

[INSERT PROJECT NAME]

SYSTEM DESIGN DOCUMENT TEMPLATE

EXECUTIVE SPONSOR – [INSERT NAME]

BUSINESS OWNER - [INSERT NAME]

PROJECT MANAGER – [INSERT NAME]

ORIGINAL PLAN DATE: [INSERT DATE, SPELLED OUT]

REVISION DATE: [INSERT DATE, SPELLED OUT]

REVISION: [INSERT NUMBER]

REVISION HISTORY

REVISION NUMBER	DATE	COMMENT
1.0	August 14, 2007	Original DoIT PMO Document

Table of Contents

REVISION HISTORY	2
TABLE OF CONTENTS.....	3
DOCUMENT OVERVIEW	4
SCOPE	4
AUDIENCE	4
RELATED DOCUMENTATION.....	4
DOCUMENT CONVENTIONS.....	4
SYSTEM OVERVIEW.....	4
DESCRIPTION	4
SYSTEM ARCHITECTURE.....	5
<i>Software Architecture</i>	<i>5</i>
<i>Hardware Architectures</i>	<i>5</i>
HARDWARE DESIGN.....	5
HARDWARE COMPONENTS	5
<i>Computer Systems</i>	<i>5</i>
<i>Peripherals</i>	<i>5</i>
<i>Networks.....</i>	<i>6</i>
<i>Project Specific hardware items (e.g. Sensors, Transducers, Robotics, Enclosure Design).....</i>	<i>6</i>
HARDWARE INTEGRATION	6
<i>Logical Design</i>	<i>6</i>
<i>Physical Design.....</i>	<i>6</i>
<i>Recovery Design</i>	<i>6</i>
SOFTWARE DESIGN	6
SOFTWARE PACKAGES	6
<i>{Software Module #1...N}.....</i>	<i>6</i>
SOFTWARE INTEGRATION	7
DATA / DATABASE / FILES	7
DATA FLOW DIAGRAMS	7
DATABASE DESIGN.....	7
FILES	7
REGISTRY / SYSTEM PARAMETERS	7
SYSTEM INTERFACES	8
{XYZ INTERFACE}.....	8
SYSTEM PERFORMANCE.....	8
GLOSSARY / TERMINOLOGY	8

DOCUMENT OVERVIEW

This is a technical blueprint for the project.

This document has been developed by [replace with participant names] for [replace with project name] for [replace with customer name]. This document was developed from [replace with list of sources] and is intended to satisfy all the customer requirements, objectives and expectations.

SCOPE

Provide a summary of models and versions of hardware and software to which this documentation relates.

AUDIENCE

Skills required and assumptions.

RELATED DOCUMENTATION

List related documents including supplier documentation, test plans and results as appropriate for this document; List any naming standard or common business process documents to guide. List any supporting Interface Control documents. Indicate how to obtain all documents.

Other system documentation for this system should include:

DOCUMENT CONVENTIONS

Describe what diagrammatic notation has been used in this document to represent the architectural views. Use of the Unified Modeling Language (UML) is strongly encouraged. If UML is not used then please provide a detailed legend in this section for all symbols and semantics.

SYSTEM OVERVIEW

This section deals with a summary of the overall system design aspects.

DESCRIPTION

A brief functional description with key concepts: Provide a top-level description of the system and its major external interfaces to aid the reader in understanding what the

software is to accomplish. Reference appropriate graphics, illustrations, tables, etc., to show functions.

SYSTEM ARCHITECTURE

This section includes high level overview of system including references to the items covered in System Architecture Document – SAD, and interfaces to other items such as hardware, peripherals and systems integration. If the hardware design is following architectural standards and buses , these are to be included here.

SOFTWARE ARCHITECTURE

This section outlines the software architecture established for the project. Provide references to the System Architecture Document and a brief summary of the software architectures.

HARDWARE ARCHITECTURES

This section outlines the hardware architecture established for the project. The platforms, networks, peripherals and hardware integration should be summarized.

HARDWARE DESIGN

In the following sections provide detailed discussion on the design and integration aspects for each hardware component. Discuss the hardware design criteria and approach including at least the internal system hardware components, customization, environmental requirements, target location, physical dimensions, configuration parameters, integration requirements, and other potential design information.

HARDWARE COMPONENTS

Discuss the hardware design criteria and approach including hardware components make/model, customization, environmental requirements, target location, physical dimensions, configuration parameters, integration requirements, and other potential hardware design information; if different, note recovery hardware components.

COMPUTER SYSTEMS

Include all platform types, hardware standards, buses, operating systems, systems scripts and related utilities. Address availability requirements (High availability – MTTR, MTBF, Fault resilience, fault tolerance, hot standby, multiple processors, UPS). Address performance requirements (cache, memory and other special I/O ports, etc.).

PERIPHERALS

List all peripheral devices and associated components involved: Address buses, standards (such as SCSI, Fiber Channel, SAN, NAS, etc.)

NETWORKS

Describe routers, bridges, gateways and other network components. Summarize data rates that this network is capable of supporting. List all protocols used (such as FDDI, Ethernet, T1, ATM, OC12, Sonnet, DWDM optical communications interfaces, etc., as applicable to design activity.)

PROJECT SPECIFIC HARDWARE ITEMS (E.G. SENSORS, TRANSDUCERS, ROBOTICS, ENCLOSURE DESIGN)

Describe as applicable to design activity. Refer to Device Installation Manuals of Suppliers to avoid redundancy.

HARDWARE INTEGRATION

LOGICAL DESIGN

Provide a logical view of the hardware component integration including associated topology.

PHYSICAL DESIGN

Provide a detailed design view of the cabling and connectors required for providing hardware integration.

RECOVERY DESIGN

If different than Physical Design, provide a detailed design view of Recovery Hardware Integration.

SOFTWARE DESIGN

Software and integration related detailed design aspects to be included here that are not already in the SAD. Discuss all internal software components, including COTS and their configuration. Provide detailed design for all software components being built including software integration.

SOFTWARE PACKAGES

List and define all packages / modules. "Module" is synonymous with programs (libraries, executables, scripts, etc.)

{SOFTWARE MODULE #1...N}

This section may be expanded if appropriate for the project. There are multiple levels of design, both above this level (such as package dependencies) and below (such as class diagrams and associated code or code design aspects). This is where more detail could be

<Project> System Design Document

provided; If some of this information has already been captured within the Software Architecture Document, only references should be included here.

Repeat for each module. Rename appropriately. Describe each module including purpose summary of functions, language / implementation approach, execution location, data definitions (inputs / outputs, references to data defined elsewhere, parameters), references to interfaces defined elsewhere, relationship to other modules, relationship to different types of users, error handling, diagrams, control, list of source files

SOFTWARE INTEGRATION

Describe linkages that capture interactions among packages including COTS. Also include configuration and customization. For example, discuss middleware tools for OR Mapping here.

DATA / DATABASE / FILES

Include overview of Software Modules to Data / Repositories Linkages.

DATA FLOW DIAGRAMS

Provide different levels of DFDs: summary of top-level, system level (between system(s)/user/ device), for each major software module, and one-layer inside the software module.

DATABASE DESIGN

List and describe tables, fields, and entity relationships (also known as data dictionary and logical/ physical database design), schema, query language, key and indices, data management functions.

FILES

Refer to Configuration Management/Data related Templates that document the directory structure and location of all files. Those Templates provide a summary list of all files and describe each data and configuration file and their formats.

REGISTRY / SYSTEM PARAMETERS

SYSTEM INTERFACES

Define all external interactions between this system and other systems. Provide definition of the software and hardware interfaces between this system and other systems.

{XYZ INTERFACE}

Include subsystems interfaces (for development, test and production). Repeat as needed. Name each section after the interface. Include description, hardware interrupts, triggering event, message protocol (or file format) and handshaking, record definitions /data definitions, timing restrictions/frequency, queuing/buffering, error identification /handling /recovery, priority, flow-control, data transfer rate, security and capacity /volume. Include additional software interface design aspects, such as the protocols or other interfaces (e.g., EAI) related to design as applicable.

SYSTEM PERFORMANCE

Include all capacity and sizing calculations. Show how to calculate file and database sizes, system limits, and expected response times. Include reference to performance related executable architectures from System Architecture Document.

GLOSSARY / TERMINOLOGY