

News Release

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3D Systems Unveils New Production Solutions; Ushers in Era of True 3D Production at Formnext 2019

- World leader in production solutions for additive manufacturing demonstrates latest innovations for Healthcare, Aerospace, and Automotive industries
- 3D Systems' application-specific production solutions will yield an unprecedented industry first - approximately 200 million end-use production parts in 2019

ROCK HILL, South Carolina, November 19, 2019 – At Formnext 2019, [3D Systems](#) (NYSE:DDD) is showcasing its new, application-specific production solutions for the Healthcare, Aerospace, and Automotive industries. The company has the unique ability to architect solutions specific to customers' needs through a combination of its breakthrough materials, hardware platforms, software, and professional services - creating a path forward to integrating additive into traditional production environments. As a result, manufacturers are able to achieve design freedom, increase agility, scale production, and improve overall total cost of operation.

"In 2016, I shared my vision and strategy for how 3D Systems would make 3D production real. It would require customer collaboration and innovation, with the experience and expertise of our people as a driving force," said Vyomesh Joshi, president and chief executive officer, 3D Systems. "Today, we're executing on that strategy to position 3D Systems as the premier production solutions company in the industry. In fact, we have already surpassed 175 million production parts created by our customers, and we are on our way to 200 million parts created in 2019 using 3D Systems' solutions."

3D Systems' customers realizing the benefits of the company's production solutions span a range of industries including Healthcare, Dental, Aerospace, Automotive, and Durable Goods. Some examples include:

- [Align Technologies](#) incorporates 3D Systems' technology to help produce more than 430,000 Invisalign aligners per day – the single highest volume additive workflow in the world.
- [NuVasive](#) – an orthopedic device company – that capitalized on 3D Systems' production solutions to move from design to market of Modulus® (now a full implant line) in just over one year.
- [Delft Aerospace Rocket Engineering](#) team at the University of Delft partnered with 3D Systems to develop an innovative rocket exit nozzle as a single part, 3D printed in titanium. Firing tests of the completed nozzle proved to be successful, placing them one step closer to achieving their mission of sending a rocket into space.

Production Solutions Accelerating Adoption of Additive Manufacturing

3D Systems partners with customers to help them progress through their additive manufacturing journey and accelerate the adoption of additive within their existing production environments. This process begins with the customer's application in mind; designing the best possible solution to achieve their needs and successfully address challenges.

3D Systems encourages customers to begin their additive manufacturing journey by engaging with one of its Customer Innovation Centers (CIC). There, a customized production workflow solution will be designed to accelerate the development of advanced applications by providing customers with access to bespoke solutions, domain expertise, and state-of-the-art technology. The process begins with the company's software as the core to the overall solution. Customers will be able to scan and digitize solutions – if digital files do not exist – and then prepare their CAD file to optimize it for 3D printing. This preparation step includes importing part data, orienting the part on the build plate, optimizing the geometry and creating optimal supports to ensure the final part matches the design intent. From this point, the part is created using 3D Systems' additive manufacturing hardware platforms. After printing, it is post-processed and 3D Systems' software comes into play again to inspect the part.

At 3D Systems' booth (Hall 12.1, Booths D03, D11, D19) at Formnext 2019, the company will demonstrate four production solutions designed specifically for the Healthcare, Aerospace, and Automotive industries, and are intended to serve as an example of the work done with

customers:

- **Automotive:** 3D Systems production solutions are helping automotive manufacturers develop lighter weight parts to drive down manufacturing costs, design and produce innovative assemblies that reduce part counts, provide greater strength and efficiency, and create realistic prototypes that can remove months from the product development process. In its booth, the company will showcase workflows for an in-door bracket and a washer fitting which includes integrated channels for a temperature sensor cable and zip tie. The workflow for the in-door bracket includes:

- [Geomagic® Design X™](#) (digitize), [3D Sprint®](#) (prepare), [ProJet® MJP 2500](#) (prototype), [ProX® SLS 6100](#) (produce), [Geomagic® Control X™](#) (inspect), and [3D Connect](#) (manage).

For the washer fitting the workflow includes:

- [Geomagic® Design X™](#) (digitize), [3D Sprint®](#) (prepare), [Figure 4 Standalone](#) (prototype), [Figure 4 Modular](#) (produce), [Figure 4 UV Cure Unit 350](#) (post-process), [Geomagic® Control X™](#) (inspect), and [3D Connect](#) (manage).

- **Aerospace:** Aerospace and defense customers are able to realize unprecedented manufacturing productivity improvements such as: increased speed and reliability of quality assurance and validation processes; lowered fuel costs through lightweighting and parts consolidation; increased manufacturing productivity through innovative 3D printed casting patterns, 3D data recovery, injection-mold design, and direct metal printing of airworthy parts. The aerospace workflow includes additive and subtractive technologies from 3D Systems, and partner GF Machining Solutions, that result in an end-use Titanium bracket. This integrated workflow includes:

- [3DXpert®](#) (design & prepare), [DMP Flex 350](#) (print), [DMP Inspection](#) and [Geomagic Control X](#) (inspect), [Cimatron®](#) and [3DXpert](#) (CNC prep), and partner GF Machining Solutions' [HSM 200 U LP](#) (machine), and [CUT AM 500](#) (separate).

- **Healthcare:** 3D Systems partners with surgeons, healthcare professionals, and medical device manufacturers to offer a range of precision healthcare solutions, including 3D printed anatomical models, virtual surgical planning, patient-specific surgical guides, instrumentation and implants. As part of the healthcare workflow, the company will produce a spinal cage implant to demonstrate how these customers can improve productivity, lower cost, and enhance the overall patient experience. The unique workflow developed to produce the spinal cage integrates:

- 3DXpert (design & prepare), DMP Flex 350 (print), Geomagic Control X (inspect), Cimatron® and 3DXpert (CNC prep), and partner GF Machining Solutions' HSM 200 U LP (machine).

On Demand Manufacturing Services Provide Supply Chain Flexibility

Whether a customer is just beginning their additive manufacturing journey, or they need additional production support, 3D Systems' On Demand manufacturing services facilitate supply chain flexibility. Leveraging the same production solutions available direct to customers, 3D Systems On Demand can provide single part production, or hundreds of parts, within days. By selecting 3D Systems as a production partner, customers gain access to a global network of industry-leading facilities and nearly four decades of experience in 3D printing and advanced manufacturing solutions.

At Formnext 2019, 3D Systems On Demand will showcase examples of the additive and subtractive manufacturing services offered. Visitors are encouraged to come consult with the On Demand experts to learn how to best leverage services for rapid prototyping, functional prototyping, appearance models and low-volume production.

Innovative Features Added to Company's Digital Factory Software

With 3D Systems' extensive software portfolio operating as the backbone of each workflow, the company is continually innovating to enrich its products. At Formnext 2019, 3D Systems is announcing its latest software release – 3DXpert 15, the company's all-in-one integrated software for metals additive manufacturing. 3DXpert is renowned as a vital part of 3D Systems' metal solutions, helping to accelerate the transition from design to post-processing. The enhancements available in this new version of 3DXpert include: automatic support generation, extremely fast slicing for high-volume lattice structures, and automated print analysis and validation. These features enable a seamless transition from rapid prototyping to production applications including the ability to optimize design structure, shorten design-to-manufacturing lead time and minimize manufacturing costs. 3DXpert 15 is planned for general availability in January 2020.

Integrated Additive and Subtractive Production Solutions

Manufacturers that have earned a reputation as industry leaders have already embraced how additive manufacturing can complement their traditional workflows for competitive advantage. In August 2018, 3D Systems and GF Machining Solutions [announced a strategic partnership](#)

designed to help more manufacturers take advantage of the transformative power of additive. This unique partnership combines 3D Systems' innovation and expertise in additive manufacturing with GF Machining Solutions' renowned leadership in precision machining, enabling manufacturers to seamlessly combine additive and subtractive technologies to more efficiently produce complex metal parts within tight tolerances, and reduce TCO. The companies will have a joint presence in Hall 12.1, Booth D11/D19 where they will showcase these integrated workflows for Healthcare and Aerospace. Their co-branded metal 3D printing solutions – [DMP Flex 350](#) and [DMP Factory 500](#) – will be featured that are designed to enhance metal parts production and redefine manufacturing environments. These solutions enable scalable metal additive manufacturing and are ideal for applications such as: fuel applications, RF applications and airfoil components, spinal cages, mold inserts with conformal cooling for injection molding and die casting.

GF Machining Solutions is also announcing its new high-speed wire cutter - [the AgieCharmilles CUT AM 500](#). The new wire EDM machine combines high-speed operation with the ability to cut even the smallest, most fragile metal parts from the build plate without damaging the parts or causing any contamination or alteration of the material. Being able to redefine this post-processing step is essential to reducing time-to-market and decreasing costs. In addition, GF Machining Solutions will showcase the [Mikron HSM 200U LP](#) high-speed milling machine. Users of this machine will benefit from the combination of direct drives on linear axes as well as rotating and swiveling axes.

3D Systems' Show Activities

3D Systems will hold several events at this year's show.

- On Tuesday, November 19 at 9:30 am, 3D Systems' President and Chief Executive Officer Vyomesh Joshi will host a press conference in the company's booth D03 in hall 12.1.
- On Wednesday, November 20, Eric Wind, international senior consultant, Geomagic EMEA, software, 3D Systems will deliver a presentation titled "3D Systems Redefines Metrology for 3D Printed Part Production with Enhancements to Geomagic Control X" at 2:15 pm at the TCT Introducing Stage, Hall 12.1. This session is very timely as the latest release of this software, Geomagic Control X 2020, is now generally available.

For more information about 3D Systems' presence at Formnext 2019, please visit the [company's website](#).

Forward-Looking Statements

Certain statements made in this release that are not statements of historical or current facts are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause the actual results, performance or achievements of the company to be materially different from historical results or from any future results or projections expressed or implied by such forward-looking statements. In many cases, forward-looking statements can be identified by terms such as "believes," "belief," "expects," "may," "will," "estimates," "intends," "anticipates" or "plans" or the negative of these terms or other comparable terminology. Forward-looking statements are based upon management's beliefs, assumptions, and current expectations and may include comments as to the company's beliefs and expectations as to future events and trends affecting its business and are necessarily subject to uncertainties, many of which are outside the control of the company. The factors described under the headings "Forward-Looking Statements" and "Risk Factors" in the company's periodic filings with the Securities and Exchange Commission, as well as other factors, could cause actual results to differ materially from those reflected or predicted in forward-looking statements. Although management believes that the expectations reflected in the forward-looking statements are reasonable, forward-looking statements are not, and should not be relied upon as a guarantee of future performance or results, nor will they necessarily prove to be accurate indications of the times at which such performance or results will be achieved. The forward-looking statements included are made only as of the date of the statement. 3D Systems undertakes no obligation to update or review any forward-looking statements made by management or on its behalf, whether as a result of future developments, subsequent events or circumstances or otherwise.

About 3D Systems

More than 30 years ago, 3D Systems brought the innovation of 3D printing to the manufacturing industry. Today, as the leading AM solutions company, it empowers manufacturers to create products and business models never before possible through transformed workflows. This is achieved with the Company's best-of-breed digital manufacturing ecosystem - comprised of plastic and metal 3D printers, print materials, on-demand manufacturing services and a portfolio of end-to-end manufacturing software. Each solution is powered by the expertise of the company's application engineers who collaborate with customers to transform manufacturing environments. 3D Systems' solutions address a

variety of advanced applications for prototyping through production in markets such as aerospace, automotive, medical, dental and consumer goods. More information on the company is available at www.3dsystems.com.

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