ETAS GmbH

Borsigstraße 14
70469 Stuttgart, Germany
Phone +49 711 3423-2240

Press and Public Relations:
Anja Krahl

anja.krahl@etas.com
www.etas.com

## Press Release

**Achieving the next level in ECU calibration efficiency with the ETAS ES891 and FETK**

- ETAS is significantly contributing to mastering the complexity of calibration tasks
- The next generation of ETAS measurement and calibration products will provide a data throughput 20 times higher than current systems
- ETAS' **FETK** ECU plug-on device along with its **ES891** ECU and Bus Interface Module will deploy a high-performance solution for measurement and calibration
- The ETAS **INCA V7.2** completes the solution, which can be applied in vehicles, test beds, or virtual environments

**Stuttgart, February 25, 2015** – With vehicle control functions becoming more complex, the current approach to calibration has to change. Or else, the effort and means needed to conduct calibration projects will escalate to non-sustainable levels.

New emissions legislation, a higher number of vehicle variants, more complex electromechanical systems, networked functions across domains, and electrification of the powertrain – these are the main drivers behind this increase in complexity. ETAS estimates that unless significant changes are made to the methods and tools used, effort put into calibration (measured in terms of engineering capacity) will double in the time period 2013-2020.

One of the main ways to counteract this trend is to reduce the time needed to perform calibration in the vehicle. An all-too common occurrence is that after test drives have been conducted, calibration engineers cannot find the root cause of an issue because information is missing from the recorded measurement data file. Due to system performance limitations, only a subset of all ECU signals get recorded, and this subset often turns out to be insufficient for analysis. Engineers are forced to reproduce the issue in an additional drive cycle, repeating all the effort required to set up the vehicle system and adjust the recording config- uration. The next generation of ETAS measurement and calibration products addresses this lack of efficiency, enabling engineers to measure all signals during the calibration of a powertrain ECU. This results in fewer test drives, less time to finish the calibration tasks, and fewer vehicle prototypes needed.

**What's new?**

Starting in the second quarter of 2015, with the release of the new products **FETK** (ECU plug-on device) and **ES891** (ECU and Bus Interface Module), ETAS will deploy a high-performance solution for measuring and calibrating powertrain ECUs. The launch of **INCA V7.2** at the end of 2015 completes the solution, which can be applied in vehicles, test beds, or virtual environments. This system will provide a data throughput 20 times higher than current systems with hardly any effect on ECU runtime. Depending on the ECU setup, the new products will be able to handle **more than 40,000** labels, mastering up to two ECU connections within one ES891. Signals out of CAN, CAN FD, FlexRay, and LIN buses as well as from digital and analog I/Os can also be handled with a highly accurate time synchronization of less than 1 microsecond. Moreover, the system can be easily expanded by combining more than one ES891 or further devices from the new high-performance ES800 family, simply by stacking the devices on top of each other without any additional cabling.

To feed this high amount of data into the ETAS INCA measurement and calibration software, the ES891 connects to the PC with a high-speed Gigabit Ethernet connection, allowing data rates of up to 120 MB/s. Open standards such as XCP-on-Ethernet for ECU access and IEEE1588 for time synchronization make it easy to integrate FETK/ES891 with third-party hardware and software tools.

The new solution naturally ensures compatibility with existing ETAS software and hardware products and provides the well-known reliability of ETAS tools.

This solution will be the first in a family of products designed to meet the future needs of powertrain engineers. In 2016, two new solutions will be added to the ETAS portfolio. The first is a high-performance data logging solution (based on the ES820 module), able to measure all ECU signals over an entire working day, which will facilitate continuous in-vehicle test operation. The second release will be a high-performance rapid prototyping solution that can reach roundtrip times of less than 100 microseconds. With these solutions, ETAS fulfills its promise to support all use cases for powertrain ECU development within one unique hardware system.

**Conclusion**

To cope with the upcoming challenges, OEMs and Tier 1 suppliers need to move up to the next level of calibration efficiency. Being able to measure all ECU signals during in-vehicle calibration is one of the main levers in making this move. With its FETK + ES891 system, ETAS provides future-proof instruments for this boost in efficiency.

| Feature | Characteristic |
|---|---|
| System performance per FETK link | More than 40,000 signals or 20 MB/s data from the ECU into INCA over an open XCP-on-Ethernet interface |
| No. of high-performance FETK interfaces on ES891 | 2 |
| Bus interfaces on ES891 | 3 CAN(-FD), 1 FLX (A/B), 1 LIN Reconfigurable to 1 LIN, 5 CAN(-FD) |
| Raster speed | Down to 5 µs |
| RP/bypassing latency (available in 2016) | <100 µs |
| Time synchronization with other interface/measurement hardware via IEEE1588 | <1 µs |

**ETAS GmbH**

ETAS provides innovative solutions for the development of embedded systems for the automotive industry and other sectors of the embedded industry. As a systems provider, ETAS supplies a multifaceted portfolio that covers the range from integrated tools and tool solutions to engineering services, consulting, training, and support. Security solutions in the area of embedded systems are offered by the ETAS subsidiary ESCRYPT.

Established in 1994, ETAS GmbH is a 100-percent subsidiary of the Bosch Group, with international subsidiaries and sales offices in 14 countries in Europe, North and South America, and Asia.

Further information is available at **www.etas.com**

**Caption**

Press Release „ES891 and FETK from ETAS"



ETAS' FETK ECU plug-on device along with its ES891 ECU and Bus Interface
Module will deploy a high-performance solution for measurement and calibration