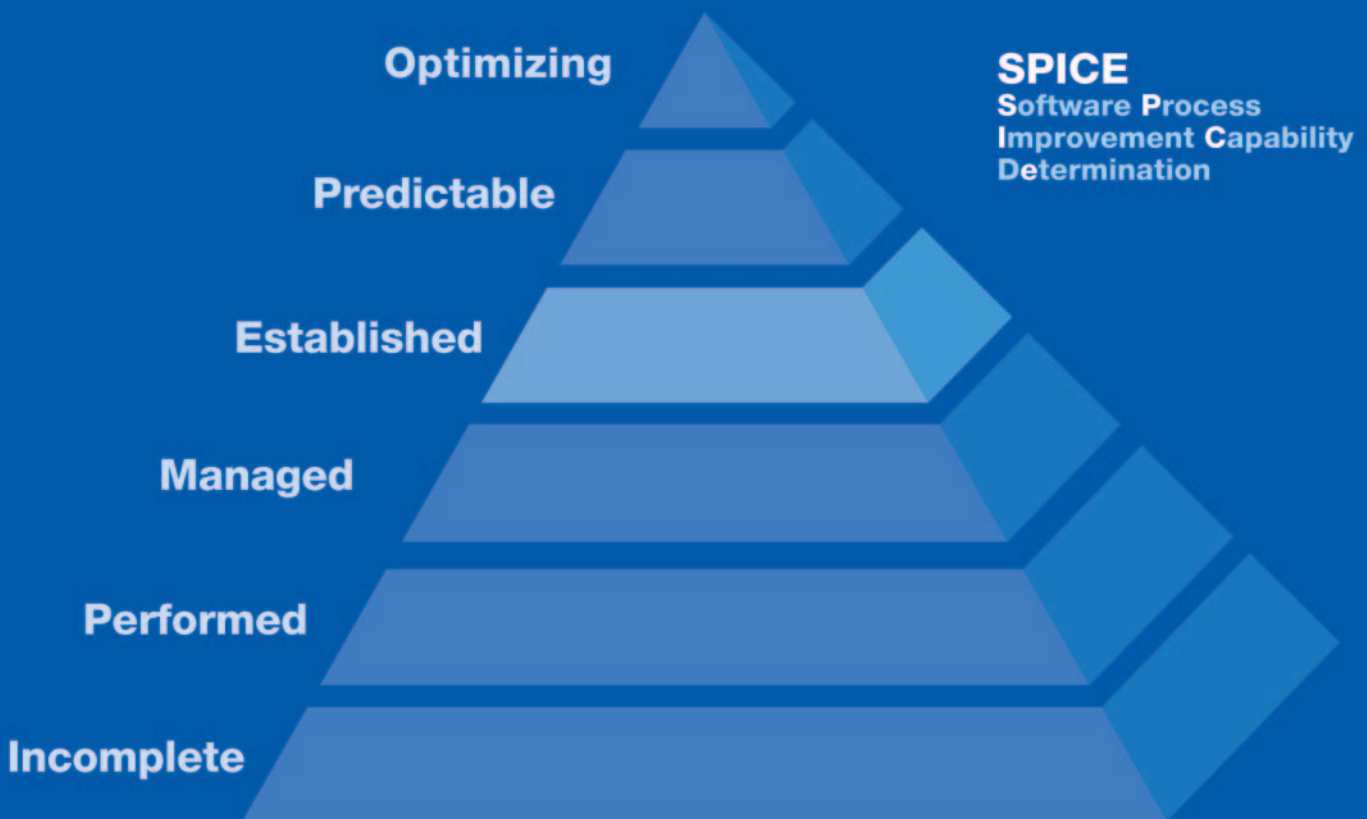


Technical Information

Electronics – Software Strategy



*Ideas today for
the cars of tomorrow*

Current situation

90 % of all new vehicle functions rely on a combination of electronics and software. The value proportion of automotive software will consequently increase from 4 % to 13 % by the year 2010.

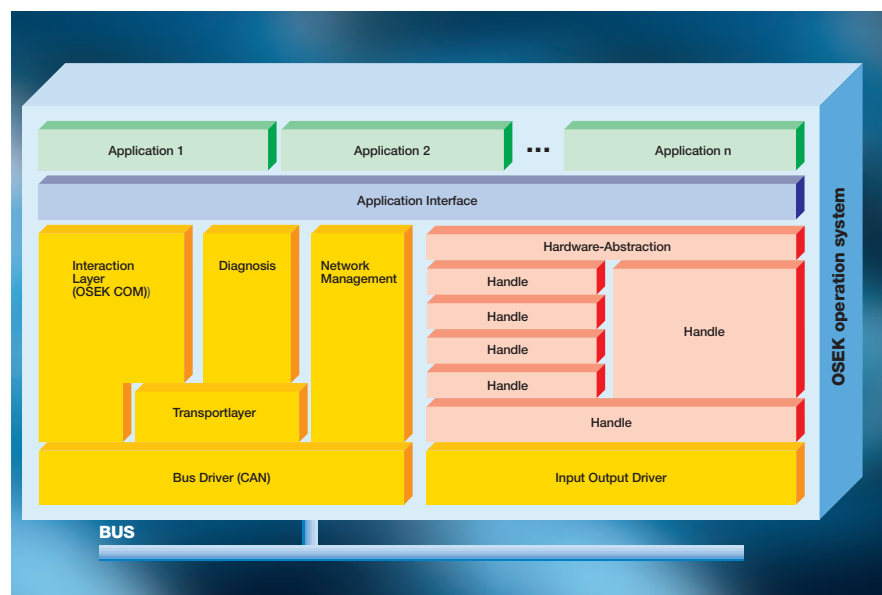
Hella is proactively meeting the increasing importance of software in the vehicle and the related requirements of the automotive industry.

Challenge

Despite further reduction in development times it is necessary to master the advancing degree of complexity. Coordinating distributed software development plays as special a role as does including internal and external development partners. Hella has accepted this challenge. All product lines have committed themselves to conform to SPICE software development and agreed to perform all development on the basis of this company-wide standard. The SPICE Level 2 was already confirmed at Hella in February 2003 by customer assessment. We intend to achieve Level 3 by the beginning of 2004.

Modular software development

The introduction of model-based software development goes hand in hand with the **standardization of software modules**. The development of production-stage projects based on the existing of standardized software modules taught us that the anticipated reduced development times went along with increased product quality. Hella therefore designed a **software architecture for the entire Hella Group** which will be the basis for both hardware-oriented software modules and comprehensive application engineering according to standard. Compatibility with the results of the Manufacturers' Software Initiative will be taken into account. **Hella's software architecture is a powerful** approach to meeting the increasing complexity of automotive software solutions.



Software Architecture "Made by Hella"

Combination of optimized software modules to software systems capable of integration

The automotive industry has a growing demand for open system architectures. Addressing this issue requires a distributed software development approach that includes all manufacturers and suppliers involved in a project. **Software integration competence** and advanced methods of subcontractor management are becoming key factors. SPICE audits are performed with potential software suppliers. The project-independent software quality control present in all product lines, ensures that the software modules are incorporated into the overall software system in conformance with the process. Hella's target is to assume a pioneer role in marketing automotive software modules.

Model-based software development and code generation

The introduction of a **model-based software development** on an industrial scale is a particular challenge to all developers involved. Hella already applied the method to series development and met with convincing benefits. Among other things it allows the simulation of individual functions and, in stages, the behavior of the entire control unit under development. Development risks are thus minimized at an early stage of a project. At the same time the automatic generation of program code supports a more rationalized development approach and lets software engineers do work that adds more value. Developers can increasingly dedicate their time to **developing the actual functions.**



Model-based Software Development

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