Intland’s Automotive
ISO 26262:2018 & ASPICE Template

Automotive Product Development and Functional Safety

4/3/2020
What is a car?

- Purpose-built layers of components
- Components:
  - Mechanical
  - Hardware
  - Software
  - Others (Liquids, oils, glues, etc.)
- OEM – Tier 1 – Tier 2 - … - Tier n
How do we build a car?

1. Design & Development
2. Productization
3. Serial production
4. Servicing
Who builds a car?

- **Domain**
  - OEM
  - OEM Tier 1
  - Tier 1
  - Tier 2

- **Domain**
  - Vehicle
  - Subsystem
  - ECU
  - MCU

- **HW Scope**
- **View**

- **Suppliers**
Who is this template for?

<table>
<thead>
<tr>
<th>Domain</th>
<th>Domain</th>
<th>HW Scope</th>
<th>View</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEM</td>
<td>Vehicle</td>
<td></td>
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</tr>
</tbody>
</table>

- SYS.2 System Requirements Analysis
- SYS.3 System Architectural Design
- SYS.4 System Integration & Integration Test
- SYS.5 System Qualification Test
- SWE.1 Software Requirements Analysis
- SWE.2 Software Architectural Design
- SWE.3 Software Detailed Design & Unit Construction
- SWE.4 Software Unit Verification
- SWE.5 Software Integration & Integration Test
- SWE.6 Software Qualification Test

Suppliers

- OEM
- OEM Tier 1
- Tier 1
- Tier 2
- Suppliers

Automotive Project Template
What matters for consumers?

- My purpose/intended use of the car
- Quality characteristics necessary for intended use
- My assumed safety in the car
Why do these standards matter?

ASPICE
ISO 26262

To deliver SAFE and QUALITY design
Real-life example (SW-HW failures)
Errors are a fact of life – they were always with us, and are here to stay.

Types of errors:

- Random
- Systematic
Safety and Quality – what’s all the fuss?

Random errors

We can calculate, estimate and plan failures

Control:
Safety Analysis (DFMEA, PFMEA, FMEDA, DFA, etc. - ISO 26262)

Systematic errors

Systematic errors (SW & HW Designs)
Probability is 100%, failures can come anytime

Control:
Process control measures (ASPICE, ISO 26262)
Safety and Quality – let’s visualize that!

ISO 26262

ASPICE

Processes

ASPICE ISO 26262

Safety approaches
Safety and Quality – let’s visualize that!

ISO 26262
How to design for safety

ASPICE
How to design if safety is not a concern

How to design to be safe and useful
How to use the template?

✓ Discover it with our demo environment
✓ Set your goals
✓ Build your use case, import your data
✓ Train your team and use it
✓ Explore more and extend

✓ Come back to us with your feedback!
OK, so what does this template provide?

- Preconfigured Processes
- Bidirectional traceability references
- Ready-made reports
- Workflows

- Demo/Training data
  - AUTOSAR’s Safety Case example
OK, so how does this template support me?

- OEM, TIER 1…n Suppliers
  - Enable transparency in design processes
  - Ensure digitalized design process control
  - Manage digitalized, intelligent work products
  - Enhance supplier integration
OK, so why should I use this template?

- OEM, TIER 1…n Suppliers
  - Automate administrative tasks by digitalization
  - Increase value-added activities
  - Motivate engineers by focusing on engineering excellence
  - Enhance product quality, reduce recalls, increase customer satisfaction
OK, so why should I use this template?

- Save time
- Reduce costs
- Enhance quality
Why ASPICE?

I want less customer complaints → My customer asked

I want to deliver products faster → I want to be more profitable

I want more complex projects → I want more profitable
Main values

- Increases project efficiency and productivity
- Guarantees process quality
- Helps manage-high complexity projects
- Provides a foundation for safety engineering
- Reduces project delivery risks