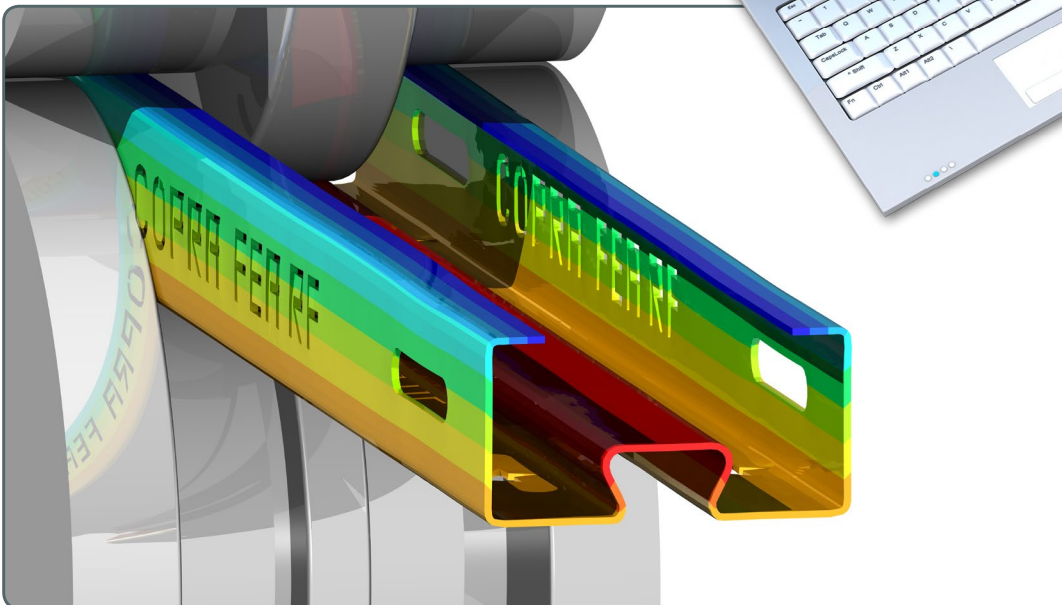


# COPRA® FEA RF 2021.1



## Release Notes

**COPRA®**  
**Finite Element**  
**Analysis**  
**for Roll Forming**



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Solutions

# COPRA® FEA RF

## What's new in version 2021.1

With over 20 years of FEA simulation experience in research and industry our specialists have contributed to the COPRA® FEA RF continuous improvement. The target of the new 2021.1 version is to:

- Increase software capabilities
- Enhance the usability of the software from a roll forming industry perspective.
- Improve the existing documentation to allow a better understanding of the available functionalities and their usage

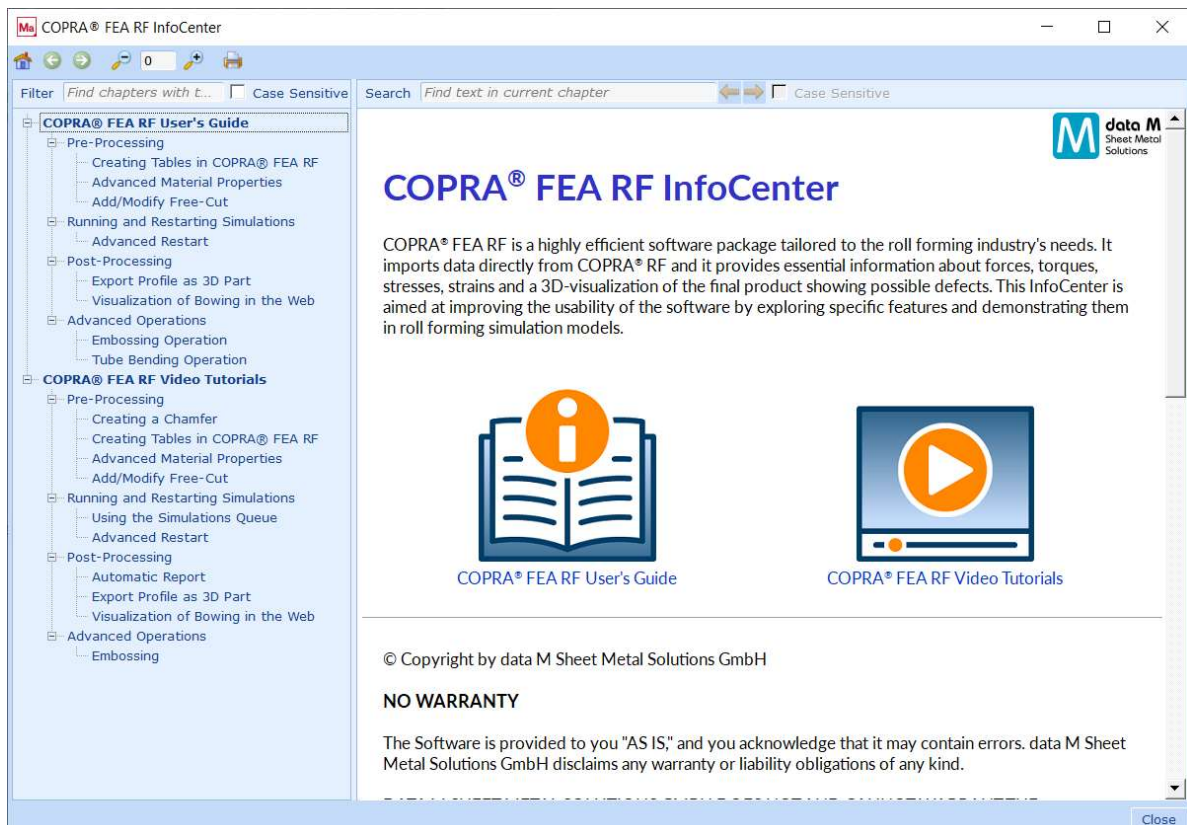
NEW

### COPRA® FEA RF InfoCenter:

With this new tool COPRA® FEA RF users get not only the already existing step-by-step illustrated instructions on software functionalities but also video tutorials.

The COPRA® FEA RF InfoCenter consist of:

- User guides with step-by-step illustrated instructions
- Video tutorials



NEW

### New Material Database:

A new material database was developed where the user can easily create an entry, with the relevant material properties, for each desired material. This material database was already introduced in the latest version of COPRA® RF and it can now also be used in COPRA® FEA RF. The materials defined in the COPRA® RF and selected for the relevant project will be automatically used in the subsequent finite element analysis using COPRA® FEA RF.




Name	Young's Modulus	Poisson's Ratio	Yield Strength	Ultimate Tensile Strength	Elongation at Break A80	Roll Material	Strip Material
Material 1	210000	0.3	460	600	21	not usable	usable
Material 2	210000	0.3	650	800	12	not usable	usable
Material 3	210000	0.3	700	860	10	not usable	usable
Material 4	210000	0.3	900	1090	5	usable	usable
Material 5	210000	0.3	960	1150	7	usable	usable
Material 6	210000	0.3	900	1200	8	usable	usable

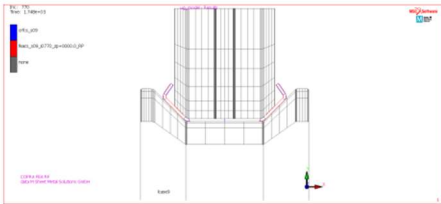
NEW

### User-defined Report Page Layout:

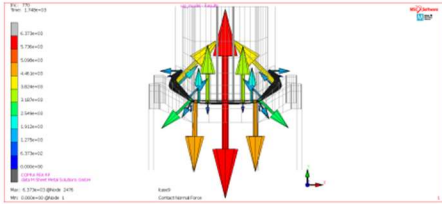
A user-defined page layout can now be defined when creating a report. The page layout can then be personalized to match the corporate identity of the company. Additionally, the content of the report can now be spread into two columns. This user-defined page layout can be applied for automatically generated reports as well as for manually generated reports, as long as the report is in PDF format.

ug\_model
22 Jun 2021 (14:03)


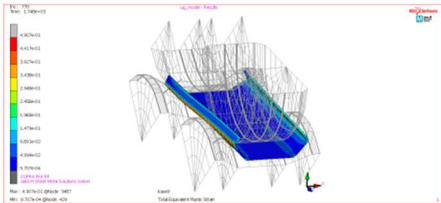
### Station 09 (7. MS)



Station 09 (7. MS)  
FEA Cross Section Roll plane (View: default)



Station 09 (7. MS)  
Contact Normal Force (View: default)



Station 09 (7. MS)  
Total Equivalent Plastic Strain (View: default)

No Image available

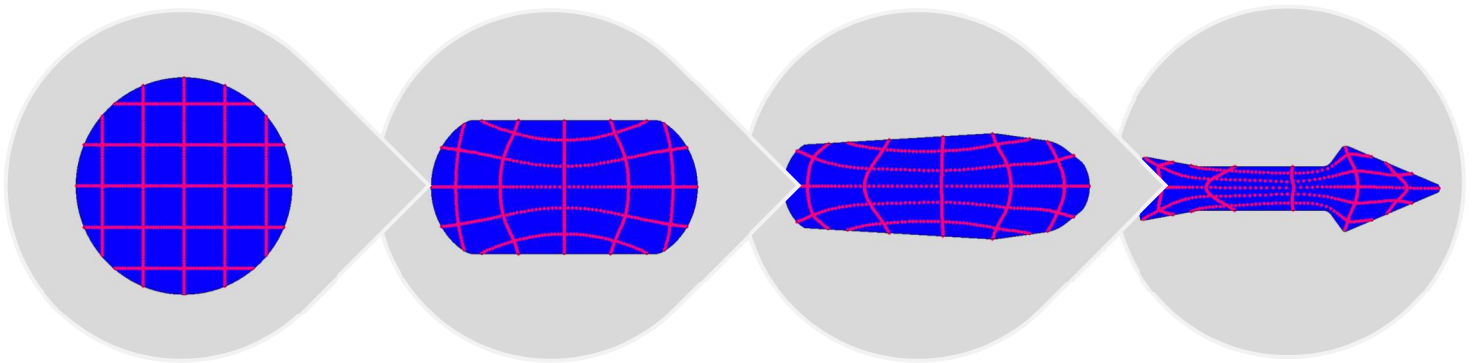
Forces on Axes in Station 09 (7. MS):

AxisName	Fx(N)	Fy(N)	Fz(N)
TopAxis	-50	23886	325
BottomAxis	6	-24812	980

## NEW

***Analysis of Material Flow in the Wire Rolling Process:***

The new version of COPRA® FEA RF WireRolling will introduce a new feature which allows the user to analyse how the material flows during the process. Analysing the material flow during wire rolling processes helps to identify the overall distortion of the final part and the areas with high/low strain levels. The acquired knowledge is particularly important to optimize the process and avoid defects.



## IMPROVED

***Automatic Import of Already Existing Meshes:***

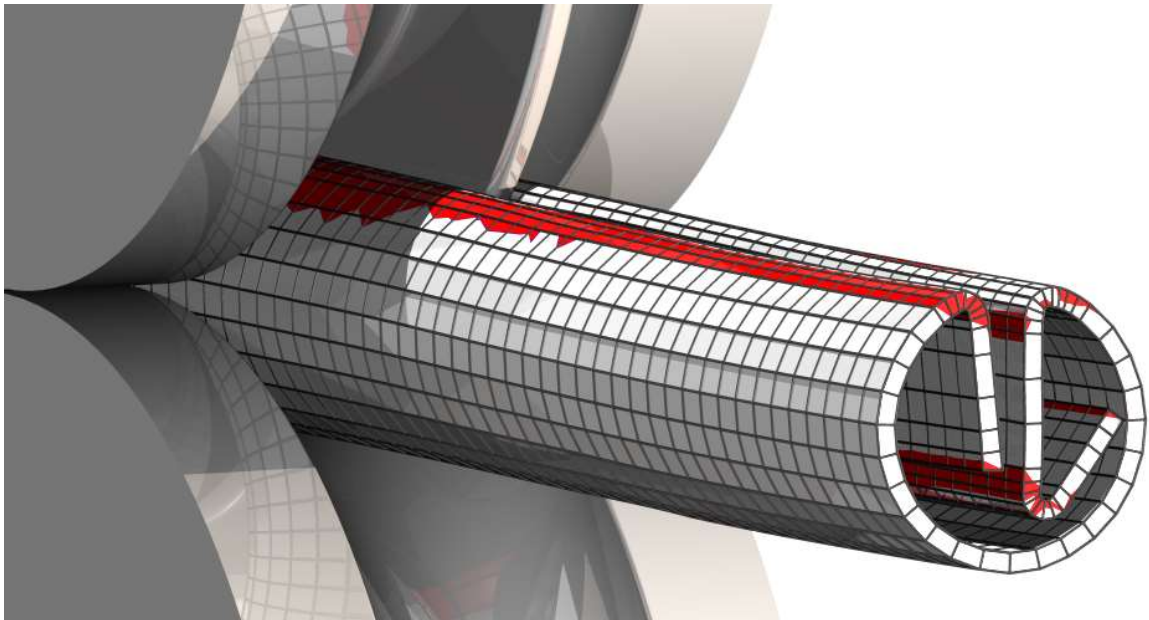
Manually modifying a mesh can be difficult and time consuming but important and necessary when meshes with specific characteristics are desired. To avoid that the user has to redo all the manually modification steps again and again, COPRA® FEA RF offers the possibility to select an already existing mesh and import it into a different simulation model. The possibilities in COPRA® FEA RF 2021.1 are even greater, any manually modified mesh used in a simulation model can now be imported into any other type of, possibly more advanced, simulation model.

## IMPROVED

**Prediction of Wear Areas in the Profile:**

The latest version of COPRA® FEA RF introduced a new feature to predict wear areas in the profile. This new feature allows user to get a better insight on the forming process and visualize areas of the profile where surface defects are expected. This knowledge facilitates the optimization of the forming process with focus on minimizing surface defects.

Prediction of wear related topics are included both in driven simulations – Total Wear, Total Wear Station, Relative Sliding Velocity Vector, Wear Rate Sliding Vector and Contact Exposure – and non-driven simulations – Contact Exposure. In the newest version of COPRA® FEA RF this feature was further developed, the user will now be able to select some of the prediction of wear related topics in the preparation of an automatic report.



## Additional Developments and Notes

- + *Improved usability of “Scan” functionality*
- + *Marc/Mentat 2020 FeaturePack 1 included (also for COPRA® FEA RF WireRolling)*
- + *General usability improvements*



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