LIN: The LIN bus (LIN Local Interconnect Network) is primarily used in the area of passenger comfort as a cost-effective communication system for the connection of ECUs and intelligent sensors and actuators. Starting with Version 6, INCA will support the measuring and recording of physical signals on the LIN bus. This functionality is available as an add-on. The description data in the LDF format are simply imported into the Database Browser and can then (like CANdb or FlexRay files) be used with appropriate hardware. INCA supports LIN monitoring with the ESS580 hardware module. Just connect a LIN connection cable and the LIN bus data are ready to be recorded. Time-synchronization with signals that are recorded in INCA using other hardware modules is of course guaranteed.

Measure Data Analyzer (MDA)
A number of optimizations and new features in the MDA will make configuration, analysis, and data exchange substantially more efficient. For quick and easy comparison of different measurement signals in the graphical display of the oscilloscope and the table editor, signals can be dragged to specific locations on the x-axis (or y-axis) and graphically overlaid.

Configuration data and measured data can be saved together in one file format, which considerably facilitates the exchange of these data among team members. Team work can further be enhanced by creating and using a default configuration.

Calibration Data Manager (CDM)
The CDM features new options for comparing DSM data (Diagnostic Services Management). These data are implemented in the ECU program as vectors/arrays and are optimized during the calibration phase. When users analyze these arrays by means of the comparison option in the CDM, they can easily detect and correct implementation errors and redundancies in these arrays.

INCA V6 also supports the new CDF 2.0 ASAM Calibration Data Format – the global standard for the PaCo files. This enhanced PaCo add-on allows users to save the calibration data and the information about their maturity level in one single file. Compared to PaCo files, these files are much smaller in size, which makes processing them much faster.

With INCA V6, ETAS offers much new functionality and new implementations in the established measuring calibration and diagnostic tool: yet the data exchange with earlier INCA versions is provided for. All projects that were created in INCA V5 can be reused in INCA V6 and vice versa, which makes distributed development with INCA possible. As we already announced in RT 1/2007, we will introduce license management with INCA V6. Our customers will be able to manage their licenses on the Internet.

With the view to facilitating the work of calibration engineers, ETAS is implementing its concept of a modern, intuitive design for the software architecture of INCA. We implemented several steps of this concept in INCA V6. The new INCA version will be on the market in the 1st quarter of 2007.

GM MDI Product Launch

This past summer, ETAS began to roll-out the new MDI (Multiple Diagnostic Interface) for General Motors. The MDI is the third generation diagnostic service tool, based on ETAS’ new VCI (Vehicle Communication Interface) platform (please also refer to RealTimes 1/2007, p. 13). It will include over 14,000 units to be distributed to GM dealers worldwide over the next 12 months as part of GM’s Essential Tool Program. Each dealer will receive one MDI, but many dealers are expected to purchase multiple units to further enhance the efficiency of their service department by diagnosing and reprogramming vehicles more quickly.

The MDI is a compact vehicle interface device that manages the transfer of data between a vehicle’s onboard ECU network and a PC for vehicle diagnostics and reprogramming. The MDI includes a powerful microprocessor that enables technicians to reprogram vehicle ECUs up to 70 % faster than their current tool, all at a lower cost.

The MDI features high-speed wireless (802.11g) and wired Ethernet connections to a PC. It includes comprehensive vehicle communication, supporting three channels of CAN, two channels of J1850, KWP2000, and more. The MDI is expandable, designed to support future protocols. The MDI is compliant with SAE J2534 for GM vehicles and includes multi-lingual support.

Bosch Order for AUTOSAR Software Modules

From mid-2007 ETAS supplies Bosch with AUTOSAR-compliant real-time operating systems (OS) and an AUTOSAR runtime environment (RTE) for automotive electronic control units. The OS and RTE are key modules of AUTOSAR supporting the reuse, exchange, and distribution of the control units’ application software components. Since 2004 ETAS has been active in the specification of AUTOSAR basic software modules as AUTOSAR premium member.

Discussing the collaboration, Walter Grote, Senior Vice President Automotive Systems Integration at Robert Bosch GmbH said: “For many years, Bosch has been using real-time operating systems for automotive control units from ETAS and has deployed these operating systems in more than 200 million automotive control units of various types. Bosch is happy to continue this successful collaboration with the introduction of the AUTOSAR software technology in the automotive electronic systems.

Our Bosch-engineered AUTOSAR software platform is ideally complemented by the ETAS OS and RTE. Starting in 2009, we will introduce a range of powerful AUTOSAR-compliant ECUs suitable for all-in-vehicle applications.” The “AUTOSAR OS” and “AUTOSAR RTE” products will be fully integrated into the ETAS control function and software development tools and distributed by ETAS to any customer worldwide.