



**MIL-STD- 498 → US 12207**  
**The Road to Successful Software  
Development Projects**

**Presented by: DSDC**

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# Objectives

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**After the class the student will understand the following:**

- **The purpose of MIL-STD-498**
- **The affect of MIL-STD-498 on software development and document**
- **The advantages of using MIL-STD-498**

# Highway 498 -- The New Route



**MIL-STD-498**



**US 12207**





# Needs addressed by MIL-STD-498

- **Improve compatibility with non-waterfall development methods**
- **Decrease dependence on formal reviews and audits**
- **Decrease emphasis on preparing hard copy documents**
- **Improve compatibility with CASE tools**
- **Clarify distinction between requirements and design**

# Why Should We Take Highway 498?



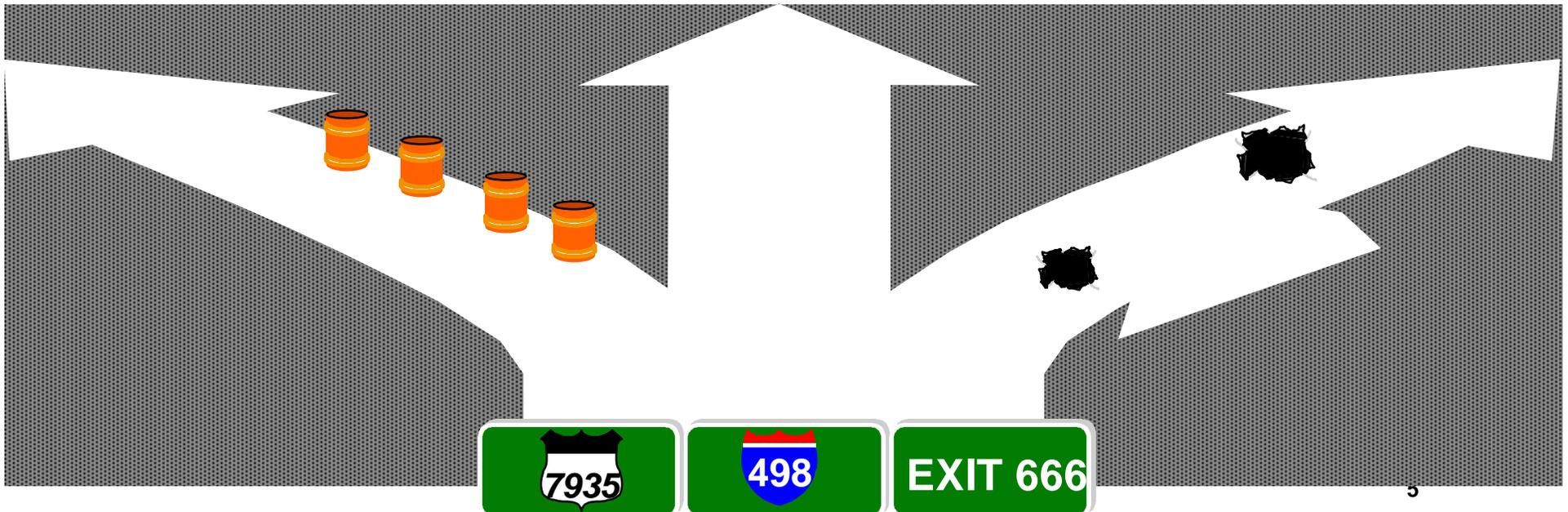
*Will get you there more efficiently (IEEE & CMM)*



*Has many Information Centers (DIDs)*



*It takes you anywhere you want to go (Tailorable)*





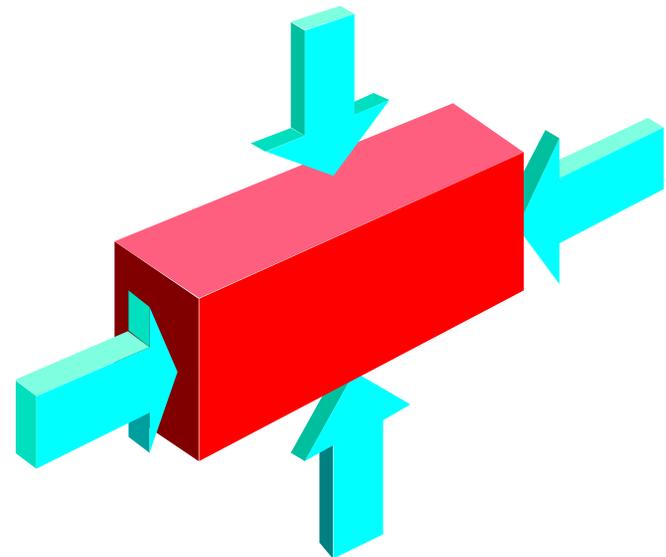
# MIL-STD-498 and the CMM

- Major activities in MIL-STD-498 correspond to many project-level activities in the Capability Maturity Model (CMM) Levels 2 & 3
- Both tell what, not how

# Types of Plans

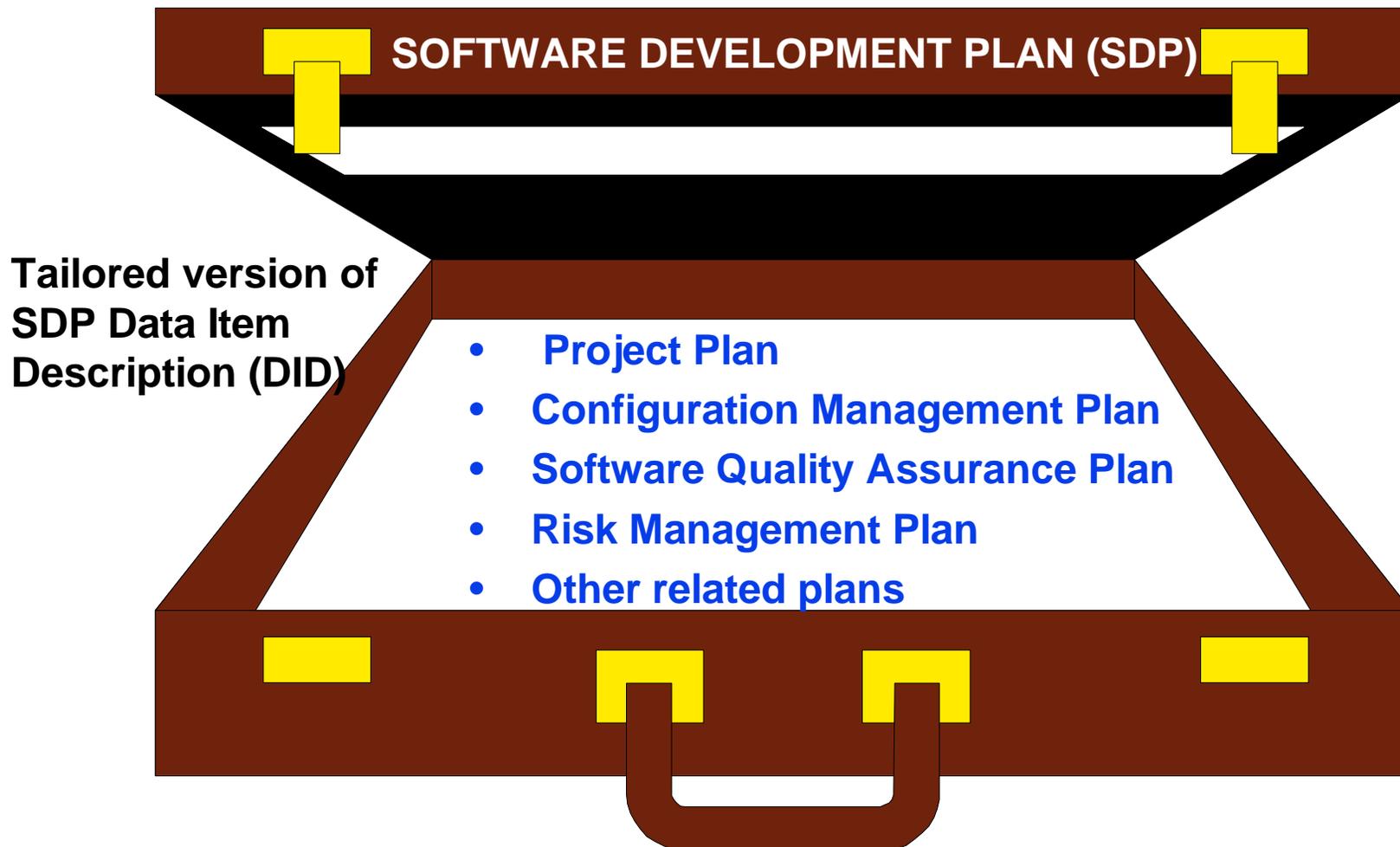
## MIL-STD-498 Requires 4 Types of Plans

- **Software Development Plan**
- **Software Test Plan**
- **Software Installation Plan**
- **Software Transition Plan**



# Planning the Trip

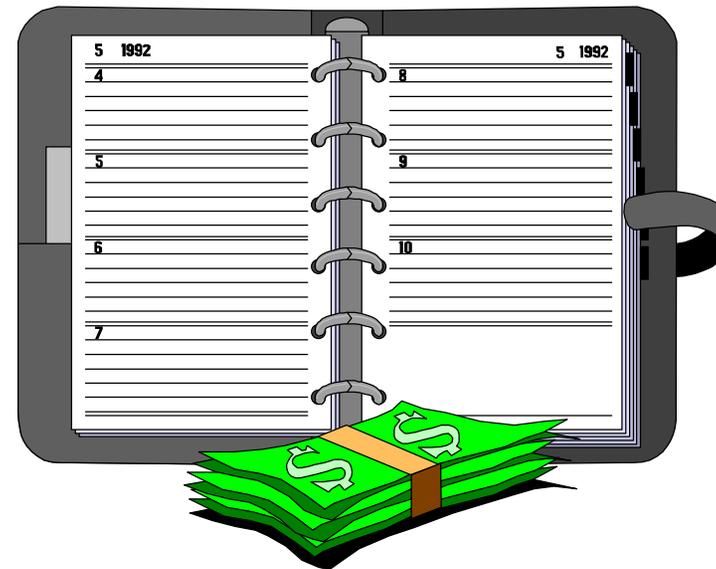
## DSDC's



# Planning the Trip

Project Plan contains Project's estimates & actuals for:

- Tasks
- Schedule
- Resources
- Cost



**Itinerary  
& Money**

# Planning the Trip

**Configuration Management Plan defines Project's CM approach for:**

- **Identification (Baselines, SDF, Libraries)**
- **Control (Change Proposals, Releases)**
- **Status Accounting**
- **Audits**

# Planning the Trip

## Software Quality Assurance Plan

- Identifies Project's processes and standards
- Identifies Project's quality reviews and audits



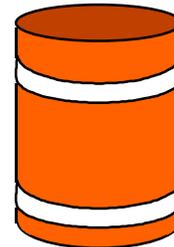
# Planning the Trip

## Risk Management Plan

- Documents risks
- Defines mitigating strategies and tasks



Reduce possibility  
of accidents



Avoid delays



Define ways to avoid  
potential problems

# Staying the Course Through the Hills and Curves

## Tailoring for variations in scope

- Choice of life cycles
- Choice of DIDs and their data
- Automation easier
- Duplication of documentation avoided



# MIL-STD-498 DIDs by Type

- PLANS

- SDP S/W Development Plan
  - SIP S/W Installation Plan
  - STrP S/W Transition Plan

- CONCEPT/REQUIREMENTS

- OCD Operational Concept Description
  - SSS System/Subsystem Specification
  - SRS S/W Requirements Specification
  - IRS Interface Requirements Specification

- DESIGN

- SSDD System/Subsystem Design Description
  - SDD S/W Design Description
  - IDD Interface Design Description
  - DBDD Database Design Description



# MIL-STD-498 DIDs (Cont'd)

- TEST

- STP S/W Test Plan
- STD S/W Test Description
- STR S/W Test Report

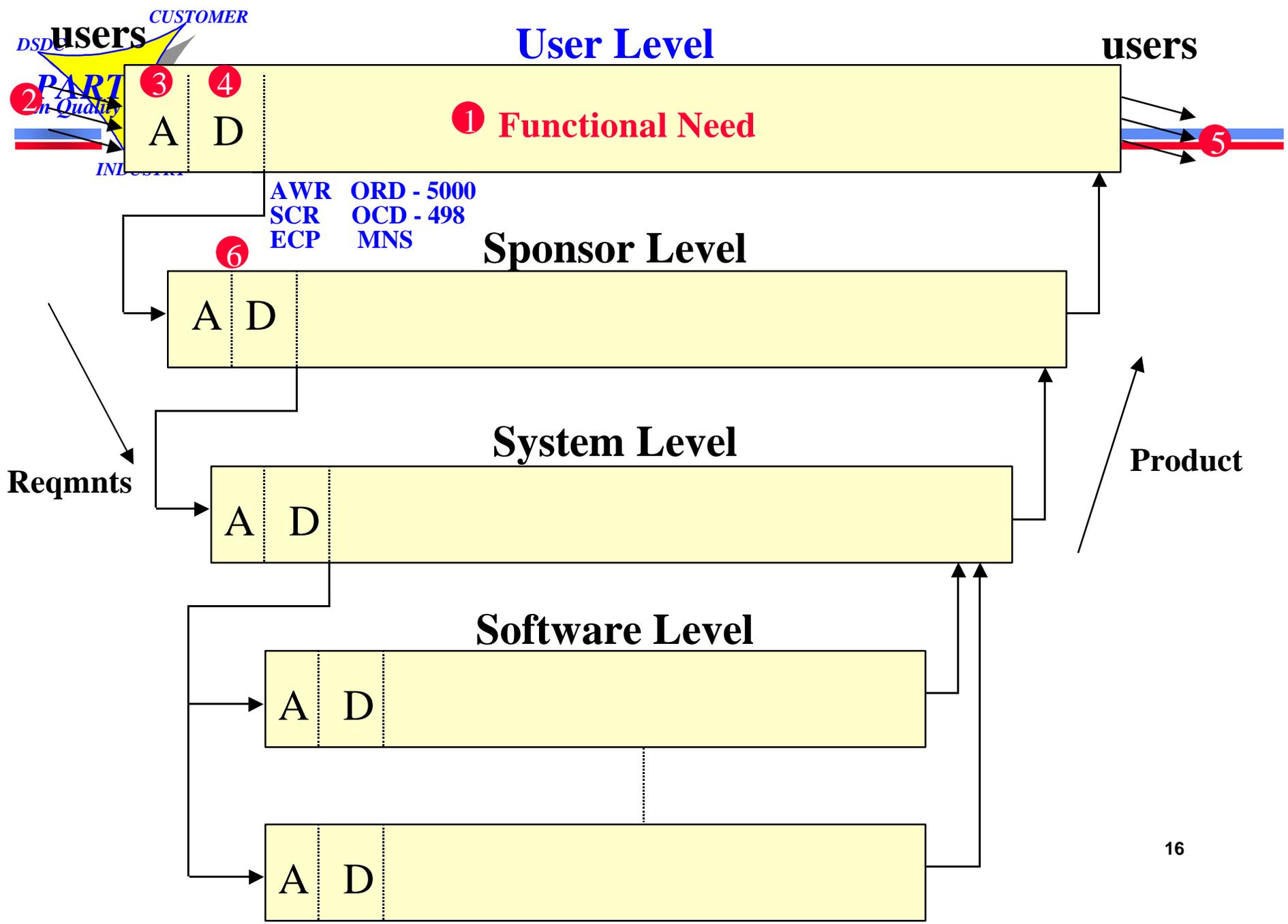
- USER/OPERATOR

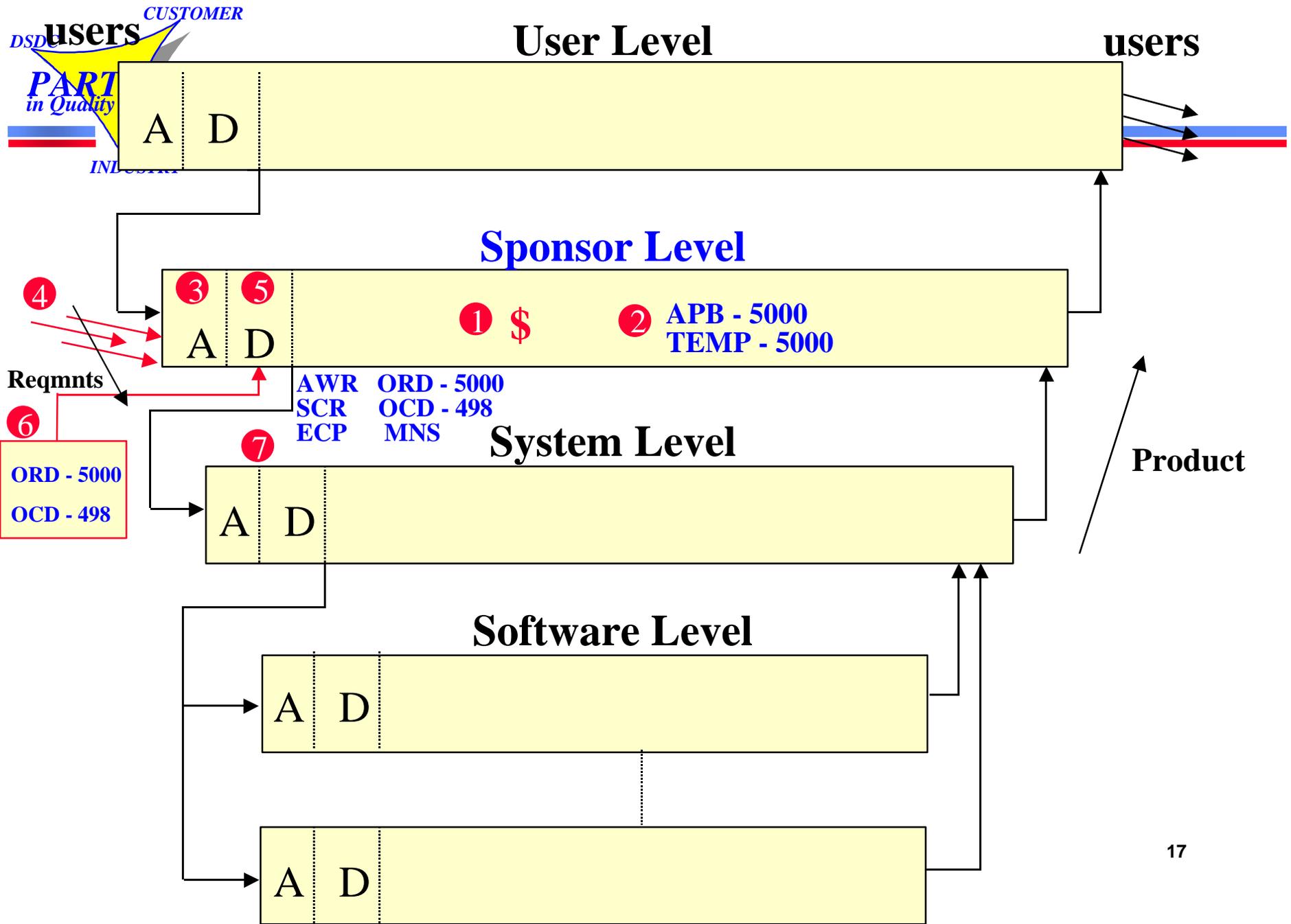
- SUM S/W User Manual
- SIOM S/W Input/Output Manual
- SCOM S/W Center Operator Manual
- COM Computer Operator Manual

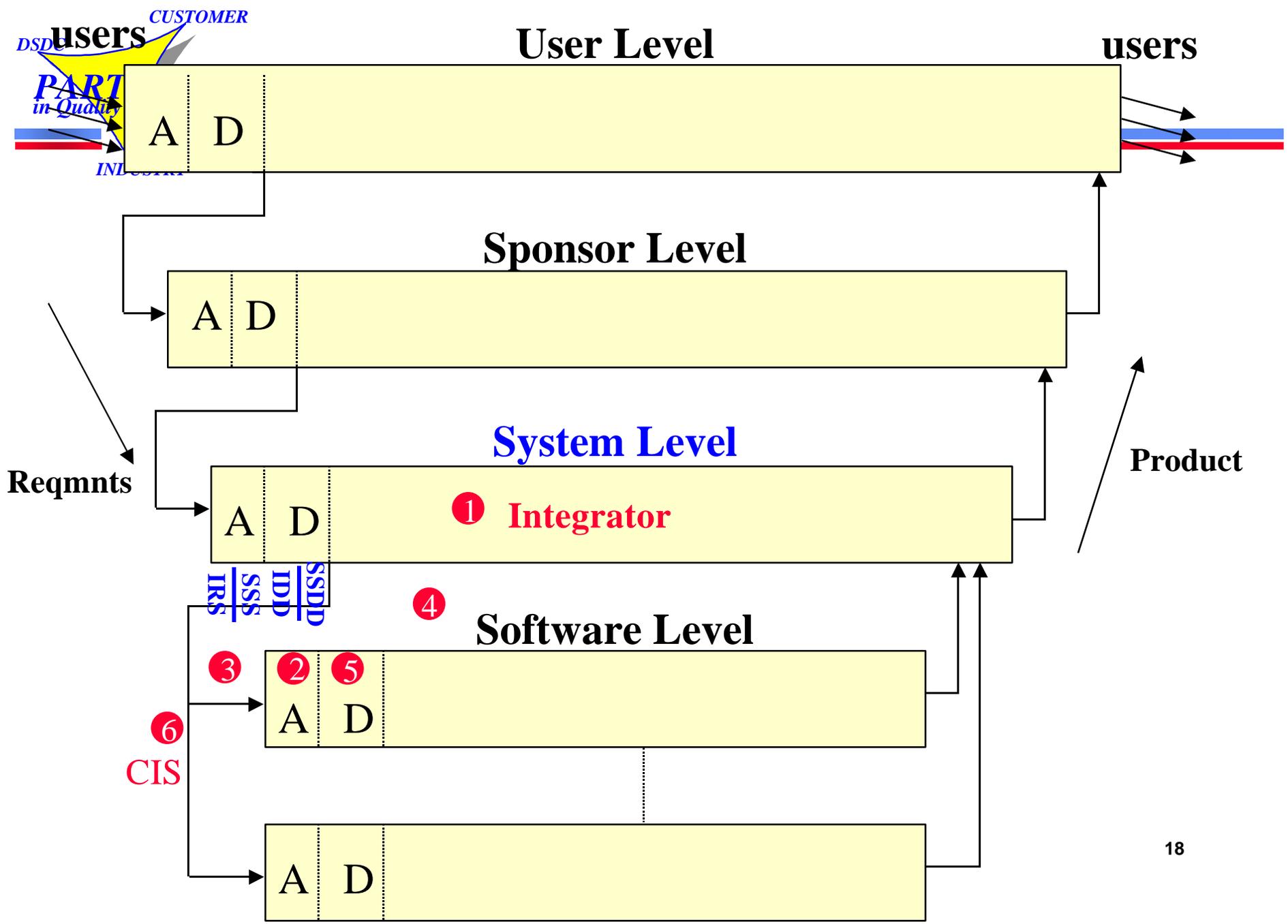
- SUPPORT

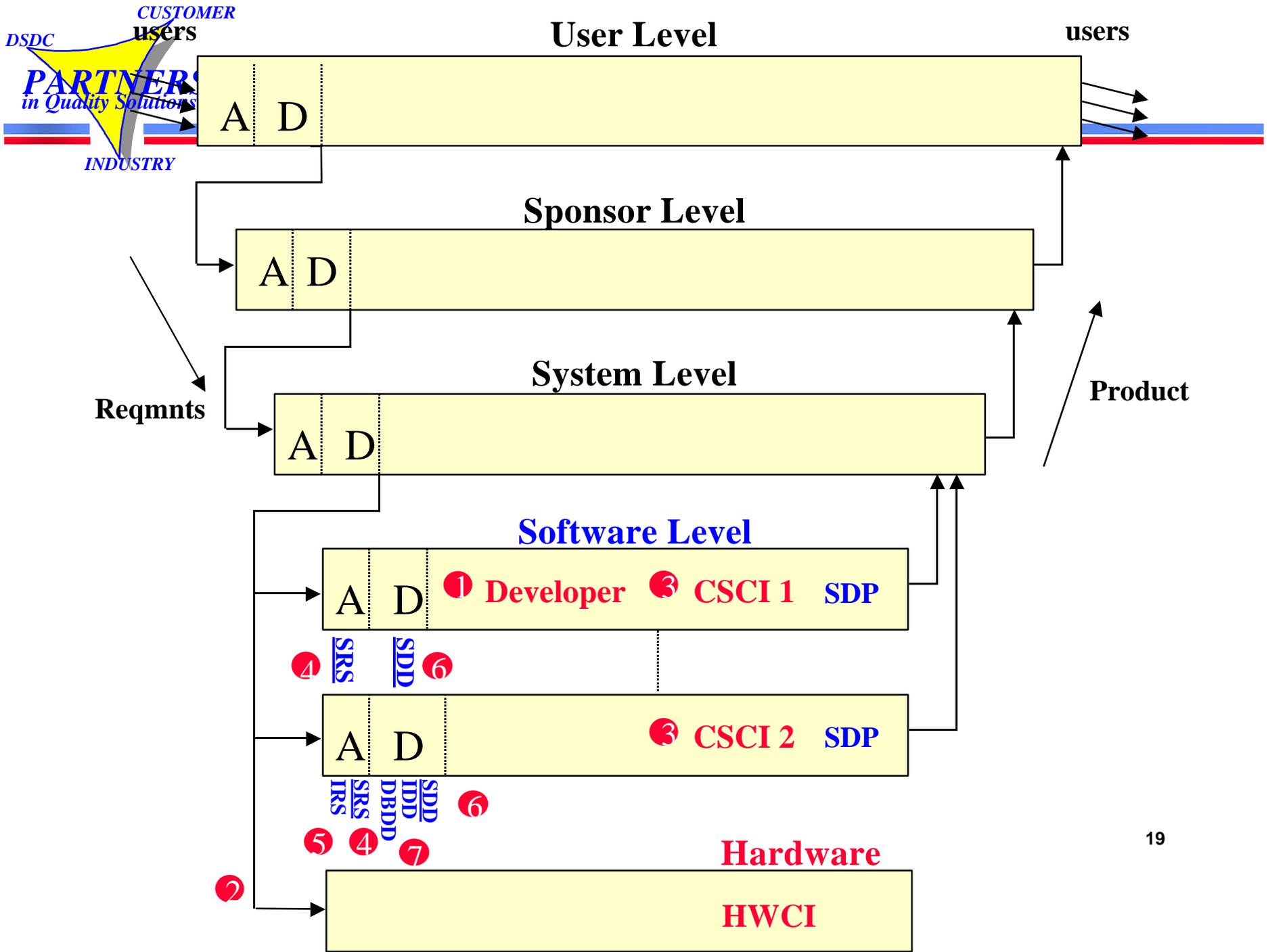
- SVD S/W Version Description
- SPS S/W Product Specification
- FSM Firmware Support Manual
- CPM Computer Programming Manual

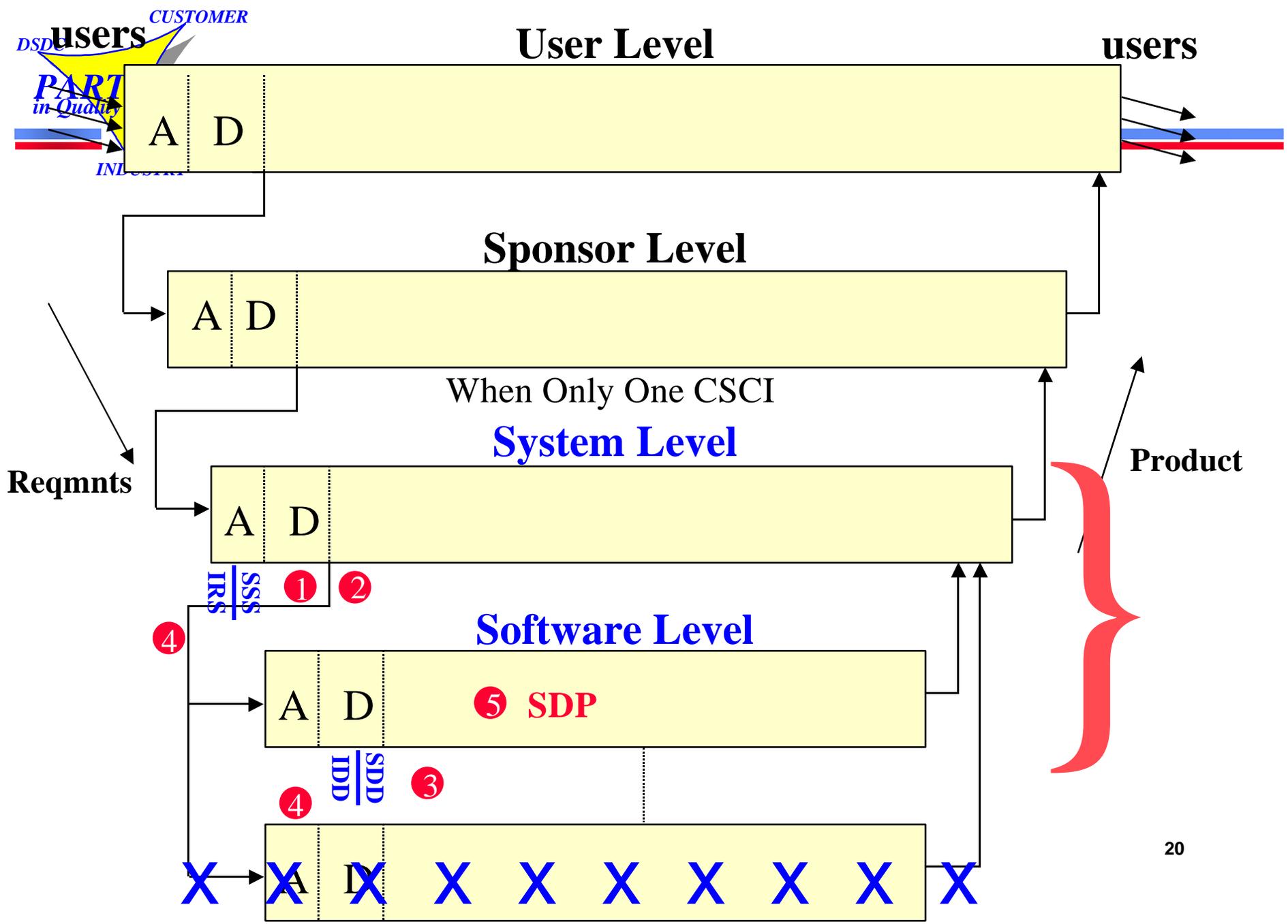


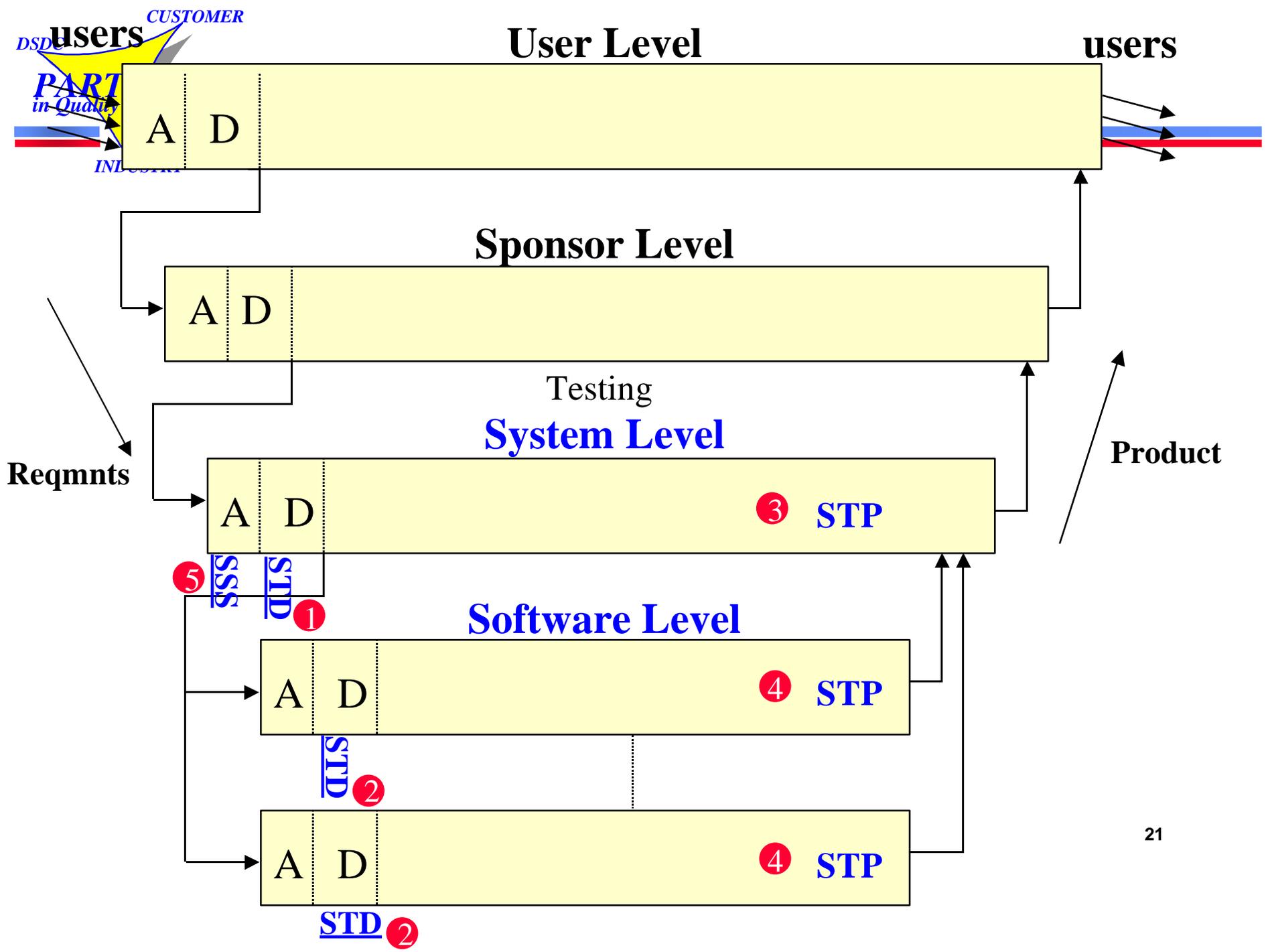












# Data Item Descriptions

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- **Are checklists of information**
- **Are tailorable to project needs and/or Customer's preference**
- **Provide requirements traceability**
- **Aid in proving requirements have been met (Qualified)**
- **Are deliverable if ordered by Customer**

# Requirements Traceability

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- **System/software requirements must be traced through each phase of the life cycle (from requirements development through test)**
- **Backward traceability to the SSS is mandatory**
- **Forward requirements traceability from the SSS is optional (expensive, but valuable)**

# Requirements Qualification

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Qualification methods to ensure that requirements have been met (SSS Section 4):

- **Demonstration**
- **Test**
- **Analysis**
- **Inspection**
- **Special qualification methods**

# MIL-STD 498 Activities

There are 19 Major MIL-STD-498 activities, e.g.:

1. Project Planning & Oversight
2. Establishing a software development environment
5. Software Requirements analysis
6. Software Design
14. Software configuration management
15. Software quality assurance
18. Joint technical and management reviews
19. Other activities
  - a. Risk management
  - b. Security and privacy
  - c. Subcontractor management

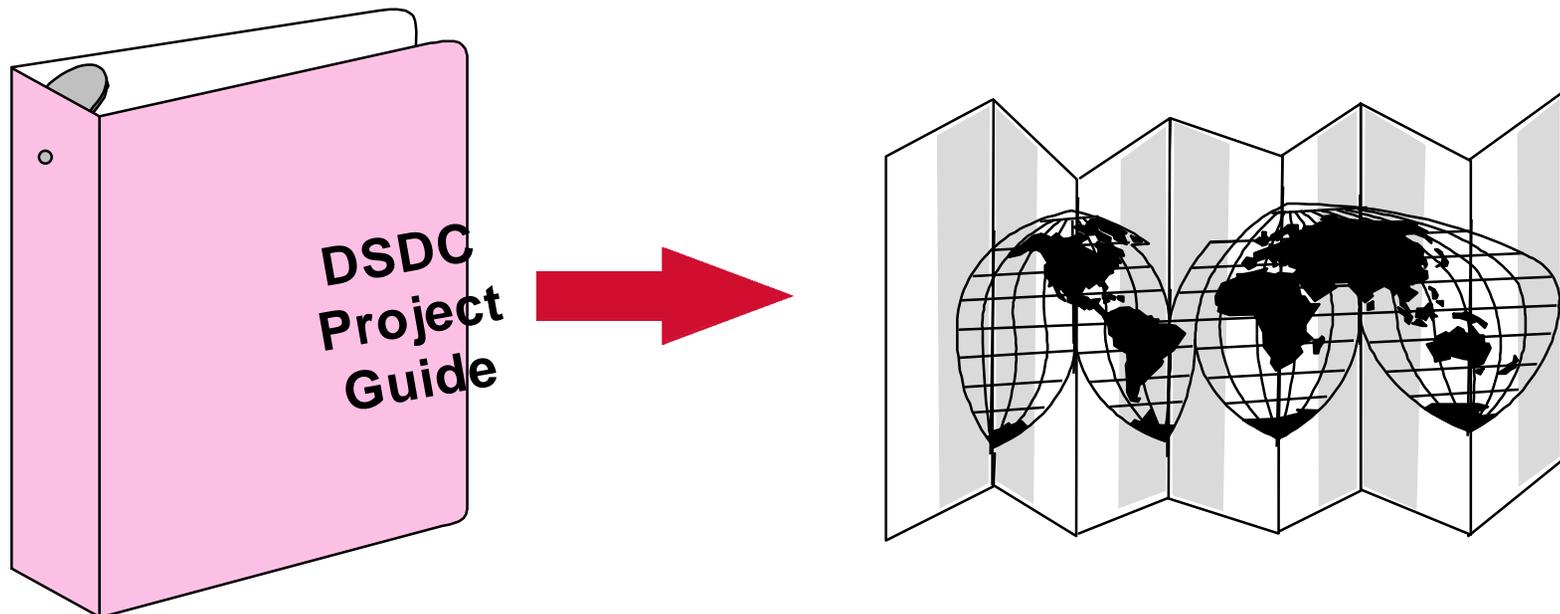
# Joint Reviews

- **More frequent, smaller, more limited in scope**
- **GOAL:** To find and fix problems through informal, conversational, technical communication between the acquirer organization and the development organization using the natural work products of the development effort.
- **Aligns with DoD 5000 Policy's Integrated Product Team (IPT) approach**

# Following the Process Map

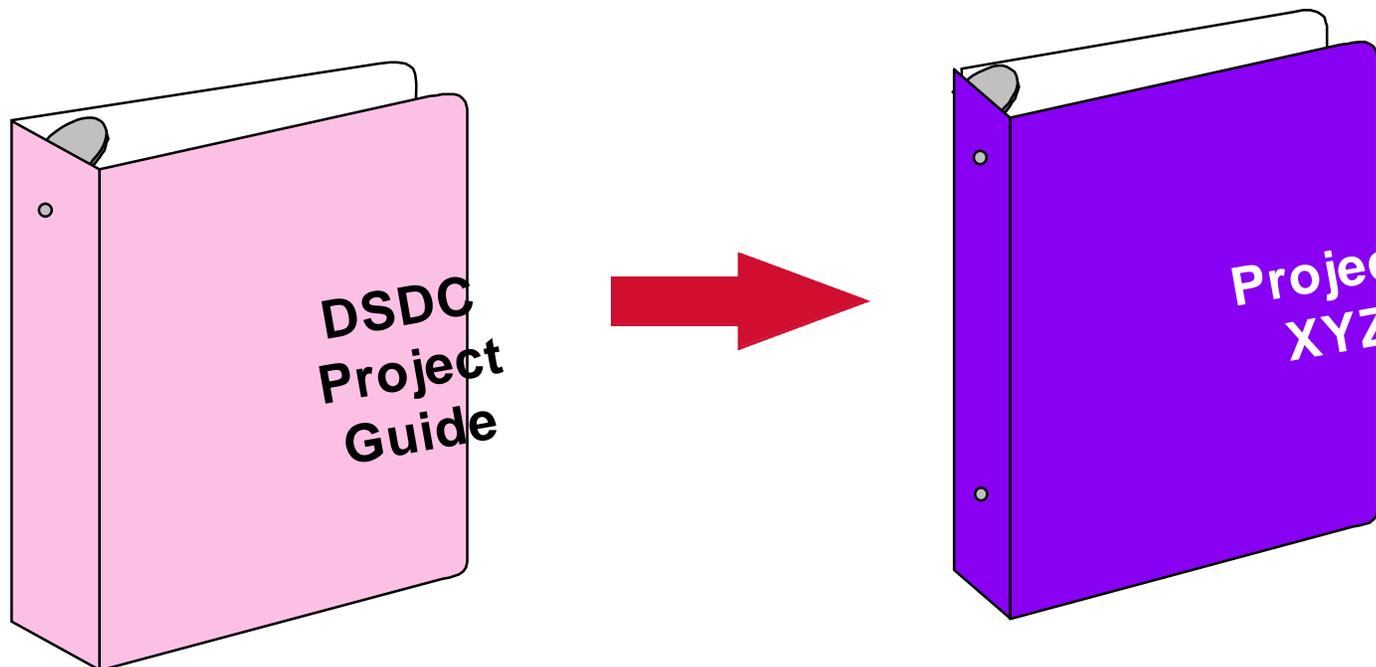
## DSDC Project Guide for Implementing CMM

- Project Management
- Configuration Management
- Software Quality Assurance
- plus Level 3 activities under development



# Following the Process Map

- Document High Level Requirements (OCD, System & Interface Specs)
- Tailor DSDC's standard process to a project-specific approach



# Reaching Our Destination: Software Effectiveness

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- Requirements



- Plans



- Process

