

### Solution Highlights

- Reduces model pre-processing time by 60%
- Accelerates model meshing activities and automatically creates 1D connections
- Allows 1 click material assignment through an intuitive user interface
- Provides a process-centric approach to streamline the tasks associated with pre-processing
- Embedded into HyperMesh

### Ideal for Organizations that:

Frequently build and iterate upon complex models

## Model Mesher Director

### Streamlining Complex Model Pre-Processing Activities

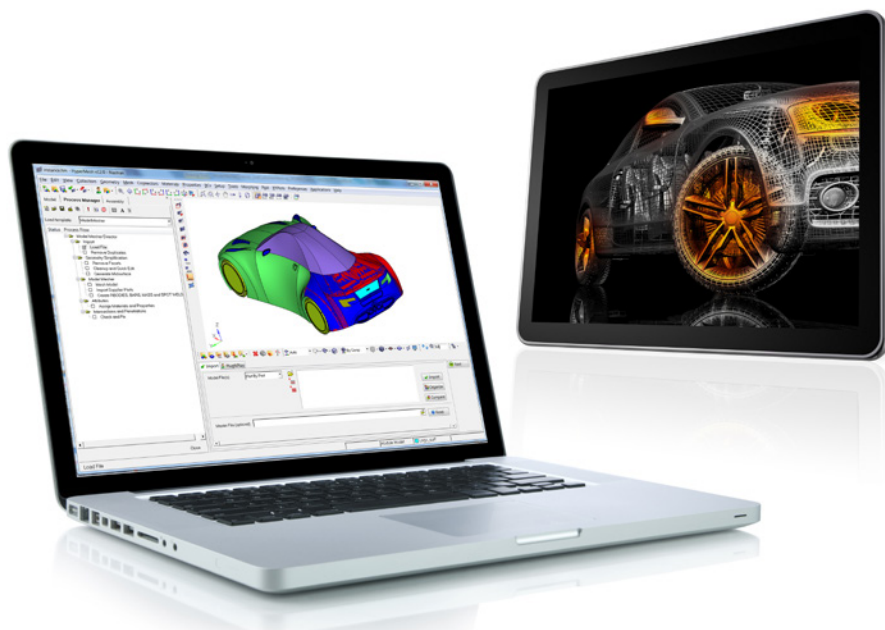
Companies face the challenge of analyzing ever larger and more complex models. This added complexity has the potential to negatively impact the design cycle time. As a result, analysts need to ensure that the model meshing process takes place rapidly and consistently across design teams. Altair's Model Mesher Director (MMD) is designed to reduce modeling time by allowing the user to quickly perform a range of pre-processing activities. By streamlining time-consuming modeling tasks, analysts can concentrate on more value added activities, spending more time investigating analysis results and providing design insight.

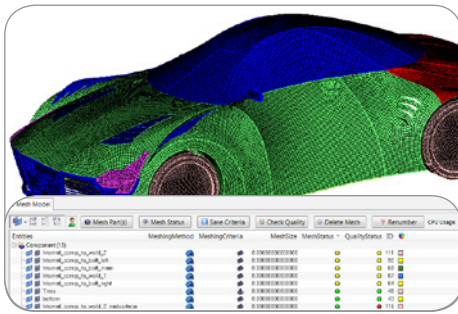
The MMD is a fully integrated, user-friendly solution that empowers engineers to import & modify geometry and mesh models with specific mesh criteria automatically with the power of Altair HyperWorks tools.

### The Model Mesher Director allows the users to:

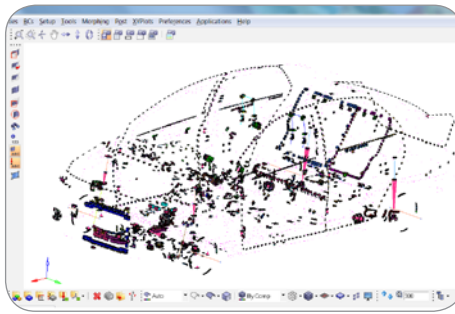
- Import the CAD model into the HyperMesh environment
- Identify and remove any duplicate components
- Simplify the geometry
- Mesh the model
- Create 1D connections
- Assign materials and properties
- Check & fix intersections and penetrations

**MMD drastically decreases the model pre-processing time. Current users of MMD have reported time savings from 6-7 days down to 24 hours compared to their traditional process.**

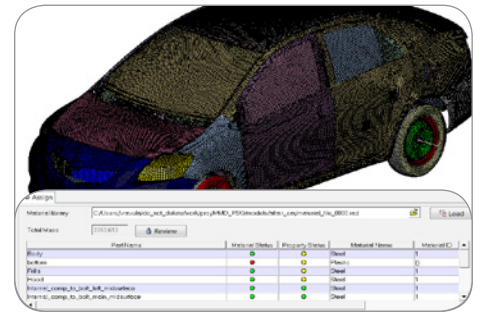




Mesh the model & receive feedback on mesh quality



Define 1D connections such as bolts & bars in the required locations



Assign materials & properties to the model

## Capabilities:

Model Mesher Director provides a comprehensive solution to reduce the time associated with pre-processing activities allowing the user to spend more time investigating the analysis results.

The Model Mesher Director covers:

### Geometry Simplification:

- Remove facets
  - Remove stamped or inscribed logos, geometry or other designs for a cleaner mesh
- Cleanup and quick edit
  - Standard HyperMesh automatic cleanup options combined in a single task panel for easy access
- Generate mid surface
  - Automatically extract mid surface by selecting components
  - Advanced options allow the user to make use of HyperMesh Mid surface extract options

### Remove Duplicates:

- Automatically identify duplicate components
- Remove duplicates in one click

### Model Mesher:

- Meshing panel
  - Edit mesh criteria and method
  - Choose element type and size
  - Choose preferred meshing method - batchmesher or automesh
  - Automatic, color coded feedback on mesh quality
- Generate TET mesh using either HyperMesh or SimLab capabilities

### Create 1D Connections:

- Create RBODIES, Bars, spot welds
- Assign mass to nodes within the model
- Auto calculate and assign beam properties based on the height and width of the beam

### Assign Materials and Properties:

- Materials and properties are assigned automatically based on the material assigned to each component in the master file
- Review and verify whether the mass is consistent with the material file

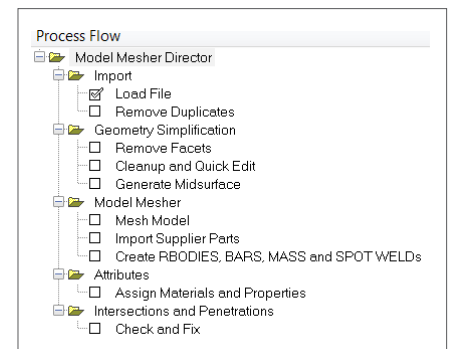
### Intersections and Penetrations:

- Standard HyperMesh options to locate intersections and penetrations combined in a single task panel for easy access
- Automatically fix the problem areas with user control

## Deployment:

Altair's team will work to understand unique practices and ensure that the Model Mesher Director meets specific requirements. While implementing MMD, our experts support the following tasks:

- Configure base module of the automation solution
- Provide custom extensions
- Provide quick start and periodical checkpoint to ensure successful user experience



The Model Mesher Director process manager



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Altair helps companies to solve business and engineering problems at the desktop, team and enterprise levels. We work closely with our clients to increase organizational efficiency and decision-making by building solutions that are tailored to their unique environment and processes. These solutions include: cloud-based simulation and high-performance technical computing, CAE workflow automation, and specialized data analytics applications.