

Data dictionary for QIF Library Expressions.xsd (normative)

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

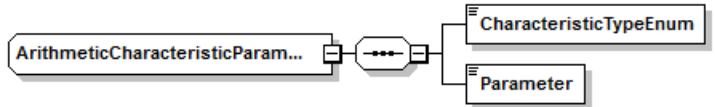
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Simple types

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complexType ArithmeticCharacteristicParameterType


diagram	
type	extension of ArithmeticExpressionBaseType
properties	base ArithmeticExpressionBaseType
children	CharacteristicTypeEnum Parameter
used by	element ArithmeticCharacteristicParameter
annotation	<p>documentation</p> <p>The ArithmeticCharacteristicParameterType defines an arithmetic expression that represents the value of an arithmetic parameter of a characteristic (e.g., the ToleranceValue of a geometric tolerance). If a parameter value is given in units that are not the units in use, the evaluating system must convert to units in use and use the converted value. An instance of ArithmeticCharacteristicParameterType should be placed only in a position in which it is evaluated only if the characteristic type is checked earlier and found to be the one specified.</p> <p>documentation</p> <p>Some provision will need to be made for dealing with cases where an optional parameter does not exist for a particular characteristic instance. Perhaps an analogous ParameterExistsType that is a Boolean expression should be defined that can test whether the parameter exists before an attempt is made to use its value.</p>

element ArithmeticCharacteristicParameterType/CharacteristicTypeEnum

diagram	
type	CharacteristicTypeEnumType
properties	content simple


facets	Kind	Value	Annotation
	enumeration	ANGLE	
	enumeration	ANGLECOORDINATE	
	enumeration	ANGLEFROM	
	enumeration	ANGLEBETWEEN	
	enumeration	ANGULARITY	
	enumeration	CHORD	
	enumeration	CIRCULARITY	
	enumeration	CIRCULARRUNOUT	
	enumeration	CONCENTRICITY	
	enumeration	CURVELENGTH	
	enumeration	CYLINDRICITY	
	enumeration	DEPTH	
	enumeration	DIAMETER	
	enumeration	DISTANCE	
	enumeration	DISTANCEFROM	
	enumeration	FLATNESS	
	enumeration	HEIGHT	
	enumeration	LENGTH	
	enumeration	LENGTHCOORDINATE	
	enumeration	LINEPROFILE	
	enumeration	PERPENDICULARITY	
	enumeration	PARALLELISM	
	enumeration	POINTPROFILE	
	enumeration	POSITION	
	enumeration	RADIUS	
	enumeration	SQUARE	
	enumeration	STRAIGHTNESS	
	enumeration	SURFACEPROFILE	
	enumeration	SURFACEPROFILENONUNIFORM	
	enumeration	SYMMETRY	
	enumeration	THICKNESS	
	enumeration	THREAD	
	enumeration	TOTALRUNOUT	
	enumeration	WIDTH	
annotation	documentation	The CharacteristicTypeEnum element identifies the type of characteristic.	

element **ArithmeticCharacteristicParameterType/Parameter**


diagram			
type	xs:token		
properties	content	simple	
annotation	documentation	<p>The Parameter element is the xpath starting from the characteristic and ending in the name of the arithmetic parameter whose value is to be obtained. The Parameter element string must be identical to the path to a parameter of characteristics of the given type. The type of the value of the parameter must be xs:decimal or the value must be</p>	

	convertible to xs:decimal without loss of accuracy.
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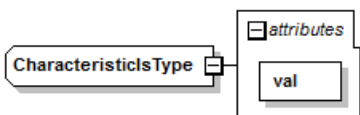
complexType ArithmeticFeatureParameterType

diagram	
type	extension of ArithmeticExpressionBaseType
properties	base ArithmeticExpressionBaseType
children	Parameter
used by	element ArithmeticFeatureParameter
annotation	<p>documentation</p> <p>The ArithmeticFeatureParameterType defines an arithmetic expression that represents the value of an arithmetic parameter of a feature (e.g., the diameter of a circle). If a parameter value is given in units that are not the units in use, the evaluating system must convert to the units in use and use the converted value. An instance of ArithmeticFeatureParameterType should be used only in an IfThenXXXRule for a feature type XXX that has the parameter.</p> <p>documentation</p> <p>Some provision will need to be made for dealing with cases where an optional parameter does not exist for a particular feature instance. Perhaps an analogous ParameterExistsType that is a Boolean expression should be defined that can test whether the parameter exists before an attempt is made to use its value.</p>

element ArithmeticFeatureParameterType/Parameter

diagram	
type	xs:token
properties	content simple
annotation	<p>documentation</p> <p>The Parameter element is the xpath starting from the feature and ending in name of the arithmetic parameter whose value is to be obtained -- for example, Diameter for a Circle or Sweep/Angle for an Arc. The type of the value of the parameter must be xs:decimal or the value must be convertible to xs:decimal without loss of accuracy.</p> <p>documentation</p> <p>Defining an enumerated set of allowed parameters for each feature type does not seem advisable since then there would also need to be separate Boolean expression types for each feature type.</p>

complexType CharacteristicsType

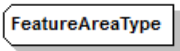
Complex type CharacteristicsType						
diagram						
type	extension of BooleanExpressionBaseType					
properties	base BooleanExpressionBaseType					
used by	element Characteristics					
attributes	Name val	Type CharacteristicTypeEnumType	Use required	Default	Fixed	Annotation documentation The required val attribute is the characteristic type against which to test the

	characteristic type of the feature.
annotation	<p>documentation</p> <p>The <code>CharacteristicsType</code> defines a Boolean expression representing a test of whether a characteristic is of a given type. The <code>CharacteristicsType</code> evaluates to true if the val is the characteristic type of the characteristic for which hit points are being selected. Otherwise, it evaluates to false.</p>

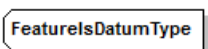
attribute **CharacteristicsType/@val**

type	CharacteristicTypeEnumType		
properties	use	required	
facets	Kind	Value	Annotation
	enumeration	ANGLE	
	enumeration	ANGLECOORDINATE	
	enumeration	ANGLEFROM	
	enumeration	ANGLEBETWEEN	
	enumeration	ANGULARITY	
	enumeration	CHORD	
	enumeration	CIRCULARITY	
	enumeration	CIRCULARRUNOUT	
	enumeration	CONCENTRICITY	
	enumeration	CURVELENGTH	
	enumeration	CYLINDRICITY	
	enumeration	DEPTH	
	enumeration	DIAMETER	
	enumeration	DISTANCE	
	enumeration	DISTANCEFROM	
	enumeration	FLATNESS	
	enumeration	HEIGHT	
	enumeration	LENGTH	
	enumeration	LENGTHCOORDINATE	
	enumeration	LINEPROFILE	
	enumeration	PERPENDICULARITY	
	enumeration	PARALLELISM	
	enumeration	POINTPROFILE	
	enumeration	POSITION	
	enumeration	RADIUS	
	enumeration	SQUARE	
	enumeration	STRAIGHTNESS	
	enumeration	SURFACEPROFILE	
	enumeration	SURFACEPROFILENONUNIFORM	
	enumeration	SYMMETRY	
	enumeration	THICKNESS	
	enumeration	THREAD	
	enumeration	TOTALRUNOUT	
	enumeration	WIDTH	
annotation	documentation	The required val attribute is the characteristic type against which to test the characteristic type of the feature.	


complexType FeatureAreaType

diagram	
type	extension of ArithmeticExpressionBaseType
properties	base ArithmeticExpressionBaseType
used by	element FeatureArea
annotation	documentation The FeatureAreaType defines an arithmetic expression representing the area of a feature. The FeatureAreaType evaluates to the area of the feature being processed. The units for area are the area units used in the file.


complexType FeatureIsDatumType

diagram	
type	extension of BooleanExpressionBaseType
properties	base BooleanExpressionBaseType
used by	element FeatureIsDatum
annotation	documentation The FeatureIsDatumType defines a Boolean expression representing a test of whether a feature is a datum. The FeatureIsDatumType evaluates to true if the feature for which hit points are being selected is used as a datum. Otherwise, it evaluates to false.

complexType FeatureIsInternalType

diagram	
type	extension of BooleanExpressionBaseType
properties	base BooleanExpressionBaseType
used by	element FeatureIsInternal
annotation	documentation The FeatureIsDatumType defines a Boolean expression representing a test of whether a feature is internal. The FeatureIsDatumType evaluates to true if the feature for which hit points are being selected is an internal feature. Otherwise, it evaluates to false, which means either the feature is external or the feature is neither internal nor external.

complexType FeatureLengthType

diagram	
type	extension of ArithmeticExpressionBaseType
properties	base ArithmeticExpressionBaseType
used by	element FeatureLength
annotation	documentation The FeatureLengthType defines an arithmetic expression representing the length of a feature. The FeatureLengthType evaluates to the length of the feature being processed. The length of a curve is its curve length. The length of a surface is the largest distance between any two points on the surface. The units for length are the linear units used in the file.

complexType **SamplingRigorIsType**

diagram						
type	extension of BooleanExpressionBaseType					
properties	base BooleanExpressionBaseType					
used by	element SamplingRigorIs					
attributes	Name val	Type xs:unsignedInt	Use required	Default	Fixed	Annotation documentation The required val attribute is the value against which to test the sampling rigor in the environment.
annotation	documentation The SamplingRigorIsType defines a Boolean expression representing a test of sampling rigor. The SamplingRigorIsType evaluates to true if the val is the point level in the environment in which the SamplingRigorIsType is evaluated. Otherwise, it evaluates to false.					

attribute **SamplingRigorIsType/@val**

type	xs:unsignedInt
properties	use required
annotation	documentation The required val attribute is the value against which to test the sampling rigor in the environment.

complexType **ShapeClassIsType**

diagram						
type	extension of BooleanExpressionBaseType					
properties	base BooleanExpressionBaseType					
used by	element ShapeClassIs					
attributes	Name val	Type ShapeClassEnumType	Use required	Default	Fixed	Annotation documentation The required val attribute is the shape class type against which to test the shape class of the part on which the feature is located.
annotation	documentation The ShapeClassIsType defines a Boolean expression representing a test of whether a part is in a given shape class. The					

	ShapeClassIsType evaluates to true if the val is the primary shape class of the part containing the feature for which the number of points is being set. Otherwise, it evaluates to false.
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attribute **ShapeClassIsType/@val**

type	ShapeClassEnumType		
properties	use	required	
facets	Kind	Value	Annotation
	enumeration	GEAR	
	enumeration	FREEFORM	
	enumeration	PRISMATIC	
	enumeration	ROTATIONAL	
	enumeration	THINWALLED	
annotation	documentation The required val attribute is the shape class type against which to test the shape class of the part on which the feature is located.		

simpleType **CharacteristicTypeEnumType**

type	restriction of xs:NMTOKEN		
properties	base	xs:NMTOKEN	
used by	element attribute	ArithmeticCharacteristicParameterType/CharacteristicTypeEnumCharacteristicsType/@val	
facets	Kind	Value	Annotation
	enumeration	ANGLE	
	enumeration	ANGLECOORDINATE	
	enumeration	ANGLEFROM	
	enumeration	ANGLEBETWEEN	
	enumeration	ANGULARITY	
	enumeration	CHORD	
	enumeration	CIRCULARITY	
	enumeration	CIRCULARRUNOUT	
	enumeration	CONCENTRICITY	
	enumeration	CURVELENGTH	
	enumeration	CYLINDRICITY	
	enumeration	DEPTH	
	enumeration	DIAMETER	
	enumeration	DISTANCE	
	enumeration	DISTANCEFROM	
	enumeration	FLATNESS	
	enumeration	HEIGHT	
	enumeration	LENGTH	
	enumeration	LENGTHCOORDINATE	
	enumeration	LINEPROFILE	
	enumeration	PERPENDICULARITY	
	enumeration	PARALLELISM	
	enumeration	POINTPROFILE	
	enumeration	POSITION	
	enumeration	RADIUS	

	enumeration SQUARE enumeration STRAIGHTNESS enumeration SURFACEPROFILE enumeration SURFACEPROFILENONUNIFORM enumeration SYMMETRY enumeration THICKNESS enumeration THREAD enumeration TOTALRUNOUT enumeration WIDTH
annotation	documentation The CharacteristicTypeEnumType enumerates types of characteristics. The enumeration values represent the names of the characteristic types defined in CharacteristicTypes.xsd. ANGLE = AngleCharacteristicNominalType ANGLECOORDINATE = AngleCoordinateCharacteristicNominalType ANGLEFROM = AngleFromCharacteristicNominalType ANGLEBETWEEN = AngleBetweenCharacteristicNominalType ANGULARITY = AngularityCharacteristicNominalType CHORD = ChordCharacteristicNominalType CIRCULARITY = CircularityCharacteristicNominalType CIRCULARRUNOUT = CircularRunoutCharacteristicNominalType CONCENTRICITY = ConcentricityCharacteristicNominalType CURVELENGTH = CurveLengthCharacteristicNominalType CYLINDRICITY = CylindricityCharacteristicNominalType DEPTH = DepthCharacteristicNominalType DIAMETER = DiameterCharacteristicNominalType DISTANCE = DistanceBetweenCharacteristicNominalType DISTANCEFROM = DistanceFromCharacteristicNominalType FLATNESS = FlatnessCharacteristicNominalType HEIGHT = HeightCharacteristicNominalType LENGTH = LengthCharacteristicNominalType LENGTHCOORDINATE = LengthCoordinateCharacteristicNominalType LINEPROFILE = LineProfileCharacteristicNominalType PERPENDICULARITY = PerpendicularityCharacteristicNominalType PARALLELISM = ParallelismCharacteristicNominalType POINTPROFILE = PointProfileCharacteristicNominalType POSITION = PositionCharacteristicNominalType RADIUS = RadiusCharacteristicNominalType SQUARE = SquareCharacteristicNominalType STRAIGHTNESS = StraightnessCharacteristicNominalType SURFACEPROFILE = SurfaceProfileCharacteristicNominalType SURFACEPROFILENONUNIFORM = SurfaceProfileNonUniformChar'Nom'Type SYMMETRY = SymmetryCharacteristicNominalType THICKNESS = ThicknessCharacteristicNominalType THREAD = ThreadCharacteristicNominalType TOTALRUNOUT = TotalRunoutCharacteristicNominalType WIDTH = WidthCharacteristicNominalType

simpleType ClosedCurvePointSamplingStrategyEnumType

type	restriction of xs:NMTOKEN		
properties	base xs:NMTOKEN		
facets	Kind	Value	Annotation
	enumeration	POINTS	
	enumeration	EQUIDISTANT	
annotation	documentation The ClosedCurvePointSamplingStrategyEnumType enumerates point sampling strategy types for closed curves. The POINTS value here has the same meaning as in the PointSamplingStrategyEnumBaseType. EQUIDISTANT means the points are spaced evenly along the curve.		

simpleType ConePointSamplingStrategyEnumType

type	restriction of PointSamplingStrategyEnumBaseType		
properties	base PointSamplingStrategyEnumBaseType		
facets	Kind	Value	Annotation
	enumeration	POLARGRID	
	enumeration	STRATIFIED	
	enumeration	SPIRAL	
	enumeration	SPIDERWEB	
	enumeration	POINTS	
annotation	documentation The ConePointSamplingStrategyEnumType enumerates point sampling strategy types from ISO14406:2010 applicable to a cone.		

simpleType ElongatedCylinderPointSamplingStrategyEnumType

type	restriction of PointSamplingStrategyEnumBaseType		
properties	base PointSamplingStrategyEnumBaseType		
facets	Kind	Value	Annotation
	enumeration	ORTHOGONALGRID	
	enumeration	BIRDCAGE	
	enumeration	SPECIFIEDGRID	
	enumeration	STRATIFIED	
	enumeration	HELIX	
	enumeration	POINTS	
annotation	documentation The ElongatedCylinderPointSamplingStrategyEnumType enumerates point sampling strategy types as given in ISO14406:2010 for cylinder.		

simpleType ExtrudedCrossSectionPointSamplingStrategyEnumType

type	restriction of PointSamplingStrategyEnumBaseType		
properties	base PointSamplingStrategyEnumBaseType		
facets	Kind	Value	Annotation
	enumeration	BIRDCAGE	
	enumeration	STRATIFIED	
	enumeration	POINTS	
annotation	documentation The ExtrudedCrossSectionPointSamplingStrategyEnumType enumerates point sampling strategy types given in ISO14406:2010 that are applicable.		

simpleType OpenCurvePointSamplingStrategyEnumType

type	restriction of PointSamplingStrategyEnumBaseType		
properties	base PointSamplingStrategyEnumBaseType		
facets	Kind	Value	Annotation
	enumeration	POINTS	
annotation	documentation The OpenCurvePointSamplingStrategyEnumType enumerates point sampling strategy types for open curves.		

simpleType **PlanePointSamplingStrategyEnumType**

type	restriction of PointSamplingStrategyEnumBaseType		
properties	base	PointSamplingStrategyEnumBaseType	
facets	Kind	Value	Annotation
	enumeration	ORTHOGONALGRID	
	enumeration	POLARGRID	
	enumeration	SPECIFIEDGRID	
	enumeration	STRATIFIED	
	enumeration	SPIRAL	
	enumeration	SPIDERWEB	
	enumeration	POINTS	
annotation	documentation The PointSamplingStrategyEnumType enumerates point sampling strategy types as given in ISO14406:2010.		

simpleType **PointDefinedPointSamplingStrategyEnumType**

type	restriction of xs:NMTOKEN		
properties	base	xs:NMTOKEN	
facets	Kind	Value	Annotation
	enumeration	GIVENPOINTS	
	enumeration	POINTS	
annotation	documentation The PointDefinedPointSamplingStrategyEnumType enumerates point sampling strategy types for point-defined curves and surfaces. The POINTS value here has the same meaning as in the PointSamplingStrategyEnumBaseType. GIVENPOINTS means to use the points of the point-defined curve or surface.		

simpleType **PointPointSamplingStrategyEnumType**

type	restriction of PointSamplingStrategyEnumBaseType		
properties	base	PointSamplingStrategyEnumBaseType	
facets	Kind	Value	Annotation
	enumeration	POINTS	
annotation	documentation The PointPointSamplingStrategyEnumType enumerates point sampling strategy types for point features.		

simpleType **PointSamplingStrategyEnumBaseType**

type	restriction of xs:NMTOKEN		
properties	base	xs:NMTOKEN	
used by	simpleTypes	ConePointSamplingStrategyEnumType ElongatedCylinderPointSamplingStrategyEnumType ExtrudedCrossSectionPointSamplingStrategyEnumType OpenCurvePointSamplingStrategyEnumType PlanePointSamplingStrategyEnumType PointPointSamplingStrategyEnumType PrismPointSamplingStrategyEnumType SpherePointSamplingStrategyEnumType SurfaceOfRevolutionPointSamplingStrategyEnumType	
facets	Kind	Value	Annotation
	enumeration	ORTHOGONALGRID	
	enumeration	BIRDCAGE	
	enumeration	POLARGRID	

	enumeration	SPECIFIEDGRID
	enumeration	STRATIFIED
	enumeration	HELIX
	enumeration	SPIRAL
	enumeration	SPIDERWEB
	enumeration	POINTS
annotation	documentation	The PointSamplingStrategyEnumType enumerates point sampling strategy types as given in ISO14406:2010.

simpleType **PrismPointSamplingStrategyEnumType**

type	restriction of PointSamplingStrategyEnumBaseType		
properties	base	PointSamplingStrategyEnumBaseType	
facets	Kind	Value	Annotation
	enumeration	ORTHOGONALGRID	
	enumeration	BIRDCAGE	
	enumeration	SPECIFIEDGRID	
	enumeration	STRATIFIED	
	enumeration	HELIX	
	enumeration	POINTS	
annotation	documentation	The PrismPointSamplingStrategyEnumType enumerates point sampling strategy types as given in ISO14406:2010.	

simpleType **SpherePointSamplingStrategyEnumType**

type	restriction of PointSamplingStrategyEnumBaseType		
properties	base	PointSamplingStrategyEnumBaseType	
facets	Kind	Value	Annotation
	enumeration	ORTHOGONALGRID	
	enumeration	SPECIFIEDGRID	
	enumeration	STRATIFIED	
	enumeration	HELIX	
	enumeration	POINTS	
annotation	documentation	The SpherePointSamplingStrategyEnumType enumerates point sampling strategy types as given in ISO14406:2010.	

simpleType **SurfaceOfRevolutionPointSamplingStrategyEnumType**

type	restriction of PointSamplingStrategyEnumBaseType		
properties	base	PointSamplingStrategyEnumBaseType	
facets	Kind	Value	Annotation
	enumeration	ORTHOGONALGRID	
	enumeration	BIRDCAGE	
	enumeration	SPECIFIEDGRID	
	enumeration	STRATIFIED	
	enumeration	HELIX	
	enumeration	POINTS	
annotation	documentation	The SurfaceOfRevolutionPointSamplingStrategyEnumType enumerates point sampling strategy types as given in	

	ISO14406:2010.
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