PRESS RELEASE pls04-2016-E

Comprehensive testing and debugging environment for safety-critical automotive applications

PLS UDE 4.6 Supports STMicroelectronics' SPC570S Family of Automotive MCUs Based on the 32-Bit Power Architecture®

Lauta (Germany), September 20, 2016 – By introducing version 4.6 of its Universal Debug Engine (UDE) at this year's electronica trade show (hall A6, booth A16), PLS Programmierbare Logik & Systeme provides a testing and debugging environment optimally matched to the comprehensive internal error-checking functions of STMicroelectronics' current SPC570S family of automotive MCUs based on the 32-bit Power Architecture®.

The latest controllers in the automotive MCU portfolio of the Franco-Italian chip manufacturer were primarily designed for use in anti-lock braking systems and airbag controllers. Applications like these are characterized by elevated functional safety requirements up to ASIL D (Automotive Safety Integrity Level) according to the ISO 26262 standard. To meet these challenges an additional checker core – serving as a safety core –supplements the e200z0h computational core. The devices of the SPC570S MCU family operate at clock frequencies of up to 80MHz and are available in different feature sets.

UDE 4.6 offers unlimited support for all technical features of the SPC570S MCUs, including their comprehensive internal debug functions. For instance, the UDE 4.6 user interface provides developers with numerous options to visualize the system state at runtime in addition to traditional run-mode debugging with breakpoints and single-stepping. That includes the visualization of application variables located in memory, an unlimited access to core and peripheral registers, and not least charts for graphical presentation of system parameters.

For comprehensive system-level analyses and to ensure functional safety, UDE 4.6 also provides trace-based tools utilizing the SPC570S MCUs' Nexus-Class-3-Trace. Aside from executing post-mortem analyses and providing profiling information, this feature can also be used to prove adequate code coverage.

Tight coupling of third-party test tools to the UDE and comprehensive scripting are enabled by the high-performance automation interface of UDE 4.6, which is based on Microsoft®'s Common Object Model (COM). As a unique feature, UDE is also independent of any proprietary scripting languages.

Two Universal Access Devices (UAD2pro and UAD3+) ensure fast and safe communication with the SPC570S MCUs. Compatible to the Power Architecture®'s specific OnCE debugging interface, suitable adapters are available for both devices, also optionally with galvanic isolation for challenging environmental conditions. SPC570S controllers allow parallel program and data traces that are transferred into the UAD3+ using the parallel Nexus interface. Up to 4 Gbytes of memory are available there for storing the captured trace data.

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PLS Programmierbare Logik & Systeme GmbH

PLS Programierbare Logik & Systeme GmbH, based in Lauta, Germany, was founded in 1990. Since then, with its innovative test and development tools, the company has demonstrated its position as an international technology leader in the field of debuggers, emulators and trace solutions for embedded systems. The modular and flexible software architecture of PLS's Universal Debug Engine (UDE) guarantees optimal conditions for debugging SoC-based systems. For example, with the intelligent use of modern on-chip debug and trace units, valuable functions such as profiling and code coverage are available for system optimization and test. PLS's Universal Access Device product family (UAD2/UAD3+) complete the full featured debug solution with an efficient and high-speed target access with transfer rates of up to 3.5 MBytes/s and a flexible adapter concept supporting a wide range of different target interfaces. The leading edge UDE/UAD debugging infrastructure offers entirely new dimensions for fast and flexible access to multi-core systems with the support of important architectures such as AURIX/TriCore, Power Architecture, Cortex/ARM, XC2000/XE166 as well as simulation platforms of different vendors. For further information about the company, please visit www.pls mc.com.

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