

## 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

# CADfix

## CADfix 12 Data Exchange Change Notes

### 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