

# PRESS RELEASE

## **Simufact Forming 14: New product version offers improved operational concept and covers additional processes**

*Newly developed operational concept streamlines model set up and the model evaluation*

*New application field: Pressure Welding*

*Brankamp interface: Linking process simulation with process monitoring*

**Hamburg, February 15, 2017** - Simufact Engineering, an MSC Software company, is launching their forming simulation software Simufact Forming 14. The software convinces with a new operating concept that simplifies the modeling and the evaluation of the simulation results (preprocessing and postprocessing). Another highlight of the new version is the new pressure welding module, which enables the simulation of joining processes in which work pieces are connected by pressure and heat.

Simufact Forming provides new process types for the simulation of mechanical joining processes: Process-specific presets shorten the model set up for the joining processes of self-piercing-riveting, punch riveting, blind riveting as well as for tensile tests.

With the Joining Optimizer, Simufact Forming offers an additional tool that is mainly used in automotive assembly. At the wire 2016 Simufact has already presented in a pilot project the linkage between process simulation and process monitoring. The interface is implemented in the latest version.

### **New operating concept simplifies model setup and evaluation of results**

Simufact introduces a new operating concept in the new version and provides users with modern, graphically appealing software dialogs, which provide for more flexibility both in model setup and in the evaluation of results. Interactive and context-related user dialogs support the user in evaluating the simulation results - with a single mouse click, he alternates between temperature, deformation or tool load.

The new operating concept also provides a number of graphical improvements for the model setup as well, and allows for simplified depiction via mouse or touchpad. Positioning as well as creating "clippings", hence to insert a cutting planes into the model, can be combined here. This allows the user to verify his model during the setup and, if necessary, adjust certain process parameters.

### **Simulate with Simufact Forming 14 Pressure Welding processes**

The new application module Pressure Welding assists in the simulation of mechanical-thermal processes, in which work pieces are joined by the introduction of pressure and heat. Typical methods are resistance spot welding, friction welding and friction spot welding.

Also interesting for cold formers: The projection welding process, a typical production step downstream of the cold forming process, can now be simulated and provide valuable indications for the optimum development of the weld projections on the work

pieces. The heat formers are also benefiting from the implementation of the module "Pressure Welding". They can now be used to illustrate electrical upsetting processes, which are frequently used in hot forming as upstream process steps.

The module's functionality put its focus on the process simulation. The user is given precise information on the behavior of individual welding points taking into account the time profile. Thus, manufacturing steps of the forming process are combined with thermal joining processes.

### **Improve tool life by linking process simulation with process monitoring**

At the Wire fair 2016, Simufact, along with Prokos, a company of the Marposs group, specialist for process monitoring, and Möhling, expert in the field of cold forming and cold formed parts, has presented in a pilot project the linkage between process simulation and process monitoring. Allows the use of a set-point and actual comparison of measured and simulated forces to be set up in the same way as the process was previously simulated or optimized: "Manufactured as simulated". In this way, cold formers can increase their tool life. With the new version, users are offered this exclusive Brankamp interface.

### **Joining Optimizer saves time and money**

The Joining Optimizer is a new add-on tool available for Simufact Forming – serving as an efficient solution in car body manufacturing. It shortens development times by automatic validation of self-piercing riveting and clinching processes.

The user can virtually test a wide range of material thickness combinations with various rivet models and tool combinations. This evaluation delivers a ranking list of technically feasible tool-rivet combinations for a single material-thickness combination. An easy-to-understand traffic light indicator based on undercut, minimum bottom sheet thickness, maximum punch force, final rivet head position, etc. visualizes the feasibility. All evaluations are stored in a database for knowledge management, reducing the efforts for re-evaluation of similar material-thickness combinations.

In a second, subsequent step, the Joining Optimizer Assembly helps optimizing the number of needed tool-rivet combinations (best possible compromise) for a given set of material thickness combinations of an assembly – aiming at highest efficiency in serial production by minimizing the number of tool and rivet changes.

Simufact has developed the Joining Optimizer in cooperation with Audi, which is employing this solution in their productive environment.

### **New process types and other interfaces implemented**

In terms of user friendliness, Simufact has introduced numerous innovations and simplifications in the field of mechanical joining. From now on, the new process types are available via the Application Function Set technology: Self-pierce-riveting, punch riveting and blind riveting. Process-specific predefined parameters are loaded for the modeling and thus shorten the model setup. On top, users can now also automate the positioning as well as visualize the simulation of adhesive processes in the module

mechanical joining and thus also take into account the functionalities of the adhesive in the joining process.

With an interface to the casting simulation ProCast (ESI), Simufact takes up the idea of process chain simulation and combines casting and forming simulation. Data imported from the casting simulation via the ProCast interface can be used in Simufact Forming 14 for forming subsequent operations.

The material database Simufact Material offers the users already a comprehensive package of materials: From steels, stainless steels, cobalt alloys, nickel base alloys, Ni-Fe super alloys up to the titanium alloys are available to the users for the simulation. Through the cooperation with MatCalc Engineering, Vienna, users can import high-quality aluminum materials via a new interface. The JMatPro interface has been extended by Simufact to include electrical material properties.

Simufact Forming 14 is available for download now.

**Please find accompanying press pictures for [download](#) on the Simufact website.**

#### **About Simufact**

Simufact Engineering – an MSC Software company – is a global operating software company providing process simulation products and services to manufacturing industries. Today, after more than 20 years of developing and supporting simulation solutions for the design and optimization of manufacturing techniques in metal processing, the Hamburg (Germany) headquartered company has established as one of the leaders in this business area. Simufact succeeds in extending its global market share backed up by a dynamically growing customer base exceeding a number of 700 customers. A strong and continuously growing network composed of local offices and channel partners ensures global support. The software primarily aims at the automotive industry, mechanical engineering, aerospace industry and their respective suppliers. Typical fields of application for Simufact software are hot forging, cold forming, sheet metal forming, rolling, ring rolling, open die forging, mechanical joining, heat treatment, different welding processes, and most recently additive manufacturing.

For more information about Simufact Engineering please visit [www.simufact.com](http://www.simufact.com).

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