

Press Information

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PRESS RELEASE

Lightweight Forging III: 480 Project Ideas for Lighter Vehicles – Initial Project Results at the IAA Commercial Vehicles

Hagen, July 26, 2018

In the third phase of The Lightweight Forging Initiative, 39 steel manufacturers and forging companies from Europe, Japan and the US came together in 2017 with the aim of uncovering the lightweighting potential in a hybrid passenger car as well as in the power-transmitting components of a conventional truck powertrain.

Phase III began in July 2017 with the disassembly and documentation of a hybrid split-axle four-wheel drive SUV at the automotive research company fka Forschungsgesellschaft Kraftfahrwesen mbH in Aachen, Germany. Likewise, the transmission, propeller shaft and rear axle of a heavy-duty commercial vehicle were disassembled. During a workshop at the end of January 2018 at the fka in Aachen, 80 experts from the companies involved in the project then had the opportunity to assess the parts themselves and inspect them with respect to potential lightweighting measures.

Since then, 350 lightweighting suggestions for the chassis, powertrain, transmission and electronic parts of the hybrid passenger car as well as 131 suggestions for weight reduction in the truck powertrain have been developed. Bearing in mind that the above-named systems of the hybrid passenger car have a reference mass of 816 kg, these lightweighting approaches add up to a potential weight reduction of 93 kg in total. For the truck powertrain with a reference mass of 909 kg, the experts were able to predict a weight reduction of 124 kg in total.

“The Initiative would like to promote communication about lightweighting along the entire supply chain – from steel manufacture to forging, component manufacture and automotive application,” explains Dr. Thomas Wurm, Chairman of The Lightweight Forging Initiative for the steel partners. “We would like bring about the implementation of new lightweighting solutions on the basis of forging,” adds Dr. Hans-Willi Raedt, Chairman of the Initiative for the forging partners.

The Initiative will thus be presenting its initial results from as early as September 2018 at three trade events:
“67th IAA Commercial Vehicles” in Hanover, September 20 – 27, 2018, hall 23 (booth no. C18)
“27th Automobile and Engine Technology Colloquium” in Aachen, October 8 – 10, 2018, first floor (booth no. 37)
“9th International Suppliers Fair (IZB)” in Wolfsburg, October 16 – 18, 2018, hall 5 (booth no. 5303)

Here, automotive manufacturers, system suppliers and engineering companies can gain an insight into the content of Project Phase III as well obtain further information on the lightweighting potential that has been determined.

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Captions to enclosed photos:



Dr.-Ing. Thomas Wurm,
Chairman of the Initiative and Head of Technical Customer Support and Application Development at
Georgsmarienhütte GmbH



Dr.-Ing. Hans-Willi Raedt,
Chairman of the Initiative and Vice President Advanced Engineering at the Hirschvogel Automotive Group

The Lightweight Forging Initiative

Since 2013, a total of 54 steel manufacturers, forging companies and an engineering service provider have joined forces under the auspices of the German Forging Association (Industrieverband Massivumformung e. V.) and the Steel Institute VDEh (Stahlinstitut VDEh) to form The Lightweight Forging Initiative. The goal of this Initiative, which is unparalleled worldwide, is to achieve weight-savings in cars and light commercial vehicles using innovative components made of steel. During Phase I, which took place in 2013 and 2014 with 24 participating companies, a medium-sized passenger car was analyzed and the lightweight design potential of forged components identified. In total, a weight-saving potential of 42 kg was achieved in the powertrain and chassis. The Initiative entered Phase II in 2015 and 2016 with 28 companies and focused this time on a light commercial vehicle up to 3.5 t. Phase II was able to build on the success of Phase I by identifying a feasible lightweight design potential of 99 kg in the powertrain and chassis. Phase III of the Initiative kicked off at international level in summer 2017 with 39 companies from the US, Japan and Western Europe. The focus of this phase is on the lightweighting potential in the powertrain and chassis of a hybrid passenger car as well as in the transmission of a conventional truck. Further information may be found at: www.lightweightforging.com.

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Industrieverband Massivumformung e. V. (German Forging Association)

Industrieverband Massivumformung e.V., with its 120 members, represents the interests of the industry with sales of 6.7 billion euros and almost 30,000 employees. A core task is organizing collaboration across the member companies, most of which are medium-sized businesses, with the aim of working together to increase the competitiveness of the individual firms. Germany is the technology leader when it comes to forging and, after China, is the world's largest producer of forged parts.

Stahlinstitut VDEh (VDEh Steel Institute)

The association promotes cooperation among engineers on projects of a technical and scientific nature, with the aim of further developing steel technology and the material steel. Stahlinstitut VDEh focuses in particular on collaborative research. In international collaborative work, system manufacturers and suppliers are also involved. Today, Stahlinstitut VDEh members include around 5,000 university graduates in technical, scientific and commercial subjects or those in leading positions in industry and trade. Besides this, 150 companies have joined the association from the areas of iron, steel and associated materials.