

# Removing the barriers to advanced simulation

## CADfix

### Support

#### Native

- CADDS 5i
- CATIA V4
- CATIA V5
- Creo/Wildfire
- Inventor
- NX
- SOLIDWORKS
- 3D Studio Max

#### Neutral

- ACIS
- DXF/DWG
- IGES
- JT Open
- Parasolid
- STEP
- STL
- VDA-FS
- 3D PDF

#### Specialist CAE

- AGPS
- ANSYS
- SC03
- Solar/Centaur/Flite

#### Platforms

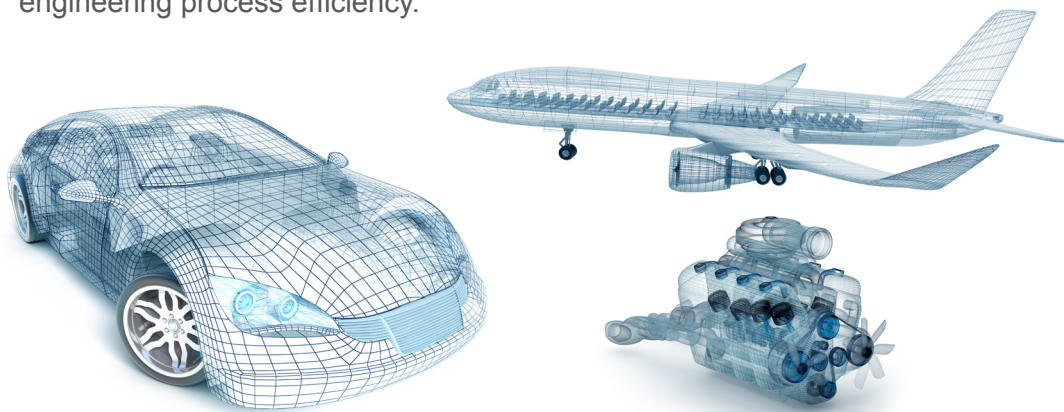
- Windows
- Linux

### About ITI

ITI is the global leader providing reliable interoperability, validation and migration solutions for product data and related systems. Our customers recognize the value in having a trusted solution partner that provides more than just software. ITI solves complex product data interoperability problems so that the world's leading manufacturers can focus on making great products. You need to keep your engineering initiatives moving forward.

CADfix removes the barriers that prevent the reuse of solid models in design, optimisation and advanced simulation processes used throughout industry. By providing an extensive set of geometry handling and manipulation tools, CADfix is able to maximise the reuse of CAD data in CFD, FEA and CEM analysis applications.

CADfix delivers breakthroughs in geometry processing, tackling some of the toughest 3D geometry issues affecting industry. ITI works closely with customers to identify requirements for the development of leading edge novel geometry processing technology that will have a significant impact on engineering process efficiency.



### CADfix Features

- Import and export functionality for a variety of CAD formats, solid modeling kernels and data exchange standards
- Advanced healing and repair engine to correct and repair geometric and topological flaws within the CAD model
- Batch, wizard and diagnostic-driven modes for automatic and interactive functionality
- Reduced complexity through de-features and simplification to prepare CAD models for analysis

CADfix is packaged as a desktop or server solution, with extensible modular functionality dependent upon the end user's source and target systems. The application may be integrated into PLM or workflow automation tools. CADfix also serves as a geometry pre-processor within proprietary CAE-centric OEM applications.

*"CADfix is at the heart of everything we do. In effect, we use it as the hub of our operation."*

- Paul Baker, BAE Systems

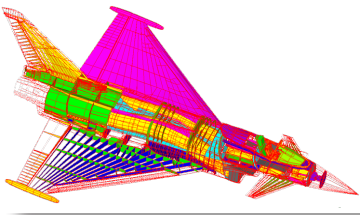
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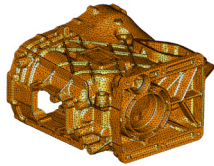
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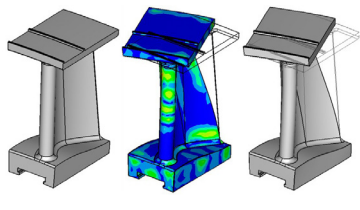
## Model simplification for advanced simulation

Defeature CAD model geometry for faster, more robust simulation. Simplify complex patchworks of CAD faces by joining into single faces. Detect and fix unmeshable regions such as sharp corners, narrow regions and intersecting lines. Remove unnecessary detail such as logos, fillets, chamfers and user selected regions. Automatically extract the flow domain for internal flow CFD.



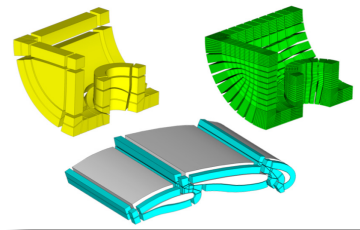
## STL generation and clean-up

Generate high quality STL from CAD and clean-up poor STL, with user controlled sizing and quality controls. Shrink-wrap generation of STL from complex assembly models. Extensive STL import and clean-up tools: hole filing, stitching, merging, intersection splitting, facet quality improvements, simplification and decimation.



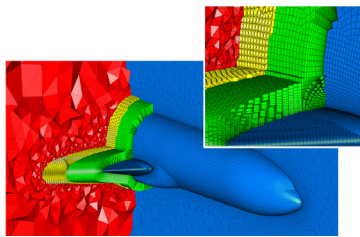
## Geometry morphing

Accurately deform CAD model geometry to match simulation results. Import volume or surface meshes representing the required deformed shape. Preserve design intent through the high accuracy morphing process, based on smooth minimal perturbations to the original CAD curves and surfaces. Accomplish morphing with very sparse meshes and export results to standard CAD file formats.



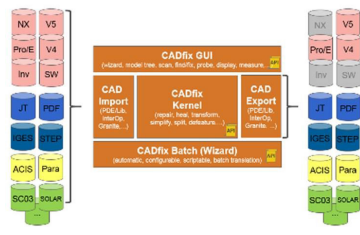
## Model partitioning for quality hybrid and structured meshing

The unique CADfix Medial Object technology enables the automatic partitioning of complex geometries for high hybrid CFD and FEA meshing. Air gaps, complex junctions, different thickness regions and trailing edges are automatically partitioned for structured meshing. Combined with the CADfix flexible meshing framework, automatic subdivision significantly speeds-up simulation workflow.



## High quality hybrid meshing

Different mesh styles, advanced size control and integrated external meshers available. Extensive mesh generation covering structured/unstructured, linear/quadratic, sizing and quality. Flexible framework with dynamic plug-ins for integrating third party meshing technologies with CADfix's own range of mesh generators.



## Geometry modelling kernel with extensive API

Develop custom applications built on the CADfix geometry system using the CADfix CFI toolkit. Multiple language support including C, C++, Java, Python and Fortran. The CFI toolkit provides geometry creation, interrogation and processing functions including: projections, derivatives, ray firing, curve and surface tessellation, mass property generation, Boolean functions, surface intersections and surface lofting.

**Maximize technology.  
Drive program success.**

Create Momentum ➔