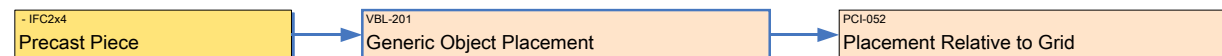


IFC Release Specific Concept Description (IFC 2x3)

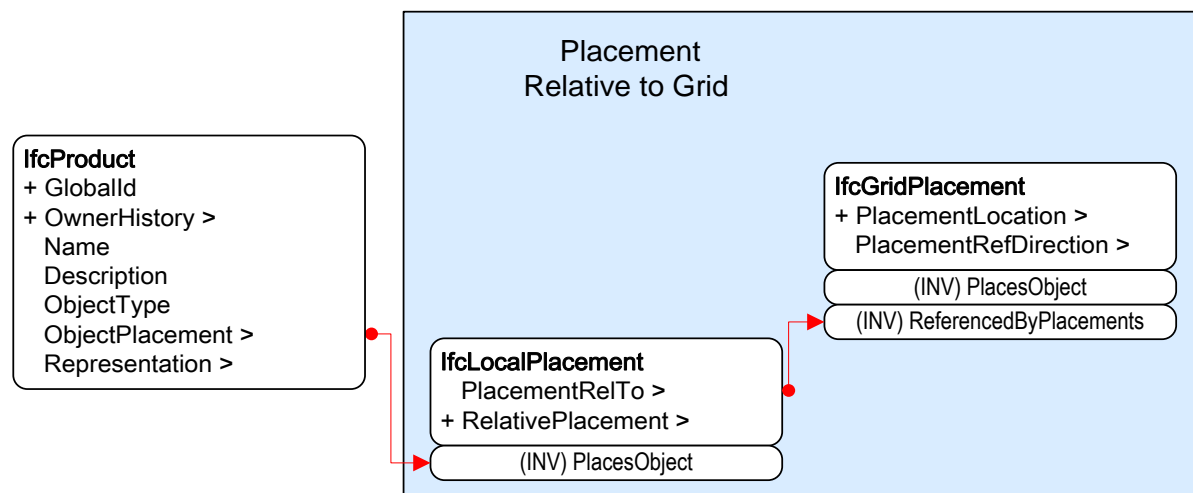
Placement Relative to Grid

Reference	PCI-052	Version	1.1	Status	Draft
Relationships	PCI-048, PCI-049				
History	Revised Nov 13, 2012				
Authors	Manu Venugopal				
Document Owner	GA Tech and Technion Precast NBIMS Team				

Usage in view definition diagram



Instantiation diagram



Implementation agreements

IfcSpatialStructureElement: Generalization of all spatial elements that might be used to define a spatial structure. Could be [IfcSite](#), [IfcBuilding](#), [IfcBuildingStorey](#) or [IfcSpace](#)

IfcProduct: Could be subtypes of [IfcBuildingElement](#) like [IfcSlab](#), [IfcBeam](#), [IfcColumn](#) etc or any other subtypes of [IfcProduct](#).

The *IfcVirtualGridIntersection* defines the derived location of the intersection between two grid axes. Offset values may be given to set an offset distance to the grid axis for the calculation of the virtual grid intersection. (Refer: **IfcGridAxisPlacement**)

IntersectingAxes: Two grid axes which intersects at exactly one intersection (see also informal proposition at [IfcGrid](#)). If attribute `OffsetDistances` is omitted, the intersection defines the placement or ref direction of a grid placement directly. If `OffsetDistances` are given, the intersection is defined by the offset curves to the grid axes.

[IfcGridPlacement](#)

The [IfcGridPlacement](#) provides a specialization of [IfcObjectPlacement](#) in which the placement and axis direction of the object coordinate system is defined by a reference to the design grid as defined in [IfcGrid](#). The design grid can

be used in plan, section or in any position relative to the world.

Attribute	Implementation agreements
PlacementLocation	The IfcGeometricCurveSet shall be an (and the only) <i>Item</i> of the IfcShapeRepresentation . It should contain an <i>IfcGeometricCurveSet</i> containing subtypes of IfcCurve , each representing a grid axis.
PlacementRefDirection	Applicable subtypes of <i>IfcCurve</i> are: IfcPolyline , IfcCircle , IfcTrimmedCurve (based on BaseCurve referencing IfcLine or IfcCircle).

Example: Part21 file

```
#25=IFCCARTESIANPOINT((0.,0.));
#26=IFCCARTESIANPOINT((9.144,0.));
#27=IFCPOLYLINE((#25,#26));
#28=IFCGRIDAXIS('A-1',#27,.T.);
#29=IFCCARTESIANPOINT((0.,9.144));
#37=IFCPOLYLINE((#25,#29));
#38=IFCGRIDAXIS('A-1',#37,.T.);
#90=IFCGRIDPLACEMENT(#91,$);
```

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