The Tinker's Toolbox - Mark Lefebvre of IBM Rational on Next-Generation Automotive Electronics Integration

Hosted by Alix Paultre, the Tinker's Toolbox is the Advantage Design Group's web-based interview show where we talk about the latest technology, components, and design issues for the electronic design engineering community.

In today's podcast we talk to Mark Lefebvre, Strategic Alliances and Integrations, IBM Rational, about next-generation automotive electronics and the challenges facing system integrators. IBM supports AUTOSAR, an open and standardized automotive software architecture jointly developed by automobile manufacturers, suppliers, and tool developers. The objective of this consortium is to create a de-facto standard for vehicle-internal software infrastructure and architecture.

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Here is a link to the podcast in case the playback button is inoperative: Mark Lefebvre Interview [1]

Here is some recent news on automotive systems from IBM Rational:

Vehicles have gone from simply transportation to “systems of systems” that

incorporate hardware and software components that give consumers a complete multimedia driving experience. In order to meet market demands, automakers are launching new cars with the latest technologies or substantially re-engineering older models to grow their customer base. Before these cars can be brought to market, auto manufacturers need to leverage AUTOSAR (Automotive Open System Architecture) technology, an open and standardized software architecture, to bring architecture and implementation transitions together and to enhance the quality and efficiency of automotive design.

EB (Elektrobit), a leading developer of cutting edge embedded technology solutions for the automotive and wireless industries, announced today a software development initiative with IBM to deliver an integrated development solution that allows carmakers and suppliers to manage the growing complexity of Electronic Control Units (ECUs) software in automotive development, speed-up development cycles and standardize software to increase re-usability across car platforms.

“A month ago, EB has delivered the first compliant software development toolset for AUTOSAR 4.0 to carmakers and suppliers”, said Dr. Jochen Schoof, Vice President ECU Software and Tools at EB. “The project with IBM to integrate its application development tools on top of EB tresos basic software framework is another proof for the strong momentum on the way to industry-wide AUTOSAR 4.0 adoption.”

AUTOSAR is a leading automotive standard that is endorsed by carmakers, suppliers, embedded device manufacturers and software providers. It is rapidly gaining adoption in the automotive industry as it allows re-using software across all car platforms worldwide. The standard reduces the complexity of design and simplifies the collaboration between engineering teams of all parts of the ecosystem, from hardware to software.

EB and IBM will deliver an integrated development solution based on AUTOSAR 4.0. TRW, a leading supplier of automotive solutions supports this joint project and anticipates significant tangible benefits from the interoperability between IBM Rational Rhapsody and EB tresos. "In many cases the complexity and overhead required for AUTOSAR compliance has been significantly underestimated,” said Mark Haller, Director global software engineering. “This partnership between IBM and EB will provide us with a unified solution to bridge the gap between E/E and ECU electronic and software development, test and traceability.”

EB is integrating IBM Rational Rhapsody, a graphical modeling tool for complex software systems, with EB tresos, a tool that provides a framework for basic software configuration and deployment down to basic hardware control components within a car. This integrated platform benefits the automotive industry by providing access to a tested, end-to-end ECU software development tool-chain. IBM’s engineering tools allow systems modeling and design applications within the AUTOSAR 4.0 software architecture. Combined with EB tresos, engineers have the ability to test their design and software even before the future hardware is available. The layered approach and defined interfaces reduces the risk associated with the complexity of automotive software projects.

"As automotive systems design and development becomes increasingly complex, our customers are demanding interface standardization and extensive tool interoperability," said Meg Selfe, vice president, Complex and Embedded Systems, IBM. "Developers working within the AUTOSAR standard for automotive development projects can now benefit from the high degree of software interchangeability and reusability through the combined offerings of IBM and EB."

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