

Title: Rollout of AUTOSAR in SV division Electronics

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Keywords: Standardization, AUTOSAR

Content:

SV preparation for AUTOSAR

Siemens VDO as a whole strongly supports the upcoming automotive standard AUTOSAR. Siemens VDO is a driving force within the standardization process contributing a huge amount of manpower with excellent expertise in the area of automotive system development since AUTOSAR start in 2003.

SV AUTOSAR Center

The implementation of AUTOSAR BSW started in SiemensVDO with the support of AUTOSAR consortium Validator 1 with dedicated BSW modules. In the first phase implementation was distributed in the divisions. One central integration team was in charge to build a platform. In meantime implementation is shifted to AUTOSAR Center. The AUTOSAR Center is an organizational unit allocated within SV central department. Its objective is to provide the SV divisions with:

- microcontroller-independent parts of the AUTOSAR Basic Software
- AUTOSAR tooling for System and ECU configuration
- additional support in AUTOSAR-related activities like BSW integration, BSW customization, BSW purchasing

Make or buy?

Considering the high strategic importance in the short term Siemens VDO considers developing its own BSW platform. Decisive arguments to build an AUTOSAR Center were:

- The in-house AUTOSAR BSW exploits SV's long experience in platforms development and integration
 - The in-house AUTOSAR BSW exploits SV's intellectual property in developing footprint- and performance- optimized software
 - The in-house AUTOSAR BSW is capable of implementing any additional, non standard requirements which turn out to be necessary (scalability, safety, project-specific customization, etc.).
 - The AUTOSAR standard enables cross-divisional synergy, potentials are evaluated as high
- Besides, the experience collected in AUTOSAR BSW development helps to drive the standardization in the consortium.

Nevertheless, buying of micro controller dependent modules is an option used.

Challenges and lessons learned by implementation of AUTOSAR in division Electronics

Current AUTOSAR specifications haven't reached a final maturity status yet. Release 3.0 will not be complete and will include release notes. An intermediate release before final release 4.0 in 2009 is probable.

No customer was asking for a 100% AUTOSAR BSW solution in power train area. Besides customers follow different strategies and have different roadmaps: some request newest releases other ask for former one (AR1.x) for dedicated modules, some ask for integration of those BSW modules which are considered either mature enough for being implemented or being important. And of course customer ask for extensions/customizations of those modules for which the AUTOSAR standard doesn't reflect their needs.

In power train area AUTOSAR BSW definitions covers today only a part (app. 50%) of the BSW needed for an Engine Management System (EMS).

Also from Tier 1 perspective it will be partly necessary, depends on project or product needs, to extend the standard by additional features and interfaces or to downsize modules.

A full migration in one step is not recommended. Target is to have ASAP as much as possible of the best fitting and mature AUTOSAR BSW modules in divisional BSW platform and to incrementally integrate the other depends on maturity and priority.