**<Project Name/Acronym>**



# System Design Document

Version X.X

MM/DD/YYYY

Document Number: <document’s configuration item control number>

Contract Number: <current contract number of company maintaining document>

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## Introduction

INSTRUCTIONS: PROVIDE IDENTIFYING INFORMATION FOR THE EXISTING AND/OR PROPOSED AUTOMATED SYSTEM OR SITUATION FOR WHICH THE SYSTEM DESIGN DOCUMENT (SDD) APPLIES (E.G., THE FULL NAMES AND ACRONYMS FOR THE DEVELOPMENT PROJECT, THE EXISTING SYSTEM OR SITUATION, AND THE PROPOSED SYSTEM OR SITUATION, AS APPLICABLE), AND EXPECTED EVOLUTION OF THE DOCUMENT. ALSO DESCRIBE ANY SECURITY OR PRIVACY CONSIDERATIONS ASSOCIATED WITH USE OF THIS DOCUMENT.

THE SYSTEM DESIGN DOCUMENT (SDD) DESCRIBES HOW THE FUNCTIONAL AND NONFUNCTIONAL REQUIREMENTS RECORDED IN THE REQUIREMENTS DOCUMENT, THE PRELIMINARY USER-ORIENTED FUNCTIONAL DESIGN RECORDED IN THE HIGH LEVEL TECHNICAL DESIGN CONCEPT/ALTERNATIVES DOCUMENT, AND THE PRELIMINARY DATA DESIGN DOCUMENTED IN THE LOGICAL DATA MODEL (LDM) TRANSFORM INTO MORE TECHNICAL SYSTEM DESIGN SPECIFICATIONS FROM WHICH THE SYSTEM IS BUILT. THE SDD DOCUMENTS THE HIGH-LEVEL SYSTEM DESIGN AND THE LOW-LEVEL DETAILED DESIGN SPECIFICATIONS.

THE SDD DESCRIBES DESIGN GOALS AND CONSIDERATIONS, PROVIDES A HIGH-LEVEL OVERVIEW OF THE SYSTEM ARCHITECTURE, AND DESCRIBES THE DATA DESIGN ASSOCIATED WITH THE SYSTEM, AS WELL AS THE HUMAN-MACHINE INTERFACE AND OPERATIONAL SCENARIOS. THE HIGH-LEVEL SYSTEM DESIGN IS FURTHER DECOMPOSED INTO LOW-LEVEL DETAILED DESIGN SPECIFICATIONS FOR EACH SYSTEM COMPONENT, INCLUDING HARDWARE, INTERNAL COMMUNICATIONS, SOFTWARE, SYSTEM INTEGRITY CONTROLS, AND EXTERNAL INTERFACES. THE HIGH-LEVEL SYSTEM DESIGN SERVES AS PRIMARY INPUT TO THE PRELIMINARY DESIGN REVIEW (PDR). THE LOW-LEVEL DETAILED DESIGN SERVES AS INPUT TO THE DETAILED DESIGN REVIEW (DDR).

### 

### Purpose of the SDD

Instructions: Provide the purpose of the SDD. This document should be tailored to fit a particular project’s needs.

The SDD documents and tracks the necessary information required to effectively define architecture and system design in order to give the development team guidance on the architecture of the system to be developed. Design documents are incrementally and iteratively produced during the system development life cycle, based on the particular circumstances of the information technology (IT) project and the system development methodology used for developing the system. Its intended audience is the project manager, project team, and development team. Some portions of this document, such as the user interface (UI), may be shared with the client/user, and other stakeholders whose input/approval into the UI is needed.

## General Overview and Design Guidelines/Approach

This section describes the principles and strategies to be used as guidelines when designing and implementing the system.

### General Overview

Instructions: Briefly introduce the system context and the basic design approach or organization. Provide a brief overview of the system and software architectures and the design goals. Include the high-level context diagram(s) for the system and subsystems previously provided in the High-Level Technical Design Concept/Alternatives and/or Requirements Document, updated as necessary to reflect any changes that have been made based on more current information or understanding. If the high-level context diagram has been updated, identify the changes that were made and why.

Assumptions/Constraints/Risks

#### Assumptions

Instructions: Describe any assumptions or dependencies regarding the system, software and its use. These may concern such issues as: related software or hardware, operating systems, end-user characteristics, and possible and/or probable changes in functionality.

#### Constraints

Instructions: Describe any global limitations or constraints that have a significant impact on the design of the system’s hardware, software and/or communications, and describe the associated impact. Such constraints may be imposed by any of the following (the list is not exhaustive):

* Hardware or software environment
* End-user environment
* Availability or volatility of resources
* Standards compliance
* Interoperability requirements
* Interface/protocol requirements
* Licensing requirements
* Data repository and distribution requirements
* Security requirements (or other such regulations)
* Memory or other capacity limitations
* Performance requirements
* Network communications
* Verification and validation requirements (testing)
* Other means of addressing quality goals
* Other requirements described in the Requirements Document

#### Risks

Instructions: Describe any risks associated with the system design and proposed mitigation strategies.

### Alignment with Federal Enterprise Architecture

Instructions: Describe alignment with FEA.

## Design Considerations

Instructions: Describe issues which need to be addressed or resolved before attempting to devise a complete design solution.

Appendix A: Record of Changes

Instructions: Provide information on how the development and distribution of the SDD will be controlled and tracked. Use the table below to provide the version number, the date of the version, the author/owner of the version, and a brief description of the reason for creating the revised version.

Table 1 - Record of Changes

| Version Number | Date | Author/Owner | Description of Change |
| --- | --- | --- | --- |
| <X.X> | <MM/DD/YYYY> | CMS | <Description of Change> |
| <X.X> | <MM/DD/YYYY> | CMS | <Description of Change> |
| <X.X> | <MM/DD/YYYY> | CMS | <Descrption of Change> |

Appendix B: Acronyms

Instructions: Provide a list of acronyms and associated literal translations used within the document. List the acronyms in alphabetical order using a tabular format as depicted below.

Table 2 - Acronyms

| Acronym | Literal Translation |
| --- | --- |
| <Acronym> | <Literal Translation> |
| <Acronym> | <Literal Translation> |
| <Acronym> | <Literal Translation> |

Appendix C: Glossary

Instructions: Provide clear and concise definitions for terms used in this document that may be unfamiliar to readers of the document. Terms are to be listed in alphabetical order.

Table 3 - Glossary

| Term | Acronym | Definition |
| --- | --- | --- |
| <Term> | <Acronym> | <Definition> |
| <Term> | <Acronym> | <Definition> |
| <Term> | <Acronym> | <Definition> |

Appendix D: Referenced Documents

Instructions: Summarize the relationship of this document to other relevant documents. Provide identifying information for all documents used to arrive at and/or referenced within this document (e.g., related and/or companion documents, prerequisite documents, relevant technical documentation, etc.).

Table 4 - Referenced Documents

| Document Name | Document Location and/or URL | Issuance Date |
| --- | --- | --- |
| <Document Name> | <Document Location and/or URL> | <MM/DD/YYYY> |
| <Document Name> | <Document Location and/or URL> | <MM/DD/YYYY> |
| <Document Name> | <Document Location and/or URL> | <MM/DD/YYYY> |

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[Cite your source here.]

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