INTECRIO
Prototyping-Software

Prototyping has become an integral part of vehicle development and is the only way to perform testing of new features early and in realistic conditions. In particular with respect to development of electronic components, early prototyping is an important key to success in achieving cost and time objectives.

To optimize quality and development times, ETAS INTECRIO offers a powerful integration and configuration platform for prototyping. It can seamlessly integrate ASCET and MATLAB®/Simulink® models, as well as AUTOSAR software components and C code.

Benefits of INTECRIO

- Vehicle tests with the prototyping hardware ES900 and ES1000 families
- Bypass-application via ETK, FETK, XETK and XCP
- Support of CAN, LIN und FlexRay
- Virtual prototyping on Windows PCs (INTECRIO-VP)
- Open interfaces for automation and adaptation to customer specifications
- Signal generation with ETAS experimental environment (ETAS-EE)
- Use of all INTECRIO-generated prototyping models with INCA

The following products are available:

INTECRIO-IP - Integration Platform

ETAS INTECRIO-IP is the integration and configuration platform for prototyping. Function models and code from a wide variety of sources (ASCET, MATLAB®/Simulink®, C code and AUTOSAR software components) can easily be combined. That means all artifacts arising from the development process can be tested and validated at an early stage. INTECRIO-IP enables cross-tool cooperation of development partners, be they manufacturers, ECU vendors, or engineering services providers – and it can even help to protect selected, competitor-sensitive information, such as intellectual property data, in the model component software. INTECRIO-IP offers a scripting interface for controlling tasks related to embedding in existing toolchains, automation, and extensions of the functionality.

INTECRIO-VP - Virtual Prototyping

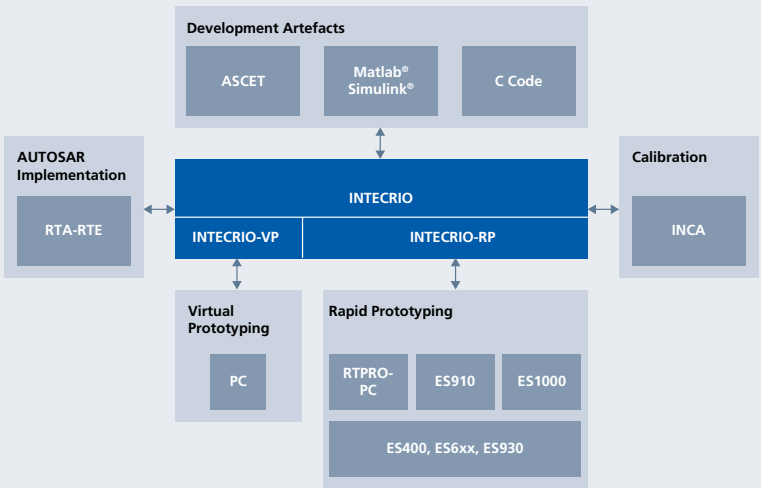
With the INTECRIO-VP add-on, function developers can use Model-in-the-Loop (MiL) in the early stage of development to validate and pre-calibrate new functions. Using MiL frees function developers from the constraints of real-time or physical vehicle environments. At the PC workstation, i.e. with-

At a Glance

Integration platform for prototyping

Integration of ASCET and MATLAB®/Simulink® models, AUTOSAR software components and C code

Prototyping vehicle electronics systems on a PC or in a real environment



ETAS INTECRIO product data model with all options for connection

out the use of specialized hardware, stimuli can be used that are created by the signal generator of the ETAS experimental environment (ETAS EE). As an alternative to physical testing, plant models depicting driver, vehicle, and environment are used instead. This facilitates the use of synergies between function and system development activities. Compared to a physical target ECU, virtual prototyping offers almost unlimited computing power and memory.

INTECRIO-RP - Rapid Prototyping

With the INTECRIO-RP add-on, developers can seamlessly access the validated function model from the virtual prototyping step in prototyping experiments. The I/O functions are now connected to physical sensors and actuators. Using ETAS prototyping hardware, prototypes can be quickly and easily integrated into existing ECU vehicle networks via a multitude of ECU and bus interfaces such as CAN, ETK, LIN, and FlexRay. In the bypass experiment, which is the most commonly used prototyping method, new ECU functions are executed on a simulation controller. The results of the model execution are sent to an ECU that is connected to the simulation controller in real time, for instance via an ETK interface. The ECU can use these results as an offset to, or instead of, internally calculated data. And of course, all prototyping models generated with INTECRIO-RP can be used by INCA.

INTECRIO-RLINK - Prototyping-Blockset

With the ETAS INTECRIO RLINK prototyping blockset[1], Simulink® models can be tested quickly and easily in the vehicle. The ETAS prototyping hardware can be configured directly within the Simulink environment.

For a complete overview of INTECRIO ordering information as well as accessories, please visit www.etas.com/intecrio.

For more information, please contact your ETAS representative

[1]Blockset is the name for the add-ons in the Simulink® environment

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ETAS Locations Worldwide

Germany
Stuttgart (Headquarter)

Brazil
São Bernardo do Campo

Canada
Kitchener

France
Saint-Ouen

India
Bangalore
Pune

Italy
Turin

Japan
Utsunomiya
Yokohama

Korea
Seongnam-si

P.R. China
Beijing
Changchun
Chongqing
Guangzhou
Shanghai
Wuhan

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