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## Technical Brief

# Simufact Additive 2021 scores with the simulation of subtractive manufacturing processes

**Hamburg, June 18, 2020** – [Simufact](#), part of Hexagon's Manufacturing Intelligence division, has announced the release of Simufact Additive 2021. The latest version scores with the new process type, that enables users to simulate subtractive manufacturing processes to predict the distortions after a machining process. Also, our Metal Binder Jetting (MBJ) module received major enhancements, bringing a new feature, a new and even faster solver and a new dedicated compensation algorithm that significantly improves usability, efficiency and productivity. Further enhancements provide an improved calibration algorithm, more possibilities for defining the base plate fixations and a new option to evaluate the fixation forces. Users also benefit from the acceleration of support generation and slicing.

### **New process type machining enables for the simulation of subtractive manufacturing processes**

The forming history of a component can cause very high residual stresses in a component. These are released by a machining process and lead to plastic deformations. A manufacturing process chain simulation without taking into account the forming history and the machining process can lead to an enormous form deviation.

Up to now, there is software on the market that, among other things, simulates and optimises machining paths and predicts tool collisions. However, these solutions do not offer the prediction of the final shape of the component after the machining process.

Simufact Additive 2021 is the first solution that offers an application for subtractive manufacturing simulation, called machining. It now predicts distortions after the machining process, such as milling or drilling, which results from any preceding manufacturing step.

### **Huge enhancements to the Metal Binder Jetting module help to consider setters during the simulation process and more**

With the new release of Simufact Additive 2021, our users benefit from major enhancements to our Metal Binder Jetting (MBJ) module.

During the additive process simulation setters can now be taken into account. They support the part during sintering to compensate for part shrinkage. Within Simufact Additive 2021, the user can choose between a ceramic settler, which does not shrink, and a live settler, which shrinks during the sintering process. Furthermore, a specially developed solver for MBJ process simulation enables for a speed-up by a factor of up to 17x. As the third enhancement, there is a special new compensation algorithm for MBJ, that is more robust during the optimization of distortion compensation.

Enjoy faster, more stable and robust MBJ simulation thanks to the enhancements of the Metal Binder Jetting module.

### **Enhancements of calibration algorithm and base plate fixations**

With the new version, we have implemented a new calibration algorithm for faster and more stable calibration runs. The calibration time is drastically reduced, while stability and robustness are increased.

Users of Simufact Additive 2021 also benefit from the enhanced base plate fixations based on a new and simple dialogue. They now define the fixations at any position, with any diameter, and with any combination regarding degrees of freedom. The direction of the fixations can now be defined from the top and bottom or only from one side. In addition to the user-defined base plate fixations, they now evaluate the fixation forces using the Time-History (THS) plot.

### **Speed-up support generation and slicing**

The speed of support generation and slicing has been significantly improved, up to 10 times faster than in the previous version of Simufact Additive. The effect of increased speed can be

seen clearly, especially when you have to simulate with finely meshed geometries and with filigree support elements.

*“Simufact Additive is our solution for modeling and optimizing your metal-based additive manufacturing processes. Our top priority is to help our customers increase their efficiency and productivity by constantly improving our solutions with each release.”, says Dr. Gabriel Mc Bain, Senior Director Product Management at Simufact. “With the new release of Simufact Additive 2021, we have introduced an application module, that allows our users to simulate the effects of subtractive manufacturing processes such as milling and drilling on the part geometry and the residual stresses. The metal binder jetting (MBJ) module received a huge enhancement where the calculation time was dramatically reduced and at the same time the distortion compensation was significantly improved. Look forward to many more new features and improvements, which will make your daily work easier!”*

Visit our What's new website and discover the top highlights of Simufact Additive 2021 <https://www.simufact.com/what-s-new-in-v2021-am.html>

## **About Hexagon | Simufact**

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications.

Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

Simufact, part of Hexagon's Manufacturing Intelligence division, applies simulation and process knowledge to help manufacturers optimise metal forming, mechanical and thermal joining and additive process quality and cost. Learn more at [simufact.com](https://www.simufact.com). Hexagon's Manufacturing Intelligence division provides solutions that utilise data from design and engineering, production and metrology to make manufacturing smarter.

Learn more about Hexagon (Nasdaq Stockholm: HEXA B) at [hexagon.com](https://www.hexagon.com) and follow us [@HexagonAB](https://twitter.com/HexagonAB).

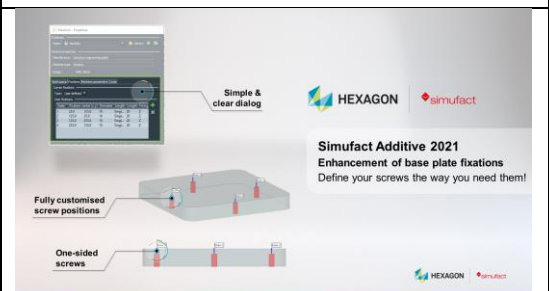
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### Notes to editor

The following images are available in the press pack, or upon request.

 <p><b>Simufact Additive 2021</b> New process type: Machining Simulating subtractive manufacturing</p> <p>01_Machining-Cover_EN.png (Dimensions: 1920 x 1080)</p>	<p>The new process type machining in Simufact Additive 2021 enables for the simulation of subtractive manufacturing processes, such as milling and drilling.</p>
 <p><b>Simufact Additive 2021</b> Extension of MBJ module Consider setter in your MBJ simulation!</p> <p>02_MBJSetter-Cover_EN.png (Dimensions: 1920 x 1080)</p>	<p>Consider setter geometries, benefit from new and even faster solver &amp; new compensation algorithm for our Metal Binder Jetting module in Simufact Additive 2021.</p>
 <p><b>Simufact Additive 2021</b> Enhancement of calibration algorithm Increasing speed, stability and robustness</p> <p>03_NewCalibrationAlgorithm-Cover_EN.png (Dimensions: 1920 x 1080)</p>	<p>The improvement of the calibration algorithm increases the speed, stability, and robustness of the calibration runs.</p>
 <p><b>Simufact Additive 2021</b> Enhancement of base plate fixations Define your screws the way you need them!</p> <p>04_BasePlateFixations-Cover_EN.png (Dimensions: 1920 x 1080)</p>	<p>Thanks to this enhancement, the base plate fixations can be modelled in a completely user-defined way.</p>



05\_SpeedUpSlicing-Cover\_EN.png  
(Dimensions: 1920 x 1080)

The new version enables up to 10 times faster support generation and slicing.