



**<Project Name>
Hardware Architecture Document**

Version <1.0>

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Revision History

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Hardware Architecture Document

1. Introduction

*[The introduction of the **Hardware Architecture Document** should provide an overview of the entire **Hardware Architecture Document**. It should include the purpose, scope, definitions, acronyms, abbreviations, references, and overview of the **Hardware Architecture Document**.]*

1.1 Purpose

This document provides a comprehensive architectural overview of the system, using a number of different architectural views to depict different aspects of the system. It is intended to capture and convey the significant architectural decisions which have been made on the system.

*[This section defines the role or purpose of the **Hardware Architecture Document**, in the overall project documentation, and briefly describes the structure of the document. The specific audiences for the document should be identified, with an indication of how they are expected to use the document.]*

1.2 Scope

*[A brief description of what the **Hardware Architecture Document** applies to; what is affected or influenced by this document.]*

1.3 Definitions, Acronyms and Abbreviations

*[This subsection should provide the definitions of all terms, acronyms, and abbreviations required to properly interpret the **Hardware Architecture Document**. This information may be provided by reference to the project Glossary.]*

1.4 References

*[This subsection should provide a complete list of all documents referenced elsewhere in the **Hardware Architecture Document**. Each document should be identified by title, report number (if applicable), date, and publishing organization. Specify the sources from which the references can be obtained. This information may be provided by reference to an appendix or to another document.]*

1.5 Overview

*[This subsection should describe what the rest of the **Hardware Architecture Document** contains and explain how the **Hardware Architecture Document** is organized.]*

2. Architectural Representation

*[This section describes what **Hardware architecture** is for the current system, and how it is represented. Of the **Use-Case, Logical, Process, Deployment, and Implementation Views**, it enumerates the views that are necessary, and for each view, explains what types of model elements it contains.]*

3. Architectural Goals and Constraints

*[This section describes the **Hardware requirements and objectives** that have some significant impact on the architecture, for example, safety, security, privacy, use of an off-the-shelf product, portability, distribution, and reuse. It also captures the special constraints that may apply: design and implementation strategy, development tools, team structure, schedule, legacy code, and so on.]*

4. Use-Case View

[This section lists use cases or scenarios from the use-case model if they represent some significant, central functionality of the final system, or if they have a large architectural coverage - they exercise many

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architectural elements, or if they stress or illustrate a specific, delicate point of the architecture.]

4.1 Use-Case Realizations

[This section illustrates how the Hardware actually works by giving a few selected use-case (or scenario) realizations, and explains how the various design model elements contribute to their functionality.]

5. Logical View

[This section describes the architecturally significant parts of the design model, such as its decomposition into subsystems and packages. And for each significant package, its decomposition into classes and class utilities. You should introduce architecturally significant classes and describe their responsibilities, as well as a few very important relationships, operations, and attributes.]

5.1 Overview

[This subsection describes the overall decomposition of the design model in terms of its package hierarchy and layers.]

5.2 Architecturally Significant Design Packages

[For each significant package, include a subsection with its name, its brief description, and a diagram with all significant classes and packages contained within the package.

For each significant class in the package, include its name, brief description, and, optionally a description of some of its major responsibilities, operations and attributes.]

6. Process View

[This section describes the system's decomposition into lightweight processes (single threads of control) and heavyweight processes (groupings of lightweight processes). Organize the section by groups of processes that communicate or interact. Describe the main modes of communication between processes, such as message passing, interrupts, and rendezvous.]

7. Deployment View

*[This section describes one or more physical network (hardware) configurations on which the Hardware is deployed and run. At a minimum for each configuration it should indicate the physical nodes (computers, CPUs) that execute the Hardware, and their interconnections (bus, LAN, point-to-point, and so on.) Also include a mapping of the processes of the **Process View** onto the physical nodes.]*

8. Implementation View

[This section describes the overall structure of the implementation model, the decomposition of the Hardware into layers and subsystems in the implementation model, and any architecturally significant components.]

8.1 Overview

[This subsection names and defines the various layers and their contents, the rules that govern the inclusion to a given layer, and the boundaries between layers. Include a component diagram that shows the relations between layers.]

8.2 Layers

[For each layer, include a subsection with its name, an enumeration of the subsystems located in the layer, and a component diagram.]

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9. Data View (optional)

[A description of the persistent data storage perspective of the system. This section is optional if there is little or no persistent data, or the translation between the Design Model and the Data Model is trivial.]

10. Size and Performance

[A description of the major dimensioning characteristics of the Hardware that impact the architecture, as well as the target performance constraints.]

11. Quality

[A description of how the Hardware architecture contributes to all capabilities (other than functionality) of the system: extensibility, reliability, portability, and so on. If these characteristics have special significance, for example safety, security or privacy implications, they should be clearly delineated.]