

## Flow of Events for Use Case – Set North

Change Log	
16/10/2004	Renamed from UC-SetNorth
01/11/2004	Finalized for pre-integrated model

### Overview

Sets the north direction for a project or for a geographic map. Within the context of a model, this information is given as a direction relevant to the coordinate context given for the project or map.

The provision of an annotation arrow to show the direction of North is not considered within this use case. However, provision may be made for this using symbol and annotation facilities within the IfcPresentationDefinitionResource schema, using the IfcDefinedSymbol approach.

### Process

#### Preconditions

Project or map is defined.

#### Actors

Applicant

#### Main Flow

Flow	Entity
1. For a model, for the instance of IfcProject, determine the direction of true North relative to the coordinate system for the map.	IfcProject
2. Set the direction of true North as an instance of IfcDirection using a set of direction ratios in the X, Y and Z axes of a Cartesian coordinate system	IfcDirection
3. Assign the direction to an instance of IfcGeometricRepresentationContext	IfcGeometricRepresentationContext

#### Post Conditions

Direction of true North for the map (model instance) is set.

### IFC Usage and Extension Requirements

Setting the true north as a direction within the XY plane of the world coordinate system is already supported by IFC.

NOTE: The true north had been introduced earlier to facilitate energy calculations taking solar gains/losses into account.

The true north is a direction along the north direction of the map. It is not used presently to facilitate the transformation of the architectural/engineering Cartesian coordinate system into an coordinate reference system.

#### Existing Entity/Class Usage

Entity Class Name	Usage
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IfcProject	The object that sets the context for the project or map and within which the direction of true North is defined.
IfcRepresentationContext	Used as the supertype for the geometric representation context for which true north is an attribute.
IfcGeometricRepresentationContext	Contains the direction specification for true North in Cartesian coordinates. It is provided by the TrueNorth::IfcDirection attribute.

### ***Issue List***

<b><i>Question</i></b>	<b><i>Answer</i></b>