**Software Architecture Design Specification**

# Introduction

< Give a brief introduction to the project and scope of the architectural design document in terms of the design elements/views that are required/covered as per guidelines (if applicable) along with the audience. Provide positioning/scope of this document in development process. For example, "Software Requirement Specification is the input of this architectural specification design, and this document becomes the input of detailed design." Also summary on organization of information will be useful. This section should be described as granularity of module to fit target product. >

# References

*< This section should provide a complete list of all documents, standards >*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Document ID** | **Document/Standards Name/Title** | **Source** | **Version No. /Release or Publication date** | **Brief Description/Section Reference** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

# Definitions and Acronyms

< Definitions of all the terms, acronyms and abbreviations required to properly interpret the architectural design is to be stated in the table. Remember to use these terms consistently across all sections of the document.>

|  |  |  |
| --- | --- | --- |
| No | Acronyms | Definition |
|  |  |  |
|  |  |  |
|  |  |  |

# System Overview

*< Describe with use of diagram to depict the various modules/components of the overall system with major components and their interfaces including fit into the end user environment. Positioning of software is different among each product. Author should consider and describe that “System” means whole product or some parts of product.*

* System Unit *Diagram*
* *Hardware/Software Partitioning*
* Hardware *Specification*
  + *MPU, I/O type, hardware interrupt level, memory type and size, communication protocol, I/O data type, performance, external device control method, etc.*
* *Positioning of the software in system>*

# Static Structure in Software

*< Give an overview of the software architecture in terms of the Program Structure. Describe both functional point of view and how to realize that features.*

* *List of Modules*
* *High Level Functional Description of the Modules*
* *External Interfaces Exposed to the External World*
  + *Feature name*
  + *Overview*
  + *The Type of Interface (such as real-time data transfer, interfacing entities, communication methods/protocols used including message formats, data transfer rates etc.)*
  + *Input(including boundary value)*
  + *Output(including boundary value)*
  + *Description in details*
  + *Data format*
  + *Remarks*
* *Etc. as applicable>*

# Behavior

*< Describe software control method and performance estimation: Author should consider description method: select some method from below and add any lists, diagrams, etc.*

* *Conditions of Resource access, Parallel Processing, Interrupts, Processing time, etc.*
* *Task Composition*
* *Timing/Sequence Diagrams*
* *Control/Data Flow Diagrams*
* *System Initialization*
* *Software/Hardware Control Method*
* *Performance Estimation*
  + *Target Condition and Process Sequence*
  + *Each process Time Estimation and Grounds*
* *Etc. as applicable>*

# High Level Design - (Modules 1…n)

*< This section should provide adequate details for detailed design and test design activities. Provide memory layout and details of each module/component. Description each of the modules/functional components in detail covering:*

* *High level Memory Map*
* *Inter-relationships/Call Structure of the Modules*
* *Functional Description*
* *External Interfaces Exposed to other Applications*
* *Internal Interfaces to Sub-systems*
* *Processing Details*
  + *Algorithms Used*
    - *Reasons for Selecting a Particular Algorithm*
  + *Parameters Passed/Output Specification*
  + *Flow Charts*
  + *Decision Tables*
  + *Timing/Sequence/Control Flow Diagrams*
* *Data Model/Data Structures*
  + *Identify and list the various data structures to be used with brief description of function, type definitions and size.*
* *Data Tables*
* *List and briefly describe the various tables used with details such as table names, size etc.*
* *Etc. as applicable>*

# Exception

*<Describe the guideline of exception. Error list (code, recovery method, etc) should be prepared as other document.*

* *Definition of Exception*
* *Rule of Importance*
* *Error code format*
* *Error handling rule*
  + *“Each function support to return error code as return value”, etc.*
* *Recovery method*
* *Etc. as applicable >*