Altia and Cypress Deliver ISO 26262-Compliant HMI Graphics and Storage Solutions for Automotive Displays

**November 1, 2018** – Altia and Cypress Semiconductor Corp. have collaborated on a new automotive instrument cluster graphics solution that delivers functional safety. Altia and Cypress will demonstrate the instrument cluster at the 2018 Electronica trade show from Tuesday, November 13 to Friday, November 16 in Munich. The demo brings together key functional safety technologies from Altia and Cypress which provide a complete, ISO 26262-compliant development solution for automotive applications.

The new cluster demo features a reconfigurable digital instrument cluster running on a Cypress Traveo™ S6J3200 microcontroller (MCU) with a 1280x480 display. The demo also employs a Cypress’ Semper™ NOR Flash memory, which ensures that the instrument cluster has instant-on access to graphics. During demo operation, users can inject single-bit errors into the Flash memory array to demonstrate maximum reliability with the Semper NOR automatic Error Correction feature. When the Altia Safety Monitor detects a corrupted bit on a safety-critical telltale, a warning message is displayed.

The Altia user interface development tool suite was used to create the graphics for this cluster demo. Developers used Altia Design, a WYSIWYG user interface editor, to integrate a variety of graphic assets into the cluster model. Altia DeepScreen was then used to generate production-ready C code that is architected to take full advantage of the on-chip resources of the Cypress Traveo MCU. Safety-critical objects in the HMI are monitored and confirmed by the Altia Safety Monitor. The Altia Safety Monitor is an ASIL B-compliant embedded software solution which addresses ISO 26262 requirements in the HMI by monitoring safety-critical objects and confirming correct display of functional safety content. It is seamlessly integrated with HMI applications during Altia DeepScreen code generation and uses a specialized component of the hardware to achieve minimal load on the CPU.

“Altia Safety Monitor is a Safety Element out of Context (SEooC) which is developed using ISO 26262 ASIL B-compliant standards. It is a low-cost ISO 26262 safety solution that saves time on development, integration and testing of mission critical systems,” says Michael Hill, Altia Vice President of Engineering. “This efficient and robust software is designed into numerous production instrument clusters.”

Cypress’ Semper NOR Flash is ASIL B-compliant and ASIL D-ready, meeting ISO 26262 standards for automotive functional safety. Cypress architected the Semper family specifically to meet the ISO 26262 standard, using an Arm® Cortex®-M0 processor to enable safe boot, processing of complex embedded algorithms, and functional safety diagnostics. The memory device was designed with Cypress’ EnduraFlex™ Architecture, which simplifies system design by enabling a Semper Flash device to be divided into multiple partitions. For frequent data writes, a partition can be configured to deliver up to 2.56 million cycles for 1Gb parts, while for code and configuration storage, a partition can be configured to retain data for 25 years. The Semper family also supports demanding instant-on applications with up to 400 MBps of read bandwidth.
“Our collaborations with Altia on instrument clusters build on our Cypress 3.0 strategy to provide our customers with as many proven resources as possible to build innovative systems,” said Rainer Hoehler, Vice President of the Flash Business Unit at Cypress. “Functional safety is a critical requirement in automotive applications, and this demo with Altia shows how our Semper NOR Flash can protect against catastrophic failures when corrupted data is introduced into a system.”

Visitors to 2018 Electronica can check out this combination of Altia and Cypress functional safety technologies in at the Cypress Semiconductor Booth in Hall C5, Booth 446.

About Altia

Altia is a software company that provides graphical user interface design and development tools that can be used from concept to final product code. Our GUI editor, Altia Design, offers development teams the capability to implement a model-based development process for clear communication and accelerated user interface development. Our code generator, Altia DeepScreen, supports a vast range of low- to high-powered processors from a variety of industry-leading silicon providers. Altia generates pure C source code that is optimized to take full advantage of hardware resources. Graphics code generated by Altia is driving millions of displays worldwide – from automotive instrument clusters, HUDs and radios to thermostats, washing machines and healthcare monitors. Our mission is to get the best automotive, medical and consumer interfaces into production in the shortest time on the lowest cost hardware.

Altia was founded in 1991. Its customers include automotive OEMs and Tier 1s like Continental Automotive, Denso, Fiat Chrysler Automobiles, Ford Motor Company, General Motors, Honda, Renault, Magneti Marelli, Nippon Seiki, Valeo, Visteon and more – plus leading consumer device manufacturers like Electrolux, Whirlpool, NordicTrack and many others.

For more information about Altia, visit www.altia.com or email info@altia.com.

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About Cypress

Cypress is the leader in advanced embedded solutions for the world’s most innovative automotive, industrial, smart home appliances, consumer electronics and medical products. Cypress’ microcontrollers, wireless and USB-based connectivity solutions, analog ICs and reliable, high-performance memories help engineers design differentiated products and get them to market first. Cypress is committed to providing customers with the best support and development resources on the planet enabling them to disrupt markets by creating new product categories in record time. To learn more, go to www.cypress.com.

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