BIM and Workgroup toolbox

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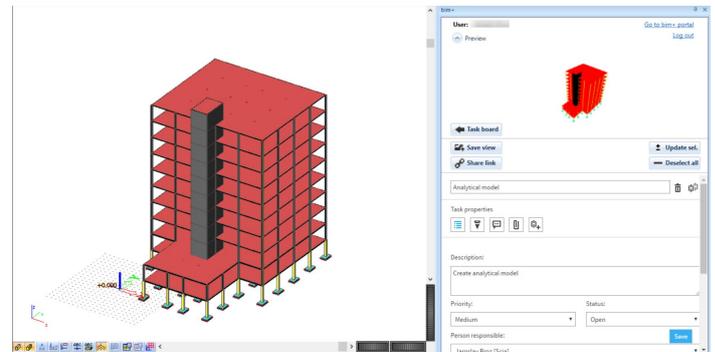

This toolbox increases BIM-productivity especially during the exchange of data between CAD and CAE applications and between two CAE products. The toolbox consists of: **Structural2Analysis** (automatic conversion of the structural model to an analysis model), **update of ESA projects**: **sharing of projects** within workgroups including update and merge tools and the **Member Recogniser** (automatic conversion of general solids to 1D and 2D members).

Toolbox also contain AllplanBimplus connection enables ability to connect your project with AllplanBimplus portal and possibility of usage of powerful tools like task management, BCF etc.

Highlights
AllplanBimplus connection
Both structural and analysis models are kept in the same project.
Analytic model is created automatically from the structural model
General shapes can be converted to structural members such as beams, columns, plates and walls
Merging of SCIA Engineer projects with full control over changes

Allplan Bimplus connection

Allplan Bimplus portal is a powerful tool for cross-system and interdisciplinary cooperation and it is open to all software in the construction sector, collaboration via standard formats such as IFC and BCF. The advantage of such system is an easy collaboration and sharing of models and information related to them. You can easily upload your model from SCIA Engineer to this portal with the help of IFC file on the background. After upload you can use variety of powerful tools like task board management. This could be use for effective communication with other involved parties as BIM manager, MEP designers, architects and draftman. Task board includes option to import / export all issues and task into BCF file and send this to external partners outside Allplan Bimplus collaboration group. Moreover, you can use the revision system to back up the progress of our work.
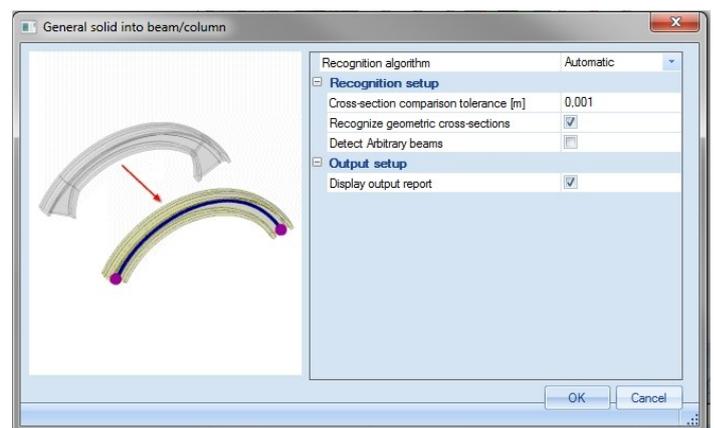
Member Recognizer

The **member recognizer** allows you to convert general solids into native SCIA Engineer entities and vice versa.

- Convert solid into beam/column (1D member)
- Convert solid into plate/wall (2D member)
- Convert part of general solid into a member
- Convert beam/slab into general solid

The conversion algorithm can be

- Automatic
- Detect straight prismatic beams

In case of arbitrary beams, multiple approaches are possible

Alignment

Align

Aligning is the process of planarizing elements in order for their nodes to be connected
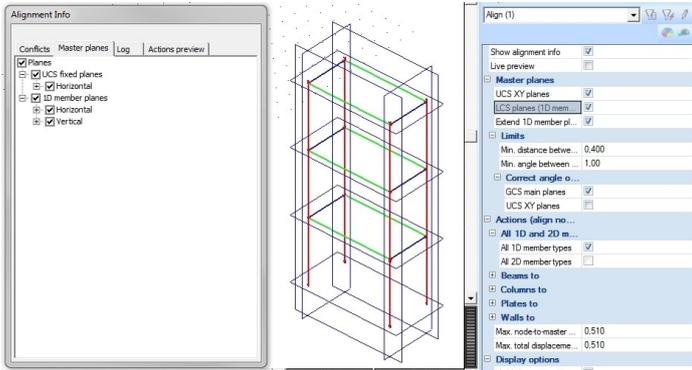
- Automatic generation of master planes
  - Planes of parametric input
  - GCS parallel planes
  - UCS XY planes
  - UCS XY parallel planes
  - Linegrid planes
  - Storey planes
  - Section planes
  - Planes generated by 1D members
  - Planes generated by 2D planes
- Alignment ranges (boundary conditions)
- Preview of master nodes
- Preview and highlighting of master planes
- Preview and highlighting of affected nodes
- Preview of aligned structure

Connect members/nodes

Connecting nodes is the process of linking nodes together to create a valid analysis model.
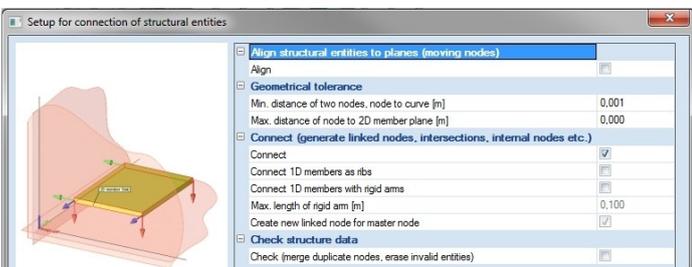
SCIA Engineer generates linked nodes, intersections and internal nodes during the connection

Additionally:

- 1D members can be connected as ribs
- 1D members can be connected by means of rigid arms
- A new linked node can be created for a master node

Check Structure Data

Checking the structure helps modelers to verify whether all entities in the project are valid and have the required properties.

It checks for free or redundant nodes and proposes to remove them.

In case of doubled members, you are notified as well.

Clash check

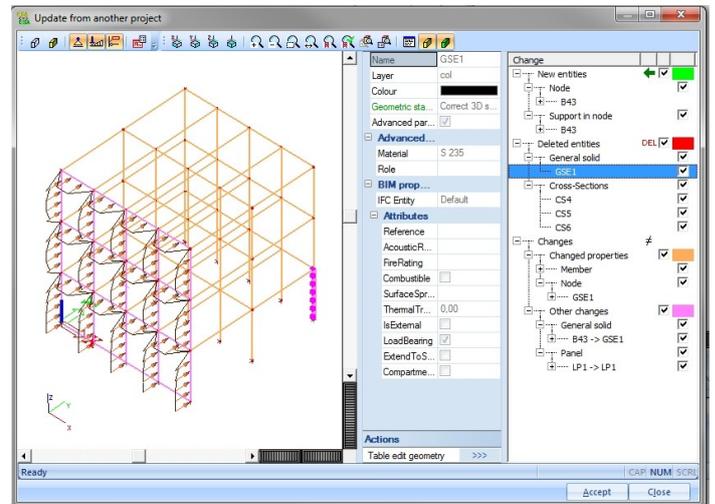**Clash check** is a tool allowing to find colliding objects in the model.
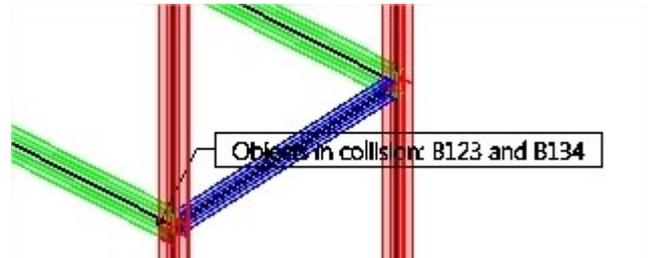
It will :

- Find intersecting volumes
- Highlight conflicts

Update

The **update** functionality in SCIA Engineer allows to compare 2 (versions of the) model(s).

Once differences are detected it is up to the user to process the new/changed:deleted objects by accepting/rejecting them.

Main features are:

- Automatic recognition of changes in the shape of structural members
- Visualization of differences in the model (highlighting)
- Update all or selection of differences
- Update graphical structural shape and/or geometry of the analysis model
- Store more variants of the model and visually compare the models