IFC Release Specific Concept Description (IFC2x3)
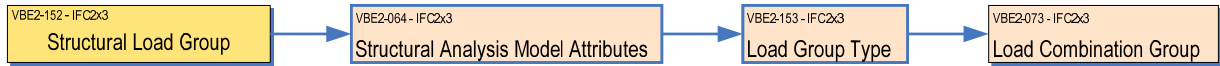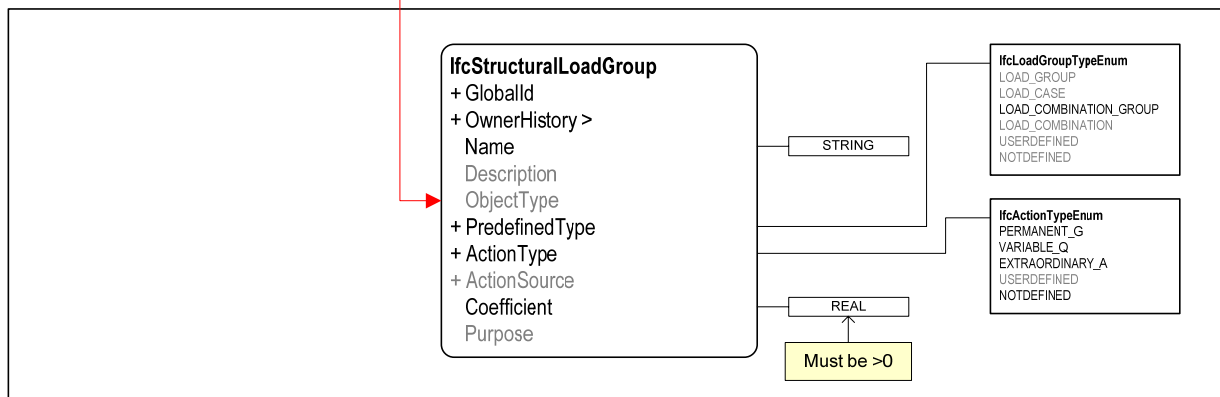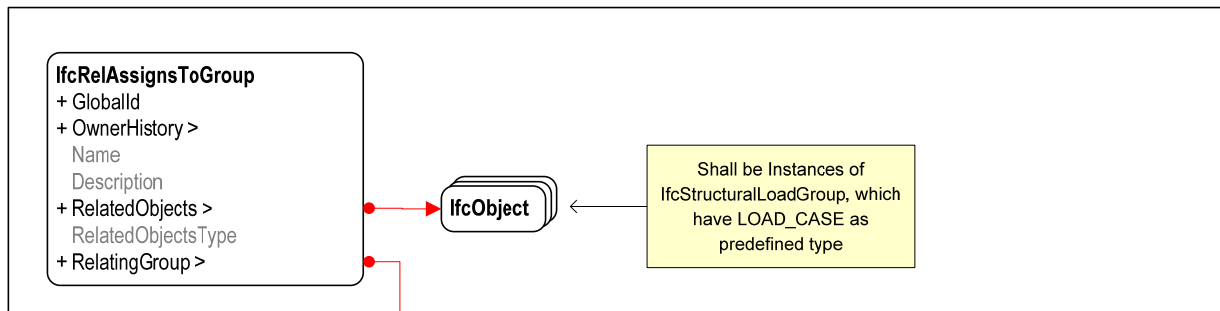# Structural Load Combination Group

Reference	VBE2-073	Version	1.0	Status	Draft
Relationships					
History	Created 23.10.2006				
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Document Owner	Tampere University of Technology				

Usage in view definition diagram

| VBE2-152 - IFC2x3 Structural Load Group | → | VBE2-064 - IFC2x3 Structural Analysis Model Attributes | → | VBE2-153 - IFC2x3 Load Group Type | → | VBE2-073 - IFC2x3 Load Combination Group |

Instantiation diagram

IfcRelAssignsToGroup
+ GlobalId
+ OwnerHistory >
   Name
   Description
+ RelatedObjects >
   RelatedObjectsType
+ RelatingGroup >

IfcObject

Shall be Instances of IfcStructuralLoadGroup, which have LOAD_CASE as predefined type

IfcStructuralLoadGroup
+ GlobalId
+ OwnerHistory >
   Name
   Description
   ObjectType
+ PredefinedType
+ ActionType
+ ActionSource
   Coefficient
   Purpose

STRING

REAL

Must be >0

IfcLoadGroupTypeEnum
LOAD_GROUP
LOAD_CASE
LOAD_COMBINATION_GROUP
LOAD_COMBINATION
USERDEFINED
NOTDEFINED

IfcActionTypeEnum
PERMANENT_G
VARIABLE_Q
EXTRAORDINARY_A
USERDEFINED
NOTDEFINED

Implementation agreements

- *GlobalID.* Providing a GUID is mandatory. In the IfcRelAssignsToGroup GUID is allowed to change.
- *OwnerHistory.* Providing an OwnerHistory is mandatory, but it is allowed to use dummy data in the owner history.
- *Name.* Freely used string. Not used in the IfcRelAssignsToGroup.
- *Description.* Not used
- *RelatedObjects.* List of IfcObjects. Shall be instance of IfcStructuralLoadGroup, which has LOAD_CASE for *PredefinedType.*
- *RelatedObjectType.* Not used.
- *RelatingGroup.* Shall be instance of IfcStructuralLoadGroup.
- *IfcStructuralLoadGroup>PredefinedType.* Must be LOAD_COMBINATION_GROUP.
- *IfcStructuralLoadGroup>ActionType.* The type of the load.
- *IfcStructuralLoadGroup>ActionSource.* Not used.
- *IfcStructuralLoadGroup>Coefficient.* Must be greater than zero.

Each IfcStructuralLoadGroup, which has LOAD_CASE for *PredefinedType,* may be associated to several IfcStructuralLoadGroup, which have LOAD_COMBINATION_GROUP for *PredefinedType.*

Load groups have a hierarchy. From the bottom to up it is: Action->Load case->Load combination group->Load combination. Each can be part of the group above or groups items below in the hierarchy. For more details see IfcStructuralLoadGroup from the IFC2x3 online documentation.

P21 example

```
#28=IFCSTRUCTURALANALYSISMODEL('2uRpA0c3HFLcW0f7ywxmPv',#2,'Example model',$,$,.LOADING_3D.,$,(#8,#16,#33),$);
#8=IFCSTRUCTURALLOADGROUP('3oBygqQiTAnr_iNVK7zUuK',#2,'Wind west',$,$,.LOAD_COMBINATION.,.NOTDEFINED.,.NOTDEFINED.,$,$);
#5=IFCRELASSIGNSTOGROUP('0Auj8TqP5074IBcmw_cony',#2,'$',$,(#4,#6,#7),$,#8);

#4=IFCSTRUCTURALLOADGROUP('18BCRV7eT457OifRTYfeDT',#2,'West wind group',$,$,.LOAD_COMBINATION_GROUP.,.PERMANENT_G.,.NOTDEFINED.,1.0,$);
#1=IFCRELASSIGNSTOGROUP('1kQX$XAC13u7Ta3_Tpu6xp',#2,$,$,(#3),$,#4);

#3=IFCSTRUCTURALLOADGROUP('1eZWYEwL9EfdqMZe4RIElD',#2,'West wind load',$,$,.LOAD_CASE.,.VARIABLE_Q.,.WIND_W.,1.05,$);
#9=IFCRELASSIGNSTOGROUP('08uWZEbKL6xNaymvWATv$s',#2,$,$,(#10,#11),$,#3);

#10=IFCSTRUCTURALLINEARACTION('2u6Aq3yejD94UEDv_Q34kp',#2,'Example action',$,$,#1560,#1590,#1562,.LOCAL_COORDS.,.F.,.TRUE_LENGTH.,$);
```