

NOT MEASUREMENT  
SENSITIVE

MIL-HDBK-245D  
3 APRIL 1996  
SUPERSEDING  
MIL-HDBK-245C  
10 SEP 1991

# DEPARTMENT OF DEFENSE

## HANDBOOK FOR PREPARATION OF STATEMENT OF WORK (SOW)



This handbook is for guidance only. Do not cite this document as a requirement.

AMSC N/A

AREA MISC

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

## FOREWORD

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

2. This handbook is for guidance only and cannot be cited as a requirement in any DoD contract. Contractors may, at their option, utilize this document for guidance in preparing responses to Government requests for proposals.

3. This handbook provides guidance to enable personnel to create a completed contract Statement Of Work (SOW) applicable to any material acquisition life-cycle phase. It also covers the SOW preparation for non-personal services contracts.

4. Modern weapon systems have traditionally contained many more specifications and greater detailed SOWs than those of the past. Contrast the Army Signal Corps SOW for the Wright Brothers' heavier-than-air flying machine in 1908 to the Air Force SOW for the Advanced Tactical Fighter in 1986. Requirements in the 1908 SOW (e.g., be easily taken apart for transport in Army wagons and be capable of being reassembled for operation in an hour, carry 350 pounds for 125 miles, and maintain 40 miles per hours in still air) and other contract conditions were specified on one page. The requirements section in the 1986 SOW for the Air Force Advanced Tactical Fighter is 85 pages long with 300 paragraphs of requirements. Today's SOWs are much more complex requiring greater attention to detail.

5. The handbook is organized so that the SOW writer after reviewing Section 3, General Description, can proceed to that portion of Section 4, Detailed Requirements, that pertains to the type of SOW required. Each portion of Section 4 has detailed instructions on the specific requirements for each type of SOW tailored to specific needs. The specific instructions provide techniques for defining task elements, and a method for organizing these elements into a comprehensive SOW. Sample outlines and significant DO's and DONT's are provided.

6. The tendency of SOW writers is to include requirements which belong in other parts of a government contract. Contract requirements should be specified in Sections A - M and should not be restated in other parts of the contract. Quantitative technical requirements should be specified in the specification and not be restated in other parts of the contract. Work requirements should be specified in the SOW, and all data requirements for delivery, format, and content should be in the Contract Data Requirements List (CDRL) in conjunction with the appropriate Data Item Description (DID) respectively, with none of the requirements restated in other parts of the contract. Redundancy invites conflict.

7. This handbook provides guidance, following DoD direction, that will enable SOW writers to rely on commercial contracting practices. The new SOW will specify what tasks need to be accomplished but leave "how to" accomplish those tasks up to the contractor.

8. 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

## MIL-HDBK-245D

Naval Warfare Systems Command, Attn.: SPAWAR 05L1, 2451 Crystal Drive, Arlington, VA 22245-5200 by using the Standardization Document Improvement Proposal (DoD Form 1426) appearing at the end of this Handbook.

## CONTENTS

<b>Section/Para.</b>	<b>Page</b>
1 SCOPE	1
1.1 Background	1
1.2 Importance of SOW	1
1.3 Introduction of Statement of Objectives (SOO)	1
2 APPLICABLE DOCUMENTS	2
2.1 General	2
2.2 Government Documents	2
2.2.1 Specifications, standards, and handbooks	2
2.3 Other Government Documents, Drawings and Publications	2
3 GENERAL DESCRIPTION	4
3.1 Purpose	4
3.2 Relationship between Statement Of Work and Specification	4
3.3 Relationship Between the SOW and Contract	4
3.4 SOW and Contractor Performance	4
3.5 Relationship of Contract Sections	5
3.6 Standard Format	7
3.6.1 SOW Section 1 - Scope	7
3.6.2 SOW Section 2 - Applicable Documents	8
3.6.3 SOW Section 3 - Requirements	8
3.6.4 SOW Do's and Don'ts	9
3.6.5 Title Page and Table of Contents	10
3.6.6 Paragraph Numbering and Identification	10
3.6.7 Language Style	13
3.7 Data Management	13
3.7.1 Use of Contract Data Requirements List (CDRL) Data	13
3.7.2 Data Item Description (DID)	14
3.8 SOW Development	14
3.8.1 Work Breakdown Structure (WBS)	14
3.8.2 Development Approach	16
3.8.3 Non-Complex SOW Development	18
4 DETAIL REQUIREMENTS	19
4.1 SOW Phasing and Results	19
4.1.1 Determining Mission Needs and Identifying Deficiencies	19
4.1.1.1 Elements of Information	19
4.1.1.2 Requirements	19
4.1.2 Phase O: Concept Exploration	20
4.1.2.1 Detailed Requirements	20
4.1.3 Phase I: Program Definition and Risk Reduction	20
4.1.3.1 Detailed Requirements	20
4.1.4 Phase II: Engineering and Manufacturing Development	20
4.1.4.1 Detailed Requirements	21

4.1.5	Phase III: Production, Deployment, and Operational Support	21
4.1.5.1	Product Specifications	21
4.1.6	Examples	21
4.2	Services (Non-personal)	21
4.2.1	Product Definition	23
4.2.2	Terminology	23
4.2.3	Word Usage	24
5	STATEMENT OF OBJECTIVES (SOO) METHOD	25
5.1	SOO Introduction	25
5.1.1	SOO Purpose	25
5.2	SOO Content	25
5.3	SOO Development Approach	26
5.4	SOO-RFP Relationships	27
6	NOTES	29
6.1	Subject term (key word) listing	29
6.2	Changes from previous issue	29

## APPENDICES

APPENDIX A	ACRONYMS	30
APPENDIX B	WORK WORDS/PRODUCT WORDS	31
APPENDIX C	PHRASES HAVING MULTIPLE MEANINGS	34
APPENDIX D1	EXAMPLE SOW FOR PRODUCTS	37
APPENDIX D2	EXAMPLE SOW FOR SERVICES	40
APPENDIX E	EXAMPLE SOO	42

## FIGURES

Figure 1.	Relationship of Government solicitation/contract sections to SOW/SOO	6
Figure 2.	Cross reference matrix	7
Figure 3.	Sample Title Page	11
Figure 4.	Sample Table of Contents	12
Figure 5.	SPEC-SOW-CDRL-DID Relationship	15
Figure 6.	Systematic approach to SOW preparation	17
Figure 7.	SOW format	22
Figure 8.	Notional Statement of objectives (SOO) format	26

## 1 SCOPE

1.1 Background. This handbook applies to the preparation of Statements of Work (SOWs) for projects and programs that have deliverables and/or services performed. It is written to implement the acquisition policies established in DoDD 5000.1. It covers the preparation of SOWs which correlate to the acquisition life cycle phases identified in Department of Defense (DoD) Acquisition Instructions such as DoDI 5000.2. This handbook is for SOWs in DoD solicitations and contracts and covers work requirements, in conjunction with applicable performance/design requirements contained in specifications, but also data deliverables contained in Contract Data Requirements Lists (CDRLs). The Federal Acquisition Regulations (FAR) and Defense Federal Acquisition Regulation Supplements (DFARS) discuss the essentiality of the SOW for sound contracting. An offeror submits a proposal based on his perception of the Government's needs as defined in the RFP. Precisely stated requirements will enable the offeror and the Government to negotiate a fair price for the deliverables and/or services to be provided. This handbook has been developed as a framework to assist the responsible manager in providing a consistent, orderly, and complete description of work required.

1.2 Importance of SOW. The majority of government contracts include a SOW which forms the basis for successful performance by the contractor and effective administration of the contract by the government. A well-written SOW enhances the opportunity for all potential offerors to compete equally for Government contracts and serves as the standard for determining if the contractor meets the stated performance requirements.

1.3 Introduction of Statement of Objectives (SOO). This document introduces a new concept called the SOO which shifts the responsibility for preparing the SOW from the government to the solicitation respondents. Following recent DoD direction to lower Government costs by encouraging innovative contract options and flexible design solutions, the SOO captures the top level objectives of a solicitation and allows the offerors complete freedom in the structure and definition of SOW tasks as they apply to the proposed approach. However, the requirement, content and purpose of the SOW in the contract remain unchanged. The SOO concept is explained in detail in Section 5.

## 2 APPLICABLE DOCUMENTS

2.1 General. The documents listed below are not necessarily all of the documents referenced herein, but are the ones that are needed in order to fully understand the information provided by this handbook.

### 2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the latest issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto.

#### STANDARDS

##### DEPARTMENT OF DEFENSE

MIL-STD-881	Work Breakdown Structures for Defense Material Items
MIL-STD-961	Department of Defense Standard Practice for Defense Specifications

#### HANDBOOKS

##### DEPARTMENT OF DEFENSE

MIL-HDBK-248	Acquisition Streamlining
--------------	--------------------------

2.3 Other Government Documents, Drawings and Publications. The following Government documents, drawings, and publications form a part of this handbook to the extent specified herein:

#### REGULATION

##### FEDERAL ACQUISITION REGULATION

FAR 52.215-33	Order of Precedence
---------------	---------------------

##### DEFENSE FEDERAL ACQUISITION REGULATION SUPPLEMENTS

DFARS 211	Describing Agency Needs
DFARS 212	Acquisition of Commercial Items - General
DFARS 227.71	Rights in Technical Data
DFARS 237.104	Personal Services Contracts
DFARS 252.211-7000	Acquisition Streamlining

MANUALS

DEPARTMENT OF DEFENSE

DoD 5010.12-L	Acquisition Management System and Data Requirements Control List (AMSDL)
DoD 5010.12-M	Procedures for the Acquisition and Management of Technical Data

DIRECTIVES

DEPARTMENT OF DEFENSE

DoDD 5000.1	Defense Acquisition
DoDI 5000.2	Defense Acquisition Management Policies and Procedures

FORMS

DEPARTMENT OF DEFENSE

DD Form 1423	Contract Data Requirements List (CDRL)
DD Form 1664	Data Item Description (DID)

(Unless otherwise indicated, copies of the above specifications, standards, handbooks, or publications are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094. Any documents required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)



### 3 GENERAL DESCRIPTION

3.1 Purpose. The SOW should specify in clear, understandable terms the work to be done in developing or producing the goods to be delivered or services to be performed by a contractor. Preparation of an effective SOW requires both an understanding of the goods or services that are needed to satisfy a particular requirement and an ability to define what is required in specific, performance-based, quantitative terms. A SOW prepared in explicit terms will enable offerors to clearly understand the government's needs. This facilitates the preparation of responsive proposals and delivery of the required goods or services. A well-written SOW also aids the Government in conduct of the source selection and contract administration after award. A Data Requirements Review Board (DRRB) may review each SOW to ensure compliance with the policy, guidance and procedures contained in this handbook (see DoD 5010.12-M for requirements for conducting the DRRB). The SOW is aligned with the acquisition milestones and phases discussed in detail in Section 4.

3.2 Relationship between Statement Of Work and Specification. The SOW defines (either directly or by reference to other documents) all work (non-specification) performance requirements for contractor effort. Qualitative and quantitative design and performance requirements are contained in specifications developed according to MIL-STD-961. Such specifications are typically referenced in the SOW, but the specific qualitative or quantitative technical requirements should not be spelled out in the SOW. For example, the referenced specification may cite reliability and maintainability requirements in terms of quantifiable mean-time-between failures (MTBF) and mean-time-to-repair (MTTR); the SOW should task the contractor to establish, implement and control a reliability and maintainability program.

3.3 Relationship Between the SOW and Contract. The SOW should be compatible with these provisions:

Requirements that are mandated by law, established DoD policy or necessary for effective management of its acquisition, operation, or support.

At the outset of development, system-level requirements should be specified in terms of mission-performance, operational effectiveness, and operational suitability.

During all acquisition phases, solicitations and contracts, the SOW should state management requirements in terms of results needed rather than "how to manage" procedures for achieving those results.

DFAR 252.211-7000, Acquisition Streamlining, is required in all solicitations and contracts for systems acquisition programs. This enables a contractor to effectively evaluate and recommend the tailored application of management systems and specifications and standards for use in the appropriate phase of the program life cycle.

3.4 SOW and Contractor Performance. After contractor selection and contract award, the contract SOW becomes a standard for measuring contractor performance. Consequently, the

SOW writer must consider the contractual and legal implications of the SOW during its preparation. As the contracted effort progresses, the government and the contractor will refer to the SOW to determine their respective rights and obligations. In this respect, the SOW defines the contract and is subject to the interpretations of contract law. The SOW must clearly define the work to be performed, since the language detailing the contractor's effort may be pertinent to legal questions concerning the scope of work. In a dispute concerning performance, rights, or obligations, clearly defined requirements will enhance the legal enforceability of a SOW, which has a high level of precedence in the solicitation document and contract as stated in FAR 52.215-33.

**3.5 Relationship of Contract Sections.** The government Request for Proposal (RFP) or solicitation defines the government's requirements and constitutes the cornerstone of the program, as it ultimately shapes the resultant contract. Therefore, the SOW must be consistent with all sections of the RFP. The SOW preparer should work closely with the overall RFP drafter and all contract section authors to achieve consistency. If acceptance and inspection of supplies or services is required to satisfy the contract, RFP Section E should address the acceptance criteria. Data deliverables are identified in Contract Data Requirements List (CDRL) exhibits to the contract. Section F (Deliveries or Performance) requires delivery of data listed in these exhibits. Clauses required by law, regulation, or any other clauses that may apply to a resulting contract are cited in Section I (Contract Clauses). Section J is a listing of all exhibits and attachments to the contract. Sections K, L, and M apply only to RFP's. They are contained at the end so that when the contract is awarded, they can be removed. Section K includes provisions that require representations, certifications, or the submission of other information by offerors. Section L includes provisions and other information or instructions to guide bidders/offerors in preparing their offers or bids in a manner that is responsive to the government's RFP. Section M identifies the factors that will be considered in awarding the contract. It contains the evaluation criteria listed in order of importance and other factors for award. The SOW and Work Breakdown Structure (WBS) are utilized in preparing the corresponding CDRL, Section L, Section M, and other parts of the RFP/contract. The relationship of RFP/contract sections to the SOW is illustrated on Figure 1. Figure 1 is provided for general guidance and shows that the SOW and SOO may, at the preference of the procuring activity, be placed in one of several different locations in the solicitation. Because of the complex interrelationships among RFP/contract documents, use of a cross-reference matrix may be helpful (see Figure 2).

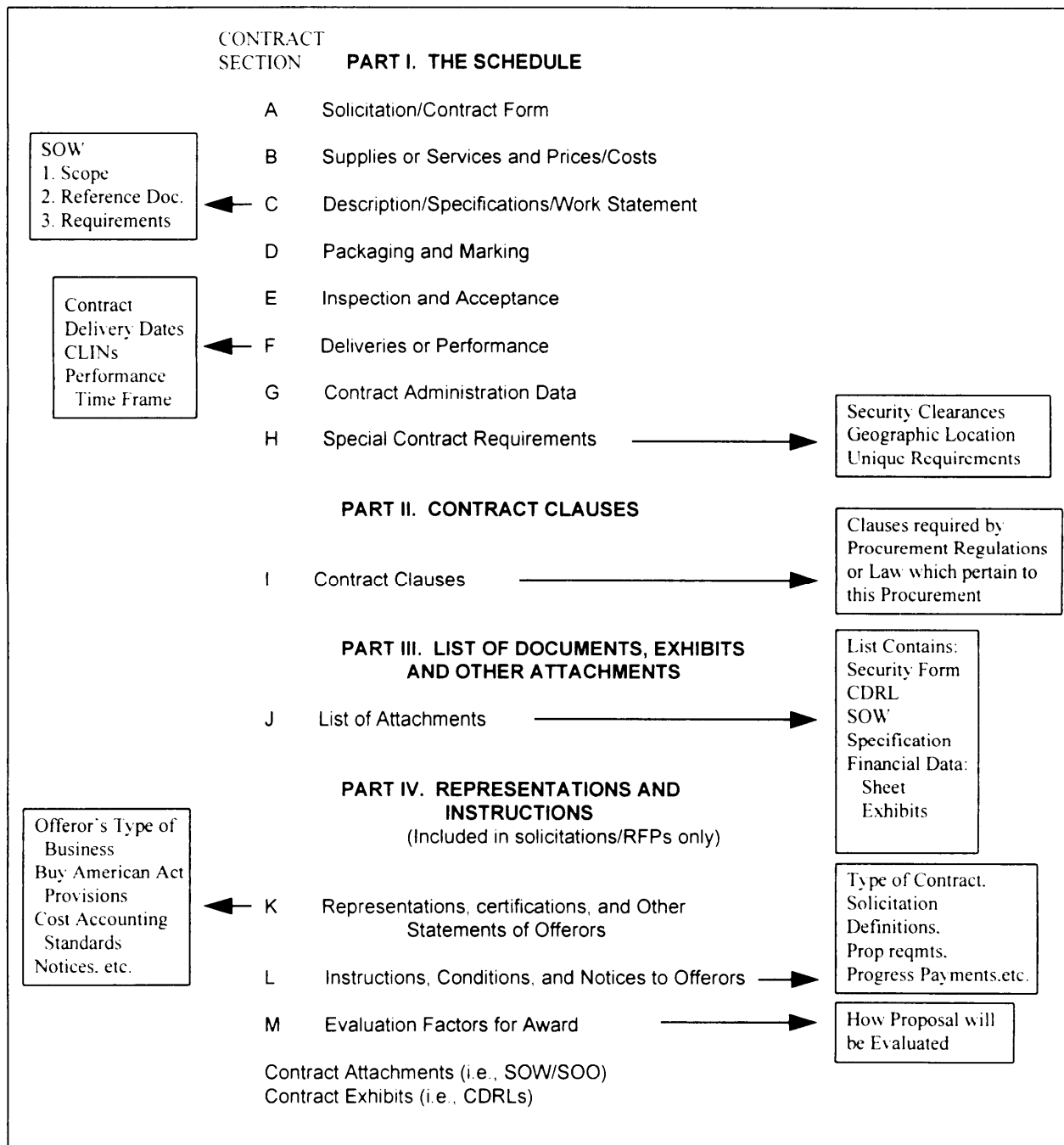


FIGURE 1. Relationship of Government solicitation/contract sections to SOW/SOO.

The following matrix is intended to reduce internal RFP inconsistencies and aid in proposal preparation. It is provided as a reference tool for information only. In the event of conflict between this matrix and any other section of the RFP, the other section shall take precedence.

WORK DESCR	WBS ELEM	SOW PARA	CLIN	CDRL	INSTR TO OFFERORS (SEC L)	EVAL FACTORS (SEC M)	PROP LOC
Design B	2.2	3.2.2	0001	N/A	3.B.1	Tech 1.A	V1-p.64
Build A	2.3	3.2.3	0002	A001	3.B.2	Tech 1.B	V1-p.75

FIGURE 2. Cross reference matrix.

3.6 Standard Format. The standard format for the SOW is as follows (subject to variations specified in Section 4 for specific types of SOWs):

<u>SOW Section</u>	<u>Title</u>
1	SCOPE
2	APPLICABLE DOCUMENTS
3	REQUIREMENTS

Deviations from the standard format may be made by the writer when necessary to accommodate overriding program needs.

3.6.1 SOW Section 1 - Scope. This Section includes a brief statement of what the SOW should cover. The scope paragraph defines the breadth and limitations of the work to be done. In some cases, the use of an introduction, background, or both, is preferred. Separate indentures under this Section are used in SOWs to accommodate complex acquisitions requiring lengthy background information. Background information should be limited to only that information needed to acquaint the proposer with the basic acquisition requirement. The items listed below should not be included in the "Scope" Section.

- a. Directions to the contractor to perform work tasks.
- b. Specification of data requirements.
- c. Description of deliverable products.

3.6.2 SOW Section 2 - Applicable Documents. Military handbooks, government instructions, service regulations, technical orders, and policy letters, as a type, are not written in language suitable for contract application. In the event requirements of these documents must be included in a SOW, excerpts only should be used and should be made into either a clear task statement or a clear reference statement for guidance only, and not for contract compliance. Any documents called out in Section 2 of the SOW should have the specific version referenced, i.e. by date or by revision letter.

The SOW writer should refer to DFARS 252.211-7000 with respect to referenced documents and begin with a zero base situation. The requirement for any specification and standard should be justified before being placed in Section 2 of the SOW. Therefore, Section 2 should not be prepared until the draft of the requirements Section, Section 3, is complete. Sections 2 and 3 are reciprocal. Documents invoked by specific reference in Section 3 of the SOW must be identified and listed in Section 2. When invoked in Section 3 of the SOW, the application should be tailored to invoke only those minimum requirements from the document which are absolutely necessary for program success as described in MIL-HDBK-248. The applicability of each document listed in Section 2 of the SOW should be specified in Section 3 and identify only that portion needed to perform the work. Improper document referencing (e.g., blanket imposition) was often a major cost driver since total compliance with a document listed in Section 2 of the SOW was implied unless Section 3 specified otherwise.

3.6.3 SOW Section 3 - Requirements. Specific work tasks are called for in SOW Section 3 (see Appendix D). These tasks, developed to satisfy program needs, are essentially the contractor work requirements. Although the Source Selection Evaluation Board (SSEB) is responsible for the examination of SOW requirements in order to eliminate nonessential requirements, such examinations may be accomplished by the functional technical groups during development of the SOW. A well-written SOW has the following attributes:

- a. Specifies requirements clearly to permit the government and offerors to estimate the probable cost and the offeror to determine the levels of expertise, manpower, and other resources needed to accomplish the task.
- b. States the specific duties of the contractor in such a way that the contractor knows what is required and can complete all tasks to the satisfaction of the contract administration office.
- c. Written so specifically that there is no question of whether the contractor is obligated to perform specific tasks.
- d. References only the absolute minimum applicable specifications and standards needed. Selectively invokes documents only to the extent required to satisfy the existing requirements. (The tailoring of reference document requirements should result in a reduction to the overall costs otherwise incurred if all requirements stated in a document are invoked).

- e. Separates general information from direction so that background information and suggested procedures are clearly distinguishable from contractor responsibilities.
- f. Avoids directing how tasks are to be performed and states only what results are required.

#### 3.6.4 SOW Do's and Don'ts.

##### a. Do's:

- Select a competent team with an experienced team leader.
- Exclude “how to” requirements since the offeror should be tasked to provide the deliverables under the contract in the most cost effective manner.
- Use the program Work Breakdown Structure (WBS), as discussed in paragraph 3.8.1 in this handbook to outline the required work effort.
- Set SOW objectives in support of the Acquisition Plan (AP), if applicable.
- Explicitly define the tailored limitations of all standards and specifications cited.
- Exclude design control or hardware performance parameters because these requirements should be covered in a specification.
- Educate personnel with respect to acquisition streamlining. (DFARS 211.002-70 Contract Clause).
- Give priority to commercial items over specification items when the former satisfies military requirements.
- Give priority to commercial practices as a means of acquisition (DFARS 212 Acquisition of Commercial Items - General).

##### b. Don'ts:

- Order, describe, or discuss Contract Data Requirements List (CDRL) data.
- Invoke, cite, or discuss a Data Item Description (DID). Although the text of the SOW should not include the data format and content preparation instructions and/or data delivery requirements, a data item description number listed on the CDRL may be cross-referenced in the SOW.
- Specify technical proposal criteria or evaluation factors.

- Establish a delivery schedule. (May include significant milestones for clarity.)
- Specify design control parameters or the performance of hardware because these items should be covered in a specification.
- Impose on the contractor a Government format when a contractor format is acceptable.
- Overspecify. Specify only what is required and let the contractor establish the best method to fulfill the requirement.
- Invoke in-house management instructions.
- Use the SOW to establish or amend a specification.
- Invoke handbooks, service regulations, technical orders, or any other document not specifically written according to DoD standards. (Non-government documents excluded.)

**3.6.5 Title Page and Table of Contents.** All SOWs should have a title page or cover that shows the SOW title, preparation date, procurement request number or contract number, revision number, date, and identity of the preparing organization (see Figure 3). A table of contents should be used when the SOW exceeds five pages (see Figure 4).

**3.6.6 Paragraph Numbering and Identification.** Each paragraph and subparagraph should be numbered consecutively within each SOW Section using a period to separate the number representing each sublevel. Paragraph numbering should be limited to the third sublevel, if possible, as shown in the following example for SOW Section 3:

Requirement	3
1st Sublevel	3.1
2nd Sublevel	3.1.1
3rd Sublevel	3.1.1.1

Paragraph breakdowns should be kept to that level necessary to clearly define required contractor tasks. Only one task should be provided in a numbered paragraph or sub paragraph to facilitate costing, referencing and tailoring of tasks. Each paragraph and sub-paragraph should be titled.

13 NOV 1995

STATEMENT OF WORK  
FOR  
RAPID DEPLOYABLE COMMUNICATIONS SYSTEM

Prepared by  
SPACE AND NAVAL WARFARE SYSTEMS COMMAND

FIGURE 3. Sample Title Page.



CONTENTS	
Section/Para	Page
1	Scope
2	Applicable documents
2.1	Department of Defense specifications
2.2	Department of Defense standards
2.3	Other publications
3	Requirements
3.1	General Requirements
3.2	Technical Objectives and Goals
3.3	Specific Requirements
3.3.1	Contractor Services
3.3.2	Integrated Logistics Support
3.3.3	Management Systems Requirements
3.3.4	Production Planning for Phase II
3.3.5	Reliability Program
3.3.6	Maintainability Program

FIGURE 4. Sample Table of Contents.

**3.6.7 Language Style.** SOW requirements should be written in language understandable to all potential program participants. Requirements should be stated explicitly in a topical, logical, chronological, or similarly structured order, avoiding words which allow for multiple interpretations. Use technical language sparingly with simple wording predominating in concise sentences. Use "shall" whenever a provision is mandatory. "Will" expresses a declaration of purpose or intent: for example, "The Government will review all recommendations and provide direction within thirty calendar days". Use active rather than passive voice: for example, "The contractor shall establish a program", not "A program shall be established by the contractor."

Spell out acronyms and abbreviations the first time and put the abbreviated version in parentheses after the spelled-out phrases. This will define them for each subsequent use. Acronyms and abbreviations may be defined in a glossary. Many of the common acronyms used are found in Appendix A.

Use verbs that identify work and performance task requirements (See Appendix B) and answer the explicit question: "What are the work requirements?" When selecting the appropriate work word which properly expresses the degree of contractor involvement, the SOW writer must explicitly define the total nature of the work requirement.

Avoid using "Any," "Either," "And/Or," as these words imply that the contractor can make a choice which may not support the intent of the SOW. Do not use pronouns. Repeat the noun to avoid any misinterpretation. Terminology should be consistent throughout the SOW. When referring to a specific item, use the same phrase or word, particularly when referring to technical terms and items. Where words can be spelled in several different ways, employ the most common spelling. Make every effort to avoid ambiguity. A list of ambiguous phrases is provided in Appendix C.

**3.7 Data Management.** As the contractor performs and completes the SOW tasks, data may be developed. Submissions of this data are generally expensive. Proper tailoring and scheduling of data submission items requires particular attention by the SOW preparers. Data costs can be minimized by selectively eliminating unnecessary reports and requiring appropriately phased submissions. A review of anticipated data requirements should therefore include definition of a time line defined for data submission. The contractor's format may be the acceptable form for submission of data products. The SOW preparer should make every effort to ensure that the CDRLs and DIDs reflect the anticipated need for data and to ascertain whether the specific data required will in fact be generated and available prior to the proposed delivery date stated on the proposed CDRL.

**3.7.1 Use of Contract Data Requirements List (CDRL) Data.** The ordering and delivery of data which the Government requires are specified and scheduled through the use of the Contract Data Requirements List (CDRL), DD Form 1423, in conjunction with the appropriate Data Item Description (DID), DD Form 1664. The CDRL is used to order the data required and tailor the DID. The DID's use is to describe the data's format and content requirements. The SOW task(s)

that will produce data requirements should be referenced in Block 5 of the CDRL. The SOW author should exercise considerable care and attention to the data delivery implications of the SOW. While data may be inherently generated by a work task, recording and delivering the data in a specific format are cost drivers that must be considered when preparing the SOW and CDRLs. The CDRL should specify that the contractor's format is acceptable, wherever possible.

**3.7.2 Data Item Description (DID).** After the need for recording and delivery of data resulting from a work task has been determined, appropriate DIDs should be selected from DoD 5010.12-L, Acquisition Management System and Data Requirements Control List (AMSDL). If certain elements of data are not needed, the DID should be tailored downward noting deletions in CDRL Block 16. When the contractor format for a data product will meet the Government's needs, it should be specified in block 16 of the CDRL if the DID does not already state contractor format is acceptable. The CDRL should only require data specifically generated in a SOW work task. The SOW, and not the DID, must task the contractor to perform work. At the end of each SOW task paragraph, the DIDs that are associated with the effort described in the task may be identified in parentheses.

To understand the relationship of a SOW to the CDRL and DID (see Figure 5), consider the example where the SOW establishes a requirement that, "the contractor shall establish, implement and control a Configuration Management (CM) program". The associated CDRL would order a CM data item and identify due date, distribution and other such parameters while the DID would provide the format and content requirements for that particular CM item, with non-essential references tailored out of the DID.

**3.8 SOW Development.** Section 4 of this handbook describes how the SOW content may change depending on which acquisition phase it supports. The following paragraphs will describe a general planning and development approach that is applicable to all SOWs regardless of which acquisition phase is to be supported.

**3.8.1 Work Breakdown Structure (WBS).** A WBS should be used in developing the SOW. MIL-STD-881 may be used for guidance. A WBS provides the framework for a disciplined approach of structuring and defining the total project or program. It is a product-oriented family tree composed of equipment, services, and other items which make up the project or program, and provides the basis for progress reporting, performance and engineering evaluations, and financial data reporting. When preparing the SOW a complete application of a WBS may not be necessary in all programs, however, the underlying philosophy and structured approach can and should be applied. The Contract Line Item Number (CLIN) and the SOW should be constructed to correlate with the WBS. Use of a WBS during SOW development facilitates a logical arrangement of the SOW elements and provides a convenient check-list to trace all necessary elements of the program and ensure that they are addressed in the SOW. The WBS will evolve into greater detail as the system definition and acquisition phases advance. For each phase, the WBS must be in sufficient detail to cover all the required work in that phase, as well as to produce the technical information needed for the next phase. The WBS may be tailored to the minimum level required to manage program risk.

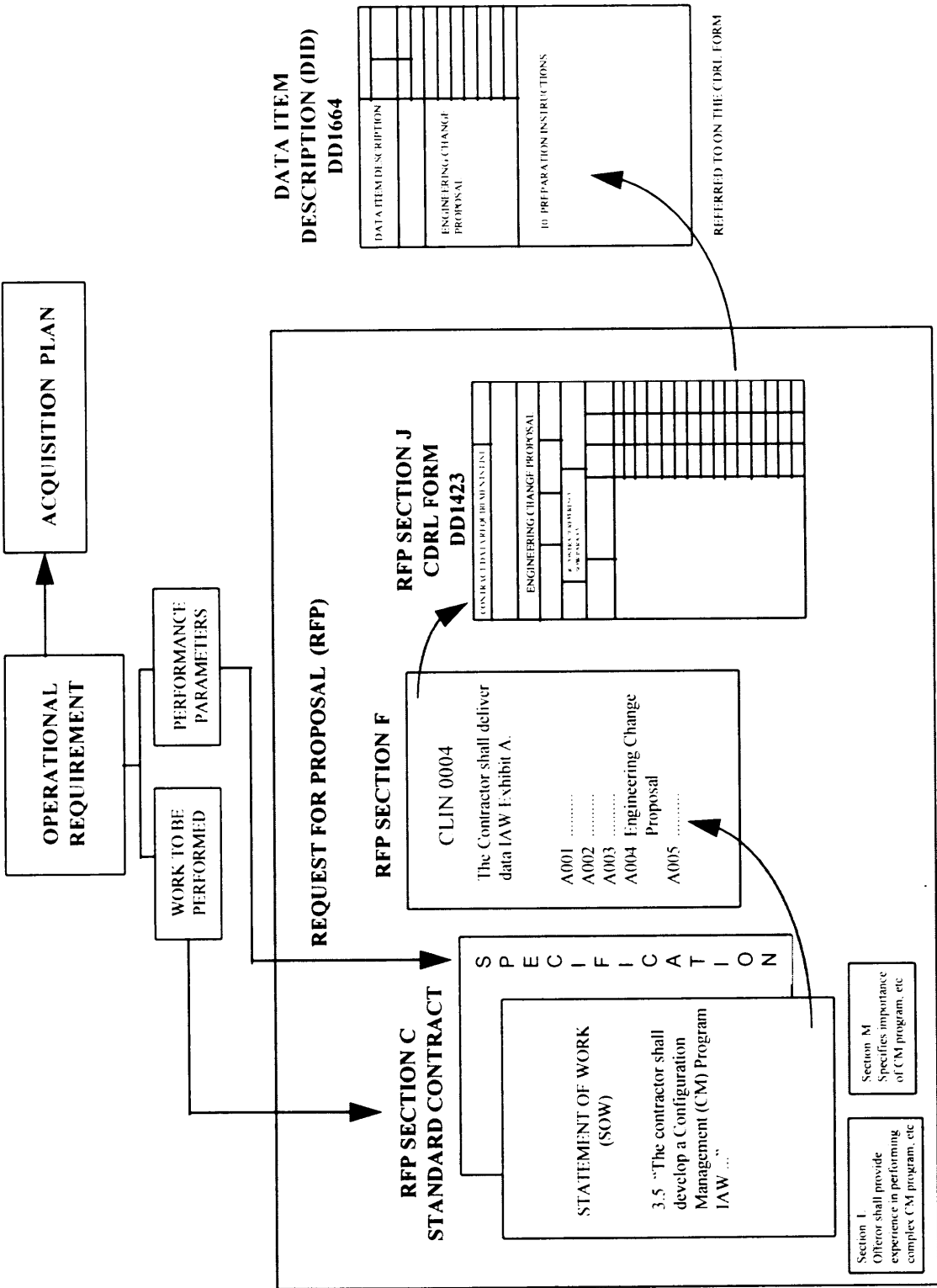


FIGURE 5. SPEC-SOW-CDRL-DID Relationship.

3.8.2 Development Approach. A systematic process is essential for SOW development. Select a competent team (expert in managerial, technical and contractual fields) with a team leader who is experienced in systems acquisition and SOW development. The SOW preparer and all contract section authors must first understand all program requirements to be supported. Following the systematic process shown on figure 6, the team should:

- a. Ensure that only those tasks which add value to the product, whether a management system or technical requirement, are included in the SOW. (See DFAR 211.002 policy.)
- b. Conduct market research to determine whether commercial items or nondevelopmental items are available to meet program requirements.
- c. Review the requirements documents which authorize the program and define its basic objectives.
- d. Review the various DoD/Services/Joint Services requirements documents for program management, acquisition and control impact.
- e. Prepare a bibliography citing the specific portions of all applicable governing instructions, directives, specifications, and standards with which the program must comply. Keep these requirements to the absolute minimum and do not include citations that direct "how" work is to be performed.
- f. Categorize the work described by the program WBS into that which will be done in-house and that which needs to be contracted.
- g. Compile all work that needs to be contracted into an Acquisition Plan (if applicable) which will identify the various RFPs/contracts required, type of contract, the time-phasing, estimated cost, method of contractor selection/award, and period of performance among other things. For each RFP/contract so identified, a SOW must be prepared covering all of the WBS work elements included in that RFP/contract.
- h. Identify all organizations and persons who will participate in preparing the SOW, and determine the participants' areas of responsibility.
- i. Prepare the SOW following the guidelines of this handbook. For each WBS work element, identify tasks that define the scope of the work effort to satisfy the minimal needs of the program and identify required data deliverables.
- j. Ensure that the specifications are consistent with the SOW. Ensure technical performance requirements are properly contained in the system specification and not in the SOW.

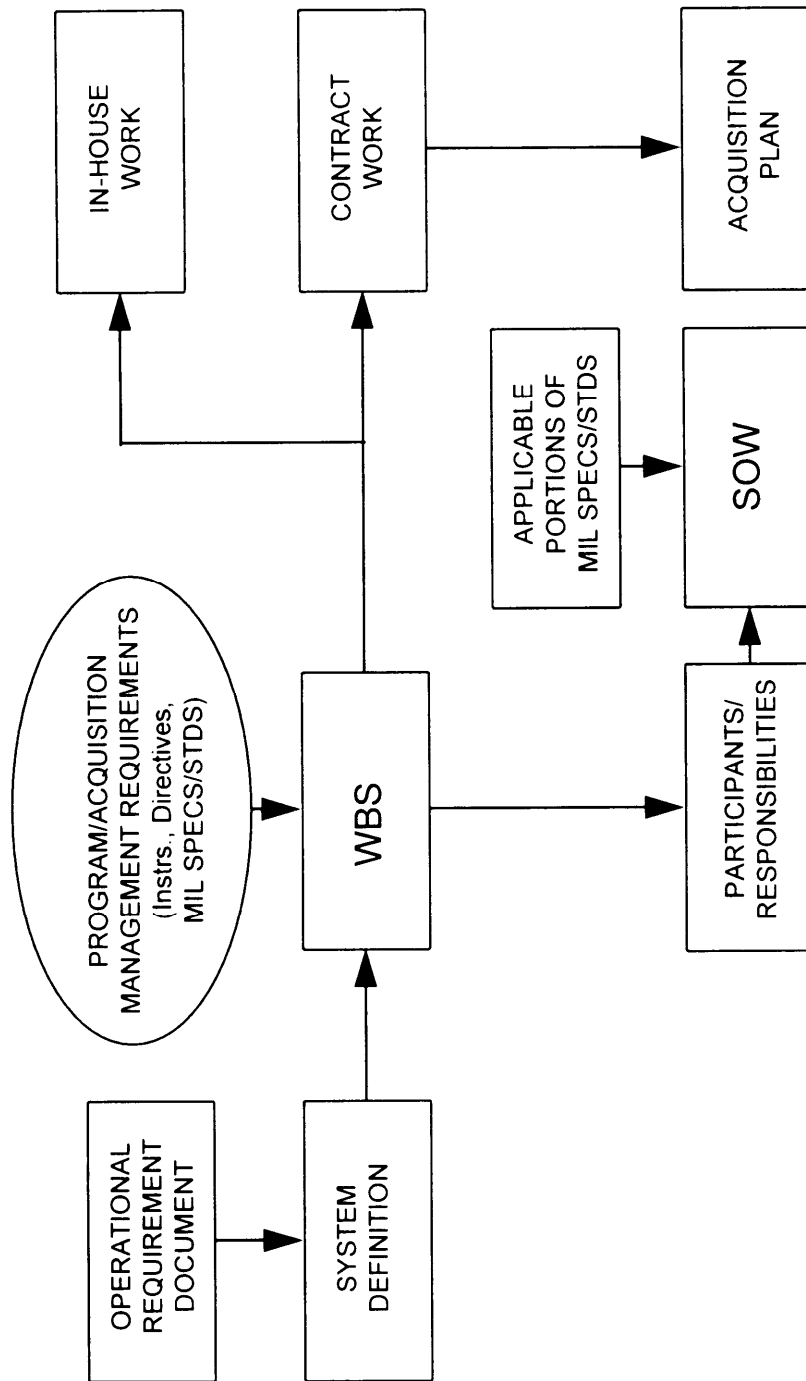


FIGURE 6. Systematic approach to SOW preparation.

k. Utilize the SOW and WBS in preparing the corresponding CDRL, Section L Instructions to Offerors, Section M Evaluation Factors for Award, and other parts of the RFP/contract following DFARS.

3.8.3 Non-Complex SOW Development. It is essential to establish a SOW outline for non-complex acquisitions which do not lend themselves to utilization of a WBS.

- a. Define end items (line items) to be acquired, such as hardware, software, engineering analysis, software validation or simulation, etc.
- b. Establish the requirements which apply to each end item and, as a minimum, develop a bibliography as described in 3.8.2.e above.
- c. Determine what services or data will be needed to support each end item after delivery to the Government.
- d. Identify all participants (see 3.8.2.h)
- e. Prepare the SOW following the guidelines of this handbook.

## 4 DETAIL REQUIREMENTS

4.1 SOW Phasing and Results. All programs, including highly classified programs, should accomplish certain core activities. These activities must be tailored to satisfy an identified need using common sense and sound business practices. The acquisition process is structured in logical phases separated by major decision points called milestones. Each milestone is an opportunity for a review to determine if the program should continue. The decision to enter the next phase or not is based on results obtained in the acquisition phase preceding that milestone. SOW requirements are tailored to support the acquisition of information, hardware, software, technical data and the logistic support required during any particular life cycle phase.

4.1.1 Determining Mission Needs and Identifying Deficiencies. All acquisition programs are based on identified, documented, and validated mission needs. Mission needs result from assessments of current and projected capability requirements. Mission needs may establish a new operational capability, improve an existing capability, or exploit an opportunity to reduce costs or enhance performance. If the potential solution results in a new program, an appropriate level review should be held to document its validity and joint potential, and confirm that the requirements have been met or considered.

4.1.1.1 Elements of Information. Where preliminary studies involving systems analyses, preliminary cost effectiveness, or trade-off studies are to be contracted, there are certain distinctive elements of information to be included in the SOW. These can be included in either the introduction or background descriptions of the Scope in Section 1.

These areas are as follows:

a. *Statement of the problem(s)*. A brief description and background of the problem(s) to be solved, and a succinct discussion of the need giving rise to this requirement.

b. *System description*. A short functional description of the overall system. If practicable, a pictorial representation that will quickly orient the reader to the desired system and the proposed use should be considered for inclusion in this Section of the SOW.

c. *Major milestones*. A graphic display of major program milestones should be included in the background information.

4.1.1.2 Requirements. The Section 3 paragraphs will establish what the contractor shall do, and may properly contain discussions of the following requirements and conditions:

a. *Component and subsystem relationships*. A functional flow diagram, explaining what is visualized as possible or practical at this time and showing the system and each associated subsystem (or major component).

b. *Alternative courses of development*. A summation of the alternatives for development as they are visualized at this time, pointing out the possible differences in operational



effectiveness in terms of performance, reliability, maintainability and operability. The SOW should clearly indicate the basis of comparison, e.g., previous experience or extrapolations.

c. *Phasing.* Where the studies to be accomplished are divisible into time phases or into other separable areas of work. The SOW should spell out these requirements.

#### 4.1.2 Phase O: Concept Exploration - Examining Alternative Concepts to Meet Deficiencies.

Phase objective is to define and evaluate alternative system design concepts which fulfill mission needs and program objectives. During this phase, technological advances, concept feasibility, schedules and costs are evaluated by the program manager in order to identify a viable solution to a military requirement. Because of the evolving nature of the desired product, the SOW used during this phase must be limited to an expression of the mission need objectives and goals. The precision with which operational goals or technical objectives can be defined during this phase will impact the Government's and the contractor's ability to estimate cost and risk. In the majority of early stage research programs, including preliminary explorations and studies, the work to be performed cannot be described precisely. When preliminary exploration and studies have indicated a high probability that the development is feasible a more definitive SOW can be drawn. Based on program needs, the contractor in this phase may develop a Type A system or system/segment specification for use by the Government in the solicitation for the next phase.

4.1.2.1 Detailed Requirements. The Concept Exploration Phase SOW instructs the contractor to assess the merits of the concepts and define the most promising concepts in broad terms of objectives for cost, schedule, performance and overall acquisition strategy. Initial measures of effectiveness and performance are also identified in this phase.

4.1.3 Phase I: Program Definition and Risk Reduction. During this Phase, the program becomes defined as one or more concepts, designs, and/or technologies are investigated. Early development models, demonstrations, and operational assessments are conducted as required to reduce risks prior entering the program's next phase. Cost, schedule and performance trade-offs are conducted. Key activities include: strategy review, identification of program specific accomplishments for the next phase, initial manpower estimates, and the identification of potential environmental impacts.

4.1.3.1 Detailed Requirements. The Program Definition phase SOW should contain enough detail to enable the successful bidders to translate program requirements into an effective development program. It should delineate specific tasks for evolving the system requirements into system type specifications or system segment specifications.

4.1.4 Phase II: Engineering and Manufacturing Development - Detailed Design, Integration Testing, and Establishing a Manufacturing Capability. The objectives of this phase are: to translate the selected design into a stable, producible, supportable, and cost effective design; to validate the manufacturing or production process; and to demonstrate system capabilities through testing.

4.1.4.1 Detailed Requirements. The Engineering and Manufacturing Development phase SOW efforts include verification that adequate resources have been programmed to support production, deployment, and logistics support of the operational system; verification of the system's software design, coding, integration and tests.

4.1.5 Phase III: Production, Deployment, and Operational Support. In the Production, Deployment, and Operational Support Phase, the system developed in the previous phases is produced and installed and any support required for operational use is provided. All tasks which were deferred until the Production Phase are addressed and action is initiated for their completion. These include efforts deferred in support areas such as, supply support (provisioning), technical publications and training. Systems engineering management will ensure on a continuing basis that the design is feasible and sound. Additionally, they will initiate, evaluate and integrate engineering changes throughout the Production Phase to provide the capability for continued support after the system is deployed. The evaluation of system Engineering Change Proposals (ECPs) and value engineering changes, and the preparation for turnover of system operation to the using service are important tasks to be accomplished during this phase. The need for continued system effectiveness and product assurance work as well as CM work will be based on the impact of engineering changes. Operation and Maintenance manuals, and supply support documents, are updated during this Phase and the finished system is tested and approved for DoD use.

4.1.5.1 Product Specifications. The product specification is the primary procurement control document used during the production phase to determine the product baseline, control design, and establish system performance. The content of the specifications is limited to requirements intended to control design and establish performance requirement of the purchased product. The SOW should not conflict with the product specification. Typical SOW requirements which should be tailored to the minimal Production Phase needs are: ILS, CM, technical manuals and publications, training, quality program requirements, calibration and instrumentation, reliability, maintainability, human factors, safety, Planned Maintenance Subsystem (PMS) and other contractor provided services needed in conjunction with the production buy. Many of these areas have already been addressed during the development phases and should now be well defined and documented. Some SOW tasks are no longer required, while others require continued effort or the introduction of new tasks compatible with the Production Phase.

4.1.6 Examples. Figure 7 provides a standard SOW format, and Appendix D illustrates an example of SOWs for both products and services. The example SOWs are intentionally incomplete in the interest of brevity.

4.2 Services (Non-personal). The product of a non-personal services SOW (Appendix D2) is the result of some work task being performed. The requirements that establish the work must be defined in terms of work words and not product words. The need for non-personal services may occur at any time. If the work to be performed is painting a building, the task

## STATEMENT OF WORK FORMAT

1 Scope. Include a statement about what this SOW covers. Some background information may be helpful to clarify the needs of the procurement.

1.1 Background. Do not discuss work tasks in Section 1.

2 Applicable Documents. All documents invoked in the requirements section of the SOW must be listed in this section by document number and title. These documents may include Standards, Specifications and other reference documents needed to identify and clarify the work task or deliverable product. However, DoD and Departmental Instructions are provided to control in-house work effort and should not be used in the SOW to control contractor effort. Also, any document listed in this section must be invoked and selectively tailored to meet minimal needs of the planned procurement in the requirements section. The exact version of any document cited in the SOW should be specified in this section.

2.1 Department of Defense specifications.

2.2 Department of Defense standards.

2.3 Other Government documents.

2.4 Industry documents.

3 Requirements. The arrangement of technical tasks and subtasks within the Requirements section will be dictated by program requirements. If a WBS is being used in the program, tasks should be arranged in accordance with that WBS. It may be helpful to have a general task to orient the planning and use of the subsequent subtasks. The following outline is a generalization. Care should be exercised to scope the program tasks to meet only the minimal needs for the phase SOW or requirements.

3.1 General.

3.2 Detail tasks.

3.2.1 System engineering.

a. Technical studies - including life cycle costs.

b. System effectiveness planning, for example, reliability, maintainability, and human factors.

FIGURE 7. SOW format.

must define what is to be painted and to what standards. The product of such a contract is obviously a building painted and completed by a certain time. If the SOW is prepared properly, contractor monitoring can be kept to a minimum as long as the task is completed on time and within cost. This would be a proper non-personal services contract. The Government is then left with the requirement to inspect the product and either accept or reject it based on the contractor's conformance to the prescribed work requirement. The wide variety of non-personal services requirements cause this type of contract to take on many forms. However, in all applications, two factors are important to ensure that the services purchased are indeed non-personal. These factors are: (a) the SOW must establish explicitly what work is to be done and require the delivery of a product or result other than periodic progress reports and (b) the contractor's employees must not be supervised or controlled by the Government during the execution of the work and production of the product or result. In this regard, the SOW must be explicit, inclusive and comprehensive in prescribing the work requirements. For a more complete discussion of a personal versus a non-personal services contract, refer to DFARS 237.104.

**4.2.1 Product Definition.** As the product or service becomes more involved and technical in nature, defining in adequate detail what is needed to enable a contractor to produce the product independently becomes more difficult. If the job is an analysis, the task must say precisely what is to be analyzed and the criteria for performing the analysis, including any particular elements to be considered. If some conclusion is to be drawn as a result of the analysis, be precise about what the DoD needs to obtain as a result of this analytic work. If it is important how or in what sequence the analysis is to be conducted, spell it out. Specify explicit needs, leaving nothing to the contractor's imagination.

**4.2.2 Terminology.** A frequent problem encountered in defining the tasks in an SOW is the use of non-specific words and phrases such as: "any", "assist", "as required", "as applicable/as necessary" and "as directed". Do not use any of these words. The following rationale for precluding their use is provided:

a. *Any.* "Any" is an ambiguous word. Writers may intend it to denote "plurality" and readers may interpret it to denote "oneness". Also, when "any" is used to describe the selection of items from a list, it's the reader who does the selecting, not the writer. Which items, and how many the reader selects are beyond the control of the writer.

b. *Assist.* "Assist" connotes personal services. It infers working side-by-side, being subject to supervision. The word is totally undefined in terms of identifying the work and its range and depth. Spell out explicitly what the contractor must do.

c. *As required.* The result of this approach is an undefined work condition. It has no expressed limitations. It places the Government in a position of not expressing its minimal needs. It could lead to a debatable condition concerning the contractor's compliance with the contract or order. The SOW must be declarative as to its minimal needs.

d. *As applicable/As necessary.* If the Government does not know what is necessary or applicable, it must not leave to the contractor the responsibility for determining the minimal

needs of the contract. The SOW should forthrightly state the requirements so that the contractor can comply with the requirement using his best efforts and expertise to accomplish the tasks.

e. *As directed.* This condition, as a part of a work task in a SOW, connotes a personal services situation in which the contractor is placed under direct supervision. "When directed" may be used in conjunction with a task order contract to indicate that specific tasks may be initiated at various times during the period of contracted performance.

f. *Including but not limited to.* This term is generally inserted when the drafter is unsure of requirement or criteria. However, it creates an unspecific requirement which creates ambiguity. Only list known requirements.

g. *Etc.* This word also introduces potentially more unidentified ambiguous requirements.

4.2.3 Word Usage. Another area of concern in establishing the SOW for non-personal services is the overuse of the words and phrases "support" and "engineering and technical services".

a. Support is an ambiguous term. Specify the specific type of support needed.

b. The terms "engineering and technical services" encompass a broad area of expertise. The SOW must state the minimal needs, even if it means broadening the work limitations to cover anticipated work tasks. For clarification, the SOW may include some examples of typical work to be done.

c. Perhaps one of the most vexing problems in contracting is the problem of loopholes. Contractors and inspectors go by the letter of the contract SOW. In one instance, an engineer intended to have a damaged roof edge repaired and repainted. He wrote "match existing," but did not specify "repaint." The contractors who did the work matched the existing metal flashing strip but refused to paint the new flashing. The inspector could only agree with the contractor, since the engineer had not adequately described what was intended. The writer and reviewers at all levels of review have a responsibility to ensure that loopholes do not exist in the final SOW.

## 5 STATEMENT OF OBJECTIVES (SOO) METHOD

5.1 SOO Introduction. The SOO is a Government prepared document incorporated into the RFP that states the overall solicitation objectives. It can be used in those solicitations where the intent is to provide the maximum flexibility to each offeror to propose an innovative development approach. Offerors use the RFP, product performance requirements, and SOO as a basis for preparing their proposals including a SOW and CDRL. Note: The SOO is not retained as a contract compliance item.

5.1.1 SOO Purpose. The program SOO should provide the basic, top level objectives of the acquisition and is provided in the RFP in lieu of a Government written SOW. This approach provides potential offerors the flexibility to develop cost effective solutions and the opportunity to propose innovative alternatives meeting the stated objectives. It also presents the Government with an opportunity to assess the offeror's understanding of all aspects of the effort to be performed, by eliminating the 'how to' instructions to accomplish the required effort normally contained in the SOW the Government provides to prospective offerors.

5.2 SOO Content. The Government may include a SOO as part of the RFP, listed in Section J, attached at the end of the RFP, or referenced in Section L and/or M, defining the top level program objectives. Alternatively, the SOO may be placed in Section L of the RFP (e.g., as an annex). Figure 8 provides a notional SOO format. It is developed to be compatible with the mission need statement (MNS); operational requirements document (ORD), technical requirements from the system requirements document (SRD)/systems specification; and the draft work breakdown structure (WBS)/dictionary. The SOO should address product oriented goals rather than performance requirements. SOOs are normally in the 2-4 page range. The SOO is not a one for one replacement of the SOW. Sections L and M should logically follow with instructions to the offerors asking for proposal information supporting the objectives and evaluation criteria that clearly identify how the offerors' responses will be evaluated. Each portion of the RFP must support one another. The key is to keep the SOO clear and concise and to provide potential offerors with enough information and detail to structure a sound program, designed to be executable and satisfy government objectives. The SOO is used, along with other information and instructions in the RFP, by offerors, to develop the contract work breakdown structure, statement of work, and other documents supporting and defining the offerors proposed effort. SOO content depends both on the type of program and on the program phase. It is possible that a 'mature' program, such as one which has been fielded for some time, could require slightly more detail in the SOO to properly integrate with other, ongoing parts of the program. The SOO is replaced at contract award in the contract by the proposed SOW.

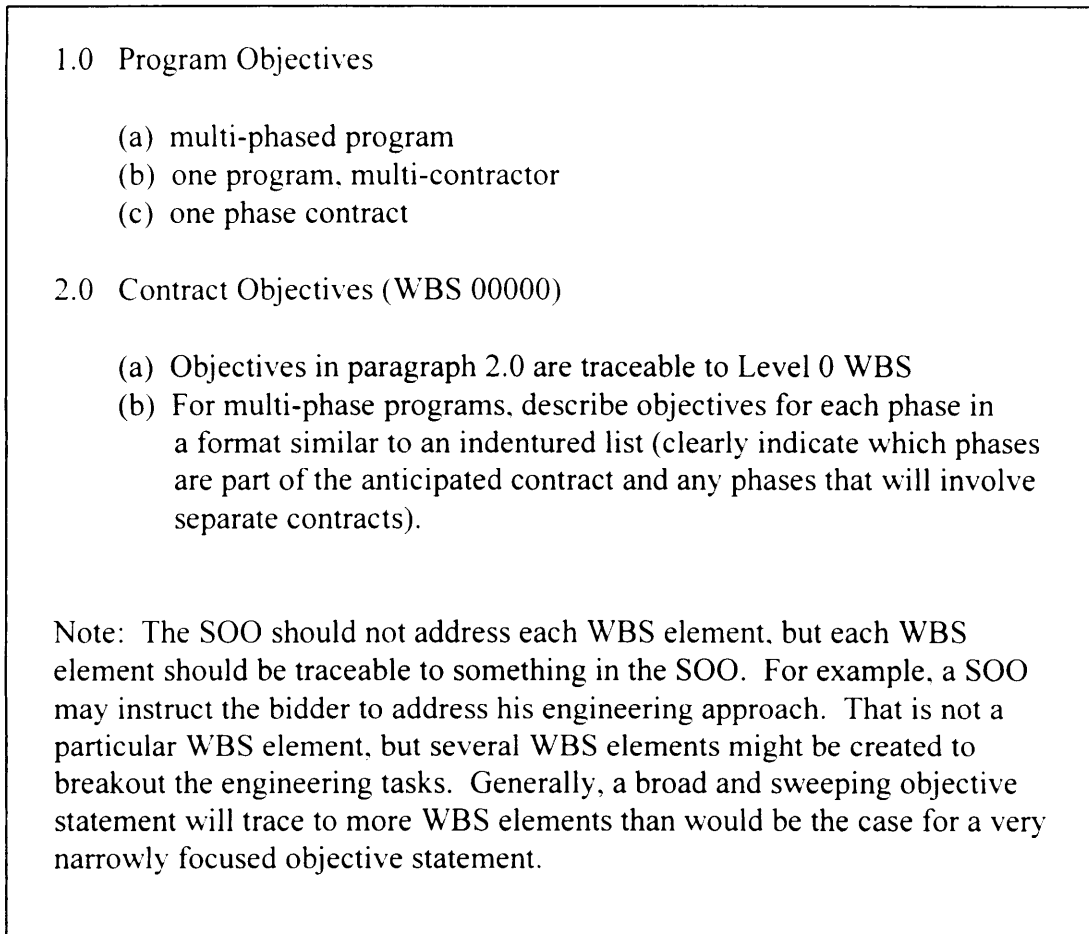


FIGURE 8. Notional Statement of objectives (SOO) format.

5.3 SOO Development Approach. A systematic process is essential for SOO development. The following steps are an integral part of that process:

- a. Conduct market research to determine whether commercial items or nondevelopmental items are available to meet program requirements.
- b. Review the requirement documents which authorize the program and define its basic objectives. Complete a risk assessment and expound the basic objectives of the program to incorporate the major technical and programmatic risks.
- c. Review the various DoD/services/joint services requirements documents for program management, acquisition and control impact.
- d. Prepare a bibliography citing the specific portions of all applicable governing instructions, directives, specifications and standards with which the program must comply. Keep these requirements to the absolute minimum.

e. Categorize the work described by the program WBS into that which will be done in-house and the objectives of that work which needs to be contracted.

f. For each RFP/contract defined, prepare a SOO from the objectives identified.

#### 5.4 SOO-RFP Relationships.

a. Section L: Section L of the RFP must include instructions to the offeror that require using the SOO to construct and submit a SOW and CDRL. An example of such wording follows:

"The Statement of Objectives (SOO), included as (cite location of SOO in the RFP), provides the Government's overall objectives for this solicitation. Offerors shall use the SOO, together with other applicable portions of this RFP, as the basis for preparing their proposal, including the CWBS, SOW and CDRL. The offeror shall ensure all aspects of the SOO are addressed. The SOW should specify in clear, understandable terms the work to be done in developing or producing the goods to be delivered or services to be performed by the contractor. Preparation of an effective SOW requires both an understanding of the goods or services that are needed to satisfy a particular requirement and an ability to define what is required in specific, performance based, quantitative terms. The offerors understanding of both required goods/services, and work effort required to accomplish should be fully demonstrated in the offeror's proposed CWBS, SOW, and CDRL. For complex interrelationships among RFP/contract documents, use of a cross-reference matrix may be helpful (see figure 2 in Section 3 of this handbook).

The offeror shall use his proposed SOW to prepare a CDRL including appropriately tailored data item description references. The requirements listed below (if any) are known minimum Government data requirements. The offeror may include additional data requirements. All data requirements shall be traceable to specific tasks defined in the SOW. Each specific data requirement shall be selected from DoD 5010.12-L and specified on DD Form 1423.

- (1) (cite minimum data requirements here if any)
- (2) . . .
- (3) . . ."

(End of Section L example wording.)

b. Section M: Evaluation Factors for Award should include sufficient criteria to:

- (1) Evaluate the offeror's ability to successfully achieve the SOO objectives.
- (2) Ensure a sound approach is proposed, and
- (3) Verify that all requirements can be met.



The Government's intention to evaluate the proposed SOW should be stressed in both Section L and Section M. The offeror's proposed CWBS, SOW, and CDRL's will be evaluated as critical elements in assessing the offerors understanding of both required goods/services, and work effort required to accomplish them.

## 6 NOTES

### 6.1 Subject term (key word) listing.

- Acquisition Plan (AP)
- Contract Data Requirements List (CDRL)
- Contract Line Item Number (CLIN)
- Commercial off-the-shelf (COTS)
- Data Item Description (DID)
- Non-Developmental Item (NDI)
- Operational Requirement Document (ORD)
- Request for Proposal (RFP)
- Statement of Objectives (SOO)
- Statement of Work (SOW)
- Work Breakdown Structure (WBS)
- Work Breakdown Structure, Contract (CWBS)

6.2 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

## APPENDIX A

## ACRONYMS

ADM	Advanced Development Model
AMSDL	Acquisition Management Systems and Data Requirements Control List
AP	Acquisition Plan
ASP	Acquisition Strategy Panel
CDRL	Contract Data Requirements List
CLIN	Contract Line Item Number
CM	Configuration Management
COTS	Commercial off-the-shelf
CWBS	Contract Work Breakdown Structure
D&V	Demonstration and Validation
DAB	Defense Acquisition Board
DFARS	Defense Federal Acquisition Regulation Supplement
DID	Data Item Description
DoD	Department of Defense
ECP	Engineering Change Proposal
EDM	Engineering Development Model
EMC	Electromagnetic Compatibility
FAR	Federal Acquisition Regulation
FMS	Foreign Military Sales
ILS	Integrated Logistics Support
IPS	Integrated Program Summary
LSA	Logistic Support Analysis
LSAR	Logistics Support Analysis Records
MILDEP	Military Department
MNS	Mission Needs Statement
MTBF	Mean-Time-Between-Failure
MTTR	Mean-Time-To-Repair
NDI	Non-Developmental Item
ORD	Operational Requirement Document
PMS	Planned Maintenance Subsystem
R&D	Research and Development
RDT&E	Research, Development, Test, and Evaluation
RFP	Request for Proposal
SOO	Statement of Objectives
SOW	Statement of Work
SPEC	Specification
SRD	System Requirements Document
STD	Standard
T&E	Test and Evaluation
WBS	Work Breakdown Structure

## APPENDIX B

## WORK WORDS/PRODUCT WORDS

B.1 Select the key word that properly expresses the degree of contractor involvement. Specify what is to be done and the total nature of the work requirement. The word list provided in this Appendix is not complete but is provided to stimulate the thinking of the SOW writer by pointing out the critical differences in the meaning of work words versus the product words identified in connection with deliverable data.

B.2 Work words. When selecting the key work word that properly expresses contractor's involvement, the SOW writer must define explicitly the total nature of the work requirement in terms of what is to be done. In some cases, the "why" or the application of the results of the performed work may be stated if it clarifies the requirement. The following sample list contains words which have the inherent value of work. This list is offered as a reminder of the various shades of meaning conveyed by choice of words.

analyze	(solve by analysis)
annotate	(provide with comments)
ascertain	(find out with certainty)
attend	(be present at)
audit	(officially examine)
build	(make by putting together)
calculate	(find out by computation)
consider	(think about, to decide)
construct	(put together; build)
control	(direct; regulate)
contribute	(give along with others)
compare	(find out likeness or differences)
create	(cause to be; make)
determine	(resolve; settle; decide)
differentiate	(make a distinction between)
develop	(bring into being or activity)
define	(make clear; settle the limits)
design	(perform an original act)
evolve	(develop gradually, work out)
examine	(look at closely; test quality of)
explore	(examine for discovery)
extract	(take out; deduce, select)
erect	(put together; set upright)
establish	(set up; settle; prove beyond dispute)
estimate	(approximate an opinion of)
evaluate	(find or fix the value of)
fabricate	(build; manufacture, invent)
form	(give shape to; establish)

## APPENDIX B

formulate	(to put together add express)
generate	(produce, cause to be)
identify	(to show or to find)
implement	(to carry out, put into practice)
install	(place; put into position)
inspect	(examine carefully or officially)
institute	(set up; establish, begin)
interpret	(explain the meaning of)
inquire	(ask, make a search of)
integrate	(to add parts to make whole)
investigate	(search into; examine closely)
judge	(decide; form an estimate of)
make	(cause to come into being)
maintain	(to keep in an existing state, to continue in, carry on)
manufacture	(fabricate from raw materials)
modify	(to change, alter)
monitor	(to watch or observe)
notice	(comment upon, review)
observe	(inspect, watch)
originate	(initiate, to give rise to)
organize	(integrate, arrange in a coherent unit)
perform	(do, carry out, accomplish)
plan	(devise a scheme for doing, making, arranging activities to achieve objectives)
probe	(investigate thoroughly)
produce	(give birth or rise to)
pursue	(seek, obtain or accomplish)
reason	(think, influence another's actions)
resolve	(reduce by analysis, clear up)
record	(set down in writing or act of electronic reproduction of communications)
recommend	(advise, attract favor of)
review	(inspection, examination or evaluation)
revise	(to correct, improve)
study	(careful examination or analysis)
seek	(try to discover; make an attempt)
search	(examine to find something)
scan	(look through hastily, examine intently)
screen	(to separate, present, or shield)
solve	(find an answer)
test	(evaluate, examine)
trace	(to copy or find by searching)
track	(observe or plot the path of)
update	(modernize, make current)

## APPENDIX B

B.3 PRODUCT WORD LIST. Although Non-personal Services contracts may not result in data as a deliverable product, a large portion do. This list of product words is provided to assist in identifying those products.

agenda	logs
audio visual aids	manuals
books	manuscript
cards	materials
certificates	minutes
charts	outlines
decks	proposals
disc-magnetic	pamphlets
documentation	plans
drafts	procedures
drawings	publications
drums-magnetic	recommendations
equipment	records
files	recordings
findings	reproducible
forms	reports
guides	requests
graphics	sheets
handbooks	specifications
illustrations	standards
lists	systems
ledgers	tapes
	transparencies

APPENDIX C

PHRASES HAVING MULTIPLE MEANINGS

C.1 This list of phrases having multiple meanings is provided as an example of those to be avoided.

To the satisfaction of the contracting officer.

As determined by the contracting officer.

In accordance with instructions of the contracting officer.

As directed by the contracting officer.

In the opinion of the contracting officer.

In the judgment of the contracting officer.

Unless otherwise directed by the contracting officer.

To furnish if requested by the contracting officer.

All reasonable requests of the contracting officer shall be complied with.

Photographs shall be taken when and where directed by the contracting officer.

In strict accordance with.

In accordance with best commercial practice.

In accordance with best modern standard practice.

In accordance with the best engineering practice.

Workmanship shall be of the highest quality.

Workmanship shall be of the highest grade.

Accurate workmanship.

Securely mounted.

Installed in a neat and workmanlike manner.

APPENDIX C

Skillfully fitted.

Properly connected.

Properly assembled.

Good working order.

Good materials.

In accordance with applicable published specifications.

Products of a recognized reputable manufacturer.

Tests will be made unless waived.

Materials shall be of the highest grade, free from defects or imperfections, and of grades approved by the contracting officer.

Kinks and bends may be cause for rejection.

Carefully performed.

Neatly finished.

Metal parts shall be cleaned before painting.

Suitably housed.

Smooth surfaces.

Pleasing lines.

Of an approved type.

Of standard type.

Any phrases referring to "The Government inspector".



APPENDIX D - STATEMENT OF WORK EXAMPLES

APPENDIX D1: EXAMPLE SOW FOR PRODUCTS

APPENDIX D2: EXAMPLE SOW FOR SERVICES

## APPENDIX D1

## EXAMPLE SOW FOR PRODUCTS

1 SCOPE. This Statement of Work (SOW) defines the effort required for the design, engineering development, fabrication, and test of an Advanced Development Model (ADM) of the \_\_\_\_\_ System for the Program Definition and Risk Reduction Phase. It includes the associated program management, human engineering, and logistic support planning requirements.

1.1 Background. The \_\_\_\_\_ program has been initiated to design, develop, produce, and deploy an \_\_\_\_\_ improved system that will fulfill the \_\_\_\_\_ requirements as specified in Operational Requirement No. \_\_\_\_\_. The \_\_\_\_\_ System will replace the **XYZ** System, and will significantly improve \_\_\_\_\_ capabilities. The \_\_\_\_\_ System specification for the ADM was developed during the Concept Exploration Phase conducted over the past two years. Upon successful testing and acceptance of the ADM developed during this Program Definition and Risk Reduction Phase, it is intended to obtain Department of Defense approval to competitively procure Engineering Development Models (EDMs) using performance specifications and program plans developed under this SOW.

2 APPLICABLE DOCUMENTS. The following documents are applicable to this Statement of Work and attached appendices to the extent specified herein.

2.1 Department of Defense Specifications.  
(List documents as appropriate.)

2.2 Department of Defense Standards  
(List documents as appropriate.)

2.3 Availability of DoD Documents. Unless otherwise indicated, copies of specifications, standards and handbooks listed above are available from the Standardization Document Order Desk, 700 Robbins Ave, Bldg 4D, Philadelphia PA 19111-5094

2.4 Non-Government standards and other publications.  
(List documents as appropriate.)

2.5 Availability of Non-Government standards and other publications. Application for copies should be addressed to the (name and address of the source).

### 3 REQUIREMENTS.

3.1 General. The work required by this contract shall be performed in accordance with \_\_\_\_\_ System Specification ( # ) and this Statement of Work (SOW).

APPENDIX D1

The contractor shall design, develop, fabricate, and test an Advanced Development Model as listed in Section C of this contract to meet the performance criteria specified by \_\_\_\_\_ System Specification ( # ) and in accordance with the detailed requirements in paragraph 3.2.1 below.

The contractor shall provide program management, human engineering management, and logistic support planning in accordance with the detail requirements of 3.2.2 below.

3.2 Detail Tasks.

3.2.1 Design, Engineering, Fabrication and Test.

3.2.1.1 Design and Engineering. The contractor shall design and develop an ADM of the \_\_\_\_\_ System to meet the specification and criteria of \_\_\_\_\_ System Specification ( # ) utilizing engineering trade-offs between performance, reliability, maintainability, supportability, producibility, and life cycle costs. The \_\_\_\_\_ System design shall include the equipment performance and physical characteristics, subsystem component location, materials, the software program design elements of a top-down design, basic module description, and interface design.

3.2.1.2 Design Analysis. The contractor shall conduct a detail design analysis of the selected design. Detailed physical and performance design characteristics shall be specifically identified including the engineering decision process for using one methodology over another. Design documentation shall include discussion of alternatives and the ramifications thereof, risk assessments, and trade-offs made.

3.2.1.3 Preliminary Design Review (PDR) and Design Formalization. The contractor shall conduct a Preliminary Design Review. Informal design reviews may be held at times agreed to by the Government and the Contractor.

As a result of the design analysis conducted in paragraph 3.2.1.2 and the PDR in 3.2.1.3, the contractor shall finalize and formalize the design for fabrication. Written procuring activity approval of the design is required before the contractor is authorized to proceed with ADM fabrication.

3.2.1.4 Fabrication. The contractor shall correct and document any design characteristics that are found to inhibit or make fabrication unnecessarily costly but that do not otherwise alter performance or system effectiveness characteristics. 3.2.1.5 Test and Evaluation. The contractor shall conduct and evaluate the results of environmental and performance tests on the ADMs to demonstrate full compliance of all equipment and software with \_\_\_\_\_ System Specification ( # ). The tests shall be conducted in accordance with the developmental test plan developed by the contractor and approved by the Government. The tests may be conducted at the contractor's facilities or at an independent laboratory or commercial testing facility.

## APPENDIX D1

3.2.1.6 Critical Design Review (CDR). The contractor shall conduct a Critical Design Review. At the CDR, the contractor shall formally report the results of the developmental tests, address design changes made during the fabrication process, and recommend design changes as a result of the developmental tests including trade-off impacts. The contractor shall incorporate all design changes approved during the CDR.

### 3.2.2 Program Planning

3.2.2.1 Program Management. The contractor shall establish and maintain management operations that shall include the following areas:

- (a) Program Planning and Control
- (b) Subcontractor Control
- (c) Financial Management
- (d) Data Management
- (e) Management and Accountability for Government Furnished Equipment, Material or Information.
- (f) Risk Management

The contractor shall develop and implement a Management Program that clearly defines how the \_\_\_\_\_ Program Definition and Risk Reduction Project will be managed and controlled. A task matrix keyed to the Work Breakdown Structure (WBS) shall be developed in sufficient detail to identify Contractor and subcontractor responsibilities. The Contractor shall develop and implement a management program that clearly defines how the \_\_\_\_\_ Program Definition and Risk Reduction Project will be managed and controlled.

The contractor shall establish and implement a program management office function to manage all technical performance, including reliability, maintainability, ILS, cost, schedule, and data delivery requirements of the contract.

3.2.2.2 Human Engineering Program. The contractor shall develop and implement a Human Engineering Program (HEP) to ensure that appropriate studies are performed and that human engineering criteria are applied to subsystem hardware and computer software design.

3.2.2.3 Logistic Support Planning. The contractor shall implement an ILS program to ensure that supportability design criteria and characteristics are considered and incorporated into the design consistent with the trade-off studies and that meet the operational availability requirements of \_\_\_\_\_ System Specification ( # ). The ILS program shall use a Logistic Support Analysis (LSA) as the principal analytic effort within the design process.

APPENDIX D2

EXAMPLE SOW FOR SERVICES

1 SCOPE. This SOW covers systems engineering, technical and management support services to the \_\_\_\_\_ Program Office This support encompasses engineering analysis and recommendations for technical logistical and life cycle support for \_\_\_\_\_ system.

2 APPLICABLE DOCUMENTS.

3 REQUIREMENTS.

3.1 Production Support.

3.1.1 Conduct independent review of \_\_\_\_\_ production programs to identify requirements consistent with directives governing the acquisition of system and equipment.

3.1.2 Using acquisition plans, existing hardware contracts and inherent lead-time items, construct schedules for inclusion in documentation for weapon system and equipment acquisitions.

3.1.3 Based on production program schedules as well as weapon system configurations, formulate technical documentation for these programs itemizing all supplies, data and services to be obtained.

3.1.4 Provide impact statements when deviations or changes occur and alternative recommendations when required to maintain individual program production integrity.

3.1.5 Identify, compile, and utilize available information, update and input data for manual or automated production scheduling information systems, prepare government production reports germane to maintaining weapons system production status and inventory.

3.1.6 Prepare production documentation for input into the applicable Management Information System (MIS).

3.1.7 Prepare recommendation for identifying project data to be entered into existing Automatic Data Processing (ADP) programs. When data system deficiencies are discovered, provide recommendations for solutions.

3.2 Foreign Military Sales (FMS) Support.

3.2.1 Compare actual deliveries with contract schedules for Military Departments (MILDEP) and FMS.

APPENDIX D2

3.2.2 Track components and deliverable end items, and compile monthly acceptance reports and quarterly production reports. Consolidate delivery schedules by fiscal year, weapons, components, support equipment and manufacturer.

3.2.3 Compare schedule with industrial capacities and weapon station buildup capabilities and identify shortcomings and problem areas in meeting these requirements.

3.2.4 Correlate consignment instructions, acceptance reports and production/weapon build-up capabilities.

3.2.5 Maintain and track material inspection receiving reports status reports of system components and support equipment.

3.3 MILDEP Support.

3.3.1 Identify unique MILDEP requirements for the system, its components and associated equipment, based on MILDEP production planning and production support requirements.

3.3.2 Compare current MILDEP acquisition plans and project directive with MILDEP delivery and performance requirements to identify firm and provisioned requirements by component and associated support equipment.

3.3.3 Determine the compatibility of requirements, military specifications and engineering documentation with MILDEP standard and specifications.

3.3.4 Provide recommendations to incorporate MILDEP stated requirements into the overall program schedules. Correlate and maintain the status of MILDEP monthly status reports thereof.

APPENDIX E

EXAMPLE SOO

E.1 Refer to Figure 8 in the body of this document for a general example. For specific examples of SOOs, contact Air Force Custodian - Code 10 (see DoD Standardization Directory (SD-1), which has all Preparing Activity codes, addresses, and telephone numbers).

Custodians:

Army - CR  
Navy - EC  
Air Force - 10

Review activities:

Army - AT, SC  
Navy - SH, AS, MC, YD2  
Air Force - 11, 13

Preparing activity:

Navy - EC  
(Project Number MISC-0214)



# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

## INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

### I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER  
**MIL-HDBK-245D**

2. DOCUMENT DATE (YYMMDD)  
**960403**

### 3. DOCUMENT TITLE

#### PREPARATION OF STATEMENT OF WORK (SOW)

### 4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

### 5. REASON FOR RECOMMENDATION

### 6. SUBMITTER

a. NAME (Last, First Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)

(1) Commercial  
(2) AUTOVON  
(if applicable)

7. DATE SUBMITTED  
(YYMMDD)

### 8. PREPARING ACTIVITY

a. NAME

COMMANDER,  
SPACE AND NAVAL WARFARE  
SYSTEMS COMMAND (SPAWAR 05L1)

b. TELEPHONE (Include Area Code)

(1) Commercial  
(703) 602-7234

(2) AUTOVON  
332-7234

c. ADDRESS (Include Zip Code)

2451 CRYSTAL DRIVE  
ARLINGTON, VA 22245-5200

IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS CONTACT  
Defense Quality and Standardization Office  
5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466  
Telephone (703) 756-2340 AUTOVON 289-2340