

IFC Release Specific Concept Description (IFC2x3)

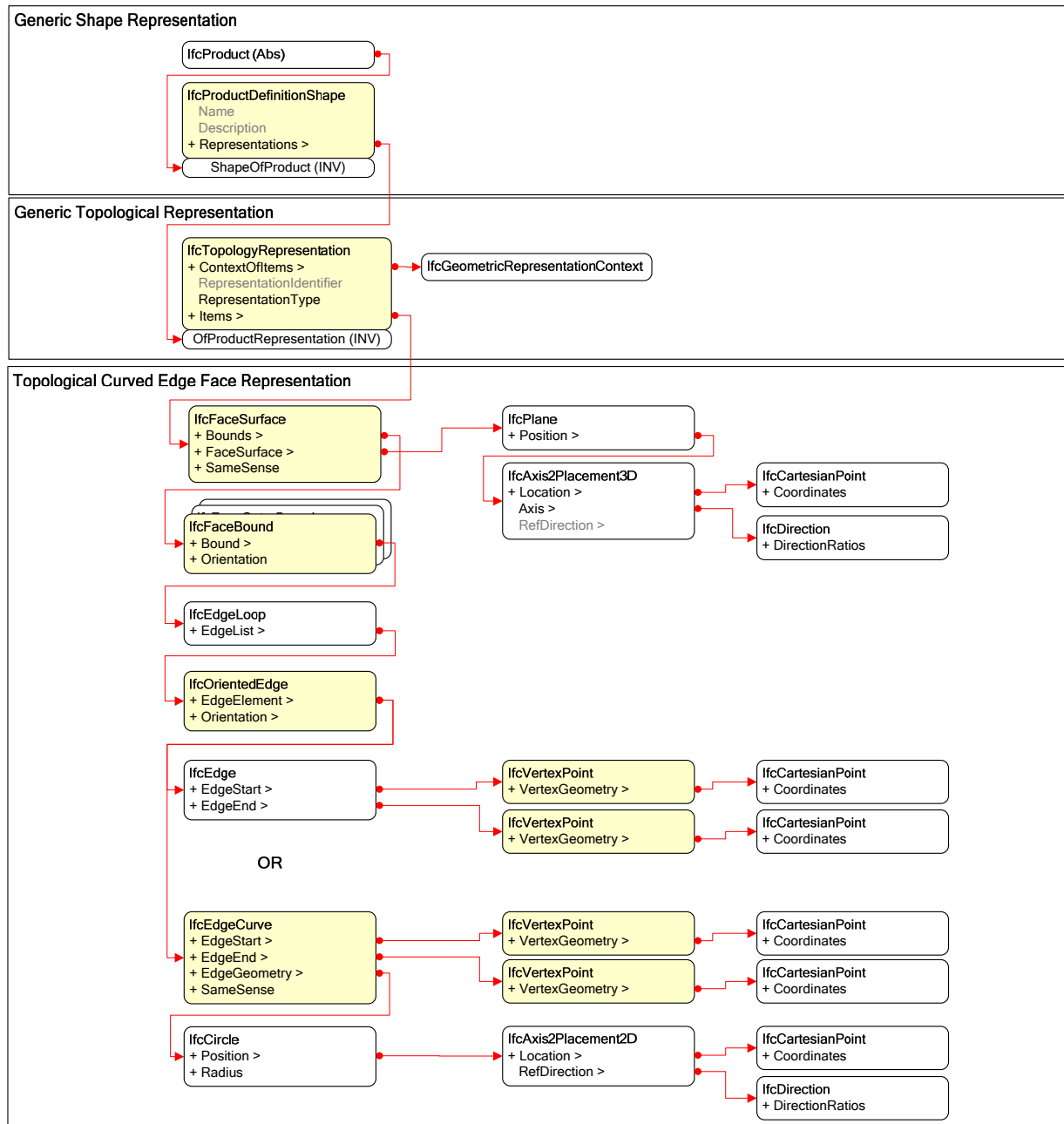
Topological Curved Edge Face Representation

Reference	VBL-219	Version	2	Status	Proposal
Relationships	Implements general concept 'Surface Representation Curved Edge'.				
History	Created 23.10.2006, improved 28.9.2007				
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Usage in view definition diagram



Instantiation diagram



Implementation agreements

IfcProductDefinitionShape

Attribute

Implementation agreements

Name	Reserved.
Description	Reserved.
Representations	Must be one IfcTopologyRepresentation.
IfcTopologyRepresentation	
Attribute	Implementation agreements
ContextOfItems	N/A
RepresentationIdentifier	Not used.
RepresentationType	Must be 'Face'.
Items	Must be one IfcFaceSurface.
IfcFaceSurface	
Attribute	Implementation agreements
Bounds	N/A
FaceSurface	Must be IfcPlane.
SameSense	N/A
IfcFaceBound	
Attribute	Implementation agreements
Bound	Must be IfcEdgeLoop.
Orientation	N/A
IfcOrientedEdge	
Attribute	Implementation agreements
EdgeStart	N/A
EdgeEnd	N/A
EdgeElement	Must be either IfcEdge or ifcEdgeCurve.
Orientation	N/A
.EdgeStart	N/A
.EdgeEnd	N/A
IfcVertexPoint	
Attribute	Implementation agreements
VertexGeometry	Must be IfcCartesianPoint.
IfcEdgeCurve	
Attribute	Implementation agreements
EdgeStart	N/A
EdgeEnd	N/A
EdgeGeometry	Must be IfcCircle.
SameSense	N/A

The diagram illustrates a 2D face (yellow) with a semi-circular outer boundary and a square inner hole. The outer boundary is defined by a red line with arrows indicating a counter-clockwise direction, labeled 'OuterBoundary'. The inner boundary is defined by a blue line with arrows indicating a clockwise direction. Vertices are numbered 1 through 4 in red circles for the outer boundary and blue circles for the inner boundary.

Additional information

P21 example

```
#9= IFCCARTESIANPOINT((0.,0.,0.));
#11= IFCDIRECTION((1.,0.,0.));
#15= IFCDIRECTION((0.,0.,1.));
#17= IFCAXIS2PLACEMENT3D(#9,#15,#11);
#34= IFCGEOMETRICREPRESENTATIONCONTEXT($,$,3,$,#17,#15);

#1022= IFCSTRUCTURALSURFACEMEMBER('0aTavr7ezE$8nRnSbp08J3',#30,'StructuralSurfaceMemberName',$,$,#1014,#1019,.NOTDEFINED.,0.2);
#970= IFCCARTESIANPOINT((6.,6.,7.));
#971= IFCVERTEXPOINT(#970);
#976= IFCCARTESIANPOINT((9.,6.,7.));
#977= IFCVERTEXPOINT(#976);
#988= IFCCARTESIANPOINT((9.,12.,7.));
#989= IFCVERTEXPOINT(#988);
#994= IFCCARTESIANPOINT((6.,12.,7.));
#995= IFCVERTEXPOINT(#994);
#369= IFCDIRECTION((0.,0.,1.));
#373= IFCCARTESIANPOINT((8.,12.,7.));
#377= IFCAXIS2PLACEMENT3D(#373,#369,$);
#380= IFCIRCLE(#377,2.);
#996= IFCEDGE(#971,#977);
#997= IFCEDGE(#977,#989);
#998= IFCEDGECURVE(#989,#995,#380,.T.);
#999= IFCEDGE(#994,#970);
#1000= IFCORIENTEDEDGE(#995,.T.);
#1001= IFCORIENTEDEDGE(#996,.T.);
#1002= IFCORIENTEDEDGE(#997,.T.);
#1003= IFCORIENTEDEDGE(#998,.T.);
#1006= IFCEDGELOOP((#1000,#1001,#1002,#1003));
#1008= IFCFACEOUTERBOUND(#1006,.T.);
#1228= IFCAXIS2PLACEMENT3D(#9,#11,#15);
#1229= IFCPLANE(#1228);
#1009= IFCFACESURFACE((#1008),#1229,.T.);
#1016= IFCTOPOLOGYREPRESENTATION(#34,$,'Face',(#1009));
#1019= IFCPRODUCTDEFINITIONSHAPE($,$,(#1016));

#1011= IFCCARTESIANPOINT((0.,0.,0.));
#1013= IFCAXIS2PLACEMENT3D(#1011,#15,#11);
#1014= IFCLOCALPLACEMENT($,#1013);
```

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The content of this document has to be certified by the IAI before becoming part of an official IFC Model View Definition.