Simufact Engineering, an MSC Software company, is a globally operating software company providing process simulation products and services to manufacturing industries. Today, after 20 years of developing and supporting simulation solutions for the design and optimization of manufacturing techniques in metal processing, the German company has extending its global market share with an international customer base of over 600. A strong and continuously growing network composed of local offices and channel partners ensures global support.

Simufact’s software is primarily aimed at the automotive industry; mechanical engineering; aerospace industry and their respective suppliers. Typical fields of application for Simufact software are hot forging; cold forging; sheet metal forming; rolling; ring rolling; open die forging; mechanical joining; heat treatment and welding.

At this November’s Blechexpo in Stuttgart, its CEO and marketing director unveiled the new version 5 of its welding simulation software, Simufact.welding, to ISMR and introduced its new product, Simufact.forming 13.

Successes and achievements

“Our organisation was purchased in February this year by a much larger group, MSC, so there are many more investment and growth opportunities now for us. We have already started adding to our staff. The acquisition will enable us to speed up our presence in global markets. We have also launched a new product line, Simufact welding and this is a new market for us (forming is our main business). We wanted to take these strategic steps forward and MSC is a good fit for us (we have collaborated with them for over twenty years) – ultimately, it means new investments and new product lines for us,” Michael Wohlmuth, CEO, Simufact told ISMR.

In November 2015, Simufact unveiled the new version 5 of its welding simulation software, Simufact welding. The main new features include APS (Application Function Set) technology for selecting the welding process types with process specific defaults and the introduction of a new module, ‘Resistance Spot Welding’, covering both types of simulation - structure simulation as well as process simulation. Simufact.welding 5 enables the import and export of welding parameters, offers more efficient modelling through improved user friendliness and supports process optimization with the Process Control Centre (an interactive Gantt diagram).

Simufact has further extended the application range of the software. With the new version, users can simulate additional welding process types, process steps and application scenarios such as arc welding, beem welding, an analysis of the potential influence of different clamping and cooling concepts and the new process of resistance spot welding.

Simufact Engineering also recently released its new product, Simufact.forming 13. The new version provides improvements in post processing, evaluation and the depiction of simulation results, result precision, software stability and speed. “With user-friendly mathematical formulas, users can now generate their own result values based upon those of...”
the simulation. In many cases, this new function renders the programming of sub-routines completely unnecessary. Users can define their own colour schemes for the depiction of result quantities and can therefore evaluate simulation results according to their own criteria. This function simplifies the post-processing process when examining the variables in the design process. Routine designs can be automatically evaluated, which substantially cuts down the time taken to find the best design for the manufacturing process,” explained Volker Mensing, Director, Marketing and Communications, Simufact to ISMR.

“Post particle tracking helps users to find the causes of typical mistakes in a massive forming process. Post particles are user-defined measuring points for the parameters. The user can define them after the actual simulation, during post processing and during all process steps whilst running the simulation both forward and backward. If a simulation indicates an imperfection, such as a fold formation, under-filling or overfilling of the die, the user can define the measuring points during post-processing.”

Simufact’s simulation software for metal forming processes - Simufact forming – recently won China’s Shen Gang Award (‘Most Recommended Software’ category) from the Confederation of Chinese Metalforming Industry (CCMI). This was handed over at MetalForm China.

An eye on new business

The software manufacturer also confirmed to ISMR that it will be moving into new areas like additive manufacturing and printing. It also intents to add extra functionality to its new welding software to reflect various welding sub-processes (such as brazing).

“With the new acquisition, we can now cover big Tier One manufacturers and OEMs on a much higher level than before. From a sales point of view, we will have much bigger impact and more measurable success than in the past. This April, we won a huge welding simulation contract with AUDI. Automotive, transportation and aerospace markets are targets for our welding simulation software. We are also running a pilot project with Jaguar Land Rover in the UK on a fastening/riveting project and it has chosen our software,” Michael Wohlmuth confirmed to ISMR.

“Generally, in the sheet metal market, we see more growth because we already see bulk parts being substituted by sheet metal parts in cars (using lightweight materials). Our EMEA market is growing and the BRIC markets are moving forwards. Our US business is also growing. Currently, there are increasing discussions in the automotive market on using mixed materials (aluminium with steel/carbon etc.). Incorporating these types of materials into Body in White (BiW) technologies means a revolution in the assembly market. The mechanical joining of mixed materials - a typical lightweight construction challenge – is another new field for us with strong market potential.

“Industry 4.0 has been an integral part of its product supply, although there is still a divide between the practical and the theoretical, he told ISMR. “We seek to further link product and manufacturing simulation. If you like, you can view this as a contribution to the concept of Industry 4.0 or the Smart Factory. The fact remains that the two are still worlds apart. Dominic Gallelli, CEO of MSC Software, put it this way: ‘Too often, our customers tell me that poorly understood manufacturing processes result in products that don’t function as designed and simulated.’ It is our goal to provide our customers with simulation instruments with which they can design products and, at the same time, take into account manufacturing requirements,” explained Wohlmuth.

Volker Mensing also echoed this viewpoint, pointing to areas where this is already happening.

“Industry 4.0 is generally discussed at a high theoretical level but we are already providing this, to some degree, to our customers,” he told ISMR. “Our roadmap is based upon customer needs. Years ago, a German automotive industry consortium wanted us to develop a tool to simulate welding structures. So we built Simufact welding - a completely customer-driven solution.”

For more information about Simufact Engineering, please visit www.simufact.com.

Michael Wohlmuth (CEO), below left, and Volker Mensing, Marketing Director, Simufact