

System Architecture and Requirement Allocation Description for <LRU/SYSTEM Name> for <Platform Name>

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## Disclaimer:

This document is a guidance document. Applicable section / table rows may be considered. Any additional details may be added. Any not applicable section/ table rows may be deleted. The template is very general and vary with process to process followed by Development Agency. The document may be fine-tuned with the TAA for finalization.

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# SYSTEM ARCHITECTURE AND REQUIREMENTS ALLOCATION DESCRIPTION(SARAD)

**1. Purpose.** The purpose of this document is to identify the major system components and assign requirements to them. It records the high-level system design and will assist analysts in the further definition of software requirements and user procedures and will assist systems engineers in the hardware utilization planning and acquisition.

**2.** Scope. Identify the application and its functional scope. This information can be taken from the System Requirements Specification (SyRS).or Functional Requirement specification (FRS).

**3.** System Overview and Identification. This paragraph shall briefly state the purpose of the system to which this document applies. It shall describe the general nature of the system; summarize the history of system development, operation, and maintenance; identify the project sponsor, acquirer, user, developer, and support agencies; identify current and planned operating sites; and list other relevant documents.

**4.** System Architecture. This section shall describe the system architecture and present it to the extent possible in a graphical representation. For an individual system or application, a system architecture describes the physical connections, locations, and identification of key hardware and software components (both ab-initio and COTS). The system architecture will need to further detail the top level information exchanges.

Example :



Product	Status in Final	Constituent parts	General Description of the system including all the components
Name	airborne config	identification	
LRU1	Mandatory	Card1 Sw PDI	Identification of system components (hardware, software, communications) and their external interfaces. Hardware should include both client and server

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LRU2	Optional		platforms; software should include first-
LRU3	Mandatory	Hw1	level application modules, Parameter
		Sw1	Data items (PDI) and database(s).
		Sw2	
		CEH1	Indicate the card & Device in which the
			software/ CEH/ PDI/ Databases are
		Hw2	loaded.
		Sw2	
		PDI1	communications should include the
		PDI2	links to each internal and external
			interface.
		CEH2	
		CEH3	Physical locations (user and platform)
			and their related communications
			layouts.
			Systems in a given architecture to show
			relationships of interest, e.g., system-
			type interfaces, planned vs. existing
			interfaces, etc.

**5. Hardware Items Identification.** For each LRU identified for use in the describe its hardware resources (such as processors, memory, input/output devices, auxiliary storage, and communications/network equipment). Include CEH and other programmable devices (like PAL, CPLD)

**6.** Software Item(s) Identification. Identify and describe each software item, e.g., COTS packages, COTS add-ons, database(s), developed application software, PDI (configuration/calibration/characterisation/field loadable data files).

**7. Manual Operations Identification.** For requirements in FRS/ Technical Spec that requires human interaction, identify the operator(s) roles and associated HMI hardware/ software.

8. Concept of Execution. This paragraph shall describe the concept of execution among the system components. It shall present an architecture design to meet the Functional Requirements Specification (FRS) performance requirements. It shall include diagrams and descriptions showing the dynamic relationship of the components, that is, how they will interact during system operation, including, as applicable, flow of execution control, data flow, dynamically controlled sequencing, state transition diagrams, timing diagrams, priorities among components, handling of interrupts, timing/sequencing relationships, exception handling, concurrent execution, dynamic allocation/deallocation, dynamic creation/deletion of objects, processes, tasks, and other aspects of dynamic behavior.

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**9.** Rationale for Allocation of Hardware Items, Software Items, and Manual Operations. Document reasons for allocating requirements to hardware, software, CEH or manual operations, as necessary.

**10. Requirements Allocation.** This section allocates each requirement in the FRS to the system architecture components identified in this description. For software requirements, identify the software items, i.e., COTS package, COTS add-ons ("bolt-ons"), integrating software, conversion software, database, PDIs or developed application software, which must implement the requirement. Construct a 3-column table similar to that shown in the below example:

FRS/	Paragraph Title/ Brief Requirement	Allocation
Tech Spec Para.		
No.		
6.1.1	Record Funds Allocation for DWCF	SW – COTS Pkg
6.1.2	Electronically Generate Fund Authorization Documents	SW – COTS Pkg
		SW – Conversion Pkg
6141	Automated Customer Accentance	SW = COTS Pkg
0.1.1.1		
		SW – Acceptance Bolt-on
6.1.7	Electronic Certification	DFAS COE
6.1.14	Data Standardization	DFAS COE (DCD)
6.1.15	Response Time	HW Server

The union of section 5, 6 and 7 shall be completely represented in third column. FRS and Tech Spec shall be completely covered in Column 1.

### **APPENDIX A - ACRONYMS**

Describe the acronyms as they are used in the description.

### **APPENDIX B - DEFINITIONS**

Describe	the	key	terms	as	they	are	used	in	the	description.
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### **APPENDIX C - REFERENCES**

*Provide a complete list of documents referenced in the text of the description. Each reference shall contain document number, title, revision number and date.* 

**Other Life Cycle Documents:** *Other plans or task descriptions that elaborate details of this description* 

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