



## Datasheet

### Allplan - SCIA • ESA PT Interface with roundtrip

#### apesa.03 Roundtrip to Allplan, IFC and others

SCIA • ESA PT Roundtrip to Allplan (NOI), IFC, and other formats. Input and output of a shape of the structure via NOI or IFC files. Alingment of structural shape to analysis shape, update of SCIA • ESA PT projects by newer NOI, IFC or other data.

## Allplan - SCIA • ESA PT Interface with roundtrip

### apesa.03

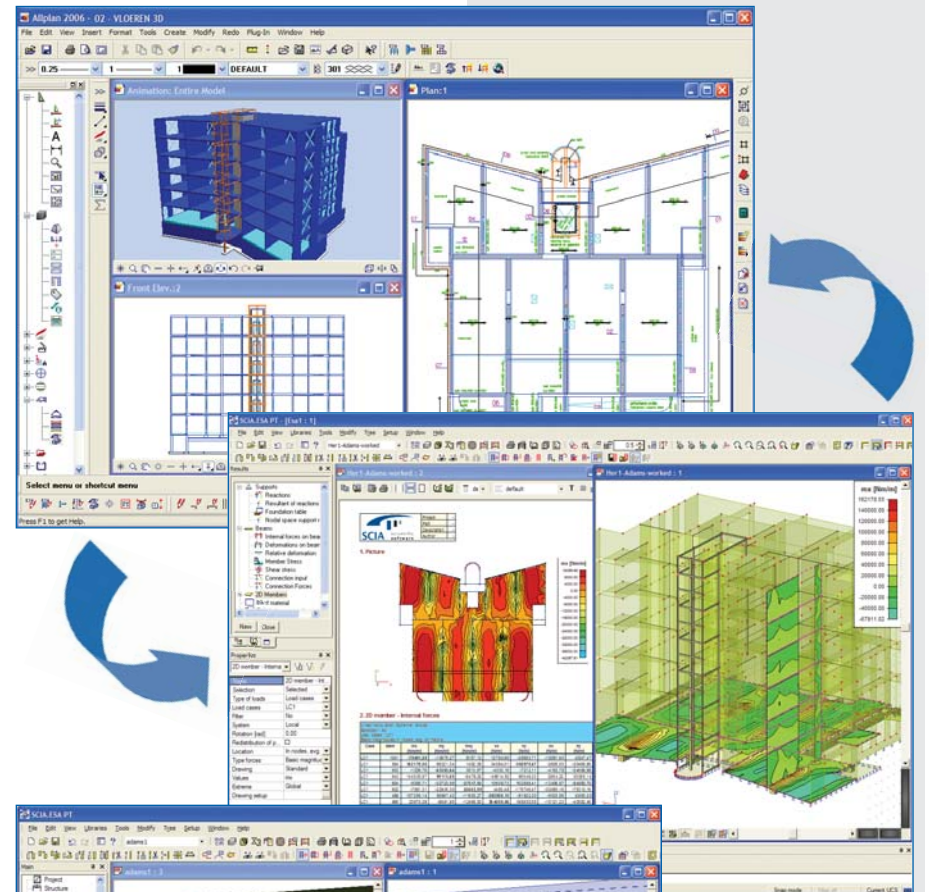
The interface between Allplan and SCIA • ESA PT is provided by means of unique tools that make it possible to use the architectural model of a structure created in Allplan for the efficient generation of an analysis model for static and dynamic analysis in SCIA • ESA PT. As the geometry of the architectural model is less detailed than that required in a realistic analysis model, SCIA • ESA PT is equipped with efficient functions enabling it to interconnect centrelines and middle planes of beams, columns, walls and plates, which is essential for a successful finite element analysis. Moreover, as an architectural model in Allplan is usually changed during the design process, sometimes several times, the interface is equipped with an intelligent update function, which allows for a user-controlled import of the changes into the SCIA • ESA PT analysis model



Required module: Base Modeller (esa.00).

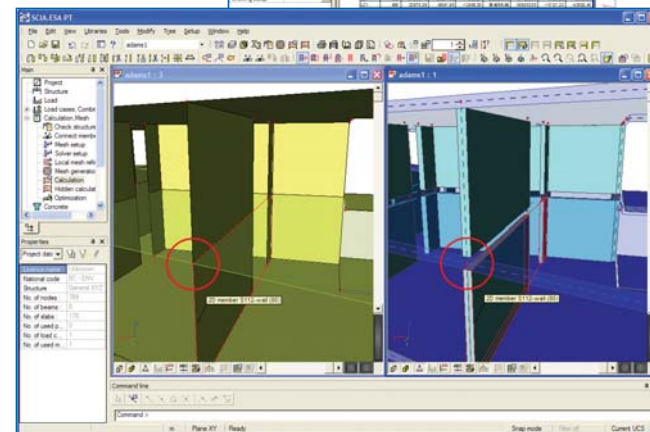
### Import model from Allplan into SCIA • ESA PT

- Beams, columns, walls and plates are supported, including all kinds of openings;
- The exact 3D shape of entity from Allplan is stored as a structural model in SCIA • ESA PT (including detailing, local changes of thickness, end-cuts, etc.);
- The shape of the analysis model is created during the import for each entity and is stored as its second interpretation;
- Centrelines and middle planes of each entity are placed into the centre of gravity of the section, which leads to the best-quality numerical results. Obviously, this could be changed afterwards by the user through regular editing within SCIA • ESA PT;
- The import can be done either directly with instant launching of SCIA • ESA PT or through an SCIA • ESA PT file.



### Connection of entities within SCIA • ESA PT

- It is possible to join either all elements or only selected parts of the structure;
- The user can influence the result of the connecting algorithm by adjusting the limit distances, tolerances and prioritization of selected important planes or axes of the structure;
- Any adjustment can be stored under a name to be re-used later;
- The original shape can be stored as a “frozen” structural model. This information about the original structure is always available for visual comparison with the current analysis model (including eccentricities, thicknesses, details etc.);
- If the position of the middle plane or centreline of any element is moved perpendicularly during the connection, SCIA • ESA PT stores this information as an eccentricity and takes it into account in the calculation.



of both the original and changed shape together;

- The user can update all or only selected differences on selected elements;
- For each element it is possible to update either only the graphical structural shape or also the geometry of the analysis model (e.g. thicknesses, profiles or geometry etc.);
- It is possible to store more variants of the model data in SCIA • ESA PT and visually compare the models later;
- The update is available through both the direct interface between SCIA • ESA PT and Allplan; alternatively a file is useful for those working remotely.

### Highlights

- A breakthrough tool providing for two-way interface, automatic update of changes made on the other side, constantly compatible structural and analysis models.

### Update of the analysis model after changing the structure in Allplan

- Automatic recognition of changes of shape of structural members is done in Allplan or in SCIA • ESA PT;
- Visualization of differences in the model by means of highlighting and displaying