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MILITARY HANDBOOK

A Tailoring Guide for DOD-STD-2167A, Defense System Software Development

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FOREWORD

1. This military handbook is approved for use by all Departments and Agencies of the Department of Defense.

2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Space and Naval Warfare Systems Command, ATTN: SPAWAR - 3212, Washington, D.C. 20363-5100, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

3. DOD-STD-2167A, Defense System Software Development, contains requirements for the acquisition, development, and support of software systems. For contracting agencies to effectively apply the standard, it is important that they tailor the requirements of the standard to meet the objectives of the specific system.

4. This military handbook provides guidance for tailoring DOD-STD-2167A in accordance with policy directed in DODD 5000.43, Acquisition Streamlining, and MIL-HDBK-248, Guide for Application and Tailoring of Requirements for Defense Materiel Acquisitions.

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1. SCOPE

1.1 Purpose of the handbook. This handbook provides guidance to Government program managers and other program office staff responsible for tailoring DOD-STD-2167A for a software development or support contract. It explains key concepts of DOD-STD-2167A, presents tailoring considerations for DOD-STD-2167A, and describes how to tailor the standard and its associated Data Item Descriptions.

1.2 Application.

1.2.1 Contracts imposing DOD-STD-2167A. This handbook may be used in preparing, negotiating, or modifying any software development or support contract that imposes DOD-STD-2167A.

1.2.2 Guidance to Government. This handbook offers aid to Government agencies and should not be included in procurement packages or contracts as a contractually binding document.

1.2.3 Assistance for contractor-recommended tailoring. When contractors are asked to provide recommended tailoring of DOD-STD-2167A, this handbook may be used to assist that effort. Final tailoring decisions remain the responsibility of the Government program manager.

2. REFERENCED DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks are referenced in this handbook:

MILITARY STANDARDS

DOD-STD-2167	Defense System Software Development
DOD-STD-2168	Defense System Software Quality Program
DOD-STD-480	Configuration Control - Engineering Changes, Deviations, and Waivers
MIL-STD-481	Configuration Control - Engineering Changes, Deviations, and Waivers (Short Form)
MIL-STD-483	Configuration Management Practices for Systems, Equipment, Munitions, and Computer Programs
MIL-STD-490	Specification Practices
MIL-STD-499	Engineering Management
MIL-STD-882	System Safety Program Requirements
MIL-STD-1521	Technical Reviews and Audits for Systems, Equipments, and Computer Software

MILITARY HANDBOOKS

DOD-HDBK-248	Guide for Application and Tailoring of Requirements for Defense Materiel Acquisitions

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

2.1.2 Other Government documents, drawings, and publications.

DODD 3405.1	Computer Programming Language Policy
DODD 3405.2	Use of Ada in Weapon Systems
DODD 5000.1	Major System Acquisition
DODD 5000.2	Defense Acquisition Program Procedures

DODD 5000.29	Management of Computer Resources in Major Defense Systems
DODD 5000.43	Acquisition Streamlining
DD Form 1423	Contract Data Requirements List

(Unless otherwise indicated, copies of directives and instructions are available from the Naval Publications and Forms Center, (ATTN: Code 1052), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

2.2 Other publications. None.

3. DEFINITIONS

3.1 Acronyms used in this handbook. The acronyms used in this handbook are defined as follows:

BAFO	Best and Final Offer
CDR	Critical Design Review
CDRL	Contract Data Requirements List
CIDS	Critical Item Development Specification
COTS	Commercial Off-the-Shelf Software
CRISD	Computer Resources Integrated Support Document
CSC	Computer Software Component
CSCI	Computer Software Configuration Item
CSOM	Computer System Operator's Manual
CSU	Computer Software Unit
DAB	Defense Acquisition Board
DBDD	Data Base Design Document
DID	Data Item Description
DOD	Department of Defense
ECP	Engineering Change Proposal
FCA	Functional Configuration Audit
FSD	Full Scale Development
FSM	Firmware Support Manual
FQT	Formal Qualification Testing
GFE	Government Furnished Equipment
GFS	Government Furnished Software
HOL	High Order Language
HWCI	Hardware Configuration Item
IDD	Interface Design Document
IRS	Interface Requirements Specification
IV&V	Independent Verification and Validation
NDS	Non-Developmental Software
PCA	Physical Configuration Audit
PDR	Preliminary Design Review
PIDS	Prime Item Development Specification
RFP	Request for Proposal
SCN	Specification Change Notice

SDD	Software Design Document
SDF	Software Development File
SDL	Software Development Library
SDP	Software Development Plan
SDR	System Design Review
SOW	Statement of Work
SPM	Software Programmer's Manual
SPS	Software Product Specification
SRR	System Requirements Review
SRS	Software Requirements Specification
SSDD	System/Segment Design Document
SSR	Software Specification Review
SSS	System/Segment Specification
STD	Software Test Description
STP	Software Test Plan
STR	Software Test Report
SUM	Software User's Manual
SW	Software
TRR	Test Readiness Review
VDD	Version Description Document

3.2 Technical terms used in this handbook. All technical terms used in this handbook are defined in DOD-STD-2167A, Defense System Software Development.

4. GENERAL INFORMATION

4.1 Purpose. This section presents key concepts of DOD-STD-2167A, defines tailoring, and gives key considerations to be taken into account in tailoring DOD-STD-2167A.

4.2 Key concepts of DOD-STD-2167A. Effective tailoring of DOD-STD-2167A requires an understanding of the purpose, applicability, and other key concepts of the standard.

4.2.1 Purpose of DOD-STD-2167A.

a. Software standardization. DOD-STD-2167A is a cornerstone of the Department of Defense (DOD) software standardization effort. It contains requirements that a software development contractor may be tasked to perform during the acquisition, development, or support of software for use in Government defense systems.

b. Management standard. DOD-STD-2167A is designed to help a Government program manager manage a software development or software support project effectively. It establishes standard terminology; provides a standard set of deliverables, reviews, and audits to choose from; and defines a standard set of software management practices that may be imposed.

c. Not a design standard. DOD-STD-2167A does not impose a particular software development or design methodology on the contractor. It encourages the contractor to select the development methods best suited to the achievement of contract requirements.

4.2.2 Applicability of the standard. The applicability of DOD-STD-2167A is specified in Section 1.2 of the standard. The paragraphs below comment on that applicability.

a. Firmware. DOD-STD-2167A makes no distinction between software that will reside in a firmware device and software that will reside in other media. The requirements of the standard are applicable to software regardless of the media on which the software will reside.

b. Non-deliverable software. A software development project requires the development and use of software other than the final deliverable products. DOD-STD-2167A includes some of this software, such as test drivers, documentation generators, and editors under the headings "software engineering environment" and "software test environment." Paragraphs 4.2.2 and

4.3.2 of the standard spell out specific requirements that apply to software environments. The remaining requirements of the standard are not intended to apply to non-deliverable software.

c. Non-developmental software. Non-developmental software (NDS) is deliverable software that was not developed under the current contract. It may be reusable software from a previous contract, Government furnished software (GFS), or commercially available software. Paragraph 4.2.4 of DOD-STD-2167A specifies requirements for non-developmental software that is incorporated into a defense system.

d. Non-CSCI software development. DOD-STD-2167A may be selectively applied to any software in a defense system whether or not the software is identified as a Computer Software Configuration Item (CSCI).

4.2.3 Organization of DOD-STD-2167A.

a. Sections. DOD-STD-2167A is organized into 6 sections and 4 appendixes. Sections 1, 2, 3, 6, and Appendix A, respectively, present the scope, referenced documents, definitions, notes, and acronyms for the standard. The tailorable requirements are contained in Sections 4 and 5, augmented by mandatory Appendixes B, C, and D:

1) Section 4 presents general requirements that apply across the entire software development process.

2) Section 5 presents detailed requirements that apply to a particular software development activity within that process.

3) Appendixes B, C, and D, respectively, present requirements for coding standards, problem classification, and evaluation criteria.

b. Functional areas. A key feature of DOD-STD-2167A is that the general and detailed requirements are categorized into functional areas. Figure 1 illustrates this structure. This organization helps in finding requirements of a particular type, following the requirements for a particular functional area throughout the standard, and tailoring the standard consistently.

FUNCTIONAL AREAS	GENERAL REQUIREMENTS	DETAILED REQUIREMENTS							
		SYSTEM REQ AN/DES	S/W REQ AN	PREL DESIGN	DETAIL DESIGN	CODE, CSU TEST	CSC INT. TEST	CSCI TEST	SYSTEM INT. TEST
Software Development Management	4.1	5.1.1	5.2.1	5.3.1	5.4.1	5.5.1	5.6.1	5.7.1	5.8.1
Software Engineering	4.2	5.1.2	5.2.2	5.3.2	5.4.2	5.5.2	5.6.2	5.7.2	5.8.2
Formal Qualification Testing	4.3	5.1.3	5.2.3	5.3.3	5.4.3	5.5.3	5.6.3	5.7.3	5.8.3
Software Product Evaluations	4.4	5.1.4	5.2.4	5.3.4	5.4.4	5.5.4	5.6.4	5.7.4	5.8.4
Configuration Management	4.5	5.1.5	5.2.5	5.3.5	5.4.5	5.5.5	5.6.5	5.7.5	5.8.5
Transition To Software Support	4.6								

FIGURE 1. Structure of DOD-STD-2167A

c. Index. The standard contains an index of key terms and phrases to aid in locating requirements relevant to a given topic.

4.2.4 Features that support tailoring. DOD-STD-2167A is designed to aid tailoring. There are several key features of the standard that facilitate tailoring:

a. Each requirement is unique. There are no redundant requirements that might cause inconsistent tailoring.

b. The functional areas group related requirements so that they can be tailored consistently.

c. The standard contains requirements only. There are no Data Item Description (DID) summaries or tutorial information whose presence could confuse the tailoring process.

d. Selected requirements, referred to in this handbook as "shell requirements," are self-tailoring. The tasks are not required unless specific direction is included in the contract. Section 4.2.7 of the handbook discusses these requirements.

4.2.5 Relationship of DOD-STD-2167A to other standards.

a. Overview. DOD-STD-2167A is part of an overall family of defense system acquisition standards. Appendix B identifies these standards and describes the relationship of each standard to DOD-STD-2167A.

b. Chain referencing of standards. It is important to note that DOD-STD-2167A invokes other standards. For example, DOD-STD-2167A specifies that formal reviews and audits are to be conducted in accordance with MIL-STD-1521, Engineering Change Proposals (ECPs) are to be prepared in accordance with DOD-STD-480 or MIL-STD-481, and Specification Change Notices (SCNs) are to be prepared in accordance with MIL-STD-490. This referencing of other standards is permitted by DOD Directive 5000.43. Unless the invoking requirements are tailored out of DOD-STD-2167A, the referenced standards are automatically on contract to the extent specified in DOD-STD-2167A. If no additional requirements from these standards are to be imposed, the standards need not be called out separately in the contract.

c. Tailoring referenced standards. When the references to other standards are left in DOD-STD-2167A, the referenced standards should be reviewed for incompatibilities with

DOD-STD-2167A. Some incompatibilities are inherent in the standards. For example, the software products identified for each review in MIL-STD-1521B are not fully compatible with the software products required by DOD-STD-2167A. Appendix B identifies these differences. Other incompatibilities may be introduced during the tailoring process. For example, the System/Segment Specification (SSS) DID might be tailored in such a way that it is incompatible with MIL-STD-490A. All such incompatibilities must be resolved to have a correct, consistent Statement of Work (SOW).

4.2.6 Related Data Item Descriptions. DOD-STD-2167A is the parent standard for 16 Data Item Descriptions. Each DID specifies the required content for a particular deliverable document. Selection of appropriate DIDs and deletion of inappropriate content within those DIDs is a key part of the tailoring process. The DOD-STD-2167A DID Selection Guidelines Worksheet in Appendix B lists the DOD-STD-2167A DIDs, summarizes each DID's purpose and use, and provides selection guidelines. DIDs for the Engineering Change Proposal and Specification Change Notice are cited in DOD-STD-2167A but invoked from the referenced standards discussed in paragraph 4.2.5 of this handbook.

4.2.7 "Shell requirements". DOD-STD-2167A contains a number of requirements whose specifics must be provided in the contract. These "shell requirements" serve a three-fold purpose in the standard: (1) to remind the Government program manager to consider and resolve issues critical to software development; (2) to make the standard self-tailoring; and (3) to provide a method for incorporating applicable program specific requirements in the contract. Figure 2 presents these requirements.

4.2.8 Relationship of DOD-STD-2167A to the acquisition process. A Computer Software Configuration Item (CSCI) is rarely developed in isolation. It is usually part of the development of a defense system involving hardware and other software. A key issue motivating the development of DOD-STD-2167A was the need to place software development in a system acquisition and system engineering context. The paragraphs that follow briefly describe DOD-STD-2167A's relationship to the defense system acquisition process and identify the requirements in DOD-STD-2167A that tie the standard to the system engineering process.

DOD-STD-2167A Paragraph	Summary of Requirement
4.1.2	Conduct or support formal reviews and audits as required by the contract.
4.1.5	Comply with the security requirements specified in the contract.
4.1.7	Interface with the Independent Validation & Verification agent as specified in the contract.
4.2.2	Establish a software engineering environment that complies with the security requirements of the contract.
4.2.4	Ensure that non-developmental software, if used, complies with the data rights specified in the contract.
4.2.7	Use the high order language specified in the contract.
4.2.10	Analyze and enforce the processing resource and reserve requirements identified in the contract.
4.3.2	Establish a software test environment that complies with the security requirements of the contract.
4.5.1	Conduct configuration identification in accordance with the identification scheme identified in the contract.
4.5.5	Prepare Engineering Change Proposals in accordance with DOD-STD-480 or MIL-STD-481 as specified in the contract.
4.6.1	Produce code that can be regenerated and maintained on a computer system specified by the contracting agency.
4.6.3	Provide training and continued support to the contracting agency's support activity as specified in the contract.
5.1.1.1	Support the System Requirements Review (SRR) as specified in the contract.
5.1.1.2	Support the System Design Review (SDR) as specified in the contract.

FIGURE 2. "Shell Requirements"

a. System acquisition and the DOD Acquisition Process. DOD Directives 5000.1, 5000.2, and 5000.29 establish the DOD Acquisition Process and define the policy for management and control of computer resources. Figure 3 illustrates this process. The process consists of phases divided by decision points or milestones that mark system transition from one acquisition phase to the next. Entry into each successive phase depends upon a demonstration that the objectives for the current phase have been met and that continuation of the program is justified.

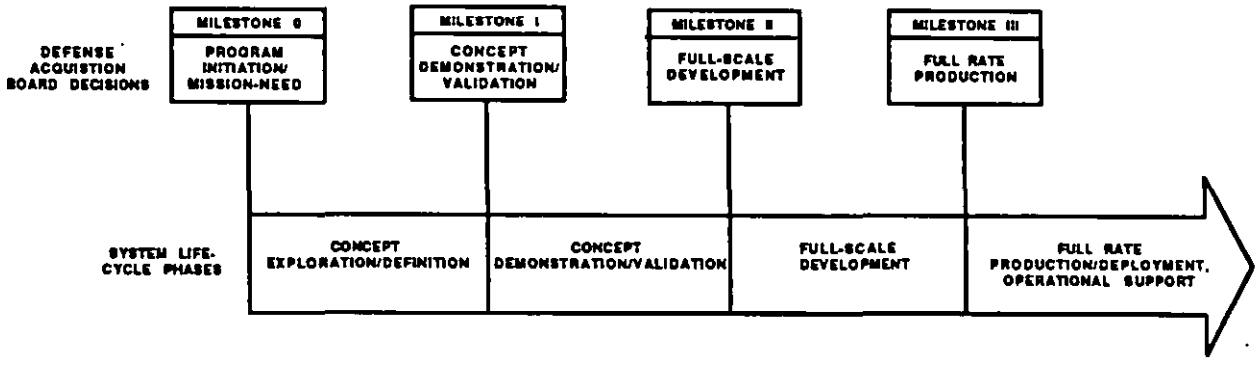

FIGURE 3. Defense system acquisition process

b. Relationship of software to the system acquisition process. Software may be developed in any system acquisition phase. It is important that the tailoring performed in a given phase be consistent with both the software and system acquisition objectives for that phase. Further guidance on this issue is provided in section 4.4.1 of the handbook.

c. Relationship of DOD-STD-2167A to MIL-STD-499. MIL-STD-499, Engineering Management, is often used as the system engineering standard for defense systems. Section 1.2.1 of DOD-STD-2167A states that DOD-STD-2167A should be used in conjunction with MIL-STD-499. This statement in DOD-STD-2167A is meant to place software development into a system engineering context and establish that software development objectives should be related to system development objectives.

d. DOD-STD-2167A requirements for system analysis/design. Section 5.1 of DOD-STD-2167A specifies the software developer's role in system analysis and design. It contains requirements to analyze the preliminary system specification to determine whether requirements are complete and consistent, participate in allocating system requirements to hardware, software, and manual operations, prepare preliminary software requirements specifications, and participate in system-level requirement and design reviews. These requirements ensure that software is taken into

consideration during analysis and design of the system and that software requirements are developed with system requirements and design in mind.

e. DOD-STD-2167A requirements for system integration and testing. Section 5.8 of DOD-STD-2167A specifies the software developer's role in system-level integration and testing. It contains requirements to support the planning for system-level testing, support the testing itself, support post-test analysis and reporting, make all required changes to the software, and support configuration audits following the testing. These requirements ensure that the software developer is involved in system integration and testing and that the software development is not complete until the software operates successfully in the system.

4.2.9 Flexibility of DOD-STD-2167A. A key issue in the development of DOD-STD-2167A was ensuring contractor flexibility in meeting contract requirements. The paragraphs that follow discuss the relationship of DOD-STD-2167A to software development models, development methodologies, and programming languages.

a. Compatibility with software development models. A software development model is an idealized representation of the software development process. There are many different development models, incorporating different activities, performed in differing sequences, and allowing differing amounts of overlap and recursion. DOD-STD-2167A is designed to be compatible with any software development model. It specifically avoids the word "phase," which might suggest sequential development. Instead, the standard specifies a set of activities that must occur sometime during software development, and specifically states in paragraph 4.1.1 that the software development activities "may overlap and may be applied iteratively or recursively." It is important in evaluating proposals to be open to many different models. The order in which the required activities are performed and the degree of overlap and recursion are to be proposed by the contractor in a Software Development Plan (SDP) along with a schedule for reviews and audits that meets Government program management oversight requirements. Note that premature scheduling of reviews and audits by the Government can constrain the development model proposed. It is recommended that reviews and audits be adjusted after the contractor and the contractor's proposed development model are selected.

b. Compatibility with software development methodologies. A software development methodology is a collection of methods used to develop software. DOD-STD-2167A is designed to be compatible with any software development methodology. The standard contains no explicit or implied default methodology, and contractor flexibility is encouraged. To underline this

approach, the Foreword of the standard states that "the standard is not intended to specify or discourage the use of any particular software development method." The only constraint imposed is in paragraph 4.2.1, which states that the contractor must use systematic, well-documented software development methods that support the formal reviews and audits required by the contract. It is important to be open to many different software development methodologies. The caution given in the preceding paragraph about premature scheduling of reviews and audits also applies here.

c. Language independence. DOD-STD-2167A is meant to be compatible with any programming language. Rather than imposing coding standards that favor or preclude a given language, it requires the contractor to propose coding standards for the selected language in the SDP. Requirements concerning the topics to be covered in coding standards are given in Appendix B of DOD-STD-2167A. The standard requires the contractor to use the high order language(s) (HOLs) specified in the contract, or, if no language is specified, to obtain contracting agency permission prior to using a particular language. No other language-related requirements are given.

d. Scheduling reviews and audits. The software development process used by the contractor must be compatible with the formal reviews and audits specified in the contract. The purpose of these reviews and audits is to assure the Government program manager that software development is progressing in accordance with overall system acquisition objectives and schedules. It is essential that the Government program manager balance the requirements for sound system management with contractor proposed development models, methodologies, and schedules proposed in the SDP. The scheduling of audits and reviews should reflect an agreed upon schedule that allows the contractor the greatest amount of flexibility commensurate with overall Government program management oversight requirements.

4.2.10 Emphasis on supportability. Most defense systems are used for ten, twenty, or more years after they are delivered. During that time, they may be continually revised to correct problems, to respond to changing requirements, missions, and threats, and to adapt to new equipment. Associated software change is called software support. Supportability requirements for long-term system support efforts can be extensive. Support is often the subject of a separate contract. An important concept in DOD-STD-2167A is that preparation for software support must take place during system development. Recommended actions on the part of the Government program manager are listed below.

a. Software user and support participation. Include the software user and software support communities in requirements definition, in contract coordination, in formal reviews and audits, and in other activities throughout the software development process. Review the life-cycle support document to help tailor DOD-STD-2167A.

b. Identify necessary deliverables. Work closely with the software support personnel to determine what elements of the contractor's software engineering and software test environment should be delivered and what other contractor products and activities are needed to prepare for software support.

c. Review deliverables. Require delivery of draft user and software support documentation early enough to permit adequate review and revision before the completion of the contract. When reviews and audits are part of the acquisition strategy, provide adequate time for the user and software support personnel to review the documentation prior to each review and audit.

4.3 Overview of tailoring.

4.3.1 What is tailoring?

a. Definition. Tailoring is the process of:

- Evaluating each requirement in a selected standard or DID to determine whether it is necessary for a given project.

- Deleting those requirements that are not needed. Tailoring is intended to eliminate unnecessary and duplicative requirements. For standards, a modified version of the requirement may be included in the SOW. For DIDs, requirements may be deleted or partially deleted, but not modified.

b. DOD-HDBK-248 guidance. General tailoring guidance for standards is provided in DOD-HDBK-248, Guide for Application and Tailoring of Requirements for Defense Materiel Acquisitions. DOD-HDBK-248 is the basis for the tailoring guidance in this handbook.

4.3.2 Why tailor?

a. DOD directed. DOD Directive 5000.43, Acquisition Streamlining, states that "Requirements that are not mandated by law or established DOD policy and that do not contribute to the operational effectiveness and suitability of the system, or effective management of its acquisition, operation, or support, shall be excluded." Implementing policies in DOD organizations repeat and amplify this directive.

b. Cost avoidance. Tailoring avoids unneeded activities, documents, controls, and practices. Tailoring can also eliminate duplicative requirements that may be invoked when multiple standards are on contract.

c. Reduce schedule impact. By avoiding unnecessary requirements, projects can be performed more quickly and their products delivered and fielded sooner.

d. Consider alternatives and risks. It is important to balance the near-term savings of cost and time against possible long-term adverse effects of tailoring decisions. Sample trade-offs are as follows:

- Tailoring out user and support documents can save time and money in the initial development, but may have severe negative effects on the long-term cost of using and supporting the software.

- Tailoring out software product evaluations can save time and money in the short term, but can result in reduced quality and expensive and time-consuming rework if products are delivered before they are ready.

- Tailoring out configuration management can save time and money in the short term, but can result in expensive and time-consuming recovery procedures if the contractor loses track of software and documentation versions.

- Tailoring out formal reviews and audits can save the time and money required to prepare for and conduct these meetings, but can reduce Government visibility into the project and result in increased costs and schedule delays if the contractor goes off course.

4.3.3 When is tailoring performed?

a. Each contract. Tailoring must be performed for each acquisition or support contract issued during the system acquisition process. As objectives and tasking change during that process, tailoring decisions for each contract will change accordingly.

b. An incremental activity. The tailoring for a given contract is an incremental activity. Draft tailoring prepared by the contracting agency will be refined based on inputs from the user and support personnel, potential bidders, and other interested parties. Figure 4 illustrates how tailoring might evolve for a given contract.

4.3.4 Who performs tailoring?

a. Team effort. It is important for the Government program manager to involve all key system acquisition participants in the tailoring process. These participants will include:

- Technical staff in, and available to, the program office, such as software engineering, configuration management, quality assurance, and test personnel.

- Contract Administration Service and contracting office personnel.

- User and support personnel.

- Development contractors. It is highly desirable to solicit contractor input early in the tailoring process. This may be done before the Request for Proposal (RFP), in a draft RFP, or in the final RFP. Contractors may also propose tailoring in their Best and Final Offer (BAFO) and during contract negotiations. The Software Development Plan (SDP) is the primary mechanism for describing the contractor-tailored development process in response to the tailored set of requirements.

b. Benefits. This team approach has significant benefits. With each participant contributing specialized expertise, the Government program manager can arrive at sound, considered tailoring for the contract.

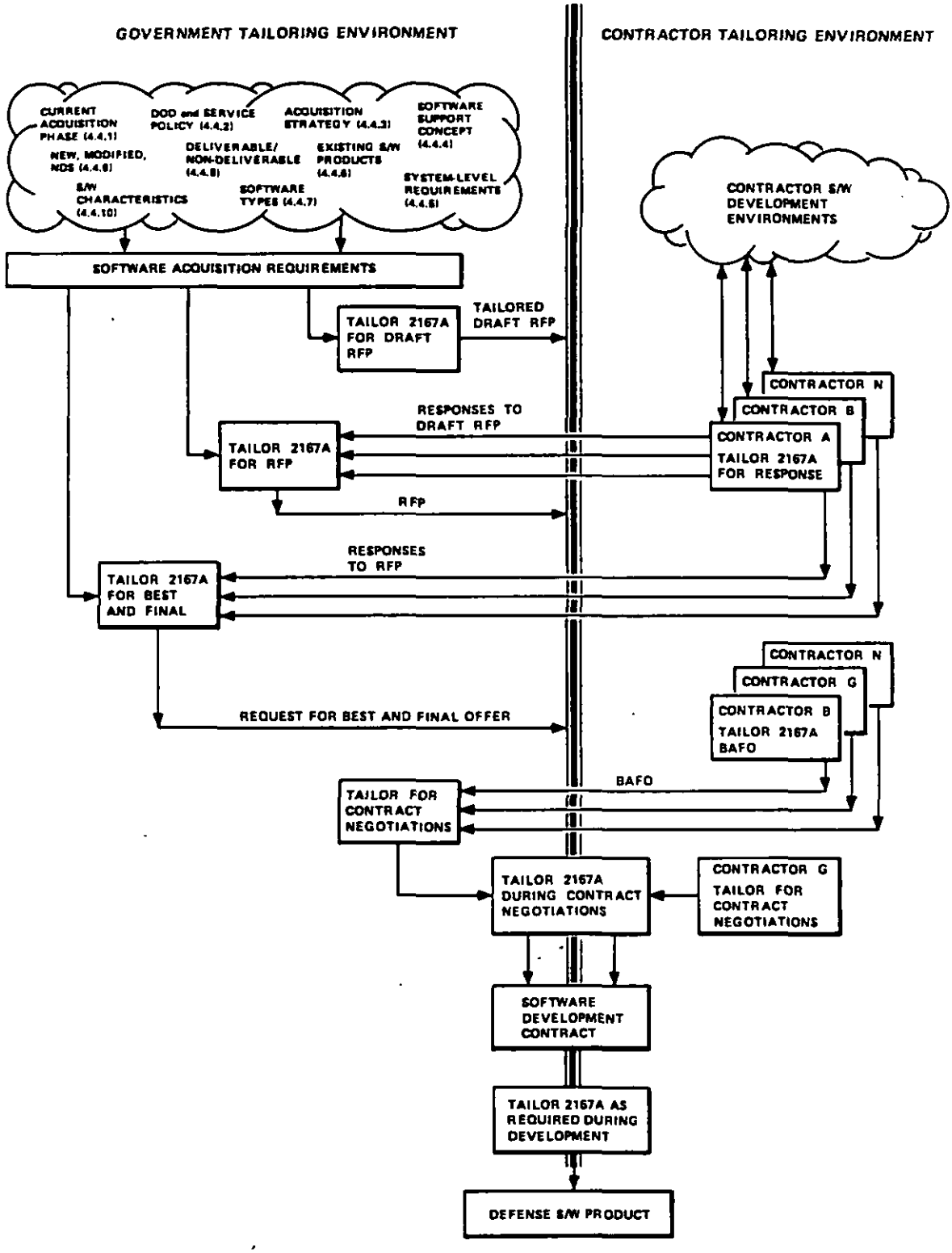

FIGURE 4. Incremental tailoring

c. Tailoring responsibility. It is essential that the software user and software support personnel review the tailoring decisions to ensure that their requirements are met. The final decisions, subject to appropriate review, remain the responsibility of the Government program manager.

4.3.5 Where are tailoring decisions specified?

a. Statement of Work. Tailoring decisions for standards are specified in the contract SOW. A typical tailoring statement is:

> The contractor shall comply with all requirements of DOD-STD-2167A with the following exceptions:
>
> 4.1.2 *Delete entire paragraph*
> 4.2.9 Delete reference to software development files
> etc.

b. Contract Data Requirements List. Tailoring of DIDs is specified on the Contract Data Requirements List (CDRL) form, also called DD Form 1423. Each deliverable is specified in a CDRL Item. The title of the DID is specified in Block 2/3 of the CDRL form. The number of the DID is specified in Block 4. Tailoring of the DID is specified in Block 16. For example:

> The following DID paragraphs do not apply: 10.3.2, 10.3.3.4, 10.3.4

c. Adding requirements. If additional requirements are required that are not specified in the standard, they are added to the Statement of Work. For DID's, no additions are permitted.

4.4 Key considerations in tailoring DOD-STD-2167A. The paragraphs that follow present key considerations in tailoring DOD-STD-2167A. These considerations interact and affect one another, forming the project environment in which the development will take place. The project's environment can alter the manner in which the standard is tailored for the contract.

4.4.1 *Current system acquisition phase.* The system acquisition process is divided into five major phases. In most cases, software development coincides with Full Scale Development Phase (FSD) of the system. However, software may be developed during any phase. Whenever software development takes place, the software activities and products required by the contract should correspond to the software development objectives. The paragraphs that follow identify the acquisition phases and provide guidance on tailoring DOD-STD-2167A in each phase.

a. Concept Exploration/Definition Phase.

1) System objectives. Concept Exploration/Definition is the initial planning phase of the system life cycle. Its objectives are to explore alternative system concepts for satisfying a mission need, to refine system operational requirements, and to establish the technical, military, and economic basis for the system.

2) Software objectives. Software development during Concept Exploration/Definition is usually research oriented. It involves the development of prototypes, simulations, and models to establish operational requirements and to investigate the relative merits of alternative concepts and design approaches. Any specifications that are developed contain broad, basic operational, functional, and performance requirements for the system. A draft system specification is frequently required to capture system capabilities, performance requirements constraints, and other applicable engineering information that results from this phase. Software developed in this phase is usually not intended for operational use.

3) Tailoring considerations. Most of DOD-STD-2167A's products, activities, and software development practices are excessive for Concept Exploration/Definition. The standard and its DIDs may be applied as guidance, rather than as requirements, to provide the developer with information about products and processes that may be required in later phases.

b. Concept Demonstration/Validation Phase.

1) System objectives. The objectives of the Concept Demonstration/Validation phase are to demonstrate the feasibility of selected alternatives, to validate the choice of alternatives, and to provide confidence that risks have been resolved or minimized. Major system characteristics, such as performance, cost, and schedule, are refined through studies, system engineering, development of preliminary equipment and software, and test and evaluation.

2) Software objectives. Software development during Concept Demonstration/Validation is usually still preliminary, but may result in products that transition to later phases. System requirements are refined and documented in a System/Segment Specification (SSS). System requirements are allocated to hardware, software, and personnel, and the

allocation may be documented in a System/Segment Design Document (SSDD). Preliminary versions of the Software Requirements Specifications (SRS) and Interface Requirements Specifications (IRS) may be developed.

3) Tailoring considerations. Software development and system development may proceed along different time lines. It is possible that the software acquisition objective for the Concept Demonstration/Validation phase is full software capability. In this case, all of the software products and processes usually required during FSD may be applied. Conversely, the emphasis may be on hardware, and little software development may occur and few, if any of DOD-STD-2167A's requirements needed. In tailoring DOD-STD-2167A for Concept Demonstration/Validation, it is important to determine the software acquisition objectives for this phase and to select the software products that will meet those objectives. Appendix C presents a tailoring example for the Concept Demonstration/Validation phase.

c. Full Scale Development Phase.

1) System objectives. The objectives of the Full Scale Development phase are to design, develop, fabricate, test, and evaluate the system equipment, software, facilities, personnel subsystems, and training necessary for the operational mission and support of the system.

2) Software objectives. Software development during this phase usually consists of specifying, designing, coding, testing, and evaluating the software that will be used in the defense system. It may also involve participation in system-level activities to ensure that the software operates as an integral part of the system.

3) Tailoring considerations. DOD-STD-2167A is written to apply to this phase of the acquisition cycle. The requirements selected for a particular project depend upon the other considerations found in this handbook. Appendix D provides a tailoring example for Full Scale Development.

d. Production/Deployment and Operational Support Phases.

1) System objectives. The last two phases of the acquisition cycle are Production/ Deployment and Operational Support. The objectives of these phases are to produce and deliver systems to users and to support the system once it is fielded.

2) Software objectives. Software development during both of these phases consists of correcting latent defects discovered in the software, adding new capabilities, and modifying the software to respond to changes in its operational environment. These activities are referred to as software support.

3) Tailoring considerations. For a major software upgrade, the tailoring will be much like that for a Full Scale Development effort. For software change efforts, care must be taken to delete or revise requirements that are appropriate only to initial development of software. Appendix E provides a tailoring example for these life cycle phases.

4.4.2 DOD policies and service regulations.

a. Description. The Department of Defense imposes requirements that are applicable to all defense system acquisitions. In addition, each DOD organization has its own regulations and instructions.

b. Tailoring considerations. The policies and guidelines imposed by DOD and service regulations can affect the tailoring of DOD-STD-2167A. Examples are policies that require:

1) Use of Ada or other specified programming languages
2) Performance of risk management
3) Use of an independent verification and validation contractor
4) Performance of safety analysis
5) Specified memory and/or timing reserves

4.4.3 Acquisition strategy.

a. Description. The acquisition strategy for a program sets forth the system acquisition objectives, required resources, management assumptions, extent of competition, proposed contract types, and program structure.

b. Tailoring considerations. A clear understanding of the program's acquisition strategy for software is a key input to the tailoring process. Examples of issues having a direct impact on the tailoring of DOD-STD-2167A and its DIDs are as follows:

1) Will one contractor perform all software development roles, or will the functions of software engineering, testing, product evaluation, and configuration management be divided among contractors?

2) Will the acquisition use formal reviews and audits as milestones?

3) Will an independent verification and validation (IV&V) contractor be used?

4) Will the software contractor(s) be involved in defining system-level requirements?

5) Will the software contractor(s) be involved in system integration and testing?

4.4.4 Software support concept.

a. Description. Another consideration in tailoring DOD-STD-2167A is the support concept for the software. The software support concept identifies how long the software will be supported, whether the software is expected to change over time, and who will perform the changes.

b. Tailoring considerations. The software support concept raises important tailoring issues. Examples of these issues are as follows:

1) Who will be responsible for support of the software? Possibilities include a Government Software Support Activity, the development contractor, or another contractor.

2) Should the development contractor be required to plan a transition of responsibility?

3) Should the development contractor be required to provide training to a Government Software Support Activity?

4) Should the contract require that the developer's software engineering and software test environments include selected hardware and software to match existing or planned software support environments?

5) What elements of the contractor's software engineering and test environments should be designated deliverable to the Government?

4.4.5 System-level characteristics.

a. Description. The allocation of system-level functional capabilities to software and the criticality of those functions to system operation affect how DOD-STD-2167A is tailored for a specific system.

b. Tailoring considerations. Examples of system-level characteristics that affect tailoring are:

1) Will software be used to implement user interfaces?
2) Could software errors result in a system security violation?
3) Could software errors result in system safety violations or loss of life?
4) Will the system impose sizing/timing limitations on the software?
5) Will software be used to implement inter- and intra-system interfaces?
6) Will some or all of the software be implemented in firmware?
7) Will the computers be commercially available or Government furnished, and already have existing manuals?

4.4.6 Software objectives.

a. Description. It is essential in tailoring to have a clear understanding of the software objectives for the current acquisition phase. These objectives, combined with the software products already in existence, determine the requirements for the current phase. Software products may transition into the current phase from another phase or another project. These existing products need to be identified and evaluated before making tailoring decisions for the current phase. If the project was started under standards preceding DOD-STD-2167A, an important issue will be whether to change from the older standards and, if so, when, and how to make the transition.

b. Tailoring considerations. Considerations regarding software objectives are as follows:

1) What are the software products that will transition into this phase? Are they complete and accurate?

2) What are the software objectives for this phase?

a) Prepare new documentation?

b) Update existing documentation?

c) Convert documentation?

- o Can existing documents be kept and any new documents be written in accordance with DOD-STD-2167A with the two documentation schemes working together?
- o Can any existing documentation be rewritten in a later phase if necessary?

3) Prepare or update code?

4) Plan for and perform testing?

4.4.7 Software types. It is important in tailoring to recognize that different types of software may require different tailoring decisions. A specific CSCI may contain more than one type of software. Figure 5 presents a matrix for use in identifying the types of software that may be present in a defense system. The paragraphs that follow discuss key tailoring considerations for these software types.

a. Application software. Application software is the primary objective of a software development effort. All requirements in DOD-STD-2167A may be applied to this software. The specific requirements that are selected depend upon the other considerations identified in this handbook.

	APPLICATION SOFTWARE	SUPPORT SOFTWARE					
		S/W ENGINEERING ENVIRONMENT		S/W TEST ENVIRONMENT		OTHER	
		DELIVERABLE	NON-DELIVERABLE Note 1	DELIVERABLE	NON-DELIVERABLE Note 2	DELIVERABLE	NON-DELIVERABLE
NEWLY DEVELOPED							
MODIFIED							
NON-DEVELOPMENTAL							

NOTE 1) DOD-STD-2167A PARAGRAPH 4.2.2 APPLIES UNLESS DELETED OR MODIFIED. NO OTHER PARAGRAPHS APPLY.

NOTE 2) DOD-STD-2167A PARAGRAPH 4.3.2 APPLIES UNLESS DELETED OR MODIFIED. NO OTHER PARAGRAPHS APPLY.

FIGURE 5. Software types affect the tailoring of DOD-STD-2167A

b. Support software. Support software is the software found in the developer's software engineering environment, software test environments, and system development, test and support environments. It is rarely appropriate to impose the same degree of controls, documentation, and other requirements on support software as on the application software. Key considerations are obtaining the documentation needed to use (and possibly change) deliverable support software, and ensuring that the delivered software is tested and controlled to the degree needed to assure its usefulness in software development and support.

1) Software engineering environment. Software found in the software engineering environment is used to develop the defense system software. This software frequently runs on computers other than those found in the defense system.

- o Deliverable elements. Some of the software in the software engineering environment may be required for future support of the application software and should be delivered. Examples are compilers, operating systems, and configuration control systems. Tailoring considerations for this software include whether the software is "one-of-a-kind," and, if so, the complexity of the software, how dependent the regeneration of the application software is upon the correct and reliable performance of the software, and how closely coupled the application software is with this support software.

- o Non-deliverable elements. Much of the software in the software engineering environment need not be delivered to the Government. Examples of this type of software are commercially available editors, debuggers, and contractor-developed project management systems not needed for software support. It is not cost effective to require full DOD-STD-2167A requirements on this type of software. The requirements in DOD-STD-2167A paragraph 4.2.2 should suffice.

2) Software test environment. Software found in the software test environment is used to perform Functional Qualification Testing of the software. This software may run on computers found in the defense system or on other computers devoted to software development and test.

- o Deliverable elements. Some of the software in the software test environment may be required for future testing of the application software and should be delivered. Examples include test drivers, stimulators, and simulations. Tailoring considerations for this software include whether the software is a unique application for the system, and

if so, the complexity of the software and how dependent the testing of the application software is upon the correct and reliable performance of the support software.

- o Non-deliverable elements. Not all of the software in the software test environment needs to be delivered to the Government. Examples of software that may be designated non-deliverable are test drivers and stubs used in unit testing, data generators, and commercial diagnostics. The requirements in paragraph 4.3.2 should be adequate for this type of software.

3) Other software. System development often requires the development and use of support software other than that found in the software engineering and test environments. This software may include calibration software or software used for training of personnel.

- o Deliverable elements. Some of this software may be required for future support of the system, such as software in hardware test suites and software used to program firmware. Tailoring considerations for this software are similar to those for the software engineering and test environments.

- o Non-deliverable elements. Non-deliverable software may include software used in the manufacture and test of hardware items, software used for project management, and so on. While DOD-STD-2167A was not designed for this type of software, selected requirements may be applied.

c. Newly developed, modified, and non-developmental software. Cutting across all of the divisions of software are three possibilities involving the state of the software.

1) Newly developed software. Newly developed software is software developed "from scratch." DOD-STD-2167A focuses on the development of this type of software. The specific requirements that apply depend upon other considerations given in this handbook.

2) Modified software. Modified software is software that exists at the beginning of a contract but must undergo major or minor change before delivery. Key tailoring considerations for this type of software are the pre-existence of code, documentation, and baselines. Before imposing requirements for DOD-STD-2167A documentation, consider whether an update of the current (possibly non-DOD-STD-2167A) documentation is a viable

alternative. Also check whether requirements concerning the Developmental Configuration need to be reworded in light of the existing Product Baseline. Certain activities, such as decomposing CSCIs into Computer Software Components (CSCs) and Computer Software Units (CSUs) may not be needed. All requirements in the standards should be carefully reviewed to determine whether they apply to the software modification effort.

3) Non-developmental software. Non-developmental software is software that can be used as-is, without modification. Examples are a commercially available database incorporated into a system, a radar module provided as Government-furnished software and not to be modified during the project, and a reusable Kalman filter software package from the developer's software library. It is important for the contract to state the data rights to this software. This type of software requires special consideration in tailoring, for example:

a) Commercially available software. Commercially available software usually comes only with object code and a user manual, rarely in DOD-STD-2167A format. It is difficult or impossible to obtain source code. It does not make sense to impose the DOD-STD-2167A development process or DOD-STD-2167A documentation requirements on such software. The economy of this software is that it is already developed. Tailoring that ignores this fact will not be cost-effective.

b) Government-furnished software. Government-furnished software offers slightly more flexibility than commercially available software. The developer is usually given the source code, can be asked to evaluate, develop, or upgrade the documentation, and can, if need be, recommend modifying the software (moving it to the category of "modified software"). Tailoring should take this pre-existence into account, and not impose process and documentation requirements that do not make sense.

c) Reusable software. The contractor's own reusable software can offer significant opportunities for savings in time and dollars. The developer has the source code, can develop or upgrade the documentation, as required, and can recommend modifying the software (moving it to the "modified software" category). Here again, tailoring should consider whether existing (possibly non-DOD-STD-2167A) documentation will suffice and should not impose process and documentation requirements for products that exist.

4.4.8 Other software characteristics. While types of software constitute a primary consideration in DOD-STD-2167A tailoring, other software characteristics may also play a major part. The paragraphs that follow discuss three such characteristics.

a. Criticality. The more dependent the defense system is upon the software operating correctly and being finished on time, the more visibility and control the program manager will probably want into the development and testing of the software. Conversely, extreme oversight of non-critical software is probably not cost-effective.

b. Technical risk. Another characteristic affecting tailoring decisions is the technical risk involved in developing the software. Software that is unprecedented, complex, and difficult requires more oversight than software whose application and techniques are known or considered to be easy.

c. Size of development team. A large project involving tens or hundreds of participants is a significantly different management problem from a project of three people. Large projects or projects with numerous subcontractors require careful oversight and benefit from the imposition of DOD-STD-2167A controls. For small projects, these controls may be inappropriate.

5. DETAILED TAILORING PROCEDURES

5.1 Overview.

a. Purpose. This section provides a method for tailoring DOD-STD-2167A. The method described is a top-down approach, consisting of documenting project characteristics, selecting the overall activities and products for a project, translating these elements into tailoring decisions for DOD-STD-2167A and the DIDs, and implementing the decisions in the Statement of Work (SOW) and Contract Data Requirements List (CDRL).

b. Tailoring worksheets and aids. The instructions in this section refer to a set of worksheets and tailoring aids. These tailoring worksheets and aids are provided in Appendixes A and B, respectively. Local reproduction of the worksheets is authorized.

c. 10-STEP process. The tailoring process consists of 10 steps - - 7 steps to tailor the standard and 3 steps to tailor the DIDs. Figure 6 is a flowchart of this process. A Detailed Flowchart in Appendix B shows the inputs and outputs of each of the tailoring steps. Each step is a refinement and extension of the previous step. The steps are detailed in the subsections that follow.

5.2 STEP 1: Establish program context, objectives, and characteristics.

a. Description. *Section 4.4 of this handbook identifies considerations that affect the tailoring of* DOD-STD-2167A. The first step in the tailoring process is to use these considerations to establish the specific nature of your program.

b. Tailoring aids. Project Environment Worksheet (p. 43).

c. Instructions. The Project Environment Worksheet is designed to help you define the environment in which the software is being developed and identify the types of software that may be found on the project. The tailoring considerations are presented in the same order as section 4.4 so that you can refer to that section as needed to complete the project description. Your answers on the Project Environment Worksheet provide a frame of reference for the remainder of the tailoring process.

TAILOR THE STANDARD

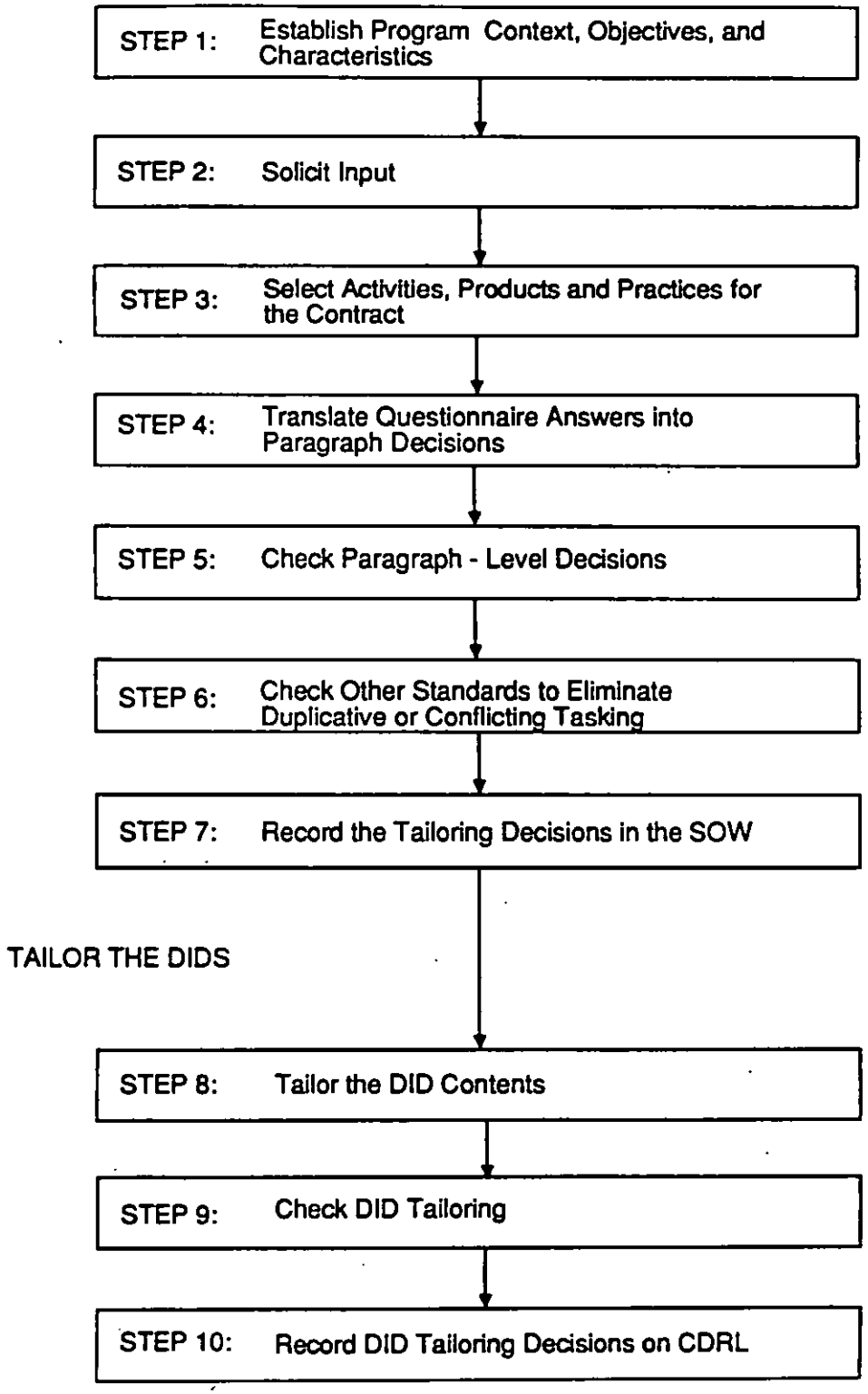

FIGURE 6. Flowchart of tailoring steps

5.3 STEP 2: Solicit input.

a. Description. The second step in the tailoring process is to solicit input from other organizations that will be affected by tailoring decisions. Include the software user and the software support personnel, contracting office personnel, and potential bidders, who can provide tailoring recommendations based upon their experience with similar projects.

b. Tailoring aids. All worksheets (optional).

c. Instructions. Solicit tailoring input in the form of completed worksheets, answers to specific questions, or free-form comments. Use the inputs in performing the remaining steps of the process.

5.4 STEP 3: Select activities, products, and practices for the contract.

a. Description. The third step of the tailoring process is to decide what activities the contractor will be required to perform, what products the contractor will be required to develop, and what practices the contractor will be required to follow.

b. Tailoring aids.

1) Completed Project Environment Worksheet.
2) Activity/Product Worksheet (p. 47).
3) DOD-STD-2167A DID Selection Guidelines (p. 103).

c. Instructions. List all relevant types and subtypes of software across the top of the Activity/Product Worksheet. Include all types and subtypes that may be present on the contract, even though you do not know for sure which will apply. Then, keeping in mind the tailoring considerations recorded on the Project Environment Worksheet, respond to each item on the Activity/Product Worksheet. In each box, indicate whether you want the contractor to perform the task for the specific type or subtype of software. Use K for keep or D for delete. Each item has a space for Notes where you can enter any rationale or notes as you go through the Worksheet. The DID Selection Guidelines can be used to help in deciding which DIDs to impose.

5.5 STEP 4: Translate worksheet answers into paragraph decisions.

a. Description. The fourth step of the tailoring process is to translate your answers on the Activity/Product Worksheet into tailoring decisions for the paragraphs of DOD-STD-2167A. Each software type or subtype with its own set of answers will result in a separate set of tailoring decisions.

b. Tailoring aids.

1) Completed Activity/Product Worksheet.
2) DOD-STD-2167A Tailoring Worksheet (p. 51).

c. Instructions. The DOD-STD-2167A Tailoring Worksheet is a numerical listing of DOD-STD-2167A paragraphs. To the right of each paragraph title or description is either a cross-reference to related items on the Activity/Product Worksheet, or an indication that the paragraph is an introductory paragraph. Fill out one DOD-STD-2167A Worksheet for each software type or subtype on your Activity/Product Worksheet.

1) For each paragraph that cross-references the Activity/Product Worksheet:

- Look up the related question(s) on your Activity/Product Worksheet. Using your answer(s) from the Activity/Product Worksheet, make a decision to keep, delete, or replace the paragraph. It may be necessary for you to read the actual words in DOD-STD-2167A to determine what you want to require. Circle the appropriate letter in front of the paragraph number.

- If you decide that a paragraph needs to be replaced or reworded, use the Comments area of the DOD-STD-2167A Tailoring Worksheet to make a note regarding the rewording. For example:

  Delete reference to Software Test Plan
  Address special interface requirements

- The Comments area may also be used to add rationale or other notes as appropriate.

2) The paragraphs marked "INTRO" in the right column are introductory paragraphs in the standard. These paragraphs generally impose no requirements themselves, but serve only to introduce a series of requirements. Handle these paragraphs last. For each introductory paragraph:

- o If all sub-paragraphs are deleted, delete the introductory paragraph.
- o If any sub-paragraph is kept or replaced, keep the introductory paragraph.

d. Examples. The following examples illustrate the types of relationships contained in the related items on the DOD-STD-2167A Tailoring Worksheet:

1) Some paragraphs contain multiple requirements. An example is paragraph 5.2.4, which requires product evaluation, use of specified criteria, and reporting of results at the Software Specification Review (SSR). For such paragraphs, it is necessary to look at several answers on the Activity/Product Worksheet before deciding whether to Keep, Delete, or Replace the requirement.

2) Some paragraphs mention other products or activities that may have been tailored out. An example is paragraph 4.2.6, which mentions both the Software Requirements Specification and the Interface Requirements Specification. For these requirements, it is necessary to consider both the task that is required by the paragraph and the other product or activity that is mentioned to be sure the requirement is tailored consistently.

3) Paragraphs that task the evaluation of a particular product (all 5.x.4 paragraphs) require you to look at whether you require the contractor to prepare the product and whether you require product evaluations. The decision on the formality and extent of evaluation of the particular product is made at this time.

4) Paragraphs that task configuration control of a particular product (all 5.x.5 paragraphs) require you to look at whether you require the contractor to prepare the product and whether you require configuration control. The decision on the formality and extent of configuration control of the particular product is made at this time.

5) Paragraphs that task a particular formal review (all 5.x.1 paragraphs) require you to look at whether you require the contractor to hold reviews and audits and whether you require preparation of the products that are the subject of that particular review. The decision on holding a given review or audit is made at this time.

5.6 STEP 5: Check paragraph-level decisions.

a. Description. *Once you have made decisions on all paragraphs, it is important to make a final check to ensure that those decisions, as recorded on the DOD-STD-2167A Tailoring Worksheets, represent the exact needs for the contract.*

b. Tailoring aids.

1) Completed DOD-STD-2167A Tailoring Worksheets.
2) DOD-STD-2167A Product Consistency Guidelines (p. 111).

c. Instructions. Using the completed DOD-STD-2167A Tailoring Worksheet as a guide, read the actual text of DOD-STD-2167A paragraphs in the following groupings:

1) Read all deleted paragraphs. Confirm that you really meant to delete them.

2) Read all kept paragraphs. Check that they form a consistent set of requirements. Check that they do not mention documents or activities that you have deleted. The Product Consistency Guidelines will help you find inconsistencies among the required deliverables. For other requirements, the Index of the standard is useful for finding related paragraphs.

3) Read all replaced paragraphs and review your notes on the required rewording. Check that your rewording eliminates mention of all deleted documents and activities.

5.7 STEP 6: Check other standards to eliminate duplicative or conflicting tasking.

a. Description. Before finalizing your DOD-STD-2167A tailoring decisions in the SOW, it is important to review the other standards that are being put on the contract to make sure that *you are not requiring duplicative or conflicting tasking.*

b. Tailoring aids.

1) Completed DOD-STD-2167A Tailoring Worksheets.
2) Relationship of DOD-STD-2167A to Other Standards (p. 113).
3) Guidelines for Tailoring MIL-STD-1521B for a DOD-STD-2167A Project (p. 115).
4) Related Standards Worksheet (p. 97).

c. Instructions. Use the Relationship of DOD-STD-2167A to Other Standards tailoring aid as a guideline to help identify other standards that may be put on the software development contract. Record your answers on the Related Standards Worksheet. Use tailoring aids (2) and (3) above to determine whether there are any inherent inconsistencies. Then look for conflicts introduced through tailoring DOD-STD-2167A. Resolve these conflicts by revising the DOD-STD-2167A Tailoring Worksheet or by tailoring the other standard.

d. Examples.

1) *If you are imposing the formal reviews and audits required in paragraphs 5.x.1 of* DOD-STD-2167A, match the products named by MIL-STD-1521B to the tailored products of DOD-STD-2167A and tailor MIL-STD-1521B to resolve inconsistencies. The MIL-STD-1521B Tailoring Aid will help you with this task.

2) If you are imposing the configuration management requirements required in paragraphs 4.5 and 5.x.5, and have also placed MIL-STD-483A on the contract, check that MIL-STD-483A *is tailored to match your DOD-STD-2167A tailoring decisions and to avoid duplication.*

3) If you are imposing the evaluation requirements of DOD-STD-2168 as part of the contract, tailor these evaluations consistently with your DOD-STD-2167A decisions.

4) Paragraph 4.2.3 of DOD-STD-2167A requires the software development contractor to perform safety analysis. If there is a system contractor involved in the procurement, that contractor may be tasked under MIL-STD-882 to perform Tasks 301-307, Software Hazard Analysis. This could be a duplication of effort and the conflict would need to be resolved.

5.8 STEP 7: Record the tailoring decisions in the Statement of Work.

a. Description. The final step in tailoring the standard itself is to record the tailoring decisions in the contract SOW.

b. Tailoring aids. Completed DOD-STD-2167A Tailoring Worksheets.

c. Instructions. For each software type or subtype:

1) Prepare draft SOW entry. Using the completed DOD-STD-2167A Tailoring Worksheet, prepare a Statement of Work entry that specifies your tailoring decisions. There are several ways of indicating these decisions:

o By exception with each exception itemized. One method of specifying tailoring decisions is to write a SOW paragraph that looks like this:

"The contractor shall comply with all requirements in DOD-STD-2167A with the following exceptions:

4.1.7	Delete entire paragraph
4.2.6	Delete reference to Interface Requirements Specification
5.1.2.4	Delete entire paragraph
5.1.4.d	Delete entire paragraph
5.5.4	Modify as follows: The contractor shall ..."

o By exception, using global reference. A second method of specifying tailoring decisions is to group all related instructions. For example:

"The contractor shall comply with all the requirements in DOD-STD-2167A with the following exceptions:

1. Delete all references to the Interface Requirements Specification.

2. Replace all references to the system specification with references to the Data System Management specification."

o By inclusion. A third method is to list the paragraph numbers of those requirements that you have kept, indicating modifications as appropriate. For example:

"The contractor shall comply with the following requirements of DOD-STD-2167A, with exceptions as noted:

4., 4.1, 4.1.3, ...
4.2.6 Delete reference to Interface Requirements Specification"

2) Clarify "shell requirements." The "shell requirements" found in DOD-STD-2167A require elaboration in the Statement of Work if they are to be invoked. All requirements of this type are marked by asterisks (**) on the DOD-STD-2167A Tailoring Worksheet. For each such requirement that you have kept, specify further details in the SOW.

3) Review SOW entry. Have the user, software support personnel, Contract Administration Service, contracting office, and any other relevant organizations review of the draft SOW entry and "shell requirements" for completeness, correctness, and compliance with DOD, agency, system level, and support requirements.

5.9 STEP 8: Tailor DID contents.

a. Description. The steps given so far have selected the DIDs to impose, but have not addressed the individual requirements within those DIDs. The next step is to review the DIDs and to tailor out requirements that are not cost-effective for your project.

b. Tailoring aids. DID Tailoring Worksheets (pp. 63-95).

c. Instructions. The DID Tailoring Worksheets summarize the requirements in each DID. Instructions are as follows:

1) In the space provided at the upper right of each DID Tailoring Worksheet, check whether you plan to KEEP or DELETE this DID. For DIDs that you have tailored out altogether from DOD-STD-2167A, ignore the paragraph items.

2) For each DID that you have kept in your tailoring of DOD-STD-2167A:

- o Read each paragraph summary on the worksheet. Use the summary to determine whether to impose the requirement. Read the actual DID paragraph if in doubt.
- o Indicate K (Keep), D (Delete), or R (Replace) for the paragraph.
- o Use the comments area to record rationale, details of partial deletions, or other notes.

5.10 STEP 9: Check DID tailoring.

a. Description. Once you have made decisions on all paragraphs within the DIDs, it is important to make a final check of those decisions.

b. Tailoring aids.

1) Completed DID Tailoring Worksheet.
2) Cross Reference of Software Development Plan Paragraphs to DOD-STD-2167A (p. 117).

c. Instructions.

1) Ensure that the DIDs you tailored are the DIDs you required in tailoring DOD-STD-2167A.

2) Review the actual paragraphs of each DID to confirm your decisions. Adjust your decisions as required.

3) Check that your tailoring of one DID does not contradict your tailoring of another. For the most part, the DIDs are independent, but there are some traceable elements between them. Make sure your deletions have not created an inconsistency.

4) Make a special check of the Software Development Plan (SDP) to see that your DID tailoring does not contradict your tailoring of DOD-STD-2167A. The Cross References of SDP Paragraphs to DOD-STD-2167A tailoring aid will help with this check.

5.11 STEP 10: Record DID tailoring decisions on the CDRL (DD 1423) Form.

a. Description. Tailoring of DID contents is specified on the CDRL rather than in the SOW. This is the final step of the tailoring process.

b. Tailoring aids.

1) Completed DID Tailoring Worksheets.
2) Contract Data Requirements List (CDRL), DD Form 1423 (p. 119) or service specific alternative.

c. Instructions. Use the completed DID Tailoring Worksheet as a guide to complete a DD Form 1423. Specify each deliverable document as a separate CDRL Item. Enter the DID title in Block 2/3 and the DID number in Block 4. Specify the tailoring decisions in Block 16. For example:

The following DID paragraphs do not apply: 10.3.1.a., 10.3.5, ...
In DID paragraph 10.1.5.5, delete reference to site-unique conditions.

5.12 Archiving tailoring decisions. The tailoring decisions made for a system can be of use to managers responsible for the system in the future and to other project managers who face similar tailoring decisions. Establish a file of the tailoring decisions, rationale for those decisions, and lessons learned as the project proceeds. This file will prevent future managers from inadvertently changing key decisions and will clarify the trade-offs and key considerations that went into the tailoring decisions.

5.13 Tailoring examples. Appendixes C, D, and E present tailoring examples. Three examples from different acquisition phases have been selected to show a wide range of tailoring possibilities. The purpose of these examples is to familiarize you with the worksheets and tailoring aids provided in this handbook. The examples are not intended to be representative of any one system or to show the "correct" or "recommended" way to structure a project or to tailor DOD-STD-2167A for a given project. It is unlikely your project will match any of the three examples exactly. You may be able to use the one closest to your project as a starting point, then make your own decisions based on the particular characteristics of your project.

APPENDIX A

TAILORING WORKSHEETS

10.1 Purpose. This appendix provides worksheets to be used in tailoring DOD-STD-2167A and its Data Item Descriptions. Included are:

Project Environment Worksheet (page 43)
Activity/Product Worksheet (page 47)
DOD-STD-2167A Tailoring Worksheet (page 51)
CRISD DID Tailoring Worksheet (page 63)
CSOM DID Tailoring Worksheet (page 65)
FSM DID Tailoring Worksheet (page 67)
IDD DID Tailoring Worksheet (page 69)
IRS DID Tailoring Worksheet (page 71)
SDD DID Tailoring Worksheet (page 73)
SDP DID Tailoring Worksheet (page 75)
SPM DID Tailoring Worksheet (page 79)
SPS DID Tailoring Worksheet (page 81)
SRS DID Tailoring Worksheet (page 83)
STD DID Tailoring Worksheet (page 85)
STP DID Tailoring Worksheet (page 87)
STR DID Tailoring Worksheet (page 89)
SUM DID Tailoring Worksheet (page 91)
SSDD DID Tailoring Worksheet (page 93)
VDD DID Tailoring Worksheet (page 95)
Related Standards Worksheet (page 97)

10.2 Use of the worksheets. Section 5 of this handbook describes a ten-step tailoring process using the worksheets in this appendix and the tailoring aids in Appendix B. Local reproduction of these worksheets is authorized.

20. Applicable documents. This section is not applicable to this appendix.

PROJECT ENVIRONMENT WORKSHEET (page 1 of 4)

Program _____

Respondent_____ Date _____

PURPOSE: To establish program context, objectives, and characteristics as a basis for tailoring DOD-STD-2167A. This worksheet is used in STEPs 1, 2, and 3 of the tailoring process.

INSTRUCTIONS: Answer the following questions. The questions are presented in the same order as they are discussed in section 4.4 of the handbook.

1. Check the system life cycle phase to which the contract applies:

   _____ a. Concept Exploration/Definition

   _____ b. Concept Demonstration/Validation

   _____ c. Full Scale Development

   _____ d. Production/Deployment

   _____ e. Operational Support

2. Which DOD or service-specific policies apply:

   _____ a. Use of Ada required

   _____ b. Use of another language required

   _____ c. Independent verification/validation required

   _____ d. Safety analysis required

   _____ e. Memory and/or timing reserves

   _____ f. Formal risk management required

   _____ g. Other _____

3. Which statements describe the acquisition strategy for the software:

   _____ a. There will be division of software development roles among contractors; each contract needs its own set of software development activities specified.

   _____ b. Formal reviews and audits will be used as project milestones.

   _____ c. There will be an IV&V contractor or IV&V agent.

   _____ d. The software contractor(s) will be involved in defining system-level requirements.

   _____ e. The software contractor(s) will be involved in system integration and testing.

PROJECT ENVIRONMENT WORKSHEET (page 2 of 4)

4. What is the software support concept:

4.1 Expected length of support _____ More than 3 years _____ 0-3 years _____ None

4.2 Expected degree of change _____ High _____ Medium _____ Low

4.3 Software support roles

_____ a. The software will transition to a Government software support activity or support contractor (transition planning and training may be required).

_____ b. The software will be supported by the developer at the developer's site. (little or no transition or training required)

5. Which system-level characteristics affect requirements imposed on software developer(s):

_____ a. Software will be used to implement some or all user interfaces.

_____ b. Software errors could result in a system security violation.

_____ c. Software errors could result in system safety violations or loss of life.

_____ d. The system will impose sizing/timing limitations on the software.

_____ e. Software will be used to implement inter- and intra-system interfaces

_____ f. Some or all of the software will be implemented in firmware.

_____ g. The computers to be used are commercially available or Government furnished, and already have existing manuals.

_____ h. Other _____

6. Software product objectives for the current phase

6.1 *Circle the software products that will be inherited from a previous phase, developed under a parallel contract, or provided as GFE* (Documents listed are from DOD-STD-2167A. Substitute equivalent document titles or acronyms as required)

a. Project plans	SDP				
b. Specifications	SSS	SRS	IRS		
c. Design documents	SSDD	SDD	IDD		
d. Test documents	STP	STD	STR		
e. User and support documents	CRISD	CSOM	SUM	SPM	FSM
f. Code and its documentation	Code	VDD	SPS		

PROJECT ENVIRONMENT WORKSHEET (page 3 of 4)

6.2 What are the software objectives for this phase? Add comments to clarify.

_____ a. Prepare or update project plans_____

_____ b. Prepare or update specifications_____

_____ c. Prepare or update design documents_____

_____ d. Prepare or update code, resulting in:

_____ 1) Throwaway prototype code_____

_____ 2) Prototype code that will be refined and made operational later_____

_____ 3) Operational code_____

_____ e. Plan for formal qualification testing_____

_____ f. Perform formal qualification testing_____

_____ g. Prepare or update plans for software support_____

_____ h. Prepare or update user/support documents_____

_____ i. Convert documents to DOD-STD-2167A_____

_____ j. Other_____

7. Software types: Put an X in each box describing a type of software to be developed, modified, or used on the contract.

	APPLICATION SOFTWARE	SUPPORT SOFTWARE					
		S/W ENGINEERING ENVIRONMENT		S/W TEST ENVIRONMENT		OTHER	
		DELIVERABLE	NON-DELIVERABLE Note 1	DELIVERABLE	NON-DELIVERABLE Note 2	DELIVERABLE	NON-DELIVERABLE
NEWLY DEVELOPED							
MODIFIED							
NON-DEVELOPMENTAL							

NOTE 1) DOD-STD-2167A PARAGRAPH 4.2.2 APPLIES UNLESS DELETED OR MODIFIED. NO OTHER PARAGRAPHS APPLY.
NOTE 2) DOD-STD-2167A PARAGRAPH 4.3.2 APPLIES UNLESS DELETED OR MODIFIED. NO OTHER PARAGRAPHS APPLY.

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PROJECT ENVIRONMENT WORKSHEET (page 4 of 4)

8. Software characteristics

a. Criticality. Based on current knowledge of the system and software, identify the critical software on the project (errors in use would have severe consequences).

_____ 1) All application software

_____ 2) Some application software. Identify which:

_____

_____ 3) Other software on the project. Identify which:

_____

_____ 4) None

_____ 5) Can't determine this yet.

b. Technical risk. Based on current knowledge of the system and software, identify the software with high technical risk (unprecedented, complex, difficult to implement)

_____ 1) All application software

_____ 2) Some application software. Identify which:

_____

_____ 3) Other software on the project. Identify which based on current assumptions:

_____

_____ 4) None

_____ 5) Can't determine this yet

c. Project size. Based on current knowledge of the system and software, make a rough estimate of the size of the software development team

_____ 1 to 5 _____ 6 to 10 _____ 11 to 20 _____ 21 to 50 _____ Over 50

_____ Can't determine this yet

d. List any other considerations that might affect the way you tailor some or all of the software for this project:

ACTIVITY/PRODUCT WORKSHEET (page 1 of 4)

Program _____

Respondent _____ Date _____

PURPOSE: To select the activities and products required for a each type of software on a project. This worksheet is used in STEP 3 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Pages 1 and 2 of this worksheet list DOD-STD-2167A activities and products. Pages 3 and 4 provide a table for recording which products and activities apply to each type of software on your project. Begin by assigning each type of software on your project a column in the table. Use Question 7 of your Project Environment Worksheet as a starting point for the types. The types will evolve as you begin to complete the worksheet and see that you can combine some types and must divide others into subtypes based on the need to give different answers for different software on your project. Write "K" to keep an item; "D" to delete it. Delete a primary item (1, 2, 3, etc.) only if you delete all of its subsidiary items (1.a, 1.b, etc.). Note that delivery of a product occurs only if it is specified on the DD 1423 Contract Data Requirements List.

DOD-STD-2167A PRODUCTS AND ACTIVITIES

1. Help define system requirements and design
   - 1.a Analyze SW requirements in system specs
   - 1.b Prepare System/Segment Design Document (SSDD)
   - 1.c Support system-level reviews (SRR, SDR)

2. Define software requirements
   - 2.a Prepare SW Requirements Spec. (SRS)
   - 2.b Prepare Interface Req'ts Spec. (IRS)

3. Perform software design
   - 3.a Organize CSCIs into CSCs, CSUs
   - 3.b Prepare Software Design Document (SDD)
   - 3.c Prepare Interface Design Document (IDD)
   - 3.d Establish SW Development Files (SDFs)

4. Perform coding activities
   - 4.a Use approved high order language
   - 4.b Code the software
   - 4.c Prepare a Version Description Doc. (VDD)

5. Perform unit/component SW testing
   - 5.a Document CSU test planning
   - 5.b Perform/record results of CSU testing
   - 5.c Document CSC integration/test planning
   - 5.d Perform/record results of CSC integ/test

6. Perform Formal Qualif. Test (FQT) of CSCIs
   - 6.a Prepare Software Test Plan (STP)
   - 6.b Establish a software test environment
   - 6.c Prepare Software Test Description (STD)
   - 6.d Dry run the test procedures
   - 6.e Perform FQT
   - 6.f Prepare a Software Test Report (STR)
   - 6.g Use independent testers

7. Participate in system-level test/integration
   - 7.a Support system test planning
   - 7.b Support system testing
   - 7.c Support post-test analysis and reporting
   - 7.d Update code and documents as needed
   - 7.e Prepare changes to baselined documents

ACTIVITY / PRODUCT WORKSHEET (page 2 of 4)

8. Perform technical product evaluations
   - 8.a Use independent evaluators
   - 8.b Evaluate software products
   - 8.c Internally coordinate deliverables
   - 8.d Use 2167A evaluation criteria
   - 8.e Keep records of evaluations

9. Perform software configuration management
   - 9.a Perform configuration identification
   - 9.b Perform configuration control
   - 9.c Perform configuration status accounting
   - 9.d Implement storage, handling, delivery procedures
   - 9.e Prepare ECPs, SCNs for baselined documents

10. Prepare software for operational use & support
    - 10.a Make code regenerable in the support environment
    - 10.b Prepare Computer Resources Integrated Support Document (CRISD)
    - 10.c Prepare Computer System Operator's Manual (CSOM)
    - 10.d Prepare Software User's Manual (SUM)
    - 10.e Prepare SW Programmer's Manual (SPM)
    - 10.f Prepare Firmware Support Manual (FSM)
    - 10.g Prepare SW Product Specification (SPS)
    - 10.h Install software at support site
    - 10.i Provide training and continuing support

11. Use DOD-STD-2167A SW management practices:
    - 11.a Prepare a Software Development Plan
    - 11.b Conduct formal reviews/audits of SW products (System reviews are 1.c)
    - 11.c Implement risk management procedures
    - 11.d Implement security measures
    - 11.e Ensure subcontractor compliance with prime contract
    - 11.f Interface with software IV&V agent(s)
    - 11.g Establish software development library
    - 11.h Implement corrective action process
    - 11.i Prepare problem/change reports
    - 11.j Use 2167A problem/priority categories

12. Use DOD-STD-2167A SW engineering practices:
    - 12.a Use systematic, well documented development methods
    - 12.b Establish a SW engineering environment
    - 12.c Perform safety analysis
    - 12.d Consider use of non-developmental SW
    - 12.e Implement design and coding standards
    - 12.f Maintain timing, memory reserves

ACTIVITY / PRODUCT WORKSHEET (page 3 of 4)

Item Number, Brief Descriptor	Software Types / Subtypes / CSCIs						Notes
1 System Req							
1.a Analyze SSS							
1.b SSDD							
1.c SRR, SDR							
2 SW Req							
2.a SRS							
2.b IRS							
3 SW Design							
3.a CSCs, CSUs							
3.b SDD							
3.c IDD							
3.d SDFs							
4 Coding							
4.a HOL							
4.b Code							
4.c VDD							
5 CSU/C Test							
5.a CSU plan							
5.b CSU test							
5.c CSC plan							
5.d CSC test							
6 FQT							
6.a STP							
6.b Test Env							
6.c STD							
6.d Dry Run							
6.e Do FQT							
6.f STR							
6.g Independent							
7 System Test							
7.a Plan							
7.b Test							
7.c Report							
7.d Update							
7.e Changes							

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ACTIVITY / PRODUCT WORKSHEET (page 4 of 4)

Item Number, Brief Descriptor	Software Types / Subtypes / CSCIs						Notes
8 Prod Evaluations							
8.a Independent							
8.b Do evaluations							
8.c Coordinate							
8.d Criteria							
8.e Records							
9. Config Mgmt							
9.a Config ID							
9.b Config Control							
9.c Config Status							
9.d Storage							
9.e ECPs							
10 Support							
10.a Regen Code							
10.b CRISD							
10.c CSOM							
10.d SUM							
10.e SPM							
10.f FSM							
10.g SPS							
10.h Install							
10.i Train							
11 Management							
11.a SDP							
11.b Rev/Aud							
11.c Risk							
11.d Security							
11.e Subcontractor							
11.f IV&V							
11.g Library							
11.h C. Action							
11.i Ch. Report							
11.j Classify							
12 SW Eng							
12.a Methods							
12.b Eng Env							
12.c Safety							
12.d Non-devel							
12.e Design/Code Stds							
12.f Reserves							

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DOD-STD-2167A TAILORING WORKSHEET (page 1 of 11)

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: To translate the selections made on the Activity/Product Worksheet into decisions on each paragraph of DOD-STD-2167A. This worksheet is used in STEP 4 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete one worksheet for each software type, subtype, or CSCI with a unique set of answers on the Activity/Product Worksheet. Begin with those paragraphs that have a number in the right-most column. For each such paragraph, look up the related item(s) on the Activity/Product Worksheet. Use your response(s) to determine whether to Keep, Delete, or Replace the paragraph. If your responses conflict (for example, one Keep and one Delete) read the actual paragraph in the standard and decide the appropriate tailoring for the paragraph. Circle the appropriate letter in the left-most column (K = keep; D = Delete; R = Replace). Use the Comments column to make notes, record rationale, and record the details of replacement text. As a last step, tailor the paragraphs with INTRO in the right-most column: select D if all subparagraphs are deleted, K if any subparagraph is K or R.

LEGEND: INTRO Paragraph contains no requirements and serves only as an introductory paragraph.
** Details must be specified in the contract.
++ References another DOD/MIL standard.
( ) Parentheses denote paragraphs descriptions vs titles.

K/D/R	2167A PARA.	TITLE / (DESCRIPTION)	COMMENTS	RELATED A/P ITEMS,* OR "INTRO"
K D R	4.	General Requirements		INTRO
K D R	4.1	Software development management		INTRO
K D R	4.1.1	Software development process		INTRO
K D R	4.1.1.a	(System Requirements Analysis/Design)		1
K D R	4.1.1.b	(Software Requirements Analysis)		2
K D R	4.1.1.c	(Preliminary Design)		3
K D R	4.1.1.d	(Detailed Design)		3
K D R	4.1.1.e	(Coding and CSU Testing)		4, 5.a, 5.b
K D R	4.1.1.f	(CSC Integration and Testing)		5.c, 5.d
K D R	4.1.1.g	(CSCI Testing)		6

* Numbers refer to questions on the Activity/Product Worksheet

DOD-STD-2167A TAILORING WORKSHEET (page 2 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	4.1.1.h	(System Integration and Testing)	7
K D R	4.1.2**,++	Formal reviews/audits	11.b
K D R	4.1.3	Software development planning	11.a
K D R	4.1.4	Risk management	11.c
K D R	4.1.5**	Security	11.d
K D R	4.1.6	Subcontractor management	11.e
K D R	4.1.7**	Interface with software IV&V agent(s)	11.f
K D R	4.1.8	Software development library	11.g
K D R	4.1.9	Corrective action process	11.h
K D R	4.1.9.a	(Implement a closed-loop process)	11.h
K D R	4.1.9.b	(Use problem/change reports, etc. as input)	11.h, 11.i
K D R	4.1.9.c	(Classify problems by category and priority)	11.h, 11.j
K D R	4.1.9.d	(Perform analysis to detect trends)	11.h
K D R	4.1.9.e	(Evaluate corrective action taken)	11.h
K D R	4.1.10	Problem/change report	11.i, 11.h
K D R	4.2	Software engineering	INTRO
K D R	4.2.1	Software development methods	12.a, 11.b
K D R	4.2.2**	Software engineering environment	12.b, 11.d
K D R	4.2.3	Safety analysis	12.c
K D R	4.2.4**	Non-developmental software	12.d, 3.d
K D R	4.2.5	Computer software organization	3.a, 11.a
K D R	4.2.6	Traceability of requirements to design	2.a, 2.b, 3.b
K D R	4.2.7**	High order language	4.a

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K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	4.2.8	Design and coding standards	12.e
K D R	4.2.9	Software development files (SDFs)	3.d, 3.a
K D R	4.2.9.a	(Put design considerations/constraints in SDF)	3.d
K D R	4.2.9.b	(Put design documentation and data in SDF)	3.d
K D R	4.2.9.c	(Put schedule/status information in SDF)	3.d
K D R	4.2.9.d	(Put test requirements/responsibilities in SDF)	3.d, 5
K D R	4.2.9.e	(Put test cases/procedures/results in SDF)	3.d, 5
K D R	4.2.10**	Processing resource and reserve capacity	12.f, 2.a, 10.g
K D R	4.3	Formal qualification testing	6.e
K D R	4.3.1	Formal qualification test planning	6.a
K D R	4.3.2**	Software test environment	6.b, 11.d
K D R	4.3.3	Independence in FQT activities	6.g, 11.a
K D R	4.3.4	Traceability of requirements to test cases	2.a, 2.b, 6.c
K D R	4.4	Software product evaluations	8
K D R	4.4.1	Independence in product eval. activities	8.a, 11.a
K D R	4.4.2	Final evaluations	8.c
K D R	4.4.3	Software evaluation records	8.e,11.h,11.i
K D R	4.4.4	Evaluation criteria	8.d
K D R	4.5	Software configuration management	INTRO
K D R	4.5.1**	Configuration identification	9.a
K D R	4.5.1.a	(Identify baseline documentation)	9.a
K D R	4.5.1.b	(Identify documentation/media under CM)	9.a
K D R	4.5.1.c	(Identify each CSCI, CSC, and CSU)	9.a

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K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	4.5.1.d	(Identify version/release/change status)	9.a
K D R	4.5.1.e	(Identify code/documentation relationship)	9.a
K D R	4.5.1.f	(Identify deliverable medium contents)	9.a
K D R	4.5.2	Configuration control	9.b
K D R	4.5.2.a	(Establish Developmental Configuration)	9.b
K D R	4.5.2.b	(Maintain current copies of deliverables)	9.b
K D R	4.5.2.c	(Provide access to documents/code under CM)	9.b
K D R	4.5.2.d	(Control changes to master copies)	9.b
K D R	4.5.3	Configuration status accounting	9.c
K D R	4.5.3.a	(Provide traceability of changes)	9.c
K D R	4.5.3.b	(Communicate configuration status)	9.c
K D R	4.5.3.c	(Ensure consistency between documents/code)	9.c
K D R	4.5.4	Storage, handling, & delivery of project media	9.d
K D R	4.5.5**,++	Engineering Change Proposals	9.e
K D R	4.6	Transitioning to software support	INTRO
K D R	4.6.1**	Regenerable and maintainable code	10.a
K D R	4.6.2	Transition planning	10.b
K D R	4.6.3**	Software transition and continuing support	10.h, 10.i
K D R	4.6.4	Software support & operational documentation	INTRO
K D R	4.6.4.a	(Prepare Comp. Res. Int. Support Doc. (CRISD))	10.b
K D R	4.6.4.b	(Prepare Comp. SW Operator's Manual (CSOM))	10.c
K D R	4.6.4.c	(Prepare SW User's Manual (SUM))	10.d
K D R	4.6.4.d	(Prepare SW Programmer's Manual (SPM))	10.e
K D R	4.6.4.e	(Prepare Firmware Support Manual (FSM))	10.f

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K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.	Detailed Requirements	INTRO
K D R	5.1	System requirements analysis/design	INTRO
K D R	5.1.1	Software development management	INTRO
K D R	5.1.1.1**	(Support System Requirements Review (SRR))	1.c
K D R	5.1.1.2**	(Support System Design Review (SDR))	1.c
K D R	5.1.2	Software engineering	INTRO
K D R	5.1.2.1	(Analyze preliminary system spec)	1.a
K D R	5.1.2.2	(Allocate system rqmts; document in SSDD)	1.b
K D R	5.1.2.3	(Define prelim. engineering rqmts in SRS)	2.a
K D R	5.1.2.4	(Define prelim. interface rqmts in IRS)	2.b
K D R	5.1.3	(Define prelim. qual. rqmts in SRS)	2.a
K D R	5.1.4	Software product evaluations	8.b, 8.d,11.a 1.b, 2.a, 2.b
K D R	5.1.4.a	(Evaluate SW Development Plan)	11.a, 8.b
K D R	5.1.4.b	(Evaluate Sys/Seg Design Document)	1.b, 8.b
K D R	5.1.4.c	(Evaluate prelim. SRSs)	2.a, 8.b
K D R	5.1.4.d	(Evaluate prelim. IRS)	2.b, 8.b
K D R	5.1.5	Configuration management	INTRO
K D R	5.1.5.a	(Put SDP under config. control)	11.a, 9.b
K D R	5.1.5.b	(Put SSDD under config. control)	1.b, 9.b
K D R	5.1.5.c	(Put prelim. SRSs under config. control)	2.a, 9.b
K D R	5.1.5.d	(Put prelim. IRS under config. control)	2.b, 9.b
K D R	5.2	Software requirements analysis	INTRO
K D R	5.2.1++	(Conduct SW Specification Review (SSR))	2.a, 2.b, 11.b

DOD-STD-2167A TAILORING WORKSHEET (page 6 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.2.2	Software engineering	INTRO
K D R	5.2.2.1	(Define engineering rqmts; document in SRS)	2.a
K D R	5.2.2.2	(Define interface rqmts; document in IRS)	2.b
K D R	5.2.3	(Define qualification rqmts; doc. in SRS)	2.a
K D R	5.2.4	Software product evaluations	8.b,8.d,11.b, 2.a, 2.b
K D R	5.2.4.a	(Evaluate Software Rqmt Specs)	2.a, 8.b
K D R	5.2.4.b	(Evaluate Interface Rqmt Specs)	2.b, 8.b
K D R	5.2.5	(Put SRS/IRS under config. control)	2.a, 2.b, 9.b
K D R	5.3	Preliminary design	INTRO
K D R	5.3.1++	(Conduct Preliminary Design Review (PDR))	3.b,3.c,11.b
K D R	5.3.2	Software engineering	INTRO
K D R	5.3.2.1	(Develop prelim. design; document in SDD)	3.b, 2.a, 2.b
K D R	5.3.2.2	(Develop prelim. interface design; document in IDD)	3.c, 2.b
K D R	5.3.2.3	(Document other design information in SDD)	3.b
K D R	5.3.2.4	(Establish CSC test requirements)	5.c, 3.d
K D R	5.3.3	(Identify formal qualification tests)	6.a, 2.a
K D R	5.3.4	Software product evaluations	8.b, 8.d, 11.b, 3.b, 3.c, 6.a, 5.c
K D R	5.3.4.a	(Evaluate Software Design Documents)	3.b, 8.b
K D R	5.3.4.b	(Evaluate prelim. Interface Design Doc)	3.c, 8.b
K D R	5.3.4.c	(Evaluate Software Test Plan)	6.a, 8.b
K D R	5.3.4.d	(Evaluate CSC test requirements)	5.c, 8.b
K D R	5.3.5	Configuration management	INTRO
K D R	5.3.5.1	(Put SDDs into Developmental Config.)	3.b, 9.b

DOD-STD-2167A TAILORING WORKSHEET (page 7 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.3.5.2	(Put STP under config. control)	6.a, 9.b
K D R	5.3.5.3	(Put IDD under config. control)	3.c, 9.b
K D R	5.4	Detailed design	INTRO
K D R	5.4.1++	(Conduct Critical Design Review (CDR))	3.b,3.c,11.b
K D R	5.4.2	Software engineering	INTRO
K D R	5.4.2.1	(Develop detailed design; document in SDD)	3.b
K D R	5.4.2.2	(Develop detailed interface design; document in IDD)	3.c, 2.b
K D R	5.4.2.3	(Document other design information in SDD)	3.b
K D R	5.4.2.4	(Define CSC test cases)	5.c, 3.d
K D R	5.4.2.5	(Define CSU test rqmts/cases)	5.a, 3.d
K D R	5.4.3	(Identify FQT test cases; document in STD)	6.c, 6.a
K D R	5.4.4	Software product evaluations	8.b,8.d,11.b, 3.b, 3.c, 3.d, 5.c, 5.a
K D R	5.4.4.a	(Evaluate updated Software Design Doc)	3.b, 8.b
K D R	5.4.4.b	(Evaluate updated Interface Design Doc)	3.c, 8.b
K D R	5.4.4.c	(Evaluate CSC test cases)	5.c, 8.b
K D R	5.4.4.d	(Evaluate CSU test rqmts/cases)	5.a, 8.b
K D R	5.4.4.e	(Evaluate a % of CSU and CSC SDFs)	3.d,8.b,11.a
K D R	5.4.4.f	(Evaluate Software Test Description)	6.c, 8.b
K D R	5.4.5	Configuration management	INTRO
K D R	5.4.5.1	(Put updated SDD in Devel. Config.)	3.b, 9.b
K D R	5.4.5.2	(Put updated IDD under config. control)	3.c, 9.b
K D R	5.4.5.3	(Put STD under config. control)	6.c, 9.b

DOD-STD-2167A TAILORING WORKSHEET (page 8 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.5	Coding and CSU testing	INTRO
K D R	5.5.1	Software development management (no rqmts)	INTRO
K D R	5.5.2	Software engineering	INTRO
K D R	5.5.2.1	(Develop CSU test procedures)	5.a, 3.d
K D R	5.5.2.2	(Code and test CSUs)	4.b, 5.b, 3.d
K D R	5.5.2.3	(Revise documents/code based on CSU tests)	3.b, 3.c, 3.d, 4.b, 5.b
K D R	5.5.2.4	(Develop CSC test procedures)	5.c, 3.d
K D R	5.5.3	Formal qualification testing (no rqmts)	INTRO
K D R	5.5.4	Software product evaluations	8.b, 8.d, 4.b, 5.a, 5.b, 5.c, 3.d
K D R	5.5.4.a	(Evaluate source code)	4.b, 8.b
K D R	5.5.4.b	(Evaluate CSC test procedures)	5.c, 8.b
K D R	5.5.4.c	(Evaluate CSU test procedures/results)	5.a, 5.b, 8.b
K D R	5.5.4.d	(Evaluate a % of updated SDFs)	3.d, 8.b
K D R	5.5.5	Configuration management	INTRO
K D R	5.5.5.1	(Put updated SDD/listings in Devel. Config.)	3.b, 4.b, 9.b
K D R	5.5.5.2	(Put source code under config. control)	4.b, 9.b
K D R	5.6	CSC integration and testing	INTRO
K D R	5.6.1++	(Conduct Test Readiness Review (TRR))	6.c, 11.b
K D R	5.6.2	Software engineering	INTRO
K D R	5.6.2.1	(Conduct CSC integration & testing)	5.d
K D R	5.6.2.2	(Record CSC test results)	5.d, 3.d
K D R	5.6.2.3	(Revise design documentation/code)	3.b, 3.c, 3.d, 4.b, 5.d

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K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.6.3	Formal qualification testing	INTRO
K D R	5.6.3.1	(Develop FQT test procedures; document in STD)	6.c
K D R	5.6.3.2	(Dry run FQT test procedures)	6.d, 6.c, 3.d
K D R	5.6.4	Software product evaluations	8.b, 8.d,11.b, 3.d, 6.c, 3.b, 3.c, 4.b,
K D R	5.6.4.a	(Evaluate test results in SDFs)	5.d, 6.d, 3.d, 8.b
K D R	5.6.4.b	(Evaluate updated STD)	6.c, 8.b
K D R	5.6.4.c	(Evaluate updated code & design docs)	3.b, 3.c, 4.b, 8.b
K D R	5.6.4.d	(Evaluate a % of updated SDFs)	3.d, 8.b
K D R	5.6.5	(Put updated SDD/listings in Devel. Config)	3.b, 4.b, 9.b
K D R	5.7	CSCI testing	INTRO
K D R	5.7.1	(Support Functional/Physical Config. Audits (FCA/PCA))	4.b, 6.f, 10.g, 11.b
K D R	5.7.2	Software engineering	INTRO
K D R	5.7.2.1	(Revise documentation/code based on FQT)	3.b, 3.d, 4.b, 6.e
K D R	5.7.2.2	(Revise IDD based on FQT)	3.c, 6.e
K D R	5.7.2.3	(Produce updated source code)	6.e,4.b 11.b,2.a
K D R	5.7.2.4	(Prepare an SPS for each CSCI)	10.g
K D R	5.7.3	Formal qualification testing	INTRO
K D R	5.7.3.1	(Perform formal qualification testing)	6.e, 6.c
K D R	5.7.3.2	(Prepare Software Test Reports)	6.f
K D R	5.7.3.3	(Prepare updated SW Test Desciption)	6.c

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K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.7.4	Software product evaluations	8.b, 8.d, 6.f 3.b, 3.c, 4.b
K D R	5.7.4.a	(Evaluate STRs)	6.f, 8.b
K D R	5.7.4.b	(Evaluate updated code & design documents)	3.b, 3.c, 4.b, 8.b
K D R	5.7.5	Configuration management	INTRO
K D R	5.7.5.1	(Prepare Version Description Document (VDD))	4.c
K D R	5.7.5.2	(Disestablish Devel. Config.)	9.b,10.g,11.b
K D R	5.8	System integration & testing	INTRO
K D R	5.8.1	(Support Functional/Physical Config. Audits (FCA/PCA))	4.b, 6.f, 10.g, 11.b
K D R	5.8.2	(Revise docs/code based on system test)	7.d
K D R	5.8.3	Formal qualification testing	INTRO
K D R	5.8.3.1	(Support system test planning)	7.a
K D R	5.8.3.2	(Support system testing)	7.b
K D R	5.8.3.3	(Support post test analysis/reporting)	7.c
K D R	5.8.4	(Evaluate updated code/design documents)	7.d, 8.b, 8.d
K D R	5.8.5	(Prepare changes to baselined documents)	7.e
K D R	B.	Appendix B - Rqmts for coding standards	INTRO
K D R	B.10.3.1	Presentation style	12.e
K D R	B.10.3.2	Naming	12.e
K D R	B.10.3.3	Restrictions on the implementation language	12.e
K D R	B.10.3.4	Use of language constructs and features	12.e
K D R	B.10.3.5	Complexity	12.e

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K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	C.	Appendix C - Category and priority classification	INTRO
K D R	C.10.2	Classify by category: SW, doc. or design	11.j
K D R	C.10.3	Classify by priority: Priority 1, 2, 3. 4. 5	11.j
K D R	D.	Appendix D - Evaluation criteria	INTRO
K D R	D.10.2.1	Internal consistency	8.d
K D R	D.10.2.2	Understandability	8.d
K D R	D.10.2.3	Traceability to indicated documents	8.d
K D R	D.10.2.4	Consistency with indicated documents	8.d
K D R	D.10.2.5	Appropriate analysis, design, & coding techniques used	8.d
K D R	D.10.2.6	Appropriate allocation of sizing & timing resources	8.d
K D R	D.10.2.7	Adequate test coverage of requirements	8.d
K D R	D.10.3	Additional criteria	8.d
K D R	D.10.3.1	Adequacy of quality factors	8.d
K D R	D.10.3.2	Testability of requirements	8.d
K D R	D.10.3.3	Consistency between data definition and data use	8.d
K D R	D.10.3.4	Adequacy of test cases, test procedures	8.d
K D R	D.10.3.5	Completeness of testing	8.d
K D R	D.10.3.6	Completeness of retesting	8.d

DID TAILORING WORKSHEET FOR THE COMPUTER RESOURCES INTEGRATED SUPPORT DOCUMENT (CRISD) (DI-MCCR-80024A)

KEEP ___ DELETE ___

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: Tailor the CRISD DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the CRISD DID required under the contract. Use the table below to select required topics in the CRISD. Circle "K" to keep a topic, "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the CRISD overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS			COMMENTS	DID PARAs
K D R	Support information				10.1.5
	K D R	Software support resources			10.1.5.1
		K D R	Software		10.1.5.1.1
		K D R	Hardware		10.1.5.1.2
		K D R	Facilities		10.1.5.1.3
		K D R	Personnel		10.1.5.1.4
		K D R	Other resources		10.1.5.1.5
	K D R	Operations			10.1.5.2
		K D R	Software modification		10.1.5.2.1
		K D R	Software integration/testing		10.1.5.2.2
		K D R	Software generation		10.1.5.2.3
		K D R	Simulation		10.1.5.2.4
		K D R	Emulation		10.1.5.2.5
	K D R	Training			10.1.5.3
		K D R	Operational SW/target system		10.1.5.3.a
		K D R	Support SW/host system		10.1.5.3.b
		K D R	Equipment maintenance		10.1.5.3.c
	K D R	Anticipated areas of change			10.1.5.4
	K D R	Transition planning			10.1.6
		K D R	Resources		10.1.6.a
		K D R	Schedules		10.1.6.b
		K D R	Installation/checkout procedures		10.1.6.c

DID TAILORING WORKSHEET FOR THE
COMPUTER SYSTEM OPERATOR'S MANUAL
(CSOM) (DI-MCCR-80018A) KEEP _____ DELETE _____

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: Tailor the CSOM DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the CSOM DID required under the contract. *Use the table below to select required topics in the CSOM. Circle "K" to keep a topic,* "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the CSOM overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS			COMMENTS	DID PARAs
K D R	Computer system preparation/shutdown				10.1.5.1
	K D R	Power on and off			10.1.5.1.1
	K D R	Initiation			10.1.5.1.2
		K D R	Equipment setup		10.1.5.1.2.a
		K D R	Bootstrap and load		10.1.5.1.2.b
		K D R	Initiation commands		10.1.5.1.2.c
		K D R	File initialization		10.1.5.1.2.d
	K D R	Shutdown			10.1.5.1.3
K D R	Operating procedures				10.1.5.2
	K D R	Input and output procedures			10.1.5.2.1
	K D R	Monitoring procedures			10.1.5.2.2
	K D R	Recovery procedures			10.1.5.2.3
	K D R	Off-line routine procedures			10.1.5.2.4
	K D R	Other procedures			10.1.5.1.5
K D R	Diagnostic features				10.1.6
	K D R	Diagnostic features summary			10.1.6.1
	K D R	Diagnostic procedures			10.1.6.2
		K D R	Procedure name		10.1.6.2.1
			K D R	HW/SW/FW needed	10.1.6.2.1.a
			K D R	Instructions	10.1.6.2.1.b
			K D R	Diagnostics	10.1.6.2.1.c
	K D R	Diagnostic tools			10.1.6.3
		K D R	Tool name		10.1.6.3.1

DID TAILORING WORKSHEET FOR THE
FIRMWARE SUPPORT MANUAL
(FSM) (DI-MCCR-80022A)

KEEP _____ DELETE _____

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: Tailor the FSM DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the FSM DID required under the contract. Use the table below to select required topics in the FSM. Circle "K" to keep a topic, "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the FSM overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS			COMMENTS	DID PARAs
K D R	Firmware device information				10.1.5
	K D R	Device description			10.1.5.1
		K D R	Name, id number		10.1.5.1.a
		K D R	Memory size		10.1.5.1.b
		K D R	Operating characteristics		10.1.5.1.c
		K D R	Pin functional description		10.1.5.1.d
		K D R	Logical interfaces		10.1.5.1.e
		K D R	Identification scheme		10.1.5.1.f
		K D R	Timing diagrams		10.1.5.1.g
	K D R	Installation and repair procedures			10.1.5.2
	K D R	Security measures			10.1.5.3
	K D R	Limitations			10.1.5.4
K D R	Programming equipment and procedures				10.1.6
	K D R	Programming hardware			10.1.6.1
	K D R	Programming software			10.1.6.2
	K D R	Loading procedures			10.1.6.3
K D R	Vendor Information				10.1.7

DID TAILORING WORKSHEET FOR THE
INTERFACE DESIGN DOCUMENT
(IDD) (DI-MCCR-80027A)

KEEP ____ DELETE ____

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: Tailor the IDD DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the IDD DID required under the contract. Use the table below to select required topics in the IDD. Circle "K" to keep a topic, "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the IDD overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
K D R	Interface design		10.1.5
K D R	Interface diagrams		10.1.5.1
K D R	Interface name/identifier		10.1.5.2
K D R	Data elements		10.1.5.2.1
K D R	Identifier		10.1.5.2.1.a
K D R	Description		10.1.5.2.1.b
K D R	Source		10.1.5.2.1.c
K D R	Users		10.1.5.2.1.d
K D R	Units of measure		10.1.5.2.1.e
K D R	Range/limit		10.1.5.2.1.f
K D R	Accuracy		10.1.5.2.1.g
K D R	Precision resolution		10.1.5.2.1.h
K D R	Frequency		10.1.5.2.1.i
K D R	Legality checks		10.1.5.2.1.j
K D R	Data type		10.1.5.2.1.k
K D R	Format		10.1.5.2.1.l
K D R	Priority		10.1.5.2.1.m
K D R	Message descriptions		10.1.5.2.2
K D R	Interface priority		10.1.5.2.3

DID TAILORING WORKSHEET FOR THE
INTERFACE DESIGN DOCUMENT (page 2 of 2)

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
K D R	Communication protocols		10.1.5.2.4
K D R	Protocol name		10.1.5.2.4.1
K D R	Message fragmentation		10.1.5.2.4.1.a
K D R	Message formatting		10.1.5.2.4.1.b
K D R	Error control		10.1.5.2.4.1.c
K D R	Synchronization		10.1.5.2.4.1.d
K D R	Flow control		10.1.5.2.4.1.e
K D R	Data transfer rate		10.1.5.2.4.1.f
K D R	Routing, addressing		10.1.5.2.4.1.g
K D R	Transmission services		10.1.5.2.4.1.h
K D R	Status, identification		10.1.5.2.4.1.i
K D R	Security		10.1.5.2.4.1.j

DID TAILORING WORKSHEET FOR THE INTERFACE REQUIREMENTS SPECIFICATION (IRS) (DI-MCCR-80026A)

KEEP _____ DELETE _____

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: Tailor the IRS DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the IRS DID required under the contract. Use the table below to select required topics in the IRS. Circle "K" to keep a topic, "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the IRS overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS				COMMENTS	DID PARAs
K D R	Interface specification					10.1.5
	K D R	Interface diagrams				10.1.5.1
	K D R	Interface name and identifier				10.1.5.2
		K D R	Interface requirements			10.1.5.2.1
			K D R	Execution		10.1.5.2.1.a
			K D R	Comm. protocol		10.1.5.2.1.b
			K D R	Priority level		10.1.5.2.1.c
		K D R	Data requirements			10.1.5.2.2
			K D R	Data element ID		10.1.5.2.2.a
			K D R	Description		10.1.5.2.2.b
			K D R	Source		10.1.5.2.2.c
			K D R	Users		10.1.5.2.2.d
			K D R	Units of measure		10.1.5.2.2.e
			K D R	Limit/range		10.1.5.2.2.f
			K D R	Accuracy		10.1.5.2.2.g
			K D R	Precision		10.1.5.2.2.h
K D R	Quality assurance requirements					10.1.6
K D R	Preparation for delivery					10.1.7

DID TAILORING WORKSHEET FOR THE
SOFTWARE DESIGN DOCUMENT
(SDD) (DI-MCCR-80012A)

KEEP _____ DELETE ____

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: Tailor the SDD DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the SDD DID required under the contract. Use the table below to select required topics in the SDD. Circle "K" to keep a topic, "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the SDD overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
K D R	Preliminary design		10.1.5
K D R	CSCI overview		10.1.5.1
K D R	CSCI architecture		10.1.5.1.1
K D R	System states and modes		10.1.5.1.2
K D R	Memory/processing time allocation		10.1.5.1.3
K D R	CSCI design description		10.1.5.2
K D R	CSC name/identifier		10.1.5.2.1
K D R	Requirements		10.1.5.2.1.a
K D R	Control/data flow		10.1.5.2.1.b
K D R	Derived rqmts/constraints		10.1.5.2.1.c
K D R	Sub-CSC description		10.1.5.2.1.1
K D R	Detailed design		10.1.6
K D R	CSC name/identifier		10.1.6.1
K D R	CSU name/identifier		10.1.6.1.2
K D R	Design rqmts/constraints		10.1.6.1.2.1
K D R	CSU design		10.1.6.1.2.2
K D R	I/O data elements		10.1.6.1.2.2.a
K D R	Local data elements		10.1.6.1.2.2.b
K D R	Interrupts/signals		10.1.6.1.2.2.c
K D R	Algorithms		10.1.6.1.2.2.d
K D R	Error handling		10.1.6.1.2.2.e
K D R	Data conversion		10.1.6.1.2.2.f

DID TAILORING WORKSHEET FOR THE
SOFTWARE DESIGN DOCUMENT (page 2 of 2)

K/D/R	REQUIRED TOPICS			COMMENTS	DID PARAs
			K D R	Other elements used	10.1.6.1.2.2.g
			K D R	Logic flow	10.1.6.1.2.2.h
			K D R	Data structures	10.1.6.1.2.2.i
			K D R	Local data files	10.1.6.1.2.2.j
			K D R	Limitations	10.1.6.1.2.2.k
K D R	CSCI global data				10.1.7
	K D R	Data elements internal to CSCI			10.1.7.a
		K D R	Name		10.1.7.a(1)
		K D R	Description		10.1.7.a(2)
		K D R	Units of measure		10.1.7.a(3)
		K D R	Range/limit		10.1.7.a(4)
		K D R	Accuracy		10.1.7.a(5)
		K D R	Precision/resolution		10.1.7.a(6)
		K D R	Frequency		10.1.7.a(7)
		K D R	Legality checks		10.1.7.a(8)
		K D R	Data type		10.1.7.a(9)
		K D R	Data format		10.1.7.a(10)
		K D R	CSU - data element set		10.1.7.a(11)
		K D R	CSU - data element used		10.1.7.a(12)
		K D R	Data source		10.1.7.a(13)
	K D R	External interfaces data elements			10.1.7.b
		K D R	Identify data element		10.1.7.b(1)
		K D R	Identify interface		10.1.7.b(2)
		K D R	Reference IDD		10.1.7.b(3)
K D R	CSCI data files				10.1.8
	K D R	Data file to CSC/CSU reference			10.1.8.1
	K D R	Data file name/identifier			10.1.8.2
K D R	Requirements traceability				10.1.9

DID TAILORING WORKSHEET FOR THE
SOFTWARE DEVELOPMENT PLAN
(SDP) (DI-MCCR-80030A)

KEEP ____ DELETE ____

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: Tailor the SDP DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the SDP DID required under the contract. Use the table below to select required topics in the SDP. Circle "K" to keep a topic, "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the SDP overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
K D R	Software development management		10.2.5
K D R	Project organization/resources		10.2.5.1
K D R	Contractor facilities		10.2.5.1.1
K D R	Govt furnished SW, equip, etc.		10.2.5.1.2
K D R	Organizational structure		10.2.5.1.3
K D R	Personnel		10.2.5.1.4
K D R	Schedule and milestones		10.2.5.2
K D R	Activities		10.2.5.2.1
K D R	Initiation		10.2.5.2.1.a
K D R	Documentation		10.2.5.2.1.b
K D R	Completion		10.2.5.2.1.c
K D R	High risk areas		10.2.5.2.1.d
K D R	Activity network		10.2.5.2.2
K D R	Source of req'd resources		10.2.5.2.3
K D R	Risk management		10.2.5.3
K D R	Identified risks		10.2.5.3.a
K D R	Risk factors		10.2.5.3.b
K D R	Monitoring procedures		10.2.5.3.c
K D R	Contingency procedures		10.2.5.3.d
K D R	Security		10.2.5.4
K D R	Interface with associate contractors		10.2.5.5
K D R	Interface with SW IV&V agent(s)		10.2.5.6

DID TAILORING WORKSHEET FOR THE
SOFTWARE DEVELOPMENT PLAN (page 2 of 4)

K/D/R	REQUIRED TOPICS				COMMENTS	DID PARAs
	K D R	Subcontractor management				10.2.5.7
	K D R	Formal reviews				10.2.5.8
	K D R	Software development library				10.2.5.9
	K D R	Corrective action process				10.2.5.10
	K D R	Problem/change report				10.2.5.11 (a-v are not req'd)
K D R	Software engineering					10.2.6
	K D R	Organization and resources				10.2.6.1
		K D R	Organizational structure			10.2.6.1.1
		K D R	Personnel			10.2.6.1.2
		K D R	SW engineering environment			10.2.6.1.3
			K D R	Software items		10.2.6.1.3.1
			K D R	Hardware/firmware items		10.2.6.1.3.2
			K D R	Government rights		10.2.6.1.3.3
			K D R	Installation/test		10.2.6.1.3.4
	K D R	Software standards and procedures				10.2.6.2
		K D R	SW development methodology			10.2.6.2.1
			K D R	SW Rqmts. Analysis		10.2.6.2.1.a
			K D R	Preliminary Design		10.2.6.2.1.b
			K D R	Detailed Design		10.2.6.2.1.c
			K D R	Coding & CSU Test		10.2.6.2.1.d
			K D R	CSC Integration/Test		10.2.6.2.1.e
			K D R	CSCI Testing		10.2.6.2.1.f
		K D R	Software development files			10.2.6.2.2
		K D R	Design standards			10.2.6.2.3
		K D R	Coding standards			10.2.6.2.4
	K D R	Non-developmental software				10.2.6.3
K D R	Formal qualification testing					10.2.7
	K D R	Organization and resources				10.2.7.1
		K D R	Organizational structure			10.2.7.1.1
		K D R	Personnel			10.2.7.1.2

DID TAILORING WORKSHEET FOR THE
SOFTWARE DEVELOPMENT PLAN (page 3 of 4)

K/D/R	REQUIRED TOPICS			COMMENTS	DID PARAs
	K D R	Test approach/philosophy			10.2.7.2
	K D R	Test plan assumptions/constraints			10.2.7.3
K D R	Software product evaluations				10.2.8
	K D R	Organization/resources			10.2.8.1
		K D R	Organizational structure		10.2.8.1.1
		K D R	Personnel		10.2.8.1.2
	K D R	Procedures and tools			10.2.8.2
		K D R	Procedures		10.2.8.2.1
		K D R	Tools		10.2.8.2.2
	K D R	Eval of subcontractor products			10.2.8.3
	K D R	SW product evaluation records			10.2.8.4
	K D R	Activity-dependent evaluations			10.2.8.5
		K D R	Eval of each product		10.2.8.5.1
K D R	Software configuration management				10.2.9
	K D R	Organization/resources			10.2.9.1
		K D R	Organizational structure		10.2.9.1.1
		K D R	Personnel		10.2.9.1.2
	K D R	Configuration identification			10.2.9.2
		K D R	Devel. config. ident.		10.2.9.2.1
		K D R	Identification methods		10.2.9.2.2
	K D R	Configuration control			10.2.9.3
		K D R	Flow of config. control		10.2.9.3.1
		K D R	Reporting documentation		10.2.9.3.2
			K D R	Each report	10.2.9.3.2.1
		K D R	Review procedures		10.2.9.3.3
			K D R	Review boards	10.2.9.3.3.1
		K D R	Media storage & handling		10.2.9.3.4
		K D R	Additional controls		10.2.9.3.5
	K D R	Configuration status accounting			10.2.9.4
	K D R	Configuration audits			10.2.9.5

DID TAILORING WORKSHEET FOR THE
SOFTWARE DEVELOPMENT PLAN (page 4 of 4)

K/D/R	REQUIRED TOPICS			COMMENTS	DID PARAs
	K D R	Prep for spec authentication			10.2.9.6
		K D R	Submittal procedures		10.2.9.6.a
		K D R	Change incorporation		10.2.9.6.b
		K D R	CM reporting		10.2.9.6.c
	K D R	CM major milestones			10.2.9.7
K D R	Other SW development functions				10.2.10
	K D R	Function name			10.2.10.1
		K D R	Organizational structure		10.2.10.1.1
		K D R	Personnel		10.2.10.1.2
		K D R	Other resources		10.2.10.1.3
		K D R	Methods and procedures		10.2.10.1.4

DID TAILORING WORKSHEET FOR THE
SOFTWARE PROGRAMMER'S MANUAL
(SPM) (DI-MCCR-80021A)

KEEP ____ DELETE ____

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: Tailor the SPM DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the SPM DID required under the contract. Use the table below to select required topics in the SPM. Circle "K" to keep a topic, "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the SPM overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
K D R	Software programming environment		10.1.5
K D R	Equipment configuration		10.1.5.a
K D R	Operational information		10.1.5.b
K D R	Machine cycle time		10.1.5.b.1
K D R	Word length		10.1.5.b.2
K D R	Memory capacity		10.1.5.b.3
K D R	Instruction set characteristics		10.1.5.b.4
K D R	Interrupt capabilities		10.1.5.b.5
K D R	Modes of operation		10.1.5.b.6
K D R	Operational registers		10.1.5.b.7
K D R	Error indicators		10.1.5.b.8
K D R	I/O characteristics		10.1.5.b.9
K D R	Special features		10.1.5.b.10
K D R	Compilations, assemblies, linkages		10.1.5.c
K D R	Programming information		10.1.6
K D R	Programming features		10.1.6.a.
K D R	Data representation		10.1.6.a.1
K D R	Instruction formats		10.1.6.a.2
K D R	Special registers		10.1.6.a.3
K D R	Control instructions		10.1.6.a.4
K D R	Subroutines & procedures		10.1.6.a.5

DID TAILORING WORKSHEET FOR THE
SOFTWARE PROGRAMMER'S MANUAL (page 2 of 2)

K/D/R	REQUIRED TOPICS		COMMENTS	DID PARAs
	K D R	Interrupt processing		10.1.6.a.6
	K D R	Timers and clocks		10.1.6.a.7
	K D R	Memory protection		10.1.6.a.8
	K D R	Additional features		10.1.6.a.9
K D R	Program instructions			10.1.6.b
	K D R	Use of each		10.1.6.b.1
	K D R	Syntax		10.1.6.b.2
	K D R	Condition codes set		10.1.6.b.3
	K D R	Execution time		10.1.6.b.4
	K D R	Machine-code format		10.1.6.b.5
	K D R	Mnemonic conventions		10.1.6.b.6
	K D R	Other characteristics		10.1.6.b.7
K D R	Input and output control programming			10.1.6.c
	K D R	initial loading		10.1.6.c.1
	K D R	Data channels		10.1.6.c.2
	K D R	Discrete inputs/outputs		10.1.6.c.3
	K D R	Interface components		10.1.6.c.4
	K D R	Device numbers, etc.		10.1.6.c.5
K D R	Additional or special techniques			10.1.6.d
K D R	Programming examples			10.1.6.e
K D R	Error detection & diagnostic features			10.1.6.f

DID TAILORING WORKSHEET FOR THE
SOFTWARE PRODUCT SPECIFICATION
(SPS) (DI-MCCR-80029A)

KEEP _____ DELETE _____

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: Tailor the SPS DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the SPS DID required under the contract. Use the table below to select required topics in the SPS. Circle "K" to keep a topic, "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the SPS overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
K D R	Software design (updated SDD)		10.1.5.1, 10.1.7.1
K D R	CSCI source code listings		10.1.5.2, 10.1.7.2
K D R	Identification of req'd compiler/assembler		10.1.5.3
K D R	Measured resource utilization		10.1.5.4

DID TAILORING WORKSHEET FOR THE SOFTWARE REQUIREMENTS SPECIFICATION (SRS) (DI-MCCR-80025A)

KEEP ____ DELETE ____

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: Tailor the SRS DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the SRS DID required under the contract. Use the table below to select required topics in the SRS. Circle "K" to keep a topic, "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the SRS overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
K D R	Engineering requirements		10.1.5
K D R	CSCI external interface requirements		10.1.5.1
K D R	CSCI capability requirements		10.1.5.2
K D R	Capability name/description		10.1.5.2.1
K D R	CSCI internal interfaces		10.1.5.3
K D R	CSCI data element requirements		10.1.5.4
K D R	CSCI-internal data elements		10.1.5.4.a
K D R	Identifier		10.1.5.4.a(1)
K D R	Description		10.1.5.4.a(2)
K D R	Units of measure		10.1.5.4.a(3)
K D R	Range/limit		10.1.5.4.a(4)
K D R	Accuracy		10.1.5.4.a(5)
K D R	Precision/resolution		10.1.5.4.a(6)
K D R	Internal interfaces		10.1.5.4.a(7)
K D R	CSCI-external data elements		10.1.5.4.b
K D R	Data element ID		10.1.5.4.b(1)
K D R	Interface ID		10.1.5.4.b(2)
K D R	Source/destination		10.1.5.4.b(3)
K D R	Reference to IRS		10.1.5.4.b(4)
K D R	Adaptation requirements		10.1.5.5
K D R	Installation-dependent data		10.1.5.5.1
K D R	Operational parameters		10.1.5.5.2

DID TAILORING WORKSHEET FOR THE
SOFTWARE REQUIREMENTS SPECIFICATION (page 2 of 2)

K/D/R	REQUIRED TOPICS			COMMENTS	DID PARAs
	K D R	Sizing/timing requirements			10.1.5.6
	K D R	Safety requirements			10.1.5.7
	K D R	Security requirements			10.1.5.8
	K D R	Design constraints			10.1.5.9
	K D R	Software quality factors			10.1.5.10
	K D R	Human engineering requirements			10.1.5.11
		K D R	Human capabilities/limitations		10.1.5.11.a
		K D R	Foreseeable human errors		10.1.5.11.b
		K D R	Impact on system environment		10.1.5.11.c
	K D R	Requirements traceability			10.1.5.12
K D R	Qualification requirements				10.1.6
	K D R	Qualification methods			10.1.6.1
		K D R	Demonstration		10.1.6.1.a
		K D R	Analysis		10.1.6.1.b
		K D R	Inspection		10.1.6.1.c
	K D R	Special qualification requirements			10.1.6.2
		K D R	Identifier		10.1.6.2.a.
		K D R	Capability to be tested		10.1.6.2.b
		K D R	Description of test		10.1.6.2.c
		K D R	Level of test		10.1.6.2.d
K D R	Preparation for delivery				10.1.7

DID TAILORING WORKSHEET FOR THE
SOFTWARE TEST DESCRIPTION
(STD) (DI-MCCR-80015A)

KEEP ____ DELETE ____

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: Tailor the STD DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the STD DID required under the contract. Use the table below to select required topics in the STD. Circle "K" to keep a topic, "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the STD overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs.
K D R	FQT preparations		10.1.5
K D R	Test name/identifier		10.1.5.1
K D R	Test schedule for:		10.1.5.1.1
K D R	Briefings		10.1.5.1.1.a
K D R	Pretest activities		10.1.5.1.1.b
K D R	Test itself		10.1.5.1.1.c
K D R	Debriefings		10.1.5.1.1.d
K D R	Data reduction		10.1.5.1.1.e
K D R	Pre-test procedures		10.1.5.1.2
K D R	HW preparation		10.1.5.1.2.1
K D R	HW name/ID		10.1.5.1.2.1.a
K D R	Switch settings/cabling		10.1.5.1.2.1.b
K D R	HW interconnections		10.1.5.1.2.1.c
K D R	HW readiness instructions		10.1.5.1.2.1.d
K D R	SW preparation		10.1.5.1.2.2
K D R	Loading the CSCI		10.1.5.1.2.2.a
K D R	Loading support SW		10.1.5.1.2.2.b
K D R	Loading sequence		10.1.5.1.2.2.c
K D R	Initialization instructions		10.1.5.1.2.2.d
K D R	Other preparations		10.1.5.1.2.3

DID TAILORING WORKSHEET FOR THE
SOFTWARE TEST DESCRIPTION (page 2 of 2)

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
K D R	FQT descriptions		10.1.6
K D R	Test name/identifier		10.1.6.1
K D R	Test case name/identifier		10.1.6.1.1
K D R	Rqmts. trace		10.1.6.1.1.1
K D R	Initialization		10.1.6.1.1.2
K D R	HW/SW config.		10.1.6.1.1.2.a
K D R	Flag/etc. settings		10.1.6.1.1.2.b
K D R	Preset HW conditions		10.1.6.1.1.2.c
K D R	Initial timing conditions		10.1.6.1.1.2.d
K D R	Simulated environment		10.1.6.1.1.2.e
K D R	Special instructions		10.1.6.1.1.2.f
K D R	Test inputs		10.1.6.1.1.3
K D R	Description		10.1.6.1.1.3.a
K D R	Source		10.1.6.1.1.3.b
K D R	Real vs simulated		10.1.6.1.1.3.c
K D R	Time/event sequence		10.1.6.1.1.3.d
K D R	Expected results		10.1.6.1.1.4
K D R	Evaluation criteria		10.1.6.1.1.5
K D R	Accuracy		10.1.6.1.1.5.a
K D R	Allowable bounds		10.1.6.1.1.5.b
K D R	Duration limits		10.1.6.1.1.5.c
K D R	Inconclusive conditions		10.1.6.1.1.5.d
K D R	Allowable error severity		10.1.6.1.1.5.e
K D R	Additional criteria		10.1.6.1.1.5.f
K D R	Test procedure		10.1.6.1.1.6
K D R	Operator actions		10.1.6.1.1.6.a
K D R	Expected results		10.1.6.1.1.6.b
K D R	Evaluation criteria		10.1.6.1.1.6.c
K D R	Error responses		10.1.6.1.1.6.d
K D R	Reduction/analysis		10.1.6.1.1.6.e
K D R	Constraints		10.1.6.1.1.7

DID TAILORING WORKSHEET FOR THE
SOFTWARE TEST PLAN
(STP) (DI-MCCR-80014A)

KEEP ____ DELETE ____

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: Tailor the STP DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the STP DID required under the contract. Use the table below to select required topics in the STP. Circle "K" to keep a topic, "D" to delete it; or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the STP overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
K D R	Software test environment		10.1.5
K D R	Software items		10.1.5.1
K D R	Hardware and firmware items		10.1.5.2
K D R	Proprietary nature, and Government rights		10.1.5.3
K D R	Installation, testing, control		10.1.5.4
K D R	Formal qualification test identification		10.1.6
K D R	CSCI name/identifier		10.1.6.1
K D R	General test requirements		10.1.6.1.1
K D R	Test classes		10.1.6.1.2
K D R	Test levels		10.1.6.1.3
K D R	Test definitions		10.1.6.1.4
K D R	Test name/ID		10.1.6.1.4.1
K D R	Objective		10.1.6.1.4.1.a
K D R	Special req'ts		10.1.6.1.4.1.b
K D R	Test level		10.1.6.1.4.1.c
K D R	Test type/class		10.1.6.1.4.1.d
K D R	Qual. method		10.1.6.1.4.1.e
K D R	Xref to SRS		10.1.6.1.4.1.f
K D R	Xref to IRS		10.1.6.1.4.1.g
K D R	Data recording		10.1.6.1.4.1.h
K D R	Assumptions/constraints		10.1.6.1.4.1.i
K D R	Test schedule		10.1.6.1.5
K D R	Data recording, reduction, and analysis		10.1.7

DID TAILORING WORKSHEET FOR THE SOFTWARE TEST REPORT (STR) (DI-MCCR-80017A)

KEEP ____ DELETE ____

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: Tailor the STR DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the STR DID required under the contract. Use the table below to select required topics in the STR. Circle "K" to keep a topic, "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the STR overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
K D R	Test overview		10.1.5
K D R	FQT name and identifier		10.1.5.1
K D R	FQT test summary		10.1.5.1.1
K D R	FQT test record		10.1.5.1.2
K D R	HW/SW configuration		10.1.5.1.2.a
K D R	Date, time, participants		10.1.5.1.2.b
K D R	Problems encountered		10.1.5.1.2.c
K D R	Backup points for retest		10.1.5.1.2.d
K D R	Test results		10.1.6
K D R	Test name & ID		10.1.6.1
K D R	Test case name & ID		10.1.6.1.1
K D R	Test case results		10.1.6.1.1.1
K D R	Deviations		10.1.6.1.1.2
K D R	CSCI evaluation and recommendations		10.1.7
K D R	CSCI evaluation		10.1.7.1
K D R	Impact of deficiencies		10.1.7.1.a
K D R	Design impact to fix		10.1.7.1.b
K D R	Recommended solution		10.1.7.1.c
K D R	Recommended improvements		10.1.7.2

DID TAILORING WORKSHEET FOR THE
SOFTWARE USER'S MANUAL
(SUM) (DI-MCCR-80019A)

KEEP _____ DELETE _____

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: Tailor the SUM DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the SUM DID required under the contract. Use the table below to select required topics in the SUM. Circle "K" to keep a topic, "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the SUM overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS		COMMENTS	DID PARAs
K D R	Execution procedures			10.1.5
	K D R	Initialization		10.1.5.a
	K D R	User inputs		10.1.5.b
	K D R	System inputs		10.1.5.c
	K D R	Termination		10.1.5.d
	K D R	Restart		10.1.5.e
	K D R	Outputs		10.1.5.f
K D R	Error messages			10.1.6

DID TAILORING WORKSHEET FOR THE
SYSTEM/SEGMENT DESIGN DOCUMENT
(SSDD) (DI-CMAN-80534)

KEEP _____ DELETE _____

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: Tailor the SSDD DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the SSDD DID required under the contract. Use the table below to select required topics in the SSDD. Circle "K" to keep a topic, "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the SSDD overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
K D R	Operational concepts		10.1.5
K D R	System/segment mission		10.1.5.1
K D R	User needs		10.1.5.1.1
K D R	Primary mission(s)		10.1.5.1.2
K D R	Secondary mission(s)		10.1.5.1.3
K D R	Operational environment		10.1.5.2
K D R	Support environment		10.1.5.3
K D R	Support concept		10.1.5.3.1
K D R	Auto test equip		10.1.5.3.1.a
K D R	Repair criteria		10.1.5.3.1.b
K D R	Maintenance levels		10.1.5.3.1.c
K D R	Maintenance cycles		10.1.5.3.1.d
K D R	Gov't/ contractor support		10.1.5.3.1.e
K D R	Accessibility		10.1.5.3.1.f
K D R	Other		10.1.5.3.1.g
K D R	Support facilities		10.1.5.3.2
K D R	Impact on supply system		10.1.5.3.3
K D R	Introducing new items		10.1.5.3.3.a
K D R	Re-supply methods		10.1.5.3.3.b
K D R	System stocks		10.1.5.3.3.c
K D R	Government agencies involved		10.1.5.3.4

DID TAILORING WORKSHEET FOR THE
SYSTEM/SEGMENT DESIGN DOCUMENT (page 2 of 2)

K/D/R	REQUIRED TOPICS			COMMENTS	DID PARAs
	K D R	System architecture			10.1.5.4
	K D R	Operational scenarios			10.1.5.5
K D R	System design				10.1.6
	K D R	HWCI identification			10.1.6.1
		K D R	HWCI name/id, description		10.1.6.1.1
	K D R	CSCI identification			10.1.6.2
		K D R	CSCI name/id, description		10.1.6.2.1
	K D R	Manual operations identification			10.1.6.3
		K D R	Name/id and description		10.1.6.3.1
	K D R	Internal interfaces			10.1.6.4
		K D R	HWCI-to-HWCI		10.1.6.4.1
		K D R	HWCI-to-CSCI		10.1.6.4.2
		K D R	CSCI-to-CSCI		10.1.6.4.3
K D R	Processing resources				10.1.7
	K D R	Resource name/identifier			10.1.7.1
		K D R	Memory size		10.1.7.1.a
		K D R	Word size		10.1.7.1.b
		K D R	Processing speed		10.1.7.1.c
		K D R	Character set standard		10.1.7.1.d
		K D R	Instruction set architecture		10.1.7.1.e
		K D R	Interrupt capabilities		10.1.7.1.f
		K D R	Direct memory access		10.1.7.1.g
		K D R	Channel requirements		10.1.7.1.h
		K D R	Auxiliary storage		10.1.7.1.i
		K D R	Growth capabilities		10.1.7.1.j
		K D R	Diagnostic capabilities		10.1.7.1.k
		K D R	Add'l HW capabilities		10.1.7.1.l
		K D R	Resource allocation		10.1.7.1.m
K D R	Quality factor compliance				10.1.8
K D R	Requirements traceability				10.1.9

DID TAILORING WORKSHEET FOR THE
VERSION DESCRIPTION DOCUMENT
(VDD) (DI-MCCR-80013A)

KEEP ___ DELETE ___

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: Tailor the VDD DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the VDD DID required under the contract. Use the table below to select required topics in the VDD. Circle "K" to keep a topic, "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the VDD overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
K D R	Inventory of materials released		10.2.5.1
K D R	Inventory of CSCI contents		10.2.5.2
K D R	Class I changes installed		10.2.5.3
K D R	Class II changes installed		10.2.5.4
K D R	Adaptation data		10.2.5.5
K D R	Interface compatibility		10.2.5.6
K D R	Bibliography of reference documents		10.2.5.7
K D R	Summary of change		10.2.5.8
K D R	Installation instructions		10.2.5.9
K D R	Possible problems and known errors		10.2.5.10

RELATED STANDARDS WORKSHEET

Program _____ Type/Subtype/CSCI _____

Respondent _____ Date _____

PURPOSE: To select and tailor other standards consistently with DOD-STD-2167A.

INSTRUCTIONS: Complete this worksheet for each software type, subtype, or CSCI requiring its own set of tailoring decisions. Begin with the four standards invoked by DOD-STD-2167A. Indicate whether each standard is 1) not to be invoked; 2) invoked to the extent specified in DOD-STD-2167A, or 3) invoked to a greater extent than that specified in DOD-STD-2167A. Then add any comments or tailoring required to resolve inconsistencies or to clarify use of the standard. When these standards are complete, use page 2 of the worksheet for other standards to be imposed on the contract. Use the table of related standards in Appendix C as a guide for both pages of the worksheet.

STANDARDS INVOKED BY DOD-STD-2167A	EXTENT OF APPLICABILITY			COMMENTS / TAILORING
	NONE	PER 2167A	MORE	
MIL-STD-480 (formerly DOD-STD-480)	____	____	____	_____
MIL-STD-481	____	____	____	_____
MIL-STD-490	____	____	____	_____
MIL-STD-1521	____	____	____	_____

RELATED STANDARDS WORKSHEET (page 2 of 2)

OTHER STANDARDS	EXTENT OF APPLICABILITY	COMMENTS / REQUIRED TAILORING

APPENDIX B

TAILORING AIDS

10.1 Purpose. This appendix provides reference materials to be used in tailoring DOD-STD-2167A and its Data Item Descriptions. Included are:

Detailed flowchart of the tailoring process (page 100)
DOD-STD-2167A DID Selection Guidelines (page 103)
DOD-STD-2167A Product Consistency Guidelines (page 111)
Relationship of DOD-STD-2167A to Other Standards (page 113)
Guidelines for Tailoring MIL-STD-1521B for a DOD-STD-2167A Project (page 115)
Cross-Reference of Software Development Plan Paragraphs to DOD-STD-2167A (page 118)
Illustration of DD Form 1423, Contract Data Requirements List (page 119)

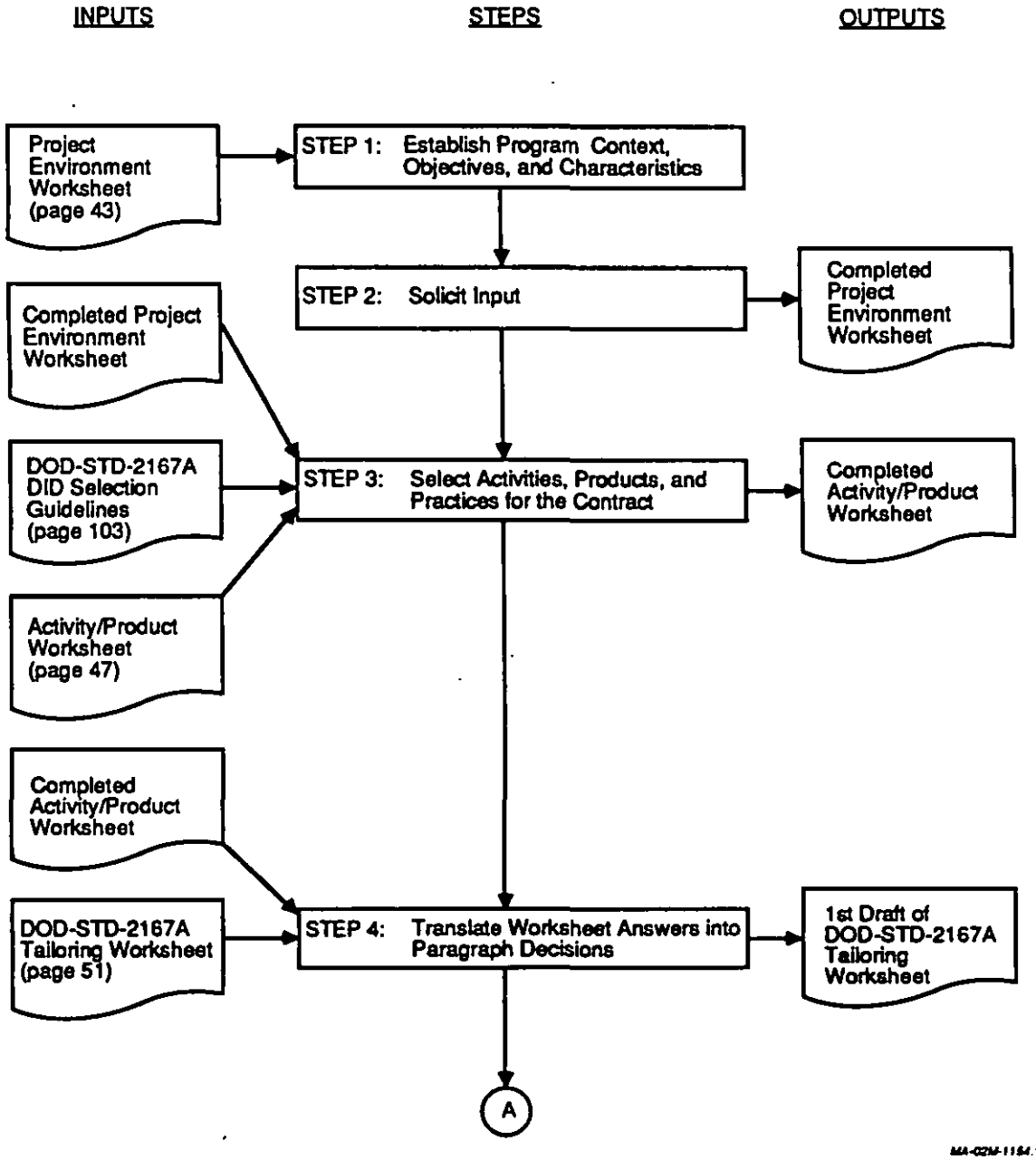
10.2 Use of the tailoring aids. Section 5 of this handbook describes a ten-step tailoring process using the tailoring aids provided in this appendix and the tailoring worksheets provided in Appendix A. Instructions for using each of these tailoring aids are also given on the item itself. Local reproduction of these reference materials is authorized.

20. Applicable documents. This section is not applicable to this appendix.

DETAILED FLOWCHART OF THE TAILORING PROCESS (page 1 of 3)

TAILORING STEPS AND RELATED TAILORING AIDS

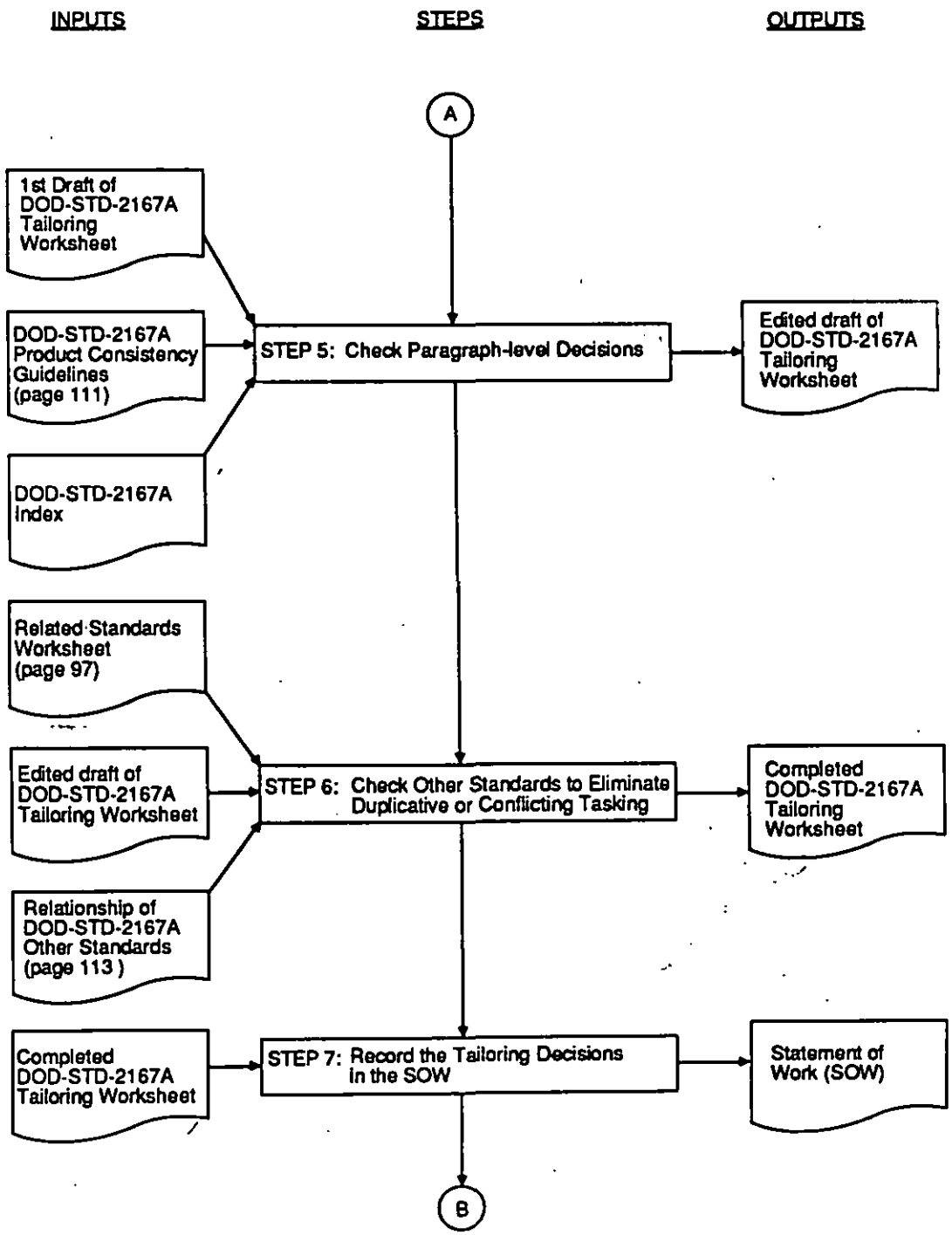
PART 1: TAILOR THE STANDARD



DETAILED FLOWCHART OF THE TAILORING PROCESS (page 2 of 3)

TAILORING STEPS AND RELATED TAILORING AIDS - Continued

PART 1: TAILOR THE STANDARD - Continued



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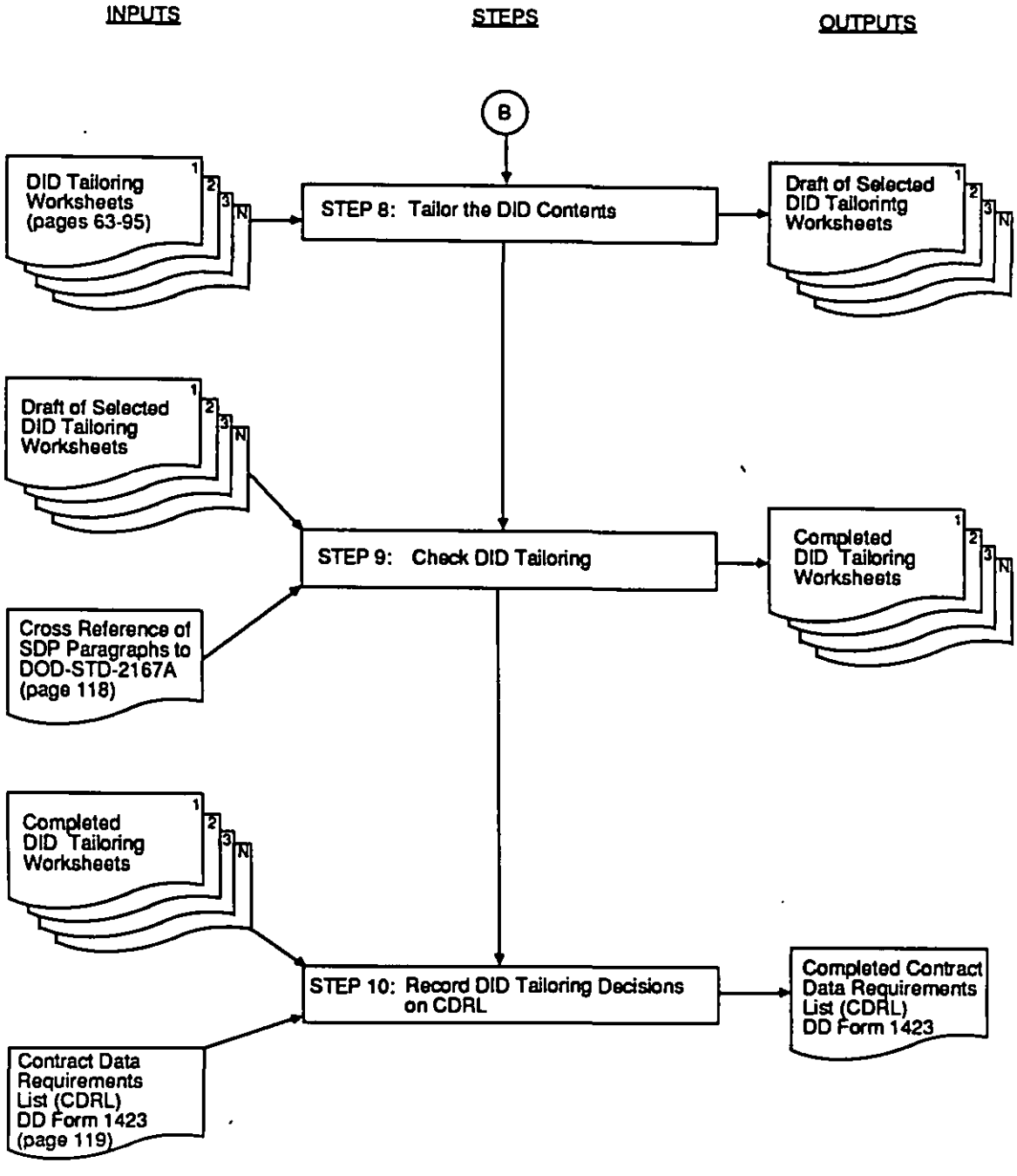
DETAILED FLOWCHART OF THE TAILORING PROCESS (page 3 of 3)

TAILORING STEPS AND RELATED TAILORING AIDS - Continued

PART 2: TAILOR THE DIDS



DOD-STD-2167A DID SELECTION GUIDELINES (page 1 of 7)

PURPOSE: To serve as a reference in deciding which Data Item Descriptions (DIDs) to require on a contract. To be used in STEP 3 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: The table below summarizes the purpose and use of each DOD-STD-2167A Data Item Description (DID) and provides guidelines for deciding whether to impose each DID and, if so, how many of the corresponding documents to require. A detailed outline of each DID is provided in the DID Tailoring Worksheets in Appendix A. Use this information to make decisions about the DIDs in filling out the Activity/Product Worksheet.

DID TITLE / ACRONYM / NUMBER / DESCRIPTION	SELECTION GUIDELINES
Computer Resources Integrated Support Document (CRISD) DI-MCCR-80024A o Provides information needed to plan for life cycle support of deliverable software. o Documents the contractor's plans for transitioning support of deliverable software to the support agency. o May be used by the Government for updating the Computer Resources Life Management Cycle Plan.	For projects on which transition and post-deployment software support are not significant issues, this document may not be necessary or cost effective. For projects on which these are significant issues, it is appropriate to require a CRISD. In this case, it is customary to require a single CRISD covering all deliverables from a given contract or prime contractor.
Computer System Operator's Manual (CSOM) DI-MCCR-80018A o Provides information and detailed procedures for initiating, operating, monitoring, and shutting down a computer system and for identifying and isolating a malfunctioning component of a computer system. o Serves as both an operator's manual and diagnostic manual for a computer system	One CSOM is needed for each computer system in which deliverable CSCIs will execute, unless operator documents are available commercially or as Government-furnished information. If commercial or Government-furnished operator manuals are available, CSOMs are not required.

DOD-STD-2167A DID SELECTION GUIDELINES (page 2 of 7)

DID TITLE / ACRONYM / NUMBER / DESCRIPTION	SELECTION GUIDELINES
Firmware Support Manual (FSM) DI-MCCR-80022A o Provides the information necessary to load software or data into firmware components of a system. Is equally applicable to ROMs, PROMs, EPROMs, and other firmware devices. o Describes aspects of the firmware devices, support software, support equipment, and procedures required to load software into firmware devices, to verify the load process, and to test the firmware devices for proper functioning.	No Firmware Support Manual is needed if the system contains no firmware, if a FSM, Government-furnished, or commercial substitute already exists, or if an FSM is being developed by another contractor
Interface Design Documents (IDD) DI-MCCR-80027A o Specifies the detailed design for one or more interfaces between one or more CSCIs and other configuration items or critical items. o The IDD and its companion Interface Requirements Specification serve to communicate and control interface design decisions to the Government. o Upon completion of Physical Configuration Audit, the IDD becomes part of the Product Baseline. o Used by the contractor(s) as basis for software design of the interfaces. o Used by the Government to assess the design of the interfaces documented in the IRS.	There is usually one IDD written for each Interface Requirements Specification.

DOD-STD-2167A DID SELECTION GUIDELINES (page 3 of 7)

DID TITLE / ACRONYM / NUMBER / DESCRIPTION	SELECTION GUIDELINES
Interface Requirements Specification (IRS) DI-MCCR-80026A	
o Specifies the requirements for one or more interfaces between one or more CSCIs and other configuration items or critical items.	No IRSs are needed on a contract if there are no interfaces requiring specification or if another contractor is preparing the IRSs.
o Enables the Government to assess whether the implementation of the interface(s) complies with the interface requirements.	If IRSs are required, there is no need to match number of IRSs to number of CSCIs. A single IRS often covers multiple CSCIs.
o Upon Government approval and authentication, becomes the joint configuration control device for the interface(s) and becomes part of the Allocated Baseline.	Unless there is a compelling reason to do otherwise, it is best to let the contractor(s) propose the number of IRSs that will best suit the system.
o Used by the contractor(s) as basis for development of the interfaces.	
Software Design Document (SDD) DI-MCCR-80012A	
o Describes the complete design of a CSCI. Describes the CSCI as composed of CSCs and CSUs.	It is customary to require one SDD per CSCI.
o Describes the allocation of requirements from a CSCI to its CSCs and CSUs.	
o Prior to Preliminary Design Review, is entered into the Developmental Configuration for the CSCI. Upon completion of Physical Configuration Audit, becomes part of the Software Product Specification, which is entered into the Product Baseline for the CSCI.	
o Used by the contractor to present the preliminary design at the PDR, present the detailed design at the CDR, and as the basis for coding each CSU.	
o Used by the Government to assess the preliminary and detailed design of a CSCI.	

DOD-STD-2167A DID SELECTION GUIDELINES (page 4 of 7)

DID TITLE / ACRONYM / NUMBER / DESCRIPTION	SELECTION GUIDELINES
Software Development Plan (SDP) DI-MCCR-80030A	
o Describes a contractor's plans for conducting software development. Includes planning for software engineering, formal qualification testing, software products evaluation, and configuration management.	For small, informal projects, it may not be cost effective to require delivery of a Software Development Plan, although preparation of the plan is still a good idea.
o Used to provide the Government insight into the organization(s) responsible for performing software and the methods and procedures to be followed by these organizations.	For larger, more formal projects, it is customary to require one Software Development Plan from a given contract or prime contractor.
o Used by the Government to monitor the procedures, management, and contract work effort of the organizations performing software development.	
Software Products Specification (SPS) DI-MCCR-80029A	
o Consists of the Software Design Document and source code listings for a CSCI.	It is customary to require one Software Product Specification for each CSCI.
o Upon Government approval and authentication following the Physical Configuration Audit, establishes the Product Baseline for the CSCI.	
o Until establishment of the Product Baseline, the contents of the SPS are contained in the contractor's Developmental Configuration for the CSCI.	
Software Programmer's Manual (SPM) DI-MCCR-80021A	
o Provides information needed by a programmer to understand the instruction set architecture of the specified host and target computers.	A Software Programmer's Manual is needed for each host or target computer systems that does not have commercial or Government-furnished manuals for the programming language used, or for which the contractor is using a non-standard version of a programming language.
o Provides information that may be used to interpret, check out, troubleshoot, or modify existing software on the host and target computers.	

DOD-STD-2167A DID SELECTION GUIDELINES (page 5 of 7)

DID TITLE / ACRONYM / NUMBER / DESCRIPTION	SELECTION GUIDELINES
Software Requirements Specification (SRS) DI-MCCR-80025A o Specifies the engineering and qualification requirements allocated to a CSCI. o Enables the Government to assess whether the completed CSCI complies with those requirements. o Used by the contractor as the basis for the design and formal testing of a CSCI. o Upon Government approval and authentication, becomes part of the Allocated Baseline for the CSCI.	It is customary to require one Software Requirements Specification for each CSCI.
Software Test Description (STD) DI-MCCR-80015A o Contains the test cases and test procedures necessary to perform formal qualification testing of a CSCI. o Enables the Government to assess the adequacy of test cases and procedures for FQT of a CSCI.	It is customary to require one Software Test Description for each CSCI.
Software Test Plan (STP) DI-MCCR-80014A o Describes the contractor's plans for formal qualification test (FQT) of one or more CSCIs. o Identifies the software test environment, required resources, schedules for FQT activities. Identifies the individual tests to be performed during FQT. o Enables the Government to assess the adequacy of planning for FQT activities.	It is customary to require one Software Test Plan for each CSCI or related group of CSCIs that are to be tested together.

DOD-STD-2167A DID SELECTION GUIDELINES (page 6 of 7)

DID TITLE / ACRONYM / NUMBER / DESCRIPTION	SELECTION GUIDELINES
Software Test Report (STR) DI-MCCR-80017A	
o Documents the results of the formal qualification testing (FQT) performed on a CSCI.	No Software Test Report is required if the contract does not involve Formal Qualification Testing (for example, a contract to prepare specifications only)
o Provides the Government a permanent record of the FQT performed on a CSCI.	
o May be used by the contractor as a basis for retesting a CSCI.	If the contract involves FQT, it is customary to require one Software Test Report for each Software Test Description.
Software User's Manual (SUM) DI-MCCR-80019A	
o Provides user personnel with instructions sufficient to execute one or more related CSCIs.	It is customary to require one Software User's Manual for each CSCI or group of CSCIs that require human interface.
o Describes steps for executing the software, expected outputs, and actions to be taken if error messages appear.	
o Is directed to the functional user of the CSCIs, as opposed to the operator of a computer system. If this distinction does not exist, the user will need to refer to both the Computer System Operator's Manual and the Software User's Manual to use the CSCI(s).	

DOD-STD-2167A DID SELECTION GUIDELINES (page 7 of 7)

DID TITLE / ACRONYM / NUMBER / DESCRIPTION	SELECTION GUIDELINES
System/Segment Design Document (SSDD) DI-CMAN-80534 o Describes the design of a system or segment and its operational and support environments. o Describes the organization of a system or segment as composed of HWCIs, CSCIs, or manual operations. o Describes the characteristics of the HWCIs and CSCIs. o *Used by the contractor(s)* to present the system design at the System Design Review, and as the basis for developing SRSs, IRS(s) and HWCI specifications.	If there is a system-level contractor, the SSDD would normally be prepared by that contractor. If the system is predominately software, it might be prepared by the software contractor. No SSDD is needed if the system is to be implemented as a single CSCI. If an SSDD is needed and there will be no segments, one SSDD will suffice. If segments have been identified and System/Subsystem Specs will exist for the system and for each segment, consider requiring an SSDD for each segment, but none at the system level.
Version Description Document (VDD) DI-MCCR-80013A o Identifies and describes a version of a CSCI. o Used by contractor to release CSCI versions to the Government. (The term "version" may be applied to the initial release of a CSCI, to a subsequent release of a CSCI, or to one of multiple forms of the CSCI released at approximately the same time.) o Used by the Government to track and control versions of software to be released to the operational environment.	No VDD is needed if the contract does not require delivery of CSCIs (for example, a contract for specifications only). If CSCIs are to be delivered, a VDD should accompany each version of each CSCI.

DOD-STD-2167A PRODUCT CONSISTENCY GUIDELINES (page 1 of 2)

PURPOSE: To check tailoring decisions concerning DOD-STD-2167A products. These guidelines can be used with STEP 5 of the tailoring process for DOD-STD-2167A.

INSTRUCTIONS: The table below identifies DOD-STD-2167A paragraphs concerning the preparation, update, evaluation, configuration management, and other requirements for each DOD-STD-2167A product. Use the table to check that all paragraphs relevant to a given product have been tailored consistently. For example, it would be inconsistent in most circumstances to delete the requirement to prepare an Interface Requirements Specification, but keep the requirement to place that document under configuration management. It is not inconsistent, however, to require a product but delete specific activities for that product.

PRODUCT	RELEVANT PARAGRAPHS IN DOD-STD-2167A				
	PREPARE	UPDATE	EVALUATE	SW CM	OTHER PARA'S
Computer Resources Integrated Support Document (CRISD)	4.6.2 4.6.4.a	—	—	—	—
Computer Software Operator's Manual (CSOM)	4.6.4.b	—	—	—	—
Firmware Support Manual (FSM)	4.6.4.e	—	—	—	—
Interface Design Document (IDD)	5.3.2.2 5.4.2.2	5.7.2.2 5.8.2	5.3.4.b 5.4.4.b 5.8.4	5.3.5.3 5.4.5.2 5.8.5	—
Interface Requirements Specification (IRS) (Preliminary)	5.1.2.4	—	5.1.4.d	5.1.5.d	See IRS
Interface Requirements Specification (IRS)	5.2.2.2	—	5.2.4.b	5.2.5	4.2.6, 4.3.4, 5.3.2.1, 5.3.2.2, 5.4.2.2
Software Design Document (SDD)	5.3.2.1	5.4.2.3 5.7.2.1 5.8.2	5.3.4.a 5.4.4.a 5.8.4	5.3.5.1 5.4.5.1 5.5.5.1 5.6.5	5.3.2.3 5.4.2.1
Software Development Plan (SDP)	4.1.3	—	5.1.4.a	5.1.5.a 5.6.5	4.2.5, 4.3.3, 4.4.1, 5.4.4.e

DOD-STD-2167A PRODUCT CONSISTENCY GUIDELINES (page 2 of 2)

PRODUCT	RELEVANT PARAGRAPHS IN DOD-STD-2167A				
	PREPARE	UPDATE	EVALUATE	SW CM	OTHER PARA'S
Software Product Specification (SPS)	5.7.2.4	—	—	5.7.5.2	4.2.10
Software Programmer's Manual (SPM)	4.6.4.d	—	—	—	—
Software Requirements Specification (SRS) (Preliminary)	5.1.2.3	—	5.1.4.c	5.1.5.c	5.1.3
Software Requirements Specification (SRS)	5.2.2.1	—	5.2.4.a	5.2.5	4.2.6, 4.2.10, 4.3.4, 5.3.2.1, 5.3.3, 5.7.2.3
Software Test Description (STD)	4.3.4 5.4.3	5.6.3.2 5.7.3.3	5.4.4.f 5.6.4.b	5.4.5.3	5.6.3.1 5.7.3.1
Software Test Plan (STP)	4.3.1 5.3.3	4.3.1	5.3.4.c	5.3.5.2	5.4.3
Software Test Report (STR)	5.7.3.2	—	5.7.4.a	—	—
Software User's Manual (SUM)	4.6.4.c	—	—	—	—
Source Code	4.6.1 5.5.2.2	5.5.2.3 5.6.2.3 5.7.2.1 5.7.2.3 5.8.2	5.5.4.a 5.6.4.c 5.7.4.b 5.8.4	4.5.1.b 4.5.2.b 5.5.5.1 5.5.5.2 5.6.5	4.2.1, 5.7.2.4 —
System/Segment Design Document (SSDD)	5.1.2.2	—	5.1.4.b	5.1.5.b	—
Version Description Document (VDD)	5.7.5.1	—	—	—	—

RELATIONSHIP OF DOD-STD-2167A TO OTHER STANDARDS (page 1 of 2)

PURPOSE: To identify other standards that should be checked for duplicative or conflicting requirements. This table can be used with STEP 6 of the tailoring process for DOD-STD-2167A.

INSTRUCTIONS: The table below identifies standards that may be imposed along with DOD-STD-2167A. Use the guidelines in the table to determine whether duplication or conflicts exist. If so, adjust your tailoring of DOD-STD-2167A, the other standard, or both to remove the problem.

STANDARD	DESCRIPTION AND RELATIONSHIP TO DOD-STD-2167A
DOD-STD-480 (as of 7/88 MIL-STD-480)	Specifies requirements for preparing Engineering Change Proposals, Deviations, and Waivers. DOD-STD-2167A paragraph 4.5.5 requires the contractor to prepare Engineering Change Proposals in accordance with MIL-STD-480 or MIL-STD-481, as specified in the contract. No duplication or conflicts will be created if MIL-STD-480 is selected.
MIL-STD-481	Specifies requirements for preparing an abbreviated form of Engineering Change Proposals, Deviations, and Waivers. DOD-STD-2167A paragraph 4.5.5 requires the contractor to prepare Engineering Change Proposals in accordance with MIL-STD-480 or MIL-STD-481, as specified in the contract. No duplication or conflicts will be created if MIL-STD-481 is selected.
MIL-STD-490	Specifies requirements for the preparation, interpretation, and revision of hardware and software specifications. DOD-STD-2167A paragraph 4.5.5 requires the contractor to prepare Specification Change Notices (SCNs) in accordance with MIL-STD-490. If this requirement is the total extent to which MIL-STD-490 is invoked, no duplication or conflicts will be created. The update of MIL-STD-490 in June 1985 provided compatibility with DOD-STD-2167. As of May 1989, no comparable revision had been undertaken to achieve consistency with DOD-STD-2167A. If provisions of MIL-STD-490A beyond SCN preparation are invoked, make allowances for 1) its non-current DID reference for the System/Segment Specification and 2) its citing of DOD-STD-2167 rather than DOD-STD-2167A software requirement and design documents.
MIL-STD-1521	Specifies requirements for formal reviews and audits. DOD-STD-2167A paragraphs 5.2.1, 5.3.1, 5.4.1, and 5.6.1 require the contractor to conduct, respectively, Software Specification Review, Preliminary Design Review, Critical Design Review, and Test Readiness Review in accordance with MIL-STD-1521. The update of MIL-STD-1521A in June 1985 provided compatibility with DOD-STD-2167. As of May 1989, no comparable revision had been undertaken to achieve consistency with DOD-STD-2167A, and the documents cited for each review are incompatible with those required by DOD-STD-2167A. Unless MIL-STD-1521B is tailored out of DOD-STD-2167A, tailor MIL-STD-1521B to resolve the inconsistencies. Requirements for each review are clearly marked. Guidelines for this tailoring follow this table.

RELATIONSHIP OF DOD-STD-2167A TO OTHER STANDARDS (page 2 of 2)

STANDARD	DESCRIPTION AND RELATIONSHIP TO DOD-STD-2167A
MIL-STD-482	Specifies requirements for preparing and maintaining configuration status accounting records. This standard is not invoked or referenced by DOD-STD-2167A. DOD-STD-2167A paragraph 4.5.3 specifies requirements for configuration status accounting records. This paragraph is intended to be self-sufficient, but is not in conflict with MIL-STD-482 if both standards are put on contract.
MIL-STD-483	Specifies configuration management practices for hardware and software. The update from MIL-STD-483 in June 1985 provides compatibility with DOD-STD-2167. As of May 1989, no comparable revision had been undertaken to achieve consistency with DOD-STD-2167A. If MIL-STD-483A is put on contract, make allowances for non-current references to the Software Development Plan, the Software Configuration Management Plan, Version Description Document, and requirement and design documents. This standard is not invoked or referenced by DOD-STD-2167A. DOD-STD-2167A paragraphs 4.5 and 5.x.5 specify requirements for software configuration management. These paragraphs are meant to be self-sufficient.
MIL-STD-499	Specifies requirements for systems engineering. Software development under DOD-STD-2167A often takes place in the context of system development under MIL-STD-499. DOD-STD-2167A paragraph 1.2.1 cites this relationship. No overlaps or conflicts exist between the two standards.
MIL-STD-882	Specifies requirements for software system safety analysis in its 300-series tasks. DOD-STD-2167A paragraph 4.2.3 requires the contractor to perform software safety analysis. Tailored versions of the MIL-STD-882 300-series tasks may be used to define the type of software safety analysis to be performed. Contact the appropriate system safety official in your organization to help define the tasks to be performed.
MIL-STD-1535	Specifies requirements for a quality assurance program when subcontracts are involved. DOD-STD-2167A paragraph 4.1.6 requires the contractor to pass down to subcontractors all relevant contractual requirements and to provide subcontractors a set of baselined requirements for the software to be developed by the subcontractors. MIL-STD-1535 describes the process required of the prime contractor for evaluation of the subcontractor's products and is focused on hardware rather than software.
DOD-STD-2168	DOD-STD-2168 specifies requirements for a software quality program. It supplements the DOD-STD-2167A requirements for software product evaluations. DOD-STD-2168 requires evaluation of software products and activities for compliance with the contract and adherence to the software planning documents. No duplication or conflicts will be created if DOD-STD-2168 is selected.

GUIDELINES FOR TAILORING MIL-STD-1521B FOR A DOD-STD-2167A PROJECT

(page 1 of 3)

PURPOSE: To identify inherent incompatibilities between DOD-STD-2167A and MIL-STD-1521B, and to provide tailoring instructions that resolve these incompatibilities.

INSTRUCTIONS: MIL-STD-1521B is written to correspond to DOD-STD-2167. It needs to be tailored to correspond to DOD-STD-2167A. The table below lists the DOD-STD-2167 documents required at each MIL-STD-1521B review and audit, lists the corresponding DOD-STD-2167A documents, and provides wording that can be incorporated into a Statement of Work to resolve the incompatibilities. If MIL-STD-1521B is invoked, either explicitly in the contract or indirectly via DOD-STD-2167A, include in the Statement of Work the appropriate provisions from the table below. Then check whether your tailoring of DOD-STD-2167A has produced a further incompatibility by tailoring out a product required at a designated review. Resolve these incompatibilities by Statement of Work entries such as "The contractor shall not be required to present the [document name] at the [review/audit name]."

	DOCUMENTS REVIEWED		
REVIEW / AUDIT	2167	2167A	REQUIRED TAILORING FOR USE WITH DOD-STD-2167A
System Requirements Review (SSR)	SSS	SSS	- None.
System Design Review (SDR)	SSS PIDS CIDS SRS IRS OCD	SSS PIDS CIDS SRS IRS SSDD	- Delete Operational Concept Document - Add System Segment Design Document
Software Specification Review (SSR)	SRS IRS OCD	SRS IRS	- Delete Operational Concept Document - Substitute for 30.2.a-g: "a. The information contained in the Software Requirements Specification(s), as tailored. b. The information contained in the Interface Requirements Specification(s), as tailored." - Delete 30.2.h, i - Delete all requirements that SSR occur before design begins

GUIDELINES FOR TAILORING MIL-STD-1521B
FOR A DOD-STD-2167A PROJECT
(page 2 of 3)

REVIEW / AUDIT	DOCUMENTS REVIEWED 2167	2167A	REQUIRED TAILORING FOR USE WITH DOD-STD-2167A
Preliminary Design Review (PDR)	STLDD	SDD	- For "Software Top Level Design Document," substitute "preliminary design in Software Design Document"
	IDD	IDD	
	STP	STP	- For "Top Level CSC (TLCSC)," substitute "CSC"
	CRISD	CRISD	- For "top-level design," substitute "preliminary design"
	SUM	SUM	- Delete Computer System Diagnostic Manual
	CSOM	CSOM	- Consider delaying review of CRISD, SUM, and CSOM to TRR
	CSDM		- Delete all requirements that PDR occur before detailed design begins
			- Substitute for 40.2.2.a-m: "40.2.2 <u>CSCIs</u>: a. The preliminary design information contained in the Software Design Document(s), as tailored. b. The preliminary interface design information contained in the Interface Design Document(s), as tailored. c. The contractor's plans for formal qualification testing as documented in the Software Test Plan, as tailored."
			- Substitute for 40.13.8-10: "40.13.8 For CSCIs, review the Software Test Plan, or its equivalent as required by the contract, for completeness and technical adequacy in specifying plans for formal qualification testing."
Critical Design Review (CDR)	SDDD	SDD	- For "Software Detailed Design Document," substitute "detailed design in the Software Design Document"
	IDD	IDD	
	DBDD	—	- For "Software Top Level Design Document," substitute "preliminary design in the Software Design Document"
	STD	STD	
	CRISD	CRISD	- Delete all references to "top level CSCs" and "lower level CSCs;" substitute "CSCs"
	SUM	SUM	
	FSM	FSM	- For "Unit," substitute "CSU"
	SPM	SPM	- Delete Data Base Design Document
	CSOM	CSOM	- For "Software Test Description," substitute "Software Test Description minus the test procedure
	CSDM		
			- Delete Computer System Diagnostic Manual
			- Consider delaying review of CRISD, SUM, FSM, SPM, and CSOM to TRR
			- Delete all requirements that CDR occur before detailed design begins

(CDR guidelines continued on next page)

GUIDELINES FOR TAILORING MIL-STD-1521B
FOR A DOD-STD-2167A PROJECT
(page 3 of 3)

REVIEW / AUDIT	DOCUMENTS REVIEWED 2167	2167A	REQUIRED TAILORING FOR USE WITH DOD-STD-2167A
CDR (Cont.)			- Substitute for 50.2.2.a, renumbering later items accordingly: "a. The detailed design information contained in the Software Design Document(s), as tailored. b. The detailed interface design information contained in the Interface Design Document(s), as tailored. c. The test plans and test case information contained in the Software Test Description, as tailored."
Test Readiness Review (TRR)	STPR SUM CSOM CSDM	STD SUM CSOM FSM SPM CRISD	- For "Software Test Descriptions," substitute "test cases in Software Test Description" - For "Software Top-Level Design Document, Data Base Design Document, and Software Detailed Design Document," substitute Software Design Document - For "informal testing," substitute "contractor-internal testing" - Add a requirement to review a summary of CSC testing and FQT dry run results - Delete Computer System Diagnostic Manual - Consider requiring a review of all required operational and support documents for completeness and adequacy - Note: Software test procedures are found in the Software Test Descriptions. The current wording for these needs no change.
Functional Configuration Audit (FCA)	STR SUM CSOM CSDM	STR SUM CSOM	- Delete Computer System Diagnostic Manual - Consider requiring a final review of all operational and support documents
Physical Configuration Audit (PCA)	SPS VDD SPM FSM SUM CSOM CSDM	SPS VDD SPM FSM SUM CSOM	- Delete Computer System Diagnostic Manual - Delete paragraph 80.4.10.d (TLCSC to LLCSC comparison) - In 80.4.10.h, delete reference to DOD-STD-2167 coding standards - For "lower-level design," substitute "detailed design" - If final review of operational and support documents is required at FCA, delete that review here

CROSS REFERENCE OF SDP PARAGRAPHS TO DOD-STD-2167A

PURPOSE: To check the tailoring of the Software Development Plan DID. This appendix can be used with STEP 9 of the tailoring process for DOD-STD-2167A.

INSTRUCTIONS: The table below shows the correspondence between paragraphs in the Software Development Plan DID and paragraphs in DOD-STD-2167A. Using your completed DOD-STD-2167A Tailoring Worksheet and completed DID Tailoring Worksheet for the Software Development Plan, compare the tailoring of corresponding paragraphs. In most cases, the tailoring decisions should agree.

SDP PARA.	TITLE	2167A PARA	TITLE / SUBJECT
10.2.5.3	Risk management	4.1.4	Risk management
10.2.5.4	Security	4.1.5	Security
10.2.5.6	Interface with software IV&V agent(s)	4.1.7	Interface with s/w IV&V agent(s)
10.2.5.7	Subcontractor management	4.1.6	Subcontractor management
10.2.5.8	Formal reviews	4.1.2	Formal reviews/audits
10.2.5.9	Software development library	4.1.8	Software development library
10.2.5.10	*Corrective action process*	4.1.9	*Corrective action process*
10.2.5.11	Problem/change report	4.1.10	Problem/change report
10.2.6.1.3	Software engineering environment	4.2.2	Software engineering environment
10.2.6.2.1	SW devel. techniques/methodologies	4.2.1	Software development methods
10.2.6.2.2	Software development files	4.2.9	Software development files
10.2.6.2.3	Design standards	4.2.8	Design and coding standards
10.2.6.2.4	Coding standards	4.2.8 Appen. B	Design and coding standards Req'ts for software coding standards
10.2.6.3	Non-developmental software	4.2.4	Non-developmental software
10.2.7	Formal qualification testing	4.3	Formal qualification testing
10.2.7.1.1	Organization structure - FQT	4.3.3	Independence in FQT activities
10.2.8	Software product evaluations	4.4	Software product evaluations
10.2.8.1.1	Organizational structure - (eval's)	4.3.3	Indepen. product eval. activities
10.2.8.4	*Software product evaluation records*	4.4.3	*Software evaluation records*
10.2.8.5.1	SW products evaluation	Appen. D	Evaluation criteria
10.2.9	Software configuration management	4.5	Software configuration management
10.2.9.2	Configuration identification	4.5.1.c	Configuration identification
10.2.9.3	Configuration control	4.5.2	Configuration control
10.2.9.4	Configuration status accounting	4.5.3	Configuration status accounting
10.2.9.5	Configuration audits	5.7.1, 5.8.1	SW development mgmt--config audits

ILLUSTRATION OF DD FORM 1423, CONTRACT DATA REQUIREMENTS LIST

PURPOSE: To illustrate the Contract Data Requirements List Form. Official copies of this form are used in Step 10 of the tailoring process.

INSTRUCTIONS: Obtain a set of blank DD 1423 Forms (or alternative forms authorized for use in your organization). Enter your DID tailoring results into Block 16 (Remarks) for each required DOD-STD-2167A deliverable. Sample wording is as follows: "The following DID paragraphs do not apply: 10.3.1.a, 10.3.5, 10.4.6.3. In DID paragraph 10.3.3.1, delete the reference to software development files."

CONTRACT DATA REQUIREMENTS LIST

ATCH NR _____ TO EXHIBIT _____ CATEGORY _____ SYSTEM/ITEM _____

TO CONTRACT/PR _____ CONTRACTOR _____

1 SEQUENCE NUMBER	2 TITLE OR DESCRIPTION OF DATA / 3 SUBTITLE	6 TECHNICAL OFFICE	10 FREQUENCY	12 DATE OF 1ST SUBMISSION	14 DISTRIBUTION AND ADDRESSEES *Addressee - Regular copies/Repro Copies*
4 AUTHORITY *(Data Item Number)*	5 CONTRACT REFERENCE	7 DD 250 REQ / 8 APP CODE (s) / 9 INPUT TO SAC (s)	11 AS OF DATE	13 DATE OF SUBSEQUENT SUBMISSION	
1	2	6	10	12	14
4	5	7 / 8 / 9	11	13	
16 REMARKS					15 TOTAL
1	2	6	10	12	14
4	5	7 / 8 / 9	11	13	
16 REMARKS					15 TOTAL
1	2	6	10	12	14
4	5	7 / 8 / 9	11	13	
16 REMARKS					15 TOTAL
1	2	6	10	12	14
4	5	7 / 8 / 9	11	13	
16 REMARKS					15 TOTAL

PREPARED BY	DATE	APPROVED BY	DATE

DD FORM 1 JAN 75 1423 SUPERSEDES EDITION OF 1 JUN 69, WHICH WILL BE USED UNTIL EXHAUSTED PAGE OF PAGES

APPENDIX C
TAILORING EXAMPLE FOR THE CONCEPT DEMONSTRATION/VALIDATION PHASE

10. Scope.

10.1 Purpose. This appendix presents a tailoring example for the Concept Demonstration/Validation Phase of the system life cycle. Included are:

Description of a sample project

Completed Project Environment Worksheet for the example

Completed Activity/Product Worksheet for the example

Completed DOD-STD-2167A Tailoring Worksheet for the example

Completed set of DID Tailoring Worksheets for the example

Completed Related Standards Worksheet for the example

Statement of Work entry representing the tailoring decisions for DOD-STD-2167A and related standards

CDRL Form DD 1423 showing the DID tailoring decisions for the example.

10.2 Notes.

a. This example has been constructed to illustrate selected aspects of DOD-STD-2167A tailoring. The project characteristics and the resulting tailoring decisions are examples only and do not represent the "correct" or preferred way to structure a procurement or to tailor DOD-STD-2167A or its DIDs in this phase. Each project will be different. This example shows one way in which a set of project characteristics could be translated into tailoring decisions.

b. The Project Environment Worksheet and the Activity/Product Worksheet cover all software on the project. The DOD-STD-2167A Tailoring Worksheets and Statement of Work are carried through for one type of software. These worksheets should suffice to illustrate the method for all types of software on the project.

20. Applicable documents. This section is not applicable to this appendix.

PROJECT DESCRIPTION FOR THE
CONCEPT DEMONSTRATION / VALIDATION EXAMPLE (page 1 of 3)

30. Project example for the Concept Demonstration/Validation Phase.

30.1 Project description.

a. Overview. The sample procurement involves the demonstration/validation of software concepts for a new navigation system. The procurement plan is to award contracts to two or three software development contractors and have each one develop preliminary Software Requirements Specification(s), Interface Requirements Specifications(s), and a prototype to demonstrate the key concepts in those specifications. The specifications will be deliverable; the prototypes will not. The procuring agency will review the specifications, view a demonstration of the prototypes, and, based on these inputs, select one of the contractor's specifications as the basis for Full Scale Development.

b. Applicable DOD and service-specific policies. Even though the software prototype is non-deliverable, the Ada programming language will be required. No formal risk management or independent verification and validation will be required. Safety analysis will be required as part of the specification development. The contractors will be required to specify 50% reserves in both memory and timing capacities.

c. Acquisition strategy. Each of the development contractors will perform a small subset of the tasks required by DOD-STD-2167A, but those requirements will be identical–there will not be a sharing of responsibilities among the contractors. Each contractor will be required to present the preliminary specifications and give a demonstration of the prototype at a Software Specification Review. The software contractors will also be required to attend the system contractor's System Requirements Review and System Design Review to provide input to the formulation of system-level requirements and design. There will be no planning or conduct of system testing during this phase.

d. Support concept. Detailed planning and preparation for software support will be a key consideration during Full Scale Development. No software support requirements will be imposed on the software development contractors during this phase.

e. System-level characteristics affecting the software. The preliminary System/Segment Specification does not call for use of firmware. There will be several user interfaces to the system, each implemented by software. The software will be required to process and safeguard data with a security classification of Secret. The software will be at least partially responsible for implementing the safety constraints imposed on the system. The software will operate on commercially available computers. The preliminary System/Segment Specification identifies sizing and timing limitations for the software.

f. Existing software products and objectives. The software contractors will each receive a copy of the preliminary System/Segment Specification. A Government-furnished software CSCI will be provided for incorporation into the prototype. The software objectives for each contractor are as follows: identify a set of proposed CSCIs, prepare a preliminary Software Requirements Specification for each CSCI, prepare one or more preliminary Interface Requirements Specifications covering all software interfaces, develop a functional prototype that demonstrates the key concepts in the specifications, and conduct a Software Specification Review at which the specifications will be presented and the prototype will be demonstrated to the procuring

PROJECT DESCRIPTION FOR THE
CONCEPT DEMONSTRATION / VALIDATION EXAMPLE (page 2 of 3)

agency. The specifications will be deliverable; the prototype software is designated "throw away software" and will not be deliverable. Each contractor will also be required to prepare a non-deliverable Software Development Plan that is tailored to this project.

g. Software types. The prototypes can be expected to contain newly developed software, software modified from other applications, the Government-furnished CSCI, and unmodified software from each contractor's library of reusable Ada packages. It may contain one or more reusable (non-developmental) CSCIs if the developers have such software, so tailoring needs to be provided to cover this eventuality. The project can also be expected to involve new, modified, and non-developmental items in the software engineering and test environments. None of the software is deliverable.

h. Software characteristics.

1) Criticality. None of the software is considered critical, since it is non-deliverable. Nevertheless, the SRSs and IRSs specify software that will be critical to system operation when developed. The newly developed and updated SRSs/IRSs will require full DOD-STD-2167A *product evaluations, a formal review, and will be placed under configuration control.* For the software that is to be modified, baselined SRSs and IRSs may already exist, and must be updated for this procurement. Full configuration management in accordance with DOD-STD-2167A will be required for these specifications. The Government-furnished software and their respective SRSs/IRSs are to be kept under configuration control and not modified.

2) Technical risk. The reusable, Government-furnished, and to-be-modified portions of the prototype are considered to be of low technical risk since they already exist. The newly developed portion is considered to be of high technical risk, since the concepts are not yet proven.

3) Project size. The program office estimates this procurement to take approximately 12 people one year. Project controls commensurate with this relatively small project are in order.

30.2 Project assumptions.

a. Uniformity within software subtypes. The newly developed software in the prototypes is expected to be sufficiently uniform and will be grouped together for tailoring. The modified software in the prototype is also expected to be sufficiently uniform for grouping together for tailoring. If this turns out not to be the case (for example, a given CSCI has no security implications), the contractors can raise this issue in the Software Development Plans and tailoring can be reconsidered.

b. Evaluation of existing products. The Government-furnished software already has a good SRS. No rewrite of this SRS or other Government-furnished product associated with this software is expected. Other than keeping the SRS and code under configuration control, few Government controls will be imposed.

TAILORING EXAMPLE FOR THE
CONCEPT DEMONSTRATION/VALIDATION PHASE (page 3 of 3)

c. Incorporation of NDS. Non-developmental software from the contractors' software libraries is expected to be incorporated into the new and modified software. This software is to be fully documented in the SRSs and IRSs, and subjected to the same configuration and project controls. If the contractors are able to reuse one or more CSCIs with no modification, they are encouraged to do so.

d. Elements of the software engineering and test environments. All software in the software engineering and test environments is non-deliverable for this procurement and, because of the highly preliminary nature of the software development, it has been decided to impose no DOD-STD-2167A controls on this software.

30.3 Worksheets. The pages that follow present sample worksheets for this procurement. The Project Environment Worksheet, Activity/Product Worksheet, and Related Standards Worksheet apply to all software on the project. The DOD-STD-2167A Tailoring Worksheet, DID Tailoring Worksheets, and sample Statement of Work paragraphs are given only for the post-flight CSCI of the system. Complete tailoring for the project would require worksheets for each type and subtype of software to which DOD-STD-2167A is to be applied.

PROJECT ENVIRONMENT WORKSHEET
FOR THE CONCEPT DEMONSTRATION / VALIDATION EXAMPLE
(page 1 of 4)

Program Navigation Prototype

Respondent Col. J. Doe Date 5/1/89

PURPOSE: To establish program context, objectives, and characteristics as a basis for tailoring DOD-STD-2167A. This worksheet is used in STEPs 1, 2, and 3 of the tailoring process.

INSTRUCTIONS: Answer the following questions. The questions are presented in the same order as they are discussed in section 4.4 of the handbook.

1. Check the system life cycle phase to which the contract applies:

   ____ a. Concept Exploration/Definition
   ✓ b. Concept Demonstration/Validation
   ____ c. Full Scale Development
   ____ d. Production/Deployment
   ____ e. Operational Support

2. Which DOD or service-specific policies apply:

   ✓ a. Use of Ada required
   ____ b. Use of another language required
   ____ c. Independent verification/validation required
   ✓ d. Safety analysis required
   ✓ e. Memory and/or timing reserves
   ____ f. Formal risk management required
   ____ g. Other ____

3. Which statements describe the acquisition strategy for the software:

   ____ a. There will be division of software development roles among contractors; each contract needs its own set of software development activities specified.
   ✓ b. Formal reviews and audits will be used as project milestones.
   ____ c. There will be an IV&V contractor or IV&V agent.
   ✓ d. The software contractor(s) will be involved in defining system-level requirements.
   ____ e. The software contractor(s) will be involved in system integration and testing.

PROJECT ENVIRONMENT WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 2 of 4)

4. What is the software support concept:

   4.1 Expected length of support ✓ More than 3 years _____ 0-3 years _____ None

   4.2 Expected degree of change ~~High~~ Unknown ~~Medium~~ ~~Low~~

   4.3 Software support roles N/A for this contract

   _____ a. The software will transition to a Government software support activity or support contractor (transition planning and training may be required).

   _____ b. The software will be supported by the developer at the developer's site. (little or no transition or training required)

5. Which system-level characteristics affect requirements imposed on software developer(s):

   ✓ a. Software will be used to implement some or all user interfaces.

   ✓ b. Software errors could result in a system security violation.

   ✓ c. Software errors could result in system safety violations or loss of life.

   ✓ d. The system will impose sizing/timing limitations on the software.

   ✓ e. Software will be used to implement inter- and intra-system interfaces

   _____ f. Some or all of the software will be implemented in firmware.

   ✓ g. The computers to be used are commercially available or Government furnished, and already have existing manuals.

   _____ h. Other _____

6. Software product objectives for the current phase

   6.1 Circle the software products that will be inherited from a previous phase, developed under a parallel contract, or provided as GFE (Documents listed are from DOD-STD-2167A. Substitute equivalent document titles or acronyms as required)

a. Project plans	SDP				
b. Specifications	Preliminary SSS	SRS	IRS		
c. Design documents	SSDD	SDD	IDD		
d. Test documents	STP	STD	STR		
e. User and support documents	CRISD	CSOM	SUM	SPM	FSM
f. Code and its documentation	Code	VDD	SPS		

GFS CSCI

PROJECT ENVIRONMENT WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 3 of 4)

6.2 What are the software objectives for this phase? Add comments to clarify.

✓ a. Prepare ~~or update~~ project plans Non-deliverable SDP

✓ b. Prepare ~~or update~~ specifications Preliminary SRS, IRS

____ c. Prepare or update design documents ____

✓ d. Prepare or update code, resulting in:

✓ 1) Throwaway prototype code Do demo of SRS, IRS concepts

____ 2) Prototype code that will be refined and made operational later ____

____ 3) Operational code ____

____ e. Plan for formal qualification testing ____

____ f. Perform formal qualification testing ____

____ g. Prepare or update plans for software support ____

____ h. Prepare or update user/support documents ____

____ i. Convert documents to DOD-STD-2167A ____

____ j. Other ____

7. Software types: Put an X in each box describing a type of software to be developed, modified, or used on the contract.

	APPLICATION SOFTWARE	SUPPORT SOFTWARE					
		S/W ENGINEERING ENVIRONMENT		S/W TEST ENVIRONMENT		OTHER	
		DELIVERABLE	NON-DELIVERABLE Note 1	DELIVERABLE	NON-DELIVERABLE Note 2	DELIVERABLE	NON-DELIVERABLE
NEWLY DEVELOPED	X (non-del)		X		X		X
MODIFIED	X (non-del)		X		X		X
NON-DEVELOPMENTAL	X (non-del)		X		X		X

NOTE 1) DOD-STD-2167A PARAGRAPH 4.2.2 APPLIES UNLESS DELETED OR MODIFIED. NO OTHER PARAGRAPHS APPLY.
NOTE 2) DOD-STD-2167A PARAGRAPH 4.3.2 APPLIES UNLESS DELETED OR MODIFIED. NO OTHER PARAGRAPHS APPLY.

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REV. 1

PROJECT ENVIRONMENT WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 4 of 4)

8. Software characteristics

a. Criticality. Based on current knowledge of the system and software, identify the critical software on the project (errors in use would have severe consequences).

_____ 1) All application software

_____ 2) Some application software. Identify which:

_____ 3) Other software on the project. Identify which:

✓ 4) None But SRS & IRS will specify SW considered critical

_____ 5) Can't determine this yet.

b. Technical risk. Based on current knowledge of the system and software, identify the software with high technical risk (unprecedented, complex, difficult to implement)

_____ 1) All application software

✓ 2) Some application software. Identify which:

Newly developed prototype software

_____ 3) Other software on the project. Identify which based on current assumptions:

_____ 4) None

_____ 5) Can't determine this yet

c. Project size. Based on current knowledge of the system and software, make a rough estimate of the size of the software development team

_____ 1 to 5 _____ 6 to 10 ✓ 11 to 20 _____ 21 to 50 _____ Over 50

_____ Can't determine this yet

d. List any other considerations that might affect the way you tailor some or all of the software for this project:

ACTIVITY/PRODUCT WORKSHEET
FOR THE CONCEPT DEMONSTRATION/VALIDATION EXAMPLE
(page 1 of 4)

Program Navigation Prototype

Respondent Col. J. Doe Date 5/10/89

PURPOSE: To select the activities and products required for a each type of software on a project. This worksheet is used in STEP 3 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Pages 1 and 2 of this worksheet list DOD-STD-2167A activities and products. Pages 3 and 4 provide a table for recording which products and activities apply to each type of software on your project. Begin by assigning each type of software on your project a column in table. Use Question 7 of your Project Environment Worksheet as a starting point for the types. The types will evolve as you begin to complete the worksheet and see that you can combine some types and must divide others into subtypes types based on the need to give different answers for different software on your project. Write "K" to keep an item; "D" to delete it. Delete a primary item (1, 2, 3, etc.) only if you delete all of its subsidiary items (1.a, 1.b, etc.). Note that delivery of a product occurs only if it is specified on the DD 1423 Contract Data Requirements List.

DOD-STD-2167A PRODUCTS AND ACTIVITIES

1. Help define system requirements and design
   - 1.a Analyze SW requirements in system specs
   - 1.b Prepare System/Segment Design Document (SSDD)
   - 1.c Support system-level reviews (SRR, SDR)

2. Define software requirements
   - 2.a Prepare SW Requirements Spec. (SRS)
   - 2.b Prepare Interface Req'ts Spec. (IRS)

3. Perform software design
   - 3.a Organize CSCIs into CSCs, CSUs
   - 3.b Prepare Software Design Document (SDD)
   - 3.c Prepare Interface Design Document (IDD)
   - 3.d Establish SW Development Files (SDFs)

4. Perform coding activities
   - 4.a Use approved high order language
   - 4.b Code the software
   - 4.c Prepare a Version Descrpt. Doc. (VDD)

5. Perform unit/component SW testing
   - 5.a Document CSU test planning
   - 5.b Perform/record results of CSU testing
   - 5.c Document CSC integration/test planning
   - 5.d Perform/record results of CSC integ/test

6. Perform Formal Qualif. Test (FQT) of CSCIs
   - 6.a Prepare Software Test Plan (STP)
   - 6.b Establish a software test environment
   - 6.c Prepare Software Test Description (STD)
   - 6.d Dry run the test procedures
   - 6.e Perform FQT
   - 6.f Prepare a Software Test Report (STR)
   - 6.g Use independent testers

7. Participate in system-level test/integration
   - 7.a Support system test planning
   - 7.b Support system testing
   - 7.c Support post-test analysis and reporting
   - 7.d Update code and documents as needed
   - 7.e Prepare changes to baselined documents

ACTIVITY / PRODUCT WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 2 of 4)

8. Perform technical product evaluations
   - 8.a Use independent evaluators
   - 8.b Evaluate software products
   - 8.c Internally coordinate deliverables
   - 8.d Use 2167A evaluation criteria
   - 8.e Keep records of evaluations

9. Perform software configuration management
   - 9.a Perform configuration identification
   - 9.b Perform configuration control
   - 9.c Perform configuration status accounting
   - 9.d Implement storage, handling, delivery procedures
   - 9.e Prepare ECPs, SCNs for baselined documents

10. Prepare software for operational use & support
    - 10.a Make code regenerable in the support environment
    - 10.b Prepare Computer Resources Integrated Support Document (CRISD)
    - 10.c Prepare Computer System Operator's Manual (CSOM)
    - 10.d Prepare Software User's Manual (SUM)
    - 10.e Prepare SW Programmer's Manual (SPM)
    - 10.f Prepare Firmware Support Manual (FSM)
    - 10.g Prepare SW Product Specification (SPS)
    - 10.h Install software at support site
    - 10.i Provide training and continuing support

11. Use DOD-STD-2167A SW management practices:
    - 11.a Prepare a Software Development Plan
    - 11.b Conduct formal reviews/audits of SW products (System reviews are 1.c)
    - 11.c Implement risk management procedures
    - 11.d Implement security measures
    - 11.e Ensure subcontractor compliance with prime contract
    - 11.f Interface with software IV&V agent(s)
    - 11.g Establish software development library
    - 11.h Implement corrective action process
    - 11.i Prepare problem/change reports
    - 11.j Use 2167A problem/priority categories

12. Use DOD-STD-2167A SW engineering practices:
    - 12.a Use systematic, well documented development methods
    - 12.b Establish a SW engineering environment
    - 12.c Perform safety analysis
    - 12.d Consider use of non-developmental SW
    - 12.e Implement design and coding standards
    - 12.f Maintain timing, memory reserves

ACTIVITY / PRODUCT WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 3 of 4)

Item Number, Brief Descriptor		Software Types / Subtypes / CSCIs: Newly developed s/w in prototype (non-deliverable)	Modified s/w in prototype (non-del)	GFS CSCI for prototype	Reusable CSCIs (if any) (non-del)	s/w Engineering & s/w Test Environments (non-del)		Notes: 1) DOD-STD-2167A will not be applied to s/w environments for this contract
1	System Req	K	K	K	K	D		
1.a	Analyze SSS	K	K	K	K			Basis for SRS + IRS
1.b	SSDD	D	D	D	D			Not required for prototype
1.c	SRR, SDR	K	K	K	K			
2	SW Req	K	K	K	K			
2.a	SRS			D				Reusable may require no work
2.b	IRS			K				
3	SW Design	D*	D*	D*	D*			*Contractor Practices
3.a	CSCs, CSUs							
3.b	SDD							
3.c	IDD							
3.d	SDFs							
4	Coding	K	K	D	K			
4.a	HOL				K			Ada required
4.b	Code				D			Non-deliverable
4.c	VDD	D	D		D			No code deliverable
5	CSU/C Test	D*	D*	D*	D*			*Contractor Practices
5.a	CSU plan							
5.b	CSU test							
5.c	CSC plan							
5.d	CSC test							
6	FQT	D	D	D	D			Not required for this Contract
6.a	STP							
6.b	Test Env							
6.c	STD							
6.d	Dry Run							
6.e	Do FQT							
6.f	STR							
6.g	Independent							
7	System Test	D	D	D	D			Not required for this contract
7.a	Plan							
7.b	Test							
7.c	Report							
7.d	Update							
7.e	Changes							

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ACTIVITY / PRODUCT WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 4 of 4)

Item Number, Brief Descriptor	Software Types / Subtypes / CSCIs: Newly developed s/w in prototype (non-deliverable)	Modified s/w in prototype (non-del)	GFS CSCI for prototype	Reuseable CSCI's (if any) (non-del)	s/w Engineering & s/w Test Environments (non-del)		Notes
8 Prod Evaluations	K	K	D	D	D		Do Eval's only for new &
8.a Independent							modified SRS & IRS
8.b Do evaluations							
8.c Coordinate							
8.d Criteria							
8.e Records							
9. Config Mgmt	K	K	K	K			
9.a Config ID		D	D	D			
9.b Config Control		K	K	K			Control All Products
9.c Config Status	D*	D*	D*	D*			* Contractor practices
9.d Storage	K	K	D	D			SRS & IRS (deliverables only)
9.e ECPs	K	K	K	K			ECP's on SSS, all SRS & IRS
10 Support	D	D	D	D			Too early to do detailed
10.a Regen Code							work, long-range only
10.b CRISD							
10.c CSOM							
10.d SUM							
10.e SPM							
10.f FSM							
10.g SPS							
10.h Install							
10.i Train							
11 Management	K	K	K	K			
11.a SDP			K				
11.b Rev/Aud			D				SSR only
11.c Risk	D*	D*	D*	D*			* Contractor practices
11.d Security	K	K	K	K			Secret data
11.e Subcontractor	K	K	K	K			(Just in case)
11.f IV&V	D	D	D	D			
11.g Library	K	K	K	K			
11.h C. Action	D*	D*	D*	D*			* Contractor practices
11.i Ch. Report							
11.j Classify							
12 SW Eng	K	K	K	K			
12.a Methods	K	K	D	D			
12.b Eng Env	K*	K*	K*	K*			* Don't Document
12.c Safety	K	K	K	K			Ensure safety included in Specs
12.d Non-devel	K	K	D	D			
12.e Design/Code Stds	D*	D*	D	D			* Contractor practices
12.f Reserves	K	K	K	K			Ensure SSS requirement in SRS

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DOD-STD-2167A TAILORING WORKSHEET
FOR THE CONCEPT DEMONSTRATION / VALIDATION EXAMPLE
(page 1 of 11)

Program Navigation Prototype Type/~~Subtype/CSCI~~ Newly developed software

Respondent Col. J. Doe Date 5/12/89

PURPOSE: To translate the selections made on the Activity/Product Worksheet into decisions on each paragraph of DOD-STD-2167A. This worksheet is used in STEP 4 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete one worksheet for each software type, subtype, or CSCI with a unique set of answers on the Activity/Product Worksheet. Begin with those paragraphs that have a number in the right-most column. For each such paragraph, look up the related item(s) on the Activity/Product Worksheet. Use your response(s) to determine whether to Keep, Delete, or Replace the paragraph. If your responses conflict (for example, one Keep and one Delete) read the actual paragraph in the standard and decide the appropriate tailoring for the paragraph. Circle the appropriate letter in the left-most column (K = keep; D = Delete; R = Replace). Use the Comments column to make notes, record rationale, and record the details of replacement text. As a last step, tailor the paragraphs with INTRO in the right-most column: select D if all subparagraphs are deleted, K if any subparagraph is K or R.

LEGEND: INTRO Paragraph contains no requirements and serves only as an introductory paragraph.
** Details must be specified in the contract.
++ References another DOD/MIL standard.
( ) Parentheses denote paragraphs descriptions vs titles.

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS,* OR "INTRO"
(K) D R	4.	General Requirements	INTRO
(K) D R	4.1	Software development management	INTRO
K D (R)	4.1.1	Software development process Delete "deliverable"	INTRO
(K) D R	4.1.1.a	(System Requirements Analysis/Design)	1
(K) D R	4.1.1.b	(Software Requirements Analysis)	2
K (D) R	4.1.1.c	(Preliminary Design)	3
K (D) R	4.1.1.d	(Detailed Design)	3
K D (R)	4.1.1.e	(Coding and CSU Testing) Delete "CSU Testing"	K 4, D 5.a, D 5.b
K (D) R	4.1.1.f	(CSC Integration and Testing)	D 5.c, D 5.d
K (D) R	4.1.1.g	(CSCI Testing)	6

* Numbers refer to questions on the Activity/Product Worksheet

DOD-STD-2167A TAILORING WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 2 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	4.1.1.h	(System Integration and Testing)	7
K D R	4.1.2**,++	Formal reviews/audits (SRR, SDR, SSR only)	11.b
K D R	4.1.3	Software development planning	11.a
K D R	4.1.4	Risk management	11.c
K D R	4.1.5**	Security Comply with the security requirements in the SSS	11.d
K D R	4.1.6	Subcontractor management	11.e
K D R	4.1.7**	Interface with software IV&V agent(s)	11.f
K D R	4.1.8	Software development library	11.g
K D R	4.1.9	Corrective action process	11.h
K D R	4.1.9.a	(Implement a closed-loop process)	11.h
K D R	4.1.9.b	(Use problem/change reports, etc. as input)	11.h, 11.i
K D R	4.1.9.c	(Classify problems by category and priority)	11.h, 11.j
K D R	4.1.9.d	(Perform analysis to detect trends)	11.h
K D R	4.1.9.e	(Evaluate corrective action taken)	11.h
K D R	4.1.10	Problem/change report	11.i, 11.h
K D R	4.2	Software engineering	INTRO
K D R	4.2.1	Software development methods	12.a, 11.b
K D R	4.2.2**	Software engineering environment (Don't document)	12.b, 11.d
K D R	4.2.3	Safety analysis	12.c
K D R	4.2.4**	Non-developmental software Delete "deliverable"	12.d, 3.d
K D R	4.2.5	Computer software organization	3.a, 11.a
K D R	4.2.6	Traceability of requirements to design SSS to SRS/IRS	2.a, 2.b, 3.b
K D R	4.2.7**	High order language Ada required	4.a

DOD-STD-2167A TAILORING WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 3 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K (D) R	4.2.8	Design and coding standards	12.e
K (D) R	4.2.9	Software development files (SDFs)	3.d, 3.a
K (D) R	4.2.9.a	(Put design considerations/constraints in SDF)	3.d
K (D) R	4.2.9.b	(Put design documentation and data in SDF)	3.d
K (D) R	4.2.9.c	(Put schedule/status information in SDF)	3.d
K (D) R	4.2.9.d	(Put test requirements/responsibilities in SDF)	3.d, 5
K (D) R	4.2.9.e	(Put test cases/procedures/results in SDF)	3.d, 5
K D (R)	4.2.10**	Processing resource and reserve capacity Delete reference to SPS	12.f, 2.a, 10.g
K (D) R	4.3	Formal qualification testing	6.e
K (D) R	4.3.1	Formal qualification test planning	6.a
K (D) R	4.3.2**	Software test environment	6.b, 11.d
K (D) R	4.3.3	Independence in FQT activities	6.g, 11.a
K (D) R	4.3.4	Traceability of requirements to test cases	2.a, 2.b, 6.c
(K) D R	4.4	Software product evaluations Only SRS + IRS	8
(K) D R	4.4.1	Independence in product eval. activities	8.a, 11.a
(K) D R	4.4.2	Final evaluations	8.c
(K) D R	4.4.3	Software evaluation records Do evals only for new + modified SRS + IRS	8.e, 11.h, 11.i
(K) D R	4.4.4	Evaluation criteria	8.d
(K) D R	4.5	Software configuration management	INTRO
(K) D R	4.5.1**	Configuration identification	9.a
(K) D R	4.5.1.a	(Identify baseline documentation)	9.a
(K) D R	4.5.1.b	(Identify documentation/media under CM)	9.a
K (D) R	4.5.1.c	(Identify each CSCI, CSC, and CSU) Code not deliverable	9.a

DOD-STD-2167A TAILORING WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 4 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION)	COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	4.5.1.d	(Identify version/release/change status)	Code not deliverable	9.a
K D R	4.5.1.e	(Identify code/documentation relationship)		9.a
K D R	4.5.1.f	(Identify deliverable medium contents)		9.a
K D R	4.5.2	Configuration control		9.b
K D R	4.5.2.a	(Establish Developmental Configuration)		9.b
K D R	4.5.2.b	(Maintain current copies of deliverables)		9.b
K D R	4.5.2.c	(Provide access to documents/code under CM)		9.b
K D R	4.5.2.d	(Control changes to master copies)		9.b
K D R	4.5.3	Configuration status accounting		9.c
K D R	4.5.3.a	(Provide traceability of changes)		9.c
K D R	4.5.3.b	(Communicate configuration status)		9.c
K D R	4.5.3.c	(Ensure consistency between documents/code)		9.c
K D R	4.5.4	Storage, handling, & delivery of project media		9.d
K D R	4.5.5**,++	Engineering Change Proposals		9.e
K D R	4.6	Transitioning to software support		INTRO
K D R	4.6.1**	Regenerable and maintainable code		10.a
K D R	4.6.2	Transition planning		10.b
K D R	4.6.3**	Software transition and continuing support		10.h, 10.i
K D R	4.6.4	Software support & operational documentation		INTRO
K D R	4.6.4.a	(Prepare Comp. Res. Int. Support Doc. (CRISD))		10.b
K D R	4.6.4.b	(Prepare Comp. SW Operator's Manual (CSOM))		10.c
K D R	4.6.4.c	(Prepare SW User's Manual (SUM))		10.d
K D R	4.6.4.d	(Prepare SW Programmer's Manual (SPM))		10.e
K D R	4.6.4.e	(Prepare Firmware Support Manual (FSM))		10.f

DOD-STD-2167A TAILORING WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 5 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
(K) D R	5.	Detailed Requirements	INTRO
(K) D R	5.1	System requirements analysis/design	INTRO
(K) D R	5.1.1	Software development management	INTRO
(K) D R	5.1.1.1**	(Support System Requirements Review (SRR))	1.c
(K) D R	5.1.1.2**	(Support System Design Review (SDR))	1.c
(K) D R	5.1.2	Software engineering	INTRO
(K) D R	5.1.2.1	(Analyze preliminary system spec)	1.a
K (D) R	5.1.2.2	(Allocate system rqmts; document in SSDD)	1.b
(K) D R	5.1.2.3	(Define prelim. engineering rqmts in SRS)	2.a
(K) D R	5.1.2.4	(Define prelim. interface rqmts in IRS)	2.b
(K) D R	5.1.3	(Define prelim. qual. rqmts in SRS)	2.a
(K) D R	5.1.4	Software product evaluations	8.b, 8.d, 11.a 1.b, 2.a, 2.b
K (D) R	5.1.4.a	(Evaluate SW Development Plan) SDP is not deliverable	11.a, 8.b
K (D) R	5.1.4.b	(Evaluate Sys/Seg Design Document) No SSDD	1.b, 8.b
(K) D R	5.1.4.c	(Evaluate prelim. SRSs)	2.a, 8.b
(K) D R	5.1.4.d	(Evaluate prelim. IRS)	2.b, 8.b
(K) D R	5.1.5	Configuration management	INTRO
K D (R)	5.1.5.a	(Put SDP under config. control) Delete reference to "deliverable"	11.a, 9.b
K (D) R	5.1.5.b	(Put SSDD under config. control)	1.b, 9.b
(K) D R	5.1.5.c	(Put prelim. SRSs under config. control)	2.a, 9.b
(K) D R	5.1.5.d	(Put prelim. IRS under config. control)	2.b, 9.b
(K) D R	5.2	Software requirements analysis	INTRO
(K) D R	5.2.1++	(Conduct SW Specification Review (SSR)) Demo prototype	2.a, 2.b, 11.b

DOD-STD-2167A TAILORING WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 6 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
(K) D R	5.2.2	Software engineering	INTRO
(K) D R	5.2.2.1	(Define engineering rqmts; document in SRS)	2.a
(K) D R	5.2.2.2	(Define interface rqmts; document in IRS)	2.b
(K) D R	5.2.3	(Define qualification rqmts; doc. in SRS)	2.a
(K) D R	5.2.4	Software product evaluations	8.b,8.d,11.b, 2.a, 2.b
(K) D R	5.2.4.a	(Evaluate Software Rqmt Specs)	2.a, 8.b
(K) D R	5.2.4.b	(Evaluate Interface Rqmt Specs)	2.b, 8.b
(K) D R	5.2.5	(Put SRS/IRS under config. control)	2.a, 2.b, 9.b
K (D) R	5.3	Preliminary design	INTRO
K (D) R	5.3.1++	(Conduct Preliminary Design Review (PDR))	3.b,3.c,11.b
K (D) R	5.3.2	Software engineering	INTRO
K (D) R	5.3.2.1	(Develop prelim. design; document in SDD)	3.b, 2.a, 2.b
K (D) R	5.3.2.2	(Develop prelim. interface design; document in IDD)	3.c, 2.b
K (D) R	5.3.2.3	(Document other design information in SDD)	3.b
K (D) R	5.3.2.4	(Establish CSC test requirements)	5.c, 3.d
K (D) R	5.3.3	(Identify formal qualification tests) No FQT	6.a, 2.a
K (D) R	5.3.4	Software product evaluations	8.b, 8.d, 11.b, 3.b, 3.c D 6.a, 5.c D
K (D) R	5.3.4.a	(Evaluate Software Design Documents) No SDD	3.b, 8.b
K (D) R	5.3.4.b	(Evaluate prelim. Interface Design Doc) No IDD	3.c, 8.b
K (D) R	5.3.4.c	(Evaluate Software Test Plan) No STP	6.a, 8.b
K (D) R	5.3.4.d	(Evaluate CSC test requirements) No CSC tests req'd	5.c, 8.b
K (D) R	5.3.5	Configuration management	INTRO
K (D) R	5.3.5.1	(Put SDDs into Developmental Config.) No SDD	3.b, 9.b

DOD-STD-2167A TAILORING WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 7 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION)	COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.3.5.2	(Put STP under config. control)	No STP	6.a, 9.b
K D R	5.3.5.3	(Put IDD under config. control)	No IDD	3.c, 9.b
K D R	5.4	Detailed design		INTRO
K D R	5.4.1++	(Conduct Critical Design Review (CDR))		3.b,3.c,11.b
K D R	5.4.2	Software engineering.		INTRO
K D R	5.4.2.1	(Develop detailed design; document in SDD)		3.b
K D R	5.4.2.2	(Develop detailed interface design; document in IDD)		3.c, 2.b
K D R	5.4.2.3	(Document other design information in SDD)		3.b
K D R	5.4.2.4	(Define CSC test cases)		5.c, 3.d
K D R	5.4.2.5	(Define CSU test rqmts/cases)		5.a, 3.d
K D R	5.4.3	(Identify FQT test cases; document in STD)		6.c, 6.a
K D R	5.4.4	Software product evaluations		8.b,8.d,11.b, 3.b, 3.c, 3.d, 5.c, 5.a
K D R	5.4.4.a	(Evaluate updated Software Design Doc)		3.b, 8.b
K D R	5.4.4.b	(Evaluate updated Interface Design Doc)		3.c, 8.b
K D R	5.4.4.c	(Evaluate CSC test cases)		5.c, 8.b
K D R	5.4.4.d	(Evaluate CSU test rqmts/cases)		5.a, 8.b
K D R	5.4.4.e	(Evaluate a % of CSU and CSC SDFs)		3.d,8.b,11.a
K D R	5.4.4.f	(Evaluate Software Test Description)		6.c, 8.b
K D R	5.4.5	Configuration management		INTRO
K D R	5.4.5.1	(Put updated SDD in Devel. Config.)		3.b, 9.b
K D R	5.4.5.2	(Put updated IDD under config. control)		3.c, 9.b
K D R	5.4.5.3	(Put STD under config. control)		6.c, 9.b

DOD-STD-2167A TAILORING WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 8 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.5	Coding and CSU testing	INTRO
K D R	5.5.1	Software development management (no rqmts)	INTRO
K D R	5.5.2	Software engineering	INTRO
K D R	5.5.2.1	(Develop CSU test procedures)	5.a, 3.d
K D R	5.5.2.2	(Code and test CSUs) Delete test requirements	4.b, 5.b, 3.d
K D R	5.5.2.3	(Revise documents/code based on CSU tests)	3.b, 3.c, 3.d, 4.b, 5.b
K D R	5.5.2.4	(Develop CSC test procedures)	5.c, 3.d
K D R	5.5.3	Formal qualification testing (no rqmts)	INTRO
K D R	5.5.4	Software product evaluations Code is not deliverable	8.b, 8.d, 4.b, 5.a, 5.b, 5.c, 3.d
K D R	5.5.4.a	(Evaluate source code)	4.b, 8.b
K D R	5.5.4.b	(Evaluate CSC test procedures)	5.c, 8.b
K D R	5.5.4.c	(Evaluate CSU test procedures/results)	5.a, 5.b, 8.b
K D R	5.5.4.d	(Evaluate a % of updated SDFs)	3.d, 8.b
K D R	5.5.5	Configuration management	INTRO
K D R	5.5.5.1	(Put updated SDD/listings in Devel. Config.)	3.b, 4.b, 9.b
K D R	5.5.5.2	(Put source code under config. control) Delete references to test evals	4.b, 9.b
K D R	5.6	CSC integration and testing	INTRO
K D R	5.6.1++	(Conduct Test Readiness Review (TRR))	6.c, 11.b
K D R	5.6.2	Software engineering	INTRO
K D R	5.6.2.1	(Conduct CSC integration & testing)	5.d
K D R	5.6.2.2	(Record CSC test results)	5.d, 3.d
K D R	5.6.2.3	(Revise design documentation/code)	3.b, 3.c, 3.d, 4.b, 5.d

DOD-STD-2167A TAILORING WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 9 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.6.3	Formal qualification testing	INTRO
K D R	5.6.3.1	(Develop FQT test procedures; document in STD)	6.c
K D R	5.6.3.2	(Dry run FQT test procedures)	6.d, 6.c, 3.d
K D R	5.6.4	Software product evaluations	8.b, 6.d, 11.b, 3.d, 6.c, 3.b, 3.c, 4.b,
K D R	5.6.4.a	(Evaluate test results in SDFs)	5.d, 6.d, 3.d, 8.b
K D R	5.6.4.b	(Evaluate updated STD)	6.c, 8.b
K D R	5.6.4.c	(Evaluate updated code & design docs)	3.b, 3.c, 4.b, 8.b
K D R	5.6.4.d	(Evaluate a % of updated SDFs)	3.d, 8.b
K D R	5.6.5	(Put updated SDD/listings in Devel. Config)	3.b, 4.b, 9.b
K D R	5.7	CSCI testing	INTRO
K D R	5.7.1	(Support Functional/Physical Config. Audits (FCA/PCA))	4.b, 6.f, 10.g, 11.b
K D R	5.7.2	Software engineering	INTRO
K D R	5.7.2.1	(Revise documentation/code based on FQT)	3.b, 3.d, 4.b, 6.e
K D R	5.7.2.2	(Revise IDD based on FQT)	3.c, 6.e
K D R	5.7.2.3	(Produce updated source code)	6.e, 4.b 11.b, 2.a
K D R	5.7.2.4	(Prepare an SPS for each CSCI)	10.g
K D R	5.7.3	Formal qualification testing	INTRO
K D R	5.7.3.1	(Perform formal qualification testing)	6.e, 6.c
K D R	5.7.3.2	(Prepare Software Test Reports)	6.f
K D R	5.7.3.3	(Prepare updated SW Test Desciption)	6.c

DOD-STD-2167A TAILORING WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 10 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.7.4	Software product evaluations	8.b, 8.d, 6.f 3.b, 3.c, 4.b
K D R	5.7.4.a	(Evaluate STRs)	6.f, 8.b
K D R	5.7.4.b	(Evaluate updated code & design documents)	3.b, 3.c, 4.b, 8.b
K D R	5.7.5	Configuration management	INTRO
K D R	5.7.5.1	(Prepare Version Description Document (VDD))	4.c
K D R	5.7.5.2	(Disestablish Devel. Config.)	9.b,10.g,11.b
K D R	5.8	System integration & testing	INTRO
K D R	5.8.1	(Support Functional/Physical Config. Audits (FCA/PCA))	4.b, 6.f, 10.g, 11.b
K D R	5.8.2	(Revise docs/code based on system test)	7.d
K D R	5.8.3	Formal qualification testing	INTRO
K D R	5.8.3.1	(Support system test planning)	7.a
K D R	5.8.3.2	(Support system testing)	7.b
K D R	5.8.3.3	(Support post test analysis/reporting)	7.c
K D R	5.8.4	(Evaluate updated code/design documents)	7.d, 8.b, 8.d
K D R	5.8.5	(Prepare changes to baselined documents)	7.e
K D R	B.	Appendix B - Rqmts for coding standards	INTRO
K D R	B.10.3.1	Presentation style	12.e
K D R	B.10.3.2	Naming	12.e
K D R	B.10.3.3	Restrictions on the implementation language	12.e
K D R	B.10.3.4	Use of language constructs and features	12.e
K D R	B.10.3.5	Complexity	12.e

DOD-STD-2167A TAILORING WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 11 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	C.	Appendix C - Category and priority classification	INTRO
K D R	C.10.2	Classify by category: SW, doc. or design	11.j
K D R	C.10.3	Classify by priority: Priority 1, 2, 3. 4. 5	11.j
K D R	D.	Appendix D - Evaluation criteria	INTRO
K D R	D.10.2.1	Internal consistency	8.d
K D R	D.10.2.2	Understandability	8.d
K D R	D.10.2.3	Traceability to indicated documents	8.d
K D R	D.10.2.4	Consistency with indicated documents	8.d
K D R	D.10.2.5	Appropriate analysis, design, & coding techniques used	8.d
K D R	D.10.2.6	Appropriate allocation of sizing & timing resources	8.d
K D R	D.10.2.7	Adequate test coverage of requirements	8.d
K D R	D.10.3	Additional criteria	8.d
K D R	D.10.3.1	Adequacy of quality factors	8.d
K D R	D.10.3.2	Testability of requirements	8.d
K D R	D.10.3.3	Consistency between data definition and data use	8.d
K D R	D.10.3.4	Adequacy of test cases, test procedures	8.d
K D R	D.10.3.5	Completeness of testing	8.d
K D R	D.10.3.6	Completeness of retesting	8.d

SDP DID TAILORING WORKSHEET
FOR THE CONCEPT DEMONSTRATION /VALIDATION EXAMPLE
(page 1 of 4)

KEEP ✓ DELETE ____

Program Navigation Prototype ~~Type/Subtype/DSCT~~ All software

Respondent Col. J. Doe Date 5/17/89

PURPOSE: Tailor the SDP DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the SDP DID required under the contract. Use the table below to select required topics in the SDP. Circle "K" to keep a topic, "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the SDP overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
(K) D R	Software development management		10.2.5
(K) D R	Project organization/resources		10.2.5.1
(K) D R	Contractor facilities		10.2.5.1.1
(K) D R	Govt furnished SW, equip, etc.		10.2.5.1.2
(K) D R	Organizational structure		10.2.5.1.3
(K) D R	Personnel		10.2.5.1.4
(K) D R	Schedule and milestones		10.2.5.2
(K) D R	Activities		10.2.5.2.1
(K) D R	Initiation		10.2.5.2.1.a
(K) D R	Documentation		10.2.5.2.1.b
(K) D R	Completion		10.2.5.2.1.c
(K) D R	High risk areas		10.2.5.2.1.d
K (D) R	Activity network		10.2.5.2.2
K (D) R	Source of req'd resources		10.2.5.2.3
K (D) R	Risk management		10.2.5.3
K (D) R	Identified risks		10.2.5.3.a
K (D) R	Risk factors		10.2.5.3.b
K (D) R	Monitoring procedures		10.2.5.3.c
K (D) R	Contingency procedures		10.2.5.3.d
(K) D R	Security		10.2.5.4
K (D) R	Interface with associate contractors		10.2.5.5
K (D) R	Interface with SW IV&V agent(s)		10.2.5.6

SDP DID TAILORING WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 2 of 4)

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
	K D R Subcontractor management		10.2.5.7
	K D R Formal reviews		10.2.5.8
	K D R Software development library		10.2.5.9
	K D R Corrective action process		10.2.5.10
	K D R Problem/change report		10.2.5.11 (a-v are not req'd)
K D R	Software engineering		10.2.6
	K D R Organization and resources		10.2.6.1
	K D R Organizational structure		10.2.6.1.1
	K D R Personnel		10.2.6.1.2
	K D R SW engineering environment		10.2.6.1.3
	K D R Software items		10.2.6.1.3.1
	K D R Hardware/firmware items		10.2.6.1.3.2
	K D R Government rights		10.2.6.1.3.3
	K D R Installation/test		10.2.6.1.3.4
	K D R Software standards and procedures		10.2.6.2
	K D R SW development methodology		10.2.6.2.1
	K D R SW Rqmts. Analysis		10.2.6.2.1.a
	K D R Preliminary Design		10.2.6.2.1.b
	K D R Detailed Design		10.2.6.2.1.c
	K D R Coding & CSU Test		10.2.6.2.1.d
	K D R CSC Integration/Test		10.2.6.2.1.e
	K D R CSCI Testing		10.2.6.2.1.f
	K D R Software development files		10.2.6.2.2
	K D R Design standards		10.2.6.2.3
	K D R Coding standards		10.2.6.2.4
	K D R Non-developmental software		10.2.6.3
K D R	Formal qualification testing		10.2.7
	K D R Organization and resources		10.2.7.1
	K D R *Organizational structure*		10.2.7.1.1
	K D R Personnel		10.2.7.1.2

SDP DID TAILORING WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 3 of 4)

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
	K(D)R Test approach/philosophy		10.2.7.2
	K(D)R Test plan assumptions/constraints		10.2.7.3
(K)D R	Software product evaluations		10.2.8
	(K)D R Organization/resources		10.2.8.1
	(K)D R Organizational structure		10.2.8.1.1
	(K)D R Personnel		10.2.8.1.2
	(K)D R Procedures and tools		10.2.8.2
	(K)D R Procedures		10.2.8.2.1
	(K)D R Tools		10.2.8.2.2
	(K)D R Eval of subcontractor products		10.2.8.3
	(K)D R SW product evaluation records		10.2.8.4
	(K)D R Activity-dependent evaluations		10.2.8.5
	(K)D R Eval of each product		10.2.8.5.1
(K)D R	Software configuration management		10.2.9
	(K)D R Organization/resources		10.2.9.1
	(K)D R Organizational structure		10.2.9.1.1
	(K)D R Personnel		10.2.9.1.2
	(K)D R Configuration identification		10.2.9.2
	(K)D R Devel. config. ident.		10.2.9.2.1
	(K)D R Identification methods		10.2.9.2.2
	(K)D R Configuration control		10.2.9.3
	(K)D R Flow of config. control		10.2.9.3.1
	(K)D R Reporting documentation		10.2.9.3.2
	K D R *Each report*		10.2.9.3.2.1
	(K)D R Review procedures		10.2.9.3.3
	(K)D R Review boards		10.2.9.3.3.1
	(K)D R Media storage & handling		10.2.9.3.4
	(K)D R Additional controls		10.2.9.3.5
	(K)D R Configuration status accounting		10.2.9.4
	(K)D R Configuration audits		10.2.9.5

SDP DID TAILORING WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 4 of 4)

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
	K D R Prep for spec authentication		10.2.9.6
	K D R Submittal procedures		10.2.9.6.a
	K D R Change incorporation		10.2.9.6.b
	K D R CM reporting		10.2.9.6.c
	K D R CM major milestones		10.2.9.7
K D R	Other SW development functions	Open for contractor use	10.2.10
	K D R Function name		10.2.10.1
	K D R Organizational structure		10.2.10.1.1
	K D R Personnel		10.2.10.1.2
	K D R Other resources		10.2.10.1.3
	K D R Methods and procedures		10.2.10.1.4

SRS DID TAILORING WORKSHEET
FOR THE CONCEPT DEMONSTRATION / VALIDATION EXAMPLE
(page 1 of 2)

KEEP ✓ DELETE ____

Program Navigation Prototype Type/~~Subtype/CSCI~~ Newly developed software

Respondent Col. J. Doe Date 5/17/89

PURPOSE: Tailor the SRS DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the SRS DID required under the contract. Use the table below to select required topics in the SRS. Circle "K" to keep a topic, "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the SRS overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
(K) D R	Engineering requirements		10.1.5
(K) D R	CSCI external interface requirements		10.1.5.1
(K) D R	CSCI capability requirements		10.1.5.2
(K) D R	Capability name/description		10.1.5.2.1
(K) D R	CSCI internal interfaces		10.1.5.3
(K) D R	CSCI data element requirements		10.1.5.4
(K) D R	CSCI-internal data elements		10.1.5.4.a
(K) D R	Identifier		10.1.5.4.a(1)
(K) D R	Description		10.1.5.4.a(2)
(K) D R	Units of measure		10.1.5.4.a(3)
(K) D R	Range/limit		10.1.5.4.a(4)
(K) D R	Accuracy		10.1.5.4.a(5)
(K) D R	Precision/resolution		10.1.5.4.a(6)
(K) D R	Internal interfaces		10.1.5.4.a(7)
(K) D R	CSCI-external data elements		10.1.5.4.b
(K) D R	Data element ID		10.1.5.4.b(1)
(K) D R	Interface ID		10.1.5.4.b(2)
(K) D R	Source/destination		10.1.5.4.b(3)
(K) D R	Reference to IRS		10.1.5.4.b(4)
(K) D R	Adaptation requirements		10.1.5.5
(K) D R	Installation-dependent data		10.1.5.5.1
(K) D R	Operational parameters		10.1.5.5.2

SRS DID TAILORING WORKSHEET FOR THE CONCEPT DEM/VAL EXAMPLE (page 2 of 2)

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
	K D R Sizing/timing requirements		10.1.5.6
	K D R Safety requirements		10.1.5.7
	K D R Security requirements		10.1.5.8
	K D R Design constraints		10.1.5.9
	K D R Software quality factors		10.1.5.10
	K D R Human engineering requirements		10.1.5.11
	K D R Human capabilities/limitations		10.1.5.11.a
	K D R Foreseeable human errors		10.1.5.11.b
	K D R Impact on system environment		10.1.5.11.c
	K D R Requirements traceability		10.1.5.12
K D R	*Qualification requirements*		10.1.6
	K D R Qualification methods		10.1.6.1
	K D R Demonstration		10.1.6.1.a
	K D R Analysis		10.1.6.1.b
	K D R Inspection		10.1.6.1.c
	K D R Special qualification requirements		10.1.6.2
	K D R Identifier		10.1.6.2.a.
	K D R Capability to be tested		10.1.6.2.b
	K D R Description of test		10.1.6.2.c
	K D R Level of test		10.1.6.2.d
K D R	Preparation for delivery		10.1.7

IRS DID TAILORING WORKSHEET
FOR THE CONCEPT DEMONSTRATION /VALIDATION EXAMPLE

KEEP ✓ DELETE ____

Program Navigation Prototype ~~Type/Subtype/CSCI~~ All software

Respondent Col. J. Doe Date 5/17/89

PURPOSE: Tailor the IRS DID. DID tailoring is STEP 8 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete this worksheet for each unique tailoring of the IRS DID required under the contract. Use the table below to select required topics in the IRS. Circle "K" to keep a topic, "D" to delete it, or "R" to replace or reword the requirement. Refer to the DID for details. Delete header paragraphs only if all subsidiary paragraphs are deleted. Use the Comments column to make notes, record rationale, and document replacement/rewording. This worksheet assumes that the IRS overview, reference documents, notes, and appendixes sections are to be kept, and does not include these topics in the table.

K/D/R	REQUIRED TOPICS	COMMENTS	DID PARAs
(K) D R	Interface specification		10.1.5
(K) D R	Interface diagrams		10.1.5.1
(K) D R	Interface name and identifier		10.1.5.2
(K) D R	Interface requirements		10.1.5.2.1
(K) D R	Execution		10.1.5.2.1.a
(K) D R	Comm. protocol		10.1.5.2.1.b
(K) D R	Priority level		10.1.5.2.1.c
(K) D R	Data requirements		10.1.5.2.2
(K) D R	Data element ID		10.1.5.2.2.a
(K) D R	Description		10.1.5.2.2.b
(K) D R	Source		10.1.5.2.2.c
(K) D R	Users		10.1.5.2.2.d
(K) D R	Units of measure		10.1.5.2.2.e
(K) D R	Limit/range		10.1.5.2.2.f
(K) D R	Accuracy		10.1.5.2.2.g
(K) D R	Precision		10.1.5.2.2.h
K (D) R	Quality assurance requirements	(No requirement)	10.1.6
K (D) R	Preparation for delivery	(No requirement)	10.1.7

RELATED STANDARDS WORKSHEET
FOR THE CONCEPT DEMONSTRATION / VALIDATION EXAMPLE

Program Navigation Prototype ~~Type/Subtype/CSCI~~ All software

Respondent Col. J. Doe Date 5/10/89

PURPOSE: To select and tailor other standards consistently with DOD-STD-2167A.

INSTRUCTIONS: Complete this worksheet for each software type, subtype, or CSCI requiring its own set of tailoring decisions. Begin with the four standards invoked by DOD-STD-2167A. Indicate whether each standard is 1) not to be invoked; 2) invoked to the extent specified in DOD-STD-2167A, or 3) invoked to a greater extent than that specified in DOD-STD-2167A. Then add any comments or tailoring required to resolve inconsistencies or to clarify use of the standard. When these standards are complete, use page 2 of the worksheet for other standards to be imposed on the contract. Use the table of related standards in Appendix C as a guide for both pages of the worksheet.

STANDARDS INVOKED BY DOD-STD-2167A	EXTENT OF APPLICABILITY NONE	PER 2167A	MORE	COMMENTS / TAILORING
MIL-STD-480 (formerly DOD-STD-480)		✓		If ECP's are required, prepare in accordance with MIL-STD-480
MIL-STD-481	✓			Use MIL-STD-480
MIL-STD-490		✓		If SCN's are required, prepare in accordance with MIL-STD-490
MIL-STD-1521		✓		SRR & SDR provide input on S/W. SSR: Apply paragraphs 4.1, 5.1.3, Appendix B except 30.2.j & 30.3.1 Require demo of prototype at SSR.

RELATED STANDARDS WORKSHEET
FOR THE CONCEPT DEMONSTRATION / VALIDATION EXAMPLE

OTHER STANDARDS	EXTENT OF APPLICABILITY	COMMENTS / REQUIRED TAILORING

No other standards affect s/w development for this contract.

STATEMENT OF WORK ENTRY SPECIFYING THE DOD-STD-2167A TAILORING DECISIONS MADE FOR THE CONCEPT DEMONSTRATION / VALIDATION EXAMPLE

For newly developed elements of the prototype, the contractor shall comply with the following requirements of DOD-STD-2167A, with clarifications and exceptions as noted:

Para. Number	Clarifications / Exceptions
4	
4.1	
4.1.1	Delete "deliverable"
4.1.1.a	
4.1.1.b	
4.1.1.e	Delete "and CSU testing"
4.1.2	
4.1.3	
4.1.5	Comply with the security requirements in the SSS
4.1.6	
4.1.8	
4.2	
4.2.1	
4.2.2	Delete last sentence
4.2.3	
4.2.4	Delete "deliverable" (Elaboration of data rights is beyond the scope of this example)
4.2.6	Document SSS to SRS/IRS traceability only
4.2.7	Use Ada for the prototype
4.2.10	Delete reference to SPS
4.4	
4.4.1	
4.4.2	
4.4.3	Evaluate new and modified SRSs and IRSs
4.4.4	
4.5	
4.5.1	Comply with the configuration identification scheme in SDP
4.5.1.a	
4.5.1.b	
4.5.2	
4.5.2.a	
4.5.2.b	
4.5.2.c	
4.5.2.d	
4.5.4	
4.5.5	Apply MIL-STD-480 rather than MIL-STD-481 to ECPs for this contract
5	
5.1	
5.1.1	
5.1.1.1	Present comments on SSS
5.1.1.2	Present comments on SSS
5.1.2	
5.1.2.1	
5.1.2.3	
5.1.2.4	
5.1.3	
5.1.4	
5.1.4.c	
5.1.4.d	
5.1.5	
5.1.5.a	Non-deliverable SDP
5.1.5.c	
5.1.5.d	
5.2	
5.2.1	Demo prototype at SSR. Delete 1521B 30.2.j, 30.3.1
5.2.2	
5.2.2.1	
5.2.2.2	
5.2.3	
5.2.4	
5.2.4.a	
5.2.4.b	
5.2.5	
5.5	
5.5.2.2	Delete test requirements
5.5.5	
5.5.5.2	Delete references to test and evaluation
Appendix D	Keep all except D.10.2.7, 10.3.3, 10.3.4, 10.3.5, 10.3.6

CDRL FORM ENTRIES SPECIFYING THE DID TAILORING DECISIONS MADE FOR THE CONCEPT DEMONSTRATION / VALIDATION EXAMPLE

CDRL ITEM	TAILORING ENTRY IN BLOCK 16 OF CDRL FORM
Software Development Plan	The following DID paragraphs do not apply: 10.2.5.2.2, 10.2.5.2.3, 10.2.5.3 and its subparagraphs, 10.2.5.5, 10.2.5.6, 10.2.5.9, 10.2.5.10, 10.2.5.11, 10.2.6.1.3 and its subparagraphs, 10.2.6.2.1.b-f, 10.2.6.2.2, 10.2.6.2.3, 10.2.6.2.4, 10.2.7 and its subparagraphs, 10.2.9.4, 10.2.9.5 - OR - The contractor is not required to comply with DID paragraphs corresponding to activities tailored out of DOD-STD-2167A for this contract
Software Requirements Specification	(No entry -- all DID paragraphs apply)
Interface Requirements Specification	The following DID paragraphs do not apply: 10.1.6, 10.1.7

APPENDIX D
TAILORING EXAMPLE FOR THE FULL SCALE DEVELOPMENT PHASE

10. Scope.

10.1 Purpose. This appendix presents a tailoring example for the *Full Scale Development (FSD)* Phase of the system life cycle. Included are:

A description of a sample project

A completed Project Environment Worksheet for the example

A completed Activity/Product Worksheet for the example

A completed DOD-STD-2167A Tailoring Worksheet for the example

A completed Related Standards Worksheet for the example

A Statement of Work entry representing the tailoring decisions for DOD-STD-2167A and related standards

10.2 Notes.

a. This example has been constructed to illustrate selected aspects of DOD-STD-2167A tailoring. The project characteristics and the resulting tailoring decisions are examples only and do not represent the "correct" or preferred way to structure a procurement or to tailor DOD-STD-2167A in this phase. Each project will be different. This example shows one way in which a set of project characteristics could be translated into tailoring decisions.

b. The Project Environment Worksheet, Activity/Product Worksheet, and Related Standards Worksheet cover all software on the project. The DOD-STD-2167A Worksheet and Statement of Work are carried through for one type of software. These worksheets should suffice to illustrate the method for all types of software on the project.

20. Applicable documents. This section is not applicable to this appendix.

PROJECT DESCRIPTION FOR THE
FULL SCALE DEVELOPMENT PHASE EXAMPLE (page 1 of 3)

30. Project example for the Full Scale Development Phase.

30.1 Project description.

a. Overview. The Full Scale Development Phase example is a follow on contract for the navigation system described in the Concept Demonstration/Validation example. One contractor's SRSs and IRSs have been selected as the basis for full scale development of the software. The SRSs/IRSs identify six application software CSCIs, including a Government-furnished navigation database CSCI that will be incorporated unmodified into the system. The other five CSCIs will be newly developed unless the contractor can modify existing software. The new CSCIs fall into two groups: four CSCIs that perform pre-flight checks and in-flight controls and one data reduction CSCI that performs post-flight analysis.

b. Applicable DOD and service-specific policies. Ada will be required for all newly developed application software in this system. Formal risk management, safety analysis, and independent verification and validation will be required for the four pre-flight and in-flight CSCIs.

c. Acquisition strategy. A competitive procurement is planned. One contractor will be selected for software development. Formal reviews and audits will be required for the five newly developed CSCIs. Decisions on whether to combine or perform iterative reviews and audits of CSCIs will be made following contractor selection based on proposals and schedules in preliminary Software Development Plans submitted as part of the RFP. System requirements and design were completed in the Demonstration/Validation Phase; the Full Scale Development contractor will participate in planning, performing and documenting system test activities. The Government-furnished software is not be to modified, is fully documented, and will only be tested during system testing. The pre-flight and in-flight CSCIs are considered critical to mission performance and will be subjected to strict DOD-STD-2167A project controls. Fewer development, safety analysis, independent verification and validation, and risk management requirements will be imposed on the post-flight CSCI.

d. Support concept. The application software's expected use is ten years. Changes are expected throughout that time. The software will transition from the development contractor to a Government Software Support Activity. The following support software is deliverable:

- Software engineering and test environment software needed to change and test the application software. The RFP will contain a list of commercially available software at the support site. Duplicative items are non-deliverable. The bidders will propose which elements of their software engineering and test environments should be designated deliverable and which non-deliverable. For non-commercial elements, the contractor will be required to deliver source and object code, Version Description Documents, Software User Manuals, and Software Product Specifications. For commercial software, the contractor will be required to deliver object code and commercial user manuals. The contractor is required to use one of three specified commercial computer systems selected by the Software Support Activity. Commercial operating and diagnostic manuals are available for the development (host) computer systems.

PROJECT DESCRIPTION FOR THE
FULL SCALE DEVELOPMENT PHASE EXAMPLE (page 2 of 3)

- o Additional support software. As part of the contract, the developer is required to build and deliver a hardware component of the navigation system. To support this effort, the contractor needs software to analyze metal fatigue. The developer will use this software during hardware stress testing. The software will run on one of the three specified commercially available systems, but the software is not considered part of either the software engineering or software test environments. A separate software program will be used to set the data points in the metal analysis software. The Government Software Support Activity requires the metal analysis software for post-flight analysis data. The development contractor will set the analysis data required for the navigation system prior to delivery and will not deliver the auxiliary program.

e. System-level characteristics. The five new CSCIs will have user interfaces and implement both inter- and intra-system interfaces. Fifty percent memory and timing reserve is required in all processors. The four pre-flight and in-flight CSCIs and GFS CSCI will have the potential to violate system security and safety requirements. There are no plans to implement any of the application software in firmware.

f. Existing software products and objectives. The winning contractor will be given an SSS, SSDD, and the selected SRSs/IRSs. Since all bidders will have submitted an SDP with their proposal, the winner's SDP will also serve as an input to the project. The contract will call for an update of the SDP based on the final contract award, analysis and update of the SRSs/IRSs for the newly developed CSCIs, and preparation and delivery of design documentation, development and delivery of code (fully integrated with the Government-furnished CSCI), and delivery of Version Description Documents for all software. The contractor will be required to plan and perform formal qualification testing of the software, integrate the five newly developed CSCIs with the Government-furnished CSCI, and fully document that activity. User/support documentation will be developed selectively. For example, documentation will not be developed for commercially available software (COTS) or for firmware since no firmware will be developed under this contract. All documentation for the Government-furnished CSCI was written according to DOD-STD-1679A and can remain as is.

g. Software types. The software types and subtypes applicable to this example are identified in paragraphs a-f above.

h. Software characteristics.

1) Criticality. For this example, criticality ratings are based on the consequences of incorrect software operation in pre-flight and in-flight situations. The highest criticality is assigned to software whose incorrect operation will result in loss of life or loss of the aircraft. Criticality for the software in this example is as follows:

PROJECT DESCRIPTION FOR THE
FULL SCALE DEVELOPMENT PHASE EXAMPLE (page 3 of 3)

Pre-flight and in-flight CSCI's	HIGH
Government furnished CSCI	HIGH
Post-flight analysis (data reduction) CSCI	MEDIUM
Software Engineering Environment (deliverable)	LOW
(non-deliverable)	LOW
Software Test Environment (deliverable)	MEDIUM
(non-deliverable)	MEDIUM
Other deliverable	MEDIUM
Other non-deliverable	LOW

2) Technical risk. Only the newly developed software found in the pre-flight and in-flight software is considered high risk since its application has not been attempted before. Prototype development reduced system risk, but there are still software elements that are considered unprecedented, difficult, and complex. The data reduction software, although newly developed, will implement known software design for this application and is considered technically low risk. Wherever possible, code, documentation, and specifications already existing for data reduction software will be the basis for the post-flight analysis CSCI or be incorporated "as is" in the CSCI.

3) Project size. It is estimated that the software development team will be over 50 people. It will take 3 years to develop and integrate the system.

30.3 Worksheets. The pages that follow present sample worksheets for this procurement. The Project Environment Worksheet, Activity/Product Worksheet, and Related Standards Worksheet apply to all software on the project. The DOD-STD-2167A Tailoring Worksheet and sample Statement of Work paragraphs are given only for the post-flight CSCI of the system. Complete tailoring for the project would require worksheets for each type and subtype of software to which DOD-STD-2167A is to be applied. Please refer to Appendix C for examples of DID Tailoring.

PROJECT ENVIRONMENT WORKSHEET
FOR THE FULL SCALE DEVELOPMENT PHASE EXAMPLE
(page 1 of 4)

Program Navigation System

Respondent J. Brown Date 5/10/91

PURPOSE: To establish program context, objectives, and characteristics as a basis for tailoring DOD-STD-2167A. This worksheet is used in STEPs 1, 2, and 3 of the tailoring process.

INSTRUCTIONS: Answer the following questions. The questions are presented in the same order as they are discussed in section 4.4 of the handbook.

1. Check the system life cycle phase to which the contract applies:

   ____ a. Concept Exploration/Definition

   ____ b. Concept Demonstration/Validation

   ✓ c. Full Scale Development

   ____ d. Production/Deployment

   ____ e. Operational Support

2. Which DOD or service-specific policies apply:

   ✓ a. Use of Ada required for all newly developed sw

   ____ b. Use of another language required

   ✓ c. Independent verification/validation required for pre- & in-flight CSCIs

   ✓ d. Safety analysis required for pre- & in-flight CSCIs

   ✓ e. Memory and/or timing reserves

   ✓ f. Formal risk management required for pre- & in-flight CSCIs

   ____ g. Other ____

3. Which statements describe the acquisition strategy for the software:

   ____ a. There will be division of software development roles among contractors; each contract needs its own set of software development activities specified.

   ✓ b. Formal reviews and audits will be used as project milestones. for newly developed software

   ✓ c. There will be an IV&V contractor or IV&V agent.

   ____ d. The software contractor(s) will be involved in defining system-level requirements.

   ✓ e. The software contractor(s) will be involved in system integration and testing.

PROJECT ENVIRONMENT WORKSHEET FOR THE FSD PHASE EXAMPLE (page 2 of 4)

4. What is the software support concept:

4.1 Expected length of support ✓ More than 3 years ____ 0-3 years ____ None

4.2 Expected degree of change ____ High ✓ Medium ____ Low

4.3 Software support roles

✓ a. The software will transition to a Government software support activity or support contractor (transition planning and training may be required).

____ b. The software will be supported by the developer at the developer's site. (little or no transition or training required)

5. Which system-level characteristics affect requirements imposed on software developer(s):

✓ a. Software will be used to implement some or all user interfaces.

✓ b. Software errors could result in a system security violation.
Pre- & in-flight s/w

✓ c. Software errors could result in system safety violations or loss of life.
Pre- & in-flight s/w

✓ d. The system will impose sizing/timing limitations on the software.

✓ e. Software will be used to implement inter- and intra-system interfaces

____ f. Some or all of the software will be implemented in firmware.

✓ g. The computers to be used are commercially available or Government furnished, and already have existing manuals.

✓ h. Other One CSCI is GFS to contractor. GFS s/w and documentation are to remain "as is."

6. Software product objectives for the current phase

6.1 Circle the software products that will be inherited from a previous phase, developed under a parallel contract, or provided as GFE (Documents listed are from DOD-STD-2167A. Substitute equivalent document titles or acronyms as required)

a. Project plans	SDP				
b. Specifications	(SSS)	(SRS)	(IRS)		
c. Design documents	(SSDD)	SDD	IDD		
d. Test documents	STP	STD	STR		
e. User and support documents	CRISD	CSOM	SUM	SPM	FSM
f. Code and its documentation	Code	VDD	SPS		

SRS & IRS are to be updated during this phase

PROJECT ENVIRONMENT WORKSHEET FOR THE FSD PHASE EXAMPLE (page 3 of 4)

6.2 What are the software objectives for this phase? Add comments to clarify.

✓ a. ~~Prepare or~~ update project plans SDP

✓ b. Prepare or update specifications Update SRS + IRS, prepare SPS

✓ c. Prepare ~~or update~~ design documents IDD and SDD

✓ d. Prepare or update code, resulting in:

___ 1) Throwaway prototype code

___ 2) Prototype code that will be refined and made operational later

✓ 3) Operational code for Navigation System

✓ e. Plan for formal qualification testing Req'd for all s/w including GFS

✓ f. Perform formal qualification testing

✓ g. Prepare or update plans for software support

✓ h. Prepare or update user/support documents Newly developed CSCIs. Select documents for support s/w.

___ i. Convert documents to DOD-STD-2167A

✓ j. Other VDDs

7. Software types: Put an X in each box describing a type of software to be developed, modified, or used on the contract.

	APPLICATION SOFTWARE	SUPPORT SOFTWARE					
		S/W ENGINEERING ENVIRONMENT		S/W TEST ENVIRONMENT		OTHER	
		DELIVERABLE	NON-DELIVERABLE Note 1	DELIVERABLE	NON-DELIVERABLE Note 2	DELIVERABLE	NON-DELIVERABLE
NEWLY DEVELOPED	X	X	X	X	X	X	X
MODIFIED	X	X	X	X	X	X	X
NON-DEVELOPMENTAL	X	X	X	X	X	X	X

NOTE 1) DOD-STD-2167A PARAGRAPH 4.2.2 APPLIES UNLESS DELETED OR MODIFIED. NO OTHER PARAGRAPHS APPLY.
NOTE 2) DOD-STD-2167A PARAGRAPH 4.3.2 APPLIES UNLESS DELETED OR MODIFIED. NO OTHER PARAGRAPHS APPLY.

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PROJECT ENVIRONMENT WORKSHEET FOR THE FSD PHASE EXAMPLE (page 4 of 4)

8. Software characteristics

a. Criticality. Based on current knowledge of the system and software, identify the critical software on the project (errors in use would have severe consequences).

_____ 1) All application software

✓ 2) Some application software. Identify which:

Pre- & in-flight CSCIs

✓ 3) Other software on the project. Identify which: Post-flight CSCI & test s/w are less critical than pre- & in-flight CSCIs, but more critical than other support s/w

_____ 4) None

_____ 5) Can't determine this yet.

b. Technical risk. Based on current knowledge of the system and software, identify the software with high technical risk (unprecedented, complex, difficult to implement)

_____ 1) All application software

✓ 2) Some application software. Identify which:

Newly developed pre- & in-flight CSCIs

_____ 3) Other software on the project. Identify which based on current assumptions:

_____ 4) None

_____ 5) Can't determine this yet

c. Project size. Based on current knowledge of the system and software, make a rough estimate of the size of the software development team

_____ 1 to 5 _____ 6 to 10 _____ 11 to 20 _____ 21 to 50 ✓ Over 50

_____ Can't determine this yet

d. List any other considerations that might affect the way you tailor some or all of the software for this project:

ACTIVITY / PRODUCT WORKSHEET
FOR THE FULL SCALE DEVELOPMENT PHASE EXAMPLE
(page 1 of 4)

Program Navigation System

Respondent J. Brown Date 5/12/91

PURPOSE: To select the activities and products required for a each type of software on a project. This worksheet is used in STEP 3 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Pages 1 and 2 of this worksheet list DOD-STD-2167A activities and products. Pages 3 and 4 provide a table for recording which products and activities apply to each type of software on your project. Begin by assigning each type of software on your project a column in table. Use Question 7 of your Project Environment Worksheet as a starting point for the types. The types will evolve as you begin to complete the worksheet and see that you can combine some types and must divide others into subtypes types based on the need to give different answers for different software on your project. Write "K" to keep an item; "D" to delete it. Delete a primary item (1, 2, 3, etc.) only if you delete all of its subsidiary items (1.a, 1.b, etc.). Note that delivery of a product occurs only if it is specified on the DD 1423 Contract Data Requirements List.

DOD-STD-2167A PRODUCTS AND ACTIVITIES

1. Help define system requirements and design
   - 1.a Analyze SW requirements in system specs
   - 1.b Prepare System/Segment Design Document (SSDD)
   - 1.c Support system-level reviews (SRR, SDR)

2. Define software requirements
   - 2.a Prepare SW Requirements Spec. (SRS)
   - 2.b Prepare Interface Req'ts Spec. (IRS)

3. Perform software design
   - 3.a Organize CSCIs into CSCs, CSUs
   - 3.b Prepare Software Design Document (SDD)
   - 3.c Prepare Interface Design Document (IDD)
   - 3.d Establish SW Development Files (SDFs)

4. Perform coding activities
   - 4.a Use approved high order language
   - 4.b Code the software
   - 4.c Prepare a Version Descrpt. Doc. (VDD)

5. Perform unit/component SW testing
   - 5.a Document CSU test planning
   - 5.b Perform/record results of CSU testing
   - 5.c Document CSC integration/test planning
   - 5.d Perform/record results of CSC integ/test

6. Perform Formal Qualif. Test (FQT) of CSCIs
   - 6.a Prepare Software Test Plan (STP)
   - 6.b Establish a software test environment
   - 6.c Prepare Software Test Description (STD)
   - 6.d Dry run the test procedures
   - 6.e Perform FQT
   - 6.f Prepare a Software Test Report (STR)
   - 6.g Use independent testers

7. Participate in system-level test/integration
   - 7.a Support system test planning
   - 7.b Support system testing
   - 7.c Support post-test analysis and reporting
   - 7.d Update code and documents as needed
   - 7.e Prepare changes to baselined documents

ACTIVITY / PRODUCT WORKSHEET FOR THE FSD PHASE EXAMPLE (page 2 of 4)

8. Perform technical product evaluations
   - 8.a *Use independent evaluators*
   - 8.b Evaluate software products
   - 8.c Internally coordinate deliverables
   - 8.d Use 2167A evaluation criteria
   - 8.e Keep records of evaluations

9. Perform software configuration management
   - 9.a Perform configuration identification
   - 9.b Perform configuration control
   - 9.c Perform configuration status accounting
   - 9.d Implement storage, handling, delivery procedures
   - 9.e Prepare ECPs, SCNs for baselined documents

10. *Prepare software for operational use & support*
    - 10.a Make code regenerable in the support *environment*
    - 10.b Prepare Computer Resources Integrated Support Document (CRISD)
    - 10.c Prepare Computer System Operator's Manual (CSOM)
    - 10.d Prepare Software User's Manual (SUM)
    - 10.e Prepare SW Programmer's Manual (SPM)
    - 10.f Prepare Firmware Support Manual (FSM)
    - 10.g Prepare SW Product Specification (SPS)
    - 10.h Install software at support site
    - 10.i Provide training and continuing support

11. Use DOD-STD-2167A SW management practices:
    - 11.a Prepare a Software Development Plan
    - 11.b Conduct formal reviews/audits of SW *products* (System reviews are 1.c)
    - 11.c Implement risk management procedures
    - 11.d Implement security measures
    - 11.e *Ensure subcontractor compliance* with prime contract
    - 11.f Interface with software IV&V agent(s)
    - 11.g Establish software development library
    - 11.h Implement corrective action process
    - 11.i Prepare problem/change reports
    - 11.j Use 2167A problem/priority categories

12. Use DOD-STD-2167A SW engineering practices:
    - 12.a Use systematic, well documented development methods
    - 12.b Establish a SW engineering environment
    - 12.c Perform safety analysis
    - 12.d Consider use of non-developmental SW
    - 12.e Implement design and coding standards
    - 12.f Maintain timing, memory reserves

ACTIVITY / PRODUCT WORKSHEET FOR THE FSD PHASE EXAMPLE (page 3 of 6)

Item Number, Brief Descriptor		Software Types / Subtypes / CSCIs							Notes
		Newly developed pre-flight & in-flight s/w	Modified pre-flight & in-flight s/w	NDS pre/in flight s/w: In-house reuse	NDS pre/in flight s/w: COTS	GFS CSCI	Newly developed post-flight s/w	Modified post-flight s/w	1) Additional s/w types for this project are on the following pages
1	System Req	D	D	D	D	D	D	D	Completed in Dem/Val
1.a	Analyze SSS								
1.b	SSDD								
1.c	SRR, SDR								
2	SW Req	K	K	K	K	K	K	K	
2.a	SRS					D			one per CSCI } update
2.b	IRS					K			one per project }
3	SW Design			K	K	K	K	K	
3.a	CSCs, CSUs			D	D	D			
3.b	SDD			D	D	D			
3.c	IDD			K	K	K			one for project
3.d	SDFs			D	D	D	D*	D*	*Contractor Practices
4	Coding			K		K	K	K	
4.a	HOL			D		D			Ada required for all new CSCI
4.b	Code			D		D			
4.c	VDD			K		K			
5	CSU/C Test			D		D	D*	D*	*Contractor practices } as req'd for modified s/w
5.a	CSU plan								
5.b	CSU test								
5.c	CSC plan								
5.d	CSC test								
6	FQT			K	K	K	K	K	
6.a	STP				K	K			one for project
6.b	Test Env				D	D			one test environment
6.c	STD								
6.d	Dry Run								
6.e	Do FQT								
6.f	STR								
6.g	Independent								
7	System Test				K	K			All s/w must work in system
7.a	Plan								
7.b	Test								
7.c	Report								
7.d	Update								
7.e	Changes								

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ACTIVITY / PRODUCT WORKSHEET FOR THE FSD PHASE EXAMPLE (page 4 of 6)

Item Number, Brief Descriptor	Software Types / Subtypes / CSCIs							Notes
	Newly developed pre-flight + in-flight s/w	Modified pre-flight + in-flight s/w	NDS pre/in flight s/w: In-house reuse	NDS pre/in flight s/w: COTS	GFS CSCI	Newly developed post-flight s/w	Modified post-flight s/w	
8 Prod Evaluations	K	K*	K*	D	D	K*	K*	*Select Evaluation Criteria for specific products
8.a Independent								
8.b Do evaluations								
8.c Coordinate								
8.d Criteria								
8.e Records								
9. Config Mgmt		K		K	K	K	K	
9.a Config ID		D		D	D			
9.b Config Control		K		K	K			Keep all s/w products under control
9.c Config Status				D	D			
9.d Storage				K	K			
9.e ECPs				K	K			
10 Support				K	K	K	K	
10.a Regen Code				D	D			
10.b CRISD				K	K			One for project
10.c CSOM	D	D	D	D	D	D	D	Commercially available
10.d SUM	K	K	K	K	K	K	K	
10.e SPM	D	D	D	D	D	D	D	Commercially available
10.f FSM	D	D	D		D	D	D	No firmware
10.g SPS	K	K	K		K	K	K	
10.h Install				K	K			
10.i Train				D	D			
11 Management			K	K	K	K	K	
11.a SDP			K	K	K			one for project (update)
11.b Rev/Aud			K*	K*	K*			*Address interface issues
11.c Risk			D	D	D			
11.d Security			K	K	K			
11.e Subcontractor			D	D	D			
11.f IV&V			D	D	D	D	D	
11.g Library			K	K	K	K	K	
11.h C. Action				D	D	D*	D*	*Contractor practices
11.i Ch. Report								
11.j Classify								
12 SW Eng			K	K	K	K	K	
12.a Methods			D	D	D			
12.b Eng Env			D	D	D			one engineering environment
12.c Safety			K	K	K	D	D	
12.d Non-devel			D	D	D	K	K	
12.e Design/Code Stds		D*	D	D	D	D*	D*	*Contractor practices
12.f Reserves		K	K	K	K	K	K	Applies to all processors

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ACTIVITY / PRODUCT WORKSHEET FOR THE FSD PHASE EXAMPLE (page 5 of 6)

Item Number, Brief Descriptor		Software Types / Subtypes / CSCIs											Notes
				← Deliverable →						non-deliverable			
		NDS Test-flight s/w: In-house reuse	NDS Test-flight s/w: COTS	New, mod s/w eng. env	NDS s/w eng. env	Newly dev or Mod. s/w Test Env	NDS Test Env: In-house reuse	NDS Test Env: COTS	Other deliverable s/w	s/w eng. env.	s/w test env	OTHER	
1	System Req	D	D	K*	D	K*	D	D	K*			D	*Support s/w may be a system in its own right
1.a	Analyze SSS												
1.b	SSDD												
1.c	SRR, SDR			D		D			D				
2	SW Req	K	K	D*	D	D*	D	D	D*				*Contractor Practices
2.a	SRS												
2.b	IRS												
3	SW Design	K	K										
3.a	CSCs, CSUs	D	D										
3.b	SDD	D	D										
3.c	IDD	K	K										
3.d	SDFs	D	D										
4	Coding	K	K	K	K	K	K	K	K				
4.a	HOL	K	D	D	D	D	D	D	D				Ada not required
4.b	Code	D	D	K	D	K	D	D	D				
4.c	VDD	K	K*	K	K*	K	K	K*	K*	O/Ly	O/Ly		*may not be available for COTS
5	CSU/C Test	D	D	D*	D	D*	D*	D	D*				*Contractor practices
5.a	CSU plan												
5.b	CSU test									4.2.2	4.3.2		
5.c	CSC plan												
5.d	CSC test												
6	FQT	K	K			K	K	D*					*Contractor Practices
6.a	STP		K				D*	D*					
6.b	Test Env		D				D	D		Apply	Apply		
6.c	STD						D						
6.d	Dry Run						D						
6.e	Do FQT						D						
6.f	STR						D						
6.g	Independent						D						
7	System Test		K				K	D*					*Contractor Practices
7.a	Plan												
7.b	Test												
7.c	Report												
7.d	Update		D										
7.e	Changes		D										

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ACTIVITY / PRODUCT WORKSHEET FOR THE FSD PHASE EXAMPLE (page 6 of 6)

Item Number, Brief Descriptor	Software Types / Subtypes / CSCIs											Notes
	NDS Post-flight s/w		← Deliverable →						non-deliverable			
	In-house reuse	COTS	New, mod s/w eng.	NDS s/w eng. mod.	Newly dev. + mod s/w Test Env.	NDS Test Env. In-house reuse	NDS Test Env. COTS	other deliverable s/w	s/w eng. mod.	s/w tested	OTHER	
8 Prod Evaluations	D*	D	D*	D	K	D*	D	D*			D	*Contractor practices
8.a Independent												
8.b Do evaluations												
8.c Coordinate												
8.d Criteria												
8.e Records												
9. Config Mgmt	K	K	K	K		K	K	K*			K	*Need to deal with this on individual item basis
9.a Config ID		D		D			D					
9.b Config Control		K		K			K					
9.c Config Status		D	D	D			D				D	
9.d Storage		K	K	K			K		ONLY	ONLY		
9.e ECPs		D	D	D			D					
10 Support		K	K	K			K					
10.a Regen Code		D		D			D					
10.b CRISD		K		K			K					one for whole project
10.c CSOM	D	D	D	D	D	D	D	D				Commercially available
10.d SUM	K	K*	K	K*	K	K	K*	K*	4.2.2	4.2.2		*Deliver commercial manuals
10.e SPM	K*	D	K*	D	K*	K*	D	K*				*only for non-standard languages
10.f FSM	D	D	D	D	D	D	D	D				N/A firmware
10.g SPS	K	K*	K	K*	K	K	K*	K*	APPLY	APPLY		*may only be object code and user manuals
10.h Install		K		K			K	K				
10.i Train		D		D			D	K				
11 Management		K	K	K	K	K	K	K				
11.a SDP		K	K	K	K	K	K	K				one for whole project
11.b Rev/Aud		K*	D	D	D	D	D	D				Address interface issues
11.c Risk	D	D	D		D	D	D					
11.d Security	K	K	K		K	K	K					
11.e Subcontractor		D	K			D	D					
11.f IV&V		D	D			D						
11.g Library		K	D*			K	*	K				*Contractor Practices
11.h C. Action	D*	D				D		D*				*Contractor Practices
11.i Ch. Report												
11.j Classify												
12 SW Eng	K	K						K				
12.a Methods	D	D					*	D*				*Contractor Practices
12.b Eng Env								K				one for project
12.c Safety					D			D				
12.d Non-devel					K							
12.e Design/Code Stds					K							
12.f Reserves	K	K			D							

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DOD-STD-2167A TAILORING WORKSHEET
FOR THE FULL SCALE DEVELOPMENT PHASE EXAMPLE
(page 1 of 11)

Program Navigation System Type/~~Subtype~~/CSCI Newly developed Post-flight s/w

Respondent J. Brown Date 5/13/91

PURPOSE: To translate the selections made on the Activity/Product Worksheet into decisions on each paragraph of DOD-STD-2167A. This worksheet is used in STEP 4 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete one worksheet for each software type, subtype, or CSCI with a unique set of answers on the Activity/Product Worksheet. Begin with those paragraphs that have a number in the right-most column. For each such paragraph, look up the related item(s) on the Activity/Product Worksheet. Use your response(s) to determine whether to Keep, Delete, or Replace the paragraph. If your responses conflict (for example, one Keep and one Delete) read the actual paragraph in the standard and decide the appropriate tailoring for the paragraph. Circle the appropriate letter in the left-most column (K = keep; D = Delete; R = Replace). Use the Comments column to make notes, record rationale, and record the details of replacement text. As a last step, tailor the paragraphs with INTRO in the right-most column: select D if all subparagraphs are deleted, K if any subparagraph is K or R.

LEGEND: INTRO Paragraph contains no requirements and serves only as an introductory paragraph.
** Details must be specified in the contract.
++ References another DOD/MIL standard.
( ) Parentheses denote paragraphs descriptions vs titles.

K/D/R	2167A PARA.	TITLE / (DESCRIPTION)	COMMENTS	RELATED A/P ITEMS,* OR "INTRO"
(K) D R	4.	General Requirements		INTRO
(K) D R	4.1	Software development management		INTRO
(K) D R	4.1.1	Software development process		INTRO
K (D) R	4.1.1.a	(System Requirements Analysis/Design)		1
(K) D R	4.1.1.b	(Software Requirements Analysis)		2
(K) D R	4.1.1.c	(Preliminary Design)		3
(K) D R	4.1.1.d	(Detailed Design)		3
K D (R)	4.1.1.e	(Coding and CSU Testing)	Delete "and CSU testing"	~~4~~, ~~5.a~~, ~~5.b~~
K (D) R	4.1.1.f	(CSC Integration and Testing)		~~5.c~~, ~~5.d~~
(K) D R	4.1.1.g	(CSCI Testing)		6

* Numbers refer to questions on the Activity/Product Worksheet

DOD-STD-2167A TAILORING WORKSHEET FOR THE FSD PHASE EXAMPLE (page 2 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
(K) D R	4.1.1.h	(System Integration and Testing)	7
(K) D R	4.1.2**,++	Formal reviews/audits	11.b
(K) D R	4.1.3	Software development planning	11.a
K (D) R	4.1.4	Risk management	11.c
(K) D R	4.1.5**	Security	11.d
(K) D R	4.1.6	Subcontractor management	11.e
K (D) R	4.1.7**	Interface with software IV&V agent(s)	11.f
(K) D R	4.1.8	Software development library	11.g
K (D) R	4.1.9	Corrective action process	11.h
K (D) R	4.1.9.a	(Implement a closed-loop process)	11.h
K (D) R	4.1.9.b	(Use problem/change reports, etc. as input)	11.h, 11.i
K (D) R	4.1.9.c	(Classify problems by category and priority)	11.h, 11.j
K (D) R	4.1.9.d	(Perform analysis to detect trends)	11.h
K (D) R	4.1.9.e	(Evaluate corrective action taken)	11.h
K (D) R	4.1.10	Problem/change report	11.i, 11.h
(K) D R	4.2	Software engineering	INTRO
(K) D R	4.2.1	Software development methods	12.a, 11.b
(K) D R	4.2.2**	Software engineering environment	12.b, 11.d
K (D) R	4.2.3	Safety analysis	12.c
K D (R)	4.2.4**	Non-developmental software Delete reference to SDFs	12.d, 3.d
(K) D R	4.2.5	Computer software organization	3.a, 11.a
(K) D R	4.2.6	Traceability of requirements to design	2.a, 2.b, 3.b
(K) D R	4.2.7**	High order language	4.a

DOD-STD-2167A TAILORING WORKSHEET FOR THE FSD PHASE EXAMPLE (page 3 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	4.2.8	Design and coding standards	12.e
K D R	4.2.9	Software development files (SDFs)	3.d, 3.a
K D R	4.2.9.a	(Put design considerations/constraints in SDF)	3.d
K D R	4.2.9.b	(Put design documentation and data in SDF)	3.d
K D R	4.2.9.c	(Put schedule/status information in SDF)	3.d
K D R	4.2.9.d	(Put test requirements/responsibilities in SDF)	3.d, 5
K D R	4.2.9.e	(Put test cases/procedures/results in SDF)	3.d, 5
K D R	4.2.10**	Processing resource and reserve capacity	12.f, 2.a, 10.g
K D R	4.3	Formal qualification testing	6.e
K D R	4.3.1	Formal qualification test planning	6.a
K D R	4.3.2**	Software test environment	6.b, 11.d
K D R	4.3.3	Independence in FQT activities	6.g, 11.a
K D R	4.3.4	Traceability of requirements to test cases	2.a, 2.b, 6.c
K D R	4.4	Software product evaluations	8
K D R	4.4.1	Independence in product eval. activities	8.a, 11.a
K D R	4.4.2	Final evaluations	8.c
K D R	4.4.3	Software evaluation records Delete second sentence	8.e, 11.h, 11.i
K D R	4.4.4	Evaluation criteria Add: "as modified"	8.d
K D R	4.5	Software configuration management	INTRO
K D R	4.5.1**	Configuration identification	9.a
K D R	4.5.1.a	(Identify baseline documentation)	9.a
K D R	4.5.1.b	(Identify documentation/media under CM)	9.a
K D R	4.5.1.c	(Identify each CSCI, CSC, and CSU)	9.a

DOD-STD-2167A TAILORING WORKSHEET FOR THE FSD PHASE EXAMPLE (page 4 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	4.5.1.d	(Identify version/release/change status)	9.a
K D R	4.5.1.e	(Identify code/documentation relationship)	9.a
K D R	4.5.1.f	(Identify deliverable medium contents)	9.a
K D R	4.5.2	Configuration control	9.b
K D R	4.5.2.a	(Establish Developmental Configuration)	9.b
K D R	4.5.2.b	(Maintain current copies of deliverables)	9.b
K D R	4.5.2.c	(Provide access to documents/code under CM)	9.b
K D R	4.5.2.d	(Control changes to master copies)	9.b
K D R	4.5.3	Configuration status accounting	9.c
K D R	4.5.3.a	(Provide traceability of changes)	9.c
K D R	4.5.3.b	(Communicate configuration status)	9.c
K D R	4.5.3.c	(Ensure consistency between documents/code)	9.c
K D R	4.5.4	Storage, handling, & delivery of project media	9.d
K D R	4.5.5**,++	Engineering Change Proposals	9.e
K D R	4.6	Transitioning to software support	INTRO
K D R	4.6.1**	Regenerable and maintainable code	10.a
K D R	4.6.2	Transition planning	10.b
K D R	4.6.3**	Software transition and continuing support	10.h, 10.i
K D R	4.6.4	Software support & operational documentation	INTRO
K D R	4.6.4.a	(Prepare Comp. Res. Int. Support Doc. (CRISD))	10.b
K D R	4.6.4.b	(Prepare Comp. SW Operator's Manual (CSOM))	10.c
K D R	4.6.4.c	(Prepare SW User's Manual (SUM))	10.d
K D R	4.6.4.d	(Prepare SW Programmer's Manual (SPM))	10.e
K D R	4.6.4.e	(Prepare Firmware Support Manual (FSM))	10.f

DOD-STD-2167A TAILORING WORKSHEET FOR THE FSD PHASE EXAMPLE (page 5 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.	Detailed Requirements	INTRO
K D R	5.1	System requirements analysis/design	INTRO
K D R	5.1.1	Software development management	INTRO
K D R	5.1.1.1**	(Support System Requirements Review (SRR))	1.c
K D R	5.1.1.2**	(Support System Design Review (SDR))	1.c
K D R	5.1.2	Software engineering	INTRO
K D R	5.1.2.1	(Analyze preliminary system spec)	1.a
K D R	5.1.2.2	(Allocate system rqmts; document in SSDD)	1.b
K D R	5.1.2.3	(Define prelim. engineering rqmts in SRS)	2.a
K D R	5.1.2.4	(Define prelim. interface rqmts in IRS)	2.b
K D R	5.1.3	(Define prelim. qual. rqmts in SRS)	2.a
K D R	5.1.4	Software product evaluations	8.b, 8.d, 11.a 1.b, 2.a, 2.b
K D R	5.1.4.a	(Evaluate SW Development Plan)	11.a, 8.b
K D R	5.1.4.b	(Evaluate Sys/Seg Design Document)	1.b, 8.b
K D R	5.1.4.c	(Evaluate prelim. SRSs)	2.a, 8.b
K D R	5.1.4.d	(Evaluate prelim. IRS)	2.b, 8.b
K D R	5.1.5	Configuration management	INTRO
K D R	5.1.5.a	(Put SDP under config. control)	11.a, 9.b
K D R	5.1.5.b	(Put SSDD under config. control)	1.b, 9.b
K D R	5.1.5.c	(Put prelim. SRSs under config. control)	2.a, 9.b
K D R	5.1.5.d	(Put prelim. IRS under config. control)	2.b, 9.b
K D R	5.2	Software requirements analysis	INTRO
K D R	5.2.1++	(Conduct SW Specification Review (SSR))	2.a, 2.b, 11.b

DOD-STD-2167A TAILORING WORKSHEET FOR THE FSD PHASE EXAMPLE (page 6 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.2.2	*Software engineering*	INTRO
K D R	5.2.2.1	(Define engineering rqmts; document in SRS)	2.a
K D R	5.2.2.2	(Define interface rqmts; document in IRS)	2.b
K D R	5.2.3	(Define qualification rqmts; doc. in SRS)	2.a
K D R	5.2.4	Software product evaluations	8.b,8.d,11.b, 2.a, 2.b
K D R	5.2.4.a	(Evaluate Software Rqmt Specs)	2.a, 8.b
K D R	5.2.4.b	(Evaluate Interface Rqmt Specs)	2.b, 8.b
K D R	5.2.5	(Put SRS/IRS under config. control)	2.a, 2.b, 9.b
K D R	5.3	Preliminary design	INTRO
K D R	5.3.1++	(Conduct Preliminary Design Review (PDR))	3.b,3.c,11.b
K D R	5.3.2	Software engineering	INTRO
K D R	5.3.2.1	(Develop prelim. design; document in SDD)	3.b, 2.a, 2.b
K D R	5.3.2.2	(Develop prelim. interface design; document in IDD)	3.c, 2.b
K D R	5.3.2.3	(Document other design information in SDD)	3.b
K D R	5.3.2.4	(Establish CSC test requirements)	5.c, 3.d
K D R	5.3.3	(Identify formal qualification tests)	6.a, 2.a
K D R	5.3.4	Software product evaluations All: "as modified" (Delete evaluation criteria "appropriate analysis, design or coding techniques, and adequate test coverage")	8.b, 8.d, 11.b, 3.b, 3.c, 6.a, 5.c
K D R	5.3.4.a	(Evaluate Software Design Documents)	3.b, 8.b
K D R	5.3.4.b	(Evaluate prelim. Interface Design Doc).	3.c, 8.b
K D R	5.3.4.c	(Evaluate Software Test Plan) Delete evaluation criteria "internal consistency"	6.a, 8.b
K D R	5.3.4.d	(Evaluate CSC test requirements)	5.c, 8.b
K D R	5.3.5	Configuration management	INTRO
K D R	5.3.5.1	(Put SDDs into Developmental Config.)	3.b, 9.b

DOD-STD-2167A TAILORING WORKSHEET FOR THE FSD PHASE EXAMPLE (page 7 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.3.5.2	(Put STP under config. control)	6.a, 9.b
K D R	5.3.5.3	(Put IDD under config. control)	3.c, 9.b
K D R	5.4	Detailed design	INTRO
K D R	5.4.1++	(Conduct Critical Design Review (CDR))	3.b,3.c,11.b
K D R	5.4.2	Software engineering	INTRO
K D R	5.4.2.1	(Develop detailed design; document in SDD)	3.b
K D R	5.4.2.2	(Develop detailed interface design; document in IDD)	3.c, 2.b
K D R	5.4.2.3	(Document other design information in SDD)	3.b
K D R	5.4.2.4	(Define CSC test cases)	5.c, 3.d
K D R	5.4.2.5	(Define CSU test rqmts/cases)	5.a, 3.d
K D R	5.4.3	(Identify FQT test cases; document in STD)	6.c, 6.a
K D R	5.4.4	Software product evaluations	8.b,8.d,11.b, 3.b, 3.c, 3.d, 5.c, 5.a
K D R	5.4.4.a	(Evaluate updated Software Design Doc)	3.b, 8.b
K D R	5.4.4.b	(Evaluate updated Interface Design Doc)	3.c, 8.b
K D R	5.4.4.c	(Evaluate CSC test cases)	5.c, 8.b
K D R	5.4.4.d	(Evaluate CSU test rqmts/cases)	5.a, 8.b
K D R	5.4.4.e	(Evaluate a % of CSU and CSC SDFs)	3.d,8.b,11.a
K D R	5.4.4.f	(Evaluate Software Test Description) Add: "provide traceability to STP"	6.c, 8.b
K D R	5.4.5	Configuration management	INTRO
K D R	5.4.5.1	(Put updated SDD in Devel. Config.)	3.b, 9.b
K D R	5.4.5.2	(Put updated IDD under config. control)	3.c, 9.b
K D R	5.4.5.3	(Put STD under config. control)	6.c, 9.b

DOD-STD-2167A TAILORING WORKSHEET FOR THE FSD PHASE EXAMPLE (page 8 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
(K) D R	5.5	Coding and CSU testing	INTRO
(K) D R	5.5.1	Software development management (no rqmts)	INTRO
(K) D R	5.5.2	Software engineering	INTRO
K (D) R	5.5.2.1	(Develop CSU test procedures)	5.a, 3.d
K D (R)	5.5.2.2	(Code and test CSUs) Delete CSU test requirements and reference to SDFs	4.b, 5.b, 3.d
K D (R)	5.5.2.3	(Revise documents/code based on CSU tests) Delete reference to SDFs	3.b, 3.c, 3.d, 4.b, 5.b
K (D) R	5.5.2.4	(Develop CSC test procedures)	5.c, 3.d
(K) D R	5.5.3	Formal qualification testing (no rqmts)	INTRO
(K) D R	5.5.4	Software product evaluations	8.b, 8.d, 4.b, 5.a, 5.b, 5.c, 3.d
(K) D R	5.5.4.a	(Evaluate source code)	4.b, 8.b
K (D) R	5.5.4.b	(Evaluate CSC test procedures)	5.c, 8.b
K (D) R	5.5.4.c	(Evaluate CSU test procedures/results)	5.a, 5.b, 8.b
K (D) R	5.5.4.d	(Evaluate a % of updated SDFs)	3.d, 8.b
(K) D R	5.5.5	Configuration management	INTRO
(K) D R	5.5.5.1	(Put updated SDD/listings in Devel. Config.)	3.b, 4.b, 9.b
K D (R)	5.5.5.2	(Put source code under config. control) Delete reference to CSU testing	4.b, 9.b
(K) D R	5.6	CSC integration and testing	INTRO
(K) D R	5.6.1++	(Conduct Test Readiness Review (TRR))	6.c, 11.b
K (D) R	5.6.2	Software engineering	INTRO
K (D) R	5.6.2.1	(Conduct CSC integration & testing)	5.d
K (D) R	5.6.2.2	(Record CSC test results)	5.d, 3.d
K D (R)	5.6.2.3	(Revise design documentation/code) Delete reference to SDFs	3.b, 3.c, 3.d, 4.b, 5.d

DOD-STD-2167A TAILORING WORKSHEET FOR THE FSD PHASE EXAMPLE (page 9 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.6.3	Formal qualification testing	INTRO
K D R	5.6.3.1	(Develop FQT test procedures; document in STD)	6.c
K D R	5.6.3.2	(Dry run FQT test procedures) Delete reference to SDFs	6.d, 6.c, 3.d
K D R	5.6.4	Software product evaluations	8.b, 8.d, 11.b, 3.d, 6.c, 3.b, 3.c, 4.b,
K D R	5.6.4.a	(Evaluate test results in SDFs)	5.d, 6.d, 3.d, 8.b
K D R	5.6.4.b	(Evaluate updated STD)	6.c, 8.b
K D R	5.6.4.c	(Evaluate updated code & design docs)	3.b, 3.c, 4.b, 6.b
K D R	5.6.4.d	(Evaluate a % of updated SDFs)	3.d, 8.b
K D R	5.6.5	(Put updated SDD/listings in Devel. Config)	3.b, 4.b, 9.b
K D R	5.7	CSCI testing	INTRO
K D R	5.7.1	(Support Functional/Physical Config. Audits (FCA/PCA))	4.b, 6.f, 10.g, 11.b
K D R	5.7.2	Software engineering	INTRO
K D R	5.7.2.1	(Revise documentation/code based on FQT) Delete reference to SDFs	3.b, 3.d, 4.b, 6.e
K D R	5.7.2.2	(Revise IDD based on FQT)	3.c, 6.e
K D R	5.7.2.3	(Produce updated source code)	6.e, 4.b 11.b, 2.a
K D R	5.7.2.4	(Prepare an SPS for each CSCI)	10.g
K D R	5.7.3	Formal qualification testing	INTRO
K D R	5.7.3.1	(Perform formal qualification testing)	6.e, 6.c
K D R	5.7.3.2	(Prepare Software Test Reports)	6.f
K D R	5.7.3.3	(Prepare updated SW Test Desciption)	6.c

DOD-STD-2167A TAILORING WORKSHEET FOR THE FSD PHASE EXAMPLE (page 10 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.7.4	Software product evaluations	8.b, 8.d, 6.f 3.b, 3.c, 4.b
K D R	5.7.4.a	(Evaluate STRs)	6.f, 8.b
K D R	5.7.4.b	(Evaluate updated code & design documents)	3.b, 3.c, 4.b, 8.b
K D R	5.7.5	Configuration management	INTRO
K D R	5.7.5.1	(Prepare Version Description Document (VDD))	4.c
K D R	5.7.5.2	(Disestablish Devel. Config.)	9.b,10.g,11.b
K D R	5.8	System integration & testing	INTRO
K D R	5.8.1	(Support Functional/Physical Config. Audits (FCA/PCA))	4.b, 6.f, 10.g, 11.b
K D R	5.8.2	(Revise design/docs based on system test)	7.d
K D R	5.8.3	Formal qualification testing	INTRO
K D R	5.8.3.1	(Support system test planning)	7.a
K D R	5.8.3.2	(Support system testing)	7.b
K D R	5.8.3.3	(Support post test analysis/reporting)	7.c
K D R	5.8.4	(Evaluate updated code/design documents)	7.d, 8.b, 8.d
K D R	5.8.5	(Prepare changes to baselined documents)	7.e
K D R	B.	Appendix B - Rqmts for coding standards	12.e
K D R	B.10.3.1	Presentation style	12.e
K D R	B.10.3.2	Naming	12.e
K D R	B.10.3.3	Restrictions on the implementation language	12.e
K D R	B.10.3.4	Use of language constructs and features	12.e
K D R	B.10.3.5	Complexity	12.e

DOD-STD-2167A TAILORING WORKSHEET FOR THE FSD PHASE EXAMPLE (page 11 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	C.	Appendix C - Category and priority classification	INTRO
K D R	C.10.2	Classify by category: SW, doc. or design	11.j
K D R	C.10.3	Classify by priority: Priority 1, 2, 3. 4. 5	11.j
K D R	D.	Appendix D - Evaluation criteria	INTRO
K D R	D.10.2.1	Internal consistency	8.d
K D R	D.10.2.2	Understandability	8.d
K D R	D.10.2.3	Traceability to indicated documents	8.d
K D R	D.10.2.4	Consistency with indicated documents	8.d
K D R	D.10.2.5	Appropriate analysis, design, & coding techniques used	8.d
K D R	D.10.2.6	Appropriate allocation of sizing & timing resources	8.d
K D R	D.10.2.7	*Adequate test coverage of requirements*	8.d
K D R	D.10.3	Additional criteria	8.d
K D R	D.10.3.1	Adequacy of quality factors	8.d
K D R	D.10.3.2	Testability of requirements	8.d
K D R	D.10.3.3	Consistency between data definition and data use	8.d
K D R	D.10.3.4	Adequacy of test cases, test procedures	8.d
K D R	D.10.3.5	Completeness of testing	8.d
K D R	D.10.3.6	Completeness of retesting	8.d

RELATED STANDARDS WORKSHEET
FOR THE FULL SCALE DEVELOPMENT PHASE EXAMPLE
(page 1 of 2)

Program Navigation System Type/~~Subtype~~/CSCI Post-flight CSCI Newly developed S/W

Respondent J. Brown Date 5/13/91

PURPOSE: To select and tailor other standards consistently with DOD-STD-2167A.

INSTRUCTIONS: Complete this worksheet for each software type, subtype, or CSCI requiring its own set of tailoring decisions. Begin with the four standards invoked by DOD-STD-2167A. Indicate whether each standard is 1) not to be invoked; 2) invoked to the extent specified in DOD-STD-2167A, or 3) invoked to a greater extent than that specified in DOD-STD-2167A. Then add any comments or tailoring required to resolve inconsistencies or to clarify use of the standard. When these standards are complete, use page 2 of the worksheet for other standards to be imposed on the contract. Use the table of related standards in Appendix C as a guide for both pages of the worksheet.

STANDARDS INVOKED BY DOD-STD-2167A	EXTENT OF APPLICABILITY NONE	PER 2167A	MORE	COMMENTS / TAILORING
MIL-STD-480 (formerly DOD-STD-480)		✓		Use for ECPs
MIL-STD-481	✓			Use MIL-STD-480 instead
MIL-STD-490		✓		Use for SCNs
MIL-STD-1521		✓		

RELATED STANDARDS WORKSHEET
FOR THE FULL SCALE DEVELOPMENT PHASE EXAMPLE (page 2 of 2)

OTHER STANDARDS	EXTENT OF APPLICABILITY	COMMENTS / REQUIRED TAILORING
MIL-STD-499	per 2167A	No tailoring required
DOD-STD-2168		No tailoring required

STATEMENT OF WORK ENTRY SPECIFYING THE DOD-STD-2167A TAILORING DECISIONS MADE FOR THE FULL SCALE DEVELOPMENT PHASE EXAMPLE

3.1 For the post-flight CSCI of the navigation system, the contractor shall comply with all requirements of DOD-STD-2167A, with the following exceptions. Unless otherwise noted, the entire text of each listed paragraph is to be deleted.

Paragraph	Clarifications/Exceptions
4.1.1.a	
4.1.1.e	Delete "and CSU Testing"
4.1.1.f	
4.1.4	
4.1.7	
4.1.9	
4.1.9.a-e	
4.1.10	
4.2.3	
4.2.4	Delete reference to SDFs
4.2.9	
4.2.9.a-e	
4.4.3	Delete second sentence
4.4.4	Add "as modified" to first sentence
4.6.4.b	
4.6.4.d	
4.6.4.e	
5.1.1	
5.1.1.1	
5.1.1.2	
5.1.2.1	
5.1.2.2	
5.1.4.b	
5.1.5.b	
5.3.2.4	
5.3.4	Add: "as modified"
5.3.4.a	Delete evaluation criteria: appropriate analysis, design, or coding techniques, and test coverage
5.3.4.c	Delete evaluation criteria: internal consistency
5.3.4.d	
5.4.2.4	
5.4.2.5	
5.4.4.c-e	
5.4.4.f	Add: "provide traceability to Software Test Plan"
5.5.2.1	
5.5.2.2	Delete CSU test requirements and reference to SDFs
5.5.2.3	Delete reference to SDFs
5.5.2.4	
5.5.4.b-d	
5.5.5.2	Delete reference to CSU testing
5.6.2	
5.6.2.1	
5.6.2.2	
5.6.2.3	Delete reference to SDFs
5.6.3.2	Delete reference to SDFs
5.6.4.a	
5.6.4.d	
5.7.2.1	Delete reference to SDFs
App.C	

3.2 The following requirements elaborate "shell" requirements of DOD-STD-2167A:

4.1.2 Conduct Preliminary Design Review, Critical Design Review, and Test Readiness Review, and support Functional Configuration Audit/Physical Configuration Audit in accordance with MIL-STD-1521B with the following modifications:

Preliminary Design Review:

- For "Software Top Level Design Document," substitute"preliminary design in Software Design Document"
- For "Top Level CSC (TLCSC)," substitute "CSC"
- For "top-level design," substitute "preliminary design"
- Delete Computer System Diagnostic Manual
- Delete review of CRISD, SUM, and CSOM
- Delete all requirements that PDR occur before detailed design begins
- Substitute for 40.2.2.a-m:

  "40.2.2 CSCIs:
  a. The preliminary design information contained in the Software Design Document(s), as tailored.
  b. The preliminary interface design information contained in the Interface Design Document(s), as tailored.
  c. The contractor's plans for formal qualification testing as documented in the Software Test Plan, as tailored."

- Substitute for 40.13.8-10:

  "40.13.8 For CSCIs, review the Software Test Plan, or its equivalent as required by the contract, for completeness and technical adequacy in specifying plans for formal qualification testing."

Critical Design Review:

- For "Software Detailed Design Document," substitute "detailed design in the Software Design Document"
- For "Software Top Level Design Document," substitute "preliminary design in the Software Design Document"
- Delete all references to "top level CSCs" and "lower level CSCs;" substitute "CSCs"
- For "Unit," substitute "CSU"
- Delete Data Base Design Document
- For "Software Test Description," substitute "Software Test Description minus the test procedure
- Delete Computer System Diagnostic Manual
- Delete review of CRISD, SUM, FSM, SPM, and CSOM
- Delete all requirements that CDR occur before detailed design begins

- Substitute for 50.2.2.a, renumbering later items accordingly:

  "a. The detailed design information contained in the Software Design Document(s), as tailored.
  b. The detailed interface design information contained in the Interface Design Document(s), as tailored.

c. The test plans and test case information contained in the Software Test Description, as tailored."

Test Readiness Review:

- For "Software Test Descriptions," substitute "test cases in Software Test Description"
- For "Software Top-Level Design Document, Data Base Design Document, and Software Detailed Design Document," substitute Software Design Document
- For "informal testing," substitute "contractor-internal testing"
- Review summary of CSC testing and FQT dry run results
- Delete Computer System Diagnostic Manual
- Review CRISD and SUM for completeness and adequacy

Functional Configuration Audit (FCA):

- Delete Computer System Diagnostic Manual
- Review SUM

Physical Configuration Audit (PCA):

- Delete Computer System Diagnostic Manual
- Delete paragraph 80.4.10.d (TLCSC to LLCSC comparison)
- In 80.4.10.h, delete reference to DOD-STD-2167 coding standards
- For "lower-level design," substitute "detailed design"
- Review CRISD

4.1.5 Comply with the security requirements in the SSS.

4.2.2 Comply with the security requirements in the SSS.

4.2.4 (Elaboration of data rights requirements is beyond the scope of this example.)

4.2.7 Use the Ada language.

4.2.10 Comply with the timing and memory allocations given for this CSCI in the SSDD.

4.3.2 Comply with the security requirements in the SSS.

4.5.1 Use the configuration identification scheme in the system configuration plan.

4.5.5 Follow MIL-STD-480 (formerly DOD-STD-480) for ECPs.

4.6.1 Deliverable code must be regenerable and maintainable on an ABC, XYZ, or LMN computer.

4.6.3 Install and checkout software on the ABC, XYZ, or LMN computers at the PQR Software Support Activity. Provide 20 hours of training regarding this CSCI to software support personnel.

APPENDIX E
TAILORING EXAMPLE FOR THE PRODUCTION / DEPLOYMENT AND OPERATIONAL SUPPORT PHASE

10. Scope.

10.1 Purpose. This appendix presents a tailoring example for the Production/Deployment and Operational Support Phases of the system life cycle. Included are:

A description of a sample project

A completed Project Environment Worksheet for the example

A completed Activity/Product Worksheet for the example

A completed Statement of Work for the example

10.2 Notes.

a. This example has been constructed to illustrate selected aspects of DOD-STD-2167A tailoring. The project characteristics and the resulting tailoring decisions are examples only and do not represent the "correct" or preferred way to structure a procurement or to tailor DOD-STD-2167A in the Operational Support Phase. Each project will be different. This example shows one way in which a set of project characteristics could be translated into tailoring decisions.

b. The Project Environment Worksheet and the Activity/Product Worksheet cover all software on the project. The DOD-STD-2167A Tailoring Worksheet and Statement of Work apply to one type of software in the project. These worksheets should suffice to illustrate the method for all types of software on the project.

20. Applicable documents. This section is not applicable to this appendix.

PROJECT DESCRIPTION FOR THE
PRODUCTION / DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE (page 1 of 2)

30. Project example for the Production/Deployment and Operational Support Phases.

30.1 Project description.

a. Overview. This example is for a contract to expand the fire control subsystem of an existing weapon system. Both the hardware and the software in the subsystem are being upgraded to add a new missile. This change may require development of a new CSCI. Changes to the existing weapon system software will be required to accept the new missile. The development contractor will be directed to evaluate a similar weapon system deploying the new missile to determine whether any of that software is reusable.

b. Applicable DOD and service-specific policies. Subcontracting is not permitted. Safety analysis and IV&V are required for this project. Ada is required for all new software development.

c. Acquisition strategy. The Government Software Support Activity plans to award the contract to a single contractor. The contractor will use the Software Support Activity's facilities for development. Reviews and audits will be held. The development contractor will be required to use the Software Support Activity's configuration management practices.

d. Support concept. The software is expected to be in the field and maintained for 10 more years. No training will be required for Software Support Activity personnel.

e. System-level characteristics. The weapon system uses data classified Secret. New user, inter-, and intra-system interfaces will be required for the new missile. Firmware PROMs will be the media on which some of the software resides. The available memory reserve is adequate for this enhancement, and the contractor must assure that a 20% reserve remains for future changes. No more than a 10% increase to the current processing time is acceptable.

f. Existing software products and software objectives. Software and documentation in the existing weapon system were developed under DOD-STD-1679A. DOD-STD-2167A will be imposed on this contract. DOD-STD-2167A documentation requirements apply to any new or rewritten documents. The following DOD-STD-1679A documents will be rewritten: Interface Design Specification (IDS), Software Test Description (STD), Operator's Manual (OM), and System Operator's Manual (SOM). New documents are as follows: a Software Development Plan (SDP), Firmware Support Manual (FSM), Software Test Plan (STP), Software Test Report (STR), and Version Description Documents (VDDs). The contractor will provide change pages to existing DOD-STD-1679A documents as required. All new software must be compatible with the HOL (FORTRAN) in the existing applications, the operating system software, and the software in the software engineering and test environments. The software development contractor will participate in analyzing and allocating system requirements for the new missile. System testing will be performed by the Government assisted by the development contractors. A long-range software objective is to convert the fire control subsystem software to Ada. The contractor will be required to convert any existing CSU to Ada if new or changed design is required. Deviations to this policy will be considered on a case-by-case basis.

PROJECT DESCRIPTION FOR THE
PRODUCTION / DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE (page 2 of 2)

g. Software types. Changes will be made to existing software to correct problems, improve performance, and incorporate the new missile interface. New CSCs and CSUs may be required. NDS may be incorporated in the fire control subsystem from another system.

h. Software characteristics. The fire control subsystem is complex, but not difficult or unprecedented. All of the application software is considered highly critical. Both the software engineering and test environments exist. The contractor's development team will consist of approximately 25 engineers and technicians. The project is scheduled for completion in 18 months.

30.2 Worksheets. The pages that follow present sample worksheets for this procurement. A sample Project Environment Description and Activity/Product Worksheet cover all software for this project. A DOD-STD-2167A Tailoring Worksheet and Statement of Work are provided only for changes to the existing weapons system software in the example. Complete tailoring for the project would require worksheets for each type and subtype of software to which DOD-STD-2167A is to be applied.

PROJECT ENVIRONMENT WORKSHEET FOR THE
PRODUCTION/DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE
(page 1 of 4)

Program Fire Control Subsystem Block Upgrade

Respondent Cdr. L. Frank Date 6/14/89

PURPOSE: To establish program context, objectives, and characteristics as a basis for tailoring DOD-STD-2167A. This worksheet is used in STEPs 1, 2, and 3 of the tailoring process.

INSTRUCTIONS: Answer the following questions. The questions are presented in the same order as they are discussed in section 4.4 of the handbook.

1. Check the system life cycle phase to which the contract applies:

   ____ a. Concept Exploration/Definition
   ____ b. Concept Demonstration/Validation
   ____ c. Full Scale Development
   ____ d. Production/Deployment
   ✓ e. Operational Support

2. Which DOD or service-specific policies apply:

   ✓ a. Use of Ada required
   ✓ b. Use of another language required (FORTRAN)
   ✓ c. Independent verification/validation required
   ✓ d. Safety analysis required
   ✓ e. Memory and/or timing reserves
   ____ f. Formal risk management required
   ____ g. Other ____

3. Which statements describe the acquisition strategy for the software:

   ____ a. There will be division of software development roles among contractors; each contract needs its own set of software development activities specified.
   ✓ b. Formal reviews and audits will be used as project milestones.
   ✓ c. There will be an IV&V contractor or IV&V agent.
   ✓ d. The software contractor(s) will be involved in defining system-level requirements.
   ✓ e. The software contractor(s) will be involved in system integration and testing.

PROJECT ENVIRONMENT WORKSHEET FOR THE
PRODUCTION/DEPLOYMENT AND OPERATIONS SUPPORT PHASE EXAMPLE(page 2 of 4)

4. What is the software support concept:

4.1 Expected length of support ✓ More than 3 years ____ 0-3 years ____ None

4.2 Expected degree of change ____ High ✓ Medium ____ Low

4.3. Software support roles N/A SSA already supports software for subsystem.

____ a. The software will transition to a Government software support activity or support contractor (transition planning required).

____ b. The software will be supported by the developer at the developer's site. (little or no transition required)

5. Which system-level characteristics affect requirements imposed on software developer(s):

✓ a. Software will be used to implement some or all user interfaces.

✓ b. Software errors could result in a system security violation. (Secret data)

✓ c. Software errors could result in system safety violations or loss of life.

✓ d. The system will impose sizing/timing limitations on the software.

✓ e. Software will be used to implement inter- and intra-system interfaces

✓ f. Some or all of the software will be implemented in firmware.

✓ g. The computers to be used are commercially available or Government furnished, and already have existing manuals.

____ h. Other ____

6. Software product objectives for the current phase

6.1 Circle the software products that will inherited from the existing fire control subsystem ~~a previous phase, developed under a parallel contract, or provided as GFE~~ (Documents listed are from DOD-STD-2167A. Substitute equivalent document titles or acronyms as required)

a. Project plans SDP

b. Specifications ~~SSS~~ SPS ~~SRS~~ IDS ~~IRS~~

c. Design documents [redacted] PDS, PDD ~~SDD~~ [redacted]

d. Test documents CPTS ~~STP~~ CPTP ~~STD~~ CPTR ~~STR~~

e. User and support documents ~~ORSD OSOM SUM SPM FSM~~ om, som

f. Code and its documentation Code VDD SPS

PROJECT ENVIRONMENT WORKSHEET FOR THE
PRODUCTION/DEPLOYMENT AND OPERATIONS SUPPORT PHASE EXAMPLE (page 3 of 4)

6.2 What are the software objectives for this phase? Add comments to clarify.

✓ a. Prepare ~~or update~~ project plans SDP and STP covering block upgrade

✓ b. Prepare ~~or~~ & update specifications Prepare Spec's for new CSCI; update w/ change pages, existing Spec's if required

✓ c. Prepare ~~or~~ & update design documents Prepare design doc's for new CSCI; Provide change pages to design doc's as required for existing software

✓ d. Prepare or update code, resulting in:

____ 1) Throwaway prototype code_____

____ 2) Prototype code that will be refined and made operational later_____

✓ 3) Operational code_____

✓ e. Plan for formal qualification testing_____

✓ f. Perform formal qualification testing_____

____ g. Prepare or update plans for software support_____

✓ h. Prepare ~~or update~~ user/support documents FSM

✓ i. Convert documents to DOD-STD-2167A IDS to IRS and IDD, OM to SUM; SOM to CSOM

____ j. Other_____

7. Software types: Put an X in each box describing a type of software to be developed, modified, or used on the contract.

	APPLICATION SOFTWARE	SUPPORT SOFTWARE					
		S/W ENGINEERING ENVIRONMENT		S/W TEST ENVIRONMENT		OTHER	
		DELIVERABLE	NON-DELIVERABLE Note 1	DELIVERABLE	NON-DELIVERABLE Note 2	DELIVERABLE	NON-DELIVERABLE
NEWLY DEVELOPED	X						
MODIFIED	X						
NON-DEVELOPMENTAL	X						

NOTE 1) DOD-STD-2167A PARAGRAPH 4.2.2 APPLIES UNLESS DELETED OR MODIFIED. NO OTHER PARAGRAPHS APPLY.
NOTE 2) DOD-STD-2167A PARAGRAPH 4.3.2 APPLIES UNLESS DELETED OR MODIFIED. NO OTHER PARAGRAPHS APPLY.

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PROJECT ENVIRONMENT WORKSHEET FOR THE
PRODUCTION/DEPLOYMENT AND OPERATIONS SUPPORT PHASE EXAMPLE (page 4 of 4)

8. Software characteristics

a. Criticality. Based on current knowledge of the system and software, identify the critical software on the project (errors in use would have severe consequences).

✓ 1) All application software

_____ 2) Some application software. Identify which:

_____ 3) Other software on the project. Identify which:

_____ 4) None

_____ 5) Can't determine this yet.

b. Technical risk. Based on current knowledge of the system and software, identify the software with high technical risk (unprecedented, complex, difficult to implement)

_____ 1) All application software

_____ 2) Some application software. Identify which:

_____ 3) Other software on the project. Identify which based on current assumptions:

✓ 4) None

_____ 5) Can't determine this yet

c. Project size. Based on current knowledge of the system and software, make a rough estimate of the size of the software development team

_____ 1 to 5 _____ 6 to 10 _____ 11 to 20 ✓ 21 to 50 _____ Over 50

_____ Can't determine this yet

d. List any other considerations that might affect the way you tailor some or all of the software for this project: Need to change document names for products that were developed under DOD-STD-1679A.

ACTIVITY / PRODUCT WORKSHEET FOR THE
PRODUCTION/DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE
(page 1 of 4)

Program Fire Control Subsystem Block Upgrade

Respondent Cdr. L. Frank Date 6/13/89

PURPOSE: To select the activities and products required for a each type of software on a project. This worksheet is used in STEP 3 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Pages 1 and 2 of this worksheet list DOD-STD-2167A activities and products. Pages 3 and 4 provide a table for recording which products and activities apply to each type of software on your project. Begin by assigning each type of software on your project a column in table. Use Question 7 of your Project Environment Worksheet as a starting point for the types. The types will evolve as you begin to complete the worksheet and see that you can combine some types and must divide others into subtypes types based on the need to give different answers for different software on your project. Write "K" to keep an item; "D" to delete it. Delete a primary item (1, 2, 3, etc.) only if you delete all of its subsidiary items (1.a, 1.b, etc.). Note that delivery of a product occurs only if it is specified on the DD 1423 Contract Data Requirements List.

DOD-STD-2167A PRODUCTS AND ACTIVITIES

1. Help define system requirements and design
   - 1.a Analyze SW requirements in system specs
   - 1.b Prepare System/Segment Design Document (SSDD)
   - 1.c Support system-level reviews (SRR, SDR)

2. Define software requirements
   - 2.a Prepare SW Requirements Spec. (SRS)
   - 2.b Prepare Interface Req'ts Spec. (IRS)

3. Perform software design
   - 3.a Organize CSCIs into CSCs, CSUs
   - 3.b Prepare Software Design Document (SDD)
   - 3.c Prepare Interface Design Document (IDD)
   - 3.d Establish SW Development Files (SDFs)

4. Perform coding activities
   - 4.a Use approved high order language
   - 4.b Code the software
   - 4.c Prepare a Version Descrpt. Doc. (VDD)

5. Perform unit/component SW testing
   - 5.a Document CSU test planning
   - 5.b Perform/record results of CSU testing
   - 5.c Document CSC integration/test planning
   - 5.d Perform/record results of CSC integ/test

6. Perform Formal Qualif. Test (FQT) of CSCIs
   - 6.a Prepare Software Test Plan (STP)
   - 6.b Establish a software test environment
   - 6.c Prepare Software Test Description (STD)
   - 6.d Dry run the test procedures
   - 6.e Perform FQT
   - 6.f Prepare a Software Test Report (STR)
   - 6.g Use independent testers

7. Participate in system-level test/integration
   - 7.a Support system test planning
   - 7.b Support system testing
   - 7.c Support post-test analysis and reporting
   - 7.d Update code and documents as needed
   - 7.e Prepare changes to baselined documents

ACTIVITY / PRODUCT WORKSHEET FOR THE
PRODUCTION/DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE (page 2 of 4)

8. Perform technical product evaluations
   - 8.a Use independent evaluators
   - 8.b Evaluate software products
   - 8.c Internally coordinate deliverables
   - 8.d Use 2167A evaluation criteria
   - 8.e Keep records of evaluations

9. Perform software configuration management
   - 9.a Perform configuration identification
   - 9.b Perform configuration control
   - 9.c Perform configuration status accounting
   - 9.d Implement storage, handling, delivery procedures
   - 9.e Prepare ECPs, SCNs for baselined documents

10. Prepare software for operational use & support
    - 10.a Make code regenerable in the support environment
    - 10.b Prepare Computer Resources Integrated Support Document (CRISD)
    - 10.c Prepare Computer System Operator's Manual (CSOM)
    - 10.d Prepare Software User's Manual (SUM)
    - 10.e Prepare SW Programmer's Manual (SPM)
    - 10.f Prepare Firmware Support Manual (FSM)
    - 10.g Prepare SW Product Specification (SPS)
    - 10.h Install software at support site
    - 10.i Provide training and continuing support

11. Use DOD-STD-2167A SW management practices:
    - 11.a Prepare a Software Development Plan
    - 11.b Conduct formal reviews/audits of SW products (System reviews are 1.c)
    - 11.c Implement risk management procedures
    - 11.d Implement security measures
    - 11.e Ensure subcontractor compliance with prime contract
    - 11.f Interface with software IV&V agent(s)
    - 11.g Establish software development library
    - 11.h Implement corrective action process
    - 11.i Prepare problem/change reports
    - 11.j Use 2167A problem/priority categories

12. Use DOD-STD-2167A SW engineering practices:
    - 12.a Use systematic, well documented development methods
    - 12.b Establish a SW engineering environment
    - 12.c Perform safety analysis
    - 12.d Consider use of non-developmental SW
    - 12.e Implement design and coding standards
    - 12.f Maintain timing, memory reserves

ACTIVITY / PRODUCT WORKSHEET FOR THE PRODUCTION/DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE (page 3 of 4)

Item Number, Brief Descriptor		Software Types / Subtypes / CSCIs: Newly developed s/w in new CSCI	Modified s/w in new CSCI	NDS in new CSCI		Changes in Existing s/w		Notes: 1.) New doc's will be prepared w/ DOD-STD-2167 & DIDs. 2.) Gradually convert some Existing docs to DOD-STD-2167A
1	System Req	K	K	K		K*		*Type "A" spec
1.a	Analyze SSS							
1.b	SSDD							Type "A" Spec
1.c	SRR, SDR							
2	SW Req							
2.a	SRS					*		*provide change pages for PPS
2.b	IRS							
3	SW Design		K*	D		K*		* as required for changes
3.a	CSCs, CSUs							
3.b	SDD					*		*provide change pages to PDB & PDD
3.c	IDD							
3.d	SDFs							
4	Coding		K			K		
4.a	HOL							Ada required; FORTRAN for existing s/w
4.b	Code							
4.c	VDD							
5	CSU/C Test		K*			K*		* as required for changes
5.a	CSU plan							
5.b	CSU test							
5.c	CSC plan							
5.d	CSC test							
6	FQT		K	K		K		
6.a	STP		K	K		K		One for project
6.b	Test Env	D	D	D		D		Use SSA's
6.c	STD	K	K*			K*		* as required for changes
6.d	Dry Run							
6.e	Do FQT							
6.f	STR							
6.g	Independent							
7	System Test		K	K		K		All s/w must work correctly
7.a	Plan							One for block upgrade
7.b	Test							
7.c	Report							
7.d	Update							
7.e	Changes							

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ACTIVITY / PRODUCT WORKSHEET FOR THE PRODUCTION/DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE (page 4 of 4)

Item Number, Brief Descriptor	Software Types / Subtypes / CSCIs						Notes
	Newly developed s/w in new CSCI	Modified s/w in new CSCI	NDS in new CSCI		Changes in Existing s/w		
8 Prod Evaluations	K	K*	D		K*		*As required for changes
8.a Independent							
8.b Do evaluations							
8.c Coordinate							
8.d Criteria							
8.e Records							
9. Config Mgmt	K	K	K		K		
9.a Config ID		D	D		D		
9.b Config Control		K			K		
9.c Config Status							
9.d Storage							
9.e ECPs							
10 Support	K	K			K		
10.a Regen Code	K	K			K		
10.b CRISD	D	D			D		
10.c CSOM	K	K			K		Rewrite SOM } Existing CSCIs
10.d SUM	K	K			K		Rewrite OM } or combine for System
10.e SPM	D	D			D		
10.f FSM	K	K			K		
10.g SPS	K	K	*		K		*Provide existing documents
10.h Install	D	D			D		
10.i Train	D	D			D		
11 Management	K	K	K		K		
11.a SDP			K				One for project
11.b Rev/Aud			D				
11.c Risk			D				
11.d Security			K				
11.e Subcontractor	D	D	D		D		Not permitted
11.f IV&V	K	K	D		K		
11.g Library			K				
11.h C. Action			D				
11.i Ch. Report							
11.j Classify							
12 SW Eng	K	K	K		K		
12.a Methods	K	K	D		K		
12.b Eng Env	D	D	D		D		Use SSA's
12.c Safety	K	K	K		K		
12.d Non-devel			D		K		
12.e Design/Code Stds			D		D		Use existing for FORTRAN code
12.f Reserves			K		K		

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DOD-STD-2167A TAILORING WORKSHEET FOR THE
PRODUCTION/DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE
(page 1 of 11)

Program Fire Control Subsystem ~~Type/Subtype/CSCI~~ Existing Software

Respondent Cdr. L. Frank Date 6/14/89

PURPOSE: To translate the selections made on the Activity/Product Worksheet into decisions on each paragraph of DOD-STD-2167A. This worksheet is used in STEP 4 of the DOD-STD-2167A tailoring process.

INSTRUCTIONS: Complete one worksheet for each software type, subtype, or CSCI with a unique set of answers on the Activity/Product Worksheet. Begin with those paragraphs that have a number in the right-most column. For each such paragraph, look up the related item(s) on the Activity/Product Worksheet. Use your response(s) to determine whether to Keep, Delete, or Replace the paragraph. If your responses conflict (for example, one Keep and one Delete) read the actual paragraph in the standard and decide the appropriate tailoring for the paragraph. Circle the appropriate letter in the left-most column (K = keep; D = Delete; R = Replace). Use the Comments column to make notes, record rationale, and record the details of replacement text. As a last step, tailor the paragraphs with INTRO in the right-most column: select D if all subparagraphs are deleted, K if any subparagraph is K or R.

LEGEND: INTRO Paragraph contains no requirements and serves only as an introductory paragraph.
** Details must be specified in the contract.
++ References another DOD/MIL standard.
( ) Parentheses denote paragraphs descriptions vs titles.

K/D/R	2167A PARA.	TITLE / (DESCRIPTION)	COMMENTS	RELATED A/P ITEMS,* OR "INTRO"
K D (R)	4.	General Requirements		INTRO
(K) D R	4.1	Software development management		INTRO
(K) D R	4.1.1	Software development process		INTRO
(K) D R	4.1.1.a	(System Requirements Analysis/Design)		1
(K) D R	4.1.1.b	(Software Requirements Analysis)		2
(K) D R	4.1.1.c	(Preliminary Design)		3
(K) D R	4.1.1.d	(Detailed Design)		3
(K) D R	4.1.1.e	(Coding and CSU Testing)		K 4, K 5.a, K 5.b
(K) D R	4.1.1.f	(CSC Integration and Testing)		K 5.c, K 5.d
(K) D R	4.1.1.g	(CSCI Testing)		6

* Numbers refer to questions on the Activity/Product Worksheet

DOD-STD-2167A TAILORING WORKSHEET FOR THE
PRODUCTION/DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE (page 2 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	4.1.1.h	(System Integration and Testing) Support SSA	7
K D R	4.1.2**,++	Formal reviews/audits	11.b
K D R	4.1.3	Software development planning	11.a
K D R	4.1.4	Risk management	11.c
K D R	4.1.5**	Security	11.d
K D R	4.1.6	Subcontractor management Not permitted	11.e
K D R	4.1.7**	Interface with software IV&V agent(s)	11.f
K D R	4.1.8	Software development library	11.g
K D R	4.1.9	Corrective action process	11.h
K D R	4.1.9.a	(Implement a closed-loop process)	11.h
K D R	4.1.9.b	(Use problem/change reports, etc. as input)	11.h, 11.i
K D R	4.1.9.c	(Classify problems by category and priority)	11.h, 11.j
K D R	4.1.9.d	(Perform analysis to detect trends)	11.h
K D R	4.1.9.e	(Evaluate corrective action taken)	11.h
K D R	4.1.10	Problem/change report	11.i, 11.h
K D R	4.2	Software engineering	INTRO
K D R	4.2.1	Software development methods	12.a, 11.b
K D R	4.2.2**	Software engineering environment	12.b, 11.d
K D R	4.2.3	Safety analysis	12.c
K D R	4.2.4**	Non-developmental software	12.d, 3.d
K D R	4.2.5	Computer software organization	3.a, 11.a
K D R	4.2.6	Traceability of requirements to design	2.a, 2.b, 3.b
K D R	4.2.7**	High order language Ada required for new software. Otherwise use FORTRAN	4.a

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PRODUCTION/DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE (page 3 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	4.2.8	Design and coding standards	12.e
K D R	4.2.9	Software development files (SDFs)	3.d, 3.a
K D R	4.2.9.a	(Put design considerations/constraints in SDF)	3.d
K D R	4.2.9.b	(Put design documentation and data in SDF)	3.d
K D R	4.2.9.c	(Put schedule/status information in SDF)	3.d
K D R	4.2.9.d	(Put test requirements/responsibilities in SDF)	3.d, 5
K D R	4.2.9.e	(Put test cases/procedures/results in SDF)	3.d, 5
K D R	4.2.10**	Processing resource and reserve capacity	12.f, 2.a, 10.g
K D R	4.3	Formal qualification testing	6.e
K D R	4.3.1	Formal qualification test planning	6.a
K D R	4.3.2**	Software test environment Already exists	6.b, 11.d
K D R	4.3.3	Independence in FQT activities	6.g, 11.a
K D R	4.3.4	Traceability of requirements to test cases	2.a, 2.b, 6.c
K D R	4.4	Software product evaluations	8
K D R	4.4.1	Independence in product eval. activities	8.a, 11.a
K D R	4.4.2	Final evaluations	8.c
K D R	4.4.3	Software evaluation records	8.e, 11.h, 11.i
K D R	4.4.4	Evaluation criteria	8.d
K D R	4.5	Software configuration management	INTRO
K D R	4.5.1**	Configuration identification Delete first sentence. Use SSA's system	9.a
K D R	4.5.1.a	(Identify baseline documentation)	9.a
K D R	4.5.1.b	(Identify documentation/media under CM)	9.a
K D R	4.5.1.c	(Identify each CSCI, CSC, and CSU)	9.a

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PRODUCTION/DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE (page 4 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	4.5.1.d	(Identify version/release/change status)	9.a
K D R	4.5.1.e	(Identify code/documentation relationship)	9.a
K D R	4.5.1.f	(Identify deliverable medium contents)	9.a
K D R	4.5.2	Configuration control Delete first sentence	9.b
K D R	4.5.2.a	(Establish Developmental Configuration)	9.b
K D R	4.5.2.b	(Maintain current copies of deliverables)	9.b
K D R	4.5.2.c	(Provide access to documents/code under CM)	9.b
K D R	4.5.2.d	(Control changes to master copies)	9.b
K D R	4.5.3	Configuration status accounting Delete first sentence	9.c
K D R	4.5.3.a	(Provide traceability of changes)	9.c
K D R	4.5.3.b	(Communicate configuration status)	9.c
K D R	4.5.3.c	(Ensure consistency between documents/code)	9.c
K D R	4.5.4	Storage, handling, & delivery of project media Delete first sentence	9.d
K D R	4.5.5**,++	Engineering Change Proposals	9.e
K D R	4.6	Transitioning to software support	INTRO
K D R	4.6.1**	Regenerable and maintainable code	10.a
K D R	4.6.2	Transition planning	10.b
K D R	4.6.3**	Software transition and continuing support	10.h, 10.i
K D R	4.6.4	Software support & operational documentation	INTRO
K D R	4.6.4.a	(Prepare Comp. Res. Int. Support Doc. (CRISD))	10.b
K D R	4.6.4.b	(Prepare Comp. SW Operator's Manual (CSOM))	10.c
K D R	4.6.4.c	(Prepare SW User's Manual (SUM))	10.d
K D R	4.6.4.d	(Prepare SW Programmer's Manual (SPM))	10.e
K D R	4.6.4.e	(Prepare Firmware Support Manual (FSM))	10.f

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PRODUCTION/DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE (page 5 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.	Detailed Requirements	INTRO
K D R	5.1	System requirements analysis/design	INTRO
K D R	5.1.1	Software development management	INTRO
K D R	5.1.1.1**	(Support System Requirements Review (SRR))	1.c
K D R	5.1.1.2**	(Support System Design Review (SDR))	1.c
K D R	5.1.2	Software engineering	INTRO
K D R	5.1.2.1	(Analyze preliminary system spec)	1.a
K D R	5.1.2.2	(Allocate system rqmts; document in SSDD)	1.b
K D R	5.1.2.3	(Define prelim. engineering rqmts in SRS)	2.a
K D R	5.1.2.4	(Define prelim. interface rqmts in IRS)	2.b
K D R	5.1.3	(Define prelim. qual. rqmts in SRS)	2.a
K D R	5.1.4	Software product evaluations	8.b, 8.d, 11.a 1.b, 2.a, 2.b
K D R	5.1.4.a	(Evaluate SW Development Plan)	11.a, 8.b
K D R	5.1.4.b	(Evaluate ~~Sys/Seg Design Document~~ Type A specification)	1.b, 8.b
K D R	5.1.4.c	(Evaluate prelim. ~~SRSs~~ PPS)	2.a, 8.b
K D R	5.1.4.d	(Evaluate prelim. IRS) Rewrite IDS	2.b, 8.b
K D R	5.1.5	Configuration management	INTRO
K D R	5.1.5.a	(Put SDP under config. control)	11.a, 9.b
K D R	5.1.5.b	(Put ~~SSDD~~ Type A Specification under config. control)	1.b, 9.b
K D R	5.1.5.c	(Put prelim. ~~SRSs~~ PPS under config. control)	2.a, 9.b
K D R	5.1.5.d	(Put prelim. IRS under config. control)	2.b, 9.b
K D R	5.2	Software requirements analysis	INTRO
K D R	5.2.1++	(Conduct SW Specification Review (SSR))	2.a, 2.b, 11.b

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PRODUCTION/DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE (page 6 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.2.2	Software engineering	INTRO
K D R	5.2.2.1	(Define engineering rqmts; document in ~~SRS~~) PPS	2.a
K D R	5.2.2.2	(Define interface rqmts; document in IRS)	2.b
K D R	5.2.3	(Define qualification rqmts; doc. in ~~SRS~~) PPS	2.a
K D R	5.2.4	Software product evaluations	8.b, 8.d, 11.b, 2.a, 2.b
K D R	5.2.4.a	(Evaluate ~~Software Rqmt Specs~~) PPS	2.a, 8.b
K D R	5.2.4.b	(Evaluate Interface Rqmt Specs)	2.b, 8.b
K D R	5.2.5	(Put ~~SRS~~ PPS/IRS under config. control)	2.a, 2.b, 9.b
K D R	5.3	Preliminary design	INTRO
K D R	5.3.1++	(Conduct Preliminary Design Review (PDR))	3.b, 3.c, 11.b
K D R	5.3.2	Software engineering	INTRO
K D R	5.3.2.1	(Develop prelim. design; document in ~~SDD~~) PPD	3.b, 2.a, 2.b
K D R	5.3.2.2	(Develop prelim. interface design; document in IDD)	3.c, 2.b
K D R	5.3.2.3	(Document other design information in ~~SDD~~) PDD Delete reference to Section E	3.b
K D R	5.3.2.4	(Establish CSC test requirements)	5.c, 3.d
K D R	5.3.3	(Identify formal qualification tests)	6.a, 2.a
K D R	5.3.4	Software product evaluations	8.b, 8.d, 11.b, 3.b, 3.c, 6.a, 5.c
K D R	5.3.4.a	(Evaluate ~~Software Design Documents~~) PPD, PDD	3.b, 8.b
K D R	5.3.4.b	(Evaluate prelim. Interface Design Doc)	3.c, 8.b
K D R	5.3.4.c	(Evaluate Software Test Plan)	6.a, 8.b
K D R	5.3.4.d	(Evaluate CSC test requirements)	5.c, 8.b
K D R	5.3.5	Configuration management	INTRO
K D R	5.3.5.1	(Put ~~SDDs~~ PPD, PDD into Developmental Config.)	3.b, 9.b

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PRODUCTION/DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE (page 7 of 11)

K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
(K) D R	5.3.5.2	(Put STP under config. control)	6.a, 9.b
K D (R)	5.3.5.3	(Put IDD under config. control)	3.c, 9.b
(K) D R	5.4	Detailed design	INTRO
(K) D R	5.4.1++	(Conduct Critical Design Review (CDR))	3.b,3.c,11.b
(K) D R	5.4.2	Software engineering	INTRO
K D (R)	5.4.2.1	(Develop detailed design; document in ~~SDD~~) PPD, PDD	3.b
K D (R)	5.4.2.2	(Develop detailed interface design; document in IDD)	3.c, 2.b
K D (R)	5.4.2.3	(Document other design information in ~~SDD~~) PPD	3.b
K D (R)	5.4.2.4	(Define CSC test cases)	5.c, 3.d
K D (R)	5.4.2.5	(Define CSU test rqmts/cases)	5.a, 3.d
K D (R)	5.4.3	(Identify FQT test cases; document in STD)	6.c, 6.a
(K) D R	5.4.4	Software product evaluations	8.b,8.d,11.b, 3.b, 3.c, 3.d, 5.c, 5.a
K D (R)	5.4.4.a	(Evaluate updated ~~Software Design Doc~~) PPD, PDD	3.b, 8.b
K D (R)	5.4.4.b	(Evaluate updated Interface Design Doc)	3.c, 8.b
K D (R)	5.4.4.c	(Evaluate CSC test cases)	5.c, 8.b
K D (R)	5.4.4.d	(Evaluate CSU test rqmts/cases)	5.a, 8.b
K D (R)	5.4.4.e	(Evaluate a % of CSU and CSC SDFs)	3.d,8.b,11.a
K D (R)	5.4.4.f	(Evaluate Software Test Description)	6.c, 8.b
(K) D R	5.4.5	Configuration management	INTRO
K D (R)	5.4.5.1	(Put updated ~~SDD~~ PPD, PDD in Devel. Config.)	3.b, 9.b
K D (R)	5.4.5.2	(Put updated IDD under config. control)	3.c, 9.b
(K) D R	5.4.5.3	(Put STD under config. control)	6.c, 9.b

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K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.5	Coding and CSU testing	INTRO
K D R	5.5.1	Software development management (no rqmts)	INTRO
K D R	5.5.2	Software engineering	INTRO
K D R	5.5.2.1	(Develop CSU test procedures)	5.a, 3.d
K D R	5.5.2.2	(Code and test CSUs)	4.b, 5.b, 3.d
K D R	5.5.2.3	(Revise documents/code based on CSU tests)	3.b, 3.c, 3.d, 4.b, 5.b
K D R	5.5.2.4	(Develop CSC test procedures)	5.c, 3.d
K D R	5.5.3	Formal qualification testing (no rqmts)	INTRO
K D R	5.5.4	Software product evaluations	8.b, 8.d, 4.b, 5.a, 5.b, 5.c, 3.d
K D R	5.5.4.a	(Evaluate source code)	4.b, 8.b
K D R	5.5.4.b	(Evaluate CSC test procedures)	5.c, 8.b
K D R	5.5.4.c	(Evaluate CSU test procedures/results)	5.a, 5.b, 8.b
K D R	5.5.4.d	(Evaluate a % of updated SDFs)	3.d, 8.b
K D R	5.5.5	Configuration management	INTRO
K D R	5.5.5.1	(Put updated ~~SDD~~ PPD, PDD/listings in Devel. Config.)	3.b, 4.b, 9.b
K D R	5.5.5.2	(Put source code under config. control)	4.b, 9.b
K D R	5.6	CSC integration and testing	INTRO
K D R	5.6.1++	(Conduct Test Readiness Review (TRR))	6.c, 11.b
K D R	5.6.2	Software engineering	INTRO
K D R	5.6.2.1	(Conduct CSC integration & testing)	5.d
K D R	5.6.2.2	(Record CSC test results)	5.d, 3.d
K D R	5.6.2.3	(Revise design documentation/code)	3.b, 3.c, 3.d, 4.b, 5.d

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K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
(K) D R	5.6.3	Formal qualification testing	INTRO
K D (R)	5.6.3.1	(Develop FQT test procedures; document in STD)	6.c
K D (R)	5.6.3.2	(Dry run FQT test procedures)	6.d, 6.c, 3.d
(K) D R	5.6.4	Software product evaluations	8.b, 8.d, 11.b, 3.d, 6.c, 3.b, 3.c, 4.b,
K D (R)	5.6.4.a	(Evaluate test results in SDFs)	5.d, 6.d, 3.d, 8.b
K D (R)	5.6.4.b	(Evaluate updated STD)	6.c, 8.b
K D (R)	5.6.4.c	(Evaluate updated code & design docs)	3.b, 3.c, 4.b, 8.b
(K) D R	5.6.4.d	(Evaluate a % of updated SDFs)	3.d, 8.b
K D (R)	5.6.5	(Put updated ~~SDD~~ PPD, PDD/listings in Devel. Config)	3.b, 4.b, 9.b
(K) D R	5.7	CSCI testing	INTRO
(K) D R	5.7.1	(Support Functional/Physical Config. Audits (FCA/PCA))	4.b, 6.1, 10.g, 11.b
(K) D R	5.7.2	Software engineering	INTRO
K D (R)	5.7.2.1	(Revise documentation/code based on FQT) Replace SDD with PPD & PDD	3.b, 3.d, 4.b, 6.e
K D (R)	5.7.2.2	(Revise IDD based on FQT)	3.c, 6.e
K D (R)	5.7.2.3	(Produce updated source code)	6.e, 4.b, 11.b, 2.a
K D (R)	5.7.2.4	(Prepare an ~~SPS~~ Program Package Document for each CSCI)	10.g
(K) D R	5.7.3	Formal qualification testing	INTRO
K D (R)	5.7.3.1	(Perform formal qualification testing)	6.e, 6.c
K D (R)	5.7.3.2	(Prepare Software Test Reports)	6.f
(K) D R	5.7.3.3	(Prepare updated SW Test Desciption)	6.c

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K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
K D R	5.7.4	Software product evaluations	8.b, 8.d, 6.f 3.b, 3.c, 4.b
K D R	5.7.4.a	(Evaluate STRs)	6.f, 8.b
K D R	5.7.4.b	(Evaluate updated code & design documents)	3.b, 3.c, 4.b, 8.b
K D R	5.7.5	*Configuration management*	INTRO
K D R	5.7.5.1	(Prepare Version Description Document (VDD))	4.c
K D R	5.7.5.2	(Disestablish Devel. Config.)	9.b,10.g,11.b
K D R	5.8	System integration & testing	INTRO
K D R	5.8.1	(Support Functional/Physical Config. Audits (FCA/PCA))	4.b, 6.f, 10.g, 11.b
K D R	5.8.2	(Revise docs/code based on system test)	7.d
K D R	5.8.3	Formal qualification testing	INTRO
K D R	5.8.3.1	(Support system test planning)	7.a
K D R	5.8.3.2	(Support system testing)	7.b
K D R	5.8.3.3	(Support post test analysis/reporting)	7.c
K D R	5.8.4	(Evaluate updated code/design documents)	7.d, 8.b, 8.d
K D R	5.8.5	(Prepare changes to baselined documents)	7.e
K D R	B.	Appendix B - Rqmts for coding standards	INTRO
K D R	B.10.3.1	Presentation style	12.e
K D R	B.10.3.2	Naming	12.e
K D R	B.10.3.3	Restrictions on the implementation language	12.e
K D R	B.10.3.4	Use of language constructs and features	12.e
K D R	B.10.3.5	Complexity	12.e

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K/D/R	2167A PARA.	TITLE / (DESCRIPTION) COMMENTS	RELATED A/P ITEMS, OR "INTRO"
(K) D R	C.	Appendix C - Category and priority classification	INTRO
(K) D R	C.10.2	Classify by category: SW, doc. or design	11.j
(K) D R	C.10.3	Classify by priority: Priority 1, 2, 3. 4. 5	11.j
(K) D R	D.	Appendix D - Evaluation criteria	INTRO
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(K) D R	D.10.2.2	Understandability	8.d
(K) D R	D.10.2.3	Traceability to indicated documents	8.d
(K) D R	D.10.2.4	Consistency with indicated documents	8.d
(K) D R	D.10.2.5	Appropriate analysis, design, & coding techniques used	8.d
(K) D R	D.10.2.6	Appropriate allocation of sizing & timing resources	8.d
(K) D R	D.10.2.7	Adequate test coverage of requirements	8.d
(K) D R	D.10.3	Additional criteria	8.d
(K) D R	D.10.3.1	Adequacy of quality factors	8.d
(K) D R	D.10.3.2	Testability of requirements	8.d
(K) D R	D.10.3.3	Consistency between data definition and data use	8.d
(K) D R	D.10.3.4	Adequacy of test cases, test procedures	8.d
(K) D R	D.10.3.5	Completeness of testing	8.d
(K) D R	D.10.3.6	Completeness of retesting	8.d

STATEMENT OF WORK ENTRY SPECIFYING THE DOD-STD-2167A TAILORING DECISIONS MADE FOR THE PRODUCTION/DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE

3.1 For the modifications to software in the existing CSCIs of the weapons system, the contractor shall comply with all requirements of DOD-STD-2167A, with the following exceptions. Unless otherwise noted, the entire text of each listed paragraph is to be deleted. Certain activities and products have been deleted or modified uniformly for this contract. These are listed separately below.

Paragraph	Clarifications/Exceptions
4.1	- Replace "perform software development" with "perform software follow-on development"
4.1.6	
4.2.2	
4.2.3	- Replace "ensure that the software requirements" with "ensure that changes to the software requirements"
4.2.5	- Replace "decompose and partition" with "review and revise, as required, the partitioning of"
	- Replace "test of each CSC and CSU" with "test of each CSC and CSU affected by the change."
4.2.6	- Replace with "document" with "update"
4.2.7	- Replace "code the deliverable" with "code changes to the deliverable"
	- Code new software in Ada, otherwise code in FORTRAN
4.2.9	- Replace "document the development of" with "document the changes to"
	- Replace "establish a separate SDF" with "establish or update a separate SDF"
	- Add to end of second sentence: "affected by the change"
4.2.10	- Replace "shall allocate these resources among the CSCIs" with "shall reallocate these resources among the CSCIs as required"
	- Replace "allocation" with "reallocation" in second sentence
	- Replace "documented in the Software Requirements Specification (SRS)" with "documented in updates to the Program Performance Specification (PPS)"
4.3	- Replace "each CSCI on the target computer" with "each CSCI affected by a change on the target computer"
4.3.2	
4.3.4	- Replace "traceability of the requirements in the Software Requirements Specifications (SRSs)" with "traceability of changed or new requirements in updates to the Program Performance Specifications (PPSs)"
4.5.1	- Delete first sentence. Conduct CM according to SSA's procedures
4.5.1.a	- Replace "establishes the Functional" with "establishes updates to the Functional"
	- Replace "and the Developmental" with "and identify the Developmental"
4.5.1.b	- Replace "containing code" with "containing changes to code"
4.5.1.c	- Replace "each CSCI and its corresponding" with "each changed CSCI and its changed corresponding"
4.5.2	- Delete first sentence
4.5.2.a	- Add following CSCI "to be changed"
4.5.3	- Delete first sentence
4.5.4	- Delete first sentence
4.6.2	
4.6.3	
4.6.4.a	

STATEMENT OF WORK ENTRY
FOR THE PRODUCTION/DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE

Paragraph	Clarifications/Exceptions
4.6.4.d	
5.1.1.1	- Ensure that existing software design is considered in planning the system upgrade
5.1.2.1	- Replace "analyze the preliminary system" with "analyze any new or updated requirements to the system"
5.1.2.2	- Replace "allocation of system requirements" with "allocation of changes to the system requirements"
	- Delete "in order to partition the system into HWCIs, CSCIs, and manual operations"
	- Replace "allocation in a System/Segment Design Document (SSDD)" with "allocation in updates to the System/Segment Specification (SSS)"
5.1.2.3	- Replace "shall define a preliminary set of engineering" with "shall identify required updates to the engineering"
	- Replace "each CSCI" with "each affected CSCI"
	- Replace second sentence with "The contractor shall document these requirements in updates to the applicable Software Requirements Specification (SRS)."
5.1.2.4	- Replace with "The contractor shall identify required updates to the external interface requirements for each affected CSCI. The contractor shall document these requirements and existing external interface requirements in an Interface Requirements Specification (IRS)."
5.1.3	- Replace first two sentences with "The contractor shall identify required updates to the qualification requirements for each affected CSCI. The contractor shall document these requirements in updates to the affected Program Performance Specification (PPS). These requirements shall be consistent with the qualification requirements defined in the system specification."
5.1.4	- Replace "evaluations of the following" with "evaluations of the changes and their effects to the following"
5.1.5	- Replace "the following" with "the updates to the following"
5.1.5.b	- Replace with "The updates to the System/Segment Specification"
5.1.5.c	- Replace with "The updates to the Program Performance Specification (PPS) for each CSCI."
5.2.1	- Replace "the Software Requirements Specifications (SRSs)" with "the updates to the Program Performance Specifications (PPSs)"
	- Replace "the CSCIs" with "the affected CSCIs"
5.2.2.1	- Replace with "The contractor shall identify required updates to the engineering requirements for each CSCI to be changed. The contractor shall document these requirements in updates to the applicable Program Performance Specifications (PPS)."
5.2.2.2	- Replace with "The contractor shall identify required updates to the external interface for each CSCI to be changed. The contractor shall document these requirements in updates to the applicable Interface Requirements Specifications (IRS)."
5.2.3	- Replace with "The contractor shall identify required updates to the qualification requirements for each CSCI to be changed. The contractor shall document these requirements in updates to the applicable Program Performance Specification (PPS)."
5.2.4	- Replace "evaluations of the products" with "evaluations of the updates and their effects to the products"
5.2.4.a	- Add "affected by the change" to the end of the sentence

STATEMENT OF WORK ENTRY
FOR THE PRODUCTION/DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE

Paragraph	Clarifications/Exceptions
5.2.5	- Replace "place the Software Requirements Specification (SRS) for each CSCI" with "place the updates to the Program Performance Specification (PPS) for each CSCI to be changed" - Replace "Interface Requirements Specification" with "Interface Requirements Specifications"
5.3.2.1	- Replace with "The contractor shall develop a preliminary design for each software change, shall allocate any new or updated requirements from the updates to the Program Performance Specifications (PPSs) and associated Interface Requirements Specifications (IRS) to the appropriate CSCs of each affected CSCI, and shall establish or update design requirements for each affected CSC. The contractor shall document this information in updates to the applicable Program Design Specification (PDS)."
5.3.2.2	- Replace with "The contractor shall develop a preliminary design for each software change to an external interface of each affected CSCI that is documented in the updates to the Interface Requirements Specification (IRS). The contractor shall document this information in updates to the applicable Interface Design Document (IDD)."
5.3.2.3	- Replace "document in Section 8 of the Software Design Document (SDD)" with "document in updates to the Program Design Specification (PDS)" - Replace "each CSCI" with "each CSCI to be changed"
5.3.2.4	- Replace "software at the limits" with "software affected by the changes at the limits" - Replace "in the CSC" with "in the applicable CSC"
5.3.3	- Replace "comply with the" with "comply with the updated" - Replace "in the Software Requirements Specification(s) (SRSs)" with "in the updates to the Program Performance Specifications (PPSs)" - Replace "for each CSCI" with "for each applicable CSCI"
5.3.4.a	- Replace "The Software Design Document (SDD)" with "The updates to the Program Design Specification (PDS)"
5.3.5.1	- Replace "the Software Design Document (SDD)" with "the updates to the Program Design Specification (PDS)" - Replace "each CSCI into" with "each CSCI to be changed into"
5.3.5.3	- Replace "The preliminary" with "The updates to the"
5.4.2.1	- Replace with "The contractor shall develop a detailed design for each software change, shall allocate new or updated requirements from the affected Computer Software Components (CSCs) to the Computer Software Units (CSUs) of each affected CSCI, and shall establish or update design requirements for each affected CSU. The contractor shall document this information in updates to the applicable Program Description Document (PDD) for each affected CSCI."
5.4.2.2	- Replace with "The contractor shall develop the detailed design for each software change to an external interface of each affected CSCI that is documented in the updates to the Interface Requirements Specification (IRS). The contractor shall document this information in updates to the Interface Design Documents (IDD)."
5.4.2.3	- Replace "document in Section 8 of the Software Design Document (SDD)" with "document in updates to the Program Description Document (PDD)" - Replace "each CSCI" with "each CSCI to be changed"
5.4.2.4	- Replace "integration and testing" with "integration and testing of CSCs affected by the changes" - Replace "in the CSC software" with "in the applicable CSC software"

STATEMENT OF WORK ENTRY
FOR THE PRODUCTION/DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE

Paragraph	Clarifications/Exceptions
5.4.2.5	- Replace "all CSUs" with "all CSUs affected by the changes"
5.4.3	- Replace "identify and describe" with "update or develop"
	- Replace "in the Software Test Description (STD)" with "in the updates to the Computer Program Test Procedure (CPTP)"
5.4.4.a	- Replace with "The updated Program Description Document (PDD) for each CSCI"
5.4.4.c,d,f	- Add "applicable to the required change" to the end of each sentence
5.4.4.e	- Following "(SDFs)", add "applicable to the required change"
5.4.5.1	- Replace "updated Software Design Document (SDD)" with "updates to the Program Description Document (PDD)"
	- Replace "for each CSCI" with "for each affected CSCI"
5.4.5.2	- Replace "updated" with "updates to the affected"
	- Replace "Document" with "Documents"
5.5.2.1	- Replace first sentence with "The contractor shall update or develop test procedures for conducting each CSU test applicable to the required change."
5.5.2.2	- Replace first sentence with "The contractor shall modify the code and perform CSU testing ensuring that the algorithms and logic employed by each CSU affected by the change are correct and that the CSU satisfies its specified requirements."
5.5.2.4	- Replace "develop test" with "develop or update test"
	- Replace "CSC test" with "CSC test applicable to the required change"
	- Replace "in the CSC SDFs" with "in the affected CSC SDFs"
5.5.3	
5.5.4.a	- Replace "The source" with "The updates to the source"
5.5.4.b,c	- Replace "procedures" with "procedures affected by the change"
5.5.5.1	- Replace "updated" with "updates to the"
5.5.5.2	- Replace "the source" with "the updated source"
5.6.2.1	- Replace "integration and testing" with "integration and testing applicable to the required change"
	- Replace "each CSC" with "each CSC affected by the change"
5.6.3.1	- Replace with "For each formal qualification test case applicable to the required change identified in the updates to the Computer Program Test Procedure(s) (CPTPs), the contractor shall develop or update set-up procedures, procedures for conducting each test, and procedures for analyzing the test results. These procedures shall be documented in the Computer Program Test Procedures (CPTPs) for each affected CSCI."
5.6.3.2	- Replace "tests documented" with "tests applicable to the required change documented"
5.6.4.a	- Replace "in the software" with "in the affected software"
5.6.4.b	- Replace with "The updated Computer Program Test Procedures (CPTPs) for each affected CSCI"
5.6.4.c	- Replace "updated" with "updates to the"
5.6.5	- Replace "updated" with "updates to the"
5.7.2.1	- Replace "revisions to the Software Design Documents(s) (SDDs)" with "revisions to the updates to the Program Design Specification(s) (PDSs) and Program Description Document(s) (PDDs)"
	- Replace "CSCIs that undergo" with "CSCIs affected by the change that undergo"
5.7.2.2	- Replace "revisions to" with "revisions to the updates to"
	- Replace "the IDD" with "the updates to the IDD"
5.7.2.3	- Replace "produce updated source code for each CSCI" with "produce updated source code for each CSCI affected by the change."
	- Replace "each CSCI for delivery" with "each affected CSCI for delivery"

STATEMENT OF WORK ENTRY
FOR THE PRODUCTION/DEPLOYMENT AND OPERATIONAL SUPPORT PHASE EXAMPLE

Paragraph	Clarifications/Exceptions
5.7.2.4	- Replace "each CSCI" with "each CSCI that has been changed" - Replace "prepare a Software Product Specification (SPS)" with "provide updates to the Program Package Document (PPD)"
5.7.3.1	- Replace "Software Test Description (STD) for each CSCI" with "Computer Program Test Procedure (CPTP) for each CSCI affected by the change"
5.7.3.2	- Replace "each CSCI" with "each affected CSCI"
5.7.4.a	- Replace with "The Computer Program Test Report (CPTR) for each CSCI affected by the change"
5.7.5.2	- Replace "the Software Product Specification (SPS)" with "the updates to the Program Package Document (PPD)" - Replace "incorporated into the Product Baseline" with "delivered to the contracting agency."
Appendix B	

3.2 The following documents are named in DOD-STD-2167A and should be substituted with the DOD-STD-1679A equivalent whenever used:

DOD-STD-2167A terminology	Substitute DOD-STD-1679A terminology
System/Segment Design Document (SSDD)	System/Segment Specification (SSS)
Software Requirements Specification (SRS)	Program Performance Specification (PPS)
Software Design Document (SDD)	
(Sections 1, 2, 3, 7, and 8)	Program Design Specification (PDS)
(Sections 4, 5, and 6)	Program Description Document (PDD)
Software Product Specification (SPS)	Program Package Document (PPD)
Software Test Description (STD)	Computer Program Test Procedure (CPTP)
Software Test Report (STR)	Computer Program Test Report (CPTR)

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