

IFC Release Specific Concept Description (IFC 2x4)

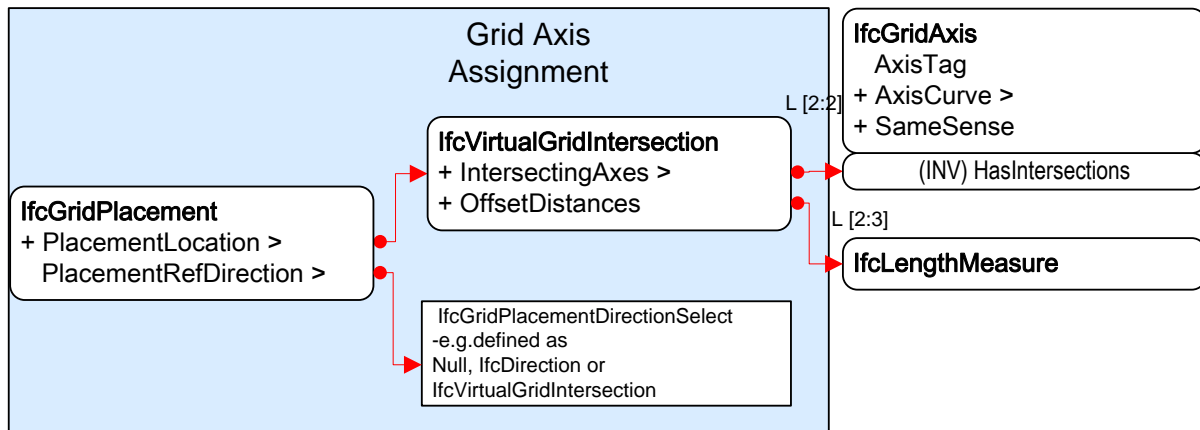
Grid Axis Assignment

Reference	PCI-050	Version	1.1	Status	Draft
Relationships	PCI-048, PCI-049				
History	Revised Nov 13, 2012				
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Document Owner	GA Tech and Technion Precast NBIMS Team				

Usage in view definition diagram



Instantiation diagram



Implementation agreements

[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).

[IfcVirtualGridIntersection](#)

Defines the derived location of the intersection between two grid axes.

Attribute	Implementation agreements
IntersectingAxes	Two intersecting grid axes. They should not intersect at more than one point.
OffsetDistances	(Optional) Offset values may be given to set an offset distance to the grid axis for the calculation of the virtual grid intersection. 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

[IfcGridAxis](#)

Attribute	Implementation agreements
AxisTag	OPTIONAL. Tag name for this grid axis
AxisCurve	Underlying curve which provides the geometry for this grid axis. Should be a subtype of IfcCurve .
SameSense	Defines whether the original sense of curve is used or whether it is reversed in the context of the grid axis. IfcBoolean entity.

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,$);
#91=IFCVIRTUALGRIDINTERSECTION((#28,#38),(0.,0.));
```