



# Getting Better and Better

The past, present, and future of test automation

A talk with Dr. Klaus Lamberg, Product Manager of test and experiment software, about AutomationDesk (dSPACE's test software) and future developments in the area of testing.

*Dr. Lamberg, dSPACE has a long history in the field of test automation. Where are they today?*

Since the mid 1990s, test automation is becoming an increasingly important topic because HIL simulation is being used more often throughout the field to test electronic control units (ECUs). Back then, in the 1990s, we were involved in a whole row of test automation projects together with our customers. We set up specific test environments in cooperation with our customers and implement-

ed them. The knowledge we gained from these projects flowed into the development of AutomationDesk, which came out in 2003. A lot has happened since then. One highlight is Version 2.0 (released in 2007), which offered many features to improve test development. The feedback from our customers was absolutely positive. The versions that followed included the Debugger and an evaluation library, among other things. As a result, we can now offer a very mature product

for developing and performing automated ECU tests.

Even though these success stories are remarkable enough, we continue to go further – in the direction of process integration and more openness.

*How does dSPACE support process integration and openness?*

To improve process integration, we offer the DOORS Connect & Sync Module, the interface between



AutomationDesk and the requirements management tool DOORS®. This keeps the test specifications in DOORS® and the corresponding test projects in AutomationDesk synchronized. One way we achieve openness is by connecting AutomationDesk to other HIL systems. We have already done this successfully for various external systems.

features, but also on the work methods and, especially, the experience. This is where the issue of services comes into play. On the basis of the experience we have gathered in numerous projects, we can help our customers steer their processes and test projects right from the start towards working in teams and towards reusing the existing tests.

software to the tool manufacturers. In addition, there is a great deal of activities towards standardization, which, by the way, was originally initiated by dSPACE, such as the HIL API. The prerequisite is, of course, that the tool system supplier and the test system supplier also support this standard – which is most certainly the case for dSPACE.

## Testing is an important part of the entire process. It cannot just be done on the side.

In addition, we have to see where the testing challenges lie for our customers, now and in the future. The current issues are ones such as systematic test processes, test reusability, organizing and structuring test tasks, cooperating in teams, and integrating the test tasks into the entire process.

### *How is dSPACE meeting these issues?*

The next AutomationDesk version (due at the end of 2009) will include a standardized interface between the test automation tool and the test system, the new HIL API (see page 44), which was recently made a standard by the ASAM board. This interface makes it easier to use AutomationDesk with different test systems, even from other suppliers, and thus also provides test reusability. The result is investment protection not only for the test software, but also for training the users and for test development. In addition, AutomationDesk supports XML import and export, which allows AutomationDesk-independent storage of test projects and exchange with other tools.

However, it is very important to concentrate not only on technical

### *Does this mean that you don't get far with just the test software?*

Exactly. Testing is a complex, expensive, and responsible task within the development process. You can't just do it on the side.

Our experience shows that the more systematic and well thought out the approach, the more efficient the test environment at the end, and the higher the reusability of tests in other test systems and test projects. Within this context, we can give our customers the best boost when they start their testing.

## The winning combination of AutomationDesk and our project experience helps our customers become productive very quickly.

### *What are the developments you see for the future?*

On the whole, we see that more and more customers want to switch from the software they developed on their own to commercial products. They have realized that maintenance, service and continuous development cause an extreme amount of work. So they leave the task of creating test

Another standard, which dSPACE significantly helped to prepare, is currently being put into action by the ASAM board: A text exchange format that uses XML to exchange tests between different test tools, and which makes test reusability possible.

We also think that the increasing virtualization of product development brings new possibilities for the field of testing. The growing importance of models on the ECU level and system level will shift testing down to earlier development phases. We call this "virtual HIL testing". Virtual HIL testing will complement classic HIL testing. The goal is to reach an even higher level of matu-

urity in even earlier development phases – a development in which we will play a significant role.

*Thank you very much for your time, Dr. Lamberg.*