DO Qualification Kit

Software Design Standards (SDS)

R2017a

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DO Qualification Kit: Software Design Standards (SDS)

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**Document Number: *<DocNo>***

Revision: ***<Revision>***

Project: **<*Project*>**

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| *<Name 2>*, Project Management |  | Date |
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| *<Name 3>*, Engineering |  | Date |
|  |  |  |
| *<Name 4>*, Quality Engineering |  | Date |

| Change History | | | | |
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| Rev. | Modification / Description | Date | Author | Checked |
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|  |  |  |  |  |
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# Introduction

## Purpose and Scope

This document comprises the Software Design Standards as referenced by the Software Development Plan (SDP), according to DO-178C 11.2 and DO-331 MB.11.2 for the project <*Project*>. As specified in DO-178C 11.7 and DO-331 MB.11.7, the Software Design Standards define the methods, rules, and tools to be used to develop the software architecture and low-level requirements.

Therefore, this document defines all of the following:

* Design description methods.
* Naming conventions.
* Design conditions and constaints.
* Constraints on design tools.
* Complexity restrictions.

This document provides the planning data defined in [DO-178C] Section 11.7 and [DO-331] Section MB.11.7, respectively.

You can use this SDS template as a resource when creating a SDS. If you are updating an existing SDS to support Model-Based Design (MBD), you can use this template as a reference document. Although representative of SDSs used in the industry, this SDS template has not been reviewed, approved, or accepted by any certification authority. It is the user’s responsibility to gain approval and acceptance of their SDS by the appropriate certification authority.

## Applicable Documents

Table 1 – Regulations and Standards

| ID | Document Title |
| --- | --- |
| DO-178C | *Software Considerations in Airborne Systems and Equipment Certification*.  RTCA, Inc., 2011 |
| DO-330 | *Software Tool Qualification Considerations*.  RTCA, Inc., 2011 |
| DO-331 | *Model-Based Development and Verification Supplement to DO-178C and DO-278A*.  RTCA, Inc., 2011 |
|  | *<List additional documents here, e.g. Advisory Circulars, EASA Certification Memos, etc.>* |

Table 2 – Company and Project Plans, Standards, and Documents

| Document | Document Title |
| --- | --- |
| PSAC | ***Plan for Software Aspects of Certification for*** <*Project*> |
| SDP | ***Software Development Plan for*** <*Project*> |
| SVP | ***Software Verification Plan for*** <*Project*> |
| SCMP | ***Software Configuration Management Plan for*** <*Project*> |
| SQAP | ***Software Quality Assurance Plan for*** <*Project*> |
| SRS | ***Software Requirements Standards for*** <*Project*> |
| SDS | ***Software Design Standards for*** <*Project*> This document. |
| SCS | ***Software Code Standards for*** <*Project*> |
| SMS | ***Software Model Standards for*** <*Project*> |
| SCI | ***Software Configuration Index for*** <*Project*> \* |
| SECI | ***Software Life Cycle Environment Configuration Index for*** <*Project*> \*\* |
| SAS | *Software Accomplishment Summary* ***for*** <*Project*> |
|  | *<List additional documents>* |

\* The information that defines the software configuration for the project <*Project*> is recorded in the *Software Configuration Index* (SCI).

\*\* The tool environment used for the project <*Project*> is defined in the *Software Life Cycle Environment Configuration Index* (SECI).

This initial release will identify the versions of completed documents, versions of the tools used, and the initial software configuration.

At the completion of the project, the SCIs and SECI will be updated with the final configuration information and final document version information.

If any of the plans are revised during the project, the reasons for the changes are captured and documented in the *Software Accomplishment Summary* (SAS).

## Referenced Documents

| ID | Document Title |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  | *<List additional documents here.>* |

# Design Description Methods

# Naming Conventions

# Design Conditions

## Scheduling

* <Describe.>

## Interrupts and Event-Driven Architectures

* <Describe.>

## Dynamic Tasking

* <Describe.>

## Re-Entry

* <Describe.>

## Global Data

* <Describe.>

## Exception Handling

* <Describe.>

# Design Constraints

## Recursion

* <Describe.>

## Dynamic Objects

* <Describe.>

## Aliases

* <Describe.>

## Compacted Expressions

* <Describe.>

# Constraints on Design Tools

# Complexity Restrictions

## Maximum Level of Nested Calls and Conditional Structures

* <Describe.>

## Use of Unconditional Branches

* <Describe.>

## Number of Entry/Exit Points

* <Describe.>