DEAR READERS,

We are pleased to be looking back on another very successful year for our customers, partners, and for Softing Automotive. Products proved to be a significant growth factor: These continued to be developed coherently both in accordance with the specifications of international standards and in line with customer-specific requirements. This clearly shows that current tools in vehicle engineering and diagnostic specification have to work continuously and coherently in order to be able to use configurations in all stages of the value chain – one of the main demands we make of ourselves and of our software and hardware tools.

To this end, we have increased and extended our product portfolio to suit specific goals. The product family DTS (Diagnostic Tool Set) covers all diagnostic application cases in engineering and – by using the libraries DTS COS and DTS AUT(omation) – also in the test environment and after-sales service. Furthermore, OTX Studio, TestCUBE2 and our measurement technology were extended with new functionalities and pioneering operating concepts. And with Softing TDX, we have now incorporated our long years of experience with repair shop testers for the very first time in an independent product and successfully tested it in the field with first pilot customers.

With our extended consulting services, our increased range of training sessions and our support packages, you will receive the best possible project and product support to assist you in reaching your individual goals.

We have compiled details of our innovations and product information in the latest edition of our Automotive Print newsletter. And would be honored to once more enjoy your trust in 2015.

Yours Markus Steffelbauer
Head of Product Management

APP development

Information and communication in and with the vehicle are central elements of automotive development. At Softing Automotive, we develop tailor-made applications for mobile end devices in the business-to-business field. In doing so, we specialize on the important platforms iOS and Android. In this area we develop solutions for mobile end devices along the entire process chain. Based on our decades of experience in integrating vehicles and other interfaces, we offer that decisive competitive edge in the implementation and realization of challenging projects.
Softing Automotive defines a tester solution for diagnostics in the repair shop environment to comply with current market requirements.

Whereas users in Engineering often require access to the last bit and free adaptability of the user interface to the specific task, an application in the repair shop environment is a totally different matter. Here the focus is very much on fast error finding, simple operation, support in repairs and the documentation of any working steps carried out and their results. It is also important that the overall solution covers all areas of implementation universally and can be used flexibly next to, in and under the vehicle. Furthermore, the system has to be able to withstand hard repair shop conditions, such as moisture, oils, acids and impact.

Softing’s answer to these demands is Softing TDX (software) on a ruggedized notebook with a flexible VCI – ideally the samtec HSC. The software consists of two components: Softing TDX.workshop – as the final application for repair shops (field) – and Softing TDX.studio for the upstream creation of repair shop sequences.

Softing TDX.workshop can be configured freely in terms of representation (GUI, interfaces) and sequences; all diagnostic procedures can be implemented. Regardless of whether work is to be based on ECUs, symptoms, functions or a mixture of all these – actions can be adapted entirely to suit customer requirements with Softing TDX. This means there are no limitations regarding the type of diagnostic functions: whether self-diagnosis, OBD (OnBoard diagnostics), guided function/error search, flash programming or measuring – all forms can be used without any restrictions. The authoring system Softing TDX.studio provides a central diagnostic tree editor to structure diagnostic access from the point of view of the repair shop. Furthermore it contains editors for the display of the interface (GUI), as well as for process sequences and the resulting communication steps.

In addition to these functions, Softing TDX makes comprehensive mechanisms available which serve data and access reliability (user management), the update of data and applications, as well as reporting – factors that already make Softing TDX an indispensable tool for customers.

For more information: www.automotive.softing.com/en/tdx
OTX Studio is a tool for engineering and commissioning diagnostic and test sequences on the basis of ODX. Its operating concept enables fast familiarization both for programmers familiar with working on a keyboard and for ECU experts without in-depth programming knowledge. The created test sequences are stored and exchanged on the basis of a standardized XML format compliant with the ISO norm 13209 for OTX.

One of the most important uses of OTX is the creation of test sequences for regression test purposes. Test cases have to be specified and assigned a target result which is compared to the actual result of a test case. An appropriate reaction is to be taken into consideration for deviations from the target value. From the user interface of OTX Studio, it is possible with just a few mouse clicks to select diagnostic services for a sequence from the ODX diagnostic database and to send them directly to the ECU for test purposes. These sequences are recorded in a specific format with symbolic representation. An assistant in the tool can be used to automatically create target sequences in OTX on the basis of the recording. These are then available for early and systematic error detection. Error handling with target value deviations can be created using predefined function bodies.

This means that a test sequence is generated automatically with every diagnostic function implemented in the ECU. This can be rerun with every new function as a regression test so that a complete diagnostic test can be created alongside implementation.

OTX Studio: regression tests made easy

Training: 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.

We provide a complete range of basic seminars on 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 and 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.

For more information: www.automotive.softing.com/en/otxstudio

For more information: www.automotive.softing.com/en/training
Softing’s Diagnostic Tool Set makes it possible to create consistent diagnostic functions and sequences based on the latest standards. This guarantees that vehicle diagnostics works reliably in Engineering, Testing, Manufacturing and After-Sales Service. The last two releases 8 and 9 included numerous add-ons and improvements, some of which are detailed below.

As an alternative to the full software package, there is now a considerably more compact „Production and Aftersales Package”. Its scope of delivery is limited to DTS COS and DTS Automation. This makes it possible to select only those software components for test benches, service testers etc. which are actually needed.

**DTS COS/BASE SYSTEM**

When using the full software package, users who work for different vehicle manufacturers can now toggle the manufacturer-specific behavior so just one PC and a one-off installation are required. The introduction of libraries makes it easier to reuse diagnostic functions and sequences between projects for different model ranges, vehicles and ECUs. The delivery scope includes two additional ODX protocol templates: first of all WWH-OBD compliant with ISO 27145 for trucks, buses and mobile working machinery and secondly SAE J1939-73 for heavy-duty diesel vehicles. The Database Differ, which enables a simple comparison of different statuses of runtime data, now offers a unique MCD-3D view of the data alongside ASAM MCD-2D (ODX).

**DTS AUTOMATION**

DTS Automation, which offers simplified access to diagnostic functions for the realization of test benches in ECU and vehicle manufacture, was extended by an OPC-server-interface and the support of OTX.

**DTS MONACO**

With the all-in-one engineering tester DTS Monaco, complex diagnostic sequences can be run and tested in depth in accordance with ISO 13209 (OTX). The completely revised and considerably extended workspace templates allow users to reach their goals faster. On-board voltage and ignition status are displayed directly in the toolbar. ECU names can be displayed in plain text for CAN identifiers in the HMI Controls Bus Trace and Symbolic Trace.

An additional display mode of the Bus trace makes it possible to display 29-bit identifiers in „J1939 style”.

**DTS VENICE**

The authoring system DTS Venice for the convenient creation, testing, management and maintenance of diagnostic specifications now supports both ODX 2.2 and 2.0.1. An additional assistant makes it possible to derive new ECU variants from existing ones. The detailed comparison of two elements (e.g. variants) with the Database Differ can be launched directly from the navigation area. New databases can now be created as DTS projects to enable the immediate testing of data changes.

---

**Table: Diagnostic Tool Set 8**

<table>
<thead>
<tr>
<th>Authoring system</th>
<th>Engineering tester</th>
<th>User applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTS-Venice, OTX Studio</td>
<td>DTS-Monaco</td>
<td>e.g. test benches, repair shop testers</td>
</tr>
</tbody>
</table>

**HIGHLIGHTS**

- MCD-3D 3.0 • DoIP
- ODX 2.2+2.0.1 • OTX
- Runtime data: ultra-compact + encryptable

**Application interface, DTS Automation**

**Diagnostic runtime system with integrated OTX runtime environment**

**DTS-COS**

**VCI access interface**

- Vehicle Communication Interface (VCI)
  - CAN
  - K-Line
  - Ethernet
  - Other
  - ECU

**Fig.: Diagnostic Tool Set 8 – System Overview**

---

For more information: [www.softing.com/dts8](http://www.softing.com/dts8)
Thanks to constant technological progress, the evolution of modern measuring systems is never-ending. But there are milestones on every path and a good hiker reaches these milestones reliably. And this is also true of Softing Measurement Technology! The latest editions to the modular measurement technology family are a thermocouple measurement amplifier (MT20.2), an Ethernet interface with Gigabit and integrated switch (RGC-ETH.1) and buffer power pack (B12-033.1). Furthermore, 2014 saw the addition of current inputs, IEPE interfaces and various embedded measurement functions to the range. And thanks to state-of-the-art 19" mechanics, SMT is now also perfect for use in test bench applications, in addition to road and crash tests.

The measuring software PEA provides lots of new functions in the areas of online visualization and digital signal processing. Furthermore, generic interfaces enable a simple link to test planning and measurement data management systems, for example due to the import of sensor and measuring point catalogs or the automatic archiving of measurement data. A CAN-open protocol stack rounds out release 2.6.0.

And since you’re never done climbing peaks, the next stage has already been defined. More coverage for decentral measurement systems, SENT, EtherCAT and 50kSPS/Ch – just a few of the buzzwords users at Softing MessTechnik can look forward to hearing more about in 2015.
TestCUBE$_2$: ECU simulation at the push of a button

ECU simulation is created automatically from ODX data using TestCUBE$_2$. TestCUBE$_2$ is always used when there is no real ECU available. Particularly in the test environment, it makes no sense to wait until an ECU is available to create test sequences. Ideally, the test sequence is already finished and verified by this point: the process of frontloading!

TestCUBE$_2$ is a configurable ECU simulation for exactly that purpose – including real bus communication so that the entire test system can be tested. In the past, configuration had to take place manually; all tester requests and the corresponding ECU responses had to be entered individually.

This now takes place automatically. All you need is ODX data describing the manner of communication. The described possible requests initiate the automatic creation of the (simulated) ECU responses – at the push of a button and without the risk of incorrect data. Parameters can be used to influence the type of creation. Once the initial simulation has been generated, you can add to it manually, for example to be able to simulate incorrect responses.

With TestCUBE$_2$ implementing diagnostic test sequences parallel to the ECU and verifying them using a real communication partner is now possible in an ultra-convenient manner for the first time.

For more information: www.automotive.softing.com/en/testcube

Looking forward to meeting you at Testing Expo Europe (Stuttgart) | Testing Expo China (Shanghai) | Testing Expo USA (Novi, MI)

CONTACT
Softing Automotive
Richard-Reitzner-Allee 6
85540 Haar – Germany

Phone +49-89-45656-420
Fax +49-89-45656-499
E-mail info.automotive@softing.com
Internet www.automotive.softing.com

All rights reserved 2015