Rapid.Tech (14–16 June 2016), Messe Erfurt

13th Rapid.Tech - Trade Forum "Aviation" presents trends and new developments

High quality additive-manufactured components, produced more quickly

Erfurt, April 2016: ***The aerospace industry is in the vanguard when it comes to integrating Additive Manufacturing (AM) and 3D Printing into parts manufacturing and spare parts supply. Now the sector is preparing to reach yet further heights by becoming even quicker, more expert and more industrial at Additive Manufacturing. At Rapid.Tech in Erfurt, the international trade show and conference for Additive Manufacturing which takes place from 14–16 June 2016, the Trade Forum "Aviation" is therefore discussing trends and new developments in this area.***

Whilst other sectors still predominantly use Additive Manufacturing processes and 3D Printing in prototyping, the aerospace industry has been using them for years in the manufacture of series parts. AM also plays an important role in spare parts supply. "3D Printing is already an established manufacturing technology in various sectors of aviation. Now it's a question of broadening the potential applications on the one hand and driving forward the industrialisation of AM processes on the other," explains Dr. Eric Klemp, Managing Director of the voestalpine Additive Manufacturing Center and convenor of the Trade Forum "Aviation" (16 June 2016) at the 13th Rapid.Tech in Erfurt.

A completely new approach to industrialisation of Additive Manufacturing is being proposed by Daan A.J. Kersten, Managing Director of the Dutch company Additive Industries, in the form of MetalFAB1. The innovative, modular design of this system enables metal components to be manufactured in an integrated process chain for the first time, from the file all the way to the finished product. And it does so with an increase in productivity of up to tenfold compared with traditional "mid-range" AM machines in use in industry, and with greater reproducibility and flexibility. One of the features that makes this possible is the system's high level of automation, which removes the need for manual labour. Matteo Levoni of CRP Technology SRL in Italy

will reference various projects as he discusses the use of a carbon fibre-reinforced composite for AM-manufactured components for satellites such as KySAT-2 and 1U CubeSat. Rainer Sabisch of App Tital GmbH will consider in his talk how a combination of investment casting and AM can be used to design components with optimised topology. Christian Seidel from the Fraunhofer Institute for Machine Tools and Forming Technology (IWU) will describe the road from design guidelines to rules that can be applied by design engineers. His talk will explain initial results, provide information on the ongoing work of standardisation bodies and finally illustrate the potential for transferring design rules into design software. By way of example, he will demonstrate software for mesoscopic lightweight design using honeycomb structures. The use of hybrid manufacturing to re-use as much material as possible in the repair of defective aerospace components is the subject of the session led by Christopher Stengel, SLM Solutions GmbH. Key requirements for this process are that the defect is recognised, that the component is suitable for 3D Printing and that the SLM process can be used to prepare it for layered manufacturing of the original geometry. A methodology for making decisions about when to use additive processes in the manufacture and repair of aviation components will be explained by Gereon Deppe of the Direct Manufacturing Research Center (DMRC) at the University of Paderborn. He will also assess the costs of Additive Manufacturing processes, enabling a comparison with manufacturing and repair costs for conventional technologies. Finally, his session will look at quality criteria and the identification and evaluation of changes in the supply chain.

For the first time this year's Rapid.Tech, the international trade show and conference for Additive Manufacturing, will include trade forums on "3D Metal Printing", "Additive Contract Manufacturing", "Electronic Engineering" and "Automotive Industry". In addition to the well-established trade forums on "Medical Technology", "Dental Technology", "Design", "Tools" and "Science" and the User's Conference, the new conference areas will provide opportunities for intensive professional discussion on specific AM topics. All Rapid.Tech conference presentations will be simultaneously translated (German<>English). "With the expanded conference programme and the extended, three-day duration of Rapid.Tech, we are keeping abreast of developments in Additive Manufacturing and 3D Printing," explains Wieland Kniffka, CEO of Messe Erfurt. The complete programme is available at www.rapidtech.de.

Thanks to its unique combination of trade show and specialist conference, Rapid.Tech in Erfurt is among the world's foremost events in the field of Additive Manufacturing and 3D Printing. For the fourth time FabCon 3.D, Germany's 3D Printing fair for semi-professional users and prosumers, will be held in parallel with the event.

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