



Media release

14 November 2019

ETIHAD ENGINEERING UNVEILS 3D PRINTING LAB AND RECEIVES THE REGION'S FIRST APPROVAL TO 3D PRINT AIRCRAFT PARTS USING EOS POWDER-BED FUSION TECHNOLOGY

- *The first Airline MRO to receive EASA approval to design, produce and certify 3D printed cabin parts using powder-bed fusion technology, in partnership with EOS.*
- *The facility also features the world's largest industrial thermoplastic extrusion 3D printer, supplied by BigRep.*

Abu Dhabi, United Arab Emirates - Etihad Engineering, the industry-leading Maintenance, Repair and Overhaul (MRO) division of Etihad Aviation Group, has collaborated with EOS and BigRep, both leading 3D printing technology providers, to open the region's first additive manufacturing facility with Design and Production Approval from the European Aviation Safety Agency (EASA).

The laboratory, located at the Etihad Engineering facility adjacent to Abu Dhabi International Airport, features two approved industrial 3D printers. The laboratory's primary machine is the powder-bed fusion technology system EOS P 396, for demanding high performance and high-quality aircraft applications. In contrast to traditional manufacturing processes, it enables faster production and reduced weight of cabin parts.

As an MRO solutions provider committed to continuously enhancing the service value it offers to the market and its customers, this month, Etihad Engineering, together with its partner EOS, received one of the first Airline MRO approvals from EASA for 3D printing using powder-bed fusion technology which will be used to design, produce and certify additively manufactured parts for the aircraft cabin of the future.

Bernhard Randerath, VP Design, Engineering and Innovation, Etihad Engineering, commented: “The launch of the new facility is in line with Etihad Engineering’s position as a leading global player in aircraft engineering as well as a pioneer in innovation and technology. We are extremely proud to collaborate with EOS and BigRep to expand our capability and support the UAE’s strategy to increase production technology and cement its position as a global aerospace hub.”

Markus Glasser, Senior Vice President, Export Region, EOS, said: “Being committed to high-quality solutions and constant technology innovation, Etihad Engineering and EOS share the same mindset. Together, we want to bring the design and production of aircraft interior parts to the next level.” Glasser continues: “Producing cabin interior parts additively will offer a substantial value-add in terms of optimised repair, lightweight design, shorter lead times and customisation, addressing some of the key challenges of the aerospace industry.”

The newest system installed by EOS produces serial parts from polymer materials such as PA 2241 FR, and enables the manufacture of cabin parts for an aircraft’s heavy maintenance C-Check. Cabin defects can also be rectified within a short turnaround time which allows for the production of the required cabin parts during line maintenance.

The EOS machine operates with a total build volume of 340 x 340 x 600mm. The modular and highly productive system enables the tool-free manufacture of serial components, spare parts, functional prototypes and models directly from CAD data.

The second machine is the BigRep ONE, one of the largest, serial-built industrial thermoplastic extrusion 3D printers. Bringing additive manufacturing to MRO, the ONE is designed for manufacturing large parts, jigs and fixtures as well as moulds – on site and on demand.

“Our 3D printers have established 3D printing and AM as an innovative, added-value technology in the aviation industry. They offer an unprecedented level of precision, quality and speed, and enable us to use the high-performance, innovative printing materials the aviation industry requires”, said Martin Back, BigRep Managing Director. “Together with Etihad Engineering, we will develop the full potential of AM. In the next phase, a BigRep PRO, the most advanced large-format FFF 3D printer will be installed.”

The facility was officially opened in a ceremony attended by His Excellency Ernst Peter Fischer, German Ambassador to the UAE in recognition of the relationship between the German companies EOS and BigRep and the UAE's Etihad Engineering.

Etihad Engineering first received EASA approval to 3D print with filament technology in 2017 and was the first airline MRO in the world to certify, print and fly 3D printed cabin parts. The latest approval, received in October 2019 covers powder bed fusion 3D printing technology.

Etihad Engineering is recognised as a global leader in aircraft maintenance with a customer base spanning leading airlines and OEMs from South America to Europe, the Middle East and Asia.

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Images can be downloaded here: <https://we.tl/t-Bg799EKsxn>

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1. The official opening of Etihad Engineering's 3D printing lab was attended by H.E. Ernst Peter Fischer, German Ambassador to the UAE and representatives from Etihad Engineering, EOS and Big Rep. (L to R) Bernhard Randerath, VP Design, Engineering & Innovation, Etihad Engineering, Abdul Khaliq Saeed, Chief Executive Officer, Etihad Engineering, Markus Glasser, Senior VP EOS, H.E. Ernst Peter Fischer, German Ambassador to the UAE, Marie Langer, Chief Executive Officer, EOS, Tony Douglas, Group Chief Executive Officer, Etihad Aviation Group, Martin Black, Chief Executive Officer, BigRep.
2. Etihad Engineering engineers at work using the pioneering EOS Additive Manufacturing 3D Printer which is now located at Etihad Engineering's facility located in Abu Dhabi.
3. The Etihad Engineering 3D printing lab is the Middle East's first additive manufacturing facility with Design and Production Approval from the European Aviation Safety Agency (EASA).

About Etihad Engineering

Etihad Engineering is the largest commercial aircraft maintenance, repair and overhaul (MRO) services provider in the Middle East. As a subsidiary of the Etihad Aviation Group, the company offers maintenance services around the clock, including design, advanced composite repair, cabin refurbishment and component services, from its state-of-the-art facility adjacent to Abu Dhabi International Airport.

Aircraft hangars at the facility cover approximately 66,000 sq metres, including 10,000 sq metres of aircraft painting facilities and a custom-designed hangar that can accommodate up to three Airbus A380 aircraft simultaneously. The company has successfully completed maintenance projects over the years for airlines across the world.

For more information, visit: www.etihadengineering.com and follow news on LinkedIn at <http://bit.ly/EYEngLinkedIn>

About EOS

EOS is the world's leading technology supplier in the field of industrial 3D printing of metals and polymers. Formed in 1989, the independent company is pioneer and innovator for comprehensive solutions in additive manufacturing. Its product portfolio of EOS systems, materials, and process parameters gives customers crucial competitive advantages in terms of product quality and the long-term economic sustainability of their manufacturing processes. Furthermore, customers benefit from deep technical expertise in global service, applications engineering and consultancy. www.eos.info

About BigRep

BigRep develops the world's largest serial production 3D printers, creating the industry benchmark for large-scale printing with the aim to reshape manufacturing. Its award-winning, German-engineered machines are establishing new standards in speed, reliability and efficiency. BigRep's printers are the preferred choice of engineers, designers and manufacturers at leading companies in the industrial, automotive and aerospace sectors.

Through collaborations with its strategic partners – including Bosch Rexroth, Etihad Airways and Deutsche Bahn – and key investors – including BASF, Koehler, Klöckner and Körber – BigRep continues to develop complete solutions for integrated additive manufacturing systems, as well as a wide range of printing materials on an open-choice source. Founded in 2014, BigRep is headquartered in Berlin with offices in Boston and Singapore. Leading the way in one of the world's key technologies, our multinational engineering teams are highly trained, interdisciplinary and customer-focused.

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