Supporting AUTOSAR in Production

By Dr. Darren Buttle, Jürgen Crepin, and Manabendra Gupta, ETAS

Better than ever before: ASCET V6.1

ASCET-developed software can be found in over 100 million production ECUs for powertrain, chassis, and body – it’s the kind of success that speaks volumes for this product family. The new release of ASCET Version 6.1 brings many benefits for the distributed development of AUTOSAR software.

For many years, the ASCET product family has been the benchmark for highly efficient model-based software development and for the automatic generation of safe, high-quality production code. ASCET meets the automotive industry’s specific requirements when developing highly complex embedded software. This includes satisfying the challenging runtime and memory constraints of the target hardware as much as it concerns safety and process requirements.

More AUTOSAR modeling options

ASCET V6.1 supports AUTOSAR releases 2.1, 3.0, and 3.1. AUTOSAR-compliant specifications can be modeled in ASCET using native AUTOSAR interface concepts, such as Sender-Receiver, Client-Server, or Calibration Interfaces. The AUTOSAR- and ASCET-specific modeling concepts can be used concurrently and are fully integrated in the development user interface, providing an easy way to migrate existing models to the AUTOSAR software architecture. The resulting ASCET-AUTOSAR software components can be used for automatic generation of production-ready code and AUTOSAR XML description files.

Importing Simulink® models

Software developers can transfer MATLAB®/Simulink® or UML models to ASCET to get access to its unique benefits. Once imported, a physical controller or actuator specification can be fine-tuned, e.g., to obtain an adequate representation in fixed point arithmetic, or integrated with an existing software architecture.

Adaptable, high-quality production code generation

The ASCET code generator, certifiable to IEC 61508 and ISO 26262, generates MISRA-C:2004-conformant, highly efficient C code for embedded microcontrollers. ASCET V6.1 offers further improvements of MISRA-C conformity by fully supporting the MISRA-C:2004 type casting rules. The new MISRA type casting algorithm improves code quality without affecting runtime efficiency. By following modeling guidelines, ASCET generated code can be fully MISRA-C-conformant. ASCET’s options to rename data types, change naming conventions and suppress the generation of data definitions facilitates easy integration with external data definition tools.

Rapid prototyping with the ES910

Function developers can derive numerous benefits from the use of a continuous tool chain for modeling, prototyping, and code generation. With its support of ETAS’ compact ES910 Prototyping and Interface Module, ASCET V6.1 now also provides interfaces for FlexRay, LIN, J2534, and XETK, in addition to standard CAN bus and ETK ECU interfaces, and integration with ETAS’ ES4xx and ES63x series of compact measurement modules.

These improvements make the new ASCET V6.1 the first choice for professional software development of AUTOSAR-conformant automotive embedded software.

For more information, visit www.etas.com/ASCET

INTRODUCTION OF ASCET V6.1 AT THE ROBERT BOSCH GMBH

“As early as four months prior to the product’s rollout, ETAS supplied a very stable test version so that we could adapt our tool chain and that is paying off now. This way, we can roll out the new version quite efficiently.” Jörg Tellermann is in charge of the ASCET rollout at the cross-divisional tool department for automotive embedded software at Robert Bosch GmbH.

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