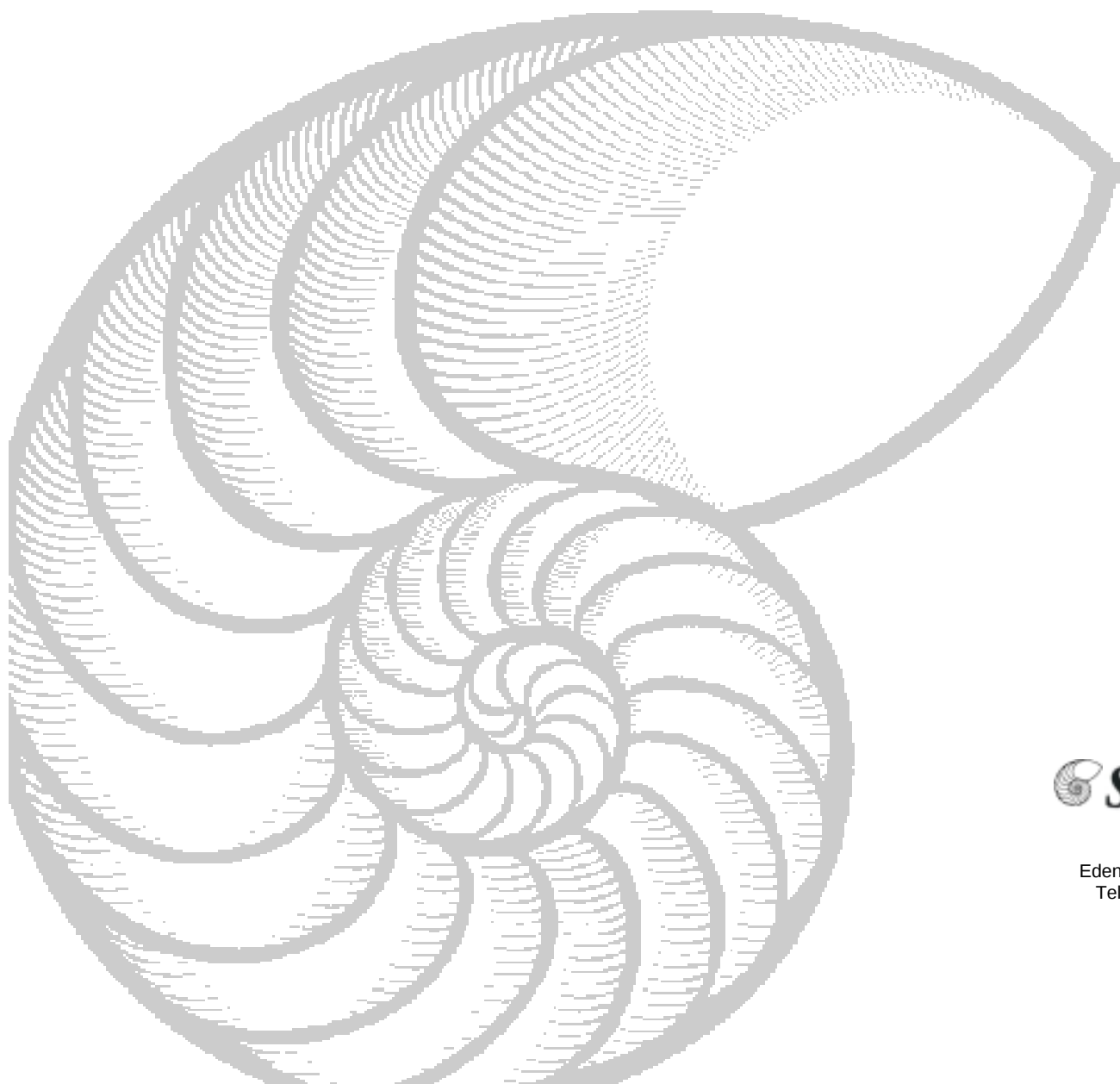


Insight™ 3.5

Release Notes



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Summary

Insight™ is the Stratasys software used to preprocess STL models and generate toolpath files to be built on a Stratasys FDM Titan™, FDM Maxum™, FDM Quantum™, Prodigy Plus™, FDM 1650, FDM 2000, FDM 3000, and FDM 8000 modeling systems. Insight preprocessing includes:

- Orienting the STL model
- Slicing the STL model to create slice curves
- Creating support curves that define where BASS™ (Break Away Support System) supports will be built
- Creating toolpaths for part and support curves
- Creating toolpath file (CMB/SML) for downloading

Insight Product

- Insight 3.5 is a PC based software application. Insight runs exclusively on Microsoft Windows XP, Windows NT and Windows 2000. Version 3.0 was issued to a limited distribution in December 2001. Version 3.1 was issues to limited distribution in March 2002. Version 3.3 was generally distributed in late Q2 2002 and introduced support for the Prodigy Plus™ modeler. Version 3.4.1 was released in November 2002, adding WaterWorks to the Titan ABS configuration. Version 3.5 builds on those releases with the addition of numerous refinements and bug fixes in all feature categories, including support for Titan PPSF material and Maxum ABSi material.
- The Insight product bundle includes the following tools:
 1. Insight - a full-featured application for all model pre-processing needs.
 2. Status - an easy to use interface to the network-based FDM Titan™, FDM Maxum™, FDM Quantum™, and Prodigy Plus™ systems. View modeler status from your workstation and download preprocessed models to be built.
 3. FDM Status - an easy to use interface to the FDM Benchtop modelers. Pack and download SML files and monitor the status during the build.
- The Insight online help system uses the Microsoft HTML Help viewer.

Insight Preprocessing

Slicing

Slicing is a key component of preprocessing. Slicing transforms the 3D STL model to a series of planar slices that contain exclusively non-overlapping and non-intersecting closed curves. The Insight slicing procedures excel at producing the desired closed curves, even when the STL model may contain gaps, overlaps, and other flaws.

During slicing the software automatically determines the best location for the seams - locations where the toolpath extrusion begins and stops. The seams are positioned to minimize undesirable visual artifacts.

Supports

Support generation is vital to ensure part integrity during the part build. The Insight support generator finds all portions of the model that need supports to ensure a quality build.

A **Sparse** support capability is included to reduce the amount of material (and time) required to build supports. Another option is **Break-away** supports, which has some of the speed advantages of Sparse supports, but can also be easier to remove on some parts.

Toolpaths

Use the contour build style for increased part build speeds on thin walls on the FDM Maxum™ and FDM Quantum™. Use the Custom Group operation to customize fill patterns for key part features.

A **Sparse** part fill capability is included to reduce the amount of material (and time) required to build the part. Another option is **Double Wide** fill, which has some of the speed advantages of Sparse part fill, but results in a solidly filled part. These options are most worthwhile when applied to parts with significant filled volume. Parts that are predominately very thin walled would have less benefit.

Curve Editing

Curve editing is occasionally needed to compensate for STL flaws and to modify curves for optimum extrusion. Insight offers a full set of tools to modify the layers of slice and support curves.

Important features to note include automated tools for merging and combining a set of closed curves and for merging a set of open curves into the desired closed curves.

A variety of curve drawing functions provide more precise control when drawing new curves.

The Undo feature will fully undo the most recent edit, regardless of the number of curves or horizontal layers that are affected.

Insight Modeler Status

The Insight Modeler Status application provides the workstation interface with which to communicate with the network-based FDM Maxum™, FDM Quantum™, FDM Titan™, and Prodigy Plus™ systems. Modeler Status provides the following capabilities.

1. Downloading CMB files to a FDM Titan™, FDM Maxum/Quantum™, or Prodigy Plus™ modeler
2. Viewing modeler status during a part build
3. Packing multiple CMB files to build simultaneously
4. Queue management to rearrange and remove pending jobs contained in the queue
5. Modeler build log that reports time and material statistics for all completed models.
6. Remote e-mail and pager notification upon build completion

Use the Status application to download all of your CMB files to FDM Titan™, FDM Maxum/Quantum™, or Prodigy Plus™ modelers. During the part build you can easily view status information for the current build, including the elapsed time and time remaining and the amount of material used during the build.

After building several parts you can retrieve the build log containing summary information for all models that have been built. This provides the actual build times and material consumption to help track modeler utilization.

To build multiple models at once, you can use the packing feature, allowing you to combine the toolpath files for multiple parts into a single composite file. This will help maximize your use of the build envelope and minimize the time spent removing parts and starting the next build.

For unattended modeling you can use the remote notification feature to receive either e-mail or pager notification when the active build is either complete or unexpectedly interrupted.

Insight FDM Status

The Insight FDM Modeler Status application is an application that provides a graphical interface for:

1. Downloading SML files to an FDM 1650, 2000, 3000, and 8000 benchtop modelers.
2. Viewing modeler status during a part build.
3. Packing multiple SML files to build simultaneously.
4. Remote e-mail or pager notification upon build completion.
5. Modeler calibration.
6. Modeler build log.

Use this application to download all of your SML files to the FDM modeler. By using this application you never need to use any of the older DOS-based programs. In fact, the FDM Status application can be started directly (and automatically) from Insight so that you don't even have to leave Insight to commence the part build.

During the part build you can easily view status information for the current build, including the elapsed time and time remaining and the amount of material used during the build.

After building several parts you can retrieve the build log containing summary information for all models that have been built. This will provide you with the actual build times and material consumption to help you track your modeler utilization.

To build multiple models at once, you can use the packing feature, allowing you to combine the toolpath files for multiple parts into a single composite file. This will help maximize your use of the build envelope and minimize the time spent removing parts and starting the next build.

For unattended modeling you can use the remote notification feature to receive either e-mail or pager notification when the active build is either complete or unexpectedly interrupted.

Finally, FDM Status makes the very important task of modeler calibration much easier. The graphic interface guides you through the calibration steps to keep your modeler in peak operating condition.

Insight 3.5 Changes

Since the release of Insight version 3.4.1, the following notable updates have been made to Insight:

Numerous bug fixes have been added in all categories. To take advantage of the many improvements, it is recommended that pre-existing jobs processed with Insight 3.4.1 or earlier versions be reprocessed after installing Insight 3.5.

TITAN

- Improve time estimator.
- Enable PPSF material.
- 1 miscellaneous fix.

MAXUM

- Add P500 ABSi material to Maxum. T16 and T12 tip options. Soluble supports only.
- Improve time estimator.

FDM 8000

- Incorporate FDM 8000 rapid speed patch. Prevents loss of position seen on some machines.

FDM 1650

- Fixes build order for FDM 1650 to perimeters first, then rasters.

STL

- Add hidden line removal option to wireframe display (View/Display Options/Advanced menu).
- 2 miscellaneous fixes.

SLICING

- 5 miscellaneous fixes and enhancements.

SUPPORTS

17 miscellaneous fixes and enhancements.

TOOLPATH

7 miscellaneous fixes and enhancements.

STATUS

6 miscellaneous fixes and enhancements.

FDM STATUS

Always build 2 calboxes for toolpath and XYZ calibration.

Enable vernier calbox.

2 miscellaneous fixes and enhancements.

CURVE EDIT

Many fixes and enhancements to Section with Profile.

3 miscellaneous fixes and enhancements.

GUI

Add a navigation history menu under the Back and Forward buttons. Access via right mouse button.

Fit view to whole part for top, front, side, and iso views.

Add selection filter for toolpath curves. Allows user to select (and delete) all toolpath curves on a layer, to facilitate editing.

When in any of the draw operations, add a link (button) to go to any of the other draw operations.

11 miscellaneous fixes and enhancements.

ALGORITHMS

10 miscellaneous fixes and enhancements.

INSTALLATION

Allow CMB-utilities-only installation.

Limit desktop shortcut icons to the main application and appropriate status application.

1 miscellaneous fix.

HELP

Various updates.