COPRA® FEA RF 2025.1

Release Notes

COPRA®
Finite Element
Analysis
### for Roll Forming
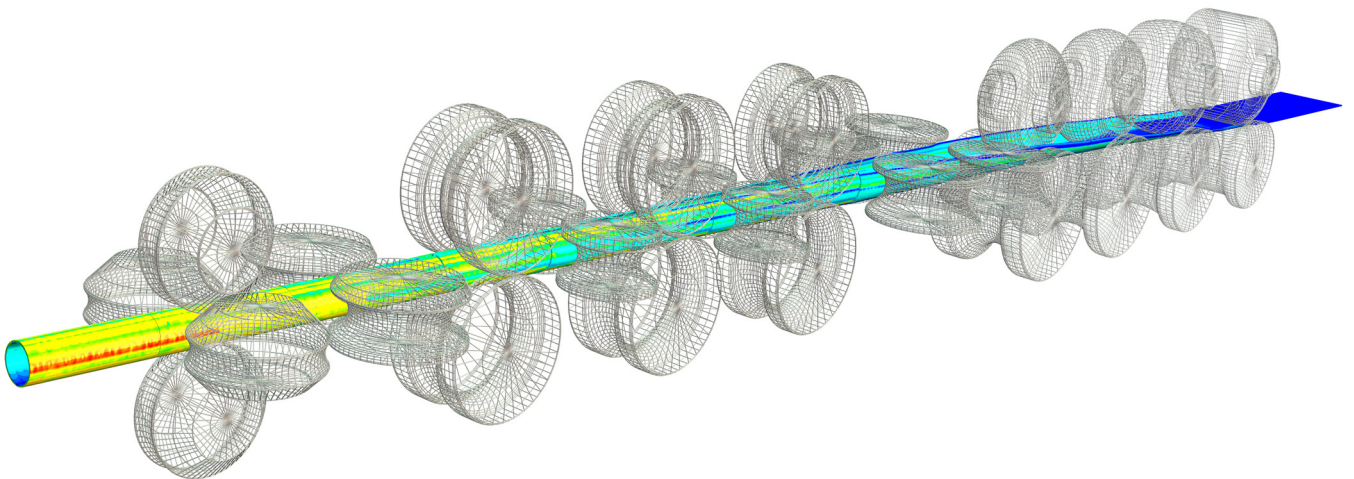
COPRA® FEA RF

What´s new in version 2025.1

With over 25 years of FEA simulation expertise in research and industry, data M´s specialists have been contributing to the continuous improvement of COPRA® FEA RF, our finite element analysis software tailored for roll forming processes. The 2025.1 release introduces innovative features, enhanced functionalities, and improved simulation efficiency, offering users an unparalleled experience.

IMPROVED

Improved Look and Feel in COPRA® FEA RF Process Control:

Stay informed about your simulation progress with the refreshed COPRA® FEA RF Process Control interface. Featuring improved readability and usability, this updated design allows users to effortlessly monitor key indicators such as wall time, CPU usage, current station and estimated remaining time. Furthermore, those key indicators, together with *COPRA® FEA RF Simulation Monitor plots are now available in the automatic report functionality.*
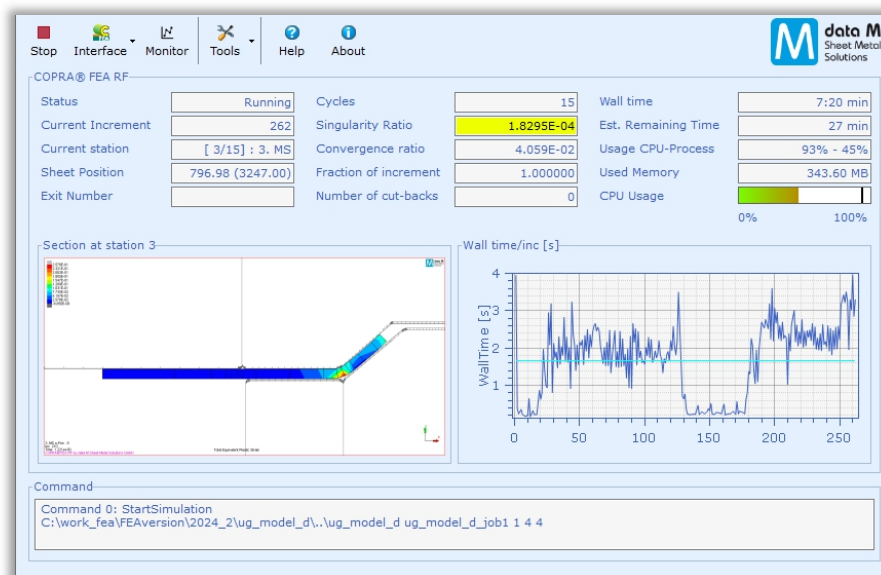
NEW

Efficient Post-Processing with User Defined Range Sets:

Save time and streamline your workflow with the new *User Defined Range Sets* feature. This allows you to save frequently used post-processing results dand their respective ranges, so you can easily access them with a single click, regardless of the project you are working on. Whether for quick comparisons or standard simulation results analysis, this feature enhances both speed and convenience, empowering users to focus on insights instead of setup.
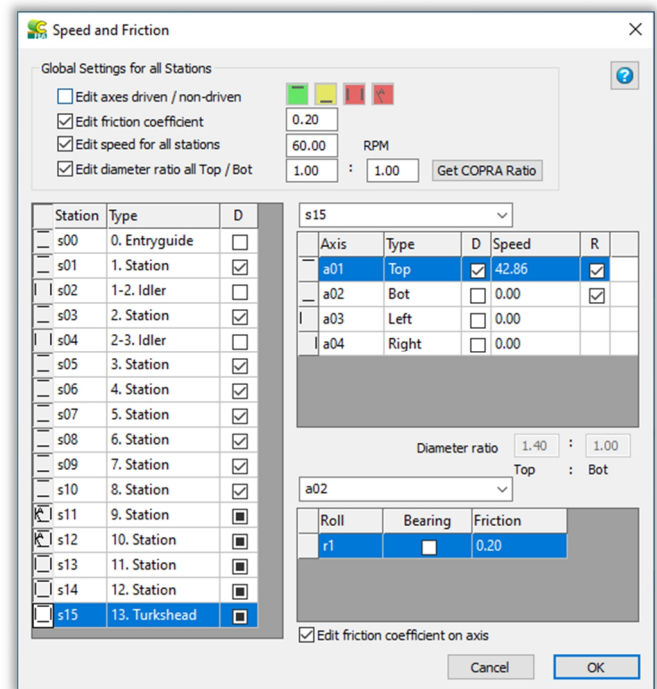
IMPROVED

Improved User Experience in COPRA® FEA RF Model Setup (COPRA2FEA):

The COPRA® FEA RF development team has enhanced the COPRA® FEA RF Model Setup dialog (COPRA2FEA) to offer a more intuitive and efficient user experience.

The reorganized friction dialog structure simplifies data input, making it easier for professional users to define and add friction to models. Starting with COPRA® RF 2025 version, the roll name will also be displayed in the dialog, offering added clarity and, COPRA® RF will enter read-only mode when COPRA2FEA dialog is open, allowing the user to retrieve relevant information from the COPRA® RF project while keeping data integrity an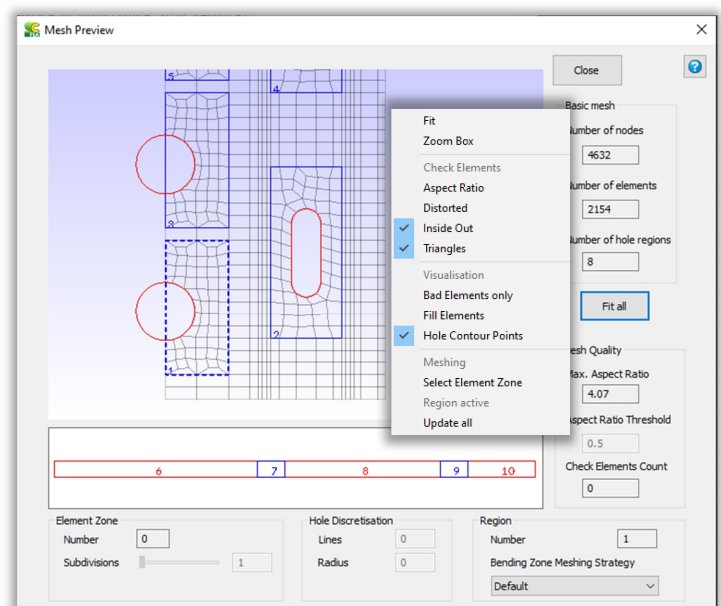d preventing unintended modifications. These improvement makes setting up friction simulations easier, faster and more robust, reducing potential errors and increasing productivity.

All Driven (Global)*   All Driven (Station)
Some Driven (Global)*   Some Driven (Station)
None Driven (Global)*   None Driven (Station)

*only if "Edit axes driven/ non-driven" is checked

In addition, our upgraded mesh generation tool now offers enhanced control and precision for models containing holes. Users can assess mesh quality during mesh definition, detecting and addressing any potential issues early on. Additionally, users can now adjust the mesh density for each hole individually tailoring refinement to specific design needs. These enhancements ensure a high-quality mesh creation, leading to more accurate and reliable simulation results.

NEW

Professional Version

Station Snapshot Embedded in Html Email:

Building on the success of the station snapshot feature, COPRA® FEA RF 2025.1 now embeds snapshots directly into HTML emails. As forming stations change, professional users can receive snapshots on the go, enabling faster decision-making even when away from the workstation. Keep an eye on your simulation's progress and react more swiftly, ensuring minimal downtime.

NEW

Symmetry Plane to Prevent Models from Overflowing:

Simulations involving symmetrical models now include a dedicated symmetry plane within the model. This plane prevents the profile from mistakenly flowing across the symmetry boundary, ensuring accurate and realistic simulation results. With this enhancement, users can rely on more precise results when modeling symmetrical profiles.

NEW

Professional Version

Advanced Possibilities to Define Position and Orientation of Cross Sections:

This new feature offers advanced tools to define the position and orientation of cross sections with improved precision (e.g. take current view orientation, automatic search for a perpendicular cut, or definition by picking positions (nodes or points)). Whether you are dealing with curved profiles or deflected cut parts, you can now easily adjust the cutting plane's position and orientation for optimal results. These functions allow for greater accuracy and control in your simulations, ensuring that even complex profiles are handled with precision.

IMPROVED

Improved Post-Processing of Contact Body Results in Restarted Simulations:

Post-processing of tooling related results, such as torque, in restarted simulations have been improved in COPRA® FEA RF 2025.1. This enhancement ensures that users can seamlessly continue their simulations while maintaining full accuracy and detail in contact body analysis. By improving how contact results are handled after a restart, users gain better continuity in their simulations and a more comprehensive understanding of forming behavior, even in complex restart scenarios.

NEW

New Post-Processing Results in COPRA® FEA RF Wirerolling: Distance to Tooling or Cross Section:

Gain deeper insights into your wire rolling simulations with the new "Distance to Tooling or Cross Section" result. This feature calculates the shortest distance between the wire outline and the selected cross section or tooling, helping users quickly identify deviations from the original design. Whether for quality control or further optimization, this new result offers a clearer understanding of the forming process. The result can be displayed as scalar or vector plot.
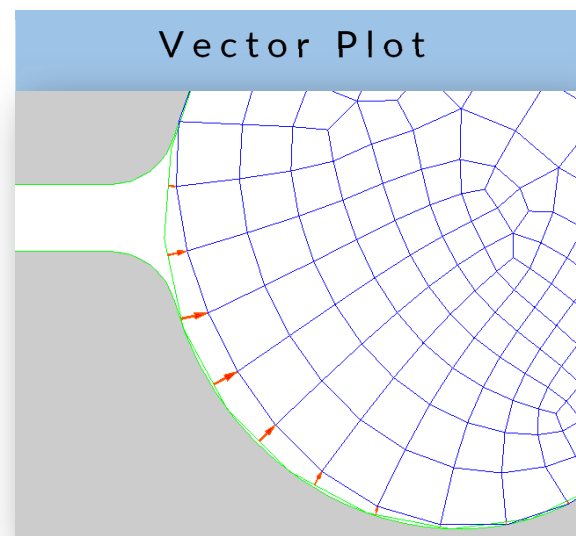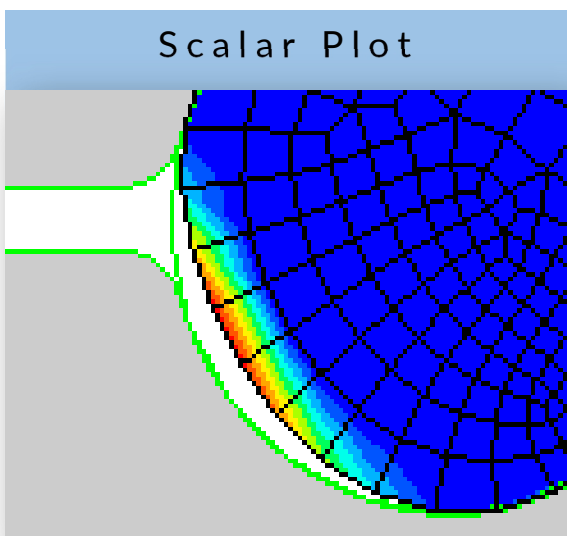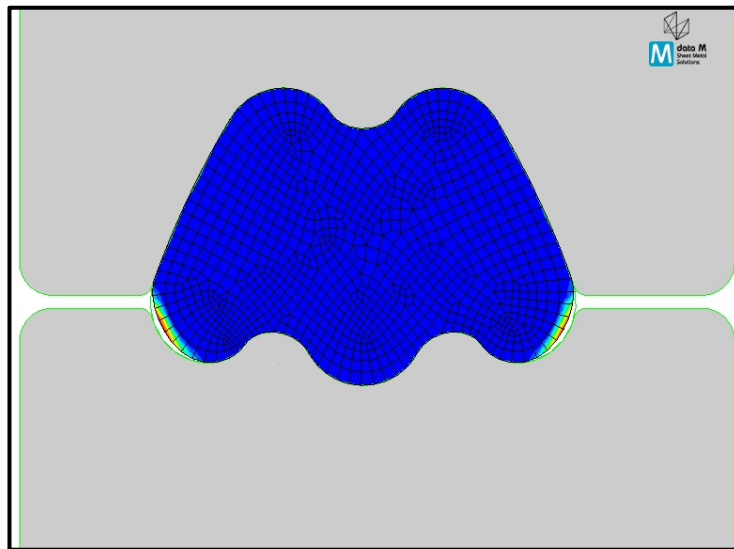
Additional Developments and Notes

+ *Novel Modelling Approach for Calibration of Profiles Formed from Coil*

+ *Workbooks and Manuals Converted into HTML Format*

+ *Plots from COPRA® FEA RF Simulation Monitor Available in Automatic Report*

+ *Marc/Mentat 2024.1 Included (also for COPRA® FEA RF WireRolling)*

+ *Improved Software Stability and Usability*