"Product of the Year" Award by *Elektronik* Magazine

AUTHORS

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ETAS EHANDBOOK achieves third place in the *Automotive* category

Readers of the trade magazines *Elektronik* and *Elektronik automotive* voted ETAS' EHANDBOOK interactive documentation tool third place in their "Product of the Year 2016" awards. In second place was Bosch's solid-state cell for lithium-ion batteries, and first place was taken by Audi's Matrix laser headlights.

With EHANDBOOK, ETAS provides a new solution for the documentation of electronic control unit (ECU) software. This solution enables information to be located more quickly and to be better understood. EHANDBOOK's documentation helps users focus on their key tasks when calibrating ECUs and developing functions. With its interactive and flexible graphical displays, EHANDBOOK's documentation is of enormous benefit to engineers who need to have a precise understanding of ECU logic for their work in areas such as calibration or function development.

ECU documentation for calibration and function development

Unlike extensive PDF documentation, EHANDBOOK makes it possible for functional interactions, such as the interdependencies of functions and signals, to be seamlessly displayed in an interactive model. On top of that, searches for particular information (e.g. measurement and calibration variables) are specific and fast, even when the documentation has large amounts of content.

In the ETAS solution, ECU documentation is generated from various pieces of source data by a tool (EHANDBOOK Container Build) that can be flexibly adapted to the development environment. In this process, specification models generated in ETAS ASCET or MATLAB®/Simulink® are translated into interactive graphical models optimized for the purposes of the documentation. Functions that were manually coded in C can also be represented in the form of graphical interactive models. In addition, the documentation content is supplemented by data from different sources. Measurements, such as ECU variables and parameters, that are contained in texts, images, and interactive models are automatically identified and indexed. Links are created between these objects to allow for function overviews to be generated.

Software developers and calibration engineers can use the EHANDBOOK-NAVIGATOR tool to explore and analyze the prepared content, which is made available in the form of EHANDBOOK Containers (see figure 2).

EHANDBOOK-NAVIGATOR can be used to merge several EHANDBOOK Containers in a flexible fashion. This means users can incorporate individual software documentation from several automotive and ECU manufacturers seamlessly into complete documentation of the entire software that is embedded in an electronically controlled system.

Connection to ETAS INCA

In practical applications, the efficiency of this new documentation solution is increased even further due to the seamless interface of EHANDBOOK-NAVIGATOR with the INCA measurement and calibration tool. The interface enables the automatic generation of INCA experiments with measurement and calibration labels directly from EHANDBOOK-NAVIGATOR. In reverse, measured values from the INCA experiment can be displayed live in EHANDBOOK-NAVIGATOR.

Know-how protection included

EHANDBOOK is geared towards producing a comprehensive and clearly organized display of the functional interactions in an ECU. Key to this are special interactive graphical models that are generated by means of various innovative technologies, such as graphically displaying C code logic in the form of block diagrams. As a result, EHANDBOOK is particularly suitable for the documentation of software being developed by manufacturers and suppliers in joint projects. However, this kind of collaboration means that there has to be protection for companies' intellectual property rights over their software. This protection is guaranteed by the interactive models, which are not suitable for generating code and cannot be modified by software development tools.

Distribution

ETAS is continuing to develop EHANDBOOK in close collaboration with its customers. Bosch provides EHANDBOOK documentation of engine control software upon request. Aside from that, several automotive and ECU manufacturers are already using this award-winning solution to make documentation of their content.

Figure 1: On behalf of ETAS, Ralf Rick and Dr. Patrick Frey (first and second from the right) accepted the EHANDBOOK award in the *Automotive* category.

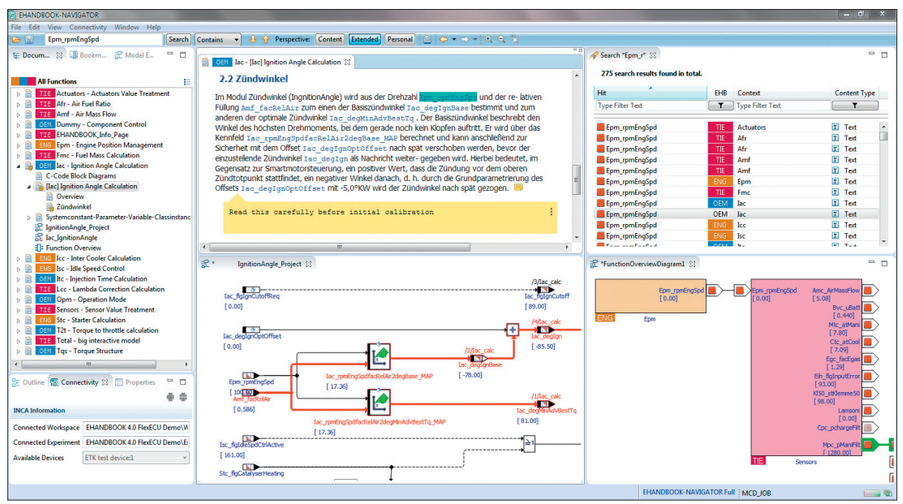

Figure 2: User interface of the EHANDBOOK-NAVIGATOR tool.