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| **Input Process Output** | **Description, means, references** | **Responsible** |
| Initiation of SW development  Technical safety concept, system design specifications, item integration & testing plan | SW development activities shall be oriented towards the V-model. Suitable guidelines for coding and modelling are to be specified and complied with (see references below). Their application shall be specified.  ISO 26262‑6 5  Handbook chapter 6.1  #6\_PD\_SW\_Template | Project FS Manager |
| Documentation of SW development environment |  | Project FS Manager |
| Specification of SW safety requirements | Derivation of SW safety requirements from technical safety concept allocated to SW. Address each SW-based function whose failure could violate a safety requirement.  ISO 26262‑6 6.4  Handbook chapter 6.2  #6\_PD\_SW\_Template | Project FS Manager |
| SW safety requirements  specification |  | Project FS Manager |
| HSI specification | Specification of the HW-SW interface by detailing it on the side of SW.  ISO 26262‑6 6.4  Handbook chapter 6.2  #6\_PD\_SW\_Template | Project FS Manager |
| HSI specifications (refined) |  | Project FS Manager |
| Specification of SW component qualification | If existing SW components shall be reused, they shall be qualified for the new use case. This qualification shall be specified compliant to references below.  ISO 26262‑8 12.4.1 and 12.4.2  Handbook chapter 8.8.1 and 8.8.2  SW\_Qualification\_Plan\_Template | Project FS Manager |
| Software component documentation |  | Project FS Manager |
| Software component qualification report |  | Project FS Manager |
| Verification of SW component qualification | The SW component qualification shall be verified according to references below. This aims to ensure requirement coverage for normal operation and failure case. Furthermore, no known error is allowed to violate a safety requirement.  ISO 26262‑8 12.4.2.2 to 12.4.3  Handbook chapter 8.8.3  SW\_Qualification\_Plan\_Template | Project FS Manager |
| SW component qualification verification report |  | Project FS Manager |
| Verification of SW safety require-ments and HSI specifications | SW SReqs and refined HSI requirements are to verify according to ISO 26262‑8 clauses 8 and 9, showing compliance with technical SReqs, system design and consistency with HSI.  ISO 26262‑6 6.4.7  Handbook chapter 6.2  09\_VERIFICATION & VALIDATION  #6\_PD\_SW\_Template  Verification\_Plan\_Template | Project FS Manager |
| Software verification report |  | Project FS Manager |
| Specification of SW architectural design | SW architectural design shall realise SW SReqs. Design description and realisation shall be appropriate (see references).  ISO 26262‑6 7 Specification of SW architectural design  Handbook chapter 6.3  #6\_PD\_SW\_Template | Project FS Manager |
| **Input Process Output** | **Description, means, references** | **Responsible** |
| Software ar-chitectural design specification |  | Project FS Manager |
| SW (safety) analysis | Analysis of dependent failures and of SW safety issues shall be performed.  ISO 26262‑6 7.4  Handbook chapter 6.3.1  #6\_PD\_SW\_Template | Project FS Manager |
| Specification of safety mechanisms at SW level | Specify necessary mechanisms, based on results of safety analysis.  ISO 26262‑6 7.4  Handbook chapter 6.3.1  #6\_PD\_SW\_Template | Project FS Manager |
| SW safety analysis report |  | Project FS Manager |
| Dependent failures analysis report |  | Project FS Manager |
| Verification of SW architectural design | Demonstrate compatibility of SW architectural design to HW, adherence to design guidelines and compliance to SW safety requirements.  ISO 26262‑6 7.4.14  Handbook chapter 6.3.1  09\_VERIFICATION & VALIDATION  #6\_PD\_SW\_Template  Verification\_Plan\_Template | Project FS Manager |
| SW verification report (refined) |  | Project FS Manager |
| Specification of SW unit design and implementation | Specification of SW unit design according to SW architectural design, using appropriate notations and design principles.  ISO 26262‑6 8.4  Handbook chapter 6.4  #6\_PD\_SW\_Template | Project FS Manager |
| **Input Process Output** | **Description, means, references** | **Responsible** |
| SW unit design |  | Project FS Manager |
| SW unit implementation |  | Project FS Manager |
| Verification of SW unit design & implementation | Verify SW unit design and implementation regarding compliance to HSI, SW SReqs, design specifications, coding guidelines and compatibility with target HW.  Demonstration of SW unit compliance with SW unit design specifications and absence of undesired functionality. Use appropriate methods listed in references below to specify SW unit verification.  ISO 26262‑6 9.4  Handbook chapter 6.5  09\_VERIFICATION & VALIDATION  #6\_PD\_SW\_Template  Verification\_Plan\_Template | Project FS Manager |
| SW verification specification |  | Project FS Manager |
| SW verification report (refined) |  | Project FS Manager |
| SW integration and verification | Integration of SW elements and demonstration of realisation of SW architectural design. SW integration planning shall be performed by hierarchical description of SW architecture.  Verification shall be planned using appropriate methods and test cases as listed in references below.  ISO 26262‑6 10.4  Handbook chapter 6.6  #6\_PD\_SW\_Template  Verification\_Plan\_Template | Project FS Manager |
| **Input Process Output** | **Description, means, references** | **Responsible** |
| Embedded software |  | Project FS Manager |
| SW verification specification (refined) |  | Project FS Manager |
| Integration and verification of embedded SW | Verification of embedded SW shall provide evidence of completeness of specified functions and absence of undesired functionalities in each integration step.  ISO 26262‑6 10.4  Handbook chapter 6.6  09\_VERIFICATION & VALIDATION  #6\_PD\_SW\_Template  Verification\_Plan\_Template | Project FS Manager |
| SW verification report (refined) |  | Project FS Manager |
| Testing of embedded SW | Verification of embedded SW regarding compliance with SW safety requirements, using test environments referenced below.  ISO 26262‑6 10.  Handbook chapter 6.7  09\_VERIFICATION & VALIDATION  #6\_PD\_SW\_Template | Project FS Manager |
| SW verification specification (refined) |  | Project FS Manager |
| SW verification report (refined) |  | Project FS Manager |
| Specification of configurable software usage  In case of configurable SW is used | Specification of configuration data to ensure correct usage over entire safety life cycle.  ISO 26262‑6 Annex C C.4.1  Handbook chapter 6.8.1  #6\_PD\_SW\_Template | Project FS Manager |
| **Input Process Output** | **Description, means, references** | **Responsible** |
| Configuration data specification |  | Project FS Manager |
| Configuration data |  | Project FS Manager |
| Verification of configuration data | Verification of configuration data regarding its specified range and compatibility to other configuration data.  ISO 26262‑6 Annex C C.4.2  Handbook chapter 6.8.2  09\_VERIFICATION & VALIDATION  #6\_PD\_SW\_Template  Verification\_Plan\_Template | Project FS Manager |
| SW verification specification (refined) |  | Project FS Manager |
| SW verification report (refined) |  | Project FS Manager |
| Specification of calibration data generation | Specification of generation of calibration data shall contain working procedures, tools and verification procedures.  ISO 26262‑6 Annex C C.4.6  Handbook chapter 6.8.3  #6\_PD\_SW\_Template | Project FS Manager |
| Calibration data specification |  | Project FS Manager |
| Calibration data |  | Project FS Manager |
| **Input Process Output** | **Description, means, references** | **Responsible** |
| Verification of calibration data | Verification of calibration data regarding its specified range and compatibility to other configuration data.  ISO 26262‑6 Annex C C.4.9  Handbook chapter 6.8.4  09\_VERIFICATION & VALIDATION  #6\_PD\_SW\_Template  Verification\_Plan\_Template | Project FS Manager |
| SW verification specification (refined) |  | Project FS Manager |
| SW verification report (refined) |  | Project FS Manager |
| Calibration data protection | Measures for detection of unintended changes of calibration data shall be implemented.  ISO 26262‑6 Annex C C.4.10  Handbook chapter 6.8.5  #6\_PD\_SW\_Template | Project FS Manager |
| Software archi-tectural design specification (refined) |  | Project FS Manager |
| SW development environment documentation | The environment for development of SW being configurable and calibratable shall be documented.  ISO 26262‑6 Annex C C.4  Handbook chapter 6.8  #6\_PD\_SW\_Template | Project FS Manager |
| Documentation of the software development environment (refined) |  | Project FS Manager |

# Version overview

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| Change history | | | | | |
| Ver-sion | Author | Division | Date | Changes | Statement |
| 1 | Franz Montowski | IBH | 31.03.2020 | Document initiation |  |