ISO 26262 / ASPICE

The standards deal primarily with the development project (but not only)

Standard compliance building blocks
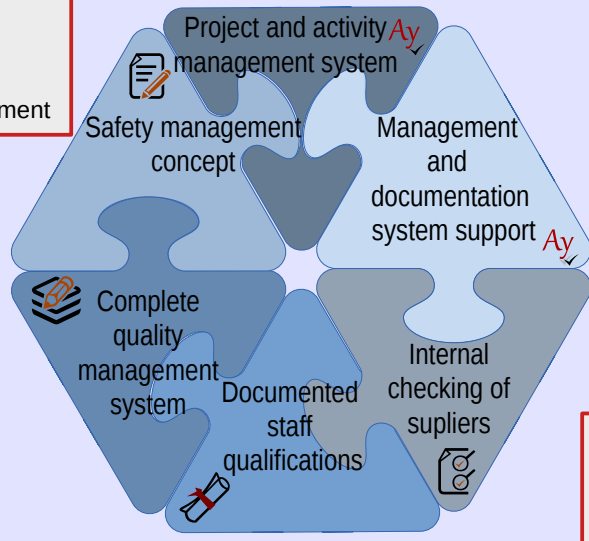
Project Management System
- ✓ Demonstrable procedural compliance
- ✓ Planning steps based on methodology
- ✓ Records of all tasks and their completion
- ✓ System support for process areasi

The standard requires system support for processes and projects

Safety management concept
- ✓ Risk assessment tools
- ✓ Qualified product risk assessment
- ✓ Identification of safety requirements
- ✓ Safety manager
- ✓ Checked compliance all over development

Project documentation management
- ✓ Document management system
- ✓ Packaging and configuration management
- ✓ Documented origin of documents
- ✓ Code management of SW under development

System for projects, production and support processes
- ✓ Documentation "PDCA" - Plan - Do - Check - Act - Improvement of processes
- ✓ A system ready for the real Assessment - qualified assessment of activities

Central diagram labels:
- Project and activity management system
- Safety management concept
- Management and documentation system support
- Complete quality management system
- Documented staff qualifications
- Internal checking of supliers

Audits independently verifying compliance with procedures
- ✓ Review of project activities
- ✓ Supplier audits
- ✓ Review of own quality system according to all standards - ISO 26262, ASPICE, ISO21434, - VDA 6.3, Formel Q, ...

The assessment is not a pro forma

Mandatory qualifications of staff
Training:
- ✓ ISO 2626 / ASPICE
- ✓ System Analysis Languages (SysML)
- ✓ Processes
- ✓ Internal tools

Key requirements of the standards

Implemented ISO 26262 process areas
- Activity management workflow
- Task control
- Configuration management for documentation
- Requirements traceability
- System analysis tool
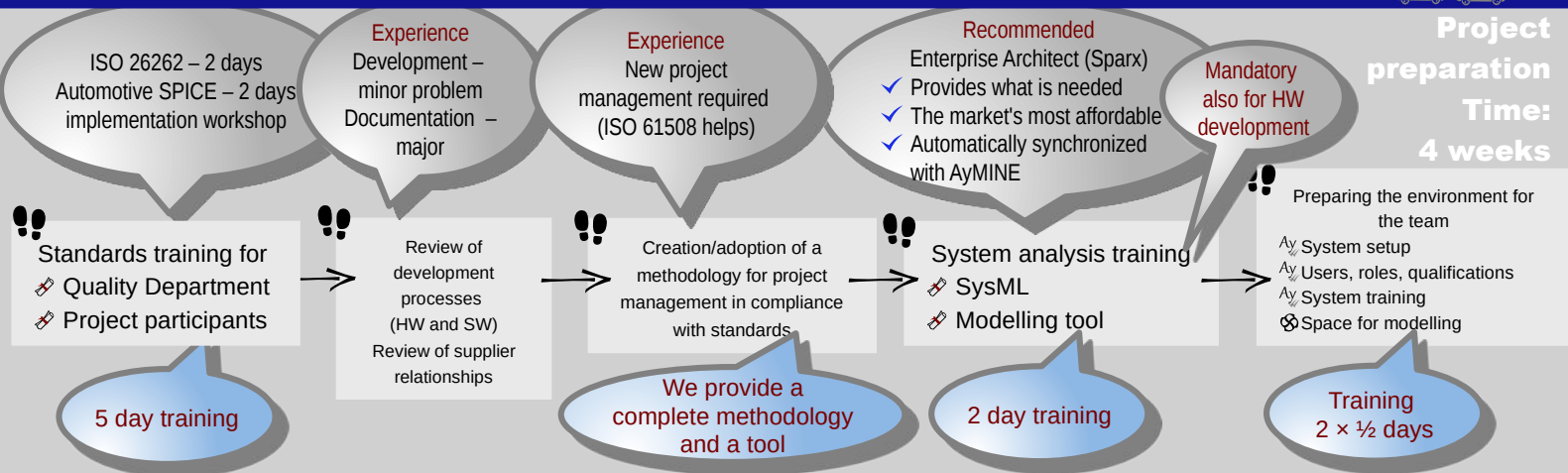- Test management and documentation

Requirements for software development - ASPICE
- Code change tracking
- Code security assurance (ISO 21434)
- Requirements traceability (to analysis level)
- Analysis tools (static code analysis)

Related mandatory standards
TISAX / ISO 27000, ISO 21434, ISO 16949
- Complete managed QMS
- Ensuring code security
- Security of all documentation (protection against cyber threats)
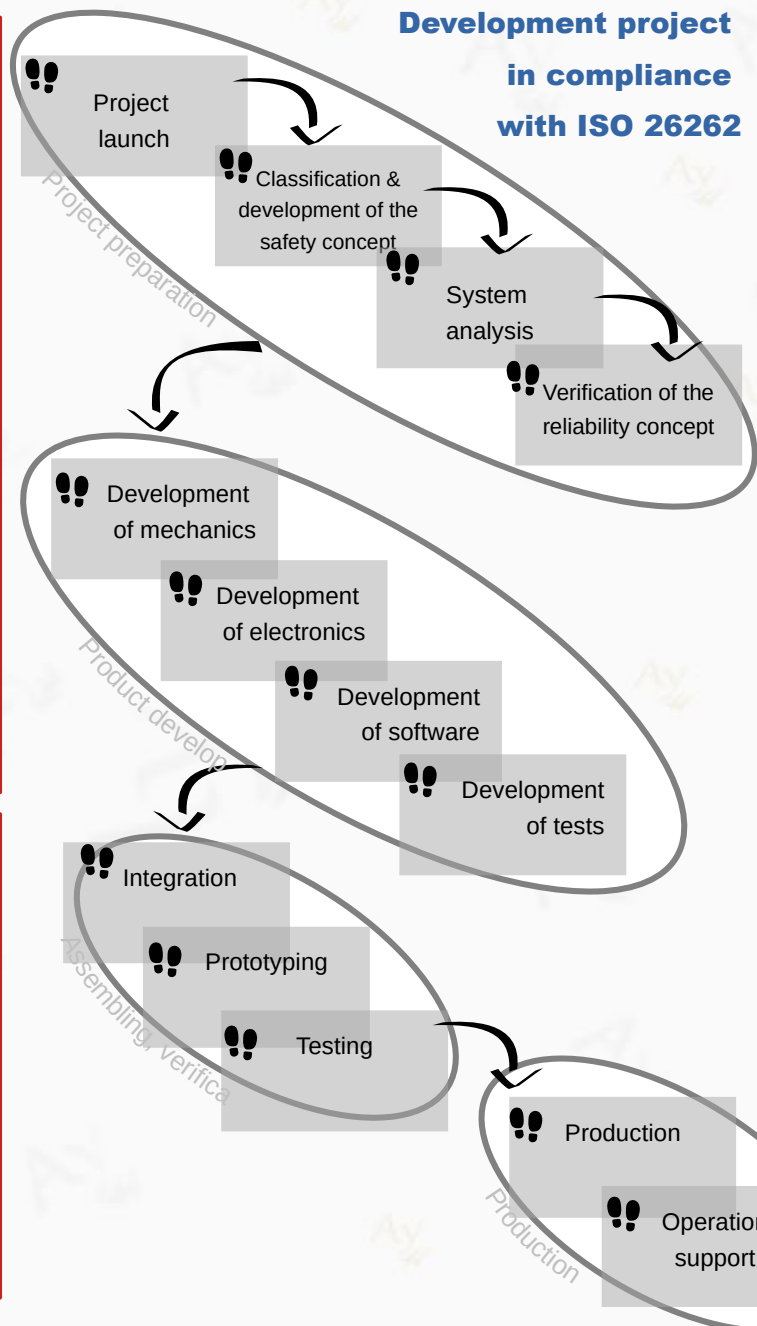- Secure information exchange with suppliers (protected portal)

Implementation of ISO 26262 / ASPICE
Learn, set the rules, start the project

Project preparation Time: 4 weeks

ISO 26262 – 2 days
Automotive SPICE – 2 days
implementation workshop

Experience
Development – minor problem
Documentation – major

Experience
New project management required
(ISO 61508 helps)

Recommended
Enterprise Architect (Sparx)
✓ Provides what is needed
✓ The market's most affordable
✓ Automatically synchronized with AyMINE

Mandatory also for HW development

Standards training for
🖉 Quality Department
🖉 Project participants

Review of development processes (HW and SW)
Review of supplier relationships

Creation/adoption of a methodology for project management in compliance with standards

System analysis training
🖉 SysML
🖉 Modelling tool

Preparing the environment for the team
Ay System setup
Ay Users, roles, qualifications
Ay System training
⊗ Space for modelling

5 day training

We provide a complete methodology and a tool

2 day training

Training 2 × ½ days

Mandatory system support for records

Requirements and analysis
Ay Evidence of requirements processing
Ay Management of requirements and relations between themi
Ay System analysis (HW and SW)

Testing
Ay Relationships between tests and requirements
Ay Testing workflow

Project management
Ay Planning
Ay Task assignment and processing
Ay Risk management
Ay Problem management
Ay Decision making

Documentation management
Ay Configuration management
Ay Versioning
Ay Document relationships

What to watch out for?
⚠ The standard cannot be met retrospectively
⚠ Efficient system support for processes is mandatory
⚠ Mandatory independent roles for test development and test design - cannot be merged
⚠ Many years after the project, detailed evidence of when who did what and that it was actually done is required
⚠ Personal responsibility for security

Development project in compliance with ISO 26262

Project preparation

- Project launch
- Classification & development of the safety concept
- System analysis
- Verification of the reliability concept

Product development

- Development of mechanics
- Development of electronics
- Development of software
- Development of tests

Assembling, verification

- Integration
- Prototyping
- Testing

Production

- Production
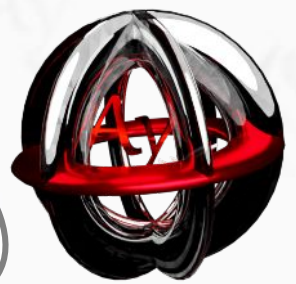- Operation support

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In how long can the project be started?
✓ ISO 26262 training is required prior to the project
✓ Safety assessment experience (FMEA) is required)
✓ The project can be started in AyMINE with the methodology within 2 weeks from the decision
✓ The entire preparation takes
✓ approx. 4 weeks; can also be done during the project

Needed roles?
👤 Security Manager
– Setting and meeting safety objectivesi
👤 Quality Manager
– Reviewing compliance with methodologies
👤 Solution Architect
– Safety analysis
– System analysis
👤 Test Manager (HW/SW)
– Verification Concepts
– Independent verification
+ professional roles

Implementation of ISO 26262 / ASPICE

Completing a project task

ISO 21434 Automotive standards
ASPICE Automotive standards
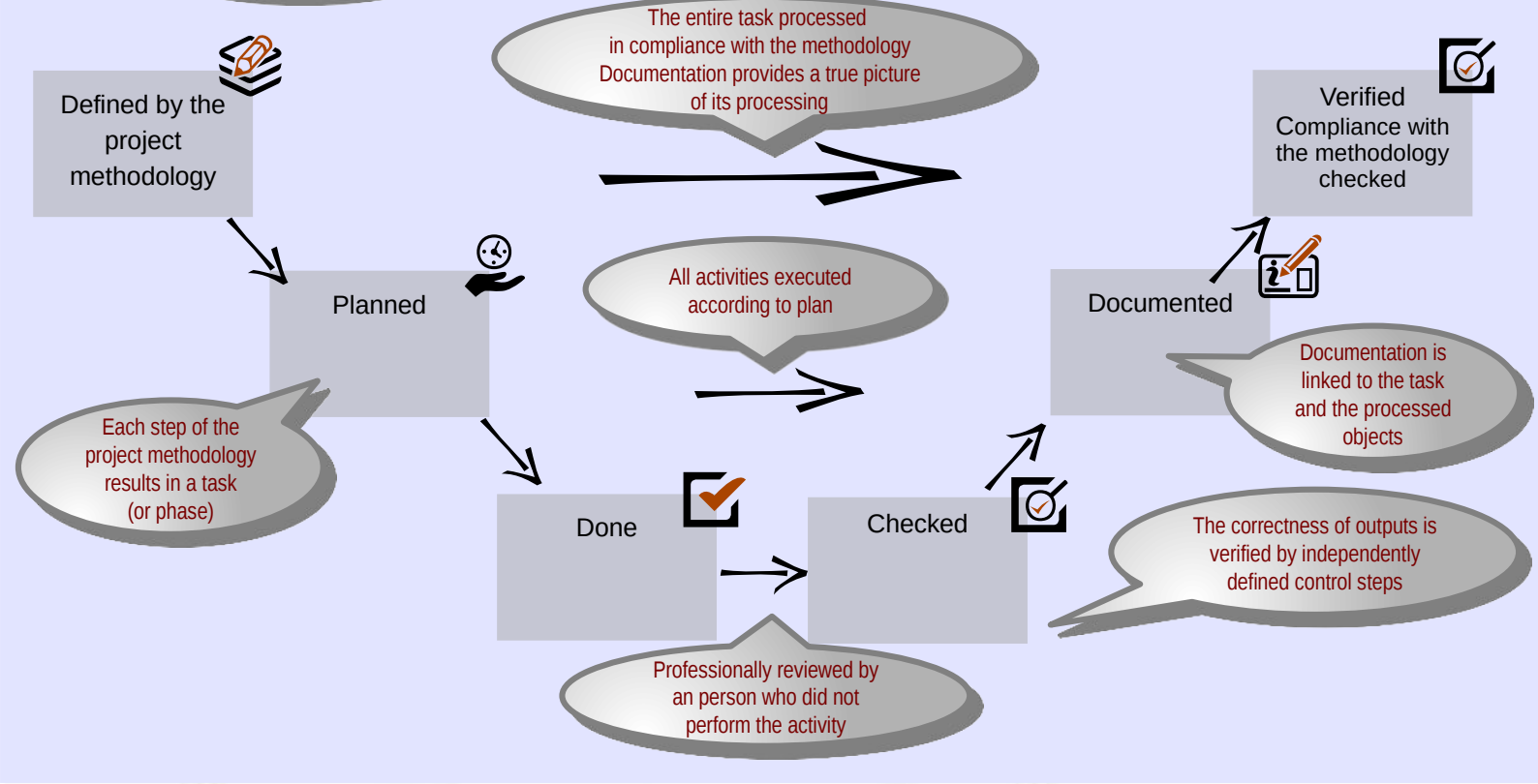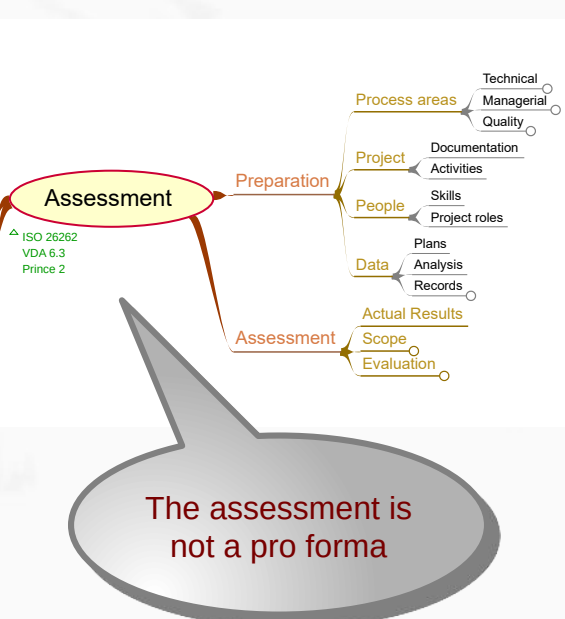**ISO 26262** Automotive standards

For each task
- ✓ When it was created
- ✓ Which items of the methodology are to be followed
- ✓ Description of the checks on its implementation
- ✓ Who was involved (+ whether qualified)
- ✓ Who handled what
- ✓ How much time was required

Standards prescribe
- ✓ Dozens of different types of records
- ✓ Hundreds of specific checks for
  - • Hardware
  - • Software
  - • Integration
  - • Documentation
  - • Management method

Defined by the project methodology

The entire task processed in compliance with the methodology Documentation provides a true picture of its processing

Verified
Compliance with the methodology checked

Planned

All activities executed according to plan

Documented

Documentation is linked to the task and the processed objects

Each step of the project methodology results in a task (or phase)

Done

Checked

The correctness of outputs is verified by independently defined control steps

Professionally reviewed by an person who did not perform the activity

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Mandatory evidence

In addition to the deliverables

- ☑ Project, security plans
- ☑ Evidence of activities performed
- ☑ Completion of all planned steps
- ☑ Documentation packages
- ☑ Minutes
- ☑ Safety analyses (FMEA)
- ☑ Planned tests, checks, test reports
- ☑ Evidence of processing of all requirements
- ☑ Evidence of documentation submitted
- ☑ Risk and problem management
- ☑ Evidence of system support for process areas
- ☑ Records of internal audits at suppliers

Assessment

- ISO 26262
  VDA 6.3
  Prince 2

Preparation
- Process areas — Technical / Managerial / Quality
- Project — Documentation / Activities
- People — Skills / Project roles
- Data — Plans / Analysis / Records

Assessment
- Actual Results — Scope / Evaluation

The assessment is not a pro forma

Assessment

What to be prepared for

Methodological basis
- 📚 ISO 33000,
- 📚 Level 3 - Defined processes
- 📚 Standards, that product development and the product itself comply with

Sources
- ☑ Submission of evidence
- ☑ Check
- ☑ Control interview
  - knowing and showing the procedures

Who does - the customer decides
- 👤 May agree to external audit (PDQM)
- 👤 Own auditors

About AyMINE

What it is and why it is worth it

What it will do for you

- ✓ **Project management compliant with standards**
  - ☞ Connecting activities to workflows - connecting project management to methodology
  - ☞ Support for project activities
  - ☞ Automatic data storage for audit
  - ☞ Documentation of staff qualifications and competencies, including history
- ✓ **Supplier portal**
  - ☞ Secure information sharing
  - ☞ Documented what information has been passed on
  - ☞ Long-term access to information for suppliers
- ✓ **Open, controlled communication**
  - ☞ Documented for audit, review and availability to other staff
  - ☞ Prevents corruption, harassment and favouritism
  - ☞ Saves time - eliminates "carbon copy" emails
  - ☞ Creates an open, auditable environment
  - ☞ Links to online public forms - easy to receive submissions in different languages
- ✓ **Efficient work management**
  - ☞ Automation of meetings, decision making
  - ☞ For people in the office, on the move, online
  - ☞ Overview of who is actually working on what
  - ☞ Connection to automatic translators
  - ☞ Documentation management and protection
- ✓ **Data protection**
  - ☞ TISAX, NIS2, GDPR, ISO 27000
  - ☞ Securely stored contacts
  - ☞ Protection against data "robbers" (WhatsApp, etc.)
  - ☞ Tasks in a separate application

Architecture

- ✓ **Open modular system**
  - ☞ Easy to maintain
  - ☞ Quickly expandable
  - ☞ Does not create vendor dependency
- ✓ **Open to suppliers**
  - ☞ Development based on open-source
  - ☞ Training and support system provided
  - ☞ Low developer requirements
    - • No knowledge of web application development needed
    - • PHP / JSONC languages are sufficient
- ✓ **Framework architecture principles + modules**
  - ☞ 100% object-oriented modern back-end
  - ☞ Consistent rights protection
    - • Logically decoupled
    - • Business functionality (back-end)
    - • Presentation and control
    - • (front-end, applications),
    - • Orchestration
    - • Appearance
    - • Language versions
    - • Documentation - each part can be independently replaced

Running in our place and yours

In the cloud under our care
- ✓ No worry about the system
- ✓ Always up to date
- ✓ Cheaper to manage and develop

At your place
- ✓ All under your control
- ✓ Can be placed behind firewalls
- ✓ Backup integration and server management
- ✗ No mobile app
- ✗ Slower updates

Eco-friendly
Where others need 5kW
AyMINE just needs 0.5kW

Minimises demands on:
- ✓ Energy consumption
- ✓ Data transmissions
- ✓ Hardware performance

Helps healthy living
- ✓ Do not print - Information in your pocket
- ✓ Efficient communication - Less stress
- ✓ - Easier cooperation online

21st century system

- ✓ **High-Tech**
  - ☞ Cooperation with academia
  - ☞ Designed to support rapid development
- ✓ **Efficient on mobile and desktop**
  - ☞ Fast even on weak mobile phones
  - ☞ Takes advantage of the possibilities of large screens
- ✓ **Web browser application**
  - ☞ Runs on any device
  - ☞ No infrastructure requirements
  - ☞ Protection from viruses

User-friendly

Ergonomy
- ✓ Keyboard shortcuts
- ✓ Ability to customize behavior
- ✓ Controls optimised
- ✓ for displays from 6" to 33"

Efficiency
- ✓ Keyboard shortcuts
- ✓ Desktop usage
- ✓ High-quality help
- ✓ Private notes
- ✓ Pockets and tags

Experience
- ✓ Fine-tuned graphics
- ✓ Light and dark design

IBM Analyst
I've never seen such a well thought out system. You've taken care of everything.

Šéfbot director
That's incredibly fast. I don't know how you do it.

Your AyMINE supplier

|pdqm|