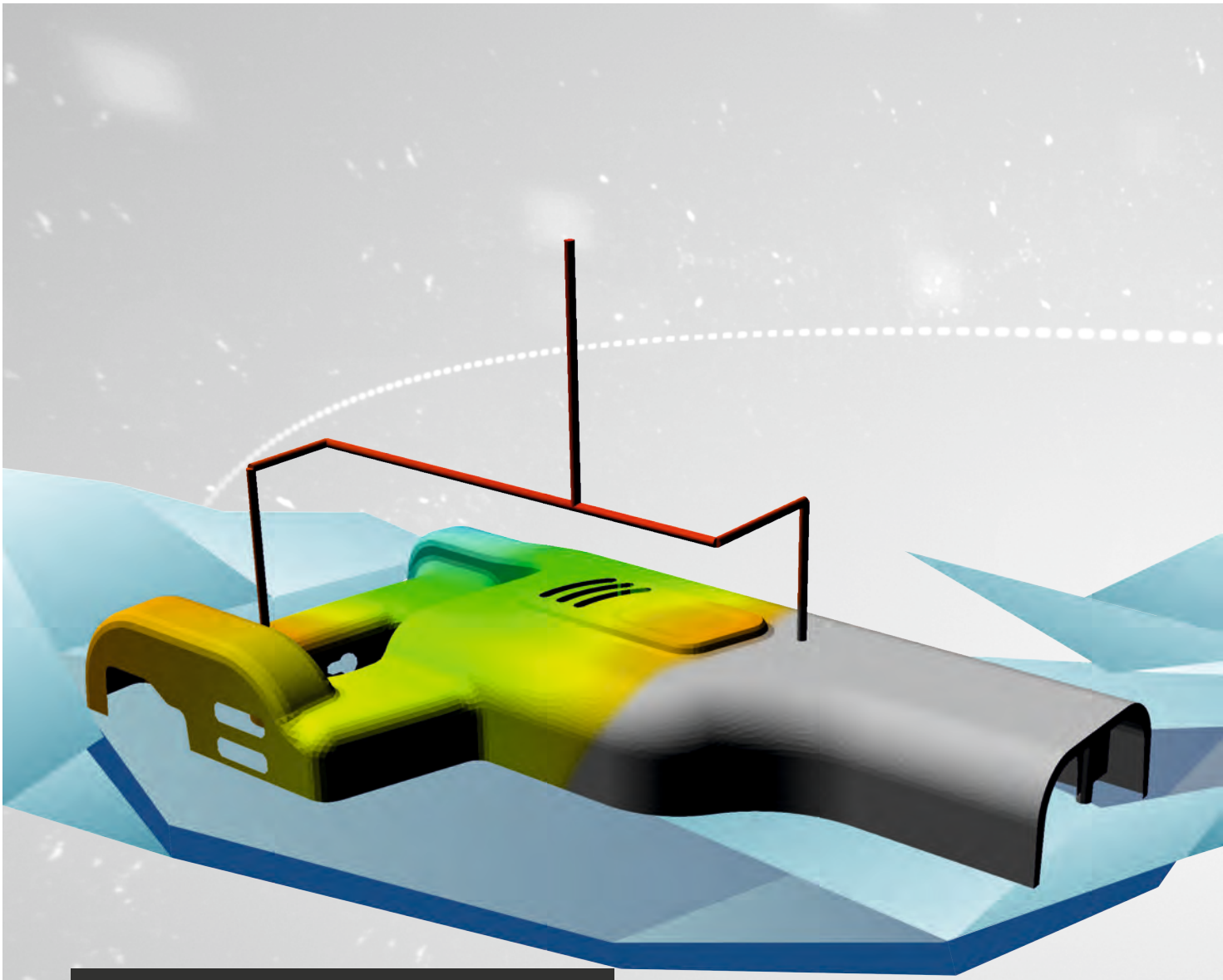
BETA
SIMULATION SOLUTIONS

physics on screen



Molding Analysis

Streamline your injection molding simulations

ANSA
PRE PROCESSOR

Accelerate your molding simulations by employing a wide range of pre-processing solutions

Whether looking for a quick result or a full analysis, ANSA provides a one-step solver for early-stage investigation as well as, great connection with Moldex3D and MOLDFLOW, addressing plastics manufacturing simulation for industries such as automotive, electronics, toys, and chemical.

Geometry

- Create, or modify geometrical shapes such as, pipes, runners and mold boxes.
- Automatic middle surface function for complicated parts.
- Automatic middle surface extraction function, resulting in nodes on middle position and capturing local part thickness.
- Complex middle surfaces fixing tool for high-quality results. Information storage to provide automatic adjustment of elements, ensuring that future modifications will follow the given middle rules.

Meshing

- Various high-quality mesh algorithms for parts, pipes, runners, or CFD-oriented analysis of coolant channels.
- Special 2D-ribs treatment for seamless de-molding.
- Mesh solutions for 3D-gates and layered mesh, meeting standard analysis requirements of Moldex3D.

One-step molding solver

- Easy set-up and run directly inside ANSA.
- Best-in-class levels of speed and accuracy.
- Results for fill time, material orientation, and weld lines.

Shape Modifications with morphing

- Model shape optimization by parametrization of modifications.
- Change per type of components, such as parts or pipes.
- Realistic results by capturing resulting part's deflection or any extrapolated position on original geometry model.

Analysis Tools and Set-up

- Compatibility with Moldex3D and Moldflow for I/O mesh files and standard solver attributes.
- Convey the effects of Injection Molding process to FEA analysis such as, weld lines, temperature, pressure, as well as, fiber orientation, estimation of anisotropic mechanical and thermal properties for reinforced plastics.
- Numerous standard or custom model integrity checks that can run automatically during model output.

Process Automation

- Procedures automation using the ANSA Python API.
- Core functionality in batch.
- User defined functions and customization of tools to automate and extend the software's functionality.

Features

- Geometry clean-up and defeaturing
- Modify and create new geometry such as, moldbase and pipes
- Advanced Middle surface extraction
- Shell and volume meshing, based on recognized model features
- Shape modification for both geometry and FE mesh
- Re-shape original part according to deflection results
- I/O compatibility for Moldex3D and Moldflow models
- Model integrity check
- One-step molding solver within ANSA

Benefits

- Great flexibility on geometry handling and mesh generation
- Highly controllable and automated best-in-class quality meshing
- Common preprocessing platform for numerous solvers
- Upfront solutions based on the harmonic cooperation of tools and functions
- Fast design modifications for re-analysis
- Quick run to obtain essential molding results, for early stage

META
POST PROCESSOR

Fully grasp the injection molding process and generate detailed reports in no time

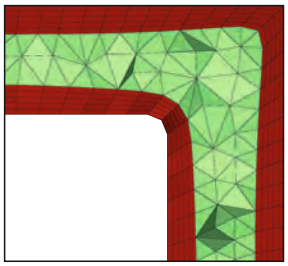
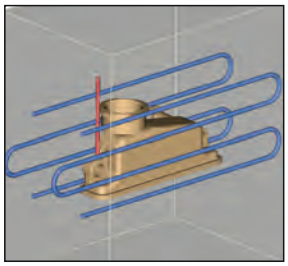
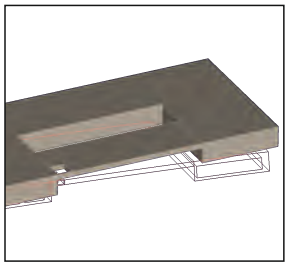
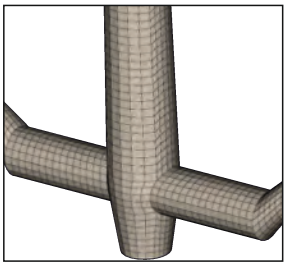
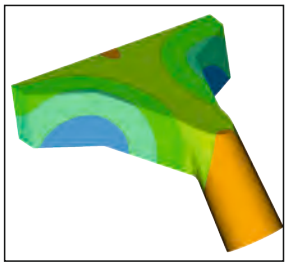
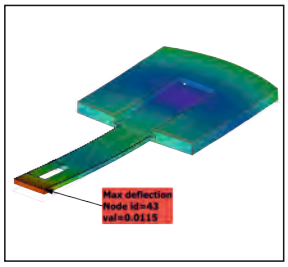
Find out early how your future products behave with the aid of the numerous tools offered by META post-processor. Automate entire processes along with detailed reports and make more time to focus on engineering and new ideas to make better products.

Post processing key features

-Read geometry and results for both Moldex3D and Moldflow.
-Various tools ensure comprehensive deflection study and flow/pack analysis:
-Cutting planes.
-Measure displacements along paths.
-Set deformation scale.
-Identification of min/max or any other filtered values.
-Several plotting options settings, and specialized iso-contours.
-Extra capabilities for CFD oriented analysis.
-Enhanced visualization capabilities by smooth animations, enhanced vectors overview and realistic materials view.
-Interactive reporting tool and automated processes for report creation.

Process Automation

-META procedures, can be automated using the META Python API.
-User-defined functions and customization of tools to further extend functionality.
-Compare post-processing between different models or runs by using META session files.
-User variables and toolbars creation through special editors.

Features

- Post process for both Moldex3D and Moldflow geometry and results
- Various tools for detailed post-processing of deflection study and flow/pack analysis
- Particular solutions for post-processing CFD analysis
- Reporting tool with wide range of capabilities
- Full automation capabilities of processes

Benefits

- A wide collection of tools in an intuitive user-interface
- Flexibility through filters use
- Common post-processing platform for numerous solvers
- Automation techniques that minimize cost and time to market

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