Project <Project Name>

<System Name>

Software Design Description (SDD) for [TBD]

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Revision History

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| Revision | Date  (yyyy-mm-dd) | Initials | Description of Changes |
|  |  |  | You may want to put „First issue“ here for the first version of the document |
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# Introduction

[TBD – Make sure you have the correct master template (ANNAX Template for Technical Documents.dotm) correctly installed in the correct location (see hints in the master template).

Please evoke the “Document Information” dialog by pressing **SHIFT+F10** in order to enter document information like e.g. document title and document number.

This SDD template contains **explanatory hidden text**. Pressing **ALT+H** will **toggle on/off** hidden text. Please remove this paragraph as well as all hidden text in the document before or when you finalize the SDD.]

Removal of hidden text is supported by a Word macro: Pressing SHIFT+F10 will evoke a dialog. Clicking „Finalize document“ will remove all hidden text automatically.

Not all of the structure of the SDD in this template is mandatory: While sections 1 and 2 are mandatory, sections 3 and following may be renamed or restructured.

Please move/change/delete the example figure and the caption below.



Figure : [TBD - Caption of Sample Figure]

## Purpose

[I1016] S4.3: „The SDD shows how the software system will be structured to satisfy the requirements identified in the software requirements specification IEEE Std 830-1998. It is a translation of requirements into a description of the software structure, software components, interfaces, and data necessary for the implementation phase. In essence, the SDD

becomes a detailed blueprint for the implementation activity. In a complete SDD, each requirement must be traceable to one or more design entities.“

Pertaining questions from an ANNAX customer’s checklist:

1. Is the purpose of the SDD defined?
2. Is the intended audience of the SDD specified?

## Scope

[I1558], Table A.7 „Identify the software products by name, explain what the software products will and will not do, describe the application software specified, and be consistent with the SRS or other documents.“

Pertaining questions from an ANNAX customer’s checklist:

1. Is the SCI to be designed identified?
2. Is what the software product(s) will, and, if necessary will not do explained?
3. Is the application of the software described?
4. Is the SDD consistent with associated SRS document?

## Definitions, Acronyms, and Abbreviations

The following acronyms and definitions are used within this SDD.

Please add all acronyms and their definitions. Delete all acronyms not used in this document from the table before finalizing the document.

Pertaining questions from an ANNAX customer’s checklist:

1. Are all the acronyms used in this document listed?
2. Are there definitions for the terms used in this document which may not be explicitly understood by the target audience of this document, including external entities (customers, or other third party)?

Table : List of Acronyms and Definitions

| Acronym | Definition |
| --- | --- |
|  |  |
| IEEE | Institute of Electrical and Electronics Engineers |
| S | Section |
| SCI | Software Configuration Item |
| SDD | Software Design Description |
| SRS | Software Requirements Specification |
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The following terms and definitions are used within this SDD:

Table : List of Terms and Definitions

| Term | Definition |  |
| --- | --- | --- |
| Design entity | A design entity is an element (component) of a design that is structurally and functionally distinct from other elements and that is separately named and referenced [I1016], S5.2 |  |
| Design entity attribute | A design entity attribute is a named characteristic or property of a design entity. It provides a statement of fact about the entity [I1016], S5.3 |  |
| Design entity attribute | Definition |
| Dependencies | A description of the relationships of this entity with other entities [I1016], S5.3.6 |
| Function | A statement what the entity does [I1016], S5.3.4 |
| Identification | The name of the entity [I1016], S5.3.1 |
| Purpose | A description of why the entity exists [I1016], S5.3.3 |
| Subordinates | The identification of all entities composing this entity [I1016], S5.3.5 |
| Type | A description of the kind of entity [I1016], S5.3.2 |

## Document Organization

[I1558], Table A.7: „Document the software methods or representations used (e.g., Data Flow Diagrams, Structure Charts, Finite state machines, Object-Oriented Diagrams, or other design techniques).“

„Define the view(s) for the design entities and their attributes, and for each view, define the document format and specify where the design entities and their attributes are described within the

document.”

Pertaining questions from an ANNAX customer’s checklist:

1. Does this section document the software methods or representations used (such as Data Flow Diagrams, Structure Charts, Finite State Machines, Object-Oriented Diagrams, etc.)?
2. Does this section define the view(s) for the design entities and their attributes?
3. For each view, does this section define the document format and specify where the design entities and their attributes are described within the SDD?

# References

The following documents are referenced within this SDD:

Please add all documents referenced in this document. Use the format [...] for the references.

Pertaining questions from an ANNAX customer’s checklist:

1. Are all documents referenced elsewhere in the SDD listed?
2. Is each document identified by title, report number (if applicable), date, and publishing organization?

Table : List of References

| Doc ID | Document Description |
| --- | --- |
| TBD |  |
| [I1016] | IEEE Std 1016-1998 - IEEE Recommended Practice for Software Design Descriptions |
| [I1558] | IEEE Std 1558-2004 - IEEE Standard for Software Documentation for Rail Equipment and Systems |
|  |  |

# Software Design

[I1558], Table A.7:“Description of the design following the organization of views specified in 1.4. Regardless of the design view(s) presented, each entity attribute for each entity shall be present.“

## Decomposition Description

[I1016] Table 1:

„Scope: Partition of the system into design entities

Entity attributes: Identification, type, purpose, function, subordinates

Example representations: Hierarchical decomposition diagram, natural language“

Pertaining questions from an ANNAX customer’s checklist:

1. Is the SCI divided into design entities (Hierarchical Decomposition Diagram)?
2. Are all design entities adequately described concerning their purposes and their functionality?

## Dependency Description

[I1016] Table 1:

„Scope: Description of the relationships among entities and system resources

Entity attributes: Identification, type, purpose, dependencies, resources

Example representation: Structure charts, data flow diagrams, transaction diagrams“

Pertaining questions from an ANNAX customer’s checklist:

1. Is this section consistent with section “SCI Decomposition in Design Entities”?
2. Are the relationships among design entities adequately described?
3. Are the dependent design entities identified?
4. Are the couplings between design entities described?
5. Are the required resources identified?

## Interface Description

[I1016] Table 1:

„Scope: List of everything a designer, programmer, or tester needs to know to use the design entitites that make up the system

Entity attributes: Identification, function, interfaces

Example representation: Interface files, parameter tables“

Pertaining questions from an ANNAX customer’s checklist:

1. Are the internal interfaces clearly identified for all design entities?
2. Are the internal interfaces adequately described for all design entities?
3. Are the external interfaces clearly identified for all design entities?
4. Are the external interfaces adequately described for all design entities?
5. Are functional model, scenarios for use, detailed feature sets and the interaction language included?

## Detail Description

[I1016] Table 1:

„Scope: Description of the internal design details of an entity

Entity attributes: Identification, processing, data

Example representation: Flowcharts, N-S charts [Nassi-Schneiderman diagram], PDL [Page Description Language]“

Pertaining questions from an ANNAX customer’s checklist:

1. Is this section consistent with section “SCI Decomposition in Design Entities”?
2. Is the detailed design described for all design entities?
3. Is the detailed design including the identification, processing and data of each entity?
4. Is the used technique appropriate to describe the detailed design of design entities?

Attachment A: [TBD Attachment A Title]

Change the heading – or delete heading if no attachment is used.