

Press Release

## **Ready to Fly: The World's First Fully 3D-Printed High-Tech Airline Seats to be Premiered by BigRep at Aircraft Interiors Expo in Hamburg.**

*Two innovative aerospace seats envisioned with Dassault Systèmes' 3DEXPERIENCE platform and the industry solution experience "Passenger Experience" / The Retro Seat saves 50 percent of original seat weight, while the cutting-edge bionic Aero Seat offers an all-new passenger experience.*

**Hamburg / Germany, April 1, 2019** – BigRep, the global leader in large-scale 3D printing (FFF segment) for industrial applications, will unveil the world's two first fully 3D-printed aerospace seat systems with Dassault Systèmes at the Aircraft Interiors Expo in Hamburg (April 2-4, 2019). Both prototypes have the potential to re-define aircraft interiors' design as well as the passenger experience in air travel.

Opening a new dimension for Additive Manufacturing (AM) in the aviation industry, the prototypes, designed by NOWLAB, the BigRep innovation consultancy department, and manufactured on BigRep's large-scale 3D printers, include the **Retro Seat**, an original airline seat which has been refurbished by using AM, and the **Aero Seat**, a bionic passenger seat. Strikingly elegant, both seats present visionary design unprecedented in 21st century aircraft interior composition.

Both full-size seat systems were created using Dassault Systèmes' 3DEXPERIENCE platform and the industry solution experience "Passenger Experience". Engineers use 3D printers to produce optimized parts by leveraging the 3DEXPERIENCE platform to design and simulate highly optimized parts based on space allocation, loads, constraints, manufacturing processes, and multi material requirements.

"Our Retro Seat saves 50 percent of weight, creating huge benefits for sustainable aircraft engineering and operational costs. Our prototypes demonstrate the massive benefits of 3D printing for manufacturers and airlines," said Daniel Büning, co-founder and Managing Director of NOWLAB at BigRep. "In addition, jigs, fixtures and other cabin interior parts can be printed on site and on demand. In cabin interior design, 3D printing will push the limits of engineering creativity. For designers, the 3DEXPERIENCE platform will be a key tool in this process."

"3D printing is in the process of re-defining the aviation industry, and we're ready to fly! Our new 3D printer PRO offers an unprecedented level of precision, quality and speed, enabling us to use the high-performance, innovative printing materials the aviation industry requires." said BigRep CEO Stephan Beyer, PhD.

BigRep and Dassault Systèmes will show how AM can be applied to any part of the cabin – from seat to armrest to sidewall panel as well as how AM enables design of individual end-use parts starting from lot size one to small series production.

Making full use of the unique technical possibilities of 3D-printing, the **Retro Seat** offers groundbreaking high-tech features such as inductive charging that permits wireless charging of smartphones. The back of the headrest is equipped with "Bring your own device" outlets to connect to tablets or other devices as well as multiple USB ports.

The seat is also embedded with blue LED light panels, creating ambiance during night flights, while the arm rest is equipped with a smart cabinet solution to safely store laptops during takeoff and landing.

The **Aero Seat** presents a game-changing passenger seat for autonomous driving technology. This exciting seat shell design has an almost bionic touch, look and feel as the seat will adapt to the driver's or passenger's individual body shape: Using a 3D body scan prior to the seat production, the shell will provide its users with an unprecedented level of comfort to reduce stress and physical discomfort during long trips. Last but not least, flexible materials are being used for printing seat cushions (incl. softness factor).

Both designs are not a simple adaptation of existing, convectional airline seat frameworks, but were specifically envisioned for large-format FFF technology, setting a benchmark example for truly creative design by breaking the limits of traditional engineering. For example, both seats have a fully integrated design, i.e. any bearings or electronics can be integrated during the printing process.

BigRep will be present at this year's Aircraft Interiors Expo at Dassault Systèmes' booth **6C90E** in the **Hanse Pavilion**.

### **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.

**For more information on BigRep and its solutions and to arrange an interview with BigRep or NOWLAB executives, please contact:**

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