



HYPERMESH 2025 AND 2025.1 UPDATES

Martin Kuklík 5.6.2025

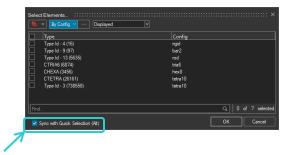
USABILITY

See More with <u>link1</u> and <u>link2</u>2



Selection

- Quick Select (Alt)
 - Parts now supported
 - Sync option now saves between sessions
 - Alphabetized list





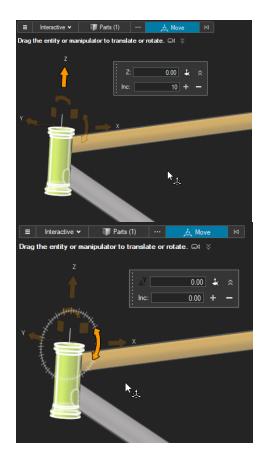
- Search tool (Ctrl+F) direct access to some tool variants
 - Position
 - Find nearby





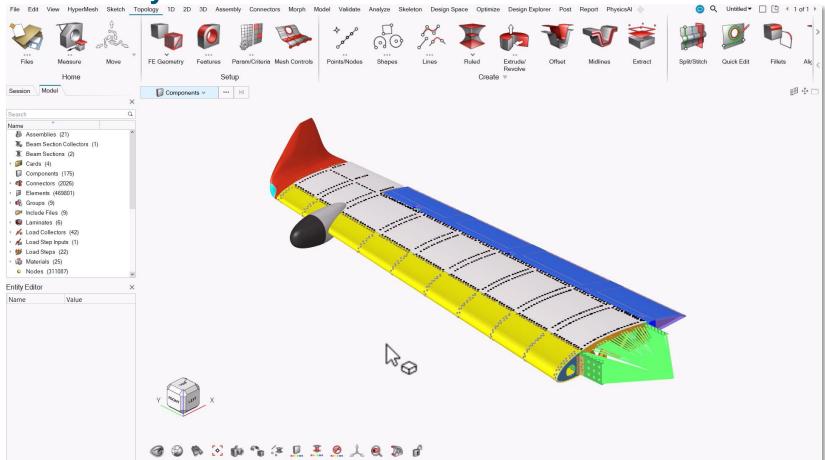
Move Tool

- Move manipulator is now available in an independent button.
 - Selection and Move operations are separate actions and don't interfere with each other.
- Ctrl click action now supported in the Move manipulator
 - Hold Ctrl and select two locations to define translation or rotation axis along a vector.
 - Hold Ctrl and select three locations to define translation or rotation axis along plane normal.
 - Translation distance is automatically filled in the increment field and can be modified, if needed.
- Various bugfixes



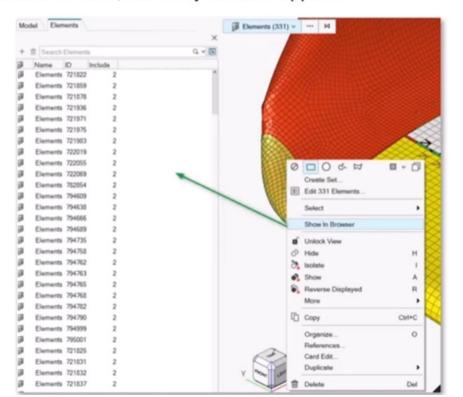


Common Entity Editor



'Show in Browser' Behavior

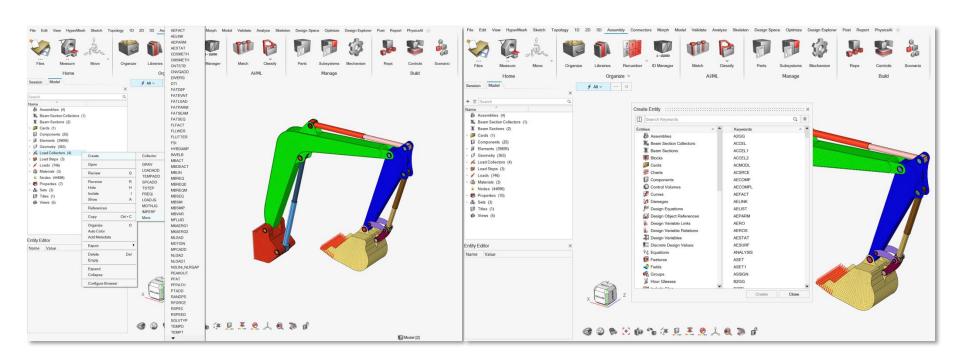
- Selected entities are sent directly to the browser if within the defined limit
- If the selection exceeds the limit, the entity selector appears





Create Entity Dialog

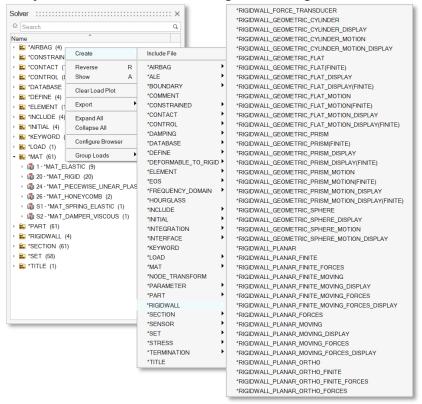
Simplifies and replaces lengthy context menus

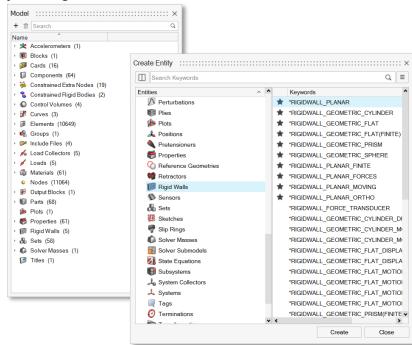




Solver Browser Deprecation

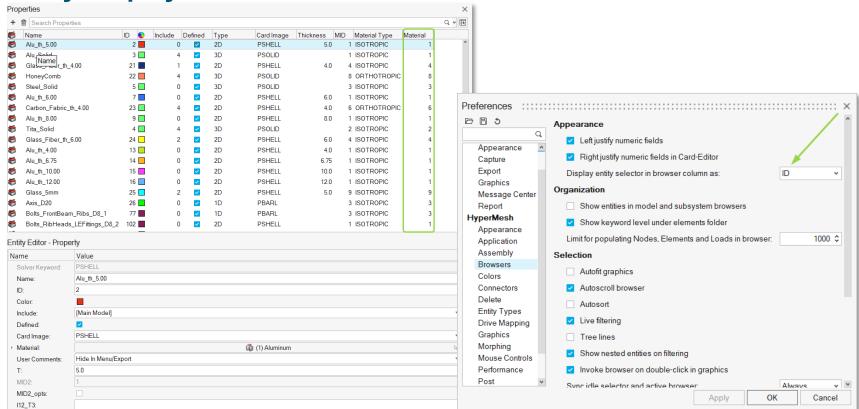
Keyword creation is managed through the Create Entity dialog







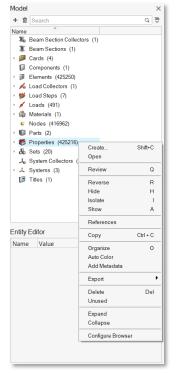
Entity Display in Attribute Columns

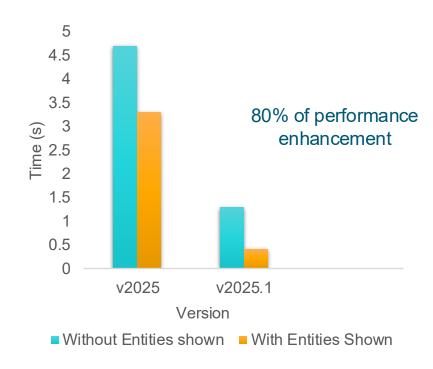




Performance Enhancement

 Enhanced performance while invoking context menu on folders in Model browser when entity count is high.

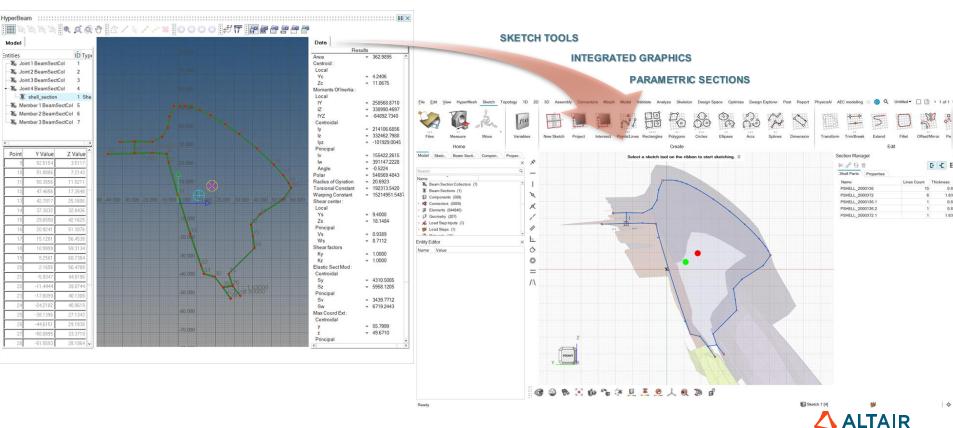






Section Manager – HyperBeam Replacement





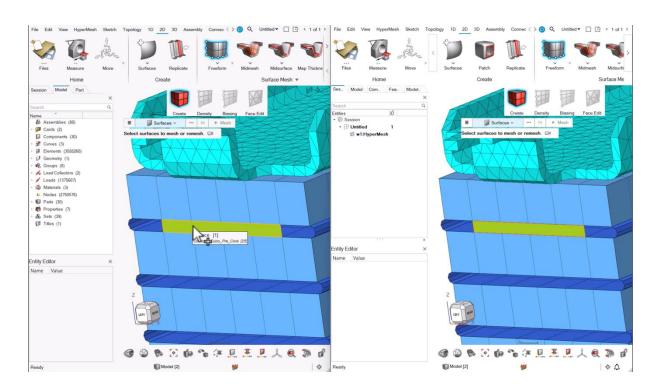
TOPOLOGY (CAD&MESH)

See More <u>here</u>



Meshing Performance

Performance of general meshing tools in large Models is now 40%-65% faster.



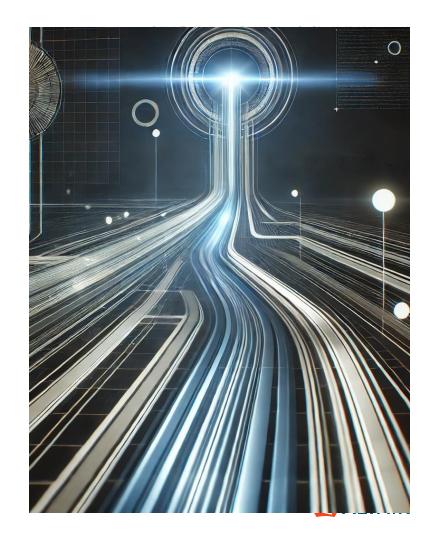


Rebuild Performance

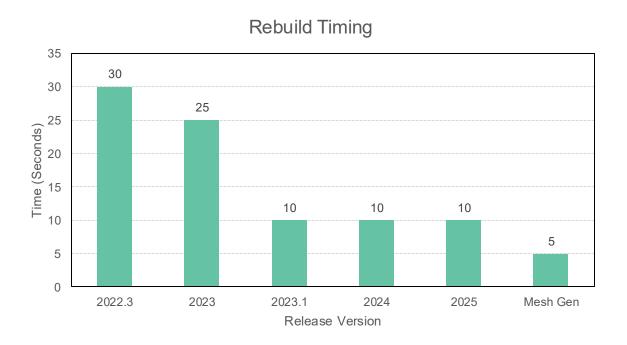
 Significant acceleration: Performance of Rebuild in Large Models is now 30%-50% faster.

Affected Tools:

- FE Geom Topology Operations
- Box Trim
- Cut Hole
- Bead Tool
- + Many More



Rebuild Performance

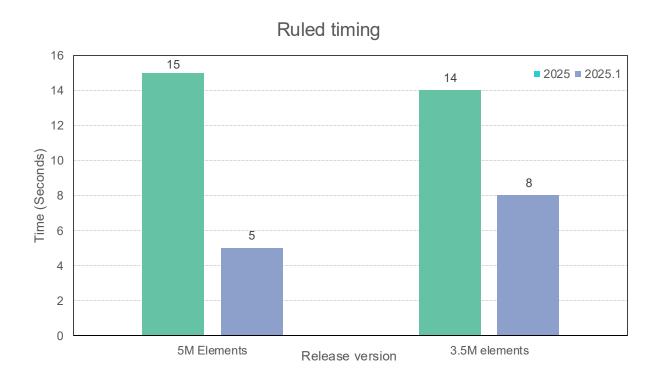


5m Element Model, 250 Elements Rebuilt



Meshing Performance

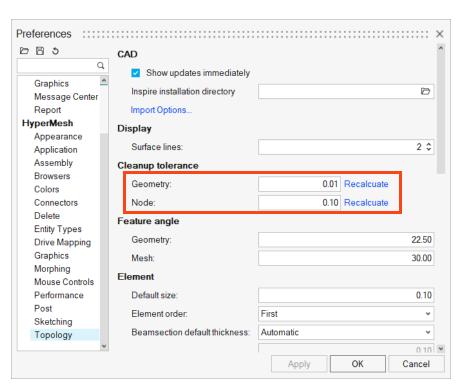
Performance of general meshing tools in large Models is now 40%-65% faster.





Topology > Cleanup tolerance

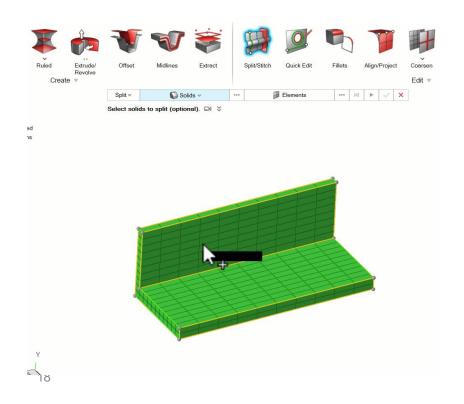
- Removed Automatic and Manual options.
- Added Recalculate buttons to auto-calculate tolerances from model size.

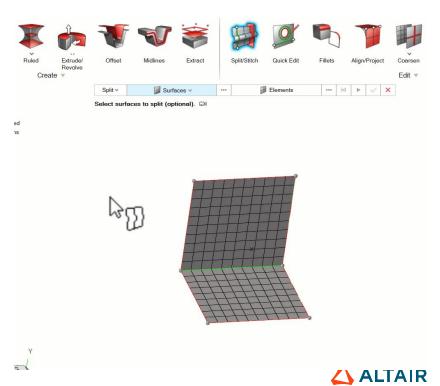




Split / Stitch

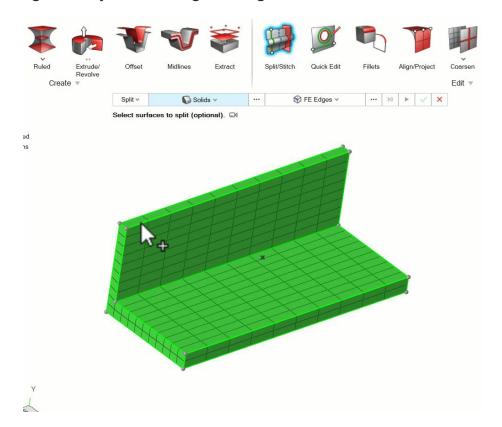
A new option has been added to split FE geometry solid or surface using elements.





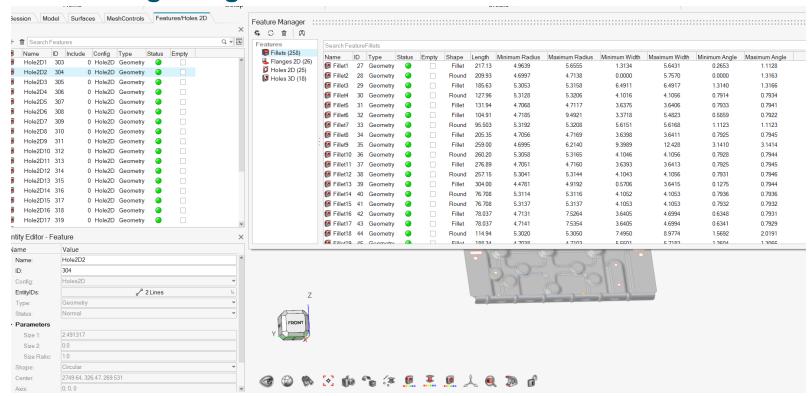
Split / Stitch

Added option to split FE geometry solid using FE edge.





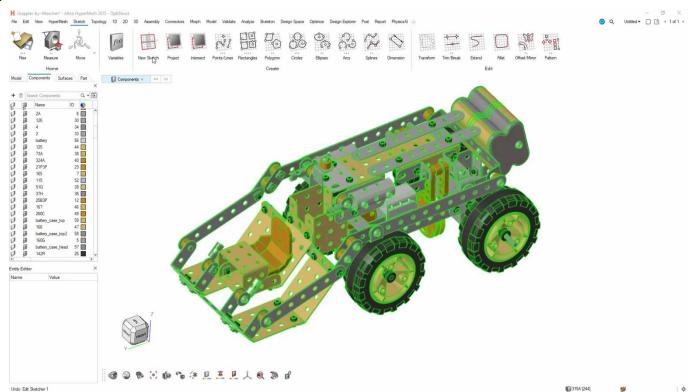
Feature Manager Migration to Browser





Sketch

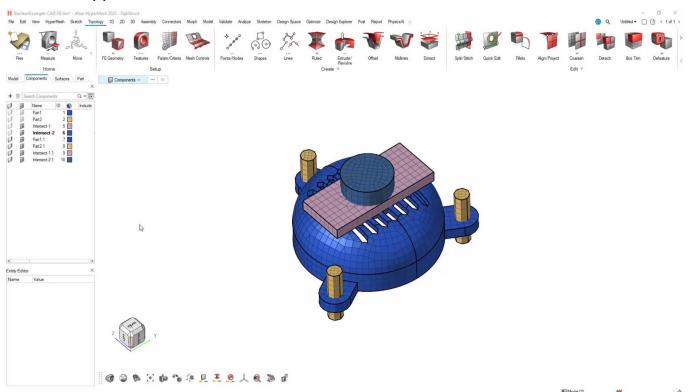
Imprint on Surface





BOOLEAN - FE GEOM

FE GEOM Support for Boolean - Combine

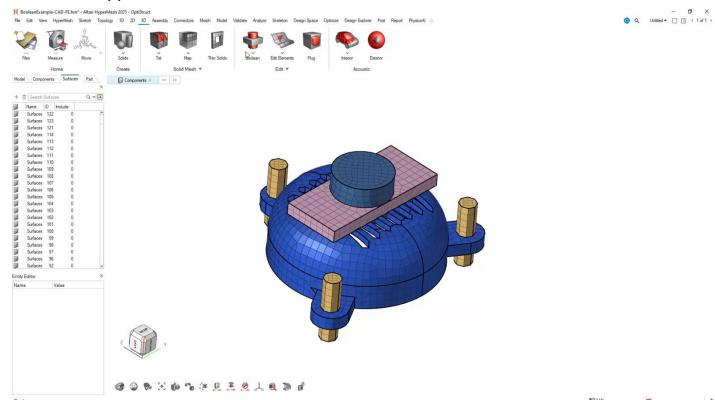




ALTAIR

BOOLEAN - FE GEOM

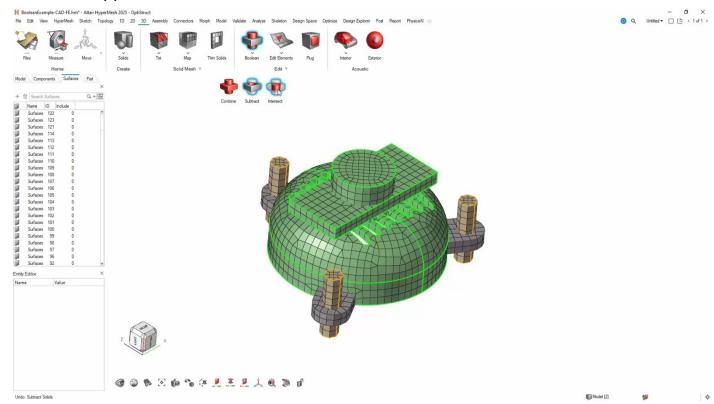
FE GEOM Support for Boolean - Subtract



△ ALTAIR

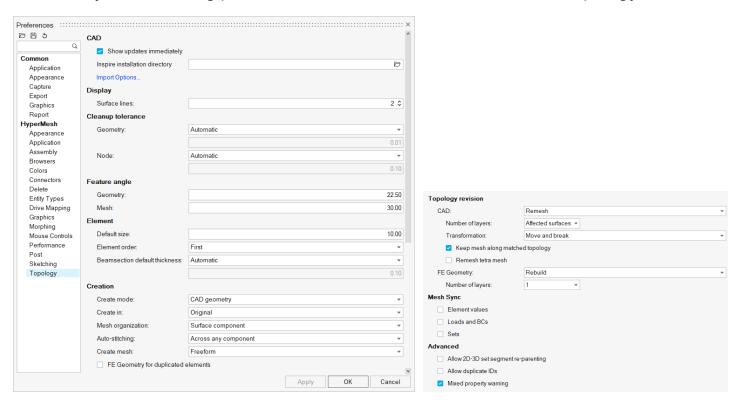
BOOLEAN - FE GEOM

FE GEOM Support for Boolean - Intersect



Preferences

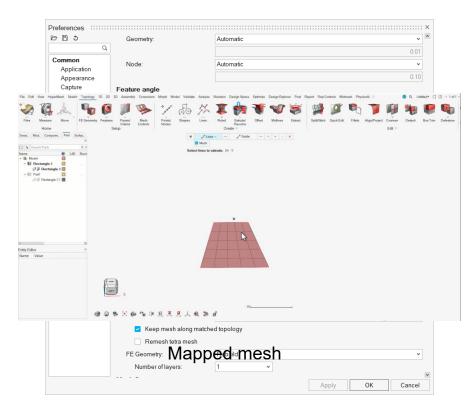
Geometry and Meshing preferences are now combined under the Topology section.

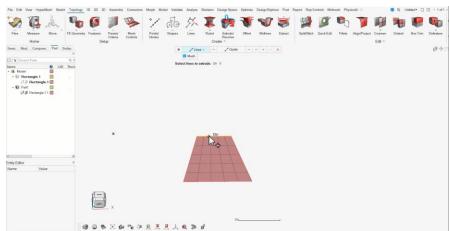




Preferences

New preference added to select between Mapped mesh and Freeform mesh for surface creation tools.



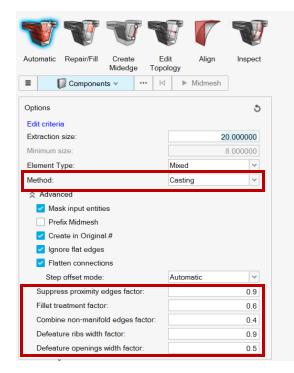


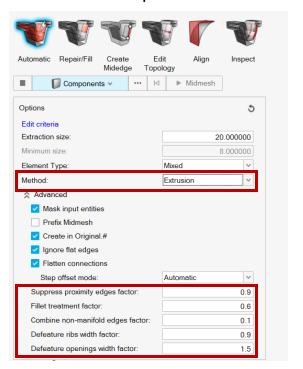
Freeform mesh



Midmesh

Introduction of "Extrusion Method" to support the midmesh operation on extrusions.

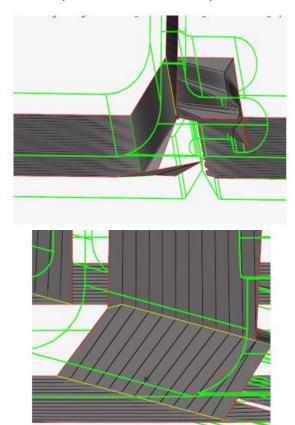


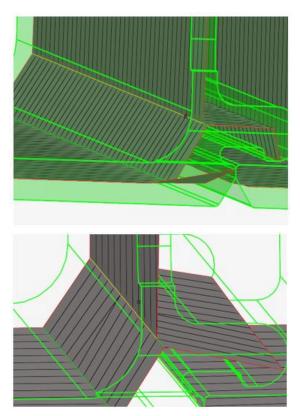




Midmesh: Previous versions vs 2025.0

General improvement of the raw output

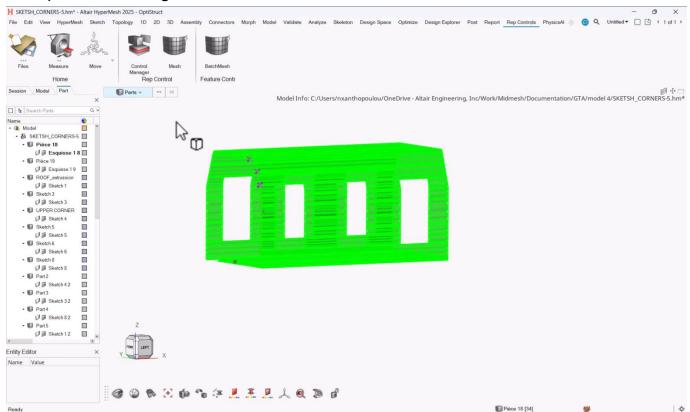






Midmesh

The process through Batchmesh:

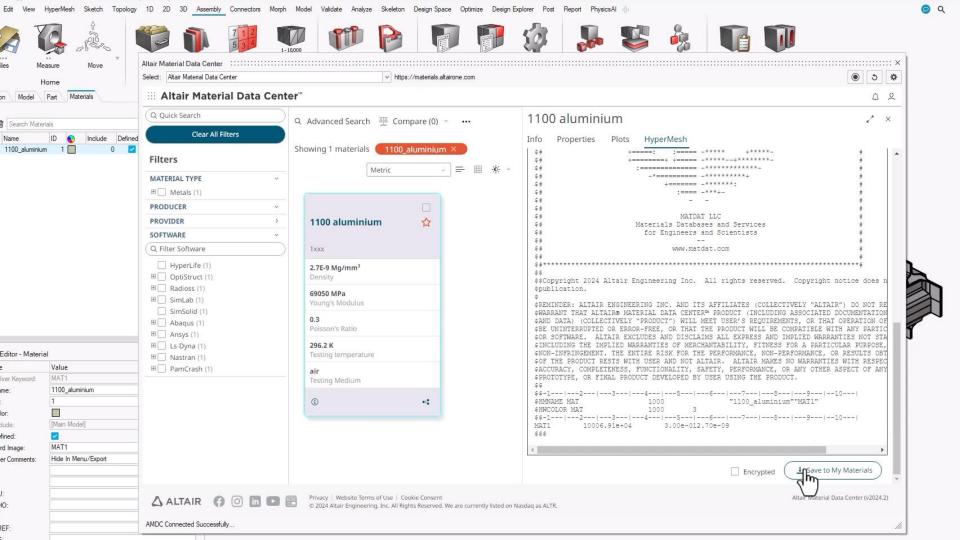




MODEL BUILD AND ASSEMBLY

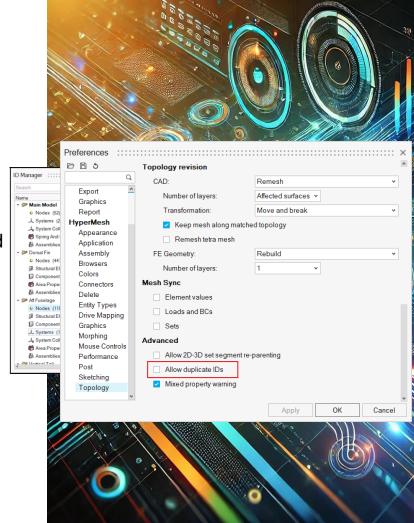
See More with <u>link1</u> and <u>link2</u>





ID Management for Efficient Renumbering

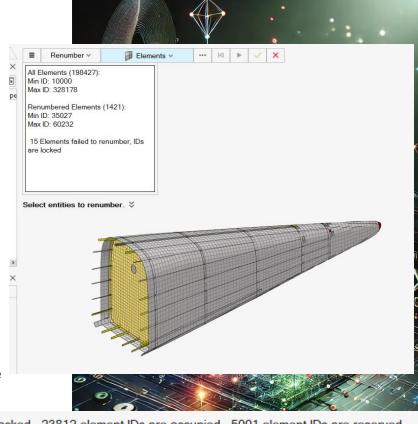
- Improved Renumbering Logic:
 - ID correction now occurs in one iteration
- Accurate "Compact and Fit" Behavior:
 - Fixed inconsistencies between the "Compact and Fit" method and the documentation
- Persistent Settings for ID Pools:
 - Duplicate ID handling settings are now saved across sessions
- Streamlined Reserved ID Management:
 - Removed "Min" and "Max" reserved ID columns
 - A single, consolidated method for reserving IDs



Renumbering: Enhanced Feedback

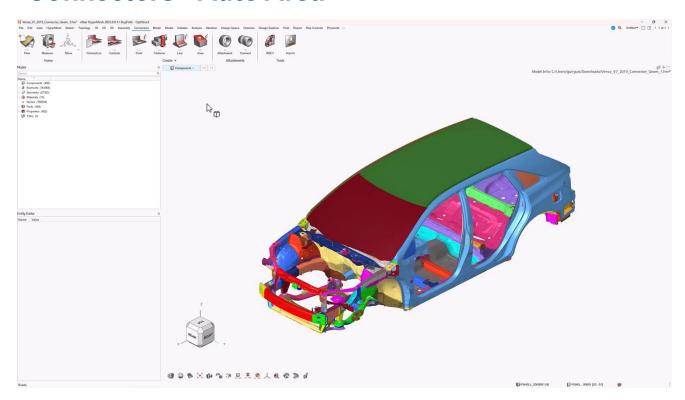
Key Improvements in Messaging:

- Clear Notifications:
 - Detailed messages provided in both the text box and status bar for better visibility.
- Locked Entity Identification:
 - Reports entities that cannot be renumbered due to locked IDs
- Reserved ID Awareness:
 - Reports when IDs are reserved and cannot be used during the renumbering process.



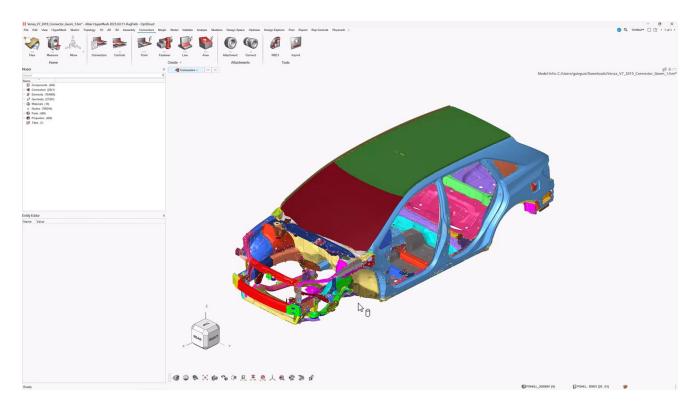
1421 element were renumbered, ranging from 35027 to 60232. 15 element IDs are locked. 23812 element IDs are occupied. 5001 element IDs are reserved.

Connectors - Auto Area



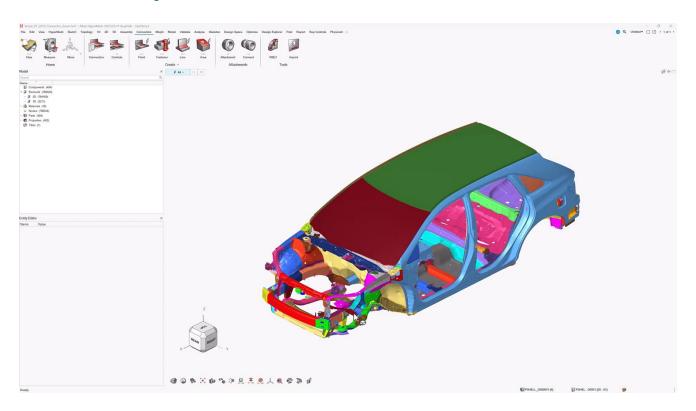


Connectors - Contact Connectors





Connectors – Shape Attachments





Connectors - Documentation Changes

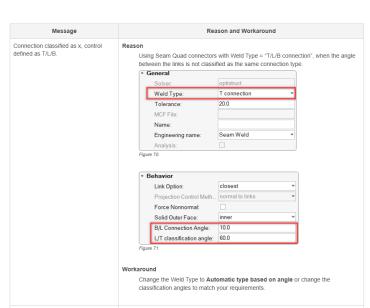
Seam Quad

Use Cases

- Profile Welding
- Fillet Weld

Troubleshootin g Errors

- Specific Guidelines
- General Guidelines



ON THIS PAGE General Info Weld Shape Realization Details Element Details Connectivity Info HAZ Info Property and Material Info Behavior Profile Welding Use Case Define the Control Imprinting Significant Nodes Examples Fillet Weld Use Case Define the Control Create the Connector Examples Troubleshooting Connector

Troubleshooting Errors Section

New Seam-Quad Sections



Enhanced Help Documentation for CAD Support

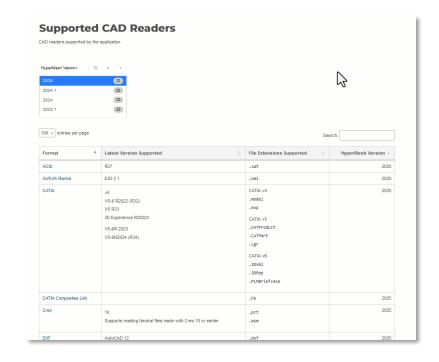
Streamlining Traceability and Accessibility for CAD Version Compatibility

Intuitive Help Format:

- Redesigned help pages provide clear traceability of CAD version support across HyperMesh releases
- Simplified navigation ensures enhanced clarity and user accessibility

Direct Access to Resources:

- Find comprehensive CAD reader support details via the updated help portal
- Access Here





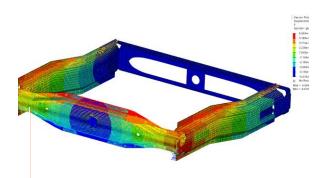
POST-PROCESSING

See More here



HyperMesh Post

Major enhancements



Vector and Tensor Plot Animation

Support on Deformed and Undeformed Shapes

Vector and Tensor plot controls are plotted by default on deformed shape and follow it during animation.

Plot can be forced to be displayed on undeformed shape via plot control setting

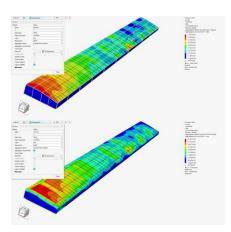


Small / Large Deformation

Autodetection of NL Subcase

Support of element system recalculation in case of large deformation.

Support of global flag for Results Query in the Post Settings



Aggregation Mode

Change in Labelling + Enhancing Capabilities

Support of aggregation based on part boundaries.

Former HMPost "Simple" Average has been renamed as Aggregation Mode "Average then Compute".

Mode "Compute then Average" has been added

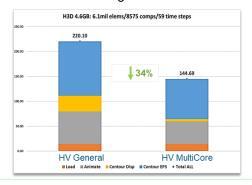


HyperView- MultiCore

New Profile offering better performance and improved workflow for results post-processing.

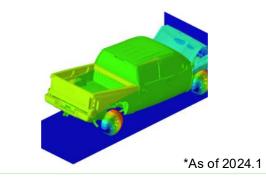
WHAT'S HV-MC?

- Employs multi-threaded, asynchronous data loading technology.
- Faster load times and always active application.
- Revamped workflow with greater user control on what gets loaded.



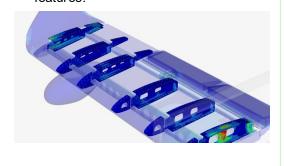
WHAT'S SUPPORTED? *

- Abaqus, Radioss, LS-DYNA and PAM-CRASH result files.
- Transient animations only.
- Features needed for transient usecases.



WHAT'S NEXT?

- Expand coverage to ALL solvers and analysis types.
- Support Derived loadcases and Derived results
- Full coverage of all post processing features.

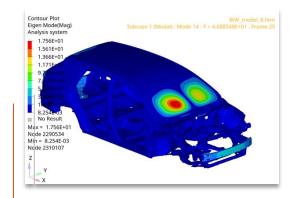


Note: Was known as HV- Upfront Loader (HV-UL) prior to v2023.0



HyperView

MultiCore updates

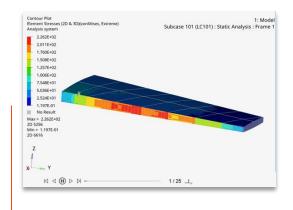


Expanded solver coverage

Supports OS, Nastran and Ansys results

Extends HV-MC to Implicit solver post-processing

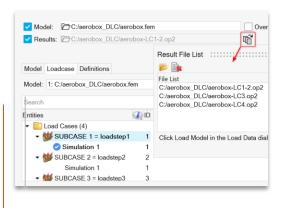
All file formats supported



Linear animation

Interpolation based animation

HV-MC now covers Linear along with Transient usecases.



Multiple Result files

Attach multiple result files to a single model file

Supports multi subcase analysis with one result file per subcase.



GETTING MORE KNOWLEDGE



Resources

Altair Learning - Connect to Learning



Altair HyperWorks How-To - YouTube Channel



<u>Altair Community</u> - Documentation, Supports, Knowledge and Forums



Altair One - Marketplace Altair One - Altair Partner Alliance



THANK YOU

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#ONLYFORWARD

