



DIGITAL TRANSFORMS PHYSICAL



LÖSCH & PARTNER
Application Lifecycle Management

Top Eight Automotive SPICE (ASPICE) Blunders



Introduction to the role of Automotive SPICE® in automotive development

The automotive industry is undergoing a profound transformation in which software is playing an increasingly significant role.

Constantly evolving technology, increasing vehicle connectivity and rising customer demands have led to a paradigm shift in the automotive industry. The way vehicles are developed has changed dramatically, and companies are facing the challenge of bringing to market innovative and high-quality products in an efficient and safe way.

In this changing landscape, product development requires a shift in thinking. Traditional approaches based on rigid and bureaucratic processes are no longer sufficient to meet the demands. Instead, agility, flexibility, and the ability to adapt quickly are now critical for success in the competitive landscape.

This is where Automotive SPICE® comes into play. Automotive SPICE® (Software Process Improvement and Capability Determination) is an internationally recognized maturity model providing a suitable framework to help companies design their own development processes. It establishes best practices that enable companies to increase product quality, improve efficiency, and ensure relevant standards are met.

Automotive SPICE does not impose rigid rules or regulations limiting creativity or freedom in product development. In fact, it represents a guideline enabling companies to individually design and adapt their own processes.

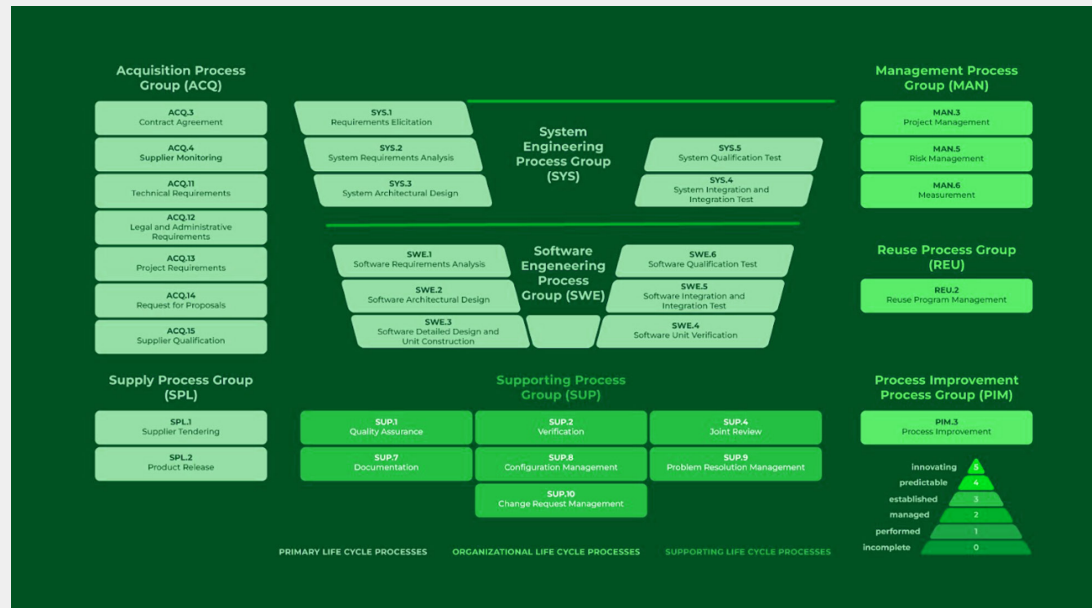


Automotive SPICE® relies on the principles of the ISO/IEC 15504 standard (SPICE®). Based on the latest version of the ISO/IEC 330xx series, it has its own Process Reference Model (PRM) and Process Assessment Model (PAM). These models describe both the processes and indicators required for a consistent assessment of processes. The framework consists of a comprehensive catalog of process requirements steering

the development process from requirements specification to system validation and verification. It is divided into capability levels ranging from Level 0 (Incomplete) to Level 5 (Innovating).

By implementing Automotive SPICE®, automotive companies and their suppliers will be able to standardize, optimize, and continuously improve their development

process. This will lead to greater efficiency, shorter development times, and increased software quality, which, in turn, will ensure increased customer satisfaction and an even better reputation. By implementing Automotive SPICE®, companies will meet the requirements of an ever-changing industry and gain a competitive advantage.



Challenges in the introduction of Automotive SPICE®

Make no mistake, the introduction of Automotive SPICE® comes with a number of challenges. These challenges may relate to both technical and organizational aspects. Some of the most common challenges in the introduction of Automotive SPICE® are explained below:

1. Complexity of the process definition: The requirements of Automotive SPICE® may initially be perceived as complex and overwhelming. It will take time and resources to adequately define and integrate processes into existing workflows.

2. Resistance and lack of acceptance: The introduction of Automotive SPICE® may be met with resistance, especially if employees consider upcoming changes as too much effort or if management fails to clearly explain why the framework is required.

3. Resource constraints: Implementing Automotive SPICE® requires an adequate allocation of resources including time, money, and competent people, which may be a challenge in many organizations.

4. Information and training needs: Some employees may not have sufficient experience with Automotive SPICE®, which creates a need for training and raising awareness of the framework's benefits.

5. Corporate culture: Unless the company's culture focuses on continuous improvement and acceptance of best practices, the implementation of Automotive SPICE® may be hindered by obstacles.

6. Internal and external collaboration: The implementation of Automotive SPICE® may affect collaboration with internal departments and external partners. It will be important to establish clear communication channels and cooperation structures to overcome this challenge.

7. Conformance: Conformance with the Automotive SPICE® requirements is a challenging task that requires thorough knowledge of the framework. Automotive SPICE® is an extremely detailed and comprehensive framework used to define specific requirements.



Implementing Automotive SPICE: Common errors and specific remedies

Blunder #1: Lack of management support

Without the active support of management, the implementation of Automotive SPICE® may grind to a halt.

Management plays a critical role in providing necessary resources and communicating the importance of the framework to the company. Unless management backs up the adoption of Automotive SPICE®, key decisions and resources may become blocked, impacting the process of successful implementation.

Solution

Win over management by convincing them of the importance of Automotive SPICE® from the very beginning.

Specific suggestion

Schedule workshops or presentations for management demonstrating the benefits and added value of Automotive SPICE®. Showcase studies of successful companies that have improved their software quality and competitiveness by implementing Automotive SPICE®. Ensure decision-makers have access to all relevant information for making an informed decision.



Blunder #2: Incomplete analysis of the company culture

When implementing Automotive SPICE®, it is critical to account for the existing corporate culture.

An incomplete analysis of the company's culture may lead to resistance and lack of acceptance among the workforce as the newly introduced processes and guidelines may not match the way the company has been operating. More beneficial to the successful implementation of Automotive SPICE® is a corporate culture focused on continuous improvement and willingness to learn.

Solution

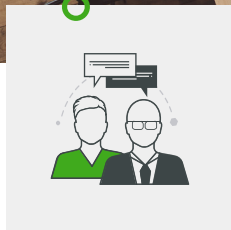
A thorough analysis of the corporate culture enables the integration of Automotive SPICE® into the company's existing structures and work processes.

Specific suggestion

Organize focus groups or semi-structured interviews with employees from different departments and hierarchy levels to get the big picture of the existing corporate culture. Use open-ended questions to find out about employees' opinions and appreciations. Analyze the corporate culture to verify its alignment with Automotive SPICE® requirements.



Blunder #3: Lack of training and awareness among employees



You will need to provide employees with information and training on Automotive SPICE® to successfully integrate the framework into their daily workflows.

Lack of training and/or awareness will lead to uncertainties and low acceptance of the framework.

Solution

Provide comprehensive training and awareness campaigns to improve employee knowledge and acceptance.

Specific suggestion

Organize internal workshops and training sessions to teach the basics of Automotive SPICE®. Provide online training materials or e-learning courses to enable employees to learn on their own. Conduct regular training sessions to continuously keep employees up to date.

Blunder #4: Excessive complexity of processes

When implementing Automotive SPICE®, excessively complex processes may potentially lead to errors.

If processes are unnecessarily complicated and difficult to understand, employees may become confused and unable to implement them in an efficient manner. This may lead to errors and delays or reduce productivity.

Solution

Avoid overly complex processes. Simplify and streamline processes so they are easier to comprehend and implement.

Specific suggestion

Use the process streamlining method to simplify processes and eliminate any unnecessary steps. This method involves an initial, detailed documentation of the current status of processes. Make sure to consider both individual process steps and their respective process results (outcomes). On this basis, in a second step processes will be optimized by adapting these processes and their outcomes to the actual requirements. Based on this analysis, optimize processes by comparing process outcomes to actual requirements. Set up a team of experienced staff to analyze and optimize your processes to increase efficiency.



Blunder #5: Lack of collaboration with suppliers

The implementation of Automotive SPICE® will not only affect your company but also your collaboration with suppliers and partners.

Suppliers play a crucial role in automotive development as numerous vehicle components and systems are sourced from external companies. Lack of attention to the integration and cooperation with external partners may lead to ambiguities, communication issues, and supply chain inefficiencies.

Solution

Integrate suppliers into your process in the early stages and establish clear communication channels.

Specific suggestion

Organize regular meetings and exchange platforms with suppliers (Supplier Integration Workshops) to create a common basis of understanding and ensure requirements are recognized and met on either side. Define objectives for meetings to ensure in advance that all relevant contacts are present. Clarify how responsibilities arising from Automotive SPICE® requirements will be divided between the company and the supplier.



Blunder #6: Insufficient involvement of employees

The implementation of Automotive SPICE® affects all employees in a company, and their active involvement is critical to its success.

Unless employees are involved in the process and given the opportunity to contribute opinions and ideas, you may create a lack of motivation and hinder employee acceptance.

Solution

Provide a platform for employees to actively participate in the implementation process and voice their concerns and ideas.

Specific suggestion

Organize regular feedback and/or brainstorming sessions for employees to share their experiences and suggestions. Encourage employees to make suggestions for improvement and establish transparent communication on your implementation progress.



Blunder #7: Unclear roles and responsibilities



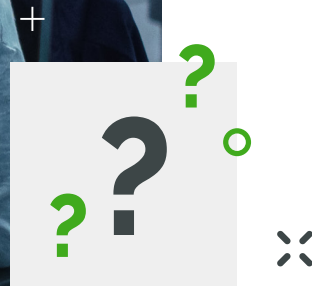
A clear definition of roles and responsibilities for the implementation of Automotive SPICE® is essential. Unless responsibilities are clearly defined, you may create misunderstandings leading to uncoordinated activities.

Solution

Define clear roles and responsibilities for the implementation and maintenance of Automotive SPICE®.

Specific suggestion

Create a RACI matrix (Responsibility Assignment Matrix) defining the roles and responsibilities for each task and process within Automotive SPICE®. Ensure all stakeholders are notified of relevant tasks and aware of their responsibilities.



Blunder #8: Lack of review of the implemented processes

Another common error in the implementation of Automotive SPICE® is the failure to conduct regular assessments.

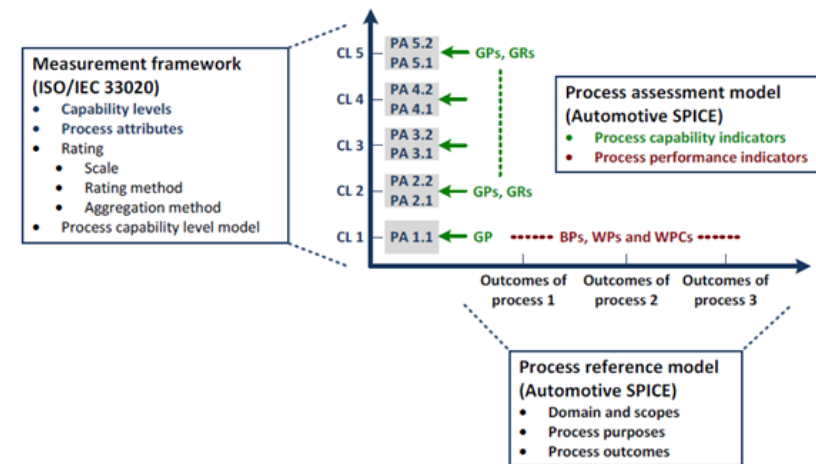
An assessment is an evaluation procedure that should be performed on a regular basis to monitor Automotive SPICE® implementation progress and ensure all objectives are met. Without systematic assessments, problems may go undetected, which may leave you without a useful foundation for process improvement.

Solution

Schedule regular assessments to help measure the maturity of the implemented processes.

Specific suggestion

Establish an assessment plan to review each process at specified intervals. Set up an assessment team to perform these assessments. We recommend using experienced external assessors or consultants to ensure both a competent analysis and an independent, valid result. Use the Process Assessment Model (PAM) within Automotive SPICE to apply the same assessment criteria as in a real-life situation. Use the assessment results to identify improvement measures and put them into practice with stakeholders to implement a process of continuous improvement.



How the right tooling can help tackle these challenges

The growing complexity of today's automotive products and development processes necessitates the use of modern tools in automotive engineering.

Application Lifecycle Management (ALM) is the strategic process of managing a software lifecycle from initial idea through development, deployment, and end-of-life. ALM tools help teams implement any process and analyze the impact of process changes over time.

They are therefore a critical resource for organizations embarking on an Automotive SPICE® journey.

PTC Codebeamer is a new generation Application Lifecycle Management solution for simplifying product and software engineering at scale. As the premiere ALM platform of the automotive industry, Codebeamer includes pre-configured yet flexible templates specially designed to support your organization's Automotive SPICE® project.

Having a preconfigured solution for your Automotive SPICE® needs can help you simplify compliance and reduce costly missteps.

Try the [Codebeamer ISO 26262 & Automotive SPICE® Template](#) for a ready-made framework with baked-in work items and best practices for process optimization.



Conclusion/Summary

The introduction of Automotive SPICE® in automotive development can be challenging. However, it will likely create enormous benefits for a company's software quality and competitiveness.

Careful planning, avoiding errors, and applying specific solutions are key for automotive companies and suppliers to ensure a successful implementation process.

The successful introduction of Automotive SPICE® depends on key success factors such as a thorough analysis of the corporate culture, support by management, comprehensive employee training, clear and adapted processes, workforce involvement, a clear definition of all roles and responsibilities, and close cooperation with suppliers.

With a thoughtful and well-coordinated approach, companies will be able to leverage the full potential of Automotive SPICE®, raising the quality and safety of their software products to a new level.

About Jürgen Bayer

Jürgen Bayer has been a managing director at Lösch & Partner GmbH for more than six years. With more than eight years of experience in process consulting, he has acquired extensive knowledge and skills in the optimization of business processes.



As an experienced Automotive SPICE® Assessor, he adds valuable experience to the assessment and implementation of processes inspired by the Automotive SPICE® framework. His profound education, including a diploma in computer science and a certification as an assessor, underlines his professional qualification for consultation services and the implementation of Automotive SPICE® in companies.

About Lösch & Partner

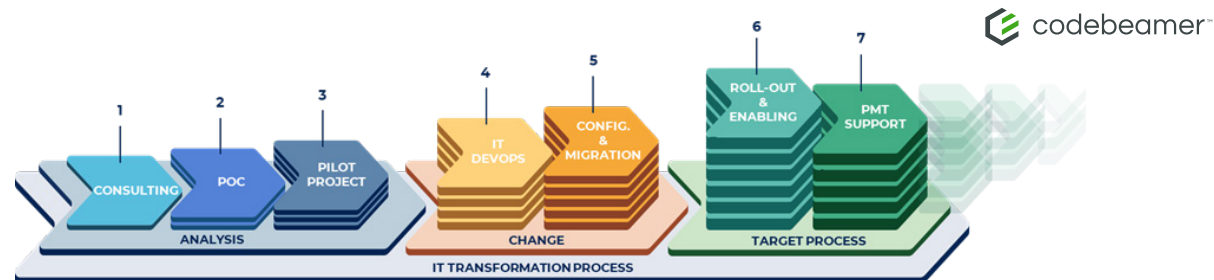
End-to-end ALM system integrator & PMT consulting company

Located in Munich, at the heart of the Bavarian Silicon Valley, Lösch & Partner is a systems engineering and IT specialist for agile and waterfall product development in high-tech industries. Over the last 20 years, Lösch & Partner has accumulated extensive business intelligence in the field of product development. We offer solutions and services focusing on process optimization, compliance (e.g., A-SPICE®, ISO 26262, ISO 15288, CMMI), and operational support in systems engineering as well as the development, configuration, customization, and end-to-end roll-out of ALM and systems engineering tools.

Our multidisciplinary team comprises technology experts, solution-oriented software developers, and process consultants perfectly equipped to develop customized solutions and ensure efficient rollouts.

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ALM for Automotive Embedded Systems Development

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Simplify functional safety compliance and verification in automotive development (ISO 26262, IEC 61508, Automotive SPICE, CMMI and more).

Learn more about Codebeamer and its Automotive ISO 26262:2018 & ASPICE Template!

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