

### Oerlikon and Boeing to Collaborate in Additive Manufacturing Work

- Oerlikon and Boeing to create standard processes for 3D-printed structural titanium aerospace
- Five-year agreement supports creation of standard titanium additive manufacturing processes
- Boeing has 50,000+ 3D-printed parts on commercial, space and defense products flying today

PFÄFFIKON SCHWYZ, SWITZERLAND & CHICAGO, **Feb. 20, 2018**— Boeing [NYSE: BA], the world's largest aerospace company, and Oerlikon [SWX: OERL], a leading technology and engineering group, signed a five-year collaboration agreement to develop standard materials and processes for metal-based additive manufacturing. Additive manufacturing, popularly known as 3D printing, is a controlled process in which material is joined or solidified to create a three-dimensional part.

"This agreement is an important step toward fully unlocking the value of powder bed titanium additive manufacturing for the aerospace industry," said Leo Christodoulou, Chief Technologist for Boeing Additive Manufacturing. "Boeing and Oerlikon will work together to standardize additive manufacturing operations from powder management to finished product and thus enable the development of a wide range of safe, reliable and cost-effective structural titanium aerospace components."

Dr. Roland Fischer, CEO Oerlikon Group said: "This program will drive the faster adoption of additive manufacturing in the rapidly growing aerospace, space and defense markets. Working together with Boeing will define the path in producing airworthy additive manufacturing components for serial manufacturing. We see collaboration as a key enabler to unlocking the value that additive manufacturing can bring to aircraft platforms and look forward to partnering with Boeing."

Boeing and Oerlikon will use the data from this collaboration to support the qualification of additive manufacturing suppliers to produce metallic components using a variety of machines and materials. The research will initially focus on industrializing titanium powder bed fusion additive manufacturing and ensuring parts made with this process meet the flight requirements of the Federal Aviation Administration and Department of Defense. The strong collaboration between Boeing and Oerlikon will enable the companies to meet the current challenges to qualify materials and processes for aerospace and provide a route for the adoption of additive manufacturing with a qualified supply chain that achieves quality and cost targets.

Since 1997, Boeing has been a leader in researching and implementing additive manufacturing in the aerospace industry and currently has about 50,000 3D-printed parts flying on commercial, space and defense programs. In 2017, Boeing became the first aerospace manufacturer to design and install a Federal Aviation Administration-qualified 3D-printed structural titanium part on a commercial airplane, the 787 Dreamliner. With the creation of the Boeing Additive Manufacturing organization in 2017, Boeing is focused on using additive manufacturing to generate value for customers by enabling greater affordability, quality, customization and speed-to-market innovation.

Oerlikon is a leading service provider in additive manufacturing, offering a full-range of integrated additive manufacturing services along the entire value chain – from metal powder production to component design, manufacturing, post-processing and quality inspection.

To find out more about both companies, visit: [www.oerlikon.com/am](http://www.oerlikon.com/am) and <http://www.boeing.com/>

#### About Oerlikon

Oerlikon is a leading global technology group, with a clear strategy to become a global powerhouse in surface solutions, advanced materials and materials processing. Backed by the key ability to intelligently engineer and process surface solutions and advanced materials, the Group is committed to invest in value-bringing technologies that provide customers with lighter, more durable, more efficient and environmentally sustainable products. A Swiss company with over 100 years of tradition, Oerlikon operates its business in three Segments (Surface Solutions, Manmade Fibers and Drive Systems) with a global footprint of over 13,500 employees at more than 180 locations in 37 countries and sales of CHF 2.3 billion in 2016. The company invested CHF 94 million in R&D in 2016 and has over 1,000 specialists developing innovative and customer-oriented products and services.

#### About Boeing

Chicago-based Boeing is the world's largest aerospace company and leading manufacturer of commercial jetliners and defense, space and security systems. A top U.S. exporter, the company supports airlines and U.S. and allied government customers in 150 countries.

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