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BigRep presents *DUSTER*, the biggest FDM-3D printed drone in the world

- Copter frame has been printed with the world's largest serial 3D printer
- Drone is the result of a cooperation between *BigRep* and drone specialist Robert Reichert

Berlin/Hannover – April 27, 2016. The Berlin-based tech startup *BigRep* has printed the largest FDM-3D printed drone in the world: *DUSTER*. The market and technological leader for large-scale serial 3D printing has produced an ultra-light, stable and with carbon threads reinforced copter drone frame with the *BigRep ONE*, the world's largest serial 3D printer. With dimensions of 220x190x60cm, the drone's copter frame is designed to accommodate eight electric motors, each with up to 3.8kW. The load capacity of the *DUSTER* is 40 to 60kg. If this full capacity is utilized, the flight time is between seven and forty minutes; with the use of further batteries it can be extended up to seventy minutes.

The 3D printed drone *DUSTER* and the *BigRep ONE* at Hannover Messe

Combination of 3D printed parts and carbon threads

The drone nicknamed *DUSTER* is officially called *OIC Copter System # 42 OT*. The "*OT*" stands for "organic tensegrity" and describes both the organic design of the 3D printed components that form the core of the copter frame, as well as the carbon threads absorbing the frame's tension – both while the drone is stationary and in flight. The combination of the thin-walled, hollow 3D printed parts and the carbon threads is essential for the stability and function of a ultra-light drone of this size: The printed parts are particularly well adapted to absorbing high pressure but not at performing bending and pulling motions; however the carbon threads contribute enormously to handling pulling forces. By combining the two materials, the shortcomings of the individual materials are perfectly balanced, which enhances the advantages of both.

Cooperation with drone specialist Robert Reichert

DUSTER was jointly developed with the drone specialist Robert Reichert of *OiC Drones*, the first full-service drone provider. The engineer and industrial designer experimented early on with systems that could carry cameras in the air in a stable manner. With *OiC*, he focuses on manufacturing highly specialized flying robots. So far, *DUSTER* is the largest drone, which Reichert has been involved in the construction of: "Without the *BigRep ONE*, producing a drone of this size would not have been possible. Large-scale 3D printing allows us to think of completely new dimensions when it comes to building drones. I am very proud to have been involved in the development of *DUSTER*, since this drone has established a completely new benchmark. "

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Primarily used in industry and agriculture

The 3D printed copter frame for the *DUSTER* is very versatile as a platform and is among other things particularly suitable for use in the industrial and agriculture sectors. In the latter, the drone could be utilized for a controlled, semi-autonomous delivery of fertilizers and biological pesticides. Moreover, the drone can be used for example in the sustainable cultivation of wine.

BigRep is presenting the drone publicly for the first time at the **Hannover Messe** from April 25 to 29, 2016 in **Hall 7, Stand C34**.

About *BigRep*:

BigRep is a Berlin-based tech startup and manufacturer and developer of the world's largest serial 3D printer. Founded in 2014, the company became the market and technological leader for large-scale serial 3D printing in only 18 months, aiming to revolutionize design, prototyping, and industrial production from the core. Prestigious enterprises and institutions from around the world rely on *BigRep*'s 3D printing solutions. With a volume of more than $1m^3$, *BigRep ONE* is the largest FFF (Fused Filament Fabrication) printer currently available on the world market, thus bridging the gap between 3D printers designed for modelling and industrial use. The *BigRep ONE.2* received the *German Design Award Gold 2016* by the *German Design Council* in October 2015. *BigRep*'s ever-growing team of presently 40 employees from ten nations is passionately committed to working on the next industrial revolution. See a sped-up 3D printing procedure with a *BigRep ONE* here: http://bit.ly/1S1UENV.

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