Process Consulting –
New in the dSPACE
portfolio

Efficient
Processes –
Not by Coincidence

There may be many ways to reach a goal, and detours can broaden our horizon. However, this learning-by-doing approach usually costs time and money and involves a greater risk. Jann-Eve Stavesand and Anne Geburzi, responsible for dSPACE Process Consulting, explain how dSPACE supports companies in creating optimized processes for developing and testing automotive software – without the detours.

Mr. Stavesand, what is process consulting and why is it new for dSPACE?
Stavesand: To keep it short: We advise our customers on how to optimize their development and validation processes, adapt them to new requirements, or redesign them. It is new for dSPACE, because we now offer consulting as an additional, product-independent service. This means that we not only advise our customers with regard to our own products and tool chains, but we take their entire tool landscape into consideration. Needless to say, the specialists from other suppliers are still the ones answering the detailed questions about their tools. However, because we look at things more comprehensively, we are the designated experts for creating a tool-independent process design.

And why is dSPACE offering process consulting at this specific point in time?
Stavesand: For some time now, we have been receiving regular requests from our customers, who explicitly want to use our experience and our know-how for optimizing processes and who see us as a partner for comprehensively designing process architectures. Therefore, now is the right time to honor their requests by offering the new dSPACE Process Consulting service. In this context, I well remember an occasion when

Figure 1: Jann-Eve Stavesand and Anne Geburzi explain dSPACE Process Consulting – the latest addition to the dSPACE portfolio.

Product Development Process

Test Process and Tool Chains

Specification and development

Integration and testing

System level

Hardware level

Software level

Application lifecycle management (ALM), requirements management, configuration management

Test management

| Configura-tion | Test auto-mation | Instrumen-tation | Parame-terization | Visuali-zation |

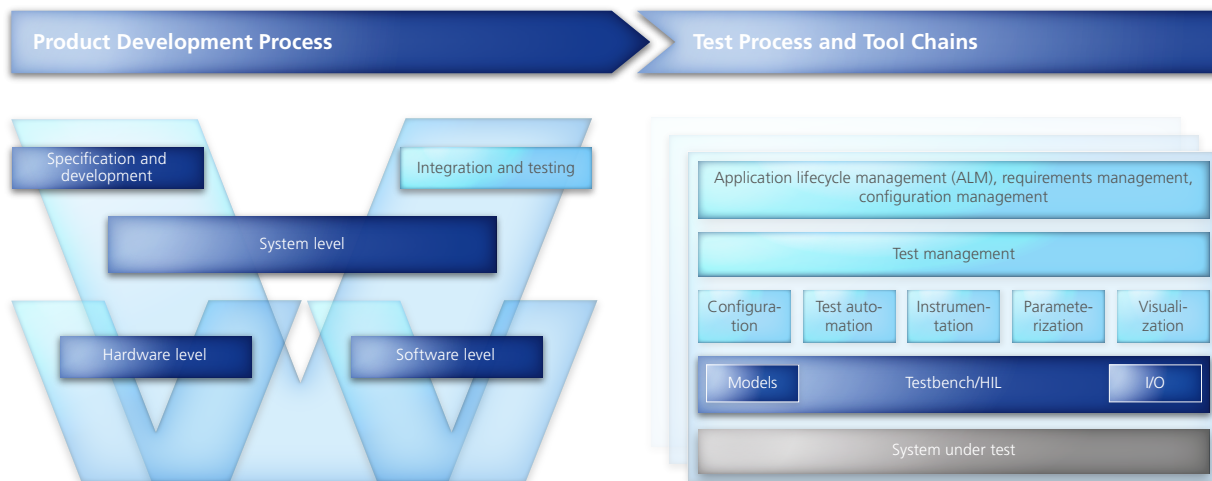Models   Testbench/HIL   I/O

System under test

Figure 2: dSPACE assessment model – A detailed analysis of the current situation is the basis of every recommendation.

we met with a major automotive supplier. The talks involved the interplay of different software and hardware products. After several interesting discussions with the customer about their tool landscape, the responsible employee told us at the end: "You know all that! We would like you to advise us comprehensively and do not want to contact every tool manufacturer individually about the process before we have the full picture." These types of requests have become more frequent in recent years, and we can now meet this customer demand by offering dSPACE Process Consulting.

Ms. Geburzi, what specifically prompts customers to avail of the dSPACE Process Consulting services?
Geburzi: New challenges, such as developing functions for autonomous driving, the increased use of virtual test methods, and the demand for more agile processes or compliance

with standards, such as ISO 26262, are typical triggers. In these cases, existing processes are often no longer ideal. Wherever you look, the complexity of processes is generally increasing. This requires customers to move away from the usual processes, starting with a simple restructuring and extending all the way to agile development or designing completely new processes. It might sound mundane, but our customers often simply lack the time and detailed knowledge to develop tailor-made concepts for process design in parallel to daily business proceedings.

Can you give an example of how you proceed in a typical consulting project?
Stavesand: Generally, the content and scope are very specific to each project and therefore the processes differ. However, most projects begin with an initial assessment, which we carry out on-site by personally speak-
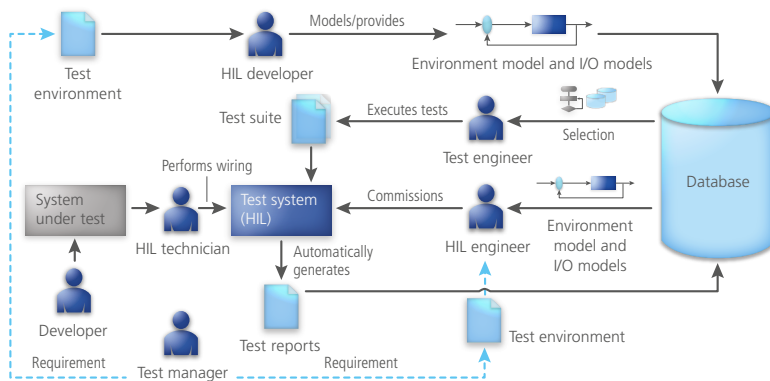
ing to all persons involved in the project. We then correlate the current status with the development goals. For this, we take existing tool chains into account as well as assigned roles, specified requirements, and best practices from comparable processes. Looking at all this information, we then identify the potential for improvement and derive a concept for process extensions or reorganizations. After implementing the proposed measures, it is essential for customer acceptance to be able to evaluate success by means of key figures.

Can you name specific cases in which you advise customers?
Geburzi: We often receive requests for supporting the design of new processes for the development of safety-critical functions according to ISO 26262, including writing documents such as safety manuals. In the context of ADAS[1], the task

Requirements that change during the development process or functions that are added during the life cycle – dSPACE Process Consulting also offers consulting and support for the introduction of agile development.

Workflows (e.g., Implementation and Execution)

always got." Often, these established processes are the reason the customers ask for our advice. If a process is established, it can simply mean that it has become outdated and no longer fits the new challenges. In addition, the respective experts are not responsible for all aspects of the process, because IT, safety managers, generally applicable standards and norms, or company-wide decisions repeatedly introduce new external requirements. Existing processes can form the basis, but they must be specifically adapted to meet all new requirements. In addition, and this is a decisive factor for us as process consultants, all measures must be communicated and coordinated within the company. In these cases, we can translate and connect the different worlds.

Ms. Geburzi, Mr. Stavesand, thank you for this interview.

might be to restructure established processes or, if necessary, to develop completely new processes. With regard to model-based development, compliance with the AUTOSAR standard, or agile approaches, the benefit evaluation and the process-related introduction of these technologies and methods also play a major role for our customers. For example, one of the challenges when introducing virtual test methods such as SIL and HIL[2] is the aspect of design for testability. This means that hardware and software have to be developed with regard to validation and verification processes based on the system design. The management of extremely large data volumes in the development and verification process also plays an increasing role. However, comprehensive and integrated tool solutions are often not available yet.

Surely, these are all areas in which dSPACE has software development experience. Yet, what qualifies dSPACE to be a consultant in these areas?
Stavesand: For all these areas, we can draw on our existing know-how and many years of practical experience in countless engineering projects with

international corporations. Our experience with best practices in different companies from different industries makes it possible for us to develop an individual, optimal, and, above all, practicable solution in cooperation with each customer.

How do you proceed with the process design, particularly in view of the fact that the customers as specialists tend to have established processes that are tailored specifically to their needs?
Geburzi: Let me quote Henry Ford: "If you always do what you've always done, you'll always get what you've

[1] Advanced driver assistance systems (editor's note)
[2] Software-in-the-loop, hardware-in-the-loop (editor's note)

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