

# Consulting

Having your process under control puts you in the driver's seat. This applies to the development of safety-critical software in particular. With the introduction of ISO 26262 and ASPICE, every car manufacturer and supplier is faced with the challenge of defining and implementing a slim and standard-compliant process for model-based development – because an off-the-peg solution does not exist.

Our process and quality team supports you in analyzing, introducing, and optimizing your software development processes in compliance with ISO 26262, ASPICE, and AUTOSAR.

Our tailored consultancy packages deploy our focused knowledge about MBD processes, safety development, and base practices of ASPICE.

## ISO 26262 Process Deployment Service

### Key benefits

- Experienced guidance for your ISO 26262- and ASPICE-compliant software development process
- Profit from best practices for model-based software development of leading car manufacturers and suppliers worldwide
- Achieve highest quality standards for your software company-wide

## Standard consultancy packages

### Basic Starter

Transition from code-based to model-based software development

### Safety Starter

Transition from code-based to model-based software development including compliance with safety standard ISO 26262

### Safety Extension

Extension of model-based software development process to achieve compliance with safety standard ISO 26262

### ASPICE Starter

Introduction of model-based software development in line with ASPICE base practices

### ASPICE Extension

Analysis of given model-based software development and extension by base practices of ASPICE where not present yet

## Process & developer manuals

We write process and developer manuals that unite global best practices and company-specific requirements in a single document. As a result, you can be sure that your processes and toolchains are implemented and applied in compliance with the rules laid out in ISO 26262 and/or ASPICE.

### Process Manuals

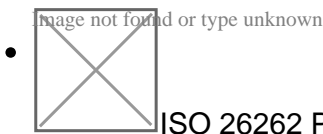
Our process manuals give you a pragmatic description of the optimum structure and sequence of processes in model-based development in compliance with ISO 26262 and ASPICE – even in the case of distributed software development with off-shore components. They include proposals of the correct tools and the most appropriate form of documentation for your company.

### Developer Manuals

Our developer manuals enable you to develop automotive software fast by following tried and tested procedures using Simulink®, TargetLink®, or Embedded Coder®. Our developer manuals include descriptions of how to construct software models and how to best exploit existing tools.

#### Our ISO 26262 Process Deployment Service

### From Analyzing Existing Development Processes to Implementing an ISO 26262-Compliant Development



ISO 26262 Process Deployment Service (507.5 KiB)

**In-house consulting packages available in English or German worldwide on request:  
sales@model-engineers.com.**

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 the Mes ISO 26262 Deployment Service

The MES Process Deployment Service Consists of Five Levels, Each One Building on the Last

### 1. Analyzing 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 safe-guarding activities
- Developing and prioritizing a roadmap for defining and implementing an ISO 26262-compliant development process

### 2. Developing 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
- Comprehensive definition including goals, prerequisites, and inputs for each process step
- Definition of work products
- Definition of roles and tools involved in the individual activities
- Goals and criteria for success of each process step

### 3. Creating 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. Implementing 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.

These services are provided in collaboration with the MES Test Center.