pls Development Tools

Debug ▪ Trace ▪ Test
for Embedded Systems

PRESS RELEASE pls02-2025-E

PLS' UDE supports COSIDE simulation model for Bosch's Generic Timer Module

Lauta/Dresden (Germany), 26. February 2025 - Users of PLS' UDE® Universal Debug Engine 2025 now benefit from the ability to debug program code of Bosch's Generic Timer IP Module (GTM) in the GTM simulation model of COSIDE® Simulator from COSEDA Technologies. The collaboration between the two companies opens up the possibility for engineers to develop, test and debug GTM applications highly efficiently and reliably already in the pre-silicon phase, which means completely independent of the host microcontroller that will be used later. PLS Programmierbare Logik & Systeme will be presenting a demonstrator at embedded world 2025 in Nuremberg in hall 4, booth 4-310.

The GTM from Bosch is implemented in a variety of automotive microcontrollers. It allows capturing digital signals from multiple inputs and generating signals at multiple outputs in real time. In addition to a large number of different function blocks for signal acquisition, filtering and generation, the GTM also includes a number of programmable RISC-based multi-channel sequencers (MCS), which can be used to generate almost any output waveform with complex pulse-width modulation (PWM). The eight programming channels of an MCS can operate in parallel, while ensuring synchronous signal generation. For programming the MCS, C compilers are available from various vendors.

COSEDA Technologies’ COSIDE Simulator allows to simulate the virtual prototype of the General Timer IP Module completely and accurately at high speed. The simulation is independent of a specific microcontroller. Using the powerful modeling methods of COSIDE, both the analog and digital environment as well as the controller software can be efficiently modelled. A wide range of internal debugging tools, such as a powerful wave viewer, also allow all internal signals and states to be observed and analyzed at any time. The virtual prototypes created with COSIDE can be delivered to customers as executable specifications or pre-silicon prototypes for software and hardware development.

For convenient debugging and testing of MCS channel programs in particular, the UDE provides COSIDE users with a front-end that offers the same debugging features they are used to from real hardware: Breakpoints, single-stepping and the display of register and memory values. Software development based

on the virtual prototype of the GTM offers a whole range of additional advantages: While the number of hardware breakpoints of the GTM hardware implementation is limited to two and there are no software breakpoints at all, the number of breakpoints that can be used on COSEDA's simulator is, by principle, unlimited. Furthermore, when a breakpoint is hit, the entire GTM model is stopped, which is similar to freezing time. As a result, this non-invasive debugging has no impact on the system behavior. In addition, the simulation is 100 percent reproducible and the debugging process is significantly simplified.

Finally, using the UDE as a debugger front-end for COSIDE greatly simplifies the transition to the GTM on real hardware. Since the usage of UDE is completely identical for both the simulator and the real hardware, there is no need to change the tool for this step.

###

PLS Programmierbare Logik & Systeme GmbH

PLS Programmierbare Logik & Systeme GmbH, based in Lauta (Germany), is the manufacturer of the debugger, test and trace framework Universal Debug Engine® (UDE®). Thanks to its innovative tools for embedded software development, PLS has developed into one of the technology leaders in this field since its foundation in 1990. The UDE combines powerful capabilities for debugging, testing and system-level analysis with efficiency and ease of use. The UAD2pro, UAD2next and UAD3+ access devices of the Universal Access Device (UAD) family complete the comprehensive debug functions of UDE and enable fast, robust and flexible communication with the target system. For further information about our company, products and services, please visit our website at www.pls-mc.com.

COSEDA Technologies GmbH

COSEDA Technologies GmbH is a Germany-based company and a leading provider of system-level software solutions for complex electronic hardware and software products. COSEDA provides latest modeling and simulation technologies to their customers to enable them to cost-effectively manage new concepts for their innovative, complex and safety-critical products. Further information about our company can be found on our website at www.coseda-tech.com.

For media-related inquiries, please contact:

PLS Programmierbare Logik & Systeme GmbH
Jens Braunes
Technologiepark
02991 Lauta, Germany
Phone +49 35722 384-0
Email jens.braunes@pls-mc.com

COSEDA Technologies GmbH
Thomas Hartung, COO
Koenigsbruecker Str. 124 | 01099 Dresden | Germany
Phone +49 351 321490-31
Mobile +49 174 3174861
Fax +49 351 321490-03
Email thomas.hartung@coseda-tech.com

3W Media & Marketing Consulting
Werner W. Wiesmeier
Preisingerlohweg 2
85368 Moosburg/Aich, Germany
Phone +49 8761 759203
Fax +49 8761 759201
Email werner.wiesmeier@3wconsulting.de