

Accelerate the Additive Design and Development Process

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Additive manufacturing (AM) processes offer great potential for many industrial applications. There are several types of AM processes, such as powder bed fusion or binder jetting, or direct energy deposition methods and in combination with other processes, so called hybrid methods. The vision and goal of the activities is a reliable, robust, fully automated, controllable process chain with the right generative design for a "first time" printable component with the right component performance and microstructure. This is only possible by linking all relevant process steps and information in the virtual and real world. The complexity of the whole process requires a complete digital transformation of the process. The focus in the presentation is on the digital process chain of metal parts for powder bed fusion processes from generative design to automated simulation and the proof-of-concept for an optimized manufacturing process and the current problems. At the end we want to have smart virtual and real processes, which are connected and an environment to store and handle all available data.

Biography

Dr. Hendrik Schafstall is the Managing Director and CEO of Simufact Engineering GmbH at Hamburg. Thereby, his specific focus is on the development and marketing of solutions in the field of manufacturing simulation and solution concepts in the field of digitalization (digital twin/digital thread) in the hexagon network. Passionate about manufacturing processes and developing solutions, he earned his doctorate at the Helmut Schmidt University in Hamburg. In 1995, he founded the FEMUTEC engineering firm - today Simufact Engineering GmbH. The focus of the company is on the development of process oriented manufacturing simulation solutions in the area of metal forming, welding and additive manufacturing. The development focus in the area of Additive Manufacturing is the whole process chain from Design to final part and part performance. Today, Simufact Engineering GmbH is part of the Hexagon Group to which also MSC Software belongs. Besides working for Simufact Engineering GmbH, Dr. Hendrik Schafstall further is active in the scientific community. He works as a college lecturer at the institute for metal forming and lightweight design at the Technical University of Dortmund, as well as the institute for metal forming and casting at the Technical University of Munich. Additionally, he is member of several Scientific boards such as the Scientific board of ICMEg (until 2016) or the Scientific board of the VDI Wissensforum and IUL at the University of Dortmund. He is also involved in several additive research programs worldwide and responsible for the Additive Manufacturing strategy within MSC-Software/Hexagon. He won several Awards with the company for the Additive Simulation Solution eg. as the Best of 2017 initiative Mittelstand Award, the German Innovation

Award 2018, the Best of Industry Award 2018, the German Stevie Award in Gold 2018, the Materiallica Design + Technology Gold Award 2018.