

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.

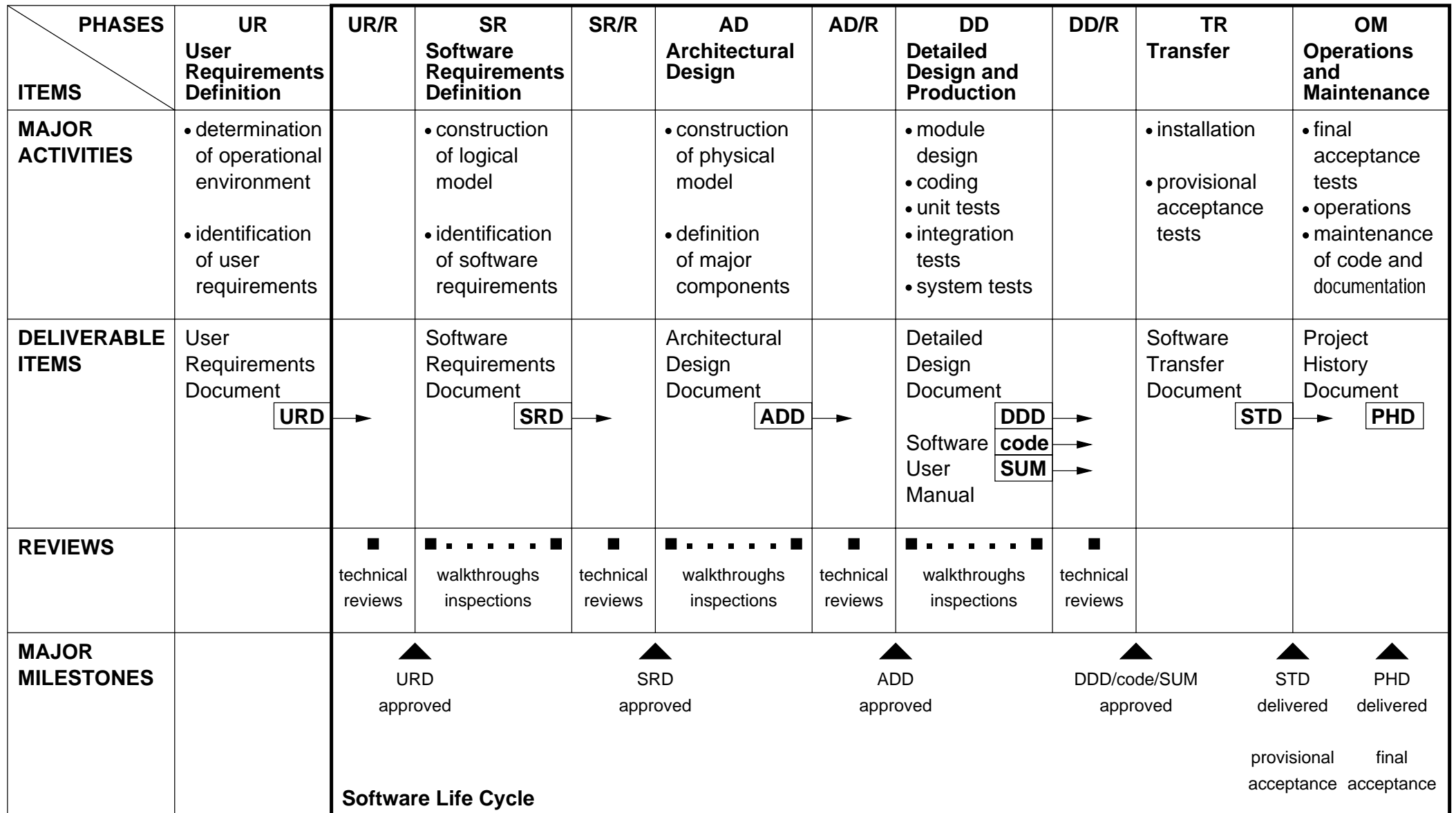
ESA Software Engineering Standards: Software Project Documentation

Summary of Technical Documents

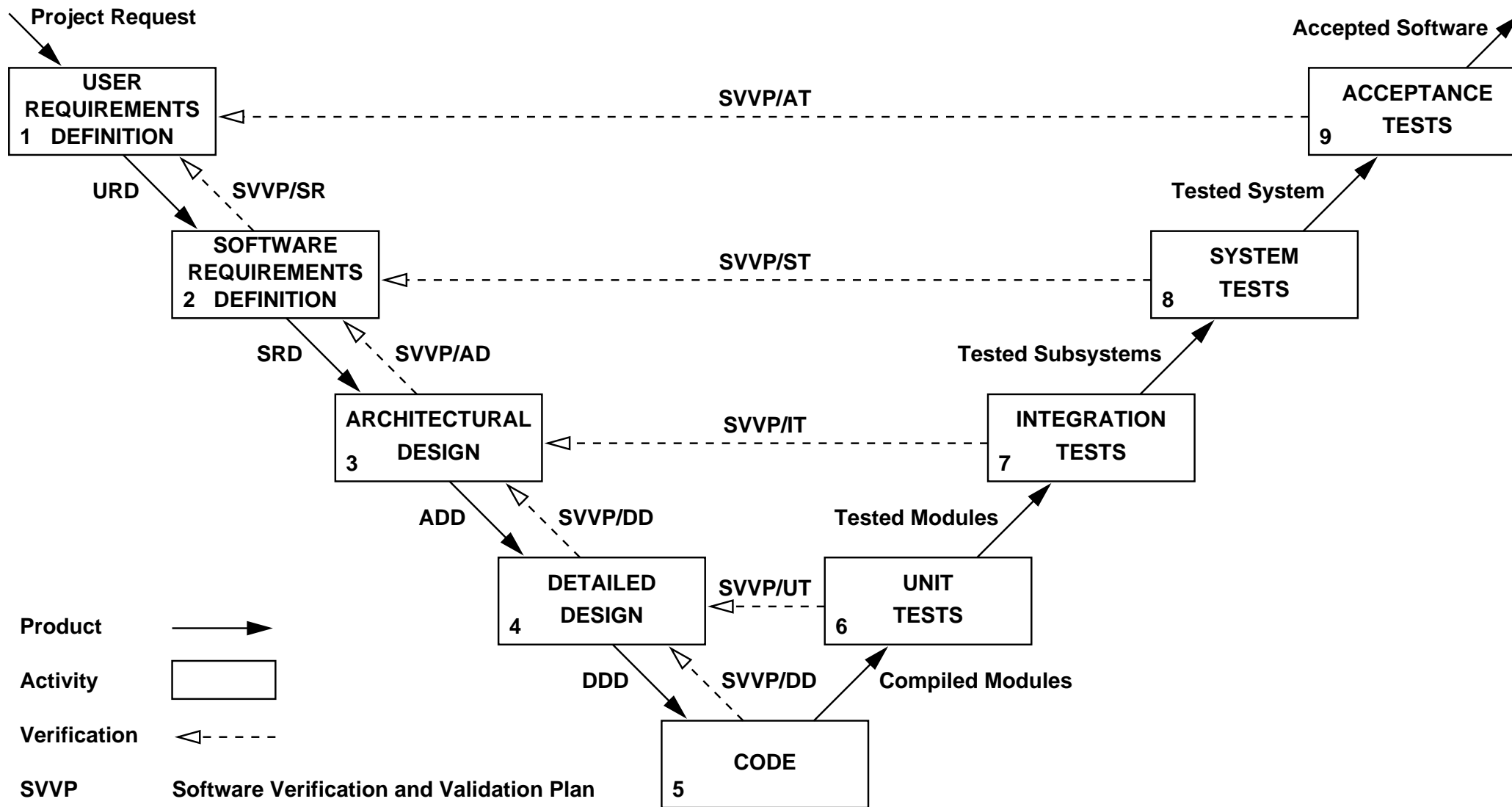
Acronym	Name	Purpose
URD	User Requirements Document	To state the needs of the users of the software system.
SRD	Software Requirements Document	To specify the requirements of the software system from the developer's point of view. The SRD incorporates the user requirements described in the URD.
ADD	Architectural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

Summary of Required Plans

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



ESA Software Engineering Standards: The Software Life Cycle Model



ESA Software Engineering Standards: Life Cycle Verification Approach