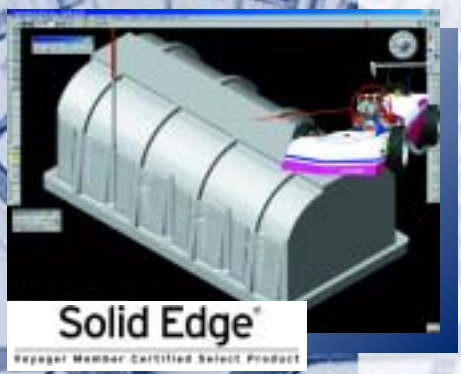
GibbsCAM® CAD Interoperability



In order to ensure that GibbsCAM can receive and machine part data whatever the source, GibbsCAM supports a wide variety of popular computer-aided design (CAD) data formats for exchanging part data.

All GibbsCAM packages support point lists, DXF, DWG, and IGES formats. These formats represent the most commonly used formats in use in industry today allowing part data to be read in from almost any source. Coordinate measurement machines or 3D scanners are a common source of point list data. DWG and DXF are native formats of AutoCAD®, AutoCAD Mechanical® and Mechanical Desktop® and are also used by non-Autodesk applications. IGES (Initial Graphics Exchange Standard) has been a leading industry standard format for the exchange of engineering drawings and geometry (wireframe, surface and more recently – solid models). Whether point, wireframe, surface or solid geometry is read into GibbsCAM depends on both the data format and the specific GibbsCAM configuration. Once read into GibbsCAM, problem geometry can be repaired using GibbsCAM's powerful healing technology. Surface models can be automatically stitched into solids allowing GibbsCAM's powerful solids-based technology to be applied.

Solid modeling is the standard method to represent parts for most modern CAD applications. To realize the highest level of data exchange accuracy, Gibbs licenses the Parasolid®, ACIS® and Granite® solid modeler kernels. These three systems are the most popular, mainstream solid modeling kernels used by numerous CAD applications. Gibbs also licenses libraries to directly read CATIA® v4 and CATIA v5 format files.

To ensure the ultimate level of interoperability, GibbsCAM supports reading the native formats of many popular CAD applications, such as Autodesk Inventor, CATIA v4, CATIA v5, Pro/ENGINEER®, Solid Edge®, and SolidWorks®. This allows GibbsCAM to directly open and machine part files from these CAD systems.

To further enhance interoperability with GibbsCAM, data transfer add-ins have been developed specifically for AutoCAD Mechanical Desktop, Autodesk Inventor, Solid Edge, and SolidWorks. These add-ins augment the CAD application allowing it to transfer part files from their current session directly into GibbsCAM. If GibbsCAM is not running, it will initiate GibbsCAM. If GibbsCAM is running, it will prompt the user for the appropriate way to accept the part – create a new GibbsCAM session, replace the current part with the incoming part, or add the incoming part to the session.

In recognition for achieving a high level of interoperability, GibbsCAM is certified under the Autodesk Inventor Certified Application Program, is a Certified Select Program with Solid Edge and is an approved CAM partner in the SolidWorks Manufacturing Network.

GibbsCAM also supports STEP and VDA-FS, two international data exchange formats. STEP (STandard for the Exchange of Product model data) is an International Standards Organization (ISO) data exchange standard used worldwide. GibbsCAM supports STEP application protocols AP203 and AP214. VDA-FS is the trimmed surface exchange format of the German automotive industry group (VDA).

Format	Option/Module	Entities	Read/ Write	Products
Point List	All Packages[1]	Points	R/W	CMM probe
STL	Solids Import	Facets	W	stereolithography
DXF	All Packages[1]	Surfaces, Solids	R	AutoCAD®, AutoCAD Mechanical®, Mechanical Desktop®, DXF-capable app's
		Geometry	R/W	
DWG	All Packages[1]	Geometry, Surfaces, Solids	R	AutoCAD, AutoCAD Mechanical, Mechanical Desktop, DWG-capable app's
IGES	All Packages[1]	Geometry, Surfaces	R/W	Commonly supported by most CAD systems
		Solids	R	
VDA-FS	VDA-FS Reader	3D Geometry, Surfaces, Solids	R	
STEP AP203	Solid Exchange[2]	Surfaces, Solids	R/W	CAD app's that support STEP, such as Alibre Design
STEP AP214	Solid Exchange[2]	Surfaces, Solids	R/W	
Parasolid®	Solids Import[3]	Surfaces, Solids	R/W	Rhino, Solid Edge®, SolidWorks®, Unigraphics®
ACIS®	ACIS SAT Reader[4]	Surfaces, Solids	R/W	Ashlar®, CADKEY®, CoCreate®, ACIS-capable app's
Granite®	Solid Exchange[2, 4]	Surfaces, Solids	R/W	IronCAD®, Granite-capable app's
Inventor	ACIS SAT Reader[4]	Surfaces, Solids, Assemblies	R	Autodesk Inventor®
CATIA V4	CATIA V4[4]	3D Geometry, Surfaces, Solids	R	CATIA V4
CATIA V5	CATIA V5[4]	3D Geometry, Surfaces, Solids	R	CATIA V5
Pro/ENGINEER®	Solid Exchange[2]	Solids, Assemblies	R	Pro/ENGINEER Wildfire
		Solids	W	Pro/E ATB file
Solid Edge®	Solids Import[3]	Surfaces, Solids	R	Solid Edge
SolidWorks®	Solids Import[3]	Surfaces, Solids	R	SolidWorks

Notes:

1) Support for DXF, DWG and IGES formats is provided with all GibbsCAM packages. Actual elements handled in the file depends on specific GibbsCAM configuration.

2) The Solid Exchange Built on Granite option requires at a minimum the Solids Import option.

3) The Solids Import option allows Parasolid data to be read into GibbsCAM, which is then machined by extracting edge geometry from the solid. The 2.5D Solids option is required to directly machine solid models.

4) Requires Solids Import, 2.5D Solids or SolidSurfacer® option.

MLG96/10M/10-03

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