AVEVA™ Model Simplification

AVEVA Model Simplification is an additional module available free of charge for all AVEVA™ E3D Design users. With AVEVA Model Simplification, users can import complex 3D CAD models of equipment that have been created in external Mechanical CAD (MCAD) systems right into AVEVA E3D Design.

During the import process into AVEVA E3D Design, the equipment items can be simplified before being inserted into the typical design database to vastly improve on software performance. The imported equipment items behave in exactly the same way as other AVEVA E3D Design objects to ensure you can work on projects more efficiently with ease and accuracy.

AVEVA Model Simplification can process a range of native CAD formats and complements the built-in model simplification features contained within AVEVA E3D Design, which can simplify and import STEP files.
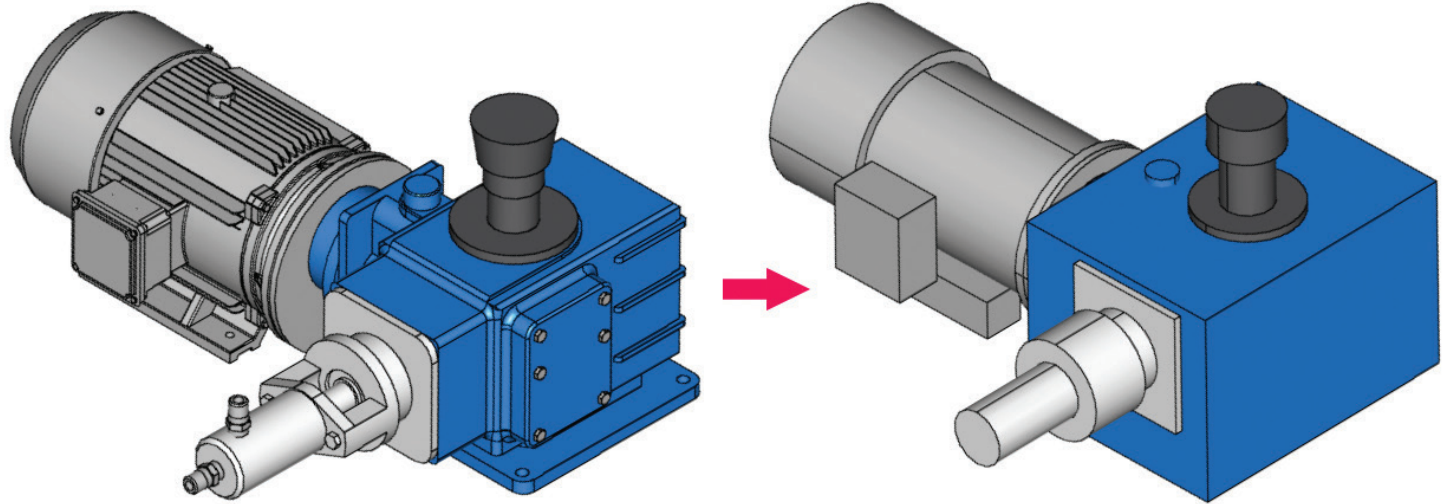
AVEVA

The challenge

Plant layouts incorporate a significant number of machines and large equipment installations. CAD models of these equipment installations contain a great deal more detail than what is needed in the plant layout model. Importing unnecessary information and data can negatively impact performance in the layout tool. By quickly removing unwanted parts and details, and simplifying the model, the tool allows seamless incorporation of equipment models into the plant model.

Field users often receive data over cellular connections, where large files are costly and slow, resulting in large data transfer costs and the loss of valuable time. Mechanical equipment vendors often want to protect their intellectual property and don't always extract the data sent to layout engineers in the best possible format for integration.

Solution overview

AVEVA Model Simplification allows users to quickly and automatically remove unwanted small parts, such as nuts, bolts, washers, and small brackets, based on size. They can also remove small CAD features such as holes, protrusions, fillets, logos, lettering, and ribs. Users can also remove internal parts and simplify complex parts to basic shapes, which helps improve performance.

The simplification tools, powered by ITI's CADfix PPS automatic simplification solution, comprise an advanced model simplification wizard, which has three levels of simplification with user options to control specific simplification operations.

Key benefits

Improved performance

- Reduce file size by orders of magnitude before integrating CAD models into AVEVA E3D Design
- Save days of non-productive geometry handling
- Increase efficiency, decrease time-to-market, and get to commissioning faster
- Greater stability and usability of plant design systems containing large equipment models

Workflow savings

- Significantly reduce file sizes
- Eliminate import failures
- Produce legible models
- Avoid CAD rework
- Eliminate system hangs
- Reduce lead times and accelerate response

Left: The original model, Right: The simplified import to AVEVA E3D Design
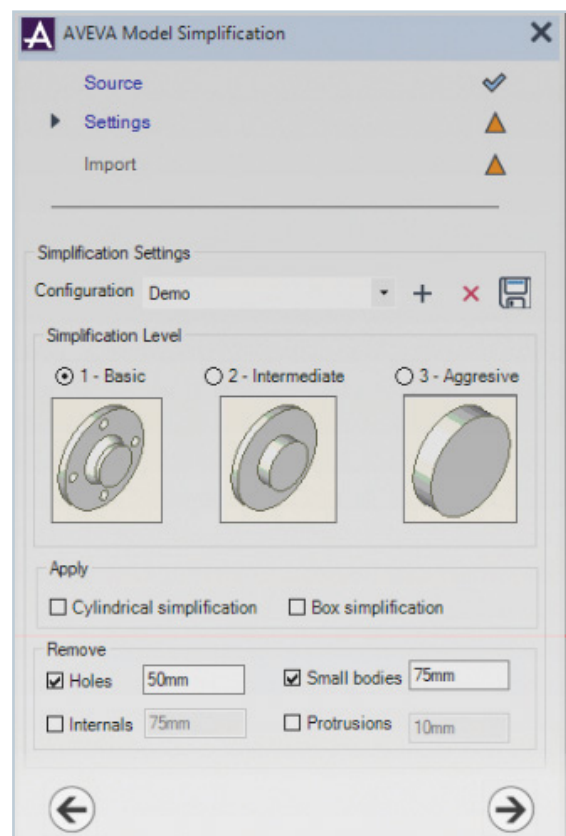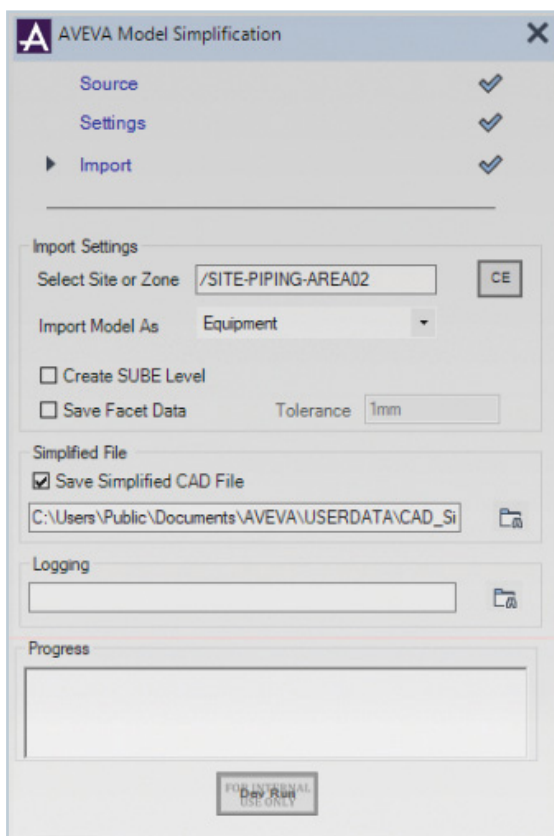
Business value

- Get to commissioning and production faster by eliminating non-value-added time associated with CAD simplification

- Increase profit margins across projects by eliminating non-value-added labor

- Empower staff to focus on value-added activities and seize opportunities for cost savings

- Accelerate time to market with faster response to field engineers

- Time-to-market advantages with a faster response to field engineers

- Avoid potential program delay penalties

Supported file formats

The AVEVA Model Simplification modules allow users to read, import, and simplify STEP files. They also allow for the import of common native MCAD system file formats, including:

- Catia V5
- Creo
- Inventor
- NX
- Solid Edge
- Solidworks

For more information about AVEVA Model Simplification, please contact your local AVEVA representative or submit a contact request via the AVEVA E3D Design page on our website.