

# Press Release

Dresden,  
September 19, 2016

## Efficient railway vehicle bodies

**Material savings, flexible production and high user comfort are increasingly gaining importance in the field of railway vehicles. Analyses and simulations of passenger flows in vehicle interiors allow for an improved vehicle body layout. Mass-reduced manufacturing of sidewalls with individualized door-cuts can be optimized by low-distortion laser welding and completely connected integral structures. At the trade fair InnoTrans 2016 the Dresden Fraunhofer institutes IWS and IVI are presenting jointly developed technical implementations for passenger flow simulations and manufacturing techniques for low heat input and highly efficient laser welding procedures.**

In the field of railway vehicle construction, weight reduction and simultaneously low production costs are crucial factors for success. These require novel design and manufacturing concepts such as a lightweight construction based on welded, completely connected integral structures. The Fraunhofer IWS Dresden has developed a welding process which is characterized by both a low heat input and high efficiency. In the case of sidewall structures the reduction of parts, weight, production time and costs has been enabled by novel design concepts and finite elements methods.

Economical operation and high user comfort are of utmost importance for traffic organizations and car manufactures. To optimize the vehicle interiors right from the beginning, scientists of the Fraunhofer IVI offer a software tool, which simulates appropriate motion during passengers' step in and out phases. Not only does this enable shorter passenger interchange times, but also increases the customer acceptance thanks to a more efficient line operation.

As leading international trade fair for transportation technology the InnoTrans will be held on September 20 - 23, 2016 in Berlin. Come and join us at the Fraunhofer joint booth, hall 23b, booth 206.

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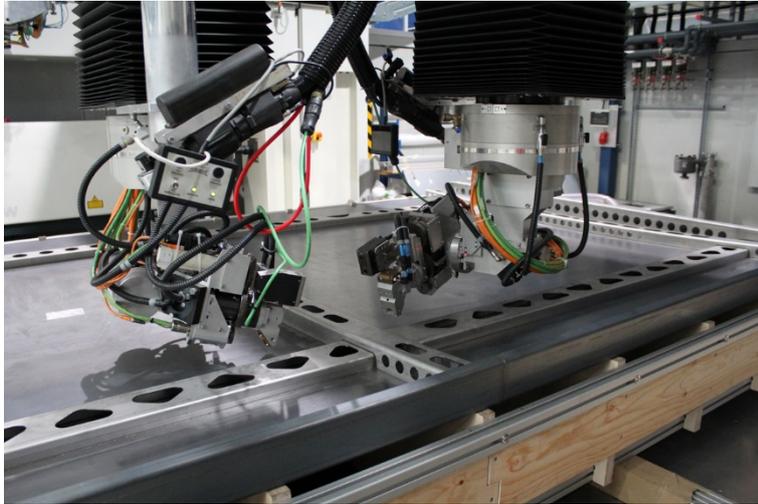


Fig. 1: Low distortion laser welded sidewall with longitudinal and vertical stiffeners  
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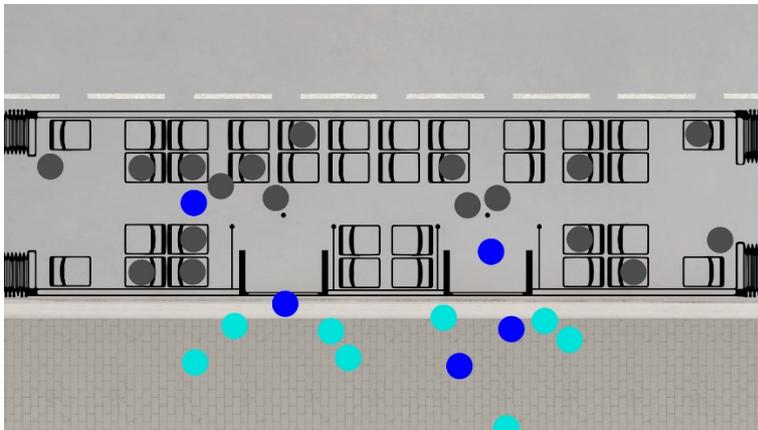


Fig. 2: Model-based simulation of a passenger interchange  
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