroidalSegmentTransformType**
properties	content complex
children	**NominalsCalculated** **BaseToroidalSegment** **Transformation**
annotation	documentation The Transform element describes the construction of a toroidal segment by the transformation of a base toroidal segment. This element is in an optional choice.

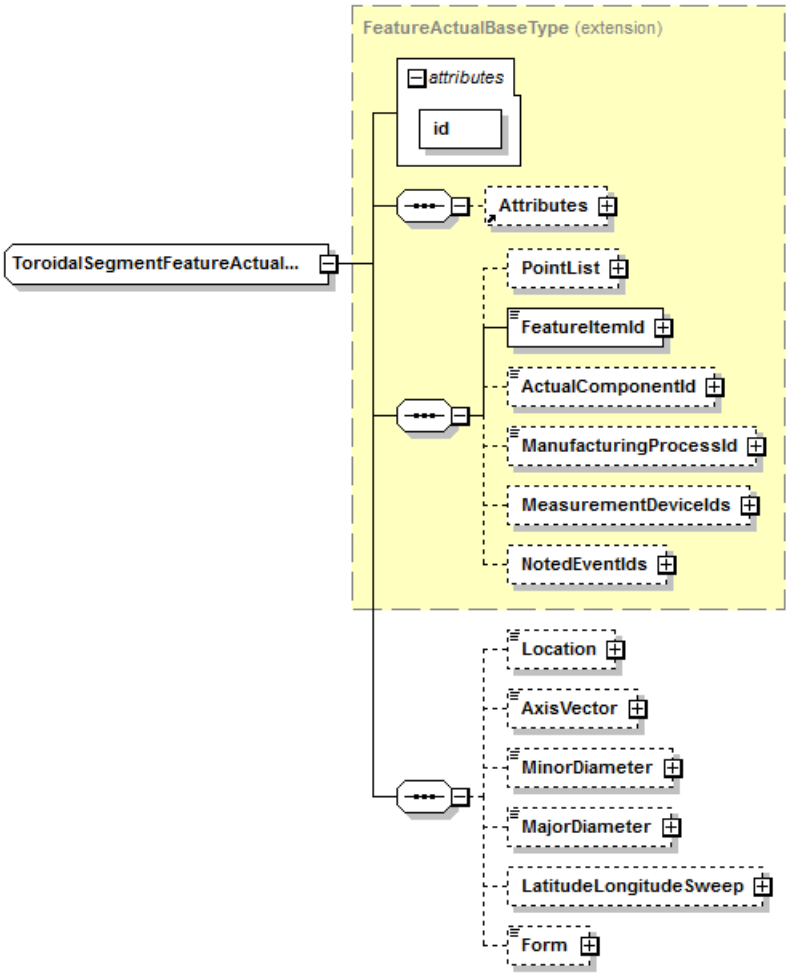
complexType **ToroidalSegmentCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseToroidalSegment**
used by	element **ToroidalSegmentConstructionMethodType/Copy**
annotation	documentation The ToroidalSegmentCopyType defines a copied toroidal segment construction.

element **ToroidalSegmentCopyType/BaseToroidalSegment**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseToroidalSegment element identifies the toroidal segment to be copied.

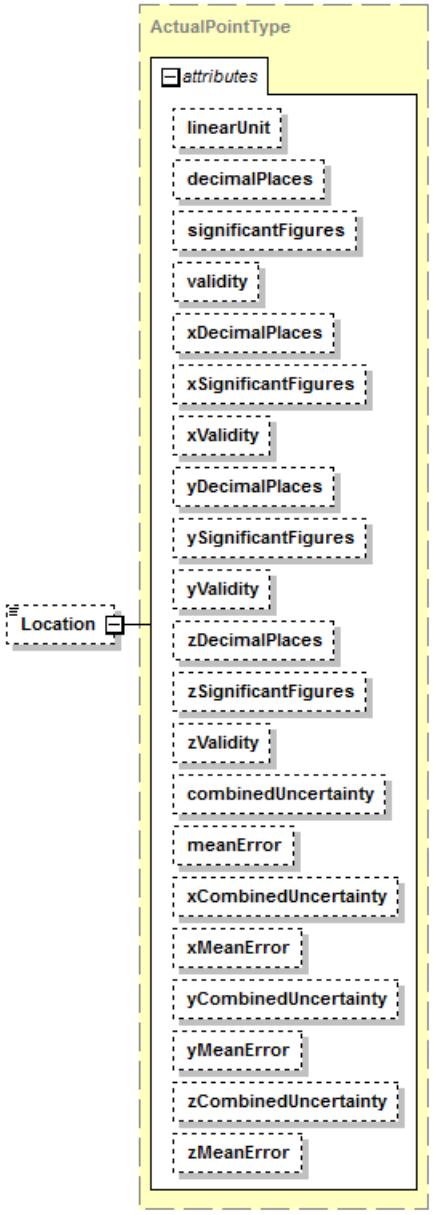
complexType **ToroidalSegmentFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes PointList FeatureItemId ActualComponentId ManufacturingProcessId MeasurementDeviceIds NotedEventIds Location AxisVector MinorDiameter MajorDiameter LatitudeLongitudeSweep Form**

used by	element **ToroidalSegmentFeatureActual**					
attributes	Name id	Type **QIFIdType**	Use required	Default	Fixed	Annotation documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ToroidalSegmentFeatureActualType defines the toroidal segment feature actual information for an individual toroidal segment feature.					

element **ToroidalSegmentFeatureActualType/Location**

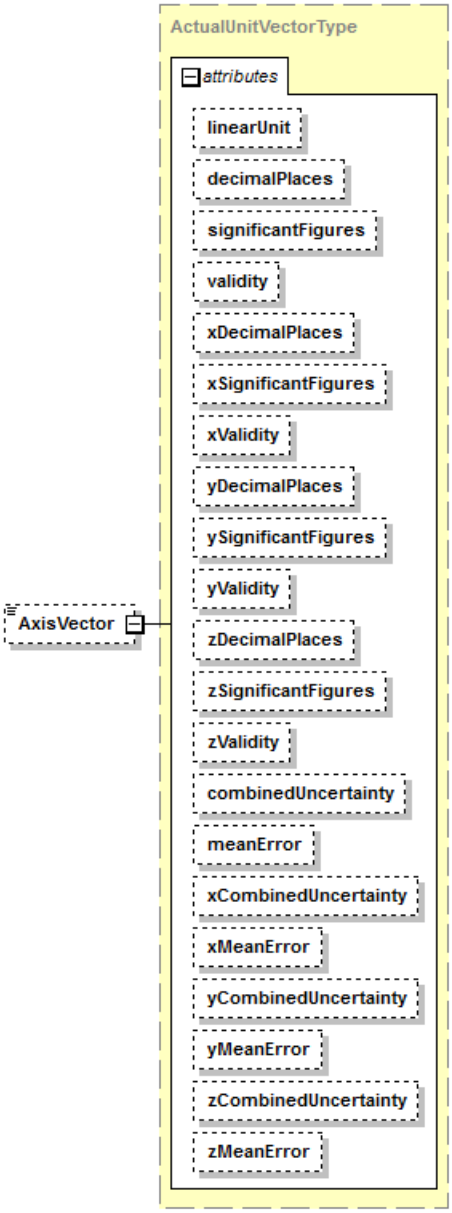
diagram



type	**ActualPointType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3
attributes	Name Type Use Default Fixed Annotation linearUnit **xs:token** decimalPlaces **xs:nonNegativeInteger** significantFigures **xs:nonNegativeInteger** validity **ValidityEnumType** xDecimalPlaces **xs:nonNegativeInteger** xSignificantFigures **xs:nonNegativeInteger** xValidity **ValidityEnumType** yDecimalPlaces **xs:nonNegativeInteger** ySignificantFigures **xs:nonNegativeInteger** yValidity **ValidityEnumType** zDecimalPlaces **xs:nonNegativeInteger** zSignificantFigures **xs:nonNegativeInteger** zValidity **ValidityEnumType** combinedUncertainty **xs:decimal** meanError **xs:decimal** xCombinedUncertainty **xs:decimal** xMeanError **xs:decimal** yCombinedUncertainty **xs:decimal** yMeanError **xs:decimal** zCombinedUncertainty **xs:decimal** zMeanError **xs:decimal**
annotation	documentation The optional Location element is the actual center of the toroidal segment.

element **ToroidalSegmentFeatureActualType/AxisVector**

diagram



type	**ActualUnitVectorType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3

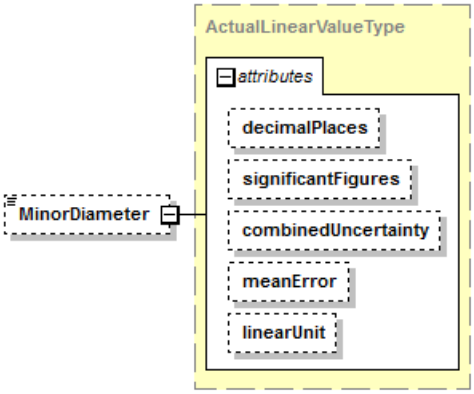
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional AxisVector element is the actual unit axis vector of the toroidal segment.	

element **ToroidalSegmentFeatureActualType/MinorDiameter**

diagram



type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

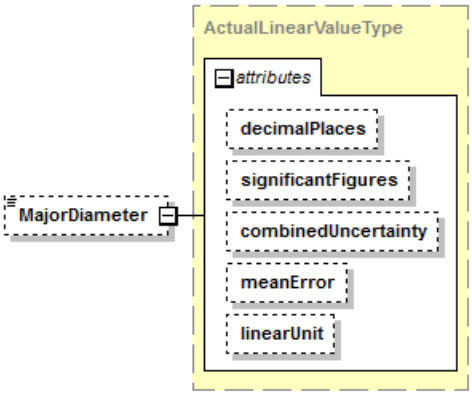
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is

	linearUnit	**xs:token**	a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional MinorDiameter element is the actual minor diameter of the toroidal segment based on the substitute feature data fitting algorithm setting.		

element **ToroidalSegmentFeatureActualType/MajorDiameter**

diagram



type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex

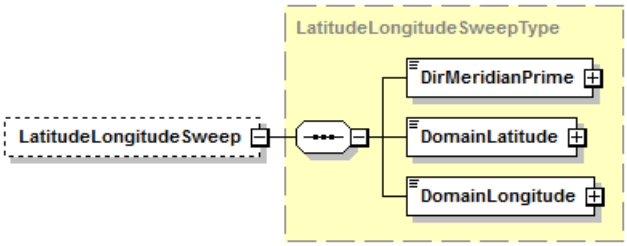
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

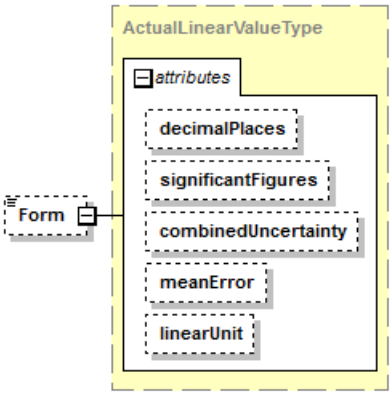
annotation

documentation
The optional MajorDiameter element is the actual major diameter of the toroidal segment based on the substitute feature data fitting algorithm setting.

element **ToroidalSegmentFeatureActualType/LatitudeLongitudeSweep**

diagram	
type	**LatitudeLongitudeSweepType**
properties	minOcc 0 maxOcc 1 content complex
children	**DirMeridianPrime DomainLatitude DomainLongitude**
annotation	documentation The optional LatitudeLongitudeSweep element gives the extent of an actual toroidal segment feature with angular sweep in two directions analogous to terrestrial latitude and longitude.

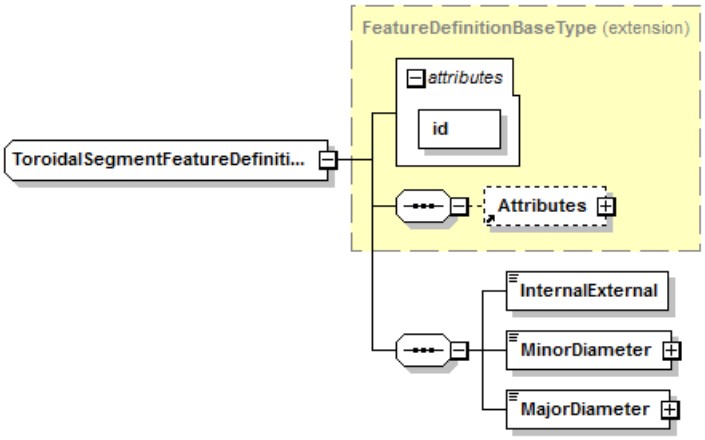
element **ToroidalSegmentFeatureActualType/Form**

diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional

	linearUnit **xs:token**	meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Form element is the form error (toroidicity) of the toroidal segment from a report or an analysis.	

complexType **ToroidalSegmentFeatureDefinitionType**

diagram



type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes InternalExternal MinorDiameter MajorDiameter**
used by	element **ToroidalSegmentFeatureDefinition**

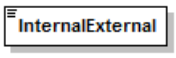
attributes

Name	Type	Use	Default	Fixed	Annotation
id	**QIFIdType**	required			documentation The id attribute is the QIF id of the feature, used for referencing.

annotation	documentation The ToroidalSegmentFeatureDefinitionType defines the toroidal segment feature nominal information that can be common to one or more toroidal segment features.

element **ToroidalSegmentFeatureDefinitionType/InternalExternal**

diagram



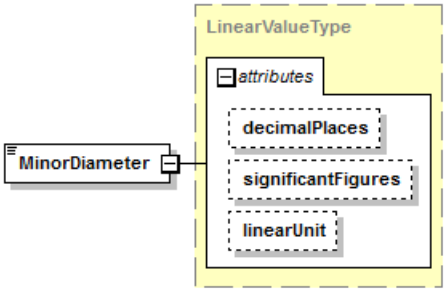
type	**InternalExternalEnumType**
properties	content simple

facets

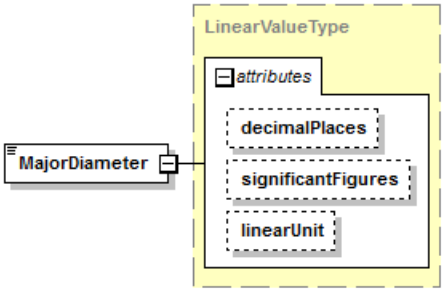
Kind	Value	Annotation
enumeration	INTERNAL	
enumeration	EXTERNAL	

	enumeration NOT_APPLICABLE
annotation	documentation The InternalExternal element indicates whether the feature is internal or external.

element **ToroidalSegmentFeatureDefinitionType/MinorDiameter**

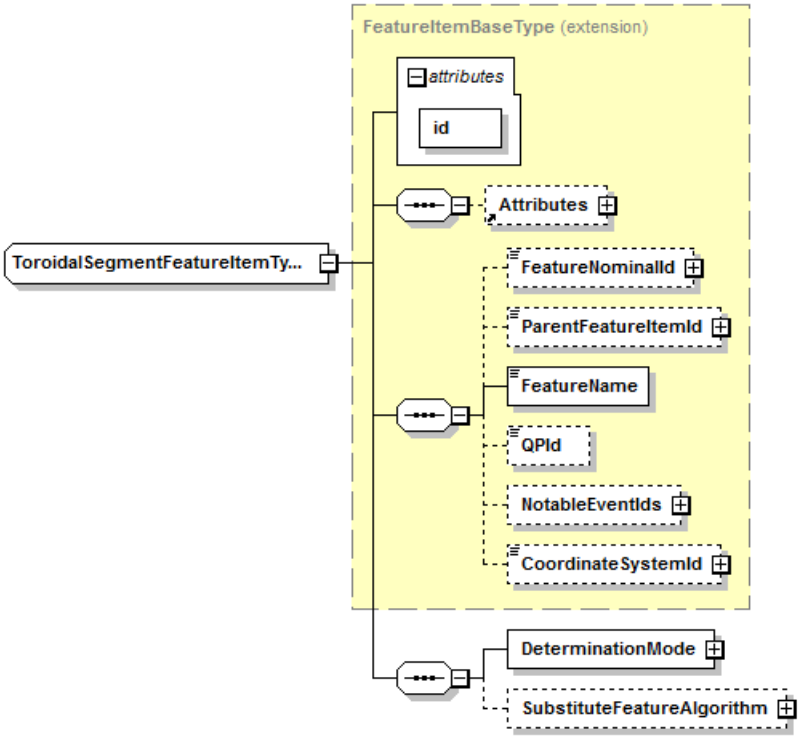
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The MinorDiameter element is the nominal minor diameter of the toroidal segment.

element **ToroidalSegmentFeatureDefinitionType/MajorDiameter**

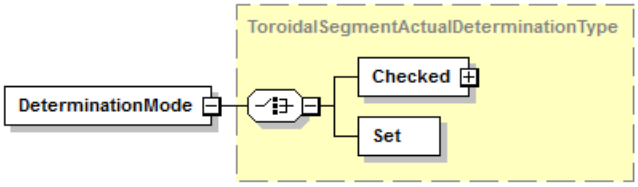
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation

	The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The MajorDiameter element is the nominal major diameter of the toroidal segment.

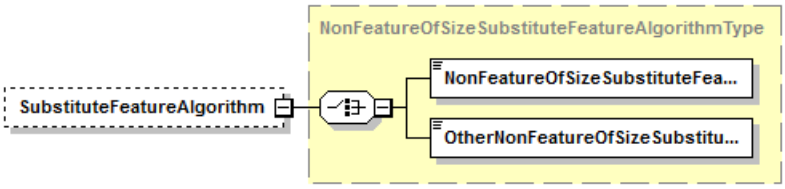
complexType **ToroidalSegmentFeatureItemType**

diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **ToroidalSegmentFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ToroidalSegmentFeatureItemType defines an individual toroidal segment feature. A toroidal segment feature is a partial torus such as the fillet surface between a cylinder and a plane.

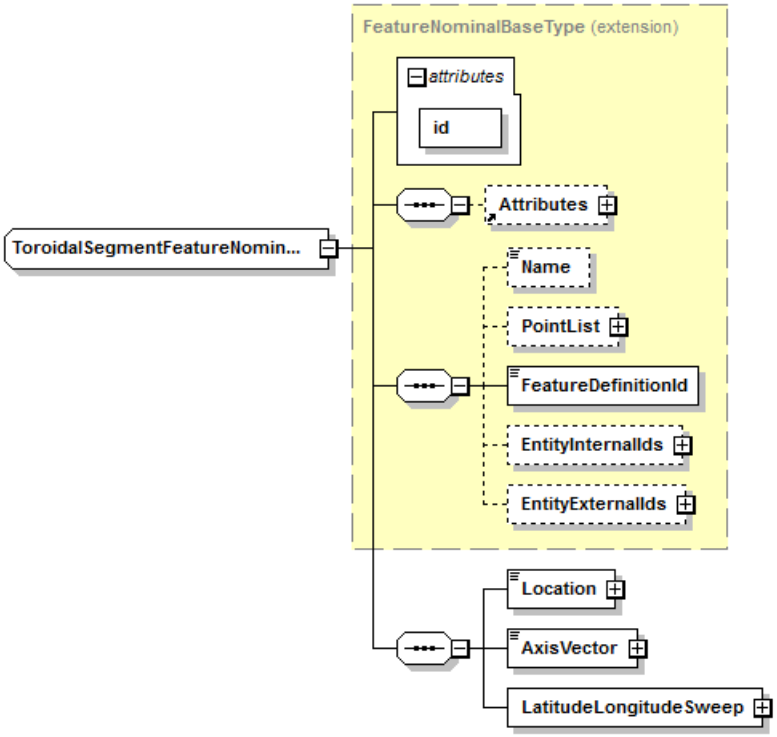
element **ToroidalSegmentFeatureItemType/DeterminationMode**

diagram	
type	**ToroidalSegmentActualDeterminationType**
properties	content complex
children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the toroidal segment feature actual is determined.

element **ToroidalSegmentFeatureItemType/SubstituteFeatureAlgorithm**

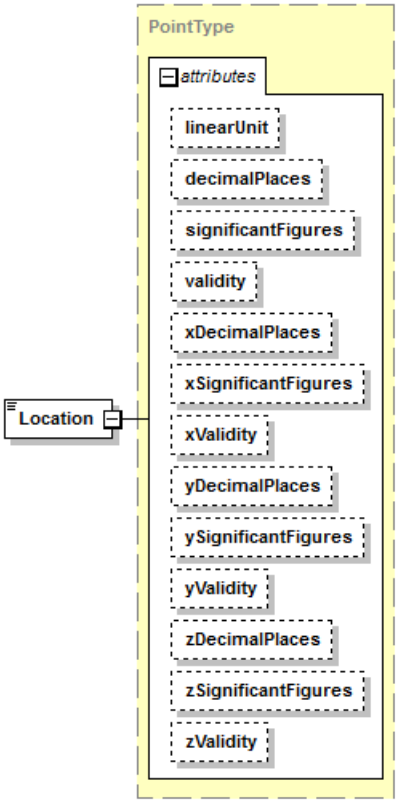
diagram	
type	**NonFeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**NonFeatureOfSizeSubstituteFeatureAlgorithmEnum OtherNonFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the toroidal segment feature.

complexType **ToroidalSegmentFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **Location** **AxisVector** **LatitudeLongitudeSweep**
used by	element **ToroidalSegmentFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The ToroidalSegmentFeatureNominalType defines the toroidal segment feature nominal information for an individual toroidal segment feature.

element **ToroidalSegmentFeatureNominalType/Location**

diagram



type **PointType**

properties content complex

facets

Kind	Value	Annotation
length	3	

attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

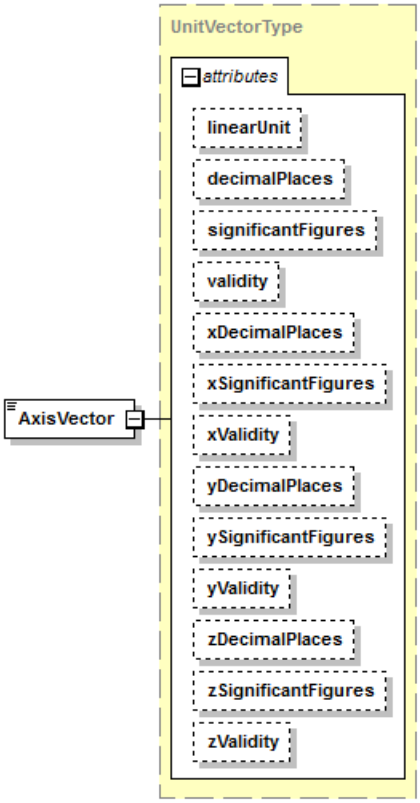
annotation

documentation

The Location element is the nominal center of the toroidal segment.

element **ToroidalSegmentFeatureNominalType/AxisVector**

diagram



type **UnitVectorType**

properties content complex

facets

Kind	Value	Annotation
length	3	

attributes

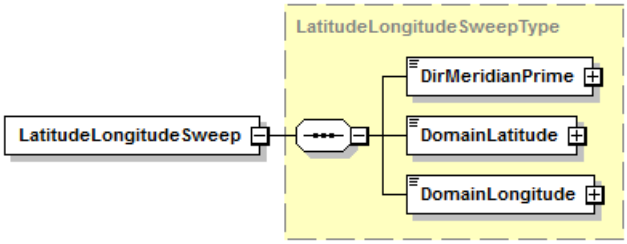
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

annotation

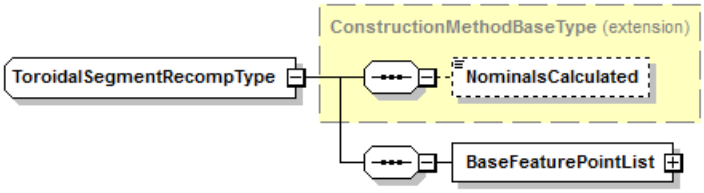
documentation

The AxisVector element is the nominal unit axis vector of the toroidal segment.

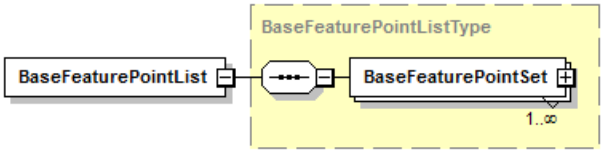
element **ToroidalSegmentFeatureNominalType/LatitudeLongitudeSweep**

diagram	
type	**LatitudeLongitudeSweepType**
properties	content complex
children	**DirMeridianPrime DomainLatitude DomainLongitude**
annotation	documentation The LatitudeLongitudeSweep element is the extent of the toroidal segment feature with angular sweep in two directions analogous to terrestrial latitude and longitude.

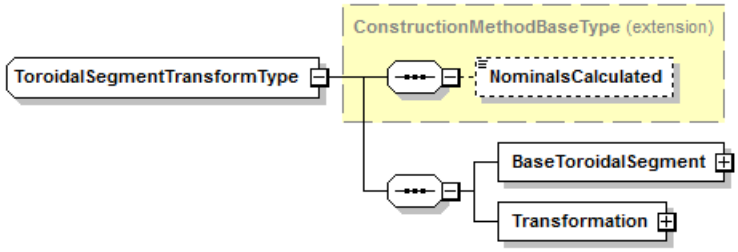
complexType **ToroidalSegmentRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **ToroidalSegmentConstructionMethodType/Recompensated**
annotation	documentation The ToroidalSegmentRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit toroidal segment through the measurement points of base features.

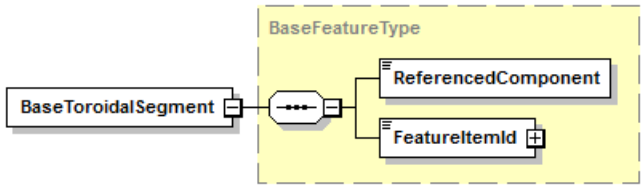
element **ToroidalSegmentRecompType/BaseFeaturePointList**

diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit toroidal segment. The total number of points in the BaseFeaturePointSets in the list must be 9 or greater.

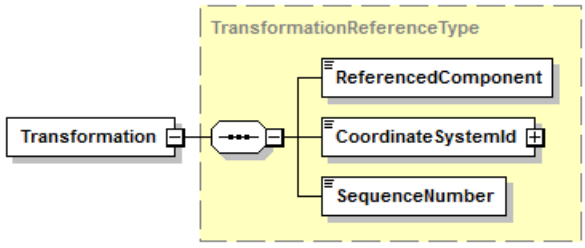
complexType **ToroidalSegmentTransformType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseToroidalSegment** **Transformation**
used by	element **ToroidalSegmentConstructionMethodType/Transform**
annotation	documentation The ToroidalSegmentTransformType defines a toroidal segment construction by the transformation of a toroidal segment through the specified nominal or actual coordinate system.

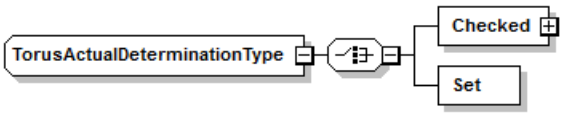
element **ToroidalSegmentTransformType/BaseToroidalSegment**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseToroidalSegment element identifies the toroidal segment to be transformed.

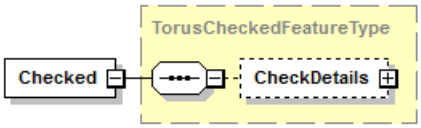
element **ToroidalSegmentTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the toroidal segment.

complexType **TorusActualDeterminationType**

diagram	
children	**Checked** **Set**
used by	element **TorusFeatureItemType/DeterminationMode**
annotation	documentation The TorusActualDeterminationType defines how the torus actual is determined, either by being set or by being checked (measured or constructed).

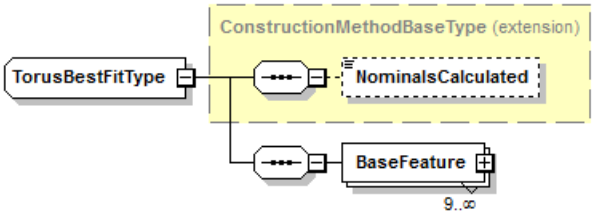
element **TorusActualDeterminationType/Checked**

diagram	
type	**TorusCheckedFeatureType**
properties	content complex
children	**CheckDetails**
annotation	documentation The Checked element signifies that the torus is checked from actual data, either measured or constructed.

element **TorusActualDeterminationType/Set**

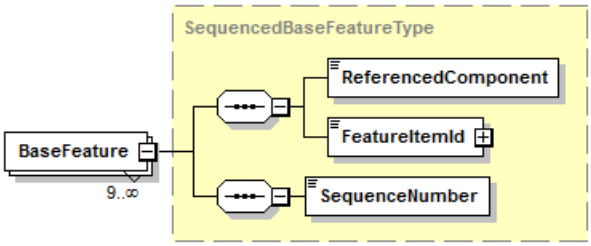
diagram	
type	**SetFeatureType**
properties	content complex
annotation	documentation The Set element signifies that the torus actual is set to its nominal value.

complexType **TorusBestFitType**

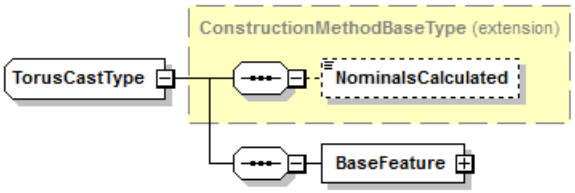
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeature**
used by	element **TorusConstructionMethodType/BestFit**
annotation	documentation The TorusBestFitType defines the information for a best-fit torus which includes a list of point-reducible base features; the

	points to which those features reduce are used in the best-fit construction of the torus.

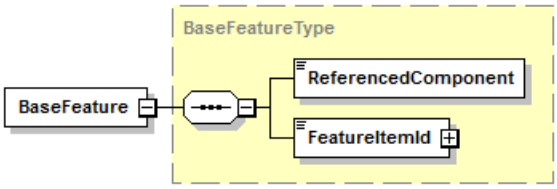
element **TorusBestFitType/BaseFeature**

diagram	
type	**SequencedBaseFeatureType**
properties	minOcc 9 maxOcc unbounded content complex
children	**ReferencedComponent FeatureItemId SequenceNumber**
annotation	documentation Each BaseFeature element identifies a base feature to be used for the construction of a torus. The number of base features must be 9 or greater.

complexType **TorusCastType**

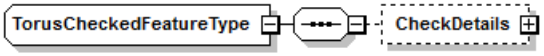
diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated BaseFeature**
used by	element **TorusConstructionMethodType/Cast**
annotation	documentation The TorusCastType defines the cast of another feature type to a torus. The location and size are copied from the base feature.

element **TorusCastType/BaseFeature**

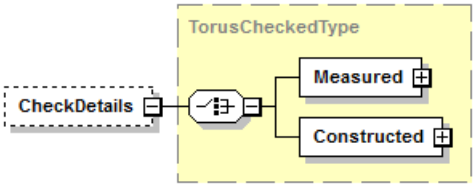
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**

annotation	documentation The BaseFeature element identifies the base feature to be cast to a torus.

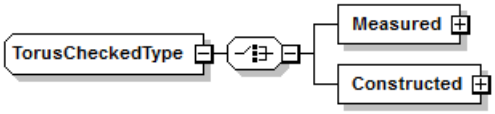
complexType **TorusCheckedFeatureType**

diagram	
children	**CheckDetails**
used by	element **TorusActualDeterminationType/Checked**
annotation	documentation The TorusCheckedFeatureType defines that a torus feature is checked.

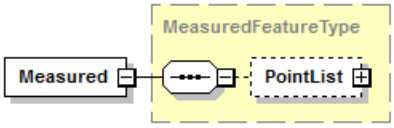
element **TorusCheckedFeatureType/CheckDetails**

diagram	
type	**TorusCheckedType**
properties	minOcc 0 maxOcc 1 content complex
children	**Measured** **Constructed**
annotation	documentation The optional CheckDetails element gives details about the torus check (measurement or construction).

complexType **TorusCheckedType**

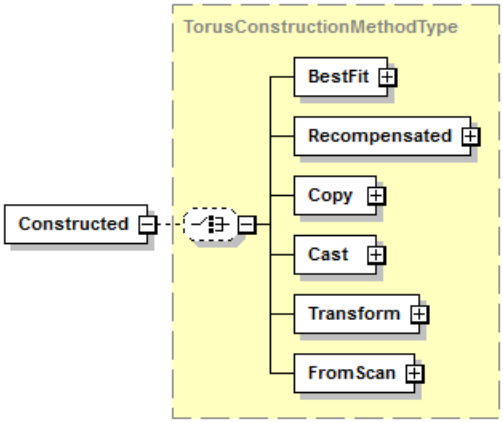
diagram	
children	**Measured** **Constructed**
used by	element **TorusCheckedFeatureType/CheckDetails**
annotation	documentation The TorusCheckedType defines how the torus actual is checked, either by measurement or by construction.

element **TorusCheckedType/Measured**

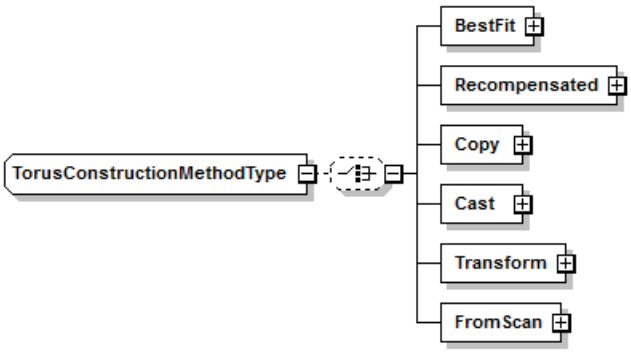
diagram	
type	**MeasuredFeatureType**
properties	content complex
children	**PointList**

annotation	documentation The Measured element signifies that the torus is measured.

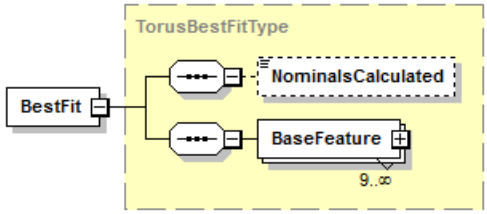
element **TorusCheckedType/Constructed**

diagram	
type	**TorusConstructionMethodType**
properties	content complex
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform** **FromScan**
annotation	documentation The Constructed element signifies that the torus is constructed.

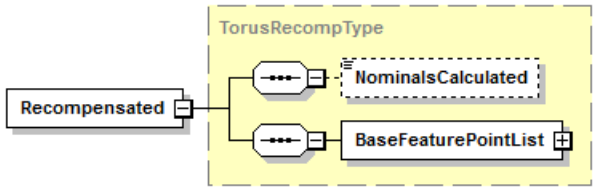
complexType **TorusConstructionMethodType**

diagram	
children	**BestFit** **Recompensated** **Copy** **Cast** **Transform** **FromScan**
used by	element **TorusCheckedType/Constructed**
annotation	documentation The TorusConstructionMethodType defines the method for constructing a unique nominal or actual torus feature.

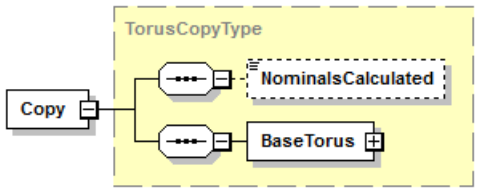
element **TorusConstructionMethodType/BestFit**

diagram	
type	**TorusBestFitType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The BestFit element describes the best-fit construction of a torus from 3 or more point-reducible base features. This element is in an optional choice.

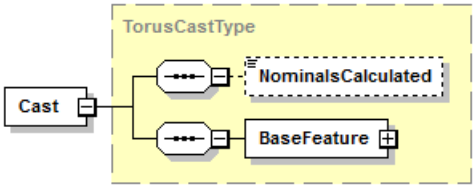
element **TorusConstructionMethodType/Recompensated**

diagram	
type	**TorusRecompType**
properties	content complex
children	**NominalsCalculated** **BaseFeaturePointList**
annotation	documentation The Recompensated element describes the re-compensated-for- probe-size best-fit construction of a torus from 9 or more base feature points. This element is in an optional choice.

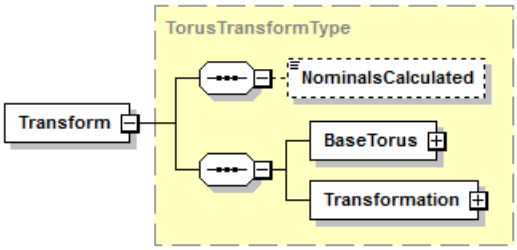
element **TorusConstructionMethodType/Copy**

diagram	
type	**TorusCopyType**
properties	content complex
children	**NominalsCalculated** **BaseTorus**
annotation	documentation The Copy element describes the construction of a torus by the copying of a base torus. This element is in an optional choice.

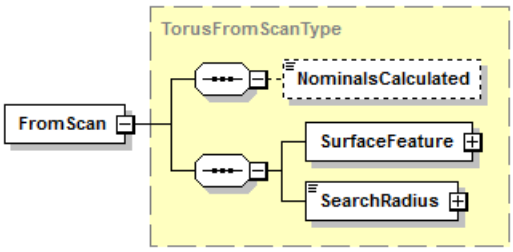
element **TorusConstructionMethodType/Cast**

diagram	
type	**TorusCastType**
properties	content complex
children	**NominalsCalculated** **BaseFeature**
annotation	documentation The Cast element describes the construction of a torus by the casting of a base feature. This element is in an optional choice.

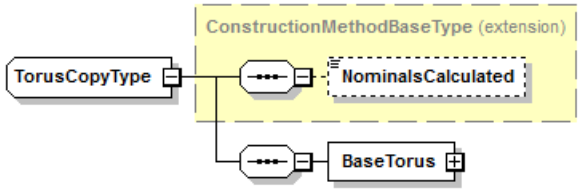
element **TorusConstructionMethodType/Transform**

diagram	
type	**TorusTransformType**
properties	content complex
children	**NominalsCalculated** **BaseTorus** **Transformation**
annotation	documentation The Transform element describes the construction of a torus by the transformation of a base torus. This element is in an optional choice.

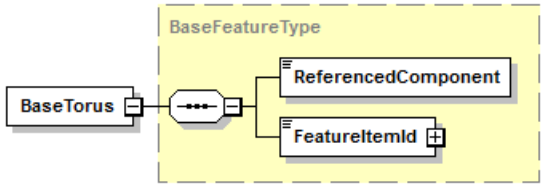
element **TorusConstructionMethodType/FromScan**

diagram	
type	**TorusFromScanType**
properties	content complex
children	**NominalsCalculated** **SurfaceFeature** **SearchRadius**
annotation	documentation The FromScan element describes the construction of a torus from scan data. This element is in an optional choice.

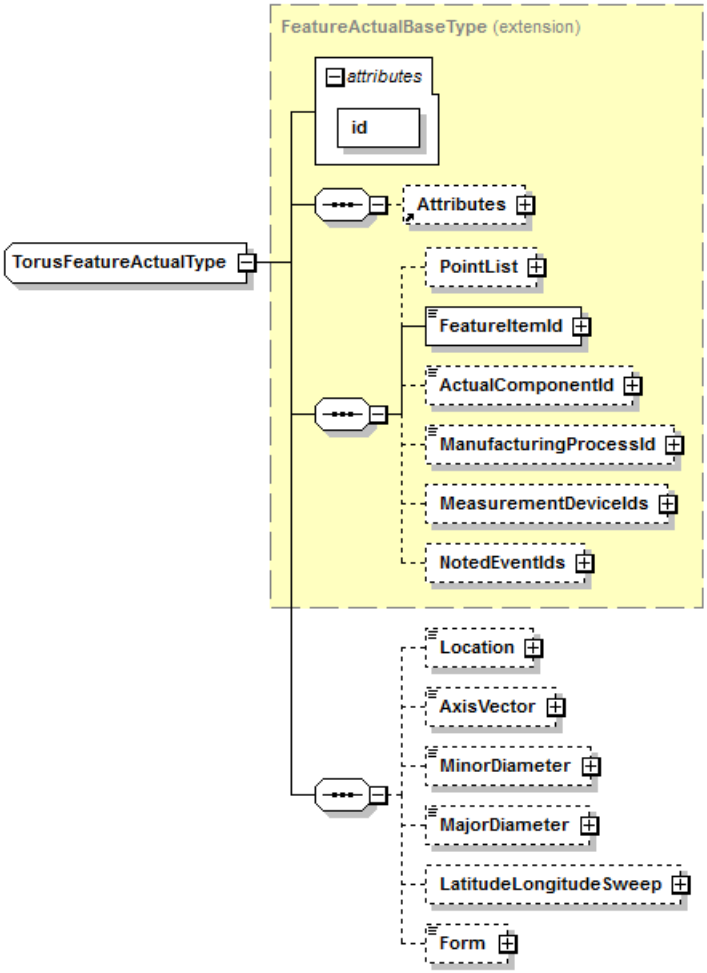
complexType **TorusCopyType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseTorus**
used by	element **TorusConstructionMethodType/Copy**
annotation	documentation The TorusCopyType defines a copied torus construction.

element **TorusCopyType/BaseTorus**

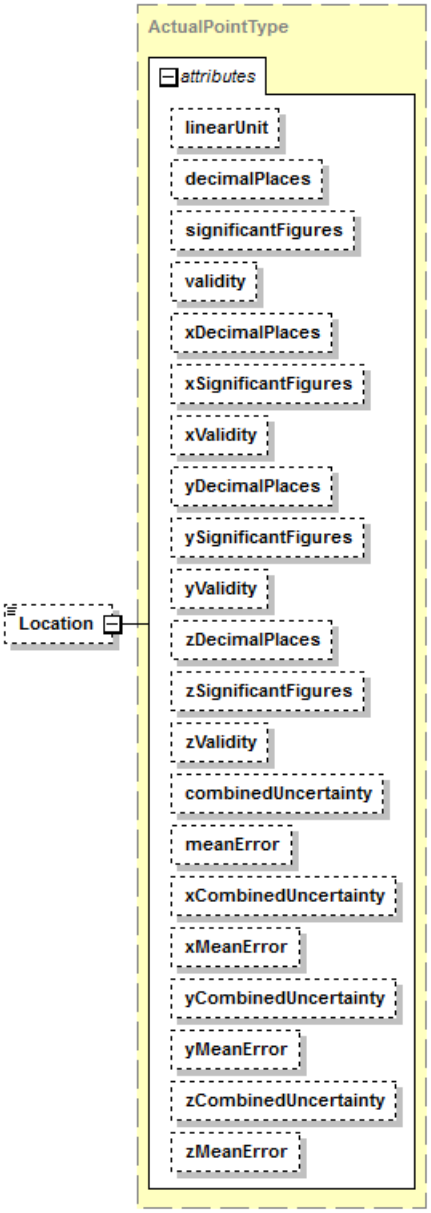
diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseTorus element identifies the torus to be copied.

complexType **TorusFeatureActualType**

diagram	
type	extension of **FeatureActualBaseType**
properties	base FeatureActualBaseType
children	**Attributes** **PointList** **FeatureItemId** **ActualComponentId** **ManufacturingProcessId** **MeasurementDeviceIds** **NotedEventIds** **Location** **AxisVector** **MinorDiameter** **MajorDiameter** **LatitudeLongitudeSweep** **Form**
used by	element **TorusFeatureActual**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default: ; Fixed: ; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The TorusFeatureActualType defines the torus feature actual information for an individual torus feature.

element **TorusFeatureActualType/Location**

diagram

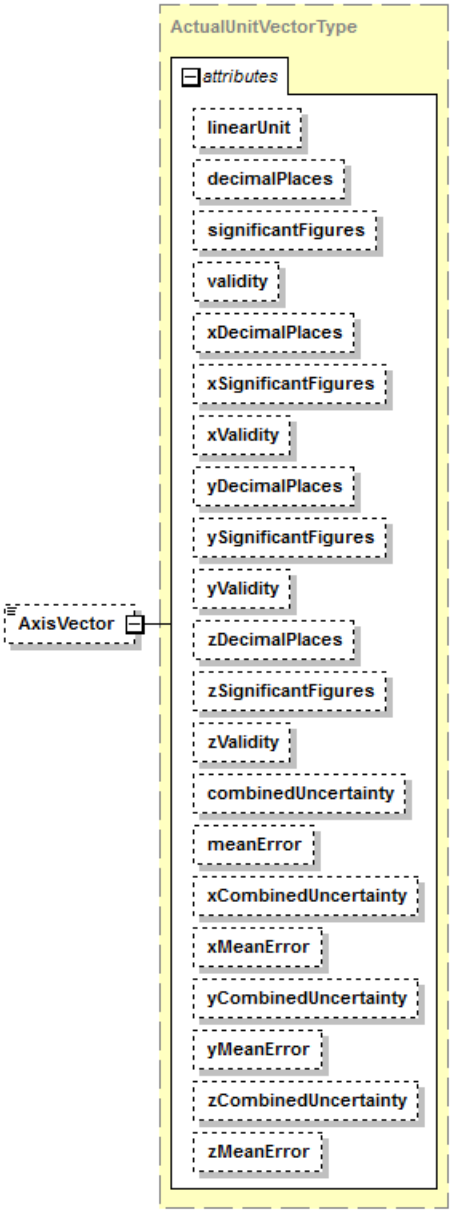


type	**ActualPointType**
properties	minOcc 0 maxOcc 1 content complex
facets	Kind Value Annotation length 3
attributes	Name Type Use Default Fixed Annotation linearUnit **xs:token** decimalPlaces **xs:nonNegativeInteger** significantFigures **xs:nonNegativeInteger** validity **ValidityEnumType** xDecimalPlaces **xs:nonNegativeInteger** xSignificantFigures **xs:nonNegativeInteger**

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional Location element is the actual center of the torus.	

element **TorusFeatureActualType/AxisVector**

diagram



type	**ActualUnitVectorType**
properties	minOcc 0 maxOcc 1 content complex

facets

Kind	Value	Annotation
length	3	

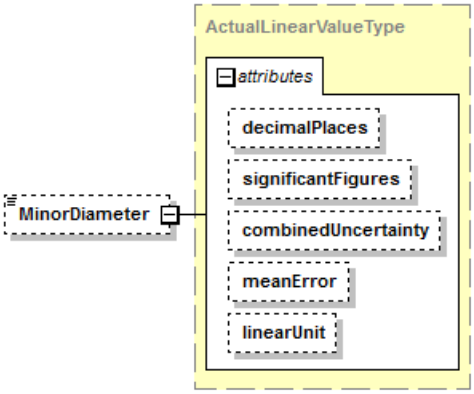
attributes

Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				

	xValidity	**ValidityEnumType**
	yDecimalPlaces	**xs:nonNegativeInteger**
	ySignificantFigures	**xs:nonNegativeInteger**
	yValidity	**ValidityEnumType**
	zDecimalPlaces	**xs:nonNegativeInteger**
	zSignificantFigures	**xs:nonNegativeInteger**
	zValidity	**ValidityEnumType**
	combinedUncertainty	**xs:decimal**
	meanError	**xs:decimal**
	xCombinedUncertainty	**xs:decimal**
	xMeanError	**xs:decimal**
	yCombinedUncertainty	**xs:decimal**
	yMeanError	**xs:decimal**
	zCombinedUncertainty	**xs:decimal**
	zMeanError	**xs:decimal**
annotation	documentation The optional AxisVector element is the actual unit axis vector of the torus.	

element **TorusFeatureActualType/MinorDiameter**

diagram



type **ActualLinearValueType**

properties

minOcc	0
maxOcc	1
content	complex

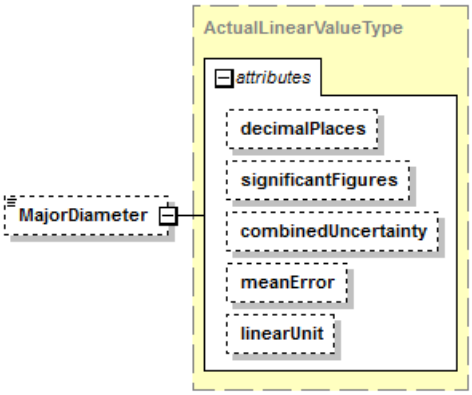
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is

	linearUnit	**xs:token**	a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional MinorDiameter element is the actual minor diameter of the torus based on the substitute feature data fitting algorithm setting.		

element **TorusFeatureActualType/MajorDiameter**

diagram



type **ActualLinearValueType**

properties

minOcc	0
maxOcc	1
content	complex

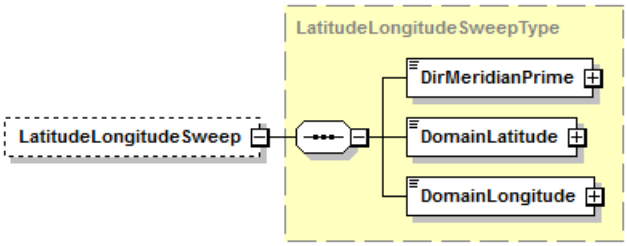
attributes

Name	Type	Use	Default	Fixed	Annotation
decimalPlaces	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
significantFigures	**xs:nonNegativeInteger**				documentation See documentation of SpecifiedDecimalType.
combinedUncertainty	**NonNegativeDecimalType**				documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType.
meanError	**NonNegativeDecimalType**				documentation The optional meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType.
linearUnit	**xs:token**				documentation The optional linearUnit attribute defines the unit used by LinearValueType.

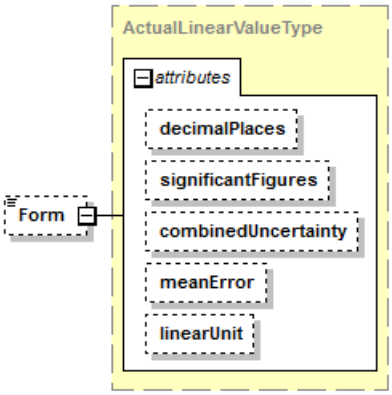
annotation

documentation
The optional MajorDiameter element is the actual major diameter of the torus based on the substitute feature data fitting algorithm setting.

element **TorusFeatureActualType/LatitudeLongitudeSweep**

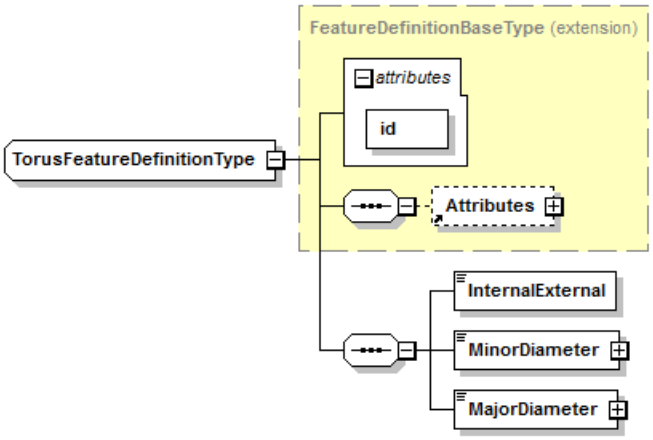
diagram	
type	**LatitudeLongitudeSweepType**
properties	minOcc 0 maxOcc 1 content complex
children	**DirMeridianPrime DomainLatitude DomainLongitude**
annotation	documentation The optional LatitudeLongitudeSweep element gives the extent of an actual partial torus with angular sweep in two directions analogous to terrestrial latitude and longitude.

element **TorusFeatureActualType/Form**

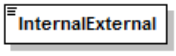
diagram	
type	**ActualLinearValueType**
properties	minOcc 0 maxOcc 1 content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. combinedUncertainty **NonNegativeDecimalType** documentation The optional combinedUncertainty attribute is a value expressing the combined uncertainty assigned to the SpecifiedDecimalType. meanError **NonNegativeDecimalType** documentation The optional

	linearUnit **xs:token**	meanError attribute is a value expressing the mean error assigned to the SpecifiedDecimalType. documentation The optional linearUnit attribute defines the unit used by LinearValueType.
annotation	documentation The optional Form element is the form error (toroidicity) of the torus from a report or an analysis.	

complexType **TorusFeatureDefinitionType**

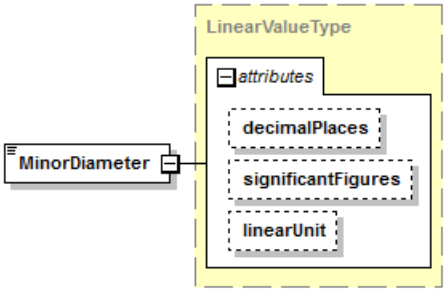
diagram	
type	extension of **FeatureDefinitionBaseType**
properties	base FeatureDefinitionBaseType
children	**Attributes** **InternalExternal** **MinorDiameter** **MajorDiameter**
used by	element **TorusFeatureDefinition**
attributes	Name: id Type: **QIFIdType** Use: required Default: Fixed: Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The TorusFeatureDefinitionType defines the torus feature nominal information that can be common to one or more torus features.

element **TorusFeatureDefinitionType/InternalExternal**

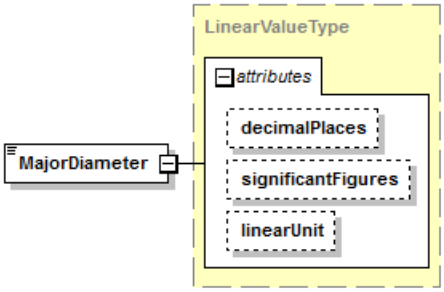
diagram			
type	**InternalExternalEnumType**		
properties	content simple		
facets	Kind enumeration enumeration	Value INTERNAL EXTERNAL	Annotation

	enumeration NOT_APPLICABLE
annotation	documentation The InternalExternal element indicates whether the feature is internal or external.

element **TorusFeatureDefinitionType/MinorDiameter**

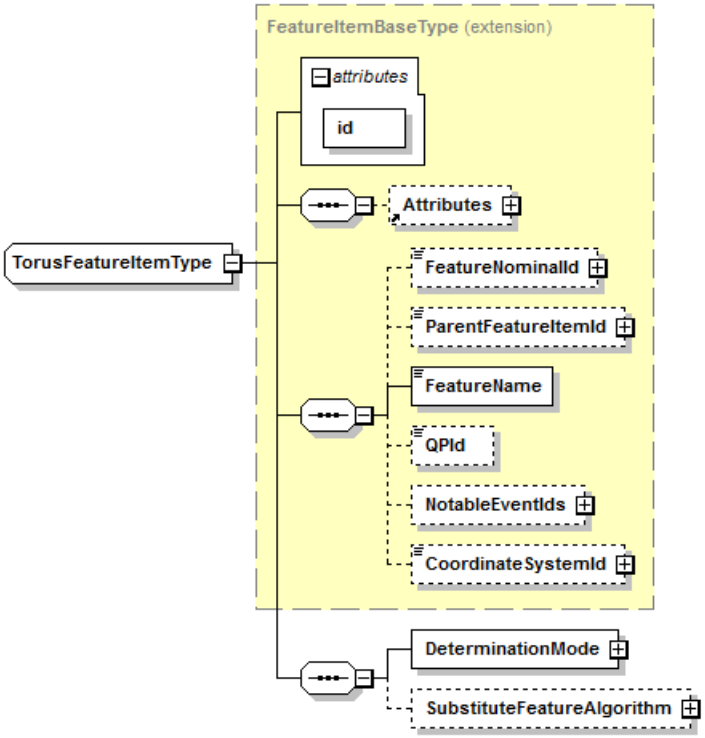
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. significantFigures / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. linearUnit / **xs:token** / / / / documentation: The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The MinorDiameter element is the nominal minor diameter of the torus.

element **TorusFeatureDefinitionType/MajorDiameter**

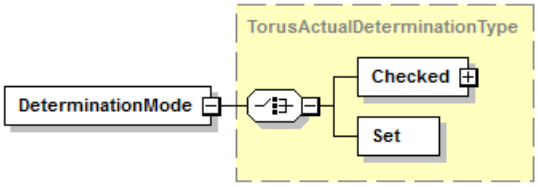
diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. significantFigures / **xs:nonNegativeInteger** / / / / documentation: See documentation of SpecifiedDecimalType. linearUnit / **xs:token** / / / / documentation

	The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The MajorDiameter element is the nominal major diameter of the torus.

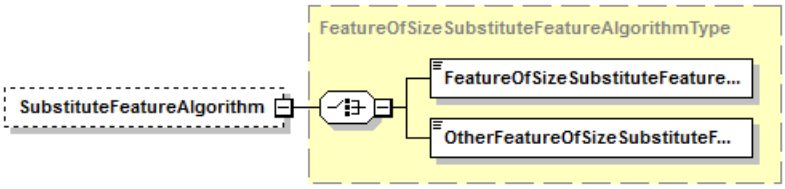
complexType **TorusFeatureItemType**

diagram	
type	extension of **FeatureItemBaseType**
properties	base FeatureItemBaseType
children	**Attributes** **FeatureNominalId** **ParentFeatureItemId** **FeatureName** **QPId** **NotableEventIds** **CoordinateSystemId** **DeterminationMode** **SubstituteFeatureAlgorithm**
used by	element **TorusFeatureItem**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The TorusFeatureItemType defines an individual torus feature.

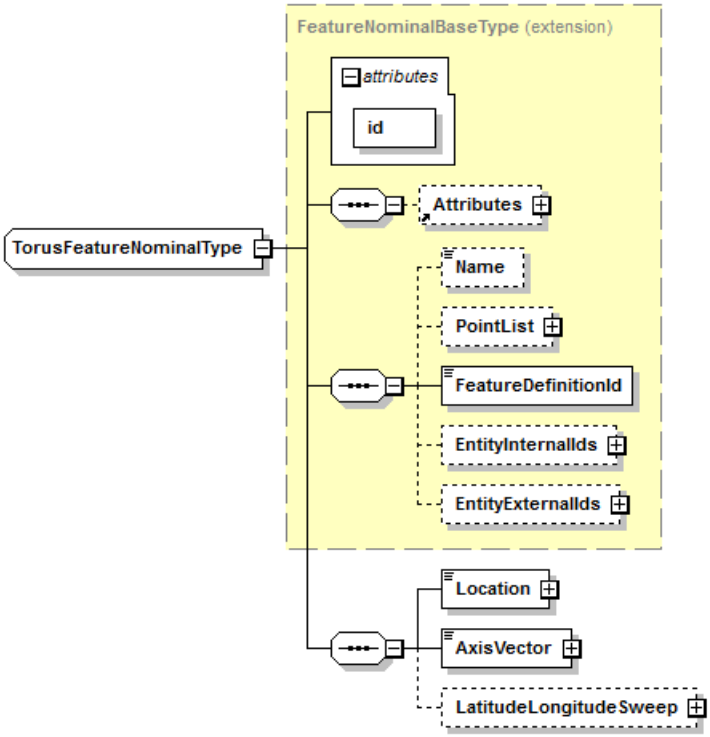
element **TorusFeatureItemType/DeterminationMode**

diagram	
type	**TorusActualDeterminationType**
properties	content complex
children	**Checked** **Set**
annotation	documentation The DeterminationMode element is the means by which the torus feature actual is determined.

element **TorusFeatureItemType/SubstituteFeatureAlgorithm**

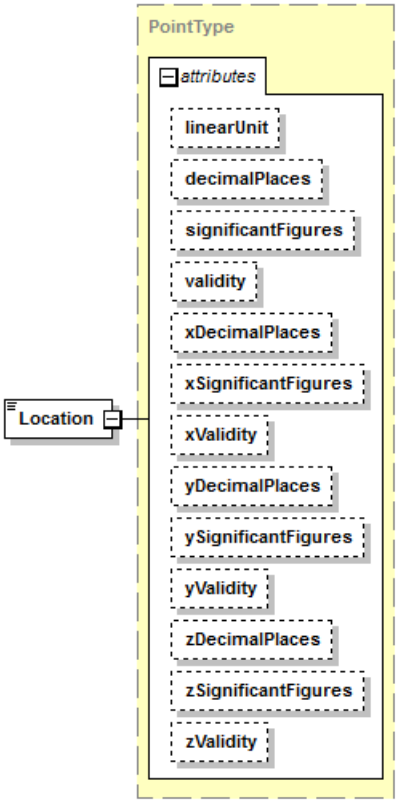
diagram	
type	**FeatureOfSizeSubstituteFeatureAlgorithmType**
properties	minOcc 0 maxOcc 1 content complex
children	**FeatureOfSizeSubstituteFeatureAlgorithmEnum OtherFeatureOfSizeSubstituteFeatureAlgorithm**
annotation	documentation The optional SubstituteFeatureAlgorithm element is the substitute feature data fitting algorithm for the torus feature.

complexType **TorusFeatureNominalType**

diagram	
type	extension of **FeatureNominalBaseType**
properties	base FeatureNominalBaseType
children	**Attributes** **Name** **PointList** **FeatureDefinitionId** **EntityInternalIds** **EntityExternalIds** **Location** **AxisVector** **LatitudeLongitudeSweep**
used by	element **TorusFeatureNominal**
attributes	Name: id; Type: **QIFIdType**; Use: required; Default; Fixed; Annotation: documentation: The id attribute is the QIF id of the feature, used for referencing.
annotation	documentation The TorusFeatureNominalType defines the torus feature nominal information for an individual torus feature.

element **TorusFeatureNominalType/Location**

diagram



type **PointType**

properties content complex

facets

Kind	Value	Annotation
length	3	

attributes

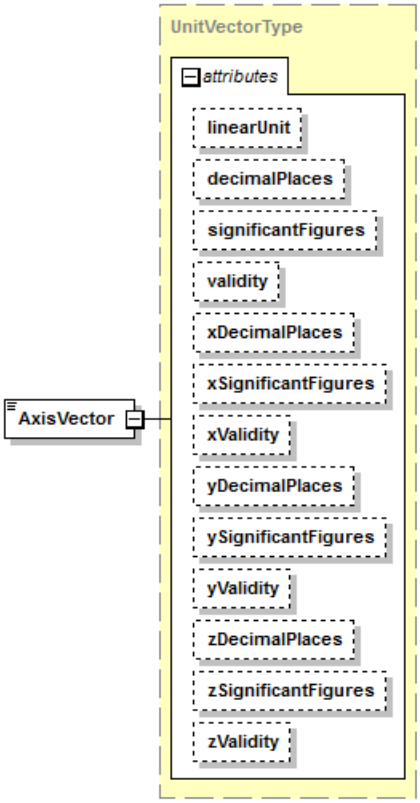
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

annotation

documentation
The Location element is the nominal center of the torus.

element **TorusFeatureNominalType/AxisVector**

diagram



type **UnitVectorType**

properties content complex

facets

Kind	Value	Annotation
length	3	

attributes

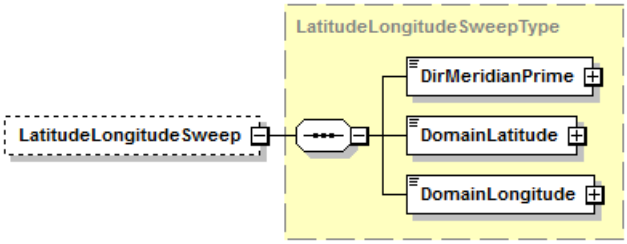
Name	Type	Use	Default	Fixed	Annotation
linearUnit	**xs:token**				
decimalPlaces	**xs:nonNegativeInteger**				
significantFigures	**xs:nonNegativeInteger**				
validity	**ValidityEnumType**				
xDecimalPlaces	**xs:nonNegativeInteger**				
xSignificantFigures	**xs:nonNegativeInteger**				
xValidity	**ValidityEnumType**				
yDecimalPlaces	**xs:nonNegativeInteger**				
ySignificantFigures	**xs:nonNegativeInteger**				
yValidity	**ValidityEnumType**				
zDecimalPlaces	**xs:nonNegativeInteger**				
zSignificantFigures	**xs:nonNegativeInteger**				
zValidity	**ValidityEnumType**				

annotation

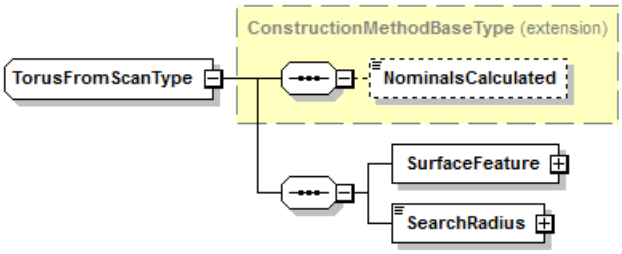
documentation

The AxisVector element is the nominal unit axis vector of the torus.

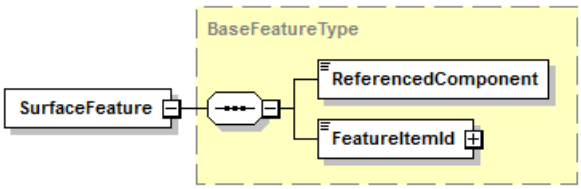
element **TorusFeatureNominalType/LatitudeLongitudeSweep**

diagram	
type	**LatitudeLongitudeSweepType**
properties	minOcc 0 maxOcc 1 content complex
children	**DirMeridianPrime DomainLatitude DomainLongitude**
annotation	documentation The optional LatitudeLongitudeSweep element gives extent of a partial torus with angular sweep in two directions analogous to terrestrial latitude and longitude.

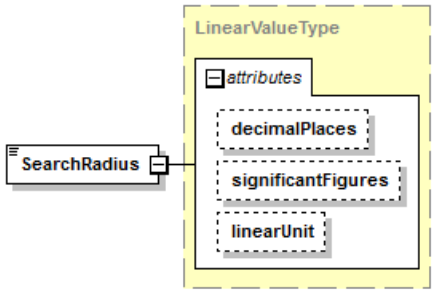
complexType **TorusFromScanType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated SurfaceFeature SearchRadius**
used by	element **TorusConstructionMethodType/FromScan**
annotation	documentation The TorusFromScanType defines a torus feature construction by the retrieval of a torus feature from a scanned surface feature (point cloud).

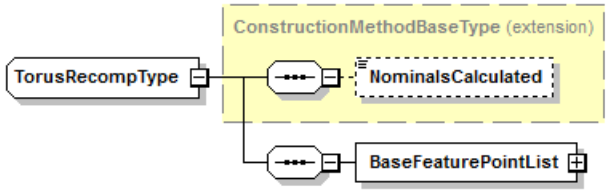
element **TorusFromScanType/SurfaceFeature**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The SurfaceFeature element identifies the scanned surface feature from which the torus is retrieved.

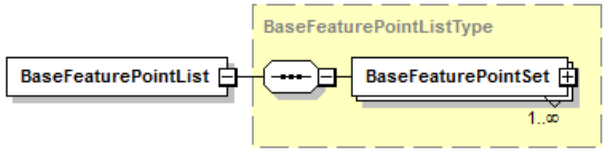
element **TorusFromScanType/SearchRadius**

diagram	
type	**LinearValueType**
properties	content complex
attributes	Name / Type / Use / Default / Fixed / Annotation decimalPlaces **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. significantFigures **xs:nonNegativeInteger** documentation See documentation of SpecifiedDecimalType. linearUnit **xs:token** documentation The optional linearUnit attribute defines the UnitName for the LinearValueType.
annotation	documentation The SearchRadius element is the radius around the nominal feature, wherein the actual feature can be expected. The SearchRadius is the radius added to and subtracted from the nominal torus minor radius defining a toroidal shell. All scanned points within this toroidal shell are used for the retrieval of the feature. The toroidal shell's axis is defined by the torus feature's direction, the toroidal shell's axis passes through the torus feature's center point. The toroidal shell is evenly disposed about the nominal torus.

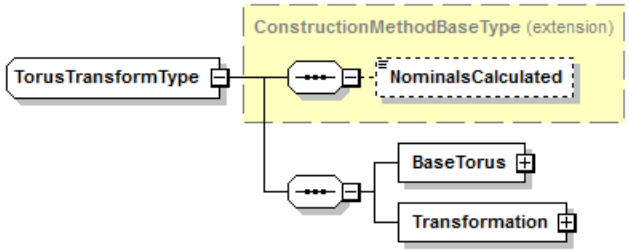
complexType **TorusRecompType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseFeaturePointList**
used by	element **TorusConstructionMethodType/Recompensated**
annotation	documentation The TorusRecompType defines a list of base feature points for construction of a re-compensated-for-probe-size best-fit torus through the measurement points of base features.

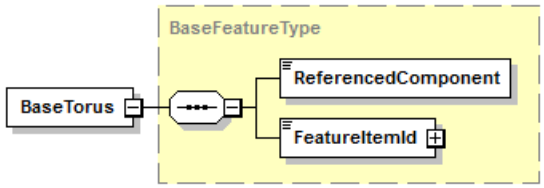
element **TorusRecompType/BaseFeaturePointList**

diagram	
type	**BaseFeaturePointListType**
properties	content complex
children	**BaseFeaturePointSet**
annotation	documentation The BaseFeaturePointList element gives a list of sets of points for construction of a re-compensated-for-probe-size best-fit torus. The total number of points in the BaseFeaturePointSets in the list must be 9 or greater.

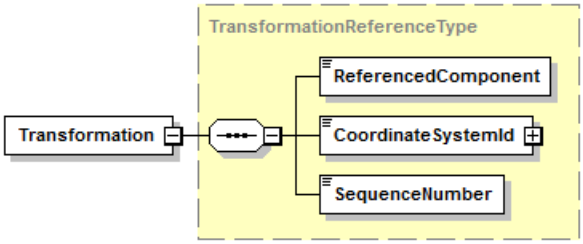
complexType **TorusTransformType**

diagram	
type	extension of **ConstructionMethodBaseType**
properties	base ConstructionMethodBaseType
children	**NominalsCalculated** **BaseTorus** **Transformation**
used by	element **TorusConstructionMethodType/Transform**
annotation	documentation The TorusTransformType defines a torus construction by the transformation of a torus through the specified nominal or actual coordinate system.

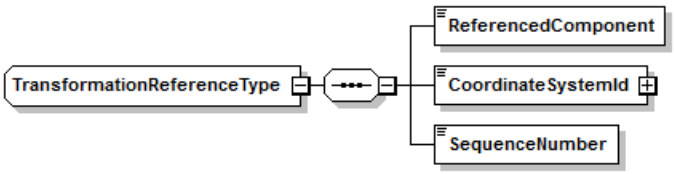
element **TorusTransformType/BaseTorus**

diagram	
type	**BaseFeatureType**
properties	content complex
children	**ReferencedComponent FeatureItemId**
annotation	documentation The BaseTorus element identifies the torus to be transformed.

element **TorusTransformType/Transformation**

diagram	
type	**TransformationReferenceType**
properties	content complex
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
annotation	documentation The Transformation element identifies the coordinate system to be used to transform the torus.

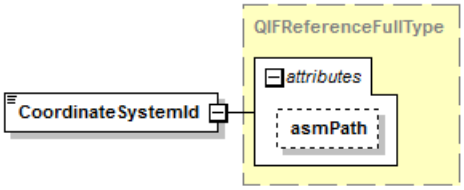
complexType **TransformationReferenceType**

diagram	
children	**ReferencedComponent** **CoordinateSystemId** **SequenceNumber**
used by	elements **ArcTransformType/Transformation** **CircleTransformType/Transformation** **ConeTransformType/Transformation** **ConicalSegmentTransformType/Transformation** **CuboidTransformType/Transformation** **CylinderTransformType/Transformation** **CylindricalSegmentTransformType/Transformation** **EdgePointTransformType/Transformation** **EllipseTransformType/Transformation** **ElongatedCylinderTransformType/Transformation** **ExtrudedCrossSectionTransformType/Transformation** **LineTransformType/Transformation** **OppositeLinesTransformType/Transformation** **OppositePlanesTransformType/Transformation** **PlaneTransformType/Transformation** **PointDefinedCurveTransformType/Transformation** **PointDefinedSurfaceTransformType/Transformation** **PointFeatureTransformType/Transformation** **SphereTransformType/Transformation** **SphericalSegmentTransformType/Transformation** **SurfaceOfRevolutionTransformType/Transformation** **ThreadedFeatureTransformType/Transformation** **ToroidalSegmentTransformType/Transformation** **TorusTransformType/Transformation**
annotation	documentation The TransformationReferenceType defines a component of a coordinate system to be used in a transform-by construction.

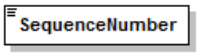
element **TransformationReferenceType/ReferencedComponent**

diagram	
type	**ReferencedComponentEnumType**
properties	content simple
facets	Kind / Value / Annotation enumeration NOMINAL enumeration ACTUAL
annotation	documentation The ReferencedComponent element indicates whether the actual or nominal component of this coordinate system is referenced.

element **TransformationReferenceType/CoordinateSystemId**

diagram	
type	**QIFReferenceFullType**
properties	content complex
attributes	Name: asmPath Type: **QIFIdType** Use: Default: Fixed: Annotation: documentation: The optional asmPath attribute is an id which must be used for locating of the assembly path within the AsmPaths. The assembly path (instantiation chain) unambiguously identifies a model entity within an assembly.
annotation	documentation The CoordinateSystemId element is the QIF id of the coordinate system used in a feature transform construction.

element **TransformationReferenceType/SequenceNumber**

diagram	
type	**xs:positiveInteger**
properties	content simple
annotation	documentation The SequenceNumber element is an ordinal number defining the order of the base feature in the construction.