# PRESS RELEASE

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# iComposite 4.0 launched

## Schuler leads group project on the economic serial production of fiber-reinforced plastic parts

*Göppingen, January 27, 2016* – As the importance of lightweight construction methods continues to rise, the automotive industry is increasingly considering fiber-reinforced plastics (composites). Due to high strength combined with low weight, fiber-reinforced plastics offer lightweight potentials which have not been fully exploited yet. At the moment, however, high resulting component costs, among other things, are preventing the widespread use of such composite parts. The beginning of 2016 saw the launch of iComposite 4.0, a group project led by Schuler aimed at achieving economical serial production of components made of fiber-reinforced plastics through increased resource efficiency.

Due to the high material cost, resource efficiency opens up enormous potential for cost savings. One approach to decreasing the component cost is to reduce the use of materials and processing times in production drastically. The cut-off of semi-finished products is up to 50 percent during manufacturing, for instance. In addition, due to new technologies, there is significant production-related scrap. With the iComposite 4.0 project, cost savings are to be achieved by near net shape, additive production processes (“3D printing”) – in combination with a resin-injection method established in the industry – as well as a networked production system with regulating system intelligence (“Internet of Things”).

The starting point of the networked production system is additive fiber spraying, which is a highly productive process to generate the basic structure of the component. After this, fiber strands are applied very precisely and in accordance with the load profile in order to absorb peak loads in the part and compensate for part variations in the fiber spraying process. During the subsequent injection of resin and shaping in the press, the die’s deflection is deliberately influenced in order to obtain the desired wall thicknesses of the part.

During the subsequent process steps, regulating system intelligence compensates for any fluctuations in the part’s properties in order to minimize scrap. The production history is stored on an RFID chip integrated into the part. This uninterrupted quality monitoring and linking of individual systems along the production line in accordance with Internet of Things methods is ultimately aimed at achieving a zero scrap rate.

In addition to Schuler, partners of the group project sponsored by the German Federal Ministry of Education and Research (BMBF) are the Aachen Center for Integrative Lightweight Production (AZL) atRWTH Aachen, Apodius GmbH, Broetje Automation Composites GmbH, Frimo Sontra GmbH, ID-Systec GmbH, the Institute of Plastics Processing (IKV) in Industry and the Skilled Crafts at RWTH Aachen, Siemens AG, and Toho Tenax Europe GmbH.

### Captions

Bild1.jpg: A self-regulating production line makes it possible to maintain defined characteristics of composite parts.

Bild2.jpg: The group project is aimed at the resource-efficient serial production of fiber-reinforced plastic parts.

*Please name IKV, AZL as the photo source.*

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