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Contents

[1.0 INTRODUCTION 4](#_Toc445903087)

[1.1 Purpose 4](#_Toc445903088)

[1.2 Scope 4](#_Toc445903089)

[1.3 Acronyms and Abbreviations 4](#_Toc445903090)

[1.4 External Documents 4](#_Toc445903091)

[1.5 Internal Documents 4](#_Toc445903092)

[2.0 Software Architecture 4](#_Toc445903093)

[2.1 Allocation of Requirements 4](#_Toc445903094)

[2.2 External interfaces 4](#_Toc445903095)

[2.3 Software structure 4](#_Toc445903096)

[2.4 Scheduling 4](#_Toc445903097)

[3.0 Control and Data flow 4](#_Toc445903098)

[4.0 Data dictionary 4](#_Toc445903099)

[5.0 Derived Requirements 5](#_Toc445903100)

[6.0 Detailed design 5](#_Toc445903101)

[7.0 Safety and security concerns 5](#_Toc445903102)

# INTRODUCTION

## Purpose

## Scope

## Acronyms and Abbreviations

## External Documents

## Internal Documents

# Software Architecture

## Allocation of Requirements

Description of how software requirements are allocated to processors and tasks.

## External interfaces

How and where the data is available in which format at what periodicity and how to interpret such data. What is the effect of data latency.

## Software structure

Division of functionality into lower level components and inter-relationship between them. Provide architectural / decomposition diagram.

## Scheduling

Scheduling procedures and inter-processor/inter-task communication mechanisms, including time-rigid sequencing, pre-emptive scheduling and interrupts. How the timing requirements are met.

# Control and Data flow

Diagrammatic representation of control and data flow from booting of software on power-ON to the acquisition of inputs, processing the information, producing the outputs until power-off/ shut down/ end of operation.

State diagrams/ activity diagrams/ transition charts may be used for this purpose.

# Data dictionary

With reference to external data and internal global data, the expected size and quantum of data required to be processed (min and max), what data types will be used, how and where these data will be stored. The meaning and use of data elements shall be specified. This description includes such things as static versus dynamic, whether it is to be shared by transactions, used as a control parameter, or used as a value, pointer, or link field. In addition, data information shall include a description of data validation needed before using it.

# Derived Requirements

The new details required from hardware/ user due to design process. These may not affect the externally visible functionality of the software and also, these being design dependent, may not hold good if the design is changed.

# Detailed design

Give step-by-step in structured English or graphically in a flow chart, the internal design details of each of the components in the architectural diagram (in sec 2.2). The conditions for decision making, formulas used, algorithms used, built-in robustness etc to be included in sufficient detail to enable unambiguous implementation in code. However, parts of the source code or function names directly from the source code are **not to be included**.

# Safety and security concerns

If the system contains deactivated code, a description of the means to ensure that the code

cannot be enabled in the target computer.

Rationale for those design decisions that are traceable to safety-related system requirements.

Partitioning methods and means of preventing partition breaches