



 SCSK to ship Automotive BSW (Basic Software)
An effective ECU (Electronic Control Unit) development platform enabled by Japan made BSW with scratch built real time OS -

October 1, 2015 –SCSK Corporation (SCSK) announced that it will start shipping own Automotive BSW (Basic Software) named "QINeS [™] BSW" from October 2015, which was co-developed by five strategic alliance partners listed below:

<Alliance Partners>

- Mamezou Co. Ltd.: http://www.mamezou.com/index.html
- eSOL Co., Ltd.: http://www.esol.com/
- Business Cube & Partners, Inc: http://biz3.co.jp/
- CATS CO., LTD: http://www.zipc.com/english/
- Future Technology Laboratories: http://www.ftl.co.jp/

Notes:

- 1. BSW: Basic Software (OS, Driver, Middleware within ECU)
- 2. ECU: Electronic Control Unit (Computer for automotive control)
- 3. AUTOSAR: Automotive Industrial software standard for ECU
- 4. QINeS: SCSK's trademark for its own automotive software "High Quality Innovation in the ECU-based software"



1. Background:

Along with the increased attention for safety and environmental issues, functions required for automobiles become more advanced and complex. This trend results in exponential increase in the development scale of automotive software (ECU Software). Further, new guidelines for safety are in place, which have to be complied by automakers and component suppliers. With this background, more reliability and scalability of automotive software development are sought after by the automobile industry.

In this context, November 2014, SCSK and above-mentioned five partners agreed to form a strategic alliance for the automotive software industry. With the aim of contributing to the advancement of the Japanese automobile industry, we have been engaged in promoting AUTOSAR related businesses. By gathering knowhow and expertise of the domain where each company have an edge, we have been supporting car manufacturers and car component suppliers in the area of ECU software development. Today, as part of our endeavor in this alliance, SCSK announces that it will start shipping "QINeS[™] BSW ver 1.0," the AUTOSAR based automotive BSW developed by Japanese players, which is based on our proprietary real time OS and related services.

2. Product Features:

The features of "QINeS[™] BSW ver. 1.0" and related services are as follows:

i. Provide Cost Competitiveness:

"QINeS BSW ver. 1.0" has a capability to absorb differences of the underlining microprocessor, in other words, applications can be used with either 16-bit or 32-bit microprocessor. This feature enables reduction of the development volume of application, which is currently developed for each microprocessor and each type of car model separately. Specifically, while 32-bit is used for high-end car, 16-bit is used for cars designed for emerging markets, and "QINeS[™] BSW ver. 1.0" enables to avoid duplication in the development processes for the common functions between 16-bit and 32-bit microprocessor, thereby contributes to reducing the development cost of the overall ECU.

ii. Enhance Productivity and Development Speed:

"QINeS[™] BSW ver. 1.0" reduces volume of software codes currently implemented along with each car model. It realizes reduction of implementation volume through standardization and structuration. Specifically, in addition to the reduction of development volume by avoiding duplication between 16-bit and 32-bit, it also enables to reduce implementation volumes by providing framework and library in the field of automotive software for each automotive product.

Aside from the enhancement of reusability, "QINeSTM BSW ver. 1.0" contributes to the further enhancement of productivity and development speed by coordinating software code generation tools, test case generation tools, and/or automated test tools.

iii. Contribute to Product Quality Improvement:

On top of the quality improvement by reusing past developed applications, SCSK plans to release standardized processes through providing development tools and defining procedures. Through standardizing and limiting resources, we enable visualization by quantifying data. Also, we will provide traceability management by using tools which could trace the entire development processes, from identifying and defining requirements to the actual coding, followed by the test results.

- 3. Service Contents of "QINeS[™] BSW ver. 1.0"
 - i. QINeS [™] BSW ver. 1.0
 - AUTOSAR 4.0.3 compliant BSW, Real time OS, framework for body
 - ii. Development Tool
 - Automatic Generation Tool for AUTOSAR Run time environment compatible to AUTOSAR 4.0.3
 - Test Case Generation Tool, Automated Test Tool (release to be followed)
 - iii. Process for Standardization
 - Consulting service for QINeS application development
 - Template for QINeS application development processes (release to be followed)
 - iv. Education and Training Support
 - Consulting service for application development on QINeS Architecture
 - Consulting service for application development using QINeS development tools
 - v. SI (System Integration)
 - Support service for AUTOSAR compliant ECU software development
 - Consulting service for implementing functional safety standards

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