



MES ISO 26262 PROCESS DEPLOYMENT SERVICE

From analyzing existing development processes to implementing an ISO 26262-compliant development

The main goal of the MES Process Deployment Service is the complete coverage of the ISO 26262 standard in model-based development. Achieving this goal requires a well-defined and cost-effective development and a V&V process that relies on the best practices of the automotive industry. The process deployment's objective is to further customer competencies in model-based development, regardless of where they currently stand. ISO 26262 provides important recommendations for software development. MES supports its customers in efficiently implementing these recommendations in all relevant phases of software development. The MES ISO 26262 Process Deployment Service creates or adds to existing process and development documentation, and is adapted to customer requirements.

Target Audience

This consulting package is targeted at OEMs and suppliers that are facing the challenge of implementing the ISO 26262 standard into all of their model-based development process activities.

Highlights

- Guidance for your ISO 26262- and ASPICE-compliant software development process
- Deriving safety requirements
- Best practices for model-based software development of leading car manufacturers and suppliers worldwide
- Includes designing software architecture, designing and implementing safety functions in models, guideline compliance, testing and managing model complexity, quality assurance of models for safety-relevant applications
- Consulting by MES consultants who are highly specialized in model-based development processes for safety-critical software development and who are experienced in company-wide introduction and implementation of ISO 26262-compliant development processes

The Five Stages of MES ISO 26262 Deployment Service

The MES Process Deployment Service consists of five levels, each one building on the last:

1. *Analysis of existing processes, methods, and tools*

In the analysis stage, MES works closely together with the customer in order to identify missing or insufficient activities and work products. Examples of tasks carried out in the analysis stage are:

- Reviewing the current development process and toolchain
- Conducting a structured ISO 26262 gap analysis to identify missing development or safeguarding activities
- Developing and prioritizing a roadmap for defining and implementing an ISO 26262-compliant development process

2. *Development of a process manual*

In this stage, processes and methods are developed together with the team and other stakeholders. The process documentation describes the required activities and work products in detail. Clear definitions state (1) what to do, (2) when to do it, and (3) what the expected result of each individual process step is (e.g. criteria for success and quality goals). A process manual documents the determined process and typically consists of the following descriptions:

- Graphical process maps that provide an overview of the activities to be carried out
- Definition of work products
- Definition of roles and tools involved in the individual activities
- Goals and criteria for success of each process step

3. *Creation of developer manuals*

The process manual is supplemented with a set of developer manuals, which explains how to use methods and tools for software development and quality assurance. The developer manual captures how to design and achieve embedded software of the highest quality. Examples of topics are:

- General pattern for automotive control function design with Simulink
- Model structures for safety-critical software
- Use of data dictionaries or parameter libraries
- Model interface design
- Application-specific modeling patterns, also for AUTOSAR software development
- Use of libraries and referenced models
- Development of larger models with software variants
- Best practices for reducing resource usage of the generated code
- Modeling for the traceability of requirements

4. *Implementation of ISO 26262-compliant development*

Using the available process manual as a basis, MES shows customers how to use enhanced and customized reference workflows for series production projects.

- Team member training of how to use the new processes on the basis of process and developer manuals
- Support in applying the process manuals in series production projects
- Assessing the successful implementation of the new process
- Assistance in optimizing the new process
- Improvement of the process and development manuals in accordance with new requirements

5. *Development support*

In the last stage, MES assists projects with production relevance via independent development services.

- Ongoing management and developer support in applying the process to existing series production projects
- Service provision, including safety management/analysis, modeling, code generation, etc.

In-house consulting packages are available in English or German worldwide on request.

MES ACADEMY

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