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Design templates in high-end quality reduce the effort involved in tester implementation

Users make high demands on the interface and the operating concept of today's diagnostic testers. An intuitive user interface reduces both the time required for users to familiarize themselves with the tester and the usage time for diagnostic tasks during daily work. Creating elaborate, platform-independent testers is complicated and takes a lot of time – time that is often simply not available. Support from suitable editor tools, cross-platform development as well as prefabricated design templates can help. The effort involved in creating anything from individual functions to a complete diagnostic tester in a bespoke design is thus reduced considerably.

The DESIGN-MANAGE-WORK workflow has proven itself when it comes to creating and maintaining diagnostic testers. The tester has to be created or designed to comply with a specific corporate design (CD), the content and software have to be managed centrally and ultimately distributed all over the world in a target-oriented manner. After-sales in particular makes high demands in terms of the interface design and operating concept. It is often the case that these test systems feature virtually identical user interfaces, which differ only very slightly from each other. The minor adaptations required – not to mention a completely new creation – often involve an incredible amount of effort. The sometimes strong link between the GUI and the business logic

complicates the design process and often results in a high level of programming effort. So they can be used on mobile end devices, the applications on the operating systems Windows, Android and iOS often have to be developed natively and thus three times – with the equivalent amount of maintenance, too!

So the challenge is to create a diagnostic tester solution with a top-quality design as cost-effectively as possible for mobile end devices such as smartphones and tablets. The creators of the diagnostic tester should enjoy optimal support in the DESIGN phase with editor tools that pursue a “What you see is what you get” (WYSIWYG) concept.

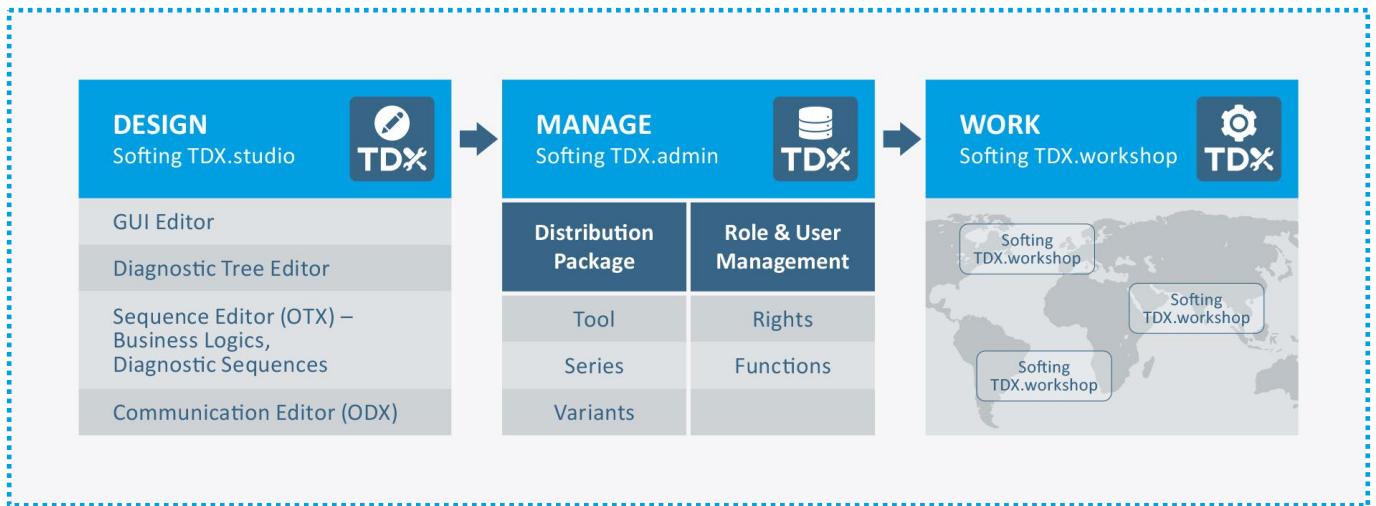


Figure 1 Process steps DESIGN, MANAGE and WORK in Softing TDX (Source: Softing Automotive)

Distributing Tasks – Increasing Efficiency

The look & feel of a tester has to satisfy very specific and high demands. The interface should be able to be created with the highest level of detail and as flexibly as possible. The operating concept is also of great significance and very company-specific.

The special challenge is therefore to consistently separate the GUI and the business logic, which makes a separate approach to the design of the entire diagnostic tester or individual diagnostic functions possible in the first place. This means users can focus on the particular core task, either the creation of the sequences and diagnoses or the design of the user interface. This parallel processing brings incredible advantages in terms of time. In particular, the maintenance of the tester in the case of any subsequent modifications is considerably simplified.

Excellent results are obtained with the Qt Modeling Language (QML), specially developed to design excellent user interfaces. The pixel-perfect design and positioning of the interface elements are the prerequisites for an impressive user interface. The underlying diagnostics and also the operating logic are implemented with suitable OTX sequences. By reusing existing diagnostic data and sequences, a unique comprehensiveness of the process chain from engineering and development through manufacturing to use in the repair shop is achieved.

Optimal Support during the DESIGN Phase – Particularly with Mobile Platforms

By using the DESIGN component Softing TDX.studio, a diagnostic tester is created with ease, reliably rolled

out throughout the company and maintained over its entire life cycle. Intuitive operating concepts can be realized and attractive user interfaces, e.g. a detailed simulation of a vehicle's dashboard, or even the complete implementation of a proprietary corporate design created absolutely freely.

Softing TDX.studio separates the design of the interface using QML entirely from the definition of the related diagnostic and business logic, thus offering the greatest possible flexibility. All diagnostic sequences are created with TDX.studio and configured with the corresponding diagnostic services. The linking of the respective services and sequences to the interface elements of the diagnostic tester also takes place at this level. Additional information, such as repair instructions, exploded drawings, videos and access to external web content, can easily be incorporated and adds the repair of important content to the diagnostic tester.

The greatest time saving is made when using the diagnostic tester on mobile end devices. QML supports cross-platform development. This means that the code remains single source and does not have to be developed and maintained several times for different platforms. The corresponding operating logic is also already available and translated for each platform as this virtually never changes. All the editors of the diagnostic tester have to do is design the interfaces. There is a little fine tuning to take care of, such as defining the screen size, but then the application is ready to run on smartphones and tablets.

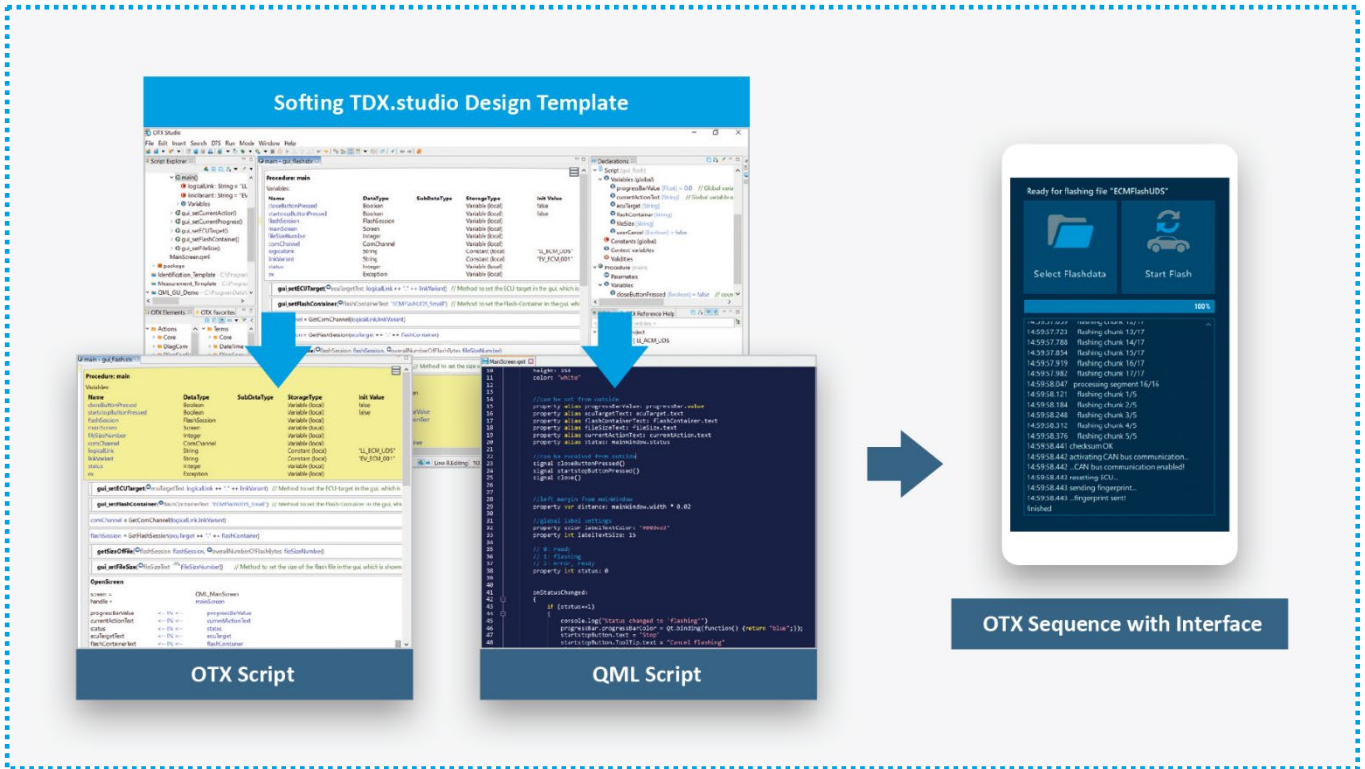


Figure 2 Making a test interface quickly and simply with the design templates in Softing TDX.studio (Source: Softing Automotive)

Reaching Goals Faster with Design Templates

Furthermore, Softing TDX.studio also offers reusable design templates. These cover the most common use case scenarios, such as identifying the vehicle or ECU, accessing the error memory, displaying measurement values and updating the ECU software. Everything is already fully implemented in the design templates, both the underlying diagnostic and operating logic and the interface based on QML as a design proposal. Using the convenient editor tools, both sequences and the GUI can very quickly be adapted separately to the company's own specifications. As a result, the design templates considerably speed up the diagnostic tester creation process.

Conclusion

Today, diagnostic testers have to feature a special design if you are looking to turn working with diagnostic testers on a daily basis into an experience and at the same time to reduce the repair time with intuitive tester operation. Correspondingly, a lot of time is invested in the full functionality and even the smallest of adjustments can result in high costs. For

this reason, there are clear advantages of using Softing TDX, ranging from the convenient creation and adaptation of diagnostic functions and fast creation of a modern user interface to the specification of intuitive operating concepts and a complete implementation of a company's corporate design (CD). By using QML and convenient editor tools based on the WYSIWYG concept for the interface design, the diagnostic tester for mobile end devices is practically a gift. The TDX design templates further reduce the effort as completed results for the most common diagnostic functions, such as identification, error memory, measurement values and flashing, are already available.



MBA & engineer Julian Erber is a product manager responsible for after-sales diagnostics and Softing TDX at Softing Automotive Electronics.