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Project Name

Design Document  
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Change Log

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Table of contents:

1 Introduction 4

1.1 Reference Documents 5

1.2 Applicable Documents 5

1.3 Acronyms 5

2 Summary of the project and technical requirements 5

3 Functional Description 5

3.1 Functional Architecture 5

4 Physical description 5

4.1 Physical Architecture 5

4.2 Description of elements of the physical architecture 6

4.3 Description of the interfaces 6

5 System design constraints 6

6 Design and Development Plan 6

7 Design Justification File Synthesis 6

8 Development activities and synthesis of development results 6

9 Conclusion 7

# Introduction

The purpose of the Design Document (DD) is to specify the overall system definition, system decisions justifications and any needed trade-off.

This template structures the minimum requirement of content expected to be reviewed by the ESA during the project execution.

Concerning the use of this template, please note the following:

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## Reference Documents

| Ref. | Document ID. | Title | Rev. |
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## Applicable Documents

| Ref. | Document ID. | Title | Rev. |
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## Acronyms

| **Tag** | **Description** |
| --- | --- |
| DD | Design Document |
|  |  |

# Summary of the project and technical requirements

1. *A brief description of the product and of the main technical requirements*
2. *A description of the system or product design documentation, based on the product tree and also include, or refer to, the specifications*
3. *For systems shall contain at least the technical requirements specifications of the elements in which the system is broken down*

# Functional Description

## Functional Architecture

1. *The description of the functional architecture of the system or product i.e. the arrangement of functions, their sub-functions and interfaces (internal and external), and the performance requirements to satisfy the requirements of the TS.*
2. *Present the data and their flow interchanged between the different functions, the conditions for control, and the execution sequencing for the different usage (if applicable)*

# Physical description

## Physical Architecture

1. *the description of physical architecture of the system or product i.e. the arrangement of elements, their decomposition, interfaces (internal and external), and physical constraints, which form the basis of a system or product design to satisfy the functional architecture and the technical requirements.*

## Description of elements of the physical architecture

1. *the nomenclature of the system or product,*
2. *the overall system or product drawings (if applicable),*
3. *for each element of the system, the description of the different constituents of the physical architecture,*
4. *the characteristics of the respective elements.*
5. *their configuration management identifier (e.g. hardware part number, software version number, drawings number, electrical schematics numbers).*
6. *It shall reference any documentation containing detailed technical descriptions and associated matrices to ensure overall consistency and completeness.*

## Description of the interfaces

1. *describe the physical and functional characteristics of the internal and external interfaces of the system*

# System design constraints

1. *shall present the constraints to be taken into account in the developments*

# Design and Development Plan

1. *Projects addressing development of hardware and/or software shall include a design and development plan to illustrate in a concise and conceptual manner the logical execution of the proposed development activities.*
2. *It shall define and include decision points upon which the course of the development will depend, together with the relevant quality standard and procedures, where applicable.*

# Design Justification File Synthesis

1. *Present status of the design justification in response to requirements, with emphasis on the driving requirements that have a big impact on the system design and operations, making reference to both functional and physical architecture*
2. *Present an overall system verification status synthesis, including:*

* *the list of requirements which have not been met (e.g. nonconformances), including proposed actions,*
* *the list of all critical points, and how criticalities have been or are intended to be resolved,*
* *the identification of requirements which have not been justified yet, and associated risks analysis, with emphasis on those that can have an impact at system level.*

# Development activities and synthesis of development results

1. *present the development activities (e.g. assessments, analyses, tests, and trade-offs) and the design drivers, which lead to and justify the design as defined in Functional Description and in Physical description, in line with the development approach identified in Design and Development Plan*
2. *The justification shall concern all the choice done both for the developments and for the procurements done affecting the architecture.*

# Conclusion

1. *summarize all deviations of the design with respect to the technical specifications and constraints induced by the system or product design definition.*