



International TechneGroup

CADfix 12/SP1

May 2019

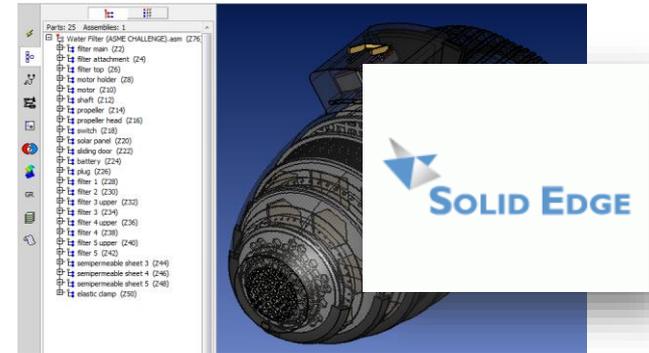


CADfix 12/SP1 Summary

- Import/Export
 - CAD version updates:
 - CATIA V5 – V5V62019
 - NX 12
 - SolidWorks 2019
 - Inventor 2019
 - DXF/DWG 2018
 - New SolidEdge import (V18-ST11)
 - New IFC import (prototype)
 - New VRML export (.wrl & .wrz)
 - New XDMF mesh export
 - FBX export – new auto-decimation option
 - STL export – new facet length controls
 - Creo import – new option for missing accelerator files
 - Major speed-up in DXF/DWG import
- Assemblies
 - Smarter default display quality for large assemblies
- Morph
 - Morphing now available for batch runs
- Zones
 - Improved zone editing and trimming
- Build
 - Improved part scaling tool
 - Improved swept part creation
- GUI
 - New compact mode for Probe tool
 - New “Add neighbours” selection tool
- Misc.
 - New model orientation tool
 - Faster screen picking
 - Faster dynamic model viewing
 - **FlexNet licence server upgrade**

12/SP1: Import/Export

- New SolidEdge Import
 - Versions V18-ST11
 - Parts, Assembly and sheet metal
 - .par, .asm & .psm
 - Attributes: colour, layer, label, transparency

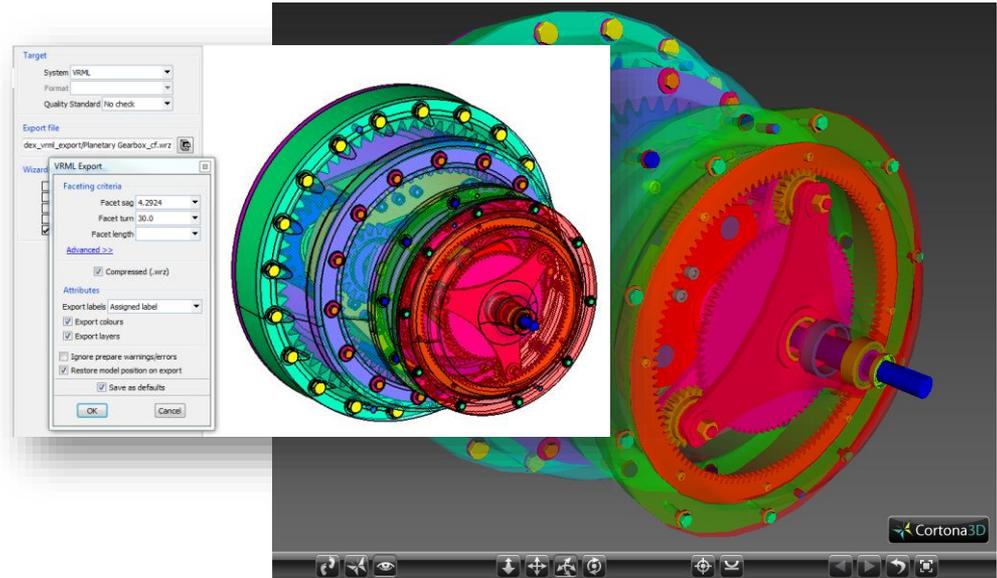


- New IFC Import
 - Support for common entity types
 - Facet based solids
 - Point and wireframe
 - Complete assembly tree
 - Attributes: colour, layer, label, transparency
 - Further entity support coming
 - *(prototype)*

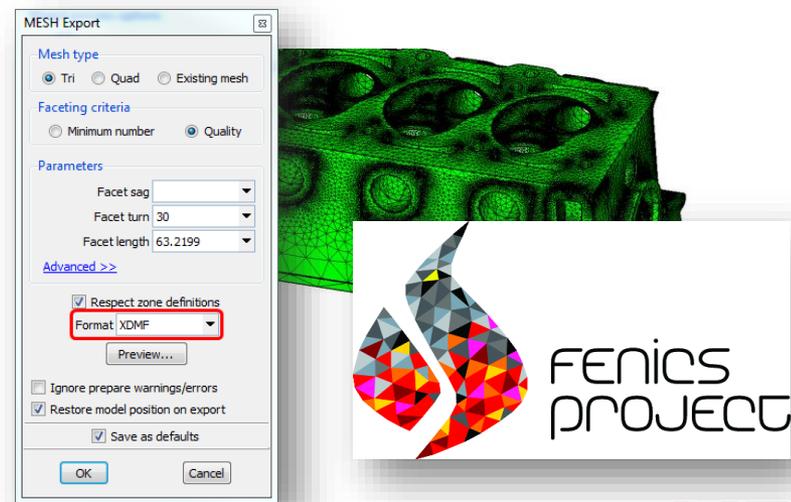


12/SP1: Import/Export

- New VRML export
 - VRML 2.0 support
 - .wrz compressed support
 - Assembly tree exported
 - Attributes + transparency
 - Interactive and batch



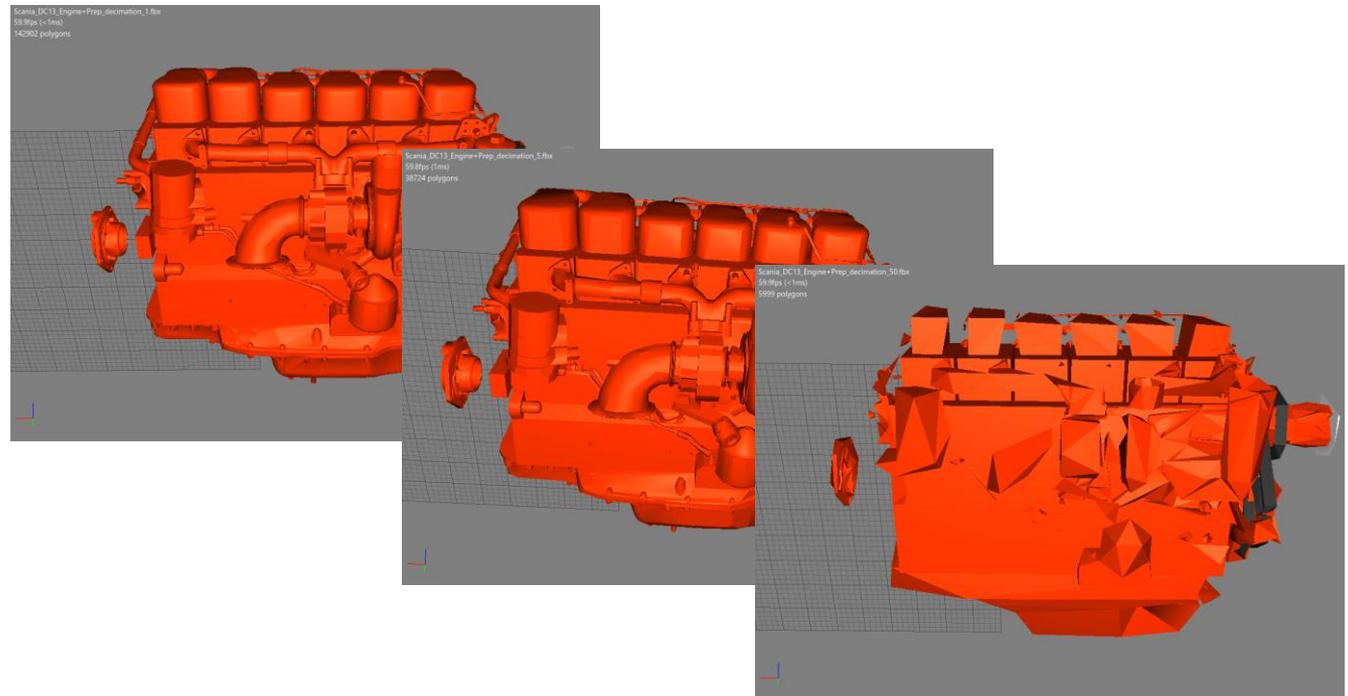
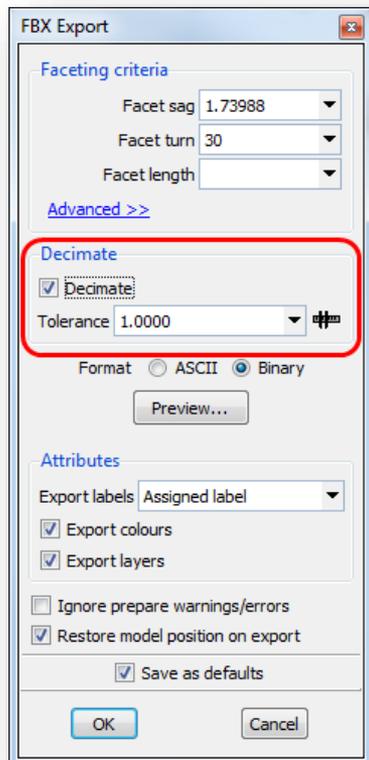
- New XDMF mesh export
 - Export CADfix surface and volume mesh to .xdm files for simulation in FEniCS
 - Tri/Quad & Tet/Pyr/Pent/Hex elements supported



T (prototype)

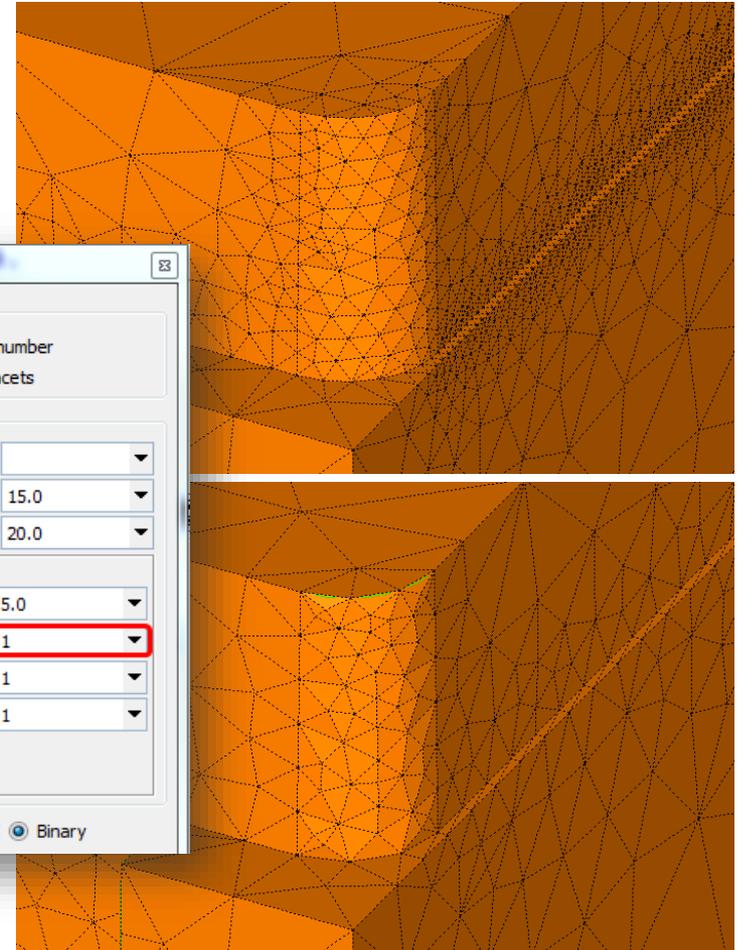
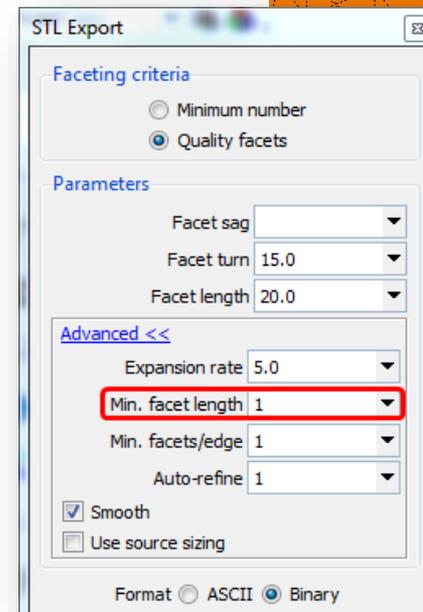
12/SP1: Import/Export

- New auto-decimation in FBX export
 - Polygon reduction through user controlled decimation
 - High tolerance = aggressive reduction, low file size
 - Interactive or batch



12/SP1: Import/Export

- New STL export control
 - Min. Facet length
 - Also controls the minimum radius of curvature resolved by the facet turn parameter
 - Use to reduce the effects of very small features that would result in areas of dense facets
 - Can result in anisotropic triangles where density has been capped



12/SP1: Morph

- Morphing now supported in batch runs
 - New .cwc configuration options control all morphing parameters
 - Input undefomed and deformed files defined in cwc file
 - Wizard log file reports progress and final status of Morph

```
transform,morph,apply [0, 1] : 1
transform,morph,undefile [NULL, file] : undefomed.stl
transform,morph,defofile [NULL, file] : deformed.stl
transform,morph,nomids [0, 1] : 0
transform,morph,matchTol [DEFAULT, value] : DEFAULT
transform,morph,fitMethod [POSONLY, POS+DERIV] : POSONLY
transform,morph,edgeTol [DEFAULT, value] : DEFAULT
transform,morph,interiorTol [DEFAULT, value] : DEFAULT
transform,morph,normalTol [DEFAULT, value] : 5.0
transform,morph,keepBad [0, 1] : 1
transform,morph,delete [0, 1] : 1
```

```
TRANSFORM
Morph: Importing mesh...

Importing model (stl 1.317Mb)...

Reading file...

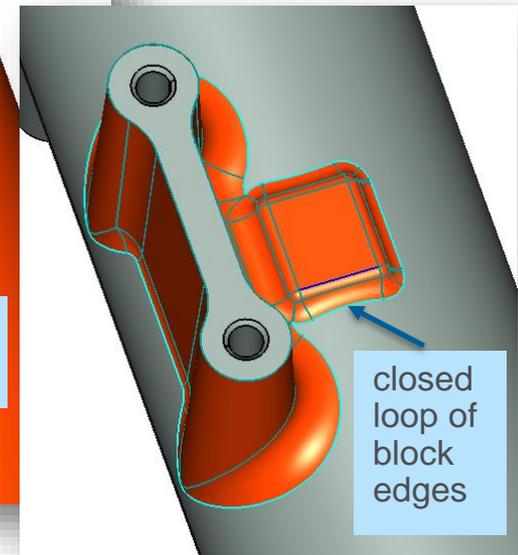
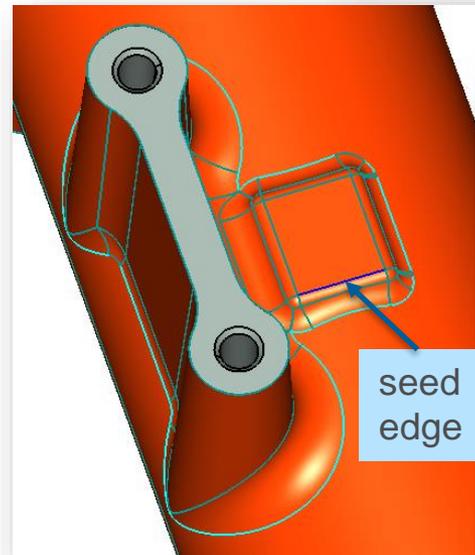
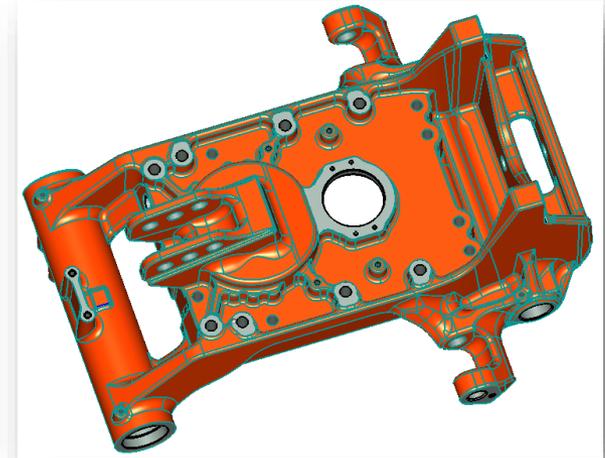
Importing model (stl 1.319Mb)...

Reading file...
Import complete ({3434 6868 0} {3434 6868 0})
Morph: Matching mesh (@ 0.00010388)...
Morph: Matching complete. Max. distance: 6.13252729511098E-07
Morph: Morphing geometry to mesh...
Deformed NURBS surfaces created: 19

TRANSFORM COMPLETED
```

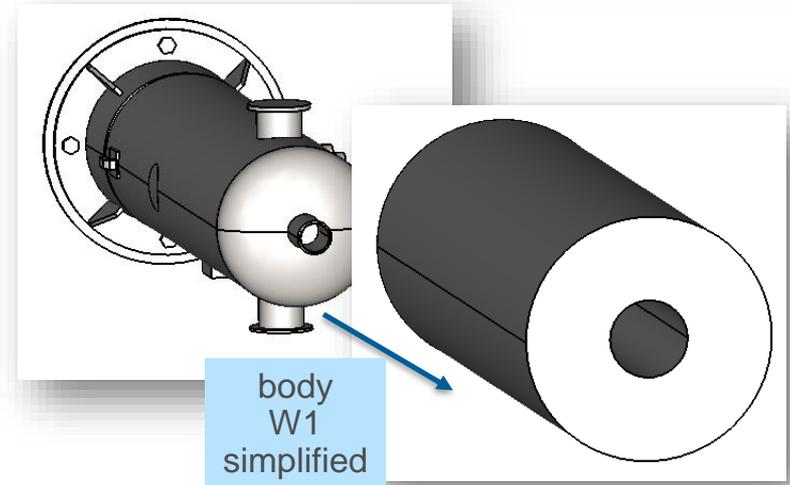
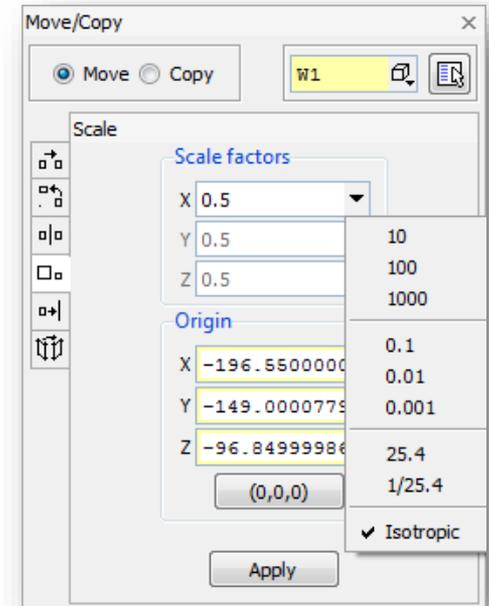
12/SP1: Zones

- Improved Zone construction
 - Tangential carpet selection can pick too much!
 - New colour scheme:
 - Initial “seed” edge (dark blue)
 - Blocking edges (cyan)
 - Allows for easy trimming back of a large zone by tracing out a closed loop of blocking edges
 - Further improvements coming in SP2 – auto-chain and loop tracing to speed up trimming



12/SP1: Build Tools

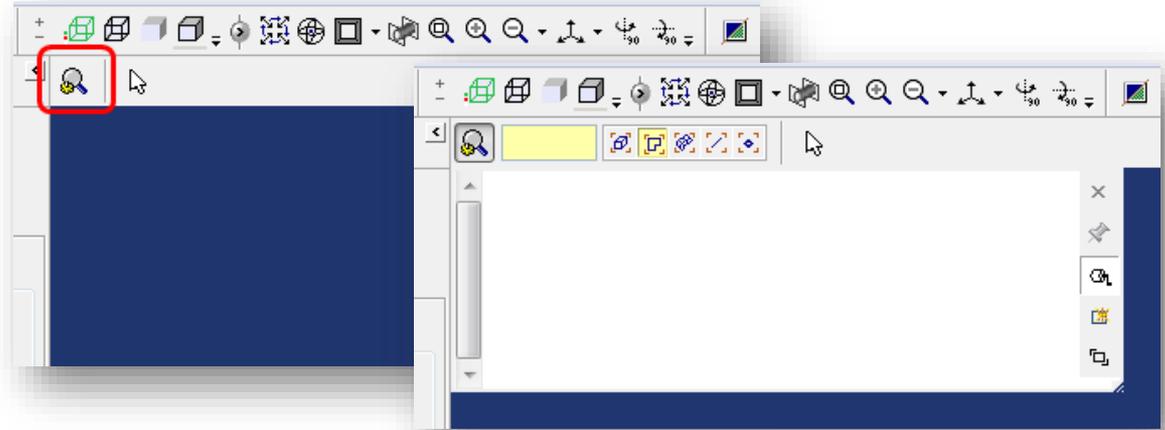
- Improved Scaling Tool
 - New menu of common scale factors
 - Option to lock to isotropic scaling (default)
 - Origin auto-populated to centroid of selected part
 - New option to reset origin to (0,0,0)
- Improved swept body creation
 - Swept and spun body creation can now redefine and existing body
 - Preserves original properties while redefining its geometry



12/SP1: GUI

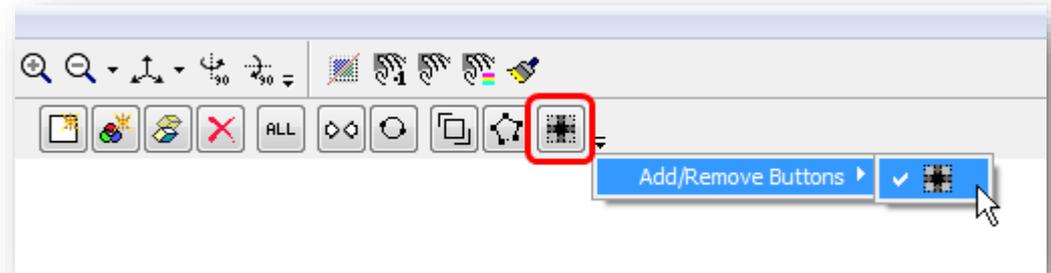
- New compact Probe mode

- When closed the probe tool hides the pick controls taking up less screen space



- New “Add neighbours” tool

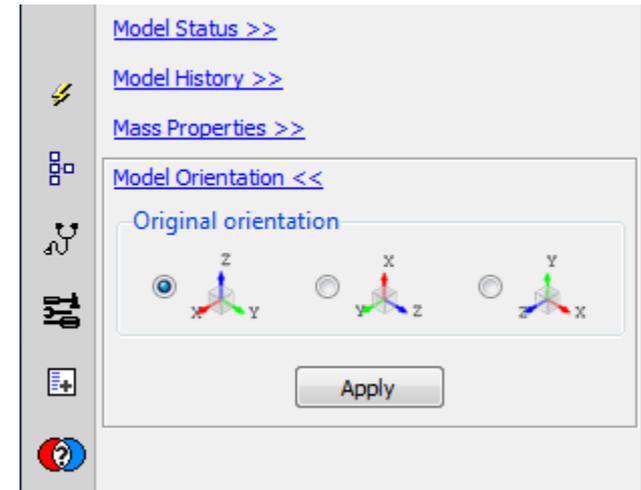
- Optional tool that can be added to the selection tools
- Quick action to extend selection by adding connected neighbours



12/SP1: Miscellaneous

- Model Status: New Orientation tool

- Tool to quickly rotate the model to a different standard orientation
- Select the “up” axis that the model was originally created in



- FlexNet licence server upgrade

- The FlexNet license server has been upgrade in 12/SP1 to pickup security fixes and fix linux hostid problems

***** To run 12/SP1 and future CADfix versions the FlexNet licence server MUST be upgraded to the version (11.16.1) delivered with 12/SP1 *****