

CADfix 12 Data Exchange Change Notes

Release Status

Supported Platforms and Operating Systems

Windows Vista, 7, 8 and 10 64 bit

Linux RHEL 6 64 bit

Import/Export

ACIS

Import/export version to 28

CATIA V5

Import/export version to 2018

CREO

Import version to 5.0

DXF/DWG

Support for exporting assemblies as facets

Import extend colour assignments to inherit between face and a body with no colour

FBX

New export for common file format used by AR/VR applications

Inventor

Import now available in Linux

JT

Import/export version to 9.0

3D Studio Max (OBJ)

New support for colours (.mtl file) and transparency

Parasolid

Import/export to V29

SCO3

Support for exporting manual mesh

STEP

Support for tessellated surfaces

Protocol upgraded to 242

SolidWorks

Import version to 2018

Transparency support

Support for import and export of transparency properties from most CAD systems

XGL/ZGL

New export

Assembly Manager

- Faster screen selection and tree updating
- Speed-up of box selection tool
- Speed-up of assembly tree selection and deletion
- Speed-up of assembly exploding

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- Faster export of large assemblies
- New option to remove scaling in transforms

Wizard Process

- Macro scripting support expanded
- Batch runs possible without cwc configuration file when run with a script

Diagnostics

- New “inconsistent loop” test

Applications

- STL (facet) manager
 - Major advance in large zone parameterisation
 - Robust, unfolded parameterisation of large complex zones
 - Enables extensive use of virtual topology to avoid small CAD features
 - Extend Set completion for FROG's

Defeature and Build tools

- Faceted primitive body to solid body
- Primitive body to centreline
- Split tools
 - New split face in to quads tool (prototype)
 - New hex-skin subdivision tool (prototype)
- Cross-field based automatic quad splitting (prototype)
 - Subdivide a face in to well aligned quad regions
 - Highly quad-dominant with optional t-junctions

Diff3D

- CAD-to-CAD merging
 - Identify regions of difference between 2 models, e.g.
 - Different revisions of same CAD model
 - Before/after versions of the same model
 - Visual feedback showing differences between regions
 - Selectively merge differences to form a new model
- Mesh-to-CAD compare
 - Import mesh (solid or surface): NASTRAN, ABAQUS, LS-DYNA, PATRAN, CGNS, STL, OBJ
 - Match to CAD
 - Option to ignore mid-side nodes
 - Reports max. differences
 - Supports virtual topology (mesh that doesn't align with CAD edges)

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- Scan-to-CAD compare
 - Point cloud and facet imports supported
 - Compute distances to CAD geometry
 - Future developments:
 - Alignment/registration tools
 - Report generation

Morph

- Improved matching: Import-Match-Deform
- Improved deformations
- Import supports surface and solid meshes
- Faster and more robust matching
- New support for virtual topology

GUI

- New macro record and playback
 - Capture and playback of interactive workflows
 - Most interactive and Wizard functions can be recorded
 - Macros saved in .cwm file
- New vertical tab layout
- Large expansion of the cwi api
 - Now over 400 separate functions available
 - Most areas of the interactive GUI are now script-able
- Various user driven improvements
- New element distance check
- Support for external toolboxes having icons in same folder as .ctl file

CAE Meshing

- New element quality test: CRAT, VRAT, ORIE and SIZE
- Improvements and extensions to Division Applications Rules
 - SCURVE can now take combined lines into account
- Extend tabulation of mesh style information
- Extension to mesh smoothing for regions of skin mesh
- Support for lattice partially covering model
- Extend Set to capture invalid Twinkles
- Hex-skin partitioning tool for hybrid meshing
 - Powered by CADfix Medial Axis
 - Skin depth user controlled
 - Skin blocks hex meshable

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General

- Increased material property limit from 1023 to 4095.
- 3-5x performance boost compared to CADfix 11 across most operations
- Faster evaluation and projection operations on NURBS surfaces
- Frame and zoom merged to single command line option