ESA Software Engineering Standards: Software Project Phases

UR = User Requirements Definition Phase

Problem definition phase:

Refine an idea about a task to be performed, using computing equipment, into a definition of what is expected from the computer system.

SR = Software Requirements Definition Phase

Problem analysis phase:

Analyse the statement of user requirements in the URD and produce a set of software requirements as complete, consistent and correct as possible.

AD = Architectural Design Phase

Solution phase:

Define a collection of software components and their interfaces to establish a framework for developing the software. It must cover all the requirements in the SRD.

DD = Detailed Design and Production Phase

Implementation phase:

Detail the design outlined in the ADD, and code, document and test it.

TR = Transfer Phase

Handover phase:

Install the software in the operational environment and demonstrate to the initiator and users that the software has all the capabilities described in the URD.

OM = Operations and Maintenance Phase

Enter practical use.

Ensure that the product continues to meet the real needs of the end-user.

ESA Software Engineering Standards: Software Project Documentation

Summary of Technical Documents

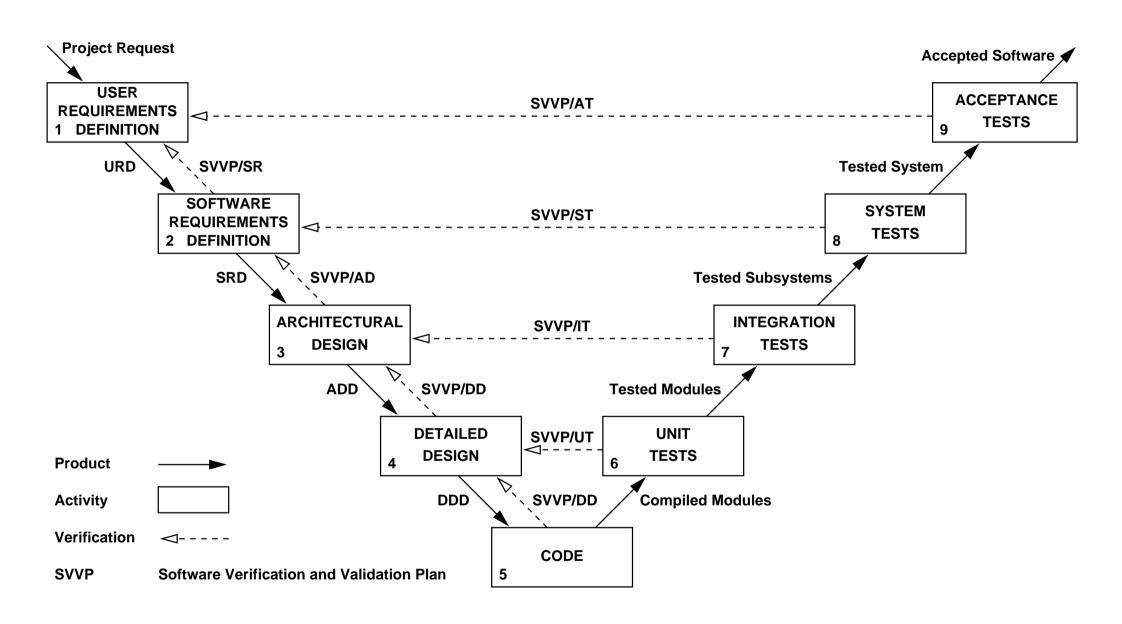
Acronym	Name	Purpose
URD	User	To state the needs of the users of the software system.
	Requirements	v
	Document	
SRD	Software	To specify the requirements of the software system from
	Requirements	the developer's point of view. The SRD incorporates the
	Document	user requirements described in the URD.
ADD	Architectural	To specify the top-level components of the software. The
	Design	ADD fulfils the software requirements stated in the SRD.
	Document	
DDD	Detailed	To specify the lower-level components of the software.
	Design	The DDD fulfils the requirements laid down in the SRD,
	Document	following the top-level design described in the DDD.
SUM	Software	To state what the software does and how to operate the
	User Manual	software.
STD	Software	To contain the checked configuration item list and SPRs,
	Transfer	SCRs, SMRs generated in the TR phase.
	Document	
PHD	Project	To record significant information about the specification,
	History	design, production, and operation of the software.
	Document	

Summary of Required Plans

Acronym	Name	Purpose				
SPMP	Software Project	To state the organization, WBS, schedule, and				
	Management Plan	budget, for each development phase.				
SCMP	Software	To state the procedures for identifying, control-				
	Configuration	ling, and recording the status of software items.				
	Management Plan					
SVVP	Software Verification	To state the procedures for testing the software				
	and Validation Plan	and for verifying that the products of each phase				
		are consistent with their inputs.				
SQAP	Software Quality	To state the procedures for assuring the quality of				
	Assurance Plan	the software products.				

ITEMS	User Requirements Definition	UR/R	SR Software Requirements Definition	SR/R	AD Architectural Design	AD/R	DD Detailed Design and Production	DD/R	TR Transfer	OM Operations and Maintenance
MAJOR ACTIVITIES	 determination of operational environment identification of user requirements 		 construction of logical model identification of software requirements 		 construction of physical model definition of major components 		 module design coding unit tests integration tests system tests 		installationprovisional acceptance tests	 final acceptance tests operations maintenance of code and documentation
DELIVERABLE ITEMS	User Requirements Document URD	→	Software Requirements Document SRD	-	Architectural Design Document ADD	-	Detailed Design Document DDD Software User Manual	→	Software Transfer Document STD	Project History Document PHD
REVIEWS		technical reviews	walkthroughs inspections	technical reviews	walkthroughs inspections	technical reviews	walkthroughs inspections	technical reviews		
MAJOR MILESTONES	approved			SRD approved		ADD approved		approved deliv		TD PHD vered delivered sional final otance acceptance

ESA Software Engineering Standards: The Software Life Cycle Model



ESA Software Engineering Standards: Life Cycle Verification Approach