

Automotive News Edition Q 1-2 2014

softing



Dear Readers

The financial crisis that started in 2007 has officially been over since the middle of last year. A lot has happened in the automotive sector over the last few years. Electric vehicles are slowly but surely getting off the ground, vehicles are becoming ever more electrified, users will increasingly find advanced driver assistance systems even in low-budget cars and production figures continue to increase. But the Euro VI standard is also having an effect on the commercial vehicle sector and the manufacturers of heavy commercial vehicles have to implement the requirements accordingly.

To satisfy the changed requirements, leading manufacturers of cars, motorcycles, commercial vehicles and their suppliers rely on tried and tested tools and solutions from Softing. With our core areas of expertise – diagnostics, measuring and testing – we are at the cutting edge of key technologies in automotive electronics.

The internationally binding standards for programming interfaces, data descriptions, protocols and bus systems implemented by Softing guarantee long-term safeguarding of your projects due to the reusability of data

with a constantly high quality level. Softing sets great store by market-relevant, international automotive standards - from CAN through UDS to ODX and OTX. Softing is a key member of numerous committees and associations (incl. ASAM, ISO, SAE) and takes an active role in helping define trend-setting market standards. It is our goal to provide our customers with the appropriate products and solutions for their tasks.

Tailored to suit your infrastructure, our solutions provide all the important certified key technologies to obtain valid and meaningful diagnostics, test and measurement results – even under extreme conditions.

Hand in hand on the road to success! Whether a standard solution, project development or on-site engineering – we support you in all areas of your value added chain.



Yours
Peter Biermann
Managing Director
Softing Automotive

VCI third-generation “block sequencer”

As a communication interface between the external test system and the vehicle, modern VCIs are designed for diagnostic and flash applications, for datalogging and for pure on-board communication.

With the VCIs from Softing’s HS family, specific functions from the named cases of application are united in one device. This is achieved with a script engine (block sequencer) which ensures perfect runtime behavior on the VCI. The block sequencer avails itself of the mechanisms of the existing communication protocols and controls how they run. External IOs can also be integrated to synchronize sequences or manually intervene in the process. Scripts are defined on the PC and then loaded into the VCI.

The user can then implement the VCI as a standalone device for datalogging, residual bus simulation or as a gateway. Alternatively, the VCI can run diagnostic communication in combination with residual bus simulation. Currently, VCIs are also used for flash programming in manufacturing with parallel monitoring by diagnostic communication. With up to 2 GB flash memory, the VCIs are also perfect for use as independent flash tools.

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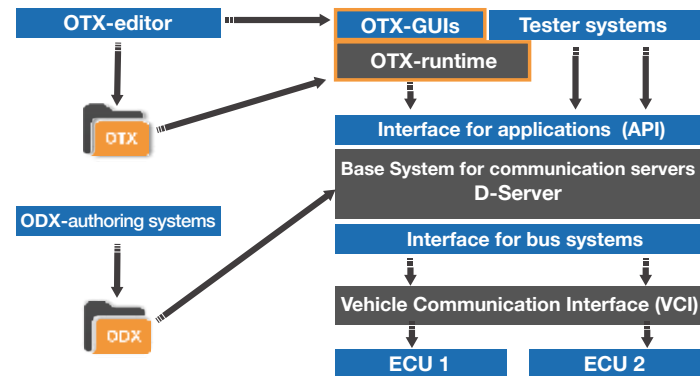
Dates 2014

Mar 25 – 26	MessTec & Sensor Masters Stuttgart
Apr 10 – 11	Automotive Diagnostic Systems Stuttgart
May 14 – 15	Diagnostics in Mechatronic Vehicle Systems - Dresden
Jun 03 – 04	Advances in Automotive Electronics - Ludwigsburg
Jun 03 – 05	Sensor + Test - Nürnberg
Jun 24 – 26	Testing Expo - Stuttgart
Sep 15 – 17	Testing Expo - China
Oct 28 – 30	Testing Expo - USA

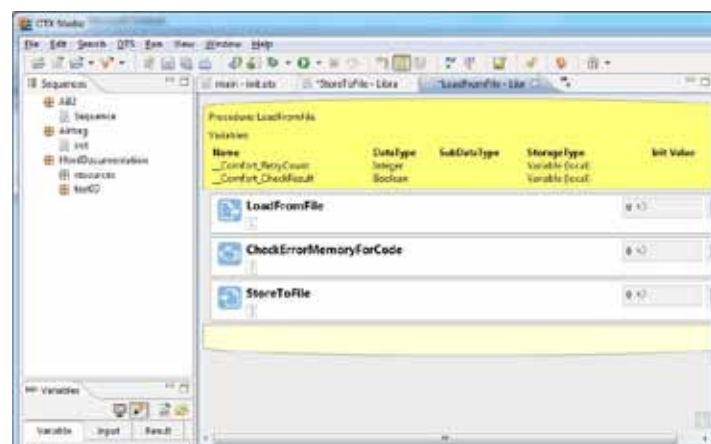
OTX Studio: new views and workflow

OTX Studio – one tool for the creation, operation and debugging of diagnostic and test sequences.

OTX Studio makes it possible to describe and implement anything from simple test sequences through to complete diagnostic tester applications. Test sequences can

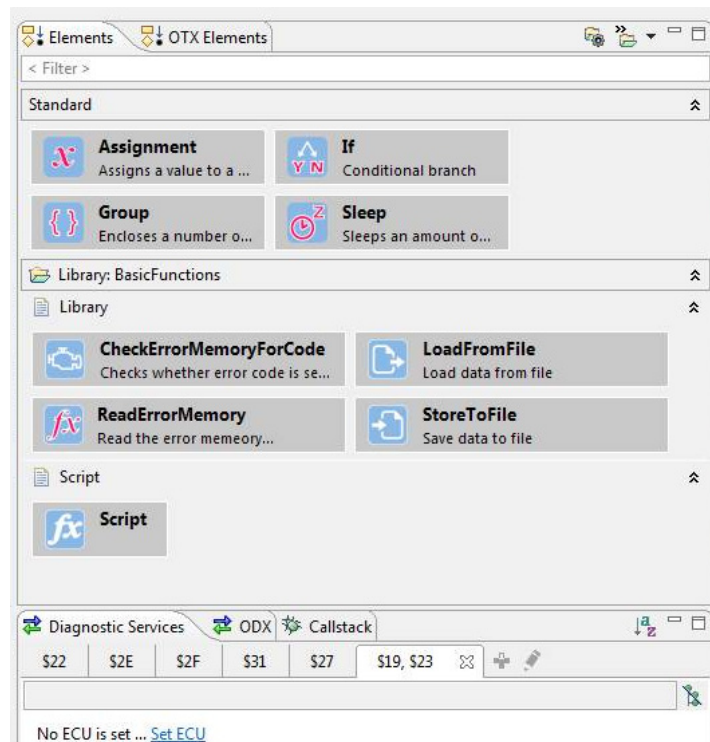


be stored and exchanged on the basis of a standardized XML format in compliance with ISO13209. OTX Studio supports the user continuously both in the specification phase and in the subsequent implementation of the test sequences in executable code. Sequences can be displayed clearly as flow charts; there is also a view for line-based programming. Depending on the application, you can switch between the views at the click of a button. The requirements of test sequence implementation vary just as much as the cases of application themselves. With its new workflow concept, the current version of OTX Studio



allows a decoupling from diagnostics expertise on the one hand and OTX-specific knowledge on the other. Programming experts who are used to working with a keyboard can quickly create detailed programming sequences without necessarily having to use the mouse. The complete scope of the extensions defined in the standard is available for just this purpose. Users with OTX expertise can thus carry out preliminary work and store reusable procedures as a library with just a few clicks of the mouse. Diagnostic users without in-depth programming knowledge can create their sequences in what is referred to as "Comfort mode" using the procedures prepared by the OTX experts. The OTX Studio Comfort mode is particularly geared toward those responsible for ECUs and works with an interface with a reduced view comprising assignments, procedure calls and structuring elements only. The evaluation of values and the configuration of troubleshooting take place in Comfort mode in predefined dialogs which are completed by selecting and deselecting checkboxes.

OTX Studio is based on Softing's Diagnostic Tool Set 8 Base System. The OTX runtime environment is integrated in the development tester DTS 8 Monaco. This complete solution for vehicle diagnostics makes it possible to create and verify diagnostic functions and test sequences as well as update them if necessary.



For more detailed information and the data sheet on OTX Studio, go to www.softing.com/otx.

CanEasy with Softing EDIC interfaces

CanEasy offers residual bus simulation for CAN and LIN bus in which real and simulated ECUs can realistically communicate with each other.

Users can very quickly adapt CanEasy to suit their tasks: A complete environment as can be found in the vehicle can be created in just a few seconds with the communication matrix (dbc and ldf files).

The Softing EDIC interfaces EDICusb, EDICblue and EDICpci are supported by the current version of CanEasy. ECU developers who are already using Softing interfaces for diagnostics can now transfer to the easy-to-use measuring and analysis software at no great expense. At the same time the combination CanEasy – EDIC VCI will already save users money today if diagnostic tasks are to be carried out in the future.



Basic functions, such as the cyclic and spontaneous sending of messages as well as tools for the analysis of value patterns, are available via double-click or “drag and drop”. CAN messages can also be configured for real ECUs.

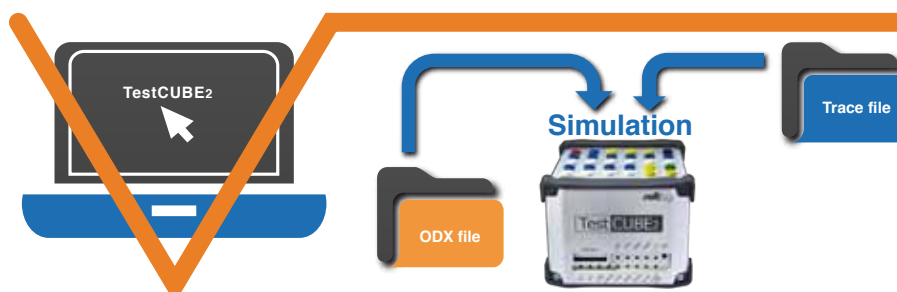
Furthermore, the function scope of CanEasy can be adapted to suit the specific needs of the relevant application. There are four editions available to ensure optimal scaling in terms of both technical and economic requirements: Professional, Simulation, Analysis and Basic.

Take a look at www.softing.com/caneasy for more information and the data sheet on CanEasy.

Frontloading with diagnostic simulation

TestCUBE2 - simulating diagnostic communication and reproducing simulation data.

TestCUBE2 has become established on the market as THE solution for simulating the diagnostic communication of one or several ECUs. The simulation files can be generated automatically and very efficiently from trace files. This method has proved its worth in system regression tests as simulation files can be saved.



The vehicles and all the relevant variants, however, are only available in part. With resolute frontloading during development, engineers want to create and test their test procedures before the relevant ECU is available. To date, simulation was the result of a long and elaborate manual process. Now, it is a user-friendly procedure using ODX data that represents the specification of the ECU. So instead of setting “FA,2D,20”, you can happily set “5.885 rpm” and “32°” with a considerably reduced error rate. And it’s also very reassuring to know that you have entered valid data!

Measurement technology in motion

Softing can look back on an eventful 2013 in terms of measurement technology.

There were lots of new additions in particular to the hardware family SMT. New modules include those for outputting frequency and PWM signals as well as analog voltages (AS08.1), the latter on a digital I/O module (MD32.1) geared to a high channel density. Furthermore, IFLEXRAY.1 means Softing measurement technology will be able to be used in connection with FlexRay ECUs in the future. PEA 2.5.0 is an important milestone in terms of measuring software. The release comes equipped with a multi-lingual user interface and considerably increases ease of use in the creation of visualization views. The overall system performance of PEA and SMT is also increasing all the time. Today, data rates of 20 kSPS per measurement channel are possible at total sampling rates of more than 1 MSPS – and there is no end in sight.

Further highlights are on the agenda for 2014. After the successful combination of the Softing measurement technology and diagnostic solutions, measurement engineers will soon be obtaining access to internal ECU measured values and fault memory information. In the area of energy supply, the product range is being increased by a supply module for mains operation in stationary lab and test bench applications as well as a battery module for mobile use. The latter is primarily used to maintain the supply when the on-board power-supply voltage fails as well as make it possible to operate measurement



technology independently of the on-board electrical system. In the category of measurement amplifiers, Softing is extending its range of available signal conditionings: Transducers with IEPE interface, alternatives to the classic thermocouple of the type K as well as inputs for current signals are just a few examples of this. And there is a lot going on with the smallest members of the family, the μ Series: Three new modules cover virtually everything you could possibly imagine when it comes to field bus measurement technology and IP67.

Further information at www.softing.com/mt.

OBD4HDD special interest group



The OBD4HDD SIG - a special interest group focusing on on-board diagnostics for heavy-duty diesel - initiated by Softing at the beginning of 2012 is very definitely catching on and now totals almost 100 members.

The group consists of manufacturers of trucks, buses and mobile working machinery as well as their suppliers. The aim is to ensure an inter-company exchange of information as well as to support and influence legislation and standardization groups.

There are six Focus Groups that devote their attention to: Diagnostic Communication, On-Board Emission Monitoring, Diagnostic Strategy, Off-Board Diagnostic Tester Architecture and Technology, Legislation/Harmonization and On-Board Diagnostic Infrastructure.

For more details and information on how to register, go to www.obd4hdd.org.

All-in-one tester for vehicle diagnostics

The reliable functioning of diagnostic communication must always be ensured when developing, testing and verifying diagnostic and control functions.

Usually, a number of different tools are used for this purpose, the problem being that their functions overlap. Users also often have to familiarize themselves with varying operating concepts and data exchange formats leading to breaks in the tool chain which, in turn, disrupts working processes and endangers quality. Furthermore, every tool targets a particular user group. But the various users have very different levels of expertise and their expectations of operation can sometimes be worlds apart.



All-in-one solution for developing, testing and test preparation

DTS Monaco is a one-tool solution, based on the latest international automotive standards, which covers the entire vehicle diagnostic chain:

- ⇒ ISO 22901-1/ASAM MCD-2D (ODX)
- ⇒ ISO 13209 (OTX) – Open Test Sequence Exchange
- ⇒ ISO 22900-3/ASAM MCD-3D application interface
- ⇒ ISO 22900-2 (D-PDU API) over CAN, K-line and Ethernet
- ⇒ ISO 14229 (UDS), ISO 15765, ISO 14230
- ⇒ ISO 13400 (DoIP) - Diagnostics over Internet Protocol
- ⇒ ISO 15031, SAE J1979 and SAE J2012 (all OBD)
- ⇒ also available: e.g. SAE J1939 and WWH-OBDD



Flexible adaptation to the requirements of different users

DTS Monaco can be flexibly adapted to suit all kinds of tasks and user groups. The screenshot shows an example of two workspaces for comparison purposes: On the left, experts can run communication tests with full access to all diagnostic functions. On the right, predefined test sequences can be started using buttons without any special diagnostic knowledge being necessary. Furthermore, specific extensions for individual vehicle manufacturers are easy to integrate.

Reduced purchasing and training costs, fast results

Purchasing costs are reduced as only one tool is required. Users only have to master one tool and therefore only have to be trained once. Familiarization time with DTS Monaco is minimal thanks to the intuitive start page, Demonstration mode, preconfigured templates and universal authoring for OBD self-diagnosis. The problems of different data exchange formats and varying operating concepts when using several tools as well as the limited orientation to specific user groups described at the beginning are thus completely avoided.

Further information: www.softing.com/dts8

Test engineering – a success story

Nowadays, e-mobility is the name of the game. It is now more important than ever before for vehicle manufacturers and the supplier industry to serve this market.

Complex ECUs, which are subjected to comprehensive and reproducible test scenarios, are required to ensure the smooth operation of the high-voltage batteries used. For this purpose, reliable test units and simulations of the real batteries and of the corresponding ECU environments are required.



The high voltage means manufacturers face difficulties during testing as this voltage necessitates safety measures that were previously not required.

In this difficult market, Softing Messen & Testen GmbH in the southern German town of Reutlingen has developed several test racks on behalf of customers which not only corresponded to customer requirements but exceeded expectations, an outcome customers were naturally more than pleased with.

It may sound simple but enabling and disabling the performance (something which at times can be quite problematic with high-voltage and high-current applications), the test integration of the ECU for the cell controllers and incorporating a high-voltage simulation into a compact rack in a user-friendly and safe manner, is in no way a trivial task. But the realization of these points was not enough for the Softing specialists from Reutlingen. They gave customers a pleasant surprise as all the systems they delivered came with an excellent price/performance ratio and special solutions they had not expected. A few examples: ingenious cable routing, internal wiring and the safe-to-use, durable drawers.

Totally satisfied with the Softing solution, a new customer also commissioned a high-voltage terminal box for the cell controller.

User-oriented training sessions from Softing



In spite of standardization and user-friendly tools, the complexity of vehicle diagnostics basically demands more or less sound know-how, depending on the area of application and requirements.

There is absolutely no way we would leave our users and prospective customers out in the rain and that is why we offer a well-balanced range of basic seminars on the subjects of diagnostics, bus protocols, ODX and OTX.

Furthermore, we have developed a range of one-day seminars on our successful solutions, such as DTS, OTX Studio, Softing TDX, geared either to suit beginners or experts. The modular structure of our courses means participants can put together a training program to suit their very own requirements. Whatever the topic, our experienced team of trainers is particularly keen to deliver a diverting combination of theoretical content and practical exercises. If required, we would also be happy to put together a customized workshop perfectly tailored to suit your requirements.

Further information: www.softing.com/automotive-training

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