

# Hella Aglaia Mobile Vision Designs 3D Passenger Counting ASIC using Impulse C High Level Synthesis Tools and Xilinx FPGAs

## Impulse tools accelerate FPGA and ASIC development for in-vehicle video analytics

**Kirkland, WA – 15 January, 2010** – Impulse Accelerated Technologies today announced that Hella Aglaia has completed an FPGA application for a computer vision 3D automatic passenger counting system using Impulse tools and Xilinx FPGAs in an ASIC prototyping flow.

Accurate counting data of passengers or other customers is a key factor in many sectors for efficient resource allocation. This includes public transportation systems such as trains and busses, and retail and facility management.

Based on 3D-Sense technology, Hella Aglaia's self contained AVC1 Automatic Passenger Counting System offers a counting accuracy greater than 98%. The system is able to verify its results at any time through the comparison with stored video recordings. The video system can be used in any environment allowing a flexible installation height and a minimum distance to passengers of 10cm. An adjustable counting threshold allows measurement of heights for the distinction to be made between children and adults.

"Impulse tools provide an easy to learn ANSI C programming environment for computer vision system development," said Spyridon Nikolaidis, Engineering Manager at Hella. "The Impulse support team was very responsive and helped us meet our prototyping and system development schedule. In addition to the Impulse compiler, we used the Impulse HDL test bench generator and were quickly able to compare our software simulation results with a ModelSim™ report of Impulse C hardware results. We estimate we saved significant development effort using Impulse tools."

"Half or more of Impulse C-to-FPGA users are developing video and image processing applications with our tool set," said David Buechner, VP at Impulse. "Military and national security subcontractors, automotive suppliers, and vision systems developers are using Impulse C design methods to help process very large, sometimes overwhelming amounts of incoming video data from multiple sources. Users of Impulse tools program FPGAs to process different parts of video feeds in parallel: filtering, preparing and parsing information at near real time or line speeds. With Impulse software, programmers report developing FPGAs 50% faster than when using standard VHDL or Verilog methods, and they find they can improve existing FPGA projects 80% faster than when using standard HDL methods."

### **About Hella Aglaia**

Hella Aglaia Mobile Vision GmbH has been raising the standards in the development of intelligent visual sensor systems since 1998. As subsidiary of automotive supplier Hella KGaA Hueck & Company, Hella's focus is on driver assistance systems and systems for managing traffic flow. Hella customers include all leading automotive and system manufacturers as well as customers beyond the automotive sector.

### **About Impulse**

Impulse Accelerated Technologies provides C-to-FPGA tools and custom hardware/software solutions for automotive, defense, industrial and financial customers worldwide. Impulse tools are used for vision systems, face and object recognition, geospatial analysis and video feed analysis for national security and automotive applications. Impulse customers develop FPGA-based products as well as targeting ASIC deployments. Impulse products are in use at over half of automotive suppliers and eight of the world's top ten defense contractors. For more information visit [www.ImpulseC.com](http://www.ImpulseC.com) or call 425-605-9543 ext. 101.

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