

M A S T E R

A C Q U I S I T I O N

Undated. MAPP  
software dates back  
to the mid 1990s.

P R O G R A M

P L A N



U s e r ' s H a n d b o o k



J O I N T G O V E R N M E N T - I N D U S T R Y P E R F O R M A N C E S P E C I F I C A T I O N

CHAPTER XI: KEY TOPICS

Note: Google search turns up only one  
acquisition program using MAPP: AN/UYK-70(V)

PART O: MASTER PROGRAM PLAN (MAPP)

Purpose: This key topic provides updated information on the Master Acquisition Program Plan (MAPP) and identifies the source of **free** software and related information.

Background: The MAPP is designed to reduce acquisition costs, improve the quality of program data, and increase the efficiency of program management. The MAPP initiative, sponsored by the Chief of Naval Operations (N4), is consistent with DoDDIR 5000.1. The MAPP was developed jointly by the Naval Aviation Systems TEAM, the Naval Sea Systems Command, and the Space and Naval Warfare Systems Command. MAPP is a government/industry performance specification; it is a database for electronically repositioning acquisition program planning data. MAPP is being used by program offices throughout the life cycle to *define, direct, document, and monitor* program decisions. Now a software program is available to assist users in implementing the MAPP on their acquisition programs.

Discussion: MAPP's principal purpose is to aid in program management through the use of a single relational database which provides current program information, as well as the capability to produce plans, reports, and other documents. MAPP provides substantial cost savings and cycle time reduction through the elimination of documentation requirements which do not support the acquisition process and the consolidation/standardization of others.

Status: During development of the MAPP, a team, with representation from each hardware SYSCOM and selected contractors, coordinated an examination of the acquisition planning process. Documents were identified which can be eliminated from the life cycle planning of an acquisition program by consolidating their planning elements into the MAPP. The next step was development of an optional software program to assist users of the MAPP. the MAPP is organized into two parts: part I for general program planning information and part II for specific subject matter annexes. Authority to apply MAPP in acquisition program planning is consistent with the aims of acquisition reform and the guidance in the new DoD 5000 series documents. the Chief of Naval Operations (N4) and the NAVAIR Acquisition Operations Council have encouraged use of the MAPP. Logistics and other assessment teams should accept documentation using MAPP principles as satisfying their documentation needs.

Availability: The MAPP software, release 1.1, and related information are available from the MAPP home page at the Navy's acquisition reform web site from which the software can be downloaded. Once downloaded from the MAPP home page, the software can then be installed on the user's PC. Instructions for downloading and installation are also contained at the web site. The web site address is: **http://www.acq-ref.navy.mil/mapphome.html**. MAPP release 2.0 to produce all milestone documentation will be a client-server application; it is planned for July 1997.

Acquisition Reform  
website no longer  
operative

**Summary of MAPP Release 1.1 Features:**

- ◆ An automated tool which streamlines the acquisition planning process
- ◆ In use NOW in all Systems Commands
- ◆ Data entered ONCE--used many times
- ◆ Produces consistent acquisition documentation
- ◆ Saves time, money, and staff resources
- ◆ Microsoft Windows application provides easy interface with other Microsoft Windows products
- ◆ Modular architecture eases update; data are automatically converted for use with successive MAPP versions
- ◆ Runtime system (Microsoft Access not required on user's PC)
- ◆ Provides MAPP development guidance
- ◆ Is tailorable to program requirements

POC: Don Luke, AIR-3.6.1.1, (301) 757-8784

## MASTER ACQUISITION PROGRAM PLAN (MAPP) USER'S HANDBOOK GENERAL GUIDANCE

This User's Handbook is designed to support and amplify the requirements presented in the Master Acquisition Program Plan (MAPP). The MAPP consolidates the requirements for more than 100 plans which had been used throughout the acquisition process. The goal of the MAPP is to improve the planning process through enhanced communication, more efficient use of resources, and reduced cycle time.

### Cover

The cover contains the unique MAPP identification number, the security classification of the MAPP, review and approval signatures, and date(s) of signatures. Refer to Figure 1 for the MAPP cover format.

The identification number comprises the document name, a four-digit control number, the name of the program office, and the life-cycle phase of the end item. The life-cycle phases are abbreviated as follows:

<u>System/Equipment</u>	<u>Ship</u>
CED = Concept Exploration and Definition	FS = Feasibility Studies
DV = Demonstration and Validation	PD = Preliminary Design
EMD = Engineering and Manufacturing Development	CD = Contract Design
PD = Production and Deployment	DD = Detail Design/Lead Ship Construction
OS = Operations and Support	FC = Follow Ship Construction
	OS = Operations and Support

An example of an identifying number is: MAPP-0001-PMW156-CED.

### Government/Contractor Data

The MAPP incorporates both Government and contractor data. The MAPP User's Handbook identifies, under the title of each MAPP paragraph, the recommended developer of the data as either Government, contractor, or both. In some cases, a data element is assigned exclusively to either the Government or the contractor. For example, the acquisition strategy paragraphs are completed by the Government throughout the acquisition process; the technical manual validation paragraphs are completed by the contractor.

In many cases, however, the responsibility for data entry migrates from the Government to the contractor. For example, before contract award, the Government describes (in the MAPP) the requirements it intends to impose on the contractor to define end item support requirements. The proposed requirements are reviewed by various program participants and may be modified before they are included in the Request for Proposal. After contract award, the contractor explains (in the MAPP) the approach, or process, which the contractor will use to determine the support requirements for the end item. Figure 2 provides a summary of recommended assignments. Figure 2 also identifies the acquisition milestone (MS) by which data for each paragraph should initially be entered in the MAPP; it is not the date the related

# Master Acquisition Program Plan

**For**

*(Name of End Item)*

*(Acquisition Category)*

**Classification**

\_\_\_\_\_  
Program Manager

\_\_\_\_\_  
Date

\_\_\_\_\_  
ILS Manager

\_\_\_\_\_  
Date

**Date**

Figure 1 MAPP Cover Format

action(s) must be completed. For instance, planning for depot certification begins at MS II; actual certification occurs after MS III. These milestones are also presented in parentheses after each paragraph title in the MAPP.

### **Specifications and Standards**

In accordance with current acquisition reform initiatives, the MAPP provides guidance on what to do, but not how to do it. Using the example above on the definition of end item support requirements, the MAPP does not mandate a specific process, such as MIL-STD-1388. Rather, it requires a description of whatever process will be used to define support requirements. In completing the related paragraphs in the MAPP, the Government will do one of the following:

- Identify the Government specifications and/or standards which are invoked and for which waivers have been obtained;
- Identify the Government specifications and/or standards which the contractor is to use as guidance when developing the process to define support requirements;
- Identify the commercial specifications and/or standards which are invoked; or
- Describe each requirement which must be accommodated in the contractor-developed process.

The last option places a burden on the Government to describe in detailed narrative exactly what is needed. Rather than relying on an established standard, the Government must explain precisely what it wants so that each competing contractor can design a process which addresses the same requirements. As described above, the contractor identifies a process in a proposal, the Government modifies/approves it, and the contractor ultimately describes (in the MAPP) the approved process for defining the end item support requirements.

### **Tailoring**

Any paragraphs or data elements which do not apply to the end item are to be marked "N/A." Provide justifications as appropriate.

### **Using the Digitized MAPP**

MAPP has been developed through the use of Object Linking and Embedding (OLE) technology available through the Microsoft Windows 3.1 environment. This approach permits the use of Microsoft Word 6.0 as the OLE server/client with Microsoft Excel 5.0 and Microsoft Power Point 4.0. Word serves as the primary front end and is used to maintain text data. Excel is used as the repository for configuration information and quantifiable data. Power Point is used for block diagrams and figures. This means that the MAPP contains tabular, text, and pictorial information and that spreadsheets/diagrams can be accessed and manipulated directly through Microsoft Word. To install the MAPP, create a MAPP directory and load the MAPP files into the directory. Tables and figures are accessed by clicking on the icon below each table/figure title. The following hardware and software are recommended: minimum 486DX/66 with 16 MB RAM and 200 MB hard disk; Windows 3.1; DOS 6.2; Microsoft Office Professional 4.3 (contains Word, Excel, and Power Point).

## MASTER ACQUISITION PROGRAM PLAN (MAPP)

MAPP Paragraph	MS	Govt	Contr
<b>PART I. GENERAL PROGRAM DATA</b>			
<b>1.0 Introduction</b>			
1.1 Mission Description	0	X	
1.2 Program Status	0	X	
1.3 Threat	0	X	
<b>1.4 Predecessor End Item</b>			
1.4.1 Identification	0	X	
1.4.2 Existing End Item Shortfalls	0	X	
<b>2.0 End Item Requirements and Constraints</b>			
2.1 Design Constraints	0	X	
2.2 Performance Requirements/Critical Characteristics/Readiness Objectives	I	X	
2.3 Utilization (Aircraft Only)	I	X	
2.4 Initial Operational Capability Requirements	0	X	
2.5 Dynamic Simulation Requirements	I		X
2.6 Interfacing Systems and Interoperability	I	X	
<b>3.0 Security</b>			
3.1 Classification	0	X	
3.2 Requirements	0	X	
3.3 Contractor Approach	I		X
<b>4.0 Alternatives Assessed and Results</b>			
4.1 Trade-Off Factors	I	X	
4.2 Design Alternatives	I	X	
<b>4.3 Selected Alternative and Rationale</b>			
4.3.1 Identification	II	X	
4.3.2 Environmental Impact	0	X	
<b>5.0 Risk Assessment</b>			
5.1 Technical	I	X	
5.2 Schedule	I	X	
5.3 Cost	I	X	
<b>6.0 End Item Description</b>			
6.1 Functional Description	I	X	X
6.2 Physical Description	I		X
<b>7.0 Acquisition Strategy</b>			
7.1 Overview	I	X	
7.2 Make-or-Buy	I	X	
7.3 Industrial Preparedness	I	X	
7.4 Streamlining	I	X	
7.5 Competition	I	X	
7.6 Other Considerations	I	X	

Figure 2 Requirements Matrix

MAPP Paragraph	MS	Govt	Contr
<b>8.0 Data Rights/Licensing/Warranty Provisions</b>			
8.1 Data Rights	I	X	
8.2 Licensing	I	X	
8.3 Warranties	I	X	
<b>9.0 Maintenance Concept</b>	I	X	
<b>10.0 Support Requirements</b>			
10.1 Approach	I	X	X
10.2 Results of Support Requirements Analysis Tasks	I		X
10.3 Infrastructure Support Requirements	I	X	
10.4 Support Assessments			
10.4.1 Self-Assessments	I	X	
10.4.2 Independent Logistics Assessments	I	X	
<b>11.0 Continuous Acquisition and Life-Cycle Support</b>			
11.1 Government Concept	I	X	
11.2 Contractor Approach	II		X
11.3 Government Verification	I	X	
<b>12.0 Standardization</b>			
12.1 Strategy	I	X	
12.2 Management	II		X
12.3 Implementation	II	X	X
<b>13.0 Program Documents/Certifications</b>			
13.1 Program Documents	0	X	X
13.2 Specifications and Standards	0	X	X
13.3 Exemptions	0	X	
13.4 Certifications	0	X	
13.5 Related Program Documents	I	X	X
<b>14.0 Organization/Major Program Participants</b>			
14.1 Program Management	I	X	X
14.2 Engineering and Technical Support Services	II	X	
<b>15.0 Program Events</b>	0	X	X
<b>16.0 Installation Schedule</b>	I	X	
<b>17.0 Government Furnished Material</b>	0	X	
<b>18.0 Cost</b>			
18.1 Life-Cycle Cost	I	X	
18.2 Design-to-Cost	I	X	
18.3 Should-Cost	I	X	
<b>19.0 Budget and Funding</b>			
19.1 Total Program Budget and Funding	0	X	
19.2 Hardware Funding Requirements	0	X	

MAPP Paragraph		MIS	Govt	Contr
19.3	Logistics Funding	0	X	
20.0	Contracts			
20.1	Plan For Each Proposed Contract			
20.1.X	First Contract			
20.1.X.1	Description	0	X	
20.1.X.2	Sources	0	X	
20.1.X.3	Competition	0	X	
20.1.X.4	Source Selection Procedures	0	X	
20.1.X.5	Contracting Considerations	0	X	
20.1.X.6	Product Descriptions	0	X	
20.1.X.7	Management Information Requirements	0	X	
20.1.X.8	Other Considerations	0	X	
20.2	Contracts Summary	0	X	
<b>PART II. ELEMENT ANNEXES</b>				
<b>Annex A. Maintenance Planning</b>				
A.1	Strategy	I	X	
A.1.1	Approach	I	X	X
A.1.2	Roles and Responsibilities	I	X	X
A.1.3	Risks and Outstanding Issues	I	X	X
A.2	Organizational Level Maintenance	I	X	X
A.3	Intermediate Level Maintenance	I	X	X
A.4	Depot Level Maintenance			
A.4.1	Approach	I	X	X
A.4.2	Interim Depot Requirements	I	X	
A.4.2.1	Interim Depot Resources	I		X
A.4.2.2	Interim Depot Capacity	I		X
A.4.2.3	Retrograde Procedures	I	X	X
A.4.2.4	Transition to Permanent Depot	I		X
A.4.3	Permanent Depot Requirements	I	X	
A.4.3.1	Permanent Depot Resources	II	X	
A.4.3.2	Permanent Depot Assignment/Certification	II	X	
A.4.3.3	Retrograde Procedures	II	X	X
A.4.3.4	Status Reports	II	X	
A.5	Documentation	III	X	X
A.6	Maintenance Reporting	III	X	X
<b>Annex B. Manpower/Personnel</b>				
B.1	Strategy	I	X	
B.1.1	Approach	I	X	X
B.1.2	Roles and Responsibilities	I	X	X
B.1.3	Risks and Outstanding Issues	I	X	X
B.2	Watch Station Requirements	I		X
B.3	Aircrew Requirements (Aircraft Only)	I		X
B.4	Maintenance Workload Requirements			
B.4.1	End Item (Non-Aircraft)	I		X
B.4.2	End Item (Aircraft Only)	I		X

MAPP Paragraph	MS	Govt	Contr
<b>B.5 Manpower Requirements</b>			
B.5.1 Estimates	I	X	
B.5.2 Requirements	II		X
<b>Annex C. Supply Support</b>			
<b>C.1 Strategy</b>	I	X	
C.1.1 Approach	I	X	X
C.1.2 Roles and Responsibilities	I	X	X
C.1.3 Risks and Outstanding Issues	I	X	X
<b>C.2 Provisioning</b>			
C.2.1 Source, Maintenance, and Recoverability Coding	II	X	X
C.2.2 National Stock Number Assignment	II	X	
C.2.3 Program Support Data	II	X	
C.2.4 Provisioning Technical Documentation	II	X	X
<b>C.3 Allowance Development</b>			
C.3.1 Spares Computation Model	II	X	
C.3.2 Allowance Lists	II	X	
<b>C.4 Contractor Supply Support</b>			
C.4.1 Government Requirements	II	X	
C.4.2 Contractor Procedures	II		X
C.4.3 Transition to Navy Support	II		X
<b>C.5 Other</b>			
C.5.1 Installation and Checkout Requirements	II	X	X
C.5.2 Training Systems Support	II		X
C.5.3 Support Equipment Support	II		X
<b>C.6 Outfitting (Ships Only)</b>	II		X
<b>C.7 Post Production Support</b>	III	X	X
<b>Annex D. Support Equipment</b>			
<b>D.1 Strategy</b>	I	X	
D.1.1 Approach	I	X	X
D.1.2 Roles and Responsibilities	I	X	X
D.1.3 Risks and Outstanding Issues	I	X	X
<b>D.2 Identification</b>	II	X	X
<b>Annex E. Technical Data</b>			
<b>E.1 Strategy</b>	I	X	
E.1.1 Approach	I	X	X
E.1.2 Roles and Responsibilities	I	X	X
E.1.3 Risks and Outstanding Issues	I	X	X
<b>E.2 Technical Manuals</b>			
E.2.1 Requirements	I	X	
E.2.2 Technical Manual Quality Assurance Program	I	X	X
E.2.2.1 Validation	I		X
E.2.2.2 Verification	I	X	
E.2.3 Technical Manual Maintenance	I	X	
<b>E.3 Engineering Drawings</b>			
E.3.1 Proprietary Data	I	X	
E.3.2 Identification	I	X	
E.3.3 Engineering Drawing Quality Assurance Program	I	X	X

MAPP Paragraph	MS	Govt	Contr
<b>Annex F. Training and Training Support</b>			
F.1 Strategy	I	X	
F.1.1 Approach	I	X	X
F.1.2 Roles and Responsibilities	I	X	X
F.1.3 Risks and Outstanding Issues	I	X	X
F.1.4 Training Alternatives	I	X	
F.2 Training Courses	II		X
F.2.1 Factory Training	II		X
F.2.2 Initial Training	II		X
F.2.3 Follow-On Training	II	X	
F.2.4 On-Board Training	II	X	
F.2.5 Team Training	II	X	X
F.2.6 Selected Reserve Training	II	X	
F.3 Training Pipelines	II	X	
F.4 Technical Training Equipment	I	X	X
F.5 Training Devices			
F.5.1 Description	I	X	
F.5.2 Acquisition Strategy	I	X	
F.5.3 Evaluation			
F.5.3.1 Planning	III	X	
F.5.3.2 Results	III	X	
F.6 Training/Instructional Aids	II	X	X
<b>Annex G. Computer Resources Support</b>			
G.1 Strategy	I	X	
G.1.1 Approach	I	X	X
G.1.2 Roles and Responsibilities	I	X	X
G.1.3 Risks and Outstanding Issues	I	X	X
G.2 Processing Requirements	I	X	X
G.3 Commercial Software	I	X	X
G.4 Developmental Software			
G.4.1 Scope	I		X
G.4.2 Control	I	X	X
G.4.3 Validation/Verification	I	X	X
G.4.4 Problem/Change Data	I	X	X
G.5 Supporting Documentation	I		X
G.6 Transition	I		X
G.7 Life-Cycle Support	I	X	
<b>Annex H. Facilities</b>			
H.1 Strategy	I	X	
H.1.1 Approach	I	X	X
H.1.2 Roles and Responsibilities	I	X	X
H.1.3 Risks and Outstanding Issues	I	X	X
H.2 Facilities Requirements	I	X	X
H.2.1 Candidate Sites	I		X
H.2.2 Site Surveys	II		X
H.2.3 Site Recommendations	II		X
H.2.4 Site Selection Decision	II	X	

MAPP Paragraph	MS	Govt	Contr
<b>Annex I. Packaging, Handling, Storage, and Transportation</b>			
I.1 Strategy	I	X	
I.1.1 Approach	I	X	X
I.1.2 Roles and Responsibilities	I	X	X
I.1.3 Risks and Outstanding Issues	I	X	X
I.2 PHST Requirements	I		X
I.2.1 Packaging	I	X	X
I.2.1.1 Design	I	X	X
I.2.1.2 Packaging Test and Approval	II	X	X
I.2.2 Handling	I	X	X
I.2.3 Storage/Stowage	I	X	X
I.2.4 Transportation	I	X	X
<b>Annex J. Reliability and Maintainability</b>			
J.1 Strategy	I	X	
J.1.1 Approach	I	X	X
J.1.2 Roles and Responsibilities	I	X	X
J.1.3 Risks and Outstanding Issues	I	X	X
J.2 Results	I	X	X
<b>Annex K. Configuration Management</b>			
K.1 Strategy	I	X	
K.1.1 Approach	I	X	X
K.1.2 Roles and Responsibilities	I	X	X
K.1.3 Risks and Outstanding Issues	I	X	X
K.2 Configuration Identification			
K.2.1 Baselines	I		X
K.2.2 Configuration Item Numbering	I	X	
K.3 Configuration Change Control and Processing			
K.3.1 Management	II	X	X
K.3.2 Change Control Tracking	II		X
K.4 Configuration Audits	II	X	X
K.5 Configuration Status Accounting	II	X	X
<b>Annex L. Safety</b>			
L.1 Strategy	I	X	
L.1.1 Approach	I	X	X
L.1.2 Roles and Responsibilities	I	X	X
L.1.3 Risks and Outstanding Issues	I	X	X
L.2 Results	I		X
L.3 Electrostatic Discharge Control	I		X
<b>Annex M. Quality Assurance</b>			
M.1 Strategy			
M.1.1 Approach	I	X	X
M.1.2 Roles and Responsibilities	I	X	X
M.1.3 Risks and Outstanding Issues	I	X	X
<b>Annex N. Human Engineering</b>			
N.1 Strategy	I	X	

<b>MAPP Paragraph</b>	<b>MS</b>	<b>Govt</b>	<b>Contr</b>
N.1.1 Approach	I	X	X
N.1.2 Roles and Responsibilities	I	X	X
N.1.3 Risks and Outstanding Issues	I	X	X
N.2 Results	I		X
<b>Annex O. Electromagnetic Compatibility</b>			
O.1 Strategy	I	X	
O.1.1 Approach	I	X	X
O.1.2 Roles and Responsibilities	I	X	X
O.1.3 Risks and Outstanding Issues	I	X	X
O.2 Electromagnetic Environment	I		X
O.3 Electromagnetic Interference Control	I		X
O.4 Frequency Spectrum Management	I		X
O.5 Electromagnetic Compatibility Program Assessment	I		X
<b>Annex P. Survivability</b>			
P.1 Strategy	I	X	
P.1.1 Approach	I	X	X
P.1.2 Roles and Responsibilities	I	X	X
P.1.3 Risks and Outstanding Issues	I	X	X
P.2 Results of Analyses	II		X
P.3 Battle Damage Repair	I	X	X
P.4 Hardness Assurance, Maintenance, and Surveillance			
P.4.1 Critical Activities	II	X	X
P.4.2 Hardness Assurance, Maintenance, and Surveillance Requirements	I	X	X
<b>Annex Q. Test and Evaluation</b>			
Q.1 Strategy	I	X	
Q.1.1 Approach	I	X	X
Q.1.2 Roles and Responsibilities	I	X	X
Q.1.3 Risks and Outstanding Issues	I	X	X
Q.2 Test and Evaluation Summary	I	X	X
Q.3 Developmental Test and Evaluation			
Q.3.1 Overview	I	X	X
Q.3.2 Developmental Test Summary	I	X	X
Q.4 Operational Test and Evaluation			
Q.4.1 Overview	I	X	X
Q.4.2 Operational Test Summary	I	X	X

**MASTER ACQUISITION PROGRAM PLAN (MAPP) USER'S HANDBOOK  
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# MASTER ACQUISITION PROGRAM PLAN (MAPP) USER'S HANDBOOK

## PART I. GENERAL PROGRAM DATA

### 1.0 INTRODUCTION

#### 1.1 Mission Description (Government)

Provide the mission description as presented in the Mission Need Statement (MNS). If there is no MNS, explain what drove the requirement for the new end item and how its operational requirements were developed. When describing the purpose and tactical use of the end item, explain how the end item will be used in both wartime and peacetime.

When describing the environment in which the end item will be used, address the geographic area and projected physical environment (e.g., weather conditions). Include environmental effects which could affect the end item's expected performance. For commercial items, describe differences between its intended (commercial use) environment and its proposed (Government use) environment.

When identifying receiving platforms, use top-level descriptions (e.g., T-45 aircraft, LHD-1 Class ships, software support activities).

Note: If MIL-STD-1388 is used, this paragraph constitutes the Use Study, Task 201.

#### 1.2 Program Status (Government)

Use fewer than 150 words to describe the program in non-technical language. Use Congressional Data Sheets as a source for this information. Address the following:

- Where the program is in the acquisition process (e.g., entering Demonstration and Validation Phase), how long the program has been in development and/or production, and when the end item is expected to be retired from service.
- Major events which have affected the program since the last milestone. Include subsequent guidance, decisions, and congressional actions.
- Additional information on the history of the program or other data considered essential for an accurate understanding of the program.
- Significant deficiencies necessitating major upgrades or modifications (at Milestone IV).

### 1.3 Threat

#### *(Government)*

This discussion focuses on the threat which drives the need for the end item. Include the hostile intelligence threat. Relate the threat(s) to the mission(s) described in the previous paragraphs. Refer to DoDI 5000.2, Sections 4-A and 4-C for guidance.

When addressing the expected operational environment for each threat, correlate threats to the mission(s) identified in Paragraph 1.1, Mission Description. Consider threats in the following areas: conventional; electronic; initial nuclear weapons effects; advanced technology/ intelligence; nuclear, biological, and chemical contamination; and terrorism or sabotage.

Use the MNS for source data when identifying threats. Also reference data in Defense Intelligence Agency (DIA) or Service Technical Intelligence Center approved documents which have been validated by the Service Intelligence Director. For major Acquisition Category (ACAT I) programs, reference the DIA-validated System Threat Assessment Report (STAR). List all related program documents in Table 13.1-1, Program Documents.

In some non-warfighting systems, the threat may be listed as "Not Applicable."

### 1.4 Predecessor End Item

#### 1.4.1 Identification

##### *(Government)*

Identify the end item being replaced. Indicate whether the predecessor end item is used as the Baseline Comparison System (BCS).

Note: The BCS is the existing end item (or composite of existing end items) which is most like the new end item. BCS data is used as a baseline for determining support requirements for the new end item. Paragraph 10.1, Approach, discusses the use of BCS data to define support requirements for the new end item. BCS data to be used is listed in Table 17-1, Government Furnished Information.

For example, early manpower estimates for the new end item will be drawn from BCS manpower requirements. These estimates will be adjusted on the basis of differences in design between the BCS and the new end item.

#### 1.4.2 Existing End Item Shortfalls

##### *(Government)*

Explain why existing capabilities cannot adequately counter the threat. If new or enhanced threats have made the predecessor end item less effective or obsolete, provide an explanation.

## 2.0 END ITEM REQUIREMENTS AND CONSTRAINTS

### 2.1 Design Constraints

#### *(Government)*

Summarize the constraints factored into the design of the end item as outlined in the MNS and other program documentation. Address the following as applicable:

- Constraints on end item size, space limitations, transportability restrictions, and organizational limitations (e.g., limits on end item manning levels)
- Constraints driven by human engineering, safety, training, and skill level limits
- Requirements for advanced training or testing features to be built into the end item
- Special operating environment constraints (refer to Paragraph 1.1)

Note: In this paragraph, address environmental constraints at the end item level; component-level environmental restrictions are addressed in Table 6.2-1, Configurations and Physical Characteristics.

### 2.2 Performance Requirements/Critical Characteristics/Readiness Objectives

This section provides a summary of end item requirements and objectives. As the acquisition progresses, it provides an overview of the results of testing and evaluation related to the established requirements. For guidance, refer to DoDI 5000.2, Sections 4-B, 4-C, and 11-A.

Note: Planning for test and evaluation is addressed in Annex Q, Test and Evaluation.

#### *(Government)*

In Table 2.2-1, identify the established performance requirements, critical characteristics, and readiness objectives. State each requirement in operational terms and list in priority order. Provide a measurable objective/threshold for each parameter.

- Performance Requirements:

Key performance thresholds will be included in the Concept Baseline at Milestone I. The performance thresholds will be used to help establish the objectives in the Concept Baseline subject to affordability constraints and the results of the Cost and Operational Effectiveness Analysis (COEA) during Phase 0. Key performance thresholds are also included in the Development Baseline (Milestone II) and the Production Baseline (Milestone III). The performance thresholds cited in the MAPP must consider, and be consistent with, the COEA at each milestone. Include the COEA in Table 13.1-1, Program Documents.

Examples of performance parameters include, but are not limited to, the following:

Hit/Kill Probability	Acceleration Rate
Rate of Fire	Speed
Crew Size	Accuracy
Altitude	Range
Lethality	Payload
Resistance to Detection	Communication Rate
Processing Speed	Intelligibility

• Critical Characteristics:

A critical characteristic is a requirement which must be met for the end item to accomplish its mission. Include the following:

- Electronic Counter-Countermeasures (ECCM) and Wartime Reserve Modes (WARM) requirements
- Conventional, initial nuclear weapons effects, and Nuclear, Biological, and Chemical (NBC) contamination
- Natural environmental factors (such as climatic, terrain, and oceanographic factors) (refer to Paragraph 1.1)
- Electromagnetic Compatibility (EMC) and frequency spectrum assignment for end items operating in the electromagnetic spectrum
- Fault detection, fault isolation, and false removal rates

For example, a critical characteristic for a communications system would be intelligibility. The following requirements might be established:

<u>Ambient Noise</u>	<u>Threshold</u>
135 dB	60%
120 dB	75%
85 dB	90%

dB = Decibels

In this case, an operator would have to rate communication satisfactory 60% of the time in an environment with an ambient noise level of 135 decibels.

Note: Diagnostic effectiveness thresholds are required for end items whose faults are detected by external support equipment or Built-In Test (BIT).

For guidance, refer to DoDI 5000.2, Sections 4-B, 4-C, 6-A, 6-E, 6-F, 6-G, and 7-C.

- Readiness Objectives:

Operational Availability ( $A_o$ ) is the first readiness threshold established. As the design and readiness requirements are refined, the following readiness thresholds should be included (the list is not all-inclusive and should be augmented as appropriate):

- Both Hardware and Software (including support and training hardware and software)
  - Mean Time Between Failure (MTBF)
  - Mean Time Between Mission Critical Failures (MTBMCF)
  - Mean Time Between Faults - System (MTBF-s)
  - Mean Time To Restore - Operator (MTTR-o)
  - Mean Time Between Maintenance Actions (MTBMA)
  - Maximum Corrective Maintenance Time ( $T_{max_c}$ ) or allowable downtime or turnaround time for specific battle damage repair scenarios
  - Maintenance Skill Level
- Hardware only
  - Mean Time to Repair (MTTR)
  - Turn Around Time (TAT) for removal/replacement operations
  - Maintenance Man-Hours per Operating Hour (MMH/OH) at one or more levels of maintenance
- Software only
  - Mean Time Between Faults
  - Mean Time To Fail (MTTF)

Readiness thresholds for aircraft will be stated as Fully Mission Capable (FMC) and Mission Capable (MC) rates. Thresholds for ships will be stated as FMC, Primary Mission Capable (PMC), and MC rates. Integrated systems (command and control, surveillance, air traffic control, etc.) which operate in multiple modes and exhibit graceful degradation may also use the FMC/PMC/MC approach. Each level of capability must be clearly defined by the use of block diagrams or mission essentiality matrices developed by the sponsor and concurred with by the Fleet. List related diagrams/matrices in Table 13.1-1, Program Documents.

At program initiation, the FMC rate is stated for the top-level end item. By Milestone I, PMC and MC rates will also be stated. By Milestone II, block diagrams must be developed showing each state of readiness.

For end items installed on platforms, the threshold is based on the most demanding operational scenario of all receiving platforms.

Table 2.2-1 End Item Performance Requirements/ Critical Characteristics /Readiness Objectives	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Parameter:	Identify the factor to be evaluated. Examples are provided above; they are not all-inclusive and must be tailored for each acquisition.
Threshold:	<p>The threshold is the minimum acceptable value for the given parameter. Thresholds must be stated in the following terms:</p> <ul style="list-style-type: none"> <li>• Relative terms (e.g., increase by 10%)</li> <li>• Specific quantitative values (e.g., 1 hour; shoot 200 rounds per minute; 500 mph)</li> </ul> <p>Note: Before the design is set, provide temporary ranges in this block. Once the design is stable, replace the ranges with firm thresholds.</p>
Category:	<p>Place an "x" in the appropriate column(s) to indicate if the parameter is a:</p> <p style="text-align: center;">P - Performance Requirement C - Critical Characteristic R - Readiness Objective</p> <p>Note: A performance requirement or readiness objective may also be a critical characteristic.</p>
Condition:	Place an "x" in the appropriate column(s) to indicate whether the threshold applies to Peacetime (P), Wartime (W), or both.
Test:	<p>Indicate the test during which the threshold will be assessed (e.g., DT I, DT II). Use the following abbreviations:</p> <p style="text-align: center;">DT - Demonstration Test OT - Operational Test</p>
Decision Supported:	List the Milestone, In-Progress Review (IPR), or other major event supported by this test.
Demonstrated Value:	<p>Provide the test result for each parameter in terms of the established threshold as measured during the given test. (Refer to Annex Q, Test and Evaluation.)</p> <p>For example, if the MTTR threshold of 1 hour is established, and it takes an average of 45 minutes to repair the end item during testing, enter 45 minutes in the Demonstrated Value column.</p> <p>The demonstrated value data is obtained from test and evaluation reports.</p>

**2.3 Utilization (Aircraft Only)  
(Government)**

Complete Table 2.3-1 for aircraft only. It reflects the projected utilization of the end item per receiving activity.

<b>Table 2.3-1 Utilization Rate (Aircraft Only)</b>	
<b>Data Element</b>	<b>Description</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Activity:	Identify, by six-character Unit Identification Code (UIC), the activity to receive the end item.
Quantity:	Identify the quantity of aircraft to be provided to the given activity.
Monthly Wartime Utilization Rate:	Indicate the monthly projected wartime utilization rate in hours.
Average Sortie Length:	Indicate the projected average sortie length in hours.

## 2.4 Initial Operational Capability Requirements (Government)

In Table 2.4-1, define what actions, when complete, will constitute attainment of Initial Operational Capability (IOC). If IOC must be achieved within a specific window of opportunity, describe the impact if IOC is delayed.

<b>Table 2.4-1 Initial Operational Capability Requirements</b>	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY)
IOC Window:	If availability in a specific time frame is important, specify the time-frame in which IOC must occur. (From MM-DD-YY to MM-DD-YY)
Number of Operational End Items:	Provide the number of operational end items which must be installed to constitute IOC.
Number of Operating Personnel:	Provide the total number of operators required for IOC. Details on personnel requirements will be addressed in Annex B, Manpower and Personnel.
Number of Maintenance Personnel:	Provide the total number of maintainers required for IOC. Details on personnel requirements will be addressed in Annex B, Manpower and Personnel.
Facilities Required:	Summarize the facilities required for IOC (e.g., modification of hangar facilities at Patuxent River Naval Air Station). The precise modification requirements will be addressed in the Annex H, Facilities.
O-Level Requirements:	Summarize the organizational level maintenance capability which must be established for IOC. Details will be addressed in Annex A, Maintenance Planning.
I-Level Requirements:	Summarize the intermediate level maintenance capability which must be established for IOC. Details will be addressed in Annex A, Maintenance Planning.
D-Level Requirements:	Summarize the depot level maintenance capability which must be established for IOC. Details will be addressed in Annex A, Maintenance Planning.

## 2.5 Dynamic Simulation Requirements (Contractor)

Explain the role of dynamic simulation in the design of the end item and the development and implementation of the support structure (e.g., human engineering, test and evaluation, training, safety). Describe procedures to validate the technical accuracy and effectiveness of the simulation.

Use subparagraph structure to define each mission/scenario which will be simulated (use the simulated mission as the paragraph title). Include techniques, procedures, and the reason the mission scenario is being simulated. Also explain how the simulation will be used, such as:

- Human performance and workload analysis;
- Test and demonstration;
- End item design development;
- Tactics development and verification;
- Development and verification of operator skill, knowledge, and other training data;
- Development and verification of operator procedures (including degraded mode and emergency procedures); and
- Development and verification of technical publications.

In Table 2.5-1, indicate the support elements which will employ dynamic simulation techniques. In the strategy paragraph for each affected annex, describe how the simulation(s) will be used to further the development and/or implementation of that support element.

<b>Table 2.5-1 Dynamic Simulation Summary</b>	
<b>Data Element</b>	<b>Definition</b>
Date	Provide date of initial data entry or modification (DD-MM-YY).
Mission/Scenario:	Identify the mission/scenario being simulated. Use subparagraph titles created above.
Support Element Areas:	Place an "x" in the appropriate column(s) to specify which of the following elements will employ dynamic simulation: <ul style="list-style-type: none"> <li>• Maintenance Planning</li> <li>• Manpower/Personnel</li> <li>• Supply Support</li> <li>• Support Equipment</li> <li>• Technical Data</li> <li>• Training and Training Support</li> <li>• Computer Resources Support</li> <li>• Facilities</li> <li>• Packaging, Handling, Storage, and Transportation (PHST)</li> <li>• Reliability and Maintainability</li> <li>• Safety</li> <li>• Quality Assurance</li> <li>• Human Engineering</li> <li>• Electromagnetic Compatibility</li> <li>• Survivability</li> <li>• Test &amp; Evaluation</li> </ul>

**2.6 Interfacing Systems and Interoperability**  
**(Government)**

Identify other systems with which this end item must interface. Include:

- Computer hardware and software interfaces

- Interoperability requirements
- Command, control, communication, and intelligence interfacing systems (from Force and platform levels to subsystem level)
- Joint service, other Government, and Allied systems
- Discussion of how the system will be integrated into the C<sup>3</sup>I architecture that is forecasted to exist at the time the system will be fielded
- Data requirements (data, voice, video), computer network support, and anti-jam requirements
- Unique intelligence information requirements, including intelligence interfaces, communications, and data base support pertaining to target and mission planning activities, threat data, etc.
- Procedural and technical interfaces and communications protocols, and standards required to be incorporated to ensure interoperability with other Service, joint service, and Allied systems
- Energy standardization and efficiency needs for both fuels and electrical power as applicable

Also identify equipment specified for inclusion in this end item.

For each interface, summarize the major terms of interface agreements with cognizant program offices, activities, etc., which allow for exchange of information critical to the design of this end item. Identify interface agreements in Table 13.1-1, Program Documents. Interfacing Configuration Control Boards (CCBs) are identified in Table K.1.2-1, Interfacing Configuration Control Board/Interface Control Working Groups.

***(Contractor)***

After contract award, update interface data as necessary to reflect all interfaces. Address unique requirements associated with commercial item interface. Include interfaces with other end items which will exist by the time this end item is fielded. If this end item interfaces with more than one other system, develop one subparagraph for each interfacing system (e.g., 2.6.1 Navigation System; 2.6.2 Chilled Water System; 2.6.3 Ventilation System).

**3.0 SECURITY**

**3.1 Classification  
*(Government)***

Provide the security classification of the end item.

3.2 **Requirements**  
***(Government)***

Describe the vulnerability of the acquisition program to foreign intelligence collection efforts (including all vendor locations). Describe the overall approach to counter this threat.

For acquisitions dealing with classified matters, discuss how adequate security will be established, maintained, and monitored throughout all phases and activities of the acquisition [Federal Acquisition Regulations (FAR) Subpart 4.4]. Identify security requirements to be imposed on contractors. Include security requirements associated with the development and transport of the end item and its components, including software. Indicate whether a Program Protection Plan is required. If so, list it in Table 13.1-1, Program Documents.

Both contractor and Government facilities and personnel may require clearances before handling data associated with a classified program. Summarize the personnel security clearance requirements (e.g., secret clearance required for all personnel working on the program). Identify status of required facility security certifications in Table 13.4-1, Certifications.

3.3 **Contractor Approach**  
***(Contractor)***

Describe the process for fulfilling Government security requirements. Describe how contractor-unique security requirements will be met (e.g., special security requirements because of the contractor's facility location). Explain how the prime contractor will ensure subcontractor compliance with security requirements. Identify the primary points of contact for Security in Table 14.1-1, Program Participants.

Identify security issues, including classified software processing issues associated with the hardware or firmware items.

Identify measures to protect against unauthorized (accidental or intentional) disclosure, modification, or destruction of automated systems, networks, documents, etc., such as:

- Physical structures and devices (e.g., file cabinets, vaults, cipher locks)
- Personnel controls
- Communication controls (e.g., data encryption)
- Accountability (e.g., logout/sign-out procedures)

Explain how the requirements in the Government's Program Protection Plan will be fulfilled. This plan is developed if program information and/or technologies must be safeguarded from foreign countries. The Program Protection Plan describes the procedures required to ensure the protection of all essential information, regardless of its location. (Refer to DoDI 5000.2, Section 5-F.)

In Table 3.3-1, list each area of vulnerability identified in the Program Protection Plan. For each area of vulnerability, describe the methodologies, including the avoidance and/or countermeasure actions, planned to address each area. Include the requirements and threats associated with all contractor, sub-contractor, or vendor-controlled locations where the identified vulnerability exists.

<b>Table 3.3-1 Program Protection Summary</b> <i>(Complete one copy for each vulnerability identified.)</i>	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Vulnerability:	State the area of vulnerability as identified in the Program Protection Plan (e.g., contractor release of program data).
Environment(s):	Identify the environment(s) in which the vulnerability exists (e.g., during use of computer networks, when leaving the prime/subcontractor facilities).
Program Protection Approach:	Describe each activity and methodology planned to counter/reduce the impact of the given vulnerability (e.g., computer system cleared for secret data; computers and facilities require log-in/log-out; all program personnel cleared to secret level; data maintained in secure storage).

#### 4.0 ALTERNATIVES ASSESSED AND RESULTS

In the following subparagraphs, discuss the alternative solutions to the mission need and identify the driving decision factors.

##### 4.1 Trade-Off Factors

###### *(Government)*

In describing the trade-off factors, include those related to schedule, performance, cost, and supportability. Clearly identify the underlying cause(s) of each factor.

For example, the requirement not to exceed the manpower levels of the predecessor end item may result in the need for a technologically sophisticated end item. This would drive the cost of the end item as well as the cost of the support system (e.g., greater skill requirements translate into increased training requirements/costs). The cost driver in this example is the constraint on manpower.

The relative weight assigned to trade-off factors can eliminate alternative solutions from consideration. Prioritize the trade-off factors to demonstrate their relative weight in trade-off decisions.

For example, if survivability is weighted very heavily, use of a commercial item may only be considered if redundant end items are part of the solution or the commercial item is hardened. However, the cost of buying two or more items for each application, or hardening the item, may be unacceptable.

**4.2 Design Alternatives**  
**(Government)**

Use the following guidance to summarize each alternative (use a separate subparagraph for each alternative).

- For ACAT I programs, identify the major features of the alternative designs by summarizing the findings presented in the COEA.
- For programs assigned to other ACATs, explain how the end item alternatives were evaluated.
- For all ACATs, define the reasons for rejection of alternatives.

For developmental acquisitions, describe the market research efforts planned or undertaken to identify commercial items, as defined in DFARS 210.001, that could satisfy the acquisition objectives. That is, certify that the use of commercial items was thoroughly investigated before the decision was made to initiate a new development.

Complete Table 4.2-1 to identify the distinguishing features of each alternative considered and the results of assessments conducted.

<b>Table 4.2-1 Design Alternatives</b> <i>(Complete one copy for each design alternative.)</i>	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Identification:	Identify the alternative by title or other discriminator (e.g., Alternative #1).
Description:	Provide a general description of this alternative (e.g., modification of the XYZ interior communications system).
Major Features:	Describe the major features of this alternative.
Advantages:	Based on assessments conducted, list the major advantages of this alternative.
Disadvantages:	Based on assessments conducted, list the major disadvantages of this alternative.
Other Data:	Provide other information which contributes to the selection or rejection of this alternative.

**4.3 Selected Alternative and Rationale**

**4.3.1 Identification**  
**(Government)**

Explain why the alternative was selected. Summarize the results of trade-offs among cost, schedule, capability/performance, and support. Explain the expected consequences of trade-off decisions on the various cost, schedule, capability/performance, and support goals. (e.g., If performance capabilities were sacrificed for cost savings, explain the expected impact of reduced performance on mission accomplishment.) A detailed functional and physical description of the selected alternative will be provided in Paragraph 6.0, End Item Description.

**4.3.2 Environmental Impact**  
*(Government)*

Explain whether the selected alternative is environmentally preferable. Identify outstanding environmental issues and explain plans to eliminate or reduce environmental risks. Address the applicability of an environmental assessment or environmental impact statement (refer to 40 CFR 1502). If the results of environmental assessments are publicized, summarize public response. Identify environment-related requirements to be included in solicitations and contracts.

Ensure compliance with DoDD 4210.15, Hazardous Material Pollution Prevention.

**5.0 RISK ASSESSMENT**

All acquisition programs must identify and assess risks and establish programs to eliminate them, or reduce their impact to an acceptable level.

The program-level technical, schedule, and cost risks are addressed in this section of the MAPP. Risks associated with a support element covered in the MAPP annexes are to be addressed in the related annex.

For example, if technical manual development is delayed because of end item configuration changes, timely delivery of the associated maintenance procedures, training curricula, and simulation software may be at risk. If all of these support elements are delayed, IOC may also be affected. The risk to the technical manual program will be addressed in Annex E, Technical Data. The risk to the development of maintenance procedures will be addressed in Annex A, Maintenance Planning. The risk to training curricula and simulation software will be addressed in Annex F, Training and Training Support. The risk to the overall schedule of the program will be addressed in Paragraph 5.2, Schedule. If the schedule slips, this will be reflected in Table 16-1, Installation Schedule.

In Annex D of the Integrated Program Summary (IPS), risks are rated as low, moderate, or high (refer to DoD 5000.2-M, Section 4-E). Risk areas assigned a rating of moderate or high in the IPS must be addressed in the MAPP (either in this paragraph or in the affected annex). When describing a risk in any section of the MAPP, explain how the risk was identified. Refer to DoDI 5000.2, Section 5-B.

**5.1 Technical**  
*(Government)*

Identify technical risks associated with the acquisition. Include trade-offs involving technical risk, such as those associated with the use of emerging technologies and commercial items.

For example, at the current rate of technological advance, a developmental end item may be obsolete before it is fielded. In acquisitions involving cutting edge technology, the risk of obsolescence must be factored into trade-off analyses. One method to reduce such

risk is to use a commercial, or modified commercial, item which can be fielded and upgraded quickly.

For each risk identified, describe how the risk will be eliminated or reduced. Refer to DoD 4245.7-M, Transition from Development to Production, for ways to identify and address design and related technical risk areas.

5.2 **Schedule**  
***(Government)***

Failure to recognize and address other risk factors can affect the ability to meet schedules. The potential cause(s) of schedule risk should be clearly described in the appropriate paragraphs of the MAPP.

For example, a design modification is being considered to replace a major component of the end item because of repeated technical problems. The replacement, while reliable, is a long lead item. The risk would be described under Technical Risk; the impact of that risk might be reflected in several annexes (Supply Support, Training and Training Support, Configuration Management, etc.). The potential effect of this issue on the schedule is described in this paragraph; modified dates are reflected in Table 16-1, Installation Schedule.

Explain unique factors which drive schedule requirements.

For example, if the program is designed to address an urgent need, certain priorities and procedures may apply. If so, specify the method for obtaining and using priorities, allocations, and allotments (refer to FAR Subpart 12.3 and Paragraph 7.1 of this Handbook). For further guidance, see DoDI 4400.1, Priorities and Allocations - Delegation of DO and DX Priorities and Allocations Authorities, Rescheduling of Deliveries, and Continuance of Related Manuals. (DO and DX are contract rating symbols; DX-rated contracts and orders take precedence over DO-rated contracts and orders which take precedence over unrated contracts and orders.)

For each risk identified, describe how the risk will be eliminated or reduced (e.g., concurrent development and production is used as a means to reduce production time and meet a critical schedule requirement). Refer to DoD 4245.7-M, Transition from Development to Production, for ways to identify and address schedule risk areas.

5.3 **Cost**  
***(Government)***

Like schedule risk, cost risk can result from other risk factors.

For example, a need to rely on prolonged interim supply support may have a cost risk associated with it. The supply support issues are addressed in Annex C, Supply Support. The cost risks associated with a

decision to increase the use of interim support are reflected in this paragraph.

However, cost risks may result directly from funding shortfalls or cutbacks. Such events are described in this paragraph. Also explain methods used to detect and address unanticipated costs. The effects of these events (i.e., cutbacks, shortfalls, unanticipated costs) are to be reflected in the appropriate sections of the MAPP.

For example, if cutbacks drive the decision to procure fewer end items, the number of personnel scheduled for training may be reduced and there may be fewer installation sites. Such effects will be reflected in Annex B, Manpower and Personnel; Annex F, Training and Training Support; and throughout the MAPP wherever delivery data appears.

For each risk identified, describe how the risk will be eliminated or reduced.

For example, low rate initial production may be used to decrease costs over the life-cycle of the end item by providing the opportunity to test a technically risky solution to the mission need.

Refer to DoD 4245.7-M, Transition from Development to Production, for ways to identify and address cost risk areas.

## 6.0 END ITEM DESCRIPTION

### 6.1 Functional Description

#### *(Government)*

Provide a general description of how the end item works. Include the function(s) of major components/software and explain how they interface to provide the desired capability.

#### *(Contractor)*

Provide a functional block diagram of the end item and its major components as Figure 6.1-1. (Click on the icon in the MAPP and develop a functional block diagram in Power Point.)

### 6.2 Physical Description

#### *(Contractor)*

The purpose of this section is to define: 1) the various configurations of the end item, and 2) the physical characteristics, unique features, and requirements of its components.

Describe the top-level physical features of the end item (e.g., size, color, unique physical attributes such as access panels, protector panels, tilted viewing screen). Use a separate subparagraph for each configuration of the end item.

Note: Ranges are often used early in the acquisition process to give designers greater flexibility as they perform trade-off analyses. When designing the end item, such ranges permit the designers to increase

standardization, maximize the use of commercial components, satisfy other acquisition objectives, etc.

For example, a size requirement may be stated in terms of the following ranges:

Height:	36" to 43"
Width:	48" to 59"
Depth:	12" to 14"

Complete Table 6.2-1 to identify the components of each configuration of the end item to the lowest repairable level, including both hardware and software. Identify each component of the end item in a manner which reflects a top-down breakdown of the given configuration of the end item. Complete one copy of Table 6.2-1 for each configuration item of each configuration of the end item.

Note: Table 6.2-1 does not apply to platform (i.e., aircraft/ship) acquisitions.

Note: Because the end item is described to the lowest repairable level, it is expected that multiple copies of the table will be required to describe all of the components of the configuration. The tables for each configuration make up a set of equipment description sheets. All subsystems/equipment/components/repairables of the given configuration of the end item must be identified (unless repairables are identified elsewhere).

<b>Table 6.2-1 Configurations and Physical Characteristics</b> <i>(Complete one copy for each CI of each configuration of the end item.)</i>	
Data Element	Description
Date:	Provide date of initial data entry or modification (MM-DD-YY).
<b>Section A. Configuration Item Identification</b>	
Configuration:	Provide approved nomenclature for this configuration of the end item. For Hull, Mechanical, and Electrical (HM&E) systems, use the Allowance Parts List (APL) designated name. Include Type/Model/Series.
CAGE Code:	Provide contractor and Government Entity (CAGE) code of this configuration of the end item.
Item Name:	Provide noun name of this Configuration Item (CI). For items installed on ships, this is the noun name as entered into Ship Configuration and Logistics Support Information System (SCLISIS). For Computer Software CIs (CSCIs) (including firmware), include the version number (e.g., MS-DOS version 6.22). Identify CSCIs at the <u>program</u> level (e.g., Excel, WordPerfect, Microsoft Word, Windows).
CI Number:	Provide unique number assigned to this CI (refer to Paragraph K.2.2, Configuration Item Numbering).
Configuration Audit:	Provide dates of configuration audits performed on this configuration of the end item (MM-DD-YY).

<b>Table 6.2-1 Configurations and Physical Characteristics</b> (Complete one copy for each CI of each configuration of the end item.)	
<b>Data Element</b>	<b>Description</b>
Type:	For each audit performed, enter a "P" for a physical configuration audit or an "F" for a functional configuration audit (refer to Paragraph K.4, Configuration Audits).
Hardware:	Place an "x" in the space provided if this is a hardware CI.
Firmware:	Place an "x" in the space provided if this is a firmware CI.
Software:	Place an "x" in the space provided if this is a software CI.
Commercial:	Place an "x" in the space provided if this is a commercial CI.
Modified Commercial:	Place an "x" in the space provided if this is a modified commercial CI.
Developmental:	Place an "x" in the space provided if this is a developmental CI.
GFE:	Place an "x" in the space provided if this CI is Government Furnished Equipment (GFE).
Manual:	Place an "x" in the space provided if operation of the CI involves any human participation, no matter how small the participation.
Automated:	Place an "x" in the space provided if this CI operates automatically.
Location:	Identify location of this CI when installed aboard aircraft/ship.
<b>Section B. Hardware</b>	
EIC:	Provide Equipment Identification Code (EIC) of this CI.
Manufacturer's Part Number:	Provide the Manufacturer's Part Number for this CI.
NSN:	Provide National Stock Number (NSN) of this CI.
Quantity:	Indicate how many of this CI are used in this configuration of the end item.
Length:	Provide overall length of this CI; indicate, by placing an "x" in the appropriate space, whether the measurement is in centimeters (cm) or inches (in). If there is an acceptable range for this parameter, provide the range and indicate the unit of measurement.
Width:	Provide overall width of this CI; indicate, by placing an "x" in the appropriate space, whether the measurement is in centimeters (cm) or inches (in). If there is an acceptable range for this parameter, provide the range and indicate the unit of measurement.
Height:	Provide overall height of this CI; indicate, by placing an "x" in the appropriate space, whether the measurement is in centimeters (cm) or inches (in). If there is an acceptable range for this parameter, provide the range and indicate the unit of measurement.
Weight:	Provide total weight of this CI; indicate, by placing an "x" in the appropriate space, whether the measurement is in kilograms (kg) or pounds (lb.). If there is an acceptable range for this parameter, provide the range and indicate the unit of measurement.
Drawing Number:	Provide number(s) of the drawing(s) associated with this CI (refer to Table E.3.2-1, Engineering Drawing Identification).  Note: The procurement contract must specify the type of drawings required for all levels of detail, from the system/subsystem level to the repairable level (e.g., schematic, parts location, wiring).  Refer to DoDI 5000.2, Sections 9-A and 9-B.

<b>Table 6.2-1 Configurations and Physical Characteristics</b> <i>(Complete one copy for each CI of each configuration of the end item.)</i>																									
<b>Data Element</b>	<b>Description</b>																								
Level of Drawing:	Indicate level of the drawing identified in the previous data field. Choose from:  C - Conceptual Design D - Developmental Design P - Product																								
Standard:	Place an "x" in the space provided if this CI is a standard item (refer to Paragraph 12.0).																								
MCC:	<p>Place an "x" in the space provided to indicate the Mission Criticality Code (MCC) assigned to the CI.</p> <p>The MCC is a numeric code assigned to a component in a specific application to denote its importance to the mission of the end item in which the component is installed. If the same component is used to support different missions (more than one of the component is installed in the end item), the highest MCC will be applied to identical components. The MCC is assigned as follows:</p> <p><b>Alternatives For Mission Accomplishment</b></p> <table border="1"> <thead> <tr> <th><u>R*</u></th> <th><u>A*</u></th> <th><u>N*</u></th> <th><u>Impact if All Alternatives Fail</u></th> </tr> </thead> <tbody> <tr> <td>C3</td> <td>C4</td> <td>C4</td> <td>Total loss of mobility, propulsion, or life support.</td> </tr> <tr> <td>C2</td> <td>C3</td> <td>C4</td> <td>Severe degradation or total loss of a primary mission.</td> </tr> <tr> <td>C1</td> <td>C2</td> <td>C3</td> <td>Severe degradation of a primary mission.</td> </tr> <tr> <td>C1</td> <td>C1</td> <td>C2</td> <td>Total loss or severe degradation of a secondary mission.</td> </tr> <tr> <td>C1</td> <td>C1</td> <td>C1</td> <td>No mission impact.</td> </tr> </tbody> </table> <p>R* - Redundant systems/equipment/components available  A* - Alternatives (excluding redundancies) available  N* - Neither redundancies nor other alternatives available</p> <p>For example, if component failure would lead to the loss of mobility, propulsion, or life support, an MCC of C3 would be assigned if provisions were made for a redundant component to assume the component's mission (e.g., automatic switching to the redundant component when the original fails). If redundancy for this component has not been built into the end item, it would have to be assigned a C4 and the associated risk would have to be addressed through other means.</p>	<u>R*</u>	<u>A*</u>	<u>N*</u>	<u>Impact if All Alternatives Fail</u>	C3	C4	C4	Total loss of mobility, propulsion, or life support.	C2	C3	C4	Severe degradation or total loss of a primary mission.	C1	C2	C3	Severe degradation of a primary mission.	C1	C1	C2	Total loss or severe degradation of a secondary mission.	C1	C1	C1	No mission impact.
<u>R*</u>	<u>A*</u>	<u>N*</u>	<u>Impact if All Alternatives Fail</u>																						
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C2	C3	C4	Severe degradation or total loss of a primary mission.																						
C1	C2	C3	Severe degradation of a primary mission.																						
C1	C1	C2	Total loss or severe degradation of a secondary mission.																						
C1	C1	C1	No mission impact.																						
<b>Special Requirements</b> <i>Complete the appropriate blocks in this section to identify special support requirements associated with this hardware CI. The purpose of this section is to flag CIs which have special requirements. The methods for addressing special requirements are to be described in the related annex(es).</i>																									
Support Requirements Analysis Candidate:	Place an "x" in the space provided if the CI will be subjected to support analysis. (Refer to Paragraph 10.1.)																								

<b>Table 6.2-1 Configurations and Physical Characteristics</b> (Complete one copy for each CI of each configuration of the end item.)	
<b>Data Element</b>	<b>Description</b>
PHST Candidate:	Place an "x" in the space provided if this CI requires PHST. (Refer to Annex I, PHST.)
Facilities Candidate:	Place an "x" in the space provided if the CI has facility implications. (Refer to Annex H, Facilities.)
Safety Candidate:	Place an "x" in the space provided if the CI poses a safety threat. (Refer to Annex L, Safety.)
Center of Gravity:	Identify center of gravity of the CI.
Hardpoint Locations:	Identify specific hardpoint locations of the CI as necessary to support handling requirements.
Temperature Requirements:	Place an "x" in the space provided if the CI is sensitive to temperature (e.g., requires cooling).
Humidity Requirements:	Place an "x" in the space provided if the CI is sensitive to humidity.
ESD Protection Requirements:	Place an "x" in the space provided if the CI must be protected from Electrostatic Discharge (ESD).
Shock Protection Requirements:	Place an "x" in the space provided if the CI must be protected from shock.
Weather Protection Requirements:	Place an "x" in the space provided if the CI must be protected from weather.
Vibration Protection Requirements:	Place an "x" in the space provided if the CI must be protected from vibration.
NBC Protection Requirements:	Place an "x" in the space provided if the CI must be protected from exposure to NBC contaminants.
Contains Hazardous Material:	Place an "x" in the space provided if the CI contains any form of hazardous material (e.g., ordnance/explosives, poisons, toxins). If so, complete the next two blocks. Note: Details of hazardous material are contained in Table L.2-1, Hazard Identification and Control.
Hazard Classification:	If the CI contains hazardous material, provide the full hazard classification of the candidate item.  Note: Hazard classifications are numerical designators which are assigned to denote that the material is either explosive or poisonous. Refer to NAVSEAINST 8020.8/DLAR 8220-1 for guidance related to Explosives Hazard Classification.
UN Number(s):	If the CI contains hazardous material, list the appropriate four-digit United Nations (UN) identification number(s) for the item. UN numbers are identified in UN Publication ST/SG/AC.10/1 and 49 CFR 100 to 127, paragraph 172.102.
Contains Explosives:	Place an "x" in the space provided if the CI contains any explosives/ordnance. If so, complete the next three blocks.
Sensitive Munitions:	Place an "x" in the space provided if the CI contains sensitive munitions.
HERO Requirements:	If this CI contains sensitive munitions, place an "x" in the space provided if the explosives/ordnance must be protected from exposure to electromagnetic radiation [Hazard of Electromagnetic Radiation to Ordnance (HERO)].

Table 6.2-1 Configurations and Physical Characteristics (Complete one copy for each CI of each configuration of the end item.)																												
Data Element	Description																											
Net Explosive Weight:	Provide total weight of explosives in the item (explosives weight only, exclusive of hardware, etc.).																											
Hardness Surveillance Candidate:	Place an "x" in the space provided if the CI is a candidate for hardness surveillance. (Refer to Annex P, Survivability, Paragraph P.1, Strategy.) If so, complete the next two data elements.  This data element is related to survivability and is used for components which are hardness surveillance candidates. Such components are expected to undergo hardness degradation as a result of operational life.																											
Hardness Degradation Code:	If the CI is a hardness surveillance candidate, place an "x" in the appropriate space to indicate the assigned degradation code. (Refer to Annex P, Survivability, Paragraph P.2, Results.) Use the following codes (from H1 - low likelihood/low impact - through H4 - high likelihood/severe impact) to indicate the probability of degradation to this component during normal operating life:  <table border="1"> <thead> <tr> <th colspan="3">Likelihood that Degradation will Occur</th> <th rowspan="2">Impact If Degradation Occurs</th> </tr> <tr> <th>Low</th> <th>Moderate</th> <th>High</th> </tr> </thead> <tbody> <tr> <td>H3</td> <td>H4</td> <td>H4</td> <td>Total loss of mobility, propulsion, or life support.</td> </tr> <tr> <td>H2</td> <td>H3</td> <td>H4</td> <td>Severe degradation or total loss of a primary mission.</td> </tr> <tr> <td>H1</td> <td>H2</td> <td>H3</td> <td>Severe degradation of a primary mission.</td> </tr> <tr> <td>H1</td> <td>H1</td> <td>H2</td> <td>Total loss or severe degradation of a secondary mission.</td> </tr> <tr> <td>H1</td> <td>H1</td> <td>H1</td> <td>No mission impact.</td> </tr> </tbody> </table>	Likelihood that Degradation will Occur			Impact If Degradation Occurs	Low	Moderate	High	H3	H4	H4	Total loss of mobility, propulsion, or life support.	H2	H3	H4	Severe degradation or total loss of a primary mission.	H1	H2	H3	Severe degradation of a primary mission.	H1	H1	H2	Total loss or severe degradation of a secondary mission.	H1	H1	H1	No mission impact.
Likelihood that Degradation will Occur			Impact If Degradation Occurs																									
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H1	H1	H2	Total loss or severe degradation of a secondary mission.																									
H1	H1	H1	No mission impact.																									
Hardness Degradation Description:	If the CI is a hardness surveillance candidate, describe the characteristics of the expected degradation and the circumstances when it is likely to occur (e.g., during maintenance or after 2000 hours of operation, whichever comes first). (Refer to Annex P, Survivability, Paragraph P.2, Results.)																											
<b>Section C. Firmware/Software:</b>																												
Major Function:	Describe the major functions of the CSCI.																											

## 7.0 ACQUISITION STRATEGY

### 7.1 Overview (Government)

Describe the general philosophy and specific acquisition strategies employed. Explain how they were selected, including the determination that the acquisition is a new development or commercial item.

Include the following:

- At Milestone I: Discuss why an existing U.S., allied military, or commercial end item, or product improvement of an existing end item, was not selected over a

proposed new end item. Identify existing military or commercial components which will be evaluated for use or possible modification during the next phase.

- At Milestone II: Identify which subsystems, components, or materials require new or additional development. Discuss why an existing military or commercial subsystem, component, or material cannot be used.

Explain and provide reasons for urgency or other special delivery requirements if it results in concurrency of development and production or constitutes justification for not providing for full and open competition (refer to FAR Subpart 12.1).

For example, timely delivery might be required in order for the Government to meet its obligations under another contract; or if timely delivery or performance is unusually important to the Government, liquidated damages considerations might be required.

Refer to DoDI 5000.2, Section 5-A for guidance when discussing the use of evolutionary acquisition or Pre-Planned Product Improvement (P<sup>3</sup>I) strategies.

Discuss foreign sales implications and summarize the impact of Foreign Military Sales (FMS) on the support structure. Also describe steps taken to ensure that Allied capabilities are properly and thoroughly considered before new development efforts are initiated. Describe efforts to satisfy Navy requirements through cooperative joint research, development, and/or production programs. Identify economies of scale afforded by these programs. State whether existing equipment from other Allied nations will satisfy Navy requirements.

Describe plans for multi-service utilization (e.g., Coast Guard, Army). Include the impact of shared utilization on the support structure. Describe steps taken to ensure that the capabilities of other U.S. Government agencies are properly and thoroughly considered before new or expanded efforts are initiated, including cooperative joint research, development, production, and support programs. State when existing equipment or capability from other agencies will satisfy Navy requirements. Include a statement of the coordination with similar work being pursued elsewhere under joint funds.

## 7.2 **Make-or-Buy** ***(Government)***

Make-or-buy programs are required for all negotiated acquisitions whose estimated value is five million dollars or more, except when the proposed contract:

- Is for research or development and, if prototypes or hardware are involved, no significant follow-on production under the same contract is anticipated;
- Is priced on the basis of adequate price competition, or established catalog or market prices of commercial items sold in substantial quantities to the general public, or has only prices set by law or regulation; or

- Involves only work that the contracting officer determines is not complex.

When describing the make-or-buy program, refer to FAR Subpart 15.7 and DFARS Subpart 215.7 for guidance.

**7.3 Industrial Preparedness**  
***(Government)***

Federal law requires the department or agency to conduct, for each ACAT I program, an analysis of the capabilities of the defense industrial base to develop, maintain, and support the end item (refer to DoDD 4005.1, Industrial Preparedness Program).

Provide the program's Industrial Preparedness (IP) strategy that assesses the capability of the U.S. industrial base to achieve identified surge and mobilization goals. Discuss the need to create or preserve domestic sources. Describe actions taken to ensure that adequate industrial resources are available to support peacetime, surge, and mobilization material production and maintenance requirements. If there are deficiencies in the industrial base, identify corrective actions and estimated cost and time required to implement those actions. If no IP strategy has been developed, provide supporting rationale for this position.

If the IP strategy includes the development of a detailed IP plan, indicate this and identify the plan in Table 13.1-1, Program Documents. If the development of the IP plan was determined to be not applicable, provide justification.

**7.4 Streamlining**  
***(Government)***

When describing streamlining initiatives, include plans and procedures to:

- Encourage industry participation by using draft solicitations, presolicitation conferences, and other means of stimulating industry involvement in the application and tailoring of contract requirements;
- Select and tailor only the necessary and cost effective requirements;
- Implement recent acquisition reform initiatives in the areas of specifications and standards reform, requirements consolidation, and the use of various product teams [e.g., Acquisition Coordination Team (ACT), Integrated Product Team (IPT)].

Policy direction on acquisition streamlining is contained in DoDI 5000.2, Section 10-C.

**7.5 Competition**  
***(Government)***

When describing competition in the acquisition process, explain the manner in which competition will be maximized throughout the life cycle. Discuss requirements associated with instituting the chosen strategies.

For example, if one of the selected strategies is the use of repurchase data to increase competition, related issues should include the ability to fund this effort and the contractual approach to acquiring data (e.g., proprietary rights and patent considerations).

## 7.6 Other Considerations (Government)

Discuss other factors which influence, or must be factored into, the acquisition strategy. Include the impact of the following:

- Energy conservation measures
- The Defense Production Act
- The Occupational Safety and Health Act
- Use of the metric system [refer to FAR Subpart 10.002(c) and DoDI 5000.2, Section 6-M]
- Value Engineering incentives (refer to FAR Part 48 and DoDI 5000.2, Section 6-0)

Note: In each procurement, there are opportunities for incentives based on surpassing the established thresholds. Incentives will not be used to promote the attainment of thresholds, since the thresholds should be set as minimum requirements. However, if goals higher than the thresholds are established, incentives to achieve these goals may be placed in the contract if DoD would benefit from the attainment of these goals. All logistics, cost, schedule, and related area contract requirements will be considered as possible incentive areas.

## 8.0 DATA RIGHTS/LICENSING/WARRANTY PROVISIONS

In the following subparagraphs, describe the major terms of each agreement related to:

- Rights to end item data (e.g., engineering drawings, source code),
- Use of copyrighted material (e.g., software licensing agreements), and
- Warranties.

## 8.1 Data Rights (Government)

The ownership of data is frequently a matter of conflict between the Government and developing contractors. By purchasing data, the Government can avoid legal entanglements over proprietary data. The cost of such data, however, may outweigh its advantages to the Government. Explain whether, and under what conditions, the Government will purchase data. Refer to DFARS 227 for guidance on patents, data, and copyrights.

**8.2**     **Licensing**  
**(Government)**

Explain the terms of licensing agreements. Identify any Government actions which would invalidate licensing agreements. Explain how Fleet personnel will be indoctrinated/trained in the provisions and requirements of such agreements; include how licensed items will be readily identified (e.g., special markings on the items and shipping containers). Include software licensing agreements for commercial software.

**8.3**     **Warranties**  
**(Government)**

Include discussion of warranties of data as well as warranties of reliability. Also include the general procedures, including documentation requirements, for invoking a warranty (e.g., return procedures, obtaining technical representative services).

Note: If procedures for invoking warranties are addressed elsewhere in the MAPP (e.g., Annex A, Maintenance Planning), refer to that section of the MAPP. Do not repeat procedures here.

Note: List specific names, telephone numbers, and addresses associated with using warranties in Table 14.1-1, Program Participants.

Refer to FAR Subpart 46.7, DFARS Subpart 246.7, and NAPS Subpart 5246.7 for guidance on warranties. Refer to DFARS Part 227.405-72 for warranties of technical data.

Explain Government actions which would invalidate such warranties. (e.g., Are there maintenance actions which would invalidate warranty provisions?) Explain how Fleet personnel will be indoctrinated/trained in the provisions and requirements of such agreements; include how warranted items will be readily identified (e.g., special markings on the items and shipping containers).

**9.0**     **MAINTENANCE CONCEPT**  
**(Government)**

A<sub>o</sub> is a major determinant of the maintenance concept. A<sub>o</sub> is determined by higher authority in accordance with the overall mission of the end item and is listed in Table 2.2-1, End Item Performance Requirements/Critical Characteristics/Readiness Objectives.

The maintenance concept is presented in Part I of the MAPP because it is the driver for most of the other logistics elements. (Other support concepts are presented in the respective annexes.) It has a major impact on the determination of manpower and training requirements, the decisions made in supply support and support equipment planning, and can also affect decisions in the areas of facilities and packaging, handling, storage, and transportation.

Because of its profound effect on the development of the support structure, it is essential that the maintenance concept be developed at the earliest possible date. It must be

recognized, however, that this is an evolving concept, subject to change as analyses are conducted and the design evolves.

When describing the maintenance concept, specify maintenance levels restricted or excluded from consideration.

For example, a Lo-mix maintenance concept will minimize organizational level maintenance and drive more maintenance to the intermediate and depot levels. On the other hand, a very high A<sub>o</sub> may necessitate a heavy reliance on organizational level maintenance that will in turn drive the depth and range of spare parts.

Note: Navy policy requires that three levels of maintenance (i.e., organizational, intermediate, and depot) be considered for all repairable end items. Maintenance will be performed at the lowest level where capability can be economically and practically established, subject to overriding operational considerations.

Also discuss whether interim contractor or other unique support is planned.

For example, interim depot maintenance may be required if modifications to the planned Government depot will not be completed in time to support the Material Support Date (MSD).

Address unique maintenance considerations (e.g., the requirement for a new maintenance facility, hazardous material requirements, or implementation of a particular maintenance strategy such as progressive maintenance).

Details on the implementation of the maintenance concept are provided in Annex A, Maintenance Planning.

## 10.0 SUPPORT REQUIREMENTS

The process of defining end item support requirements must be initiated as the design process begins and continued as the design evolves. Logistics Support Analysis (LSA), Level of Repair Analysis (LORA), Hardware-Manpower (HARDMAN), and Reliability Centered Maintenance (RCM) Analysis are examples of methods used to define support requirements. The objective of trade-offs between design and support is to field a fully supported end item which fulfills its mission through the effective and efficient use of resources. The consequences of ignoring supportability factors can take the form of delayed delivery, inadequate provisioning, inadequately trained personnel, delayed delivery of support facilities, inadequate support equipment, excessive downtime, etc.

### 10.1 Approach (Government)

Describe the requirements to be imposed on contractors or other activities to define support for the end item. If LSA is being used, this paragraph constitutes the LSA Strategy. Identify support requirements definition tasks to be performed in Table 10.1-1.

Note: Reliability and maintainability tasks are listed in Annex J, Reliability and Maintainability because they are design analyses versus support analyses. However the results of the reliability and maintainability tasks will provide input data to support requirements tasks.

Table 10.1-1 Support Requirements Analysis Tasks	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Standard:	Place an "x" in the space provided to indicate if this is a commercial or Government standard.
Performed by:	Place an "x" in the appropriate space to indicate if the task is to be performed by a contractor or the Government.  Note: If, in developing the support requirements definition strategy, the Government assigns responsibility for specific tasks to "contractor," these tasks must be included as requirements in the Request for Proposals (RFP).
Standard:	Provide number of the standard invoking the task. If no standard is used (i.e., if the task is part of a contractor-developed process), enter "N/A".
Tailored:	Place an "x" in the space provided if the standard is tailored.
Activity/ Organization:	Provide the six-character UIC of the Government activity responsible for performing the task, or provide the name of the contractor responsible for the task.  Note: The full address of the contractor is to be provided in Table 14.1-1, Program Participants.
Task Title.:	Identify the title of the task to be performed.
Task/Paragraph Number:	Identify the number of the task or the number of the paragraph in which task requirements are defined; use formal task number derived from invoked specifications/standards or contractor-developed number.
Tailoring Provisions:	Specify how the task is to be tailored. (i.e., Provide specific tailoring instructions, such as, "Omit paragraph 10.2, 13.1, and 14.7").
Results:	Summarize the results of this task.

The Government will provide some source data to conduct supportability analyses. This includes data from the BCS which will be used to establish support baselines for this end item. Identify the BCS (this may be the predecessor system identified in Paragraph 1.4.1, Identification). List data to be furnished to contractors in Table 17-1, Government Furnished Information.

**(Contractor)**

After contract award, describe how support requirements will be defined. Include the following:

- What specifications/standards are being used by the contractor to guide the definition of support requirements? How are they tailored?

- If no specifications or standards are being used, what process will be used to define support requirements?
- If only selected components of the end item will be subjected to support analysis, how are these candidates selected? (Supportability analysis candidates are identified in Table 6.2-1, Configurations and Physical Characteristics.)
- What models and/or databases will be used to facilitate analysis? Include name and version.
- How will the evolving design be reflected in the support analyses?
- What procedures will ensure that all support requirements are identified?
- How will the process be monitored and controlled to ensure integration and the efficient use of resources?
- What are the procedures, methods, and controls for identifying and recording design problems or deficiencies affecting supportability? How will corrective action be initiated and progress tracked to ensure resolution of problems?
- How will support requirements analysis and related design data be documented, disseminated, and controlled?
- What review procedures will ensure that data is validated and verified?

Note: If the contractor is using LSA, this paragraph constitutes the LSA Plan.

Update Table 10.1-1 to refine support requirements tasks.

**10.2 Results of Support Requirements Analysis Tasks**  
(Contractor)

Provide a summary of the results of each task in the "Results" block of Table 10.1-1, above. Do not provide detailed results; focus on results that drive development of the support program and could have an effect on end item design. The detailed results of the analyses will be delivered in accordance with contract requirements. If reports are generated as a result of performing the support requirements definition tasks, identify them in Table 10.2-1.

Table 10.2-1 Support Requirements Analysis Reports	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Title:	Identify output reports or summaries which are generated as a result of the analysis [e.g., Support Equipment Recommendation Data (SERD)].
Number:	Provide number of the report. If the report is not numbered, enter "N/A."
Distribution Date:	Provide date the report will be ready for distribution.

Table 10.2-1 Support Requirements Analysis Reports	
Data Element	Definition
Use:	Explain how the results will be used (e.g., to identify support equipment). This will be used as source data in the applicable sections of the MAPP.

**10.3 Infrastructure Support Requirements**  
(Government)

When identifying infrastructure support requirements, address unique mapping, charting, and geodesy products required for the end item, including requirements for Defense Mapping Agency standard military data. Include data accuracy and forecast requirements.

**10.4 Support Assessments**

Independent Logistics Assessments (ILAs) are conducted prior to each milestone to certify that support planning and execution are adequate. Before each ILA, the program office conducts a self-assessment to identify deficiencies and develops plans to address them. Tables 10.4.1-1 and 10.4.2-1 identify the elements to be reviewed during each self and independent assessment. Supporting data for each element is located in the MAPP as follows:

Support Element	Location of MAPP Supporting Data
Integrated Logistics Support (ILS) Budgeting and Funding	Part I, Table 19.3-1
ILS Management	Part I, Paragraphs 10.0, 11.0, 13.0, 14.0, 15.0 All annexes, paragraphs 1.1, 1.2
Design Interface:	
Configuration Management	Annex K
Standardization	Part I, Paragraph 12.0
Reliability & Maintainability	Annex J
Safety	Annex L
Human Factors Engineering	Annex N
Survivability	Annex P
Logistics Support Analysis	Part I, Paragraph 10.0
Supportability Design Constraints	Part I, Paragraph 2.1
Quality Assurance	Annex M
Maintenance Planning	
Mission Oriented A <sub>o</sub>	Part I, Table 2.2-1
Reliability Centered Maintenance	Part I, Paragraph 10.0
Warranty Planning	Part I, Paragraph 8.3
Depot Planning	Annex A, Paragraph A.4
Installation Planning	Part I, Paragraph 16.0
Support Equipment	
Calibration Requirements	Annex D, Table D.2-1
2M (Gold Disc Development and Parts Support)	Annex D, Paragraph D.1
Supply Support	Annex C
PHST	Annex I
Computer Resources Support	Annex G

Support Element	Location of MAPP Supporting Data
Technical Data	Annex E
Technical Manual Contract Requirement	Annex E, Paragraph E.1
Technical Manual AIRTASK/ SEATASK/ etc. Requirement	Annex E, Paragraph E.1.2
Technical Manuals	Annex E, Paragraph E.2
Maintenance Requirement Cards	Annex A, Table A.5-1
Technical Repair Standards	Annex A, Paragraph A.4.1
Drawings	Annex E, Table E.3.2-1
Drawing Requirements	Annex E, Paragraph E.1.1
Facilities	Annex H
Manpower/Personnel	Annex B
Training and Training Support	Annex F
CALS	Part I, Paragraph 11.0
Environmental Planning	
Environmental Impact Analysis	Part I, Paragraph 4.3.2
Environmental Compliance and Conservation	Part I, Paragraph 4.3.2
Use of Environmentally Preferable Products and Services	Part I, Paragraph 4.3.2
Use of Recyclable Products	Part I, Paragraph 4.3.2
Pollution Prevention	Part I, Paragraph 4.3.2
Hazardous Materials Control and Management	Annex L, Table L.2-1
Occupational Health	Annex N
Radiation Safety	Annex L, Table L.2-1

#### 10.4.1 Self-Assessments

##### (Government)

Explain the process which will be used to ensure a thorough assessment is conducted. Summarize the results of each self-assessment in Table 10.4.1-1. Once completed, Table 10.4.1-1 constitutes the logistics self-assessment report.

Table 10.4.1-1 Logistics Self-Assessment Summary (Complete one copy for each logistics self-assessment conducted.)	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
<b>Section A. General</b>	
Milestone Supported:	Identify the acquisition milestone for which the assessment is being conducted.
Assessment Date(s):	Provide (from/to) dates during which the self-assessment is conducted. The assessment may be conducted as a single event or as a series of events. If there are multiple events, list the duration of each. Use (MM-DD-YY to MM-DD-YY) format.
Date Program Certified Ready for ILA:	If the majority of the elements are judged to be adequately planned and executed, the program will be scheduled for an ILA. Provide date on which the Self-Assessment Team determined that the program was ready for an ILA (MM-DD-YY).
Team Member:	Identify by name (last name, first name) each member of the self-assessment team. [Place the Team Leader's name in the block with the asterisk (*).]

<b>Table 10.4.1-1 Logistics Self-Assessment Summary</b> (Complete one copy for each logistics self-assessment conducted.)	
Data Element	Definition
	Note: List the address and phone numbers of each member in Table 14.1-1, Program Participants.
Organization:	Identify organization of each team member.
Code:	Identify code of each team member.
Affiliation:	Identify each member's affiliation with the program [e.g., ILS Manager].
<b>Section B. Self-Assessment</b>	
No.:	Assigned a unique number to each support element.
Support Element:	List of ILS elements to be assessed; no action required.
Rating:	Check green, yellow, red, or not assessed for each ILS element reviewed, as follows:  <div style="margin-left: 40px;"> Green:            Planning and execution are adequate.  Yellow:          Planning and execution are conditionally acceptable.   Red:              Planning and execution are inadequate.  Not Assessed:   The element was not assessed. </div>
Justification:	Explain why the element was judged green, yellow, or red. An ILS element may be assessed as questionable if the self-assessment team members are uncertain as to the adequacy or inadequacy of the planning and execution of the element.  For elements which were not assessed, provide justification.
<b>Section C. Plan of Action</b>	
Action No.:	Provide unique number assigned to each deficiency. The numbers should correlate with the numbers assigned to each element area in Section B of this table.  Note: Elements assessed as red or yellow should have related action items to correct deficiencies.
Description:	Describe deficiency.
Action Required:	Provide action required to correct the deficiency.
Target Date:	Provide target date for completion of the action item (MM-DD-YY).
Cog:	Indicate the organization and code responsible for completing the action item.
Complete Date:	Provide date the action is completed (MM-DD-YY).

**10.4.2 Independent Logistics Assessments**  
(Government)

Explain how a thorough, independent assessment will be ensured. Complete Table 10.4.2-1 to summarize ILA findings. Once completed, Table 10.4.2-1 constitutes the ILA Report. The ILA report must be distributed to the following:

- Assistant Secretary of the Navy (Manpower and Reserve Affairs) (ASN (M&RA))
- Assistant Secretary of the Navy (Research, Development, and Acquisition) (Logistics) (ASN (RDA)(LOG))

- Assistant Secretary of the Navy (Research, Development, and Acquisition) (Product Integrity) (ASN (RDA)(PI))
- Assistant Secretary of the Navy (Installations and Environment) (ASN (I&E))
- DCNO (Manpower and Personnel) (N1) or Deputy Chief of Staff (DC/S) M&RA as appropriate
- Director of Naval Training (N7) or Commanding General, Combat Development Command (CG MCCDC) as applicable
- Special Assistant for Safety Matters (N09F) or Director of Safety Division, Headquarters Marine Corps (HQMC) as applicable
- Representative or the cognizant Warfare area of system under review
- DCNO (Logistics) (N4) or DC/S I&L(L) as applicable
- Commander Naval Supply Systems Command (COMNAVSUPSYSCOM) or Commander Marine Corps Logistics Bases as applicable
- Commander Naval Facilities Engineering Command (COMNAVFACENGCOM) or Deputy Chief of Staff for Installations and Logistics (LF) as applicable
- Commandant of the Marine Corps (as appropriate)
- Cognizant Training Agent (as applicable)

<b>Table 10.4.2-1 Independent Logistics Assessment Summary</b> (Complete one copy for each ILA conducted.)	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
<b>Section A. General</b>	
Milestone Supported:	Identify acquisition milestone for which assessment is being conducted.
Assessment Date(s):	Provide (from/to) dates during which the ILA is conducted. The ILA may be conducted as a single event or as a series of events. If there are multiple events, list duration of each (MM-DD-YY to MM-DD-YY).
Date of ILA Team Certification:	Provide date on which the ILA Team certifies the program as logistically ready to proceed to next acquisition phase (MM-DD-YY).
Date of DEPCOM/PEO/DRPM Certification:	Provide date on which Deputy SYSCOM Commander/Program Executive Office/Direct Reporting Program Manager ( DEPCOM/PEO/DRPM) certifies to the Milestone Decision Authority (MDA) that the program is logistically ready to proceed to next acquisition phase (MM-DD-YY).
Team Composition Approved:	Provide date on which DEPCOM/PEO/DRPM approves the composition of ILA Team (MM-DD-YY).
ILA Team Member:	Identify by name (last name, first name) each member of the ILA Team. [Place the Team Leader's name in the block with the asterisk (*).] Note: List address and phone numbers for each member in Table 14.1-1, Program Participants.
Organization:	Identify organization of each team member.
Code:	Identify code of each team member.
Level 3 Certified:	Place an "x" in the space provided if the team member has attained Level 3 certification in the Defense Acquisition Workforce Improvement Act (DAWIA) logistics career field. Place a "P" in the space provided if the team member is certifiable but certification is pending.

<b>Table 10.4.2-1 Independent Logistics Assessment Summary</b> (Complete one copy for each ILA conducted.)	
<b>Data Element</b>	<b>Definition</b>
<b>Section B. Independent Assessment</b>	
<b>No.:</b>	Assign a number to each element.  Note: It is recommended that the same numbering scheme be used as was used for the self-assessment.
<b>Support Element:</b>	List of ILS elements to be assessed; no action required.
<b>Rating:</b>	Place an "x" in the appropriate column to indicate the status of each element, as follows:  Green: Planning and execution are adequate. Yellow: Planning and execution are conditionally acceptable. Red: Planning and execution are inadequate. Not Assessed: The element was not assessed.
<b>Justification:</b>	Explain assessment rating for the element area.  For elements given a rating of 'Yellow,' list conditions which apply; then report findings and required corrective action(s) in Section C of this Table.  For elements rated as 'Red,' explain deficiencies (findings) in Section C of this table.  For elements which were not assessed, provide justification.
<b>Section C. Findings</b>	
<b>Finding No.:</b>	Assign number to each finding. The numbers should correlate with numbers assigned to each element area in Section B of this table.
<b>Description:</b>	Describe the finding/deficiency.
<b>Resolution:</b>	Explain how finding will be corrected or addressed. If the Logistics Assessment Board is convened to decide the issue, indicate this and report the results of their decision.  Note: Any findings or resolutions which have an impact on plans reflected in the MAPP, must be reflected in the appropriate section(s) of the MAPP (e.g., support element impact is addressed in all annexes, Paragraph 1.3, Risks and Outstanding Issues).
<b>Target Date:</b>	Provide date by which the required action is to be completed (MM-DD-YY).
<b>Cog:</b>	Indicate organization and code responsible for completing required action.
<b>Complete Date:</b>	Provide date the action is satisfactorily completed (MM-DD-YY).

## 11.0 CONTINUOUS ACQUISITION AND LIFE-CYCLE SUPPORT (CAL S)

### 11.1 Government Concept (Government)

The primary goal of Continuous Acquisition and Life-Cycle Support (CAL S) is to migrate from manual, paper-intensive operations to integrated, highly automated acquisition processes. To implement this goal, each program must develop an information strategy which takes advantage of automation and integration capabilities. This strategy should employ a computer-based environment for generating and storing data only once and yet provide multiple access for multiple applications. This section describes that strategy and constitutes the Government Concept of Operations (GCO) for the acquisition.

The GCO is developed by the program office with input from other Government activities involved in the life-cycle support of the end item. To provide potential bidders with an understanding of specific user needs for technical information throughout all life-cycle activities, the GCO should be included in the RFP as Government Furnished Information (GFI). The winning contractor will provide CAL S implementation data which documents the contractor's plan to respond to the GCO; this data is entered into Paragraph 11.2, Contractor Approach.

Include requirements for the establishment and use of Contractor Integrated Technical Information Services (CITIS) to provide Government access to contractor-maintained program data. Include Government access requirements, data protection and security requirements, and data rights. (Refer to Paragraphs 3.3, Contractor Approach, and 8.1, Data Rights.) Define the actions on the part of the contractor and Government that constitute delivery and acceptance of data which may remain at the contractor's facility throughout the acquisition and beyond delivery of the end item.

Note: CITIS is the preferred choice of data delivery access; it is replacing most, if not all, contractor delivery of hard copy data required by the Government. CITIS may include:

- On-line access to contractor-maintained databases containing management, financial, engineering, and logistics program data;
- On-line access to contractor-developed or owned applications;
- File transferability; and
- Electronic mail capability compatible with Government E-mail systems.

In Table 11.1-1, define data distribution requirements. This table serves a number of purposes. Early in the acquisition, field activities can review and comment on the program office's plans regarding distribution of data.

For example, a maintenance depot targeted to assume major maintenance responsibilities discovers (by reviewing the MAPP) that the program office has no plans to provide them with copies of the draft technical manuals. The maintenance depot could contact the program office who, upon agreeing that review by the maintenance depot is

appropriate, would obtain the necessary data to update the table (e.g., what type of hardware/software the depot has).

The requirements in the table become the baseline for contract requirements related to data distribution and are reflected in Contract Data Requirements Lists.

Note: Table 11.1-1 addresses deliverables only; that is, it covers data delivered to the Government by contractors (e.g., technical manuals, training curriculum, support requirements task reports).

Refer to the Navy/Marine Corps Manager's Desktop Guide for CALS Implementation and MIL-HDBK-59 for guidance.

<b>Table 11.1-1 Data/Communications Requirements</b>	
<b>Data Element</b>	<b>Definition</b>
<b>Date:</b>	Provide date of initial data entry or modification (MM-DD-YY).
<b>Data Category:</b>	Use the following codes to indicate the category of the data:  M - Management/ Administrative Data L - Logistics Data E - Engineering Data T - Technical Reports and Plans
<b>Data Type:</b>	For each category of data, provide the type (or subcategory) of data. Examples are shown below (they are not all-inclusive; augment as appropriate to the acquisition).  Management/ Administrative Data: Progress and Status Reports Contractual Data Logistics Data: Logistics Support Analysis Record Training Curricula Engineering Data: Drawings Engineering Change Proposals Technical Reports and Plans: Test Reports Specifications
<b>Data User:</b>	List the activity (including code) of the user(s) of each data type. Names, addresses, and phone numbers are provided in Table 14.1-1, Program Participants. There may be more than one user for each data type.
<b>Data Use:</b>	Using the following codes, indicate how the data user will use the given type of data:  V - View Only - the ability to examine a data file without the ability to change it. This includes viewing selected portions of one or several documents as well as side-by-side comparison of documents.  C - Comment/ Annotate - the ability to evaluate and highlight for future reference or to make annotations, approvals, and

**Table 11.1-1 Data/Communications Requirements**

Data Element	Definition
	<p>comments without the ability to change the original file. Annotations are associated with a specific item or location within a document such that the annotations are displayed whenever that point or area of the document is displayed.</p> <p>U - Update/Maintain - the ability to change data either directly or through controlling software in the active files on the host computer.</p> <p>P - Extract/Process/Transform - the ability to extract and modify the format/composition/structure of data into another usable form.</p> <p>A - Archive - the placing of data into a repository to preserve it for future use.</p>
<p>Data User Infrastructure:</p>	<p>The data user infrastructure is the computing environment available to a particular user. This information is critical if the data provided is to be useable to the receiving activities. It identifies the hardware and software capabilities of each receiving activity and is used by the Government to establish deliverable requirements. For each data user, indicate all related hardware/software requirements.</p> <p>Note: The program office will survey the receiving activities to ensure this information is current.</p> <p>Provide the following data for each data user:</p> <ul style="list-style-type: none"> <li>• Hardware: Identify the hardware available to support the program. Include current hardware and planned upgrades. For upgrades, include the date the upgrade will be available.</li> <li>• Software: This is the most critical element. Interoperability will normally be achieved through the use of software. Again, identify software applications to support the program. Include current software and planned upgrades. For upgrades, include the date the upgrade will be available.</li> <li>• Networks: Determine the local and wide area networking capabilities.</li> <li>• Navy Infrastructure Modernization Programs (NIMP): The Navy is building various CALS supporting systems for generation, receipt, and processing of digital data. Identify which of these systems will be used to support the program. Examples include:             <ul style="list-style-type: none"> <li>- Automated Document Management and Publishing System (ADMAPS);</li> <li>- Advanced Technical Information System (ATIS);</li> <li>- Computer-Aided Design, Second Acquisition (CAD2);</li> <li>- Joint Engineering Data Management Information and Control System (JEDMICS); and</li> <li>- Technical Manual Publish-On-Demand System (TMPODS).</li> </ul> </li> </ul>

Table 11.1-1 Data/Communications Requirements	
Data Element	Definition
Delivery/ Access:	<p>Data delivery and access methods are ways in which data types may be accessed/delivered during the program life cycle. Use the following codes:</p> <p>C - Composed Products: Human interpretable documents in digital image format. These items cannot be further processed since they are complete, published entities. Examples of data products that could be delivered or accessed in this format include legacy engineering drawings, technical reports, and test plans.</p> <p>P - Processable Data Files: Machine readable, dynamic information that includes revisable source data for multiple data applications, thus enabling standard and custom documents to be generated and the source data to be manipulated. Examples of processable files are LSA Record (LSAR) files and files extracted as subsets of computer-aided design files.</p> <p>I - Interactive Databases: On-line interactive access provides the greatest flexibility of data usage with immediate and timely data access for custom report generation, document generation, and on-line request of information transmitted as composed products and processable data files. Program offices should give preference to use of CITIS for performing the functions of updating, storing, controlling, reproducing, and distributing data items.</p>
Data Format:	<p>For each Data Delivery/ Access Method identified, select the data format required. Use the following codes:</p> <ul style="list-style-type: none"> <li>• Composed Products:           HC - Hard Copy   PI - Page Image</li> <li>• Processable Data Files:       TF - Text File   GF - Graphics File   AF - Alphanumeric File   VF - Audio/Visual File   IF - Integrated Data File</li> <li>• Interactive Databases:        CN - Core Functions   TN - Tailorable Functions</li> </ul>
Interchange Standards:	<p>Each of the data formats requires certain interchange standards to remain CALS compliant. These include document image standards, text standards, graphics standards, and application unique data standards. Identify applicable standard(s).</p> <p>Note: List standards and specifications in Table 13.2-1, Specifications and Standards.</p>
Media Type:	<p>Determine the media required for each data type. Use the following codes:</p> <p>P - Physical Media: Includes Magnetic Tape, Magnetic Disk, or Optical Disk. Optical Disk includes Compact Disk, Read Only Memory (CD-ROM), Compact Disk Interactive (CDI), Digital Video Interactive (DVI), Write Once and Read Many Times (WORM), and erasable optical disk.</p>

Table 11.1-1 Data/Communications Requirements	
Data Element	Definition
	T - Telecommunications: Includes Defense Industrial Security Network (DISN), Open Systems Interconnection (OSI), and CITIS. Refer to Federal Information Processing Standard (FIPS) PUB 161 for Electronic Data Interchange (EDI) standards.
CITIS:	Place an "x" in the space provided if CITIS must be capable of interfacing with the user group under the stated processing environment.

**11.2 Contractor Approach**  
*(Contractor)*

Explain how CALS will be implemented. Address the following:

- The integration of functional processes, such as system engineering, design, logistics support, configuration management, and manufacturing, using data base integration techniques.
- The procedures for integrating applications and data processes that improve product quality and eliminate data redundancy.
- Procedures which will ensure data protection and integrity, including risk assessment and end item security certification. (Refer to Paragraph 3.3, Contractor Approach.)
- How CITIS requirements will be met. Include CITIS capabilities, interface requirements, and access procedures.

**11.3 Government Verification**  
*(Government)*

The Government must ensure that the contractor is complying with CALS requirements. Of primary importance is ensuring that delivered CALS data complies with standards specified in the contract, such as MIL-D-28000, Digital Representation for Communication of Product Data: IGES Application Subsets and IGES Application Protocols , or MIL-M-28001, Markup Requirements and Generic Style Specification for Electronic Printed Output and Exchange of Text. In this paragraph, describe the process used to verify that contractor data delivered in digital format meets the specified CALS requirements.

**12.0 STANDARDIZATION**

Standardization requirements for an acquisition program are determined by many factors. For example, if support cost is a primary driver, standardization requirements may be stringent; if acquisition cost is a primary driver (and commercial item procurement is the least expensive alternative), standardization may have a very low priority.

The objectives of standardization are to:

- Provide for common usage of equipment, components, parts, and materials to promote commonality among weapon systems.
- Maximize the use of standard items, parts, materials, processes, and support equipment to lower life-cycle cost, reduce downtime, facilitate interchangeability, and promote commonality.
- Maximize repetitive use of existing reliable items.
- Maximize use of common publications, manuals, and training aids.
- Maximize installation of existing reliable equipment/components.

Unless otherwise specified by the Government, the order of precedence for the selection of items meeting required specifications is as follows:

- Items established in the DoD inventory which were acquired under previous contracts for active systems and equipment, or lists of items identified by the Government for use in weapons, weapon systems, and equipment in development.
- Items requiring introduction of the least number of non-stock-numbered parts to the DoD inventory.

For guidance, refer to DoDI 5000.2, Sections 6-Q and 6-R.

#### 12.1 Strategy (Government)

Describe standardization concepts and objectives, including the necessity to designate, in accordance with Government procedures, technical equipment as "standard" so that future purchases of the equipment can be made from the same manufacturing source. Include the following:

- The impact of standardization on commercial item acquisitions and support equipment required for test, maintenance, assembly, servicing, handling, etc.;
- How the program office will ensure that component/equipment standardization requirements are incorporated into the acquisition program; and
- Methods to monitor standardization as the design progresses.

*For system/subsystem/equipment MAPPs:*

For new design end items, standardization is measured at the Allowance Parts List (APL) and stock number levels. Identify and describe standardization requirements to be imposed on the contractor. Identify standardization goal in percentage terms.

Note: Standard items for other than platform (i.e., aircraft/ship) acquisitions are identified in Table 6.2-1, Configurations and Physical Characteristics.

*For platform MAPPs:*

Include the degree to which standardization will be required. (e.g., Will standardization requirements be imposed at the intra-Navy, intra-class, and intra-platform levels?) Identify the equipment commonality goal in Table 12.3-1.

## **12.2 Management** **(Contractor)**

Explain the processes to ensure the standardization effort is efficiently implemented and controlled. Include processes to:

- Establish sufficient controls for integrating and coordinating all aspects of the standardization effort to avoid duplication and production of unnecessary data.
- Monitor standardization continuously throughout contract phases.
- Inform all design, development, acquisition, production, logistics, and associated personnel of standardization requirements and the application of these requirements to their areas of responsibility.

## **12.3 Implementation** **(Government/Contractor)**

Describe progress made in implementing the standardization program. For system/subsystem/equipment MAPPs, refer to Table 6.2-1, Configurations and Physical Characteristics. Provide percentage of standard items. For platform (i.e., aircraft and ship) MAPPs, complete Table 12.3-1 to summarize the standardization effort to date.

Describe in-house decisions and actions which would increase commonality among end items and equipment or reduce life-cycle cost. Include a discussion on the use of Standard Electronic Modules (SEMs). Identify estimated cost savings or cost avoidance resulting from these actions or decisions.

Note: Table 12.3-1 applies to Contractor Furnished Equipment (CFE) only. GFE is by definition standard. If GFE is considered in the calculation, both the number of standard APLs and the total number of APLs must be increased by the same number (the number of GFE APLs).

Note: Standard items from any of the military services (i.e., Army, Air Force, Coast Guard, Marine Corps) are considered standard items even if they require assignment of new Navy APLs.

Table 12.3-1 Standardization Program Summary (Platform MAPPs only)	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Total APLs Estimated:	Estimate the total number of APLs required for the end item (both standard and non-standard items).
Equipment Commonality Goal:	<p><i>(Government)</i> Indicate the standardization goal.</p> <p>Standardization is measured at the APL level. Express in terms of percentage (%) of standard APLs to non-standard APLs. Use the following formula:</p> $\% = \frac{\text{Number of Standard APLs}}{\text{Estimated Total Number of APLs}}$
Equipment Commonality Achieved:	<p><i>(Contractor)</i> Indicate progress to date by using the following formula:</p> $\% = \frac{\text{Number of Standard APLs to Date}}{\text{Estimated Total Number of APLs}}$ <p>Note: The estimated total number of APLs remains constant. Thus, if the estimated total number of APLs required is 100 and 5 standard APLs have been identified to date, the equipment commonality achieved is 5%.</p>
Government Inventory:	Indicate number of items obtained from the DoD inventory.
Commercial Items:	List commercial items (including modified commercial items) which are being used in lieu of DoD specification/standard items.
NSN or P/N:	For each commercial item which is being used in lieu of DoD specification/standard items, provide the NSN or Part Number (P/N) of the DoD item which was replaced.

## 13.0 PROGRAM DOCUMENTS/CERTIFICATIONS

### 13.1 Program Documents (Government/Contractor)

Identify documentation which governs, guides, and controls this acquisition. Examples of documents which should be included are shown below. The list of examples is not all-inclusive; it must be tailored/augmented as appropriate to the acquisition. Include all source documents used to develop the MAPP.

Table 13.1-1 Program Documents	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Document:	Provide title of document. Examples of documents include:  Mission Need Statement Cost and Operational Effectiveness Analysis Integrated Program Summary (IPS) Acquisition Decision Memorandum (ADM) Acquisition Strategy Report (ASR) Independent Cost Estimate (ICE) System Threat Assessment Report Memoranda of Understanding/ Agreement (MOU/MOA) Letters of Instruction (LOI) System Specification(s) Nuclear Survivability Assurance Plan Technology Assessment/Control Plan Electromagnetic Compatibility Advisory Board Charter Schedule A Legal/Regulatory Documents
Control Number:	Provide document number.
Date of Issue/ Revision:	Provide date of the latest version of the document (MM-DD-YY).
Preparing Activity:	Provide organization and code which has cognizance over the document.  Note: List specific points of contact in Table 14.1-1, Program Participants.

**13.2 Specifications and Standards**  
**(Government/Contractor)**

A waiver must be obtained before any Government standard or specification is invoked by the Government in a contract. If the specification or standard is recommended for use by the contractor in response to an RFP requirement, no waiver is required. In Table 13.2-1, list each specification and standard (both Government and commercial) invoked for this acquisition program.

Table 13.2-1 Specifications and Standards	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Title:	Provide title of the specification or standard.
Number:	Provide identifying number of the specification/standard; include revision identifier (e.g., MIL-STD-1388-1A; ISO-9001).
Government:	Place an "x" in the space provided if this is a Government specification/standard.
Commercial:	Place an "x" in the space provided if this is a Commercial specification/standard.
Spec/Std Date:	Provide date of issuance of the specification/standard (MM-DD-YY).
Government Invoked:	Place an "x" in the space provided if the specification/standard is invoked by the Government.

Table 13.2-1 Specifications and Standards	
Data Element	Definition
Contractor Recommended:	Place an "x" in the space provided if the specification/standard is recommended for use by the contractor.
Date of Waiver:	If this is a Government specification/standard invoked by the Government, indicate the date the waiver was obtained (MM-DD-YY).
Authorization:	If this is a Government specification/standard invoked by the Government, indicate the organization and code of the office/individual who granted the waiver.

### 13.3 Exemptions (Government)

The previous paragraph identifies waivers obtained to use specifications and standards normally prohibited from use. There are, however, requirements which apply to certain types of acquisitions. In Table 13.3-1, identify all exemptions from established requirements.

For example, there are numerous environmental and safety regulations which could apply to an acquisition program unless specifically waived. There are also element-specific requirements which may apply (e.g., Ada is the only programming language to be used in new defense systems and major software modifications of existing systems regardless of size, cost, or functional application). All exemptions, including element-specific exemptions, are to be listed in Table 13.3-1.

It is critical that exemptions be communicated to all program participants, particularly when safety is involved.

Table 13.3-1 Exemptions	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Source Document Number:	Provide number of the document (specification/standard/etc.) containing the exempted requirement.
Document Title:	Provide title of the document containing the exempted requirement.
Document Requirement:	Identify paragraph number or other identifier (e.g., section number) which clearly specifies the requirement from which the program is to be exempted.
Exemption	Describe the exemption.
Impact of Exemption:	If the exemption affects safety, provide a narrative assessment of the risk involved in implementing the exemption.
Date of Exemption:	Provide date exemption is obtained (MM-DD-YY).
Expiration:	Provide date exemption will expire (MM-DD-YY); if there is no expiration date, enter "N/A".
Authorization:	Indicate the organization and code of the office/individual who granted the exemption.

**13.4 Certifications**  
**(Government)**

When describing requirements for certifications and accreditations, include any outstanding issues including the potential impact of delays. In Table 13.4-1, identify all required security, safety, software, hardware, facilities, and test-related certifications.

When identifying the certifying authority, cite the designated approval authority.

For example, the National Security Agency/Chief of Security Services acts as the Designated Approval Authority (DAA) when an automated system is required to process Level I National Cryptologic data.

Table 13.4-1 Certifications	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Government Activity:	Identify, by six-character UIC, the Government activity requiring certification.
Contractor:	Provide name and address of contractor requiring certification.
Certification:	Identify certification required.
Purpose:	Describe the purpose of the certification.
DAA:	Identify the Designated Approval Authority (DAA) for the required certification.
Certification Date:	Provide date of certification (MM-DD-YY). List associated documents in Table 13.1-1, Program Documents.
Annex H:	Place an "x" in the space provided if the certification is for a facility addressed in Annex H, Facilities.

**13.5 Related Program Documents**  
**(Government/Contractor)**

Frequently, one end item plays a role in several acquisition programs. Many of the systems/equipment installed on an aircraft or ship are end item acquisitions in their own right, with separate development processes and schedules. Information on a navigation system might appear in documentation for two different ship classes as well as documentation for one of the computer subsystems. Integration of technical and acquisition data among such programs is essential.

In Table 13.5-1, list all documentation for related programs which must be monitored by this acquisition program. If a related program has developed a MAPP, it should be listed here along with other appropriate documents. Examples of related program documents for programs which have not developed MAPPs include, but are not limited to: Navy Training Plan, Integrated Logistics Support Plan, and User's Logistics Support Summary.

Table 13.5-1 Related Program Documents	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Related End Item:	Provide approved nomenclature for the related end item.
Document:	Provide title of document.
Control Number:	Provide unique identifier assigned to the document.

Table 13.5-1 Related Program Documents	
Data Element	Definition
Date of Issue/ Revision:	Provide date of the latest version of the document (MM-DD-YY).
Preparing Activity:	Provide name of activity (organization and code) which has cognizance over the document.

## 14.0 ORGANIZATION/ MAJOR PROGRAM PARTICIPANTS

### 14.1 Program Management

Note: This section addresses organizational structure and integration. Address the integration of the various disciplines (e.g., training, maintenance, and technical data) in the respective annexes.

#### *(Government)*

Describe the organization(s) established to control and integrate the development and support of the end item [e.g., Acquisition Coordination Team (ACT), Integrated Product Teams (IPT)]. Use subparagraph structure, if necessary, to define the general responsibilities of each management/coordinating team and participating organization. Include the engineering, technical, and logistics organizations, contractors, and subcontractors.

In Table 14.1-1, identify all program participants, including all sources of technical assistance. Identify memberships in coordinating groups.

#### *(Contractor)*

Describe the procedures employed to ensure flow-down of Government data and requirements to all developing organizations (i.e., from prime to subcontractors). Describe the processes used to ensure effective execution and control of trade-offs between design and logistic support considerations. Include means to ensure the integration of related functional elements of the contractor organization.

In Table 14.1-1, identify all program participants. Identify memberships in coordinating groups.

Table 14.1-1 Program Participants	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Name:	Provide full name of the individual, last name first. Early in the acquisition, it is common not to have a specific point of contact for some organizations. In this case, complete this block when the information becomes available.
Function:	Identify all of the functions performed by the individual (many individuals serve more than one function in the acquisition process). Examples of functions include (the list is not all-inclusive and must be tailored for each acquisition program):  <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Program Sponsor Program Manager</p> </div> <div style="width: 45%;"> <p>Resource Sponsor ILS Manager</p> </div> </div>

Table 14.1-1 Program Participants																													
Data Element	Definition																												
	<table border="0"> <tr> <td>Milestone Decision Authority</td> <td>Contractor Program Manager</td> </tr> <tr> <td>Project Engineer</td> <td>Design Agent</td> </tr> <tr> <td>Quality Assurance Manager</td> <td>Logistics Element Manager</td> </tr> <tr> <td>Configuration Manager</td> <td>Configuration Data Manager</td> </tr> <tr> <td>Technical Direction Agent</td> <td>Training Mission Sponsor</td> </tr> <tr> <td>Manpower Mission Sponsor</td> <td>Life-Cycle Manager</td> </tr> <tr> <td>In-Service Engineering Agent</td> <td>Manufacturer/Subcontractor</td> </tr> <tr> <td>Factory Technical Representative</td> <td>Training Activity Facility Manager</td> </tr> </table> <p style="text-align: center;">Representative of/Specialist in:</p> <table border="0"> <tr> <td>Permanent Designated Overhaul Point</td> <td>Interim Designated Overhaul Point</td> </tr> <tr> <td>Computer Program Support Activity</td> <td>Software Support Activity</td> </tr> <tr> <td>Technical Support Activity</td> <td>Training Agency</td> </tr> <tr> <td>Principal Development Activity</td> <td>Inventory Control Point</td> </tr> <tr> <td>Training Support Agency</td> <td>Bureau of Personnel</td> </tr> <tr> <td>Reliability &amp; Maintainability</td> <td>Electromagnetic Compatibility</td> </tr> </table>	Milestone Decision Authority	Contractor Program Manager	Project Engineer	Design Agent	Quality Assurance Manager	Logistics Element Manager	Configuration Manager	Configuration Data Manager	Technical Direction Agent	Training Mission Sponsor	Manpower Mission Sponsor	Life-Cycle Manager	In-Service Engineering Agent	Manufacturer/Subcontractor	Factory Technical Representative	Training Activity Facility Manager	Permanent Designated Overhaul Point	Interim Designated Overhaul Point	Computer Program Support Activity	Software Support Activity	Technical Support Activity	Training Agency	Principal Development Activity	Inventory Control Point	Training Support Agency	Bureau of Personnel	Reliability & Maintainability	Electromagnetic Compatibility
Milestone Decision Authority	Contractor Program Manager																												
Project Engineer	Design Agent																												
Quality Assurance Manager	Logistics Element Manager																												
Configuration Manager	Configuration Data Manager																												
Technical Direction Agent	Training Mission Sponsor																												
Manpower Mission Sponsor	Life-Cycle Manager																												
In-Service Engineering Agent	Manufacturer/Subcontractor																												
Factory Technical Representative	Training Activity Facility Manager																												
Permanent Designated Overhaul Point	Interim Designated Overhaul Point																												
Computer Program Support Activity	Software Support Activity																												
Technical Support Activity	Training Agency																												
Principal Development Activity	Inventory Control Point																												
Training Support Agency	Bureau of Personnel																												
Reliability & Maintainability	Electromagnetic Compatibility																												
Organization/ Code:	Identify the organization and code of the individual. If only the organization is known, complete this block and add the participant's name when available.																												
Address:	Provide full street mailing address of the individual.																												
DSN:	Provide Defense Services Network (DSN) phone number for the individual.																												
Commercial:	Provide full commercial phone number for the individual, including area code.																												
FAX:	Provide full FAX phone number for the individual, including area code.																												
Group(s):	<p>Identify group(s) in which the given individual participates. The list of groups must be tailored for each program. Develop a coding/abbreviation scheme and provide a key. Examples include, but are not limited to the following:</p> <ul style="list-style-type: none"> <li>• Acquisition Coordination Team (ACT)</li> <li>• Integrated Product Team (IPT)</li> <li>• ILS Management Team (ILSMT)</li> <li>• Configuration Control Board (CCB)</li> <li>• Special Study Group/Special Task Force (SSG/STF)</li> <li>• Combat System Working Group (CSWG)</li> <li>• LSA Review Team (LSART)</li> <li>• Technical Manual Management Team (TMMT)</li> <li>• Test Planning Working Group (TPWG)</li> <li>• Training Support Working Group (TSWG)</li> <li>• Interface Control Working Group (ICWG)</li> <li>• Computer Resources Working Group (CRWG)</li> <li>• Hazardous Material Control and Management Committee (HMCMC)</li> </ul>																												

**14.2 Engineering and Technical Support Services**  
**(Government)**

Navy Engineering and Technical Services (NETS), Contractor Engineering and Technical Services (CETS), and Contractor Operation and Maintenance of Simulators (COMS) are terms used to describe outside support to be provided for a specified purpose and duration of time. Justify requirement for CETS and COMS (refer to

Paragraph 2.5, Dynamic Simulation Requirements) and ensure the requirement(s) are reflected in Table 19.3-1, Logistics Funding Summary.

Note: The Office of Management and Budget (OMB) Circular Number A-76 (refer to FAR Subpart 7.3) states that it is the policy of the Government to: 1) rely generally on private commercial sources for supplies and services, if certain criteria are met, while recognizing that some functions are inherently Governmental and must be performed by Government personnel, and 2) give appropriate consideration to relative cost in deciding between Government performance and performance under contract. Refer to DoDI 4100.33, Commercial Activities Program Procedures, for further guidance.

Table 14.2-1 Engineering and Technical/Advisory Services	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Location:	Indicate location where services will be provided; enter six-character UIC, if known, or organization/ activity and city, state.
Number of Personnel:	Identify the number of personnel required at the site for the stated duration. If different numbers of personnel will be required at the same location at different times, list each occurrence separately.  If personnel requirements are stipulated in terms of "as required" in a contract (and then defined by task order, etc.), enter "A/R" in the space provided.
Duration:	Enter from/to dates during which the services are required (MM-DD-YY).
Type:	Indicate type of support to be provided, as follows:  N - Navy Engineering and Technical Services C - Contractor Engineering and Technical Services M - Contractor Operation and Maintenance of Simulators O - Other (Specify in space provided.)
Scope:	Provide brief description of the type of services to be provided (e.g., installation and checkout of end item).

## 15.0 PROGRAM EVENTS

*(Government/Contractor)*

In Table 15-1, list the major events which must be accomplished prior to each acquisition milestone. Limit the list to key controlling events pertaining to the development, introduction, and follow-on support of the end item.

If the program maintains an alternative event tracking system, identify the system and indicate how access to the system is obtained; do not duplicate the event data in Table 15-1.

Table 15-1 Program Events	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Acquisition Milestone:	Indicate milestone by which the listed events must occur. Choose from Milestone 0, I, II, III, or IV.
Event:	Identify the event.

Table 15-1 Program Events	
Data Element	Definition
Planned Start Date:	Provide date on which the event is to be initiated (MM-DD-YY).
Planned End Date:	Provide date by which the event is to be completed (MM-DD-YY).
Actual Start Date:	Provide date on which the event is initiated (MM-DD-YY).
Actual End Date:	Provide date on which the event is completed (MM-DD-YY).
Cognizance:	Identify organization/activity and code responsible for accomplishing the event.  Note: List all organizations/activities/codes identified in this table in Table 14.1-1, Program Participants.
Status:	Indicate status of the event as:  I - In Process C - Completed  If work on the event has not been initiated, leave the status column blank.

Following is a list of documents and events that may pertain to the acquisition program; assign the required dates to each applicable document/event. The list is not all-inclusive.

Note: Many meetings are commonly held by the program office during the program life cycle (e.g., ACT, IPT, ILSMT, CCB). No attempt is made to list each of these meetings separately. Instead, they are listed as program management meetings; the program office should list them separately.

Sample Documents/Events Which May be Entered in Table 15-1		
Sample Documents	ACAT Applicability	Milestone Applicability
Mission Need Statement	I-IV	0
Acquisition Decision Memorandum	I-IV	0-IV
Intelligence Report	II-III	0-IV
Defense Intelligence Agency Intelligence Report	I	I-IV
Joint Requirements Oversight Council Assessment	I	I-IV
Independent Cost Estimate	I-II	I-IV
System Threat Assessment Report	I-IV	I-IV
Integrated Program Summary	I-IV	I-IV
Integrated Program Assessment	I-IV	I-IV
Program Life-Cycle Cost Estimate	I-IV	I-IV
Acquisition Program Baseline	I-IV	I-IV
Cost and Operational Effectiveness Analysis	I-IV	I-IV
Independent Cost Estimate Report	ID/IC	I-IV
Manpower Estimate Report	I	II-III
Developmental Test and Evaluation Report	I-IV	II-III
Low Rate Initial Production (LRIP) Report for Naval Vessels and Satellites	I	II
Competitive Prototype Strategy Waiver	I	II

Sample Documents/Events Which May be Entered in Table 15-1		
Live Fire Test and Evaluation Waiver	I-IV	II
Early Operational Assessment Report	I-IV	II
Operational Test and Evaluation Report	I-IV	III
Live Fire Test and Evaluation Report	I-IV	III
Beyond LRIP Report	I-IV	III
<b>Sample Events</b>		
Mission Need Approved		
Milestone Decision		
Establish ACT		
Assign Program Manager		
Establish Integration Teams (IPT, CCB, ILSMT, etc.)		
Conduct Management Team Meetings		
Conduct Systems Requirements Reviews		
Establish Maintenance Concept		
Perform Contract Actions For Next Phase (RFP, Evaluation, Award)		
Exercise Contract Options		
Freeze Design/Configuration		
Develop/Update Preliminary Specifications		
Define Preliminary Stowage Requirements (Ship)		
Develop Preliminary Work Breakdown Structure (WBS)		
Conduct Independent Logistics Assessment (in preparation for each milestone)		
Develop Specifications (specify type)		
Establish Configuration Baselines (specify Functional, Allocated, or Product)		
Develop/Update MAPP		
Develop Plans not subsumed by MAPP (specify) (e.g., Manufacturing Plan)		
Verify Adequacy of Manufacturing/Production Processes		
Verify Defense Industrial Base Capability to Support the Program		
Verify Environmental Consequences/Mitigation Measures		
Verify Programming of Resources to Support Production, Deployment, Support		
Verify Arms Control Treaty Compliance of Program		
Confirm Existence of Competitive Alternative Sources for System		
Confirm Stability/Producibility of Design		
Develop Preliminary Software Test Plan		
Prepare Plans/Funding Requirements for Operational Test and Evaluation		
Approve Low-Rate Initial Production		
Approve Low-Rate Initial Production Increases		
Approve Full-Rate Production/Construction		
Update Program Cost, Schedule, and Performance Objectives		
Update Design to Average Unit Procurement Cost Objective		
Conduct Design Reviews [specify Preliminary (PDR), Critical (CDR), etc.]		
Establish Configuration Status Accounting (CSA) System		
Develop Corrosion Control Portion of Ship Specification (Ship)		
Develop Aviation Consolidated Allowance List (AVCAL) (Aircraft)		
Develop Incremental Stock Number Sequence List (ISNSL) and Load Consolidated Ship Allowance List (COSAL) (Ship)		
Complete Technical Evaluation (TECHEVAL)		
Conduct Logistics Self-Assessment		
Identify and Approve ILA Team Leader		

Sample Documents/Events Which May be Entered in Table 15-1
Establish ILA Team
Conduct ILA (Milestone I, II, III, Pre-Initial Operational Capability)
Perform First Flight Acceptance Testing (Aircraft)
Conduct Acceptance/Builder/Final Contract Trials (Ship)
Conduct Program Management Team Meetings
Develop Manufacturing Plan
Establish Product Baseline
Achieve Preliminary Operational Capability
Deliver Aircraft/Ship (system/equipment end item delivery indicated in Table 16-1, Installation Schedule)
Achieve Initial Operational Capability
Update Acquisition Strategy Report
Update Program Life-Cycle Cost Estimate
Conduct Independent Logistics Assessment
Conduct Program Management Team Meetings
Achieve Material Support Date
Establish Standard Depot Level Maintenance Program (SDLM) (Aircraft)
Establish Availability Schedule (Ship)
Develop Configuration Overhaul Package (COP)/Ship Alteration and Repair Package (SARP) (Ship)
Install Engineering Change Proposals (ECPs)/Ship Alterations (SHIPALTs)/Ordnance Alterations (ORDALTs)/Field Changes
Conduct Configuration Audits

## 16.0 INSTALLATION SCHEDULE

*(Government)*

Complete one copy of Table 16-1 for each installation site. Include all installations, not only those for the Fleet, but also support installations such as maintenance and training activities (including the installation of training devices for such activities). As the program evolves and estimates become requirements, update Table 16-1.

Table 16-1 does not apply to ship or aircraft acquisition programs. Aircraft and ship delivery dates are to be entered in Table 15-1, Program Events.

Table 16-1 Installation Schedule	
<i>(Do not complete for aircraft or ship acquisition programs.)</i>	
<i>(Complete one copy for each installation site.)</i>	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Installation Site:	Use the six-character UIC to identify activity/platform/site at which the end item is being installed.
Method of Introduction:	Identify how the end item will be introduced to the site [e.g., new production, retrofit, Service Life Extension Program (SLEP), during modernization].  If this data element does not apply (as in the case of an end item being installed at a maintenance depot), enter "N/A".
Installing Activity:	Identify organization/code responsible for performing the installation.

<b>Table 16-1 Installation Schedule</b> (Do not complete for aircraft or ship MAPPs.) (Complete one copy for each installation site.)	
<b>Data Element</b>	<b>Definition</b>
Configuration:	For each site, indicate the configuration being installed. If more than one configuration is being installed at this site, complete a separate copy of this table for each configuration.
Tracking Number:	If applicable, cite identifying end item tracking numbers [e.g., as contained in the Space and Naval Warfare Automated Requirements Monitoring System (SWARMS) or assigned to Technical Training Equipment and Training Devices].
RDD:	Provide the Required Delivery Date (RDD) (that date by which the end item must be delivered to the site/platform to ensure timely installation). If there will be more than one installation of this configuration at this site, enter the RDD for each installation (MM-DD-YY).
PDD:	Provide the Projected Delivery Date (PDD) for each RDD listed (MM-DD-YY).
Quantity:	Indicate how many of this configuration are being installed at this location for each RDD listed.
RFOU:	Provide the Ready-For-Operational-Use (RFOU) date [use the Ready-For-Training (RFT) date for training systems] for each RDD listed (MM-DD-YY).
Justification:	If the PDD differs from the RDD, provide a justification. Address significant anticipated delays in Paragraph 5.2, Schedule, if the delay will affect the whole program. Provide justification in this table if the delay affects only this installation.
Major Interface Events:	Indicate major interfacing events which dictate the timing of installation (e.g., new construction at builder site; replacement during SLEP, restricted availability, overhaul).

## 17.0 GOVERNMENT FURNISHED MATERIAL

### *(Government)*

Government furnished material comprises both property/equipment and information (e.g., drawings, manuals) provided to contractors. These items must be identified and tracked from delivery through disposition.

When discussing Government Furnished Property, address GFE issues, including such factors as availability problems (refer to FAR Part 45). GFE is listed in the following MAPP Tables:

<u>GFE</u>	<u>MAPP Location</u>
End Item/Components	Table 6.2-1, Configurations and Physical Characteristics
Support Equipment	Table D.2-1, Identification of Support Equipment

Complete Table 17-1 to identify GFI, such as BCS data or other manuals, drawings, and test data, to be provided to prospective offerors and contractors.

Table 17-1 Government Furnished Information	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY)
Location:	Identify receiving activity. If the GFI will be delivered to a contractor facility, indicate the company name and the location of the facility.
Item:	Identify the item to be delivered by title or subject.
Identification No.:	Provide identification number of the GFI.
Restricted Use:	Place an "x" in the space provided if there are any restrictions on the use of the GFI.
Restriction:	State the restriction(s) placed on use of the information (e.g., For Official use Only, Proprietary, Confidential).
Quantity:	Indicate how many of this item will be delivered to the given location.
Delivery Date:	Provide date by which the GFI must be delivered to the receiving activity (MM-DD-YY).
Notes:	Space provided for comments/notes.

**18.0 COST**

In the following subparagraphs, discuss the cost concepts to be employed for this end item.

**18.1 Life-Cycle Cost  
(Government)**

Explain how life-cycle cost will be factored into acquisition/design/support decisions. Include discussion of how all costs associated with the end item will be considered, including all hardware and software development, procurement, support, and disposal costs. Life-cycle cost is usually one of the major trade-off factors when evaluating design alternatives (refer to Paragraph 4.1, Trade-Off Factors); it may also be a risk factor (refer to Paragraph 5.3, Cost). Projected costs will be reflected in Table 19.1-1, Total Program Budget and Funding Summary.

**18.2 Design-to-Cost  
(Government)**

A design to average unit procurement cost objective must be established for ACAT I programs, beginning at Milestone I. Design to cost objectives are required for ACATs II through IV at the direction of the milestone decision authority. Average unit procurement cost is defined as flyaway, rollaway, sailaway cost (including nonrecurring production costs) adjusted for data, training, support equipment, and initial spares costs. Refer to DoDI 5000.2, Section 6-K, for guidance.

**18.3 Should-Cost  
(Government)**

Should-cost analysis is not applicable to commercial or fixed price competitive acquisitions. Refer to FAR 15.810, DFARS 215.810, and NAPS 5215.810 for guidance.

**19.0 BUDGET AND FUNDING**

**19.1 Total Program Budget and Funding  
(Government)**

Describe how budget estimates were derived and discuss the schedule for obtaining adequate funds at the time when they are required (refer to FAR Subpart 32.7). Complete Table 19.1-1 to summarize budget and funding requirements.

Note: Complete one block of Table 19.1-1 for each different type of appropriation required.

<b>Table 19.1-1 Total Program Budget and Funding Summary</b>	
<b>Data Element</b>	<b>Definition</b>
(\$ ____):	Indicate in the title of the table the funding units used [e.g., (\$K) for thousands of dollars, (\$M) for millions of dollars, etc.].
(FYDP:     ):	Indicate Future Year Defense Plan (FYDP) in which the stated funding requirements are reflected.
Date:	Provide date of initial data entry or modification (MM-DD-YY).
APPN:	<p>Identify the appropriation (APPN) containing the programmed funding for each element. Examples of abbreviations/acronyms to use include:</p> <p style="margin-left: 40px;">                     APN     - Aircraft Procurement, Navy                      WPN     - Weapons Procurement, Navy                      OPN     - Other Procurement, Navy                      SCN     - Shipbuilding and Conversion, Navy                      O&amp;MN   - Operation and Maintenance, Navy                      MILCON - Military Construction                      RDT&amp;E  - Research, Development, Test, and Evaluation                 </p> <p>If other types of appropriations are used [e.g., Defense Business Operations Funds (DBOF)], use appropriate acronyms.</p> <p>In a footnote to the table , define all acronyms used.</p>
Program Identifier:	<p>List the Program Element/Line Item (PE/LI), Activity Group/Sub-Activity Groups (AG/SAGs), number or project number which contains the funding for the element.</p> <p>Line item numbers are eight digit codes used in the programming process. The first two digits denote the appropriation. Project numbers and UICs will be used in lieu of PE/LI for all activities funded by a MILCON appropriation. Once a Project Identification (PI) code has been established for a MILCON project, it is to be used in lieu of the project number and UIC. Investment Program (IP) and Investment Category (IC) for MILCON requirements and funding must also be shown. (Refer to Annex H, Facilities.)</p>
CC/RS:	Identify Claimant Code (CC) and Resource Sponsor (RS) for each Program Identifier.

Table 19.1-1 Total Program Budget and Funding Summary	
Data Element	Definition
FYPY & Prior/FYCY/ FY+1/FY+2/ etc.:	Identify Fiscal Year Prior Year (FYPY), Fiscal Year Current Year (FYCY), and each subsequent Fiscal Year (FY+1, FY+2), etc. (for the life of the program). Under FYPY & Prior, identify all funding requirements for the prior fiscal year and all previous fiscal years.  Requirements should be expressed in then-year (escalated) dollars per approved Department of the Navy (DoN) Comptroller indices. For prior and current years, amounts should reflect all program changes regardless of whether such changes have been reported or approved under reprogramming procedures.
TOTAL:	Provides the total costs for each line item and subelement by appropriation. The Required, Funded, and Difference Total lines are automatically calculated for each appropriation.
Required:	Indicate the funding required by appropriation for each fiscal year.
Funded:	Indicate the amount budgeted by appropriation for each fiscal year.
Difference:	The difference between required and funded is automatically calculated.
TOTAL:	Provides the total costs for each appropriation by FY. Total Required, Funded, and Difference lines are automatically calculated for each fiscal year.

## 19.2 Hardware Funding Requirements

### *(Government)*

Table 19.2-1 specifies the number of end items (units) which must be funded in each fiscal year to fulfill delivery requirements (e.g., if there is a two-year production lead time, funding for each unit must be provided two years prior to required delivery). This table also indicates per unit production cost and supports Table 19.1-1, above. This table is based on the installation schedule (refer to Table 16-1). Complete Table 19.2-1 to identify end item procurement and funding requirements.

Table 19.2-1 Hardware Funding Requirements Summary	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
End Items:	Column heading denoting the type of end item.
FYPY & Prior/FYCY/ FY+1/FY+2/ etc.:	Identify the Fiscal Year Prior Year (FYPY), Fiscal Year Current Year (FYCY), and subsequent Fiscal Year One (FY+1), Fiscal Year Two (FY+2), etc. (for the life of the program). Under FYPY & Prior, identify all end item requirements for the prior fiscal year and all previous fiscal years.
TOTAL:	Provides the total number of units funded and delivered and total production unit funding required. Automatically calculated
Engineering Development Model:	Heading to indicate the following data applies to Engineering Development Model (EDM) requirements.
Units Funded by FY:	Identify number of units which must be funded in each fiscal year to meet delivery requirements.
Units Delivered by FY:	Identify number of units which must be delivered in each fiscal year to meet delivery requirements.

Table 19.2-1 Hardware Funding Requirements Summary	
Data Element	Definition
Pilot Production	Heading to indicate the following data applies to Pilot Production Model requirements.
Units Funded by FY:	Identify number of units which must be funded in each fiscal year to meet delivery requirements.
Units Delivered by FY:	Identify number of units which must be delivered in each fiscal year to meet delivery requirements.
Production	Heading to indicate the following data applies to Production Model requirements.
Units Funded by FY:	Identify number of units which must be funded in each fiscal year to meet delivery requirements.
Funding Required:	Provides hardware funding requirements per year. Automatically calculated using the Estimated Unit Production Cost.
Units Delivered by FY:	Identify number of units which must be delivered in each fiscal year to meet delivery requirements. Derive data from Table 16-1, Installation Schedule, for System/Equipment MAPPs and from Table 15-1, Program Events, for Platform MAPPs.
Estimated Unit Production Cost:	Provide the estimated cost to produce one production unit (end item) in constant dollars.
(\$ ___):	Indicate the funding units used [e.g., (\$K) or (\$M)].
(FY ___):	Indicate the fiscal year which is used as the basis for the constant dollar amount (e.g., FY97).

### 19.3 Logistics Funding (Government)

There has been a very weak connection between logistics budget estimation and the formal budget process. Much of the problem is the lack of consistency between formal budget categories and the Logistics Requirements and Funding Summary (LRFS). This lack of consistency makes the translation of LRFS data to the formal budget process extremely difficult. The MAPP Logistics Funding Summary is a first step in addressing these problems.

Table 19.3-1 integrates logistics funding requirements into the formal budget process. It supports Table 19.1-1, Total Program Budget and Funding Summary. As opposed to the LRFS, the sub-elements included in the table correlate directly with program budget exhibits. In some cases, the line items in Table 19.3-1 are directly linked to line items in the budget exhibits. In others, they contribute to the totals in the budget exhibits.

The requirements in Table 19.3-1 were derived from NAVCOMPTINST 7102.2B, DoDI 5000.2, DoD 5000.2-M, and SECNAVINST 5000.2A. The individual line items were extracted from several Budget Exhibits as well as the LRFS.

The budget documents used to develop Table 19.3-1, and which the table is designed to support, are described as follows.

Source	Description	Directly Supported by Table 19.3-1
Acquisition Logistics and Operations and Support Funding for Selected Weapon Systems	one line item (Depot Maintenance). It is intended to summarize support funding requirements both during the acquisition and operation of an end item.	
Format D-26, Acquisition Logistics and Operations and Support Funding for Selected Weapon Systems	Revised format (replacement) for Exhibit P-6, Integrated Logistic Support Funding Summary. It is required for DoN, Office of the Secretary of Defense (OSD), and OMB submissions. It is very similar to Format D-22, and is intended to summarize support funding requirements both during the acquisition and operation of an end item.	Yes
Exhibits A/B, Requirements for Reporting of Initial Support Funding for Major Weapon Systems	Identifies the requirements and programmed resources for initial support of major end items in early production. Exhibit A provides a summary funding profile reflecting initial support costs, and Exhibit B provides a breakdown of initial support funding by appropriation. Required for OSD and OMB submissions.	Yes
Exhibit P-5, Aircraft Cost Analysis	Identifies costs associated with various elements within flyaway and support cost categories and provides a valid comparison of system flyaway unit costs from year-to-year. It is required for DoN, OSD, and Congressional submissions.	No. Those Exhibit P-5 elements which were incorporated into Table 19.3-1 are not exclusive to aircraft but are applicable to all platforms/end items. For aircraft, some additional breakout is required to support Exhibit P-5 development.
Exhibit P-12, Missile System Cost Analysis	Required for each missile type and model to provide a detailed breakout of flyaway cost and other support costs. It is required for DoN, OSD, OMB, and Congressional submissions.	Yes. Those Exhibit P-12 elements incorporated into Table 19.3-1 are not exclusive to missile systems but are applicable to all platforms/end items.
Exhibit 15E, Schedule of Consulting Services	Replaced Exhibit PB-27, and provides estimates for Consulting Services (CS).	Table 19.3-1 line items provide the logistics portion of the program's Exhibit 15E CS totals.
Exhibit P-44, Weapon System Cost Data Sheet	Provides an explanation for changes in unit cost of an end item between prior year, current year, and budget years one and two for all major end items. Exhibit P-44 is required for DoN, OSD, OMB, and Congressional submissions.	Table 19.3-1 provides the logistics portion of the program's Exhibit P-44 totals.

Source	Description	Directly Supported by Table 19.3-1
Exhibit P-22b, Training Requirements Analysis	Identifies the training equipment resources needed for the support of Exhibit P-1 line items. Exhibit P-22b format is used to present planned procurement of simulators and training devices/equipment in support of major end items, and is included in all major end items procurement budget submissions.	Yes
Exhibit P-22, Program Cost Breakdown	Provides detailed cost information in support of Exhibit P-1 line items and provides data for four fiscal years: the prior, current, and budget years. It is required for DoN, OSD, OMB, and Congressional submissions. <i>Exhibit P-22 is the single most important exhibit in the procurement backup book.</i>	The data in Table 19.3-1 is an aggregate of "other" line items and supports the Exhibit P-22 line item "Miscellaneous Cost: Logistics Support."
Exhibit P-1, Procurement Program	Basic justification exhibit for presenting procurement requirements. It is required for DoN, OSD, OMB, and Congressional submissions.	Table 19.3-1 is designed in accordance with Exhibit P-1 development criteria in NAVCOMPTINST 7102.2B.
Logistics Requirements and Funding Summary (LRFS)	Subsumed by the MAPP; required by SECNAVINST 5000.2A.	Yes Table 19.3-1 takes the place of the LRFS.

Since individual line items within this table will be included in formal Program Budget Exhibits, ensure that adequate backup data (including narrative) is maintained to support the Exhibits. For line items where the requirement exceeds the funding, the backup should discuss the impact on support schedules, readiness objectives, or resource requirements for other support elements/line items. Address such issues in the appropriate risk paragraphs in Part I (Paragraph 5.0, Risk Assessment), or in the respective annex(es) of the MAPP.

Backup should include a detailed breakout of all costs included in developing the aggregate line item and sub-element entries. Entries shown in one sub-element are not to be duplicated in another. Decisions regarding applicability must be consistent and reflect the guidance presented in the following line item/sub-element definitions.

Note: If this acquisition program has an automated system in place which provides the data required in this section, do not duplicate data. Instead, identify the system used and explain how to access the data.

Table 19.3-1 Logistics Funding Summary	
<i>Note: The budget documents supported by Table 19.3-1 are shown in italics after each data element description.</i>	
Data Element	Definition
(\$___)	Indicate in the title of the table the funding units used [e.g., (\$K) for thousands of dollars, (\$M) for millions of dollars, etc.].
Date:	Provide date of initial data entry or modification (MM-DD-YY).

**Table 19.3-1 Logistics Funding Summary**

*Note: The budget documents supported by Table 19.3-1 are shown in italics after each data element description.*

Data Element	Definition
APPN:	<p>Identify the (APPN) containing the programmed funding for each element. Examples of abbreviations/acronyms to use include:</p> <p style="padding-left: 40px;">                     APN - Aircraft Procurement, Navy                      WPN - Weapons Procurement, Navy                      OPN - Other Procurement, Navy                      SCN - Shipbuilding and Conversion, Navy                      O&amp;MN - Operation and Maintenance, Navy                      MILCON - Military Construction                      RDT&amp;E - Research, Development, Test, and Evaluation                 </p> <p>If other types of appropriations are used [e.g., Defense Business Operations Funds (DBOF)], use appropriate acronyms in this column.</p> <p>In a footnote to the table, define all acronyms used.</p>
Program Identifier:	<p>List the Program Element/Line Item (PE/LI), Activity Group/Sub-Activity Groups (AG/SAGs), number or project number which contains the funding for the element.</p> <p>Line item numbers are eight digit codes used in the programming process. The first two digits denote the appropriation. Project numbers and UICs will be used in lieu of PE/LI for all activities funded by a MILCON appropriation. Once a Project Identification (PI) code has been established for a MILCON project, it is to be used in lieu of the project number and UIC. Investment Program (IP) and Investment Category (IC) for MILCON requirements and funding must also be shown. (Refer to Annex H, Facilities.)</p>
CC/RS:	<p>Identify Claimant Code (CC) and Resource Sponsor (RS) for each Program Identifier.</p>
FYPY & Prior/FYCY/ FY+1/FY+2/ etc.:	<p>Identify Fiscal Year Prior Year (FYPY), Fiscal Year Current Year (FYCY), and each subsequent Fiscal Year (FY+1, FY+2), etc. (for the life of the program). Under FYPY &amp; Prior, identify all funding requirements for the prior fiscal year and all previous fiscal years.</p> <p>Requirements should be expressed in then-year (escalated) dollars per approved DoN Comptroller indices. For prior and current years, amounts should reflect all program changes regardless of whether such changes have been reported or approved under reprogramming procedures.</p>
RQD:	<p>Indicate the funding required for each line item for each fiscal year. If more than one appropriation is required for the line item, indicate the required funding per appropriation.</p>
FND:	<p>Indicate the amount budgeted for each line item for each fiscal year. If funding is provided from more than one appropriation, indicate the funding per appropriation.</p>
DIFF:	<p>The difference between the required and funded amount for the given line item for each fiscal year; automatically calculated.</p>

**Table 19.3-1 Logistics Funding Summary**

*Note: The budget documents supported by Table 19.3-1 are shown in italics after each data element description.*

Data Element	Definition
TOTALS:	Total required for the logistic category by appropriation for all fiscal years. Automatically calculated.
ILS Program Management:	Total of ILS Program Management subcategories. Automatically calculated. <i>Exhibit A/B, Exhibit P-22</i>
Consulting Services:	Those contracted services to support the development, acquisition, and operation of specific end items. Consider travel requirements, etc., related to the following functions when developing the entry for this line item. (Refer to NAVCOMPTINST 7102.2 series and SECNAVINST 4200.31B.) Reflects total of following three subcategories. Automatically calculated. <i>Exhibit 15E</i>
Studies, Analyses & Evaluations:	Include organized, in-depth analytic assessments needed to understand complex issues and improve policy development or decision-making. <i>Exhibit 15E</i>
Management and Professional Support Services:	Include advice, training, or direct assistance to organizations to ensure more efficient or effective operation of managerial, administrative, or related kinds of systems. <i>Exhibit 15E</i>
Engineering and Technical Services:	Include services performed by contractors which do not meet the criteria delineated in other sub-elements. This number must reflect the requirements in Table 14.2-1, Engineering and Technical/ Advisory Services. <i>Exhibit 15E</i>
Other ILS Program Management:	Include all program management costs not covered under the other sub-elements. Include: development/revision of manpower, training, and support planning documentation; support requirements definition (e.g., LSA, LORA, or RCM); and analysis of test and early field data/feedback (e.g., 4790-CK forms) to determine needed logistics improvements. <i>Exhibit P-22</i>
Maintenance Support:	Do not duplicate repair costs in other categories (Supply Support, Support Equipment, etc.). Backup should include a summary of the basis for computation (flying hours, etc.). Ensure the entries reflect the requirements addressed in Annex A, Maintenance Planning. Reflects total maintenance support costs for each fiscal year by appropriation. Automatically calculated from the following two sub-elements. <i>Exhibit P-22</i>
Depot Maintenance:	All costs related to establishing and sustaining organic depot maintenance should be reported under the aggregate "Depot Maintenance." (Contractor depot services are included in the subcategory, "Contractor Plant & Field Services.")  Include the recurring cost of organic support at the depot level (labor, material, and overhead). Include primary plant equipment that is unique to depot repair facilities. Address all investment and repair

**Table 19.3-1 Logistics Funding Summary**

*Note: The budget documents supported by Table 19.3-1 are shown in italics after each data element description.*

Data Element	Definition
	<p>costs for establishing and operating the permanent Designated Overhaul Point (DOP) (as well as interim DOP if applicable).</p> <p>Backup should include a breakout for end item depot repair (e.g., airframe rework) and major component repair (e.g., engine rework, aircraft component rework). For aircraft, break out depot maintenance into airframe, engine, depot-level repairables, and other. For ships, break out the depot maintenance into overhaul, restricted/technical availabilities, depot-level repairables, and other. For other systems, break out depot maintenance into software, ordnance, other end item, depot-level repairables, and other maintenance.</p> <p style="text-align: right;"><i>Format D-22, Exhibit A/B</i></p>
Other Maintenance:	<p>All organizational and intermediate level maintenance support costs should be reported under the aggregate "Other Maintenance." Include primary plant equipment that is unique to intermediate repair facilities. Include maintenance support costs not included under the other sub-elements.</p> <p style="text-align: right;"><i>Exhibit P-22</i></p>
Supply Support:	<p>Ensure these funding requirements are consistent with supply support planning data such as Program Support Data (PSD) sheets and the requirements addressed in Annex C, Supply Support. Backup should identify the model or approach used to estimate spares requirements and key inputs (e.g., operational target, resupply time, current reliability estimates). If there are significant risks in the support planning assumptions, be prepared to discuss the potential impact on spares. Provides total supply support costs for each fiscal year by appropriation; automatically calculated from the following sub-elements.</p> <p style="text-align: right;"><i>Exhibit P-22</i></p>
Spare & Repair Parts:	<p>Include all research and development, initial, replacement, outfitting, COSAL/AVCAL, and war reserve spare and repair parts (for both contractor and GFE) for the end item and its associated support, test, and training equipment. For non-aviation systems, include depot stock, and On-Board Repair Parts (OBRPs). Spare and repair parts for aviation systems include site outfitting and depot supply. For aviation programs, include outfitting buy-out requirements, and engines (all spare aircraft engines will be considered initial spares). Break out spare and repair parts as follows. This entry is the total of the following two subcategories; automatically calculated.</p> <p style="text-align: right;"><i>Exhibit P-1, Exhibit A/B</i></p>
Initial Spares:	<p>Include spare and repair parts initially delivered with the end item.</p> <p style="text-align: right;"><i>Exhibit P-1, Exhibit A/B</i></p>
Replenishment/ War Reserve Spares:	<p>Include spares delivered in accordance with sparing computations [e.g., Fleet Logistics Support Improvement Program (FLSIP)]; these are "follow-on" as opposed to initial spares.</p> <p style="text-align: right;"><i>Exhibit P-1, Format D-22, Format D-26, Exhibit A/B</i></p>

**Table 19.3-1 Logistics Funding Summary**

*Note: The budget documents supported by Table 19.3-1 are shown in italics after each data element description.*

<b>Data Element</b>	<b>Definition</b>
Installation & Checkout:	Include spare and repair parts provided with the equipment used during installation and checkout. Entry must reflect requirements in Paragraph C.5.1, Installation and Checkout Requirements. <i>Exhibit P-12</i>
Outfitting:	Include those costs required to make a ship self-sufficient and operationally ready which are not covered under other entries. <i>Exhibit P-1, Format D-22</i>
Post-Delivery:	Include costs associated with correcting defects noted in initial deployment or remaining to be accomplished after operational testing (for ships, defects noted during the shakedown cruise and those remaining from Acceptance Trials). <i>Exhibit P-1, Format D-22</i>
Operations & Support:	Total of the following two subcategories; automatically calculated. <i>Exhibit P-1</i>
Consumables:	Include non-fuel operations and support items which are not repairable (e.g., lubricants). <i>Format D-22, Format D-26, Exhibit A/B</i>
Repairables:	Include spare and repair parts not covered under other entries. <i>Format D-22, Format D-26, Exhibit A/B</i>
Contractor Plant & Field Services:	Total of next four subcategories; automatically calculated. <i>Exhibit P-1</i>
Contractor Logistics Support, Depot:	Include the cost for contractor depot repair. Entry must reflect requirements in Paragraph A.4, Depot Level Maintenance. <i>Exhibit A/B</i>
Contractor Logistics Support, Other:	Include contractor logistics support functions associated with below-depot maintenance, including technical and repair services and contractor management of maintenance and supply services. <i>Exhibit A/B</i>
Interim Contractor Support:	Include temporary support pending the establishment of organic/in-house logistics capabilities. <i>Format D-22, Format D-26</i>
Sustaining Engineering Support:	Include contractual services necessary to maintain required levels of performance, safety, reliability, and/or supportability of fielded, operational end items. <i>Format D-22, Format D-26</i>
Other Supply Support:	Include all other supply support costs not covered under the other sub-elements. <i>Exhibit P-22</i>
Support Equipment:	Project support equipment funding requirements for all planned levels of maintenance, test sites, training sites, etc. Include calibration standards and support equipment acquisition, analysis, and data. Include "insurance" funding for anticipated but unknown changes. For aviation programs, be sure to include airframe, engine, and avionics support equipment. Backup should show the relationship among funding requirements, site/unit activations, and the schedule for transition from contractor to organic maintenance at each maintenance level. Ensure the entries reflect the requirements addressed in Annex D, Support Equipment. Total support equipment

**Table 19.3-1 Logistics Funding Summary**

*Note: The budget documents supported by Table 19.3-1 are shown in italics after each data element description.*

Data Element	Definition
	<p>costs for each fiscal year by appropriation as follows. Total of following five subcategories; automatically calculated.</p> <p style="text-align: right;"><i>Exhibit P-1, Exhibit P-22, Exhibit A/B</i></p>
<p>Field Level Common Support Equipment:</p>	<p>Include the development and procurement of major items of common support equipment (automated test stations, handling equipment, etc.), as well as organizational level general purpose support equipment.</p> <p style="text-align: right;"><i>Exhibit P-5</i></p>
<p>Field Level Peculiar Support Equipment:</p>	<p>Include the development and procurement of peculiar support equipment (including test program sets), as well as organizational level special purpose support equipment.</p> <p style="text-align: right;"><i>Exhibit P-5, Exhibit P-12</i></p>
<p>Depot Level Support Equipment/ Software:</p>	<p>Include all depot level support equipment requirements. Do not duplicate entries between this sub-element and the "Depot Maintenance" sub-element listed under Maintenance Support.</p> <p style="text-align: right;"><i>Exhibit P-5</i></p>
<p>Installed Government Furnished Equipment:</p>	<p>Include BIT/BIT Equipment (BIT/BITE) and all other Government furnished equipment installed in the end item.</p> <p style="text-align: right;"><i>Exhibit P-5</i></p>
<p>Other Support Equipment:</p>	<p>Include intermediate level support equipment requirements and support equipment costs not covered under the other sub-elements.</p> <p style="text-align: right;"><i>Exhibit P-12</i></p>
<p>Technical Data:</p>	<p>Include the requirements for the development, procurement, in-process review, production, validation/verification, distribution, and updating of technical data (drawings, parts breakdowns, etc.), and technical manuals (operator and maintenance) for each echelon of maintenance. Include management, review, and source data. Consider technical manuals, technical manual changes, reprourement data, Planned Maintenance System (PMS) requirements, analyses, studies, and plans, and other technical data requirements not covered under other line items. Ensure the entries reflect the requirements addressed in Annex E, Technical Data. Enter total technical data costs for each fiscal year by appropriation.</p> <p style="text-align: right;"><i>Exhibit P-5, Exhibit P-12, Exhibit P-22, Format D-22, Format D-26, Exhibit A/B</i></p>
<p>Training and Training Support:</p>	<p>Total training and training support costs for each fiscal year by appropriation. Total of next 5 subcategories; automatically calculated. Ensure that the entries reflect the training throughput requirements derived from Annex F, Training and Training Support. Ensure the total includes the following:</p> <ul style="list-style-type: none"> <li>• Development and procurement of training courses and materials, simulators and other training devices, and factory training</li> <li>• All training course requirements from development to instructor services</li> <li>• Training equipment and aids</li> <li>• Software Support Activity (SSA) training requirements</li> </ul>

**Table 19.3-1 Logistics Funding Summary**

*Note: The budget documents supported by Table 19.3-1 are shown in italics after each data element description.*

Data Element	Definition
	<ul style="list-style-type: none"> <li>• Initial or contractor training services</li> <li>• Training devices/ aids; associated analysis and studies</li> <li>• Training resource requirements and costs</li> <li>• Instructional literature</li> <li>• Training equipment installation</li> <li>• Initial (factory) training; associated engineering technical services</li> <li>• Applicable Training Support Agent/Training Agent (TSA/TA) funding requirements (ensure these funding requirements are related to site/unit activation dates and organic support dates)</li> </ul> <p>Training equipment includes, but is not limited to, the following: Operator, Team, Tactics, and Maintenance training equipment. Training equipment and devices should be listed by training site in Table 16-1, Installation Schedule.</p> <p>Ensure that each line item accurately describes the effort. Frequently, attempts are made to use the same line item entry for more than one year when the program entry for the following year is not exactly the same.</p> <p>For example, Model A of a particular training equipment procured in one year and an improved Model B version is planned for the following year. Separate entries should be used to avoid comparisons of these two unlike items.</p> <p>Enter training costs for the sub-elements as follows:  <i>Exhibit P-1, Exhibit P-12, Exhibit P-22, Exhibit P-22b, Format D-22, Format D-26, Exhibit A/B</i></p>
Operator:	Include all costs associated with operator training. <i>Exhibit P-22b, Format D-22, Format D-26, Exhibit A/B</i>
Maintenance:	Include all costs associated with maintainer training. <i>Exhibit P-22b, Format D-22, Format D-26, Exhibit A/B</i>
Team:	Include all costs associated with team training. <i>Exhibit P-22b</i>
Tactics:	Include all costs associated with tactics training. <i>Exhibit P-22b</i>
Other Training and Training Support:	Include "insurance" funding for anticipated but unknown changes. Include software training requirements and training and training support requirements not covered under the other sub-elements. <i>Exhibit P-22</i>
Computer Resources Support:	Summarize the requirements for computer resources to support Annex G, Computer Resources Support. Include software support, software documentation, independent validation and verification, computer security, software testing, support software, simulation support, software maintenance/support, support equipment unique to SSAs, and other computer resources support requirements not

**Table 19.3-1 Logistics Funding Summary**

*Note: The budget documents supported by Table 19.3-1 are shown in italics after each data element description.*

Data Element	Definition
	<p>covered under other line items. Enter the total computer resources support costs for each fiscal year.</p> <p style="text-align: right;"><i>Exhibit P-22</i></p>
Facilities:	<p>Include all MILCON funded new construction and facilities modification identified for the new end item (except production facilities), O&amp;MN, minor construction (less than \$300,000), public works and utilities, and any procurement for site exploration/surveys. Factors to consider include MILCON planning and design; MILCON unspecified minor construction, facilities analysis and plans, and other facilities requirements not covered under other line items. Ensure entries reflect the requirements addressed in Annex H, Facilities. Enter the total facilities costs for each fiscal year by appropriation.</p> <p style="text-align: right;"><i>Exhibit P-1, Exhibit P-22, Exhibit A/B</i></p>
Related Programs:	<p>Total of next four subcategories; automatically calculated. Tailor/define the sub-elements for this line item as appropriate for this end item. Include requirements for all other support estimates under program manager claimancy. Include: configuration management; survivability; installation; handling equipment; containers; special PHST; survivability; and hazardous material control and management.</p> <p>Identify requirements associated with other support activities, contractor or Government laboratories, and field activities not already shown in other line items that require resources in any milestone phase. Do not include items funded by Fleet O&amp;MN accounts. Enter total related program costs for each fiscal year by appropriation as follows.</p> <p style="text-align: right;"><i>Exhibit P-22</i></p>
Modification of In-Service End Item:	<p>List each modification separately. This entry includes costs associated with known, planned modifications/upgrades to items currently in Fleet use.</p> <p style="text-align: right;"><i>Exhibit P-1, Exhibit A/B</i></p>
Anticipated Changes:	<p>Include "insurance" funding for unknown but anticipated changes. Include development and procurement funding for support-related engineering change orders/proposals and product improvements (e.g., Reliability and Maintainability Improvement Program).</p> <p style="text-align: right;"><i>Exhibit P-5, Exhibit P-12, Exhibit A/B</i></p>
Special Handling Equipment:	<p>Include handling equipment unique to the end item.</p> <p style="text-align: right;"><i>Exhibit P-12</i></p>
Other Related Programs:	<p>Include related program requirements not covered under the other sub-elements.</p> <p style="text-align: right;"><i>Exhibit A/B</i></p>

<b>Table 19.3-1 Logistics Funding Summary</b>	
<i>Note: The budget documents supported by Table 19.3-1 are shown in italics after each data element description.</i>	
<b>Data Element</b>	<b>Definition</b>
Test and Evaluation:	Include all funding required by fiscal year to support test and evaluation of the end item. Refer to Annex Q, Test and Evaluation.
TOTAL, ALL LINE ITEMS:	<p>All costs (required, funded, and differences) by fiscal year; automatically calculated. Be prepared to define and defend, in narrative form, the impact of the variance between required and funded (i.e., difference as noted in "DIFF" column). These explanations should be succinct and should describe any change in requirements or funding shortfalls. Risk introduced by the differences should be addressed in Paragraph 5.3, Cost.</p> <p>In preparing the backup, provide a narrative explanation for changes between the prior, current, and subsequent fiscal years. In describing the reasons for changes, include categories such as escalation, quantity changes, configurations (specify), or revised business base as appropriate.</p> <p style="text-align: right;"><i>Exhibit P-22, Exhibit P-44</i></p>

**20.0 CONTRACTS**

**20.1 Plan For Each Proposed Contract**

Using subparagraph structure, briefly describe each proposed contract.

**20.1.X [First Contract]** Identify the contract by number or title.

Note: The content of this section concerns only those contracts for which solicitation authority is requested by submission of this MAPP. If more than one contract is anticipated, the plan for each award should be presented in a separate subparagraph (i.e., Paragraph 20.1.X becomes Paragraph 20.1.1 for the first contract, Paragraph 20.1.2 for the second contract, etc.). Once a contract is awarded, it is to be addressed in Paragraph 20.2 and deleted from Paragraph 20.1.X.

Discussion of each contract should be as brief as possible. The following subparagraphs apply to each proposed contract (e.g., 20.1.X.1 becomes 20.1.1.1 to provide the description for the first contract).

**20.1.X.1 Description**

*(Government)*

Provide a brief description of the item (or services) being procured under the contract.

**20.1.X.2 Sources**

*(Government)*

Indicate the prospective sources of supplies and/or services that can meet the need. Consider required sources of supplies and services (refer to FAR Part 8). Include

consideration of small business, small disadvantaged business, and labor surplus area concerns (refer to FAR Parts 19 and 20). If the acquisition or a part of it is for commercial or commercial-type products (refer to FAR Part 11), address the results of market research and analysis and indicate their impact. If the acquisition, or part of it, is for other than commercial or commercial-type products, address the extent and results of the market survey conducted or the reasons one was not or will not be conducted.

**20.1.X.3 Competition**  
**(Government)**

When addressing competition, indicate the type of solicitation planned. Select from the following and provide the requisite data.

Type	Description
Full and Open Competition	Describe how competition will be sought, promoted, and sustained throughout the course of the acquisition.
Full and Open Competition After Exclusion of Sources	If exclusion of source(s) is proposed, identify the applicable statutory authority permitting exclusion. Cite the basis in FAR 6.202 or 6.203 permitting the exclusion. Where FAR 6.202 is cited, provide supporting information required by DFARS 206.202(b)(i).
Other Than Full and Open Competition	<p>If full and open competition is not anticipated, cite the authority in FAR Subpart 6.302, discuss the basis for the application of that authority, identify the source(s), and discuss why full and open competition cannot be obtained.</p> <p>Note: FAR 7.104(c) states that if other than full and open competition is proposed, it must be coordinated with the cognizant competition advocate.</p>

When effective subcontract competition is both feasible and desirable, describe how such subcontract competition will be sought, promoted, and sustained throughout the course of the acquisition. Identify known barriers to increasing subcontract competition and address how to overcome them.

Address restrictions on foreign participation at the subcontract level. For sole-source items, provide plans for increasing the level of subcontractor competition.

**20.1.X.4 Source Selection Procedures**  
**(Government)**

Discuss the source selection procedures for the acquisition, including the timing for submission and evaluation of proposals, and the relationship of evaluation factors to the attainment of the acquisition objectives (refer to FAR Subpart 15.6). Include factors which will be used to determine best value to the Government. If best value will not be used as the ultimate selection criteria, provide justification.

**20.1.X.5 Contracting Considerations**  
***(Government)***

For each proposed contract, discuss the following:

- Contract type selection (refer to FAR Part 16);
- Use of multiyear contracting, options, or other special contracting methods (refer to FAR Part 17);
- Special clauses, special solicitation provisions, or FAR deviations required (refer to FAR Subpart 1.4);
- Whether sealed bidding or negotiation will be used and why;
- Whether equipment will be acquired by lease or purchase (refer to FAR Subpart 7.4) and why; and
- Other contracting considerations.

**20.1.X.6 Product Descriptions**  
***(Government)***

Refer to FAR Part 10. Include use of commercial and/or Government specifications and standards which will be invoked for this procurement. When explaining why these were selected, include plans to obtain necessary waivers. Once the contract is awarded, all specifications and standards are to be listed in Table 13.2-1, Specifications and Standards.

**20.1.X.7 Management Information Requirements**  
***(Government)***

Discuss, as appropriate, what management system will be used by the Government to monitor the contractor's effort. Include a statement as to whether or not Cost/Schedule Control Systems Criteria (C/SCSC) or the Cost/Schedule Status Report (C/SSR) will be used. After contract award, this information will be deleted from this paragraph and included in the appropriate sections of the MAPP (e.g., Table 11.1-1, Data/Communication Requirements).

See DoDI 5000.2, Section 11-B, for guidance on C/SCSC and C/SSR.

**20.1.X.8 Other Considerations**  
***(Government)***

Provide additional information as necessary to ensure understanding of the proposed contract. Limit the discussion to essential information.

**20.2 Contracts Summary**  
***(Government)***

Complete Table 20.2-1 for each proposed and awarded program contract.

Note: Financial data on proposed contracts is considered business-sensitive. If this data is maintained elsewhere, indicate where and how the data may be accessed; include access restrictions. If this is the case, complete Table 20.2-1 for awarded contracts only.

Note: Associated costs must be reflected in Tables 19.1-1, 19.2-1, and 19.3-1 as appropriate.

<b>Table 20.2-1 Contracts Summary</b>	
<b>Data Element</b>	<b>Definition</b>
<b>Date:</b>	Provide date of initial data entry or modification (MM-DD-YY).
<b>Number:</b>	Enter assigned contract number (e.g., N00001-99-C-0001).
<b>Procurement Type:</b>	Indicate the type of procurement using the following codes:  S - Sole Source Procurement SDB - Small Disadvantaged Business Set-Aside SB - Small Business Set-Aside Procurement 8a - Minority Owned Business Set-Aside C - Full and Open Competitive Procurement
<b>Contract Type:</b>	Enter standard abbreviation for the contract type [e.g., Cost Plus Fixed Fee (CPFF), Cost Plus Incentive Fee (CPIF), Firm Fixed Price (FFP)].
<b>Proposed:</b>	Place an "x" in the space provided if this is a proposed contract.
<b>Value:</b>	Enter total value of the contract.
<b>Performance Period:</b>	Enter duration of the contract. (MM-DD-YY to MM-DD-YY)
<b>Purpose:</b>	Define the purpose of the contract (e.g., engineering services, end item development).
<b>Number of End Items:</b>	For development contracts, enter the number of end items to be delivered. This supports Table 19.2-1, Hardware Funding Requirements Summary.
<b>APPN:</b>	Enter type of funds (appropriation) used to fund the contract [e.g., APN].
<b>Contractor:</b>	After contract award, identify the contractor responsible for performing the work.

# MASTER ACQUISITION PROGRAM PLAN (MAPP) USER'S HANDBOOK

## ANNEX A. MAINTENANCE PLANNING

The translation of the maintenance concept (refer to Part I, Paragraph 9.0, Maintenance Concept) into a support structure relies on detailed analyses which can include Logistics Support Analysis (LSA), Reliability Centered Maintenance (RCM), Level of Repair Analysis (LORA), or contractor-developed processes. Support requirements analysis tasks are to be listed in Part I, Table 10.1-1, Support Requirements Tasks. If RCM analysis is performed, for example, the tasks to be performed would be listed in Table 10.1-1. Likewise, if LORA is performed, the associated tasks to be performed would be listed in Table 10.1-1.

Commercial items should have operational data available upon which to base the maintenance concept and support structure, keeping in mind that data may need to be adjusted to reflect the military application of the commercial end item.

### A.1 STRATEGY (Government)

In most of the MAPP annexes, the element support concept is described in the Strategy paragraph. However, because the maintenance concept drives most of the other support elements, it is presented in Part I, Paragraph 9.0, Maintenance Concept, along with the other program-level data. In this paragraph, describe how the maintenance concept was determined (e.g., trade-offs for contractor versus organic repair), including those assumptions on which the trade-offs were based. Also include programmatic or operational requirements which drive or constrain this philosophy.

If this is a commercial end item, or contains commercial components, discuss the impact on maintenance planning and support.

For example, commercial item acquisitions are often ready for fielding before the maintenance support structure can be fully established. This can drive a requirement for extended reliance on contractor support.

Maintenance planning factors to be considered during the commercial item acquisition process include:

- The availability of manufacturer supported preventive maintenance programs,
- Requirements to return end items to the factory for repair,
- The availability of on-site repair personnel (technical representatives) to perform repairs in the field (e.g., aboard ship), or
- A combination of these factors.

### **A.1.1 Approach**

Note: Identify all specifications and standards used in the maintenance planning program in Part I, Table 13.2-1, Specifications and Standards.

#### ***(Government)***

Explain how maintenance planning requirements will be defined for the end item. Before contract award, either: 1) list specifications and standards to be invoked, or 2) list the specific minimum requirements on which the contractor process will be based. These requirements will be incorporated into the Request For Proposals (RFP). Refer to DoDI 5000.2, Section 6-C.

#### ***(Contractor)***

After contract award, explain how Government requirements will be met. Identify source data to be used to determine maintenance planning requirements. Explain how results of support requirements analysis tasks (refer to Part I, Paragraph 10.2, Results of Support Requirements Analysis Tasks) will be used.

Address management techniques used to ensure the effectiveness of maintenance planning. If simulation is being used in support of maintenance planning, describe how, why, and when it will be used (refer to Part I, Table 2.5-1, Dynamic Simulation Summary).

### **A.1.2 Roles and Responsibilities**

#### ***(Government/Contractor)***

When identifying the roles and responsibilities of participants in the maintenance support planning and implementation efforts, identify participants at the organization level [(e.g., Activity XX will develop Maintenance Requirement Cards (MRCs)]. Ensure that each Government or contractor organization described here is listed in Part I, Table 14.1-1, Program Participants.

### **A.1.3 Risks and Outstanding Issues**

#### ***(Government/Contractor)***

In this paragraph, identify each risk and describe plans to reduce or eliminate its impact.

For example, if normal maintenance actions would invalidate warranty provisions, this risk must be defined and addressed. Risk reduction techniques could include placing warning labels on the equipment and emphasizing warranty provisions in operator and maintainer training courses.

#### ***(Government)***

In the discussion of outstanding issues, include Independent Logistics Assessment (ILA) findings. Address the impact of each finding and explain how the recommended action will affect the maintenance planning program. (Refer to Part I, Table 10.4.2-1, Independent Logistics Assessment Summary.)

**A.2 ORGANIZATIONAL LEVEL MAINTENANCE**  
*(Government/Contractor)*

Briefly discuss the types of tasks assigned to the organizational level (e.g., remove and replace vice repair of circuit cards).

For example, many times the overall maintenance strategy (such as Lo-mix, in the case of a ship) or design (such as modular, in the case of equipment) limits organizational level maintenance tasks. The result is a greater reliance on intermediate and depot level support.

Discuss planned use of contractor and/or Government support activities to effect organizational level maintenance over the life-cycle of the end item. Include temporary or permanent use of contractor technical representatives or Government engineering field support activities [e.g., Naval Air Warfare Centers (NAWCs)]. List specific points of contact in Part I, Table 14.1-1, Program Participants.

**A.3 INTERMEDIATE LEVEL MAINTENANCE**  
*(Government/Contractor)*

Briefly describe the types of tasks assigned to the intermediate level and any overriding constraints, such as a maintenance strategy or end item design, which drive intermediate level maintenance decisions. For aviation engines, specify which level of intermediate maintenance will be used (Level I, II, or III). Where enhanced I-level capability is required [i.e., augmentation of an existing Intermediate Maintenance Activity (IMA) for reasons of either workload or the addition of a new capability], describe the requirement and the augmentation planned. Also discuss planning for interim or life-cycle contractor support. Identify the organizations responsible for providing both interim and life-cycle intermediate maintenance support. List specific points of contact in Part I, Table 14.1-1, Program Participants.

**A.4 DEPOT LEVEL MAINTENANCE**

Depot maintenance is performed by designated maintenance activities to augment stocks of serviceable material and to conduct comprehensive maintenance overhauls beyond the capabilities of organizational and intermediate maintenance activities. Depot level activities require extensive shop facilities, equipment, and personnel of higher technical skill than that available at lower maintenance levels. Depot services normally include:

- Inspection, test, repair, modification, alteration, modernization, conversion, overhaul, reclamation, or rebuild/rework of parts, assemblies, subassemblies, components, and end items;
- The manufacture of critical non-available parts; and
- Technical assistance to organizational or intermediate maintenance organizations or other activities.

Depot maintenance is normally accomplished in fixed shops, shipyards, and other shore-based facilities, or by depot field teams. When these facilities or teams are under the cognizance of the Systems Command (SYSCOM) (e.g. NAVAIR, SPAWAR), it is referred to as an "in-house organic" capability. However, depot maintenance can also be performed under contract by commercial organizations, including the Original Equipment Manufacturer (OEM).

**A.4.1 Approach**  
**(Government/Contractor)**

Describe the types of tasks assigned to the depot level. Discuss overriding constraints of maintenance, strategy, or design which may have driven selection of these tasks. Factors to consider when developing depot level planning requirements include identification of:

- Industrial base for maintenance or for equipment, spares, and parts manufacture
- Peacetime readiness and combat sustainability
- Quantification of cost effectiveness of using Government depot facilities versus contractor facilities
- Depot security implications (refer to Part I, Paragraph 3.0, Security)
- Private/commercial sources for depot availability
- Status and compatibility of existing Technical Repair Standards (TRSs).

Repairables associated with the end item are identified in Part I, Table 6.2-1, Configurations and Physical Characteristics.

**A.4.2 Interim Depot Requirements**  
**(Government)**

Interim depot support (usually provided by the OEM) must be established during late development and early deployment of the end item. Base interim depot support decisions on installation schedules (refer to Part I, Table 16-1, Installation Schedule) and existing Navy organic depot capabilities and capacities. Specify the approach and plan for contractor support until Government support can be established. Identify performance requirements and/or incentives (repair turnaround time, cost, quality, etc.). Explain how performance requirements will be monitored and enforced.

**A.4.2.1 Interim Depot Resources**  
**(Contractor)**

Interim depot resources include special purpose tools and test equipment, general purpose tools and test equipment, documentation, bonded storerooms/other facilities, and spare parts. When describing the strategy for fulfilling interim depot resource requirements, identify potential barriers. Identify resources in short supply (e.g., unique skills or specialties) and explain how they will be allocated.

Note: Address strategies only; do not list specific requirements here. Resource requirements are provided in the appropriate MAPP annexes (e.g., support and test equipment is identified in Table D.2-1, Identification of Support Equipment).

#### **A.4.2.2 Interim Depot Capacity**

##### ***(Contractor)***

Based on maintenance requirements derived through LSA or other analyses, determine whether the candidate interim depot site capacity is adequate. Projected workload requirements (type and quantity of workload identified by civilian/military skill levels and annual manhour projections) over a five-year period from anticipated start-up should be entered in Tables B.4.1-1, Maintenance Workload Requirements, and B.4.2-1, Maintenance Man-Hours Per Operating/Flight Hour. When discussing the impact of the OEM as the interim depot, address priorities given to repair and production. That is, explain how the Government will ensure that resources are not diverted from end item production to meet repair requirements, and vice versa.

#### **A.4.2.3 Retrograde Procedures**

##### ***(Government)***

Retrograde procedures for returning failed parts to the interim depot must be established. Before contract award, identify requirements to be imposed on the OEM.

##### ***(Contractor)***

Discuss procedures used for receiving, identifying, repairing, packaging, and shipping repaired or replacement parts. If the interim depot is the OEM, distinguish between warranty and non-warranty procedures (the process may be as simple as checking a block on the paperwork which accompanies the returned item). Warranty provisions are summarized in Part I, Paragraph 8.3, Warranties.

#### **A.4.2.4 Transition to Permanent Depot**

##### ***(Contractor)***

When discussing transition to the permanent depot, identify the maintenance responsibilities to be transitioned. Explain whether a phased transition is planned. If so, identify the dates and responsibilities to be transferred at each phase. Identify potential barriers and outstanding issues associated with the transition. The disposition of GFM provided to the OEM (refer to Paragraph A.4.2.1, Interim Depot Resources) must be determined and reflected in the appropriate MAPP tables.

For example, if the Government will provide a piece of test equipment for interim depot use, the requirement for, and the disposition of, the test equipment will be identified in Table D.2-1, Identification of Support Equipment.

### A.4.3 Permanent Depot Requirements

#### *(Government)*

Planning for permanent depot maintenance generally parallels planning for interim depot maintenance. However, additional requirements of Designated Overhaul Point (DOP) Assignment Approval Process and Depot Certification must be addressed.

[Refer to Depot Maintenance Interservice Program (DoDD 4151.1) and the Commercial and Industrial-Type Activities Programs (DoDD 4100.15) for guidance.]

Factors to consider during permanent depot planning include:

- Whether the proposed DOP can currently perform the required maintenance on the end item (or whether additional OEM technical expertise is required);
- Whether the proposed DOP has the industrial capability (e.g., Test equipment, tools, repair parts, and personnel) to meet military contingency, mobilization, or sustained operational requirements;
- Whether it is economically feasible for the Navy to establish DOP maintenance support (as opposed to maintaining an interim support structure);
- Whether the establishment of a DOP is essential to support depot level repair of critical repair items essential to the accomplishment of military mission requirements; or
- Whether the establishment of a DOP would violate commercial proprietary rights.

Refer to Commercial Activities Program Procedures (DoDD 4100.33) for guidance on the establishment of in-house organic depot support.

#### A.4.3.1 Permanent Depot Resources

##### *(Government)*

Permanent depot resources may include special purpose tools and test equipment, general purpose tools and test equipment, documentation, bonded storeroom and other facilities, and spare parts. Specific resources to be provided by the Government are identified in the appropriate annexes of the MAPP as follows:

Depot Resources	MAPP Location
Manpower	Annex B, Table B.5.2-1
Support, Plant, Calibration, and Test Equipment	Annex D, Table D.2-1
Documentation (drawings, technical manuals)	Annex E, Tables E.2.1-2 and E.3.2-1
Training	Annex F, Table F.2-1
Facilities	Annex H, Table H.2-1
PHST Requirements	Annex I, Table I.2-1

Explain how depot resource requirements will be defined and describe procedures for fulfilling them.

For example, when planning for outfitting the depot with initial spare parts, several steps may be involved. The program office may provide the depot with parts lists (refer to Table C.3.2-1, Allowance Lists). The depot will review the lists and develop a list of their requirements. This list of spare parts requirements will be negotiated and then become an agreement between the program office and depot. This process would be described in this paragraph.

#### **A.4.3.2 Permanent Depot Assignment/Certification**

*(Government)*

The DOP Assignment Approval Process should begin when the identity of DOP repairables is established.

Complete Table H.2-1, Section B, Candidate Site Data, to identify permanent depot candidates. All DOPs for the end item will be certified in accordance with SYSCOM certification procedures before induction of a newly assigned depot level repairable workload. SYSCOM certification procedures are designed to ensure the adequacy of depot maintenance support resources and capacity.

Certification personnel should include a SYSCOM Program Manager for Depot Maintenance (PMDM) representative, Program Manager representative, Inventory Control Point (ICP) representative, acquisition and maintenance engineering representatives, and contracting officers, if required. Specific points of contact for coordination of these functions are to be provided in Part I, Table 14.1-1, Program Participants.

If transition to the permanent DOP is phased, certification will also have to be phased.

When a permanent depot has been selected, complete Table H.2-1, Section F, Selection Decision.

#### **A.4.3.3 Retrograde Procedures**

*(Government/Contractor)*

See paragraph A.4.2.3.

#### **A.4.3.4 Status Reports**

*(Government)*

An industrial facility selected as the DOP, whether in-house organic or OEM, usually will have an existing management information system capable of generating required repair workload status reports. Potential impact can occur if the program office has peculiar data or submission requirements because of warranty or special maintenance data collection procedures/activities. Describe how these impacts will be identified, quantified, and accommodated.

**A.5 DOCUMENTATION**

*(Government/Contractor)*

Complete Table A.5-1 to identify the Maintenance Index Pages (MIPs) for system/subsystem/equipment MAPPs, or for ship MAPPs, the date of the List of Effective Pages (LOEP) date.

Table A.5-1 Maintenance Index Pages	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
MIP Number:	<i>(Not for ship MAPPs)</i> List the MIPs developed for the end item.
MIP Title:	<i>(Not for ship MAPPs)</i> Provide the title of the given MIP for the end item.
LOEP Date:	<i>(Ships only)</i> Provide the date of the LOEP (MM-DD-YY).

**A.6 MAINTENANCE REPORTING**

*(Government/Contractor)*

When addressing data collection to support the Maintenance Data Collection System, discuss data reporting requirements at each maintenance level (Organizational, Intermediate, and Depot -- both interim and permanent).

If the Maintenance Data Collection System is not used, describe how and by whom the data for readiness assessment will be generated.

# MASTER ACQUISITION PROGRAM PLAN (MAPP) USER'S HANDBOOK

## ANNEX B. MANPOWER/PERSONNEL

According to DoDI 5000.2, Manpower and Personnel is the logistics support element which "involves the identification and acquisition of military and civilian personnel with the skills and grades required to operate and support the end item over its lifetime at peacetime and wartime rates." Because manpower/personnel costs are usually a major driver of support costs, planning for this element must begin at program initiation. Baseline Comparison System (BCS) data provides the initial estimates of manpower requirements. These estimates are refined in response to established requirements/constraints, trade-off analyses, and evolution of the end item design.

### B.1 STRATEGY

#### *(Government)*

Summarize the manpower/personnel concept from the Mission Need Statement (MNS). Discuss the manpower impact of the new end item as compared to its predecessor or comparable end item(s) and identify the sources of manpower resources for the new end item. Summarize requirements for new occupational specialties, requirements for high quality personnel, or "hard-to-fill" military and civilian occupations, and explain the strategy for fulfilling these requirements.

Include a summary of the factors governing the manpower requirement, such as: constraints on crew size and mix (including directed use of existing billet structure and requirements for minimum or reduced manning), condition watches, maintenance requirements, budget limitations, and demographic limitations.

Explain how manpower considerations affect the acquisition. For example, Requests for Proposals (RFPs) may include the need to reduce manpower quantities or skill requirements; this, in turn, may lead to the need for a more technologically sophisticated end item.

If the decision is made to acquire a commercial item, explain whether this has an effect on the manpower program.

For example, with the rapid fielding of a commercial item there may not be sufficient time to define manpower requirements (both quality and quantity), identify and train operator and maintenance personnel, and get the personnel to their assigned destinations in time. In such an event, contractors may need to operate and maintain the system until Navy support can be established.

#### B.1.1 Approach

Note: Identify all specifications and standards used in the manpower/personnel program in Part I, Table 13.2-1, Specifications and Standards.

**(Government)**

Before contract award, either: 1) list specifications and standards to be invoked, or 2) list the specific minimum requirements on which the contractor process must be based. If specifications/standards are tailored, define the tailored requirements in this paragraph. These requirements will be incorporated into the RFP. If source data is to be supplied to contractors by the Government, list it in Part I, Table 17-1, Government Furnished Information. Refer to DoDI 5000.2, Section 7-A and Section 7-B.

**(Contractor)**

After contract award, explain how the manpower/personnel program will be conducted. Include:

- A description of the process to identify and validate manpower requirements.
- A description of the interface between manpower/personnel and the other support elements, especially the other domains of Human Systems Integration (i.e., human engineering, training, and safety).
- An explanation of the use of simulation to define and implement manpower/personnel program requirements. Describe when, why, and how it will be used (refer to Part I, Table 2.5-1, Dynamic Simulation Summary).

Identify source data to be used to determine manpower/personnel requirements. Explain how the results of support requirements analysis tasks will be used (refer to Part I, Paragraph 10.2, Results of Support Requirements Analysis Tasks).

When discussing techniques to be used to ensure the effectiveness of the manpower/personnel program, consider the following:

- Ensure that manpower and skill requirements analyses for the new end item are:
  - Initiated early in the conceptual phase
  - Considered as prime design considerations during development
  - Addressed specifically during logistics support or other requirements determination analysis
  - Conducted with the objective of minimizing the requirements
- Use manpower cost factors in design and support trade-off analyses to take into account costs to train or replace experienced personnel, as well as billet and all overhead costs.
- Develop detailed descriptions of current and projected manpower skill resources and shortfalls (include the use of data derived from similar systems).

**B.1.2 Roles and Responsibilities**  
*(Government/Contractor)*

When identifying the roles and responsibilities of manpower/personnel program participants, provide descriptions at the organization level (e.g., Activity XX will develop the Preliminary Squadron Manning Document). Ensure that each activity or contractor organization described here is listed in Part I, Table 14.1-1, Program Participants.

**B.1.3 Risks and Outstanding Issues**  
*(Government/Contractor)*

Describe risks which could hinder the establishment of effective manpower/personnel support. For each risk, identify how the risk will be reduced or eliminated.

For example, detailed analysis indicates that a specific rating (Boatswain's Mate) should be trained to perform a specific task (maneuver a hovercraft). It is found, however, that trainees are failing to complete training at an alarming rate. The risk is that there will not be enough trained personnel to command the crafts. The plan to reduce or eliminate the risk may involve several steps: 1) perform a human engineering analysis of the tasks involved in driving the craft; 2) assess the training program to ensure it is instructionally sound; 3) interview the trainees, both successful and unsuccessful, to get their views on the problem; etc.

In the discussion of outstanding issues, include items that affect the manpower/personnel program. Include manpower/personnel Independent Logistics Assessment (ILA) findings. Address the impact of each finding and explain how the recommended action affects the manpower/personnel program. (Refer to Part I, Table 10.4.2-1, Independent Logistics Assessment Summary).

**B.2 WATCH STATION REQUIREMENTS**  
*(Contractor)*

When discussing how end item operation affects manpower requirements, include a description of the basic manner in which the end item will be operated (e.g., unmanned, single operator, two-person team, Condition I or Condition III, existing watch sharing), and who (e.g., what rating) will operate the end item. Part I, Table 6.2-1, Configurations and Physical Characteristics, indicates which configuration items require human involvement for operation. A description of the specific modes of operation is not required. If the end item does not require dedicated watch station manning for operation, include an explanation that describes: the operational concept in terms of function of existing watch organization; time shared with other watch station(s); responsibility for monitoring end item operation; entirely unmanned/unmonitored operation; and/or other special purpose operation.

Complete Table B.2-1 to identify the number of watch stations to be manned at various conditions of readiness.

Table B.2-1 Watch Station Requirements	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Station Title:	Provide name or title of watch station.
<b>Watch Stations</b>	
	<p>Place an "x" in the appropriate space(s) to indicate that the station is to be manned during the indicated condition(s) of readiness. The conditions of readiness are defined as follows:</p> <ul style="list-style-type: none"> <li>• Condition I: general quarters, all hands at battle stations</li> <li>• Condition III: wartime cruising</li> <li>• Condition IV: peacetime cruising</li> <li>• Condition IA: all hands on station to conduct amphibious operations and limited defense of the ship</li> <li>• Condition IM: all hands on station to conduct mine countermeasures</li> <li>• Condition V: peacetime watch in port</li> <li>• FQ: Flight Quarters</li> <li>• UR: Underway Replenishment operations</li> <li>• VR: Vertical Replenishment operations</li> </ul>
Designator:	Provide officer billet designator.
Rank/Rate/Rating:	For officers, indicate rank; for enlisted, indicate rate/rating.
NOBC/NEC/MOS:	For officers, provide Navy Officer Billet Classification (NOBC); for enlisted, provide Navy Enlisted Classification (NEC)/ Military Occupational Specialty (MOS).
AQD:	For officers, provide Additional Qualification Designator (AQD).

**B.3 AIRCREW REQUIREMENTS** (*Aircraft Only*)  
(Contractor)

If the end item for which the MAPP is being developed is an aircraft, complete Table B.3-1 to identify the manpower needed during aircraft operation. If the MAPP is for an end item being installed in an aircraft, complete Table B.3-1 to identify the impact on aircraft manning.

Table B.3-1 Aircrew Requirements ( <i>Aircraft Only</i> )	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Position:	Identify the position (function) to be filled.
Designator Rate/Rating:	Provide officer billet designator or enlisted rate/rating of the person filling the stated position.
NOBC/NEC/MOS :	For officers, provide Navy Officer Billet Classification (NOBC); for enlisted, provide Navy Enlisted Classification (NEC)/ Military Occupational Specialty (MOS).
AQD:	For officers, provide Additional Qualification Designator (AQD).
Crew Ratio:	Assigned by The Chief of Naval Operations (OPNAV); indicate number of personnel required per aircraft.
Seat Factor:	Identify the number of seats available.

## B.4 MAINTENANCE WORKLOAD REQUIREMENTS

### B.4.1 End Item (Non-Aircraft) (Contractor)

Maintenance requirements are a major driver of manpower requirements. In Table B.4.1-1, provide the average planned and corrective maintenance man-hours required per week per installed end item. Planned maintenance estimates should be in reference to eventual end item coverage under the Planned Maintenance System (PMS). Identify source and date of planned maintenance data, such as Logistics Support Analysis (LSA), Work Study Design Specification, test data, operating experience, Maintenance Index Pages (MIP), preliminary/draft Maintenance Requirement Cards (MRCs), etc. Corrective maintenance estimates are to be based on Navy Manpower Analysis Center (NAVMAC) approved planned maintenance/corrective maintenance ratios.

<b>Table B.4.1-1 Maintenance Workload Requirements (Non-Aircraft)</b> <i>(Maintenance man-hours per week per installed end item)</i>	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
NAVPERS 15839:	Provide version of this manual used to verify officer grade/designator/ Navy Officer Billet Classification (NOBC) designations.
NAVPERS 18068:	Provide version of this manual used to verify enlisted rate/rating/Navy Enlisted Classification (NEC) code designations.
Marine Occupational Specialty Manual (MCO-P-1200.7 series):	Provide version of this manual used to verify enlisted Military Occupational Specialty (MOS) designations.
Minimum Rank/Rate/Rating:	For officers, indicate minimum rank required for the function performed. For enlisted, indicate minimum rate/rating.
Functional Description:	Provide brief functional description of the job to be performed (e.g., O-level maintenance of the XYZ radar), or, if requirement is for a supervisor, provide the job title (e.g., communications maintenance supervisor).
Maintenance Level:	Indicate the maintenance level as follows: O - Organizational Level I - Intermediate Level D - Depot Level
NOBC/NEC/MOS:	For officers, provide Navy Officer Billet Classification (NOBC); for enlisted, provide Navy Enlisted Classification (NEC)/ Military Occupational Specialty (MOS).
Page Number:	Provide the page number in NAVPERS 15839 (officers), NAVPERS 18068 (enlisted), or MCO-P-1200.7 (Marines) on which rate/rating/NEC, grade/designator/NOBC, or MOS are found.
New Requirement:	If no appropriate listing is found in NAVPERS 18068/15839 or MCO-P-1200.7, place an "x" in the column indicating that there is a requirement for a new or modified NOBC/NEC/MOS.

Table B.4.1-1 Maintenance Workload Requirements (Non-Aircraft) (Maintenance man-hours per week per installed end item)	
MMH/Wk:	Indicate the total estimated planned, corrective, and other Maintenance Man-Hours Per Week (MMH/Wk) for the given rank/rate/rating performing the given function; distribute the hours among the following maintenance categories:  PM - Planned Maintenance CM - Corrective Maintenance Other - "Other" workload factors in terms of weekly man-hours [e.g., Own Unit Support (OUS), Administrative Support (AS), Customer Support (CS), Productive Allowance (PA), in accordance with standard Activity Manpower Document (AMD) and methodology].
Total:	Provides total estimated maintenance manhours per maintenance category. Automatically calculated.

**B.4.2 End Item (Aircraft Only)  
(Contractor)**

In Table B.4.2-1, provide the estimated direct maintenance man-hours per flight hour or per operating hour of the end item by work center for the Fleet Squadron (FS), Fleet Replacement Squadron (FRS), and Marine Replacement Squadron (MRS) as applicable. Identify source document used.

Table B.4.2-1 Maintenance Man-Hours Per Operating/Flight Hour (Aircraft Only)	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Work Center:	Identify the work center responsible for the maintenance action(s) driving this requirement.
Rating:	Indicate enlisted rating required at this work center.
NEC/MOS:	For enlisted, provide Navy Enlisted Classification (NEC)/ Military Occupational Specialty (MOS).
Organizational MMH/FH:	Indicate the organizational level direct Maintenance Man-Hour/Flight Hour (MMH/FH) or operating hour.
Intermediate MMH/FH:	Indicate the intermediate level direct Maintenance Man-Hour/Flight Hour (MMH/FH) or operating hour.
Total:	Provides total estimated maintenance manhours per operating/flight hour per maintenance level. Automatically calculated.

**B.5 MANPOWER REQUIREMENTS**

**B.5.1 Estimates  
(Government)**

Early in the acquisition process, gross estimates must be developed to show the potential manpower impact of the end item. These ranges are based on the design alternatives being considered. In providing the rationale for the high and low estimates, tie the ranges to design alternatives (refer to Part I, Paragraph 4.2, Design Alternatives). In Table B.5.1-1, indicate the total high and low quantities of personnel required to support the end item by division.

Table B.5.1-1 Manpower Estimates	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Department:	Provide name of ship/squadron/shore activity department affected by introduction of the new end item.
Division:	Provide name of division affected by the identified billets.
<b>Officer</b>	
Low:	Indicate low estimate of officers required in this division.
High:	Provide high estimate of officers required in this division.
<b>Enlisted</b>	
Low:	Provide low estimate of the total number of enlisted personnel required in this division to operate and/or maintain the end item.
High:	Provide high estimate of the total number of enlisted personnel required in this division to operate and/or maintain the end item.
Ratings:	List enlisted ratings expected to be required in this division to operate and/or maintain the end item.
Total:	Provides the estimated total high and low quantities of personnel required to operate and maintain the end item. Automatically calculated.

**B.5.2 Requirements**  
(Contractor)

Describe the status of crew scheduling and phasing plans/aviation phasing plans and activity manpower documents, etc., which delineate the billet requirements for the end item.

Complete one copy of Table B.5.2-1 for each operation, maintenance, training, or other support platform on which the end item will be installed. (Refer to Part I, Table 16-1, Installation Schedule.)

In the case of total aircraft or total ship platform MAPPs, if the ship/squadron has an approved Activity Manning Document (AMD), make reference to the AMD in lieu of listing detailed billet data in Table B.5.2-1. In this case, only list officer and enlisted totals per installation platform. Phasing plans and AMDs are listed in Part I, Table 13.1-1, Program Documents.

Table B.5.2-1 Manpower Requirements (Complete one copy for each receiving or training activity.)	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
<b>Section A. Installation Site Data (Except Training Activities)</b> Complete the following data for each installation site except training activities.	
Unit/ Activity/Squadron/ Hull Number/UIC:	(Not applicable for training sites.) Enter the six-character Unit Identification Code (UIC) of the activity affected by the introduction of the end item (e.g., Fleet support unit; operation/maintenance or operation and maintenance activity; ship; or squadron).  Note: Receiving activities are listed in Part I, Table 16-1, Installation Schedule.

<b>Table B.5.2-1 Manpower Requirements</b> (Complete one copy for each receiving or training activity.)	
<b>Data Element</b>	<b>Definition</b>
Operational Unit/ Activity:	(Not applicable for training sites.) Place an "x" in the space provided if this is an operating unit/activity.
Fleet Support Unit/ Activity:	(Not applicable for training sites.) Place an "x" in the space provided if this is a Fleet support activity.  Fleet Support Units include the following: Intermediate Maintenance Activity (IMA) Integrated Services and Core Aircraft Intermediate Maintenance Department (AIMD) Operational Detachments (OPDETs) Ship's Company AIMD Fleet Staff Mobile Technical Unit (MOTU) Technical Evaluation/Operational Evaluation (TECHEVAL/OPEVAL) Fleet Introduction Team (FIT) Other support activity
Date End Item Will be RFOU:	(Not applicable for training sites.) Provide date end item will be Ready For Operational Use (RFOU) (MM-DD-YY).  [This date serves as the basis for determining when trained manpower is required to report to operational units/activities (e.g., a specified time before or after the RFOU date, no later than RFOU, etc.). RFOU for an aircraft squadron will coincide with delivery of the first aircraft to that squadron.]
Date Replaced End Item Will be Phased Out:	(Not applicable for training sites.) Provide date replaced end item will be phased out (MM-DD-YY).
Current Manpower Documents for Replaced End Item:	(Not applicable for training sites.) List most recent manpower documents for the end item being replaced. Use document number, if available. If not, use document title.
Billets for New End Item Identified in Platform MAPP:	(Not applicable for training sites.) For a system/subsystem/equipment MAPP, place an "x" in the space provided if the billets are identified in a platform (ship or aircraft) MAPP. This eliminates double-counting of billet requirements.
Billets for New End Item Identified in S/S/E MAPP:	(Not applicable for training sites.) For a platform MAPP, place an "x" in the space provided if billet requirements are identified in an installed System/Subsystem/Equipment (S/S/E) MAPP. This eliminates double-counting of billet requirements.
Test and Evaluation:	Place an "x" in the space provided if the personnel requirements are for test and evaluation.
Rank/Rate/Rating/Grade:	(Not required for total aircraft platform MAPPs) For officers, indicate rank; for enlisted, indicate rate/rating; for civil service, indicate grade. (Civil Service does not apply to training activities.)
Navy/Marine Corps/Civilian:	Use the following code to indicate whether the billet is:  N - Navy M - Marine Corps C - Civil Service

<b>Table B.5.2-1 Manpower Requirements</b> (Complete one copy for each receiving or training activity.)	
<b>Data Element</b>	<b>Definition</b>
<b>Designator:</b>	Provide officer billet designator.
<b>NOBC/PNEC/PMOS/ Series:</b>	(Not required for total aircraft platform MAPPs) For officers, provide NOBC; for enlisted, provide Primary NEC (PNEC)/Primary MOS (PMOS); for civil service, provide series.
<b>SSC/SNEC/SMOS:</b>	(Not required for total aircraft platform MAPPs) For officers, provide Sub-Specialty Code (SSC); for enlisted, provide Secondary NEC (SNEC)/Secondary MOS (SMOS).
<b>AQD:</b>	For officers, provide Additional Qualification Designator (AQD).
<b>ACDU/TAR/SELRES:</b>	Indicate whether billet is:  A - Active Duty (ACDU) T - Training and Administration of Reserve (TAR) S - Selected Reserve (SELRES)
<b>Old Billet:</b>	Place an "x" in the space provided if the billet applies to the predecessor end item.
<b>New Billet:</b>	Place an "x" in the space provided if the billet applies to the new end item. A continuing billet requirement will be checked as both old and new. A billet to be phased out will be checked only as old. A new requirement will be checked only as new.
<b>Supervisory/Team Billet:</b>	(Not applicable for training sites) If this is a supervisory billet, place an "S" in the space provided. If this is a team billet, place a "T" in the space provided. If it is both a supervisory and team billet, place "T/S" in the space provided. Team functions do not create a requirement for a billet. The number in the team column lists those operator, maintenance, and/or operator/ maintenance billets which will require a team skill. These billets are not applicable to aviation programs.
<b>Maintenance Level:</b>	Indicate maintenance level for the billet as applicable:  O - Organizational I - Intermediate D - Depot
<b>CFY ___; FY+1 ___; FY+2 ___; FY+3 ___; FY+4 ___</b>	Indicate the Current Fiscal Year (CFY) and subsequent Fiscal Years (FY+1, 2, 3, 4, etc.). Under CFY, list officer/enlisted/civil service billets required for that year and all previous years. For Fleet Support Units, under CFY, identify Fleet support units or activities phased out/impacted in that year and all previous years.
<b>O/E/C:</b>	Indicate by fiscal year, the total number of officer (O)/enlisted (E)/civil service (C) billets of the given description required.
<b>Total O/E/C:</b>	Provides total officer, enlisted, civilian manpower requirements of the given description. Automatically calculated.
<b>Operator:</b>	List requirements for personnel fulfilling operator/aircrew functions.
<b>Maintainer:</b>	List requirements for personnel fulfilling maintainer functions. Include Integrated Services and AIMD augmentation personnel assigned to squadron, but do not include OPDETS in support of the FRS.

<b>Table B.5.2-1 Manpower Requirements</b> (Complete one copy for each receiving or training activity.)	
<b>Data Element</b>	<b>Definition</b>
<b>Operator/ Maintainer:</b>	List requirements for personnel fulfilling operator/ maintainer functions.
<b>Other:</b>	List requirements for personnel fulfilling "other" operational/ maintenance activity functions at the given site. Include the following departments in aviation squadrons: operations, administrative, executive, safety, and integrated services if they do not appear as operators/ aircrew or maintainers. Include Fleet Readiness Aviation Maintenance Personnel (FRAMP) and Training Departments for FRS.
<b>Total:</b>	Provides total number of personnel required at the operational or maintenance activity for each fiscal year by officer/ enlisted/ civil service category. Automatically calculated.
<b>Section B. Training Activity Data</b> Complete the following for each training installation.	
<b>School (UIC):</b>	(For training activities only) Identify training installation site by six-character UIC.
<b>RFT:</b>	(For training activities only) Provide Ready-For-Training (RFT) date (MM-DD-YY). This is the date by which a training system and its associated logistics, maintenance, syllabus, and instructors are certified to be available to conduct training at the training site.
<b>Required On Board:</b>	(For training activities only) Provide date instructors and support personnel must be on board at the given training activity to participate in initial training (MM-DD-YY).
<b>Course (CIN):</b>	(For training activities only) Indicate Course Identification Number (CIN) of the course this billet will support.
<b>Rank/Rate/Rating:</b>	(For training activities only) For officers, indicate rank; for enlisted, indicate rate/rating. (Civil Service does not apply to training activities.)
<b>Navy/Marine Corps:</b>	(For training activities only) Use the following code to indicate whether the billet is:  N - Navy M - Marine Corps
<b>Designator:</b>	(For training activities only) Provide officer billet designator.
<b>NOBC/PNEC/PMOS</b>	(For training activities only) For officers, provide NOBC; for enlisted, provide Primary NEC (PNEC)/Primary MOS (PMOS). (Civil Service does not apply to training activities.)
<b>SSC/SNEC/SMOS:</b>	(For training activities only) For officers, provide Sub-Specialty Code (SSC); for enlisted, provide Secondary NEC (SNEC)/Secondary MOS (SMOS).
<b>AQD:</b>	(For training activities only) For officers, provide Additional Qualification Designator (AQD).
<b>ACDU/TAR/SELRES:</b>	(For training activities only) Indicate whether billet is:  A - Active Duty (ACDU) T - Training and Administration of Reserve (TAR) S - Selected Reserve (SELRES)
<b>Old Billet:</b>	(For training activities only) Place an "x" in the space provided if the billet applies to the predecessor end item.

<b>Table B.5.2-1 Manpower Requirements</b> <i>(Complete one copy for each receiving or training activity.)</i>	
<b>Data Element</b>	<b>Definition</b>
<b>New Billet:</b>	<i>(For training activities only)</i> Place an "x" in the space provided if the billet applies to the new end item. A continuing billet requirement will be checked as both old and new. A billet to be phased out will be checked only as old. A new requirement will be checked only as new.
CFY ___; FY+1 ___; FY+2 ___; FY+3 ___; FY+4 ___	<i>(For training activities only)</i> Indicate the Current Fiscal Year (CFY) and subsequent Fiscal Years (FY+1, 2, 3, 4, etc.). Under CFY, list officer/enlisted billets required for that year and all previous years. For Fleet Support Units, under CFY, identify Fleet support units or activities phased out/impacted in that year and all previous years.
<b>O/E :</b>	<i>(For training activities only)</i> Indicate by fiscal year, the total number of officer (O)/enlisted (E) billets of the given description required.
<b>Total O/E:</b>	Provides total officer, enlisted manpower requirements. Automatically calculated.
<b>Instructors:</b>	<i>(For training activities only)</i> Requirements for personnel fulfilling instructor functions are listed under this category. Instructor requirements are calculated in accordance with CNETINST 5311.1 series.
<b>Support:</b>	<i>(For training activities only)</i> Requirements for personnel fulfilling support functions are listed under this category. (Support includes Maintenance, Administrative, and Other personnel required to support the conduct of training). Support requirements are calculated in accordance with CNETINST 5311.1 series.
<b>Student Billets (Chargeable):</b>	<p><i>(For training activities only)</i> Identify (by fiscal year) the chargeable student billets (billet man years) required. Determine chargeable student billets from Average on Board (AOB) as follows:</p> <p style="text-align: center;">Note: Identify course, ACDU, old billet, new billet, and FY.</p> $\text{Navy and Marine Corps input} \times \frac{\text{number of course days}}{365}$ <p>Round figures to the nearest whole number. Not applicable to SELRES.</p> <p>Officer and enlisted students requiring chargeable billets are defined as those on Permanent Change of Station (PCS) orders regardless of the length of the training course to which they have been ordered. Officers and enlisted personnel on Temporary Additional Duty (TAD) orders and civilians do not require chargeable student billets.</p> <p style="text-align: center;">Note: Course length for courses of five working days or less will equal the number of days. For courses in excess of five working days, include all</p>

**Table B.5.2-1 Manpower Requirements**  
(Complete one copy for each receiving or training activity.)

<b>Data Element</b>	<b>Definition</b>
	weekends between the start day and last working day.
<b>Training Activity Total:</b>	<i>(For training activities only)</i> Provides total officer and enlisted manpower requirements per fiscal year per training activity. Automatically calculated.

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## ANNEX C. SUPPLY SUPPORT

Supply support includes the identification, procurement, and management of initial and follow-on spare and repair parts. Two primary objectives of supply support are to ensure that end items are delivered in a satisfactory state of supply readiness and to maintain readiness by fulfilling material replenishment requirements throughout the life cycle of the end item. Supply support decisions are based on inputs from maintenance planning and configuration management.

### C.1 STRATEGY (Government)

When describing the supply support concept, identify the strategies used to ensure effective support of the end item. Consider the following:

- Interim Contractor Supply Support (ICSS) - the use of contractor support when normal provisioning procedures cannot support the timely acquisition and operation of an end item.
- Spares Acquisition Integrated with Production (SAIP) - scheduling spares procurement to coincide with the contractor's production schedule (refer to DoDI 5000.2, Section 7-A).
- Government-Aided Provisioning (GAP) - provisioning accomplished by the Ship's Parts Control Center (SPCC) by using technical data and drawings provided by the vendor.

Discuss the factors and assumptions on which the supply support concept is based (e.g., maintenance concept).

If this is a commercial item acquisition program, explain how the supply support program is affected.

For example, manufacturing and historical usage data is normally used in the prediction of initial provisioning requirements for spare/repair parts. However, when a commercial item is procured for military purposes, this information may be invalid due to the nature of military operations. In this case, the provisioning data would have to reflect more rigorous end item usage.

#### C.1.1 Approach

Note: Identify all specifications and standards used in the supply support program in Part I, Table 13.2-1, Specifications and Standards.

(FSC) which identifies the group of material in which the end item belongs. The last nine digits are collectively known as the National Item Identification Number (NIIN). The first two digits of the NIIN are the National Codification Bureau (NCB) code, which designates the country that catalogs the item. The last seven digits are the unique identification number.

### **C.2.3 Program Support Data** ***(Government)***

Discuss issues associated with the development, submission, review, and maintenance of Program Support Data (PSD).

PSD provides a budgeting and planning link between Program Managers and the Program Support Inventory Control Point (PSICP) for end item supply support requirements. Program Managers are responsible for developing PSD sheets for all end items requiring spare part support. PSD sheets are also used to document Installation and Checkout (INCO) spares, Maintenance Assistance Modules (MAMs), and On-Board Repair Parts (OBRPs) during the interim support period. PSD is used by the PSICP to identify initial end item and follow-on spare and repair parts, including system stock, replenishment stock, and OBRP requirements. PSD should be provided to the PSICP at least two fiscal years in advance of the actual need. PSD must be consistent with the information contained in the Future Year Defense Plan (FYDP) and Program Objective Memorandum (POM). PSD is updated and maintained until all installations for the end item are completed and the Material Support Date (MSD) has been achieved. The MSD should be identified in the PSD sheets as soon as practical.

Note: PSD sheets provide source data for Part I, Table 19.3-1, Logistics Funding Summary.

PSD Automated Reporting and Tracking System (PARTS) is the official database in which System Command (SYSCOM) program support data resides. PARTS is used for transmitting PSD from the program office to the PSICP. Program Support Data Coordinators (PSDCs) are appointed within each command to coordinate the collection of program support data and plan for budget calls.

Every PSD sheet will consist of NAVSUP Forms 1390 and 1390/1. Some PSD sheets will also require NAVSUP Form 1392 to document MAM, INCO kit, or OBRP requirements.

### **C.2.4 Provisioning Technical Documentation**

Provisioning is the process of determining the range and depth of repair parts required to support the end item. Provisioning is required for all end items which will require support through the Federal Supply System. PTD supports the provisioning process and is necessary for all end items that have parts subject to failure or replacement, and that require maintenance at any level.

#### ***(Government)***

In Table C.2.4-1, identify each type of PTD to be specified as a contract deliverable. Use this data to develop specifications and prepare Logistics Support Analysis (LSA) Data Selection Sheet 1949-1, if used.

**Table C.2.4-1 Provisioning Technical Documentation**

Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Types of PTD:	<p>Place an "x" in the appropriate space(s) to indicate the required provisioning data.</p> <p><b>PPL:</b> The Provisioning Parts List (PPL) defines the physical composition of the end item and must contain all components, assemblies, and support items that can be disassembled, reassembled, or replaced and that compose the end item when combined. The PPL must contain all tools and test equipment required to maintain the end item. For each part, the PPL shows information such as the part number, unit price, and other data specified by the PTD data selection sheet (LSA Data Selection Sheet 1949-1).</p> <p><b>PPLI:</b> The PPL Index (PPLI) is part of the PPL; it lists the parts in alphanumeric order. It is an index that identifies the location of each part within an equipment.</p> <p><b>SFPPL:</b> The Short Form PPL (SFPPL) is used to document provisioning information related to minor components. It does not apply to major components of shipbuilding programs or to aircraft requirements. Although similar to the PPL, it requires only a limited amount of data and is not automated. The SFPPL is no longer authorized for use in new contract requirements. (Definition is provided for programs transitioning to MAPP.)</p> <p><b>SLPPL:</b> The Ship Level PPL (SLPPL) contains the shipboard-installed items that are not readily associated with specific equipment.</p> <p><b>CBIL:</b> The Common and Bulk Items List (CBIL) includes bulk items such as electrical wire, cable, gasket material, tubing, adhesives, paints, oil, grease, and solvents which are not otherwise identified as repair parts. Submitted with the PPL, the CBIL does not include common hardware (e.g., nuts, bolts, screws, and washers). CBILs are categorized into options (1, 2, 3, or 4), depending on the level of detail required. Refer to MIL-STD-1561 series for a definition of each option. Indicate the option of the CBIL required for this end item.</p> <p style="text-align: center;">NOTE: The CBIL provides source data for development of the General Use Consumables List (GUCL) (refer to definitions for Table C.3.2-1, Allowance Lists).</p> <p><b>LLTIL:</b> The Long Lead Time Items List (LLTIL) identifies those items which require long manufacturing lead-time or are affected by limited production capacity. These items should be ordered prior to the normal provisioning process. The LLTIL must be delivered before the other provisioning lists.</p>

Table C.2.4-1 Provisioning Technical Documentation	
Data Element	Definition
	<p><b>RIL:</b> The Repairable Items List (RIL) identifies support items that will be recovered after failure and sent to a designated overhaul point for repair.</p> <p><b>ISIL/SML:</b> The Interim Support Items List/Support Materials List (ISIL/SML) is a preliminary PPL used to select those major items that the contractor should provide or stock in advance. It is needed when normal provisioning cannot be accomplished in time to have material available at IOC. For aircraft, this list is called the SML; for ships, this list is called the ISIL.</p> <p><b>PCL:</b> (<i>Aircraft only</i>) The Post Conference List (PCL) provides a complete account of all parts and associated coding that were reviewed during a provisioning conference for maintenance and support. It is loaded into the WSF by magnetic tape in item-selection-code series. It is used to establish follow-on action for provisioning, procurement, or replenishment measures, and allowance list production.</p> <p><b>TTEL:</b> (<i>Non-Aircraft</i>) The Tools and Test Equipment List (TTEL) identifies those support items which are not integral to the end item, but are required to inspect, test, calibrate, service, repair, or overhaul the end item.</p> <p><b>SCPL:</b> (<i>Non-Aircraft</i>) The System Configuration Provisioning List (SCPL) is needed when the end item PPL reflects data at the component level. It shows the relationship of the components within the end item. It also lists the attaching parts used to integrate the components into the end item.</p> <p><b>SPS:</b> The Statement of Prior Submission (SPS) may be submitted in lieu of required PTD if that PTD has been previously submitted on a current contract to the Navy and no design changes have been made to the equipment.</p> <p><b>SPTD:</b> Unlike the other categories of PTD, Supplementary Provisioning Technical Documentation (SPTD) can take many forms. SPTD comprises technical data used to support the provisioning process. This can include items such as sketches, photographs, component descriptions, etc.</p>

**(Contractor)**

For PTD submission procedures, limit the discussion to two areas: 1) whether the PTD will be submitted incrementally or as a one-time delivery; and 2) how the PTD will be submitted [e.g., via Interactive Computer-Aided Provisioning System (ICAPS)]. PTD submission date(s) are to be listed in Part I, Table 15-1, Program Events.

Explain how the PTD/SPTD will be validated by the contractor against the end item configuration.

### C.3 ALLOWANCE DEVELOPMENT

#### C.3.1 Spares Computation Model

*(Government)*

Identify the sparing model used to define the range and depth of allowance requirements; explain why the model was selected. Sparing models are divided into two categories: demand-based sparing models and Readiness-Based Sparing (RBS) models. Examples of sparing models include the following:

- Demand-Based Sparing Models
  - Fleet Logistics Support Improvement Program (FLSIP)
- Readiness-Based Sparing Models
  - Availability Centered Inventory Model (ACIM)
  - Aviation Readiness Requirements Oriented to Weapon Replaceable Assemblies (ARROWs)

Demand-based sparing reflects requirements based on actual usage and failure data as reported by the Fleet (e.g., the more an end item is used, the higher the chance for failure and therefore the greater the demand to obtain a replacement.) RBS models can either maximize end item readiness for a fixed dollar inventory value or minimize inventory cost in meeting an end item readiness objective.

#### C.3.2 Allowance Lists

*(Government)*

Using the following guidance, list all allowance lists for the end item in Table C.3.2-1. If an allowance list tracking system currently exists, do not duplicate data in Table C.3.2-1. Identify where and how access to this data may be obtained.

Table C.3.2-1 Allowance Lists	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Type:	<p>Enter the type of allowance list required. More than one type of allowance list may be required.</p> <ul style="list-style-type: none"> <li>• <u>Allowance Requirements Register (ARR)</u>: Lists repair parts, accessories, and other material required for the support, maintenance, and operation of a specific type of aircraft. The ARR lists quantities to support a 90-day period based on anticipated flight hours.</li> <li>• <u>Individual Material Readiness List (IMRL)</u>: Specifies the items and quantities of support equipment authorized for organizational or intermediate maintenance level activities. (Refer to Annex D, Support Equipment.)</li> </ul>

Table C.3.2-1 Allowance Lists

Data Element	Definition
	<ul style="list-style-type: none"> <li>• <u>Aviation Maintenance Material Readiness List (AMMRL)</u>: Develops the data to establish requirements and inventory control procedures for aircraft support equipment at the organizational and intermediate levels. (Refer to Annex D, Support Equipment.)</li> <li>• <u>Shore-Based Consolidated Allowance List (SHORCAL)</u>: Lists repairable items and sub-assemblies; used at Navy and Marine Corps shore stations to describe support requirements for assigned aircraft, engines, and end items of support equipment.</li> <li>• <u>Aviation Consolidated Allowance List (AVCAL)</u>: Lists repairable aircraft components, repair parts, and consumable items required for an aircraft carrier or Marine Air Group. The AVCAL describes support for assigned aircraft, engines, and end items of support equipment.</li> <li>• <u>Coordinated Shipboard Allowance List (COSAL)</u>: Lists the ship's Hull, Mechanical, and Electrical (HM&amp;E), electronic, and ordnance systems, equipment, and components. It also identifies repair parts, special tools and test equipment, miscellaneous portable items, and equipage and consumable items authorized for the prescribed maintenance and upkeep of the ship. The COSAL does not contain information on provisions (food), recreational equipment, medical material, hydrographic charts, clothing, bulk fuels, and ammunition. The General Use Consumables List (GUCL), which contains non-equipment related consumable items, is included as a separate section of the COSAL. The COSAL for a destroyer might contain 3500 different Allowance Parts Lists (APLs) and 700 different Allowance Equipage Lists (AELs) and comprises an average of seven to eight volumes of information.   <p style="text-align: center;">Note: An Integrated COSAL (I-COSAL) is a modified COSAL, used when all APLs are not received in time to be issued with the COSAL.</p> </li> <li>• <u>Allowance Parts List (APL)</u>: Lists the repair parts considered to be maintenance significant (i.e., subject to failure or replacement.) The data listed in the APL reflects decisions made during provisioning. APLs are developed for all HM&amp;E, electronic, and ordnance systems; they may also be developed to support aviation systems. APLs printed for shipboard use are included in the COSAL and do not have allowance quantities listed in the allowance table columns. The repair part allowance computations are listed in the Stock Number Sequence List (SNSL) (Part III of the COSAL).</li> <li>• <u>Allowance Equipage List (AEL)</u>: Identifies specific non-installed material known as equipage. AELs are prepared to document requirements for such areas as damage control, galley gear, and items necessary to operate electronic equipment. Because each requirement is independent, allowances are shown in the allowance tables and are not part of the allowance computations.</li> </ul>

Table C.3.2-1 Allowance Lists	
Data Element	Definition
	<ul style="list-style-type: none"> <li>• <u>Preliminary Allowance List (PAL)</u>: Provides preliminary allowance data when all required provisioning information is not available. A PAL will be replaced by an APL when requirements are fully defined.</li> <li>• <u>Coordinated Shore-Based Allowance List (COSBAL)</u>: Lists repairable items and sub-assemblies. It is used at Navy shore bases to describe their support requirements for assigned ships, systems, and other end items.</li> </ul>
Number:	Provide the number of each allowance list (e.g., 00006253, 7-670050115).
Nomenclature:	Provide the title of each allowance list [e.g., AN/SQR-19 (V)1 Unit 30]. Refer to Part I, Table 6.2-1, Configurations and Physical Characteristics.

#### C.4 CONTRACTOR SUPPLY SUPPORT

Chief of Naval Operations (CNO) policy states that all end items will be fully supported at the time of installation with a level of spares sufficient to meet operational readiness requirements. If full Navy support is not available prior to Fleet introduction, interim support procedures must be established to bridge the gap between IOC and MSD. ICSS may be used whenever design is unstable, when limited quantities of the end item are being procured, or when development and production schedules have been compressed so that Navy support cannot be provided through normal provisioning procedures. The Government must identify and budget for ICSS requirements, or requirements for lifetime contractor supply support, as early as possible in the acquisition process. Reflect these requirements in Part I, Table 19.3-1, Logistics Funding Summary. For every interim supported item, a PAL will be developed and a zero cognizant NICN will be assigned, until MSD is achieved and an APL is created. The PAL will be identified in Table C.3.2-1.

##### C.4.1 Government Requirements (Government)

Utilization of contractor support on either an interim or lifetime basis will be identified in Paragraph C.1. In this paragraph, summarize the requirements imposed on the contractor. Examples include requiring the contractor to:

- Identify items requiring interim support (i.e., use of the Government-specified computational model to develop an ISIL).
- Establish and operate a spare and repair parts warehouse [e.g., Contractor Repair Parts Stock Point (CRPSP)]; include contractor response time requirements and compliance with Government-specified bonded storage requirements.
- Establish and operate an inventory control system; include the process for determining inventory levels, establishing associated record-keeping procedures, and identifying related documentation to be provided to the Government (e.g., monthly usage data).

items. Section B, Kit Composition, does not apply to platform end items. This level of detail may be obtained from the MAPPs developed for the systems/equipment installed on the platform or, for ships, in Schedule E of the Ship Project Directives. If this MAPP is being developed for a platform (i.e., aircraft or ship), refer to the MAPPs developed for the systems/equipment to be installed on the platform.

Table C.5.1-1 Installation and Checkout Requirements	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
<b>Section A. Kit Distribution</b>	
Receiving Activity:	Provide the name of the activity receiving the INCO kit/spares [e.g., Supervisor of Shipbuilding (SUPSHIP) Bath].
UIC:	Indicate the six character UIC for the receiving activity.
Kit Quantity:	Provide the number of INCO kits shipped.
<b>Section B. Kit Composition: (Does not apply to platform MAPPs.)</b>	
Item Name:	Provide name of the spare.
Part Number:	Provide part number assigned to the spare.
CAGE:	Provide five-digit manufacturer's code assigned to the spare.
Spare Quantity:	Provide the number of spares shipped in the kit.

### C.5.2 Training Systems Support (Contractor)

The purpose of this section is to identify the supply support items which are required by the training activity and constitute part of the Training Support Package.

Technical Training Equipment (TTE) is, by definition, the same as the operational end item being deployed. However, because the conduct of training frequently results in increased maintenance requirements (due to the constant use that the TTE takes from students performing operating and maintenance tasks), the program office may need to adjust the quantity of spare parts and other supply support normally provided. The supply support required for Training Devices (TD) must also be documented.

Identify the repair parts and consumables required for the TTE/TD in Table C.5.2-1. If the spare parts and consumables provided to the training activity are identified elsewhere, do not complete Table C.5.2-1. Identify where and how to access this data.

Table C.5.2-1 Training Supply Support	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Location/UIC:	Indicate the six-character UIC for the training location that requires the repair parts.
TTE/TD Identification Number:	Provide identification number of the TTE/TD that requires the initial support. Refer to Table F.4-1, Technical Training Equipment Requirements, and Table F.5.1-1, Training Device Summary.

Table C.5.2-1 Training Supply Support	
Data Element	Definition
Initial Training:	Place an "x" in the space provided if the parts are required for initial training.
Follow-on Training:	Place an "x" in the space provided if the parts are required for follow-on training.
Repair Part/Consumable:	Identify the name/nomenclature of the repair part/consumable required to support training.
NSN:	Provide NSN of the support item.
Quantity/Units:	Identify the quantity and units provided (e.g., 3 doz.; 36 rolls).
RDD:	Provide Required Delivery Date (RDD) of TTE/TD repair parts (MM-DD-YY).

**C.5.3 Support Equipment Support**  
(Contractor)

Support equipment is identified in Table D.2-1, Identification of Support Equipment. If spares for support equipment are required, complete Table C.5.3-1. However, if the support equipment has its own MAPP, do not complete Table C.5.3-1.

Table C.5.3-1 Support Equipment Spares	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Support Equipment:	Provide name of the support equipment requiring support. Refer to Table D.2-1, Identification of Support Equipment.
NSN:	Provide NSN of the support equipment.
Support Equipment Spare(s):	Provide name of the required spare(s).
NSN:	Provide NSN of the support equipment spare.

**C.6 OUTFITTING (Ships Only)**  
(Contractor)

When discussing the monitoring of outfitting procedures, address fitting-out, bin validation, and installation procedures. Also, address repair parts (refer to COSAL), technical manuals (refer to Table E.2.1-2, Technical Manual Development Summary) and support equipment (refer to Table D.2-1, Identification of Support Equipment). The outfitting activity is identified in Part I, Table 14.1-1, Program Participants.

Note: The outfitting activity can be the shipbuilder or other activity and will be identified in Ship Specification - Section 083. The outfitting activity will prepare an Outfitting Operations Plan (OOP) for program office approval. List the OOP in Part I, Table 13.1-1, Program Documents.

**C.7 POST PRODUCTION SUPPORT**  
(Government/Contractor)

Identify support items associated with the end item that may present problems due to inadequate sources of supply after shutdown of production lines. Discuss alternative solutions to anticipated support difficulties during the remaining life of the end item.

Discuss each alternative considered (e.g., multiple sourcing). Identify the selected alternative and explain the reason for selection. If LSA Task 403, Post Production Support Analysis was completed, record the results here.

# MASTER ACQUISITION PROGRAM PLAN (MAPP) USER'S HANDBOOK

## ANNEX D. SUPPORT EQUIPMENT

Navy policy requires the number of different tools and support equipment required for test, maintenance, assembly, servicing, handling, etc. be kept to a minimum. Commonality will be stressed and multi-application tools will be used wherever possible. General Purpose Electronic Test Equipment (GPETE) should be employed versus Special Purpose Electronic Test Equipment (SPETE). Refer to MIL-STD-1364 for a listing of GPETE.

The Consolidated Automated Support System (CASS), AN/USM-636(V), is the Navy's standard Automatic Test Equipment (ATE). New ATE will not be acquired if the requirements can be satisfied by CASS in a cost-effective manner. For all new end items, use of non-CASS ATE must be justified and will require approval by the Assistant Secretary of the Navy for Research, Development, and Acquisition [ASN(RD&A)]. An initial cost/benefit analysis must be conducted to determine the feasibility of contractually requiring CASS compatibility for support of the end item. If the cost of implementing CASS is prohibitively greater than the cost of using other ATE, provide justification to ASN(RD&A).

The key to ensuring an effective and comprehensive support equipment program is establishing and maintaining communication with the Systems Command (SYSCOM) support equipment division. They can assist in the entire range of life-cycle support equipment issues, from system specification and Statement of Work (SOW) development to provisioning and life-cycle support. Program offices interact with these support equipment experts on issues such as obtaining waivers for non-standard test equipment, interfacing with the Metrology and Calibration (METCAL) program (including the establishment or confirmation of calibration procedures), and developing support equipment allowance lists.

### D.1 STRATEGY (Government)

When identifying the factors which influence support equipment decisions, include the effect of design requirements and other support element decisions.

For example, if the end item is required to be operated and/or maintained in severe sea states, the development of ruggedized SPETE may be required.

Describe the procedures for ensuring maximum use of general versus special (or peculiar) support equipment. If special purpose (non-military standard) support equipment is employed, justification must be provided.

Support equipment factors may impact commercial item acquisitions (e.g., new calibration standards and procedures for related test equipment may not be available when the commercial end item is fielded). Additionally, rapid fielding of a commercial

end item may necessitate the procurement of commercial support equipment or the need for interim contractor support.

Discuss plans to incorporate end item circuit board test procedures into the Gold Disk Program. The Gold Disk Program is an index of various printed circuit board test procedures on Compact Disk - Read Only Memory (CD-ROM) that prompt the technician through testing.

### D.1.1 Approach

Note: Identify all specifications and standards used in the support equipment program in Part I, Table 13.2-1, Specifications and Standards.

#### *(Government)*

Define the parameters of the support requirements definition process. (e.g., Must separate lists of tools, test equipment, and calibration equipment be provided? What information must be provided for each piece of support equipment?)

Before contract award, either: 1) list specifications and standards to be invoked, or 2) list the specific minimum requirements on which the contractor process must be based. If specifications/standards are tailored, define the tailored requirements in this paragraph. These requirements will be incorporated into the Request for Proposal (RFP). If source data is to be supplied to contractors by the Government, list it in Part I, Table 17-1, Government Furnished Information. Refer to DoDI 5000.2, Section 7-A.

#### *(Contractor)*

After contract award, describe the approach for defining support equipment requirements. For repairable support equipment item(s) requiring extensive and complex support, explain how logistics requirements will be defined and the support structure established. Complex support equipment may require its own MAPP. Integrated Logistics Support (ILS) for less complex support equipment is addressed in this MAPP.

Identify the data used to define support equipment requirements [e.g., Support Equipment Recommendations Data; Test, Measurement and Diagnostic Equipment (TMDE) report]. Refer to Part I, Paragraph 10.2, Results of Support Requirements Analysis Tasks.

Describe management techniques used to ensure the effectiveness of the support equipment program. Consider the following:

- Test equipment performance specifications include criteria for fault detection, isolation, and false indications.
- Phased contractor support is utilized to accommodate design instability.

- Test equipment performance, procedures, and software verification and validation are completed before Initial Operational Capability (IOC).
- Upward compatibility is specified between Built-in Test (BIT)/Built-in Test Equipment (BITE) and intermediate, depot, and factory support equipment.
- Support and calibration requirements for support and test equipment are included in development and production contracts.
- Estimated costs of Test Program Set (TPS) development are based on comparable equipment development and are fully funded.
- Simulation is used to refine support equipment requirements.
- Support equipment is evaluated during formal contractor maintainability demonstrations and operational tests.

**D.1.2 Roles and Responsibilities**  
(Government/Contractor)

When identifying the roles and responsibilities of participants in support equipment planning and implementation efforts, provide descriptions at the organization level (e.g., Activity XX reviews preliminary support equipment requirements). Ensure that each activity or contractor organization described here is listed in Part I, Table 14.1-1, Program Participants.

**D.1.3 Risks and Outstanding Issues**  
(Government/Contractor)

Identify risks that may hinder the development, procurement, or delivery of support equipment. Include risks associated with the design, test, producibility, and supportability of the selected support equipment.

For example, if the design of the end item is not stable, there could be a risk of delay in designing special purpose support equipment.

For each risk area identified, describe plans to eliminate or reduce the risk.

Discuss outstanding issues which affect support equipment planning. Include support equipment Independent Logistics Assessment (ILA) findings. Address the impact of each finding and explain how the recommended action will affect the support equipment program. (Refer to Part I, Table 10.4.2-1, Independent Logistics Assessment Summary.)

**D.2 IDENTIFICATION**  
(Government/Contractor)

When identifying support equipment, include peripheral, direct, and general and specific application equipment, both fixed and mobile. Consider requirements for multi-use end items, SPETE/GPETE, ground handling and maintenance equipment,

tools, metrology and calibration equipment, TPS, ATE, facilities support equipment (e.g., cooling towers, overhead hoists), and training equipment (both direct curriculum application and support/peripheral equipment). Also list support equipment required to support test and evaluation, including Technical Evaluation (TECHEVAL) and Operational Evaluation (OPEVAL).

Complete one copy of Table D.2-1 for each item of support equipment. Ship program managers must provide configuration data [Schedule A (derived from the Ship Project Directives) and Contractor Furnished Equipment (CFE) lists] to SYSCOM support equipment divisions and to the Naval Warfare Assessment Center (NWAC), Corona ATE/TPS Coordination Center before delivery of new construction ships.

End item managers also must provide their respective SYSCOM support equipment division with a list of TMDE required to support each new prime end item under their cognizance as early as possible, but no later than 24 months before the start of the fiscal year in which the TMDE is required to be deployed. TMDE is a subset of Table D.2-1.

If support requirements are specified elsewhere, indicate how and where the data may be accessed. If this is the case, explain how requirements for support for support equipment will be defined and addressed.

<b>Table D.2-1 Identification of Support Equipment</b> <i>(Complete one copy for each support equipment item.)</i>	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Item:	Identify by functional name (e.g., voltmeter, oscilloscope, tank level indicator) each item of support equipment required to support the operation and maintenance of the end item or training device.
National Stock Number:	List the thirteen-digit National Stock Number (NSN) for the support equipment item.
Manufacturer:	Provide name of manufacturer.
CAGE:	Identify the manufacturer's five-digit Contractor and Government Entity (CAGE) code.
Part Number/Model:	Identify the manufacturer's part number and/or model number assigned to the support equipment.
Item Manager COG Symbol:	List the two-digit Cognizance (COG) Symbol for the item manager of the support equipment.
CFE:	Place an "x" in the space provided if the item is CFE.
GFE:	Place an "x" in the space provided if the item is Government Furnished Equipment (GFE).
Fixed:	Place an "x" in the space provided if the item is fixed in place at the using activity (e.g., an ATE workstation or test bench at a depot).
Mobile:	Place an "x" in the space provided if the item is portable (e.g., a shipboard charge tester).
Support Required:	Place an "x" in the space provided if the item of support equipment will require additional support.
	<p>Note: Logistics resources must be provided to maintain support equipment as well as the end item. Support equipment planning should address the full range of effort</p>

**Table D.2-1 Identification of Support Equipment**  
(Complete one copy for each support equipment item.)

Data Element	Definition
	<p>needed to ensure that maintenance, calibration, training, and spare parts support are available at IOC. Support equipment varies widely in complexity and function. Some of the more complex/significant items, particularly special purpose support equipment, will require unique attention in provisioning and configuration management, and may impact other program elements such as training and technical data. These items must be identified as early as possible in the acquisition cycle (no later than Engineering and Manufacturing Development).</p> <p>TMDE generally requires more logistics planning than other types of support equipment. As a rule, TMDE will require maintenance planning (including planned maintenance documentation), Provisioning Technical Documentation (PTD), operation and maintenance manuals, and, if calibration is required, calibration procedures and intervals. TMDE data must be factored into development of stowage and facility requirements and calibration planning (i.e., workload projections, new measurement areas, new calibration standards, development of calibration procedures, and training). Repair and calibration of support equipment will be performed at the lowest practical maintenance level.</p>
Support Established:	<p>Place an "x" in the space provided if the required support structure is already established for this support equipment item.</p> <p>If support is required but not established, a decision must be made regarding how to address the requirements, either through development of a separate MAPP or integration of the requirements into the related sections of this MAPP (e.g., spares for support equipment not having its own MAPP are listed in Table C.5.3-1, Support Equipment Spares). If support requirements are unknown, the item may be subjected to support analysis as indicated below. Lack of support for support equipment should be identified as a risk in Paragraph D.1.3. The SYSCOM support equipment division can help determine if support for the item is already in place.</p> <p>If a program is introducing new special purpose equipment (e.g., SPETE) to support an end item, the end item program manager has total life-cycle responsibility including outfitting, support, and replacement for that equipment.</p>
Code:	If required support is established, identify the cognizant organization/code.
Support Defined in This MAPP:	Place an "x" in the space provided if the required support is addressed in this MAPP.
Support Defined in Related MAPP:	Place an "x" in the space provided if support is addressed in a separate MAPP. The related MAPP is to be listed in Part I, Table 13.5-1, Related Program Documents; the MAPP identification number is listed below.
MAPP Number:	Provide the identification number of the MAPP which addresses support for this support equipment.

<b>Table D.2-1 Identification of Support Equipment</b> (Complete one copy for each support equipment item.)	
<b>Data Element</b>	<b>Definition</b>
Supportability Candidate:	If support is not established and related requirements are unknown, place an "x" in the space provided to indicate that support equipment support requirements will be determined through structured analysis.
Support Analyses:	If support for this item is defined in this MAPP, identify the analyses which will be performed to define those support requirements.  Note: This is analogous to the support requirement analyses conducted for the end item (refer to Part I, Paragraph 10.0, Support Requirements).
Standard Item:	Place an "x" in the space provided if support equipment item is a standard item (i.e., if the item is in the supply system.)
PHST Candidate:	Place an "x" in the space provided if the support equipment item is a Packaging, Handling, Storage, and Transportation (PHST) candidate. This relates to support for the support equipment. If there are special PHST issues associated with the support equipment item, this block should be checked and the PHST requirements should be identified in Annex I, PHST.
<b>Physical Description:</b> If the item is a PHST candidate, complete the following data elements.	
Height:	Indicate the height of the item. State the unit of measure (e.g., inches, feet, meters).
Width:	Indicate the width of the item. State the unit of measure (e.g., inches, feet, meters).
Depth:	State the depth of the item. Indicate the unit of measure (e.g., inches, centimeters).
Weight:	State the weight of the item. Indicate the unit of measure (e.g., pounds, kilograms).
Center of Gravity:	Identify in linear terms, the center of gravity. Indicate the unit of measure (e.g., inches, centimeters).
Hardpoint Locations:	Identify the specific locations to be used for lifting, moving, etc..
Sensitivity:	Place an "x" in the space provided if the support equipment item is sensitive to the following. Indicate all that apply: <ul style="list-style-type: none"> <li>• Temperature</li> <li>• Humidity</li> <li>• Electrostatic Discharge</li> <li>• Shock</li> <li>• Weather</li> <li>• Vibration</li> <li>• Nuclear, Biological, or Chemical (NBC) Exposure</li> <li>• Other (Specify)</li> </ul>
<b>Category:</b>	Support equipment is divided into the following categories; TMDE is further divided into subcategories. Place an "x" in each applicable space to identify which categories apply to this item of support equipment.
General Support Equipment:	Includes both common and peculiar support equipment (both ground and shipboard), general purpose tools, Electrostatic Discharge (ESD) protective tools, materials and equipment, and ancillary equipment.
IPE:	Includes installed Industrial Plant Equipment (IPE).

<b>Table D.2-1 Identification of Support Equipment</b> (Complete one copy for each support equipment item.)	
<b>Data Element</b>	<b>Definition</b>
ADP Equipment and Software:	Includes Automated Data Processing (ADP) equipment and supporting software.
TMDE:	Includes devices used to measure, calibrate, gauge, test, inspect, diagnose, or otherwise examine materials, supplies, or equipment to determine compliance with requirements established in technical documents. Planning for TMDE involves trade-off analyses of the various forms of off-line, automatic, and manual testing as well as BIT/BITE and testability features of the end item design. The use of Maintenance Assistance Modules (MAMs), while not encouraged, can be considered when BIT and off-line testing cannot support the required Mean-Time-To-Repair (MTTR) in a cost-effective manner. TMDE includes electrical and mechanical equipment. Place an "x" in each applicable subcategory. The categories are not exclusive; that is, a single TMDE item can be classified as special purpose, electronic, and ATE.
General Purpose:	General purpose TMDE supports a variety of platforms/applications.
Special Purpose:	Special purpose TMDE supports a single platform/application.
Electronic:	TMDE designed to generate, modify, or measure a range of parameters of electronic functions. GPETE performs this function for two or more systems or equipment of different designs. SPETE performs this function for a single prime equipment or system.
Electrical:	TMDE designed to measure the basic parameters of current, voltage, resistance, and frequency of electrical power distribution equipment or systems.
Mechanical:	TMDE used to test, inspect, or diagnose a range of parameters in the measurement areas of pressure, temperature, linear, optical, torque, weight, mass, vibration, etc. Indicate the magnitude directly in the units of the parameter being measured.
ATE:	TMDE designed to conduct analysis of functional or static parameters to evaluate the degree of performance degradation or perform fault isolation of unit malfunctions. The decision-making, control, or evaluation functions are conducted with minimum reliance on human intervention. If this item is ATE, complete the "ATE Test/Fault Isolation Capabilities" section below.
BIT:	TMDE that is permanently installed as part of the prime end item. BIT may also be ATE.
BITE:	TMDE that is functionally separate from, but permanently connected to, the prime end item, and is used for the express purpose of testing that end item. BITE may also be ATE.
MAM:	A MAM is a replaceable assembly used to perform fault isolation through progressive and/or selective module substitution.
TPS:	A TPS is used for interface between a Unit Under Test (UUT) and a piece of ATE.
CAL STD:	Calibration Standards (CAL STDs) are devices used to maintain continuity of value in units of measurement by periodic comparison with a standard of known or greater accuracy.
Other:	Includes test tools, test jigs and fixtures, and test benches.

<b>Table D.2-1 Identification of Support Equipment</b> (Complete one copy for each support equipment item.)	
<b>Data Element</b>	<b>Definition</b>
SCAT Code:	For TMDE, list the four-digit Subcategory (SCAT) code used to place test equipment in functional categories. SCAT codes define minimum test parameters by functional categories, such as signal generator, oscilloscope, multimeter, etc.
Thresholds:	For TMDE, list established diagnostic capability thresholds. Diagnostic capabilities must be consistent with the operational mission and intended use of the end item. The developing activity should use the diagnostic capabilities that will be used under operational conditions when performing factory diagnostics for units under production. Thresholds for new/special purpose test and measurement equipment must be assigned, approved, and validated as part of the normal system development process. Test and evaluation of diagnostic capability against documented thresholds (including fault detection and fault isolation techniques) must be part of TECHEVAL and OPEVAL planning. For BIT/BITE, include BIT fault detection and fault isolation thresholds (e.g., BIT coverage at the end item, subsystem, equipment, and cabinet level; false alarm rates; maximum and mean fault isolation times; and maximum ambiguity group size). Also address thresholds for any off-line testing to supplement BIT/BITE.
Calibration Procedures Developed:	Place an "x" in the space provided if specific calibration procedures have been formally established and entered into the Metrology Automated System for Uniform Recall and Reporting (MEASURE). This is a requirement for all calibratable TMDE.  During end item development and (if applicable) interim support, ensure that calibration requirements for TMDE are determined and conducted in accordance with applicable standards. Interface with the SYSCOM support equipment division to determine if calibration procedures are already in place for the item, or if new procedures must be established within MEASURE. MEASURE is an automated database used in managing the METCAL program. MEASURE provides (among other functions) a standardized system for recalling and scheduling calibratable TMDE, as well as for reporting calibration actions. Under METCAL, shipboard and shore-based maintenance personnel will provide calibration and repair services for the equipment at all maintenance levels. The METCAL program assigns uniform procedures, standards, and periods for TMDE calibration. All programs should include development of calibration related data for all portable and installed TMDE in contracts and specifications. All TMDE must have Navy approved calibration procedures included in MEASURE before delivery.
Component(s) Supported Nomenclature:	Identify the component(s) supported by the support equipment item.
Component(s) Supported NSN:	Provide NSN of each component supported.
ATE Test/Fault Isolation Capabilities:	<i>For Automatic Test Equipment Only.</i> Describe test and fault isolation capabilities desired. Express in terms of realistic and affordable probabilities and confidence levels.

<b>Table D.2-1 Identification of Support Equipment</b> (Complete one copy for each support equipment item.)	
<b>Data Element</b>	<b>Definition</b>
Maintenance Level(s):	Place an "x" in the space provided to identify the maintenance level(s) at which the support equipment will be utilized. Check all that apply. For aircraft engine intermediate maintenance, indicate whether the maintenance will be performed at Level I, II, or III.
Using Activity:	Identify the activity using the support equipment; use the six-character Unit Identification Code (UIC). Include all user activities (e.g., interim contractor supply support activities).
Use:	For each using activity, state the function the item will be used to support. Choose from the following categories: O - Operation M - Maintenance T - Training DT - TECHEVAL OT - OPEVAL XX - Other (indicate function in space provided)
CIN:	For those items provided to training activities, list the Course Identification Number (CIN) of the course supported by the support equipment.
Quantity:	Identify the quantity of the support equipment item to be provided to the given site.
RDD:	Enter the Required Delivery Date (RDD) for the support equipment at the given site (MM-DD-YY).
Disposition:	For each interim support activity, indicate what will be done with the support equipment at transition from interim to Navy support. Choose from the following categories: G - Return to Government S - Retain/Shelve D - Dispose X - Other (indicate disposition in space provided)

# MASTER ACQUISITION PROGRAM PLAN (MAPP) USER'S HANDBOOK

## ANNEX E. TECHNICAL DATA

The program office identifies the requirements for the Technical Data Package (TDP) early in the acquisition program. The TDP includes engineering drawings, specifications, schematics, process sheets, testing requirements, parts lists, and Technical Manuals (TMs). This annex addresses TMs and engineering drawings, unique elements of the TDP which require careful monitoring. Additional TDP elements are addressed in other sections of the MAPP (e.g., end item specifications are listed in Part I, Table 13.1-1, Program Documents; parts lists are identified in Annex C, Supply Support).

TMs normally include operating and/or maintenance instructions, parts lists or parts breakdown documentation, and related technical information or procedures exclusive of administrative procedures. TMs which are properly developed and managed should be a primary source of technical information for operation, maintenance, repair, training, and logistics support of the end item. They should be available at the same time as the first production end item or initial training equipment, and matched to the education, training, and comprehensibility levels of the intended users.

Engineering drawings are prepared as an integral part of the design, development, and production efforts. As an end item evolves through the various acquisition phases, the engineering drawings should also evolve. First, conceptual engineering drawings are developed to illustrate the proposed end item. Conceptual engineering drawings (formerly called "level 1 drawings") describe the engineering concepts on which a proposed design approach is based. After the conceptual phase is completed, developmental engineering drawings (formerly called "level 2 drawings") are developed. Developmental drawings describe the physical and functional characteristics of a specific design. The final engineering drawings developed are the product drawings (formerly called "level 3 drawings"). These engineering drawings provide the design, engineering, manufacturing, and quality control information necessary to permit a competent manufacturer to produce an item which duplicates the physical and performance characteristics of the original design.

### E.1 STRATEGY (Government)

When describing the acquisition strategy for TMs and engineering drawings, define baseline requirements and constraints which will be reflected in contract requirements. When identifying key issues or drivers of the TM/engineering drawing acquisition strategy, include issues such as security classification, cost constraints, and time/schedule constraints. Include the following as appropriate:

- Requirements for contractor data and data rights, including repurchase data; describe the intended use of such data [required by Federal Acquisition Regulation (FAR) Part 27 and Defense FAR (DFAR) 252.227-7013]. (Refer to Part I, Paragraph 8.1, Data Rights.)

- Types of data to be acquired, including the level of engineering drawings required at each phase of the acquisition. (Refer to Part I, Table 6.2-1, Configurations and Physical Characteristics.)
- Whether the following clauses are invoked (for both TMs and engineering drawings), and if not, why not:
  - restrictive markings clause (required by DFAR 252.227-7018)
  - right in data-special works clause (required by DFAR 252.227-7020)
  - requirement for certification clause (required by DFAR 252.227-7028)
  - identification of technical data clause (required by DFAR 252.227-7029)
  - withholding of payment clause (required by DFAR 252.727-7030)
  - data requirements clause (required by DFAR 252.227-7031)
  - pre-notification of rights clause (required by DFAR 252.227-7035)
  - certification of conformity clause (required by DFAR 252.227-7036)
  - validation of restrictive markings clause (required by DFAR 252.227-7037)
  - warranty of data clause (required by DFAR 252.246-7001)
- Deferred ordering or deferred delivery (required by DFAR 252.227-7026 and DFAR 252.227-7027); include the associated rationale and specify how and when the data will be procured. If other than competitive TMs and engineering drawings are to be acquired, provide justification.

Note: Deferred ordering is a method used to delay the ordering of technical data until such time as a need is established and the specific data requirements are identified. Data is not ordered unless a need is positively identified. Often, it is difficult or impossible to identify all data requirements before awarding a contract. Therefore, deferred ordering of engineering data/engineering drawings is often required; however, the concept should not be misused (e.g., to compensate for an overall shortfall in program funding). Deferred delivery is a method used to order technical data based on an established need, but for which the time or place of delivery cannot be established at the time of contracting.

- Strategies for minimizing the amount of technical data delivered to the Government with other than unlimited rights.
- Technical Manual Contract Requirements (TMCRs) and methods to achieve standardization.
- Development of TMs in digital format, including Interactive Electronic TMs (IETMs). Include the options for presenting information, such as embedded and paperless delivery. (Refer to Part I, Table 11.1-1, Data/Communications Requirements.)

- Delineation of Government and contractor responsibilities in the development, verification, validation, publication, and maintenance of TMs.
- Requirements for automated processes [such as the use of Computer-Aided Design (CAD)] for drawing preparation.
- Provisions to ensure that TMs will be available at the same time as the end item or technical training equipment and will be matched to the education, training, and comprehension levels of the intended users.

When discussing commercial items, address plans to use or modify commercial TMs and the impact of commercial item acquisition on engineering drawing requirements.

### E.1.1 **Approach**

Note: Identify all specifications and standards used in the technical data program in Part I, Table 13.2-1, Specifications and Standards.

#### ***(Government)***

Before contract award, either: 1) list specifications and standards to be invoked, or 2) list the specific minimum requirements on which the contractor process must be based. If specifications/standards are tailored, define the tailored requirements in this paragraph. These requirements will be incorporated into the Request For Proposal (RFP). Commercial standards, such as American Society of Mechanical Engineers Standards for Engineering Drawings, may be used without waiver, but are also to be listed in Part I, Table 13.2-1, Specifications and Standards. If source data is to be supplied to contractors by the Government, list it in Part I, Table 17-1, Government Furnished Information. Refer to DoDI 5000.2, Sections 7-A and 9-B.

#### ***(Contractor)***

After contract award, describe the approach for delivering TMs and engineering drawings in accordance with contract requirements.

Identify source data to be used to determine TM and engineering drawing requirements. Explain how the results of support requirements analysis tasks will be used (refer to Part I, Paragraph 10.2, Results of Support Requirements Analysis Tasks).

When describing management techniques used to ensure effective development and management of TMs and engineering drawings, include:

- Automated processes used in TM and engineering drawing preparation.
- Verification of maintenance tasks that provide the source data used in TM development.
- Validation and verification of TMs before final preparation and publication.

- Use of automated readability analyses to verify that the reading grade level of the document matches the level specified.
- Use of simulation to support TM development [e.g., Interactive Electronic TMs (IETMs)].

**E.1.2 Roles and Responsibilities**  
*(Government/Contractor)*

When identifying the roles and responsibilities of participants in the TM/engineering drawing program, provide descriptions at the organization level (e.g., Activity XX will assist in the verification of TMs). Ensure that each activity or contractor organization described here is listed in Part I, Table 14.1-1, Program Participants.

After contract award, address how prime contractors will monitor subcontractor performance. Describe the interface of the TM/engineering drawing functions with other program elements. Describe the contractor's TM and engineering drawing Quality Assurance (QA) organizations.

**E.1.3 Risks and Outstanding Issues**  
*(Government/Contractor)*

Identify risks which may hinder the success of the TM and engineering drawing program. For each risk, identify the approach to reduce the impact of, or eliminate, the risk.

For example, a changing configuration baseline may inhibit development and timely delivery of both TMs and engineering drawings. In order to reduce the impact of this risk, it may be decided to use red-line copies of TMs to support initial training and operational evaluation.

In the discussion of outstanding issues, include Independent Logistics Assessment (ILA) findings. Address the impact of each finding and explain how the recommended action will affect the technical data program. (Refer to Part I, Table 10.4.2-1, Independent Logistics Assessment Summary.)

**E.2 TECHNICAL MANUALS**

**E.2.1 Requirements**  
*(Government)*

Table E.2.1-1 provides a hierarchy of system, subsystem, equipment, and component TMs that support the end item. If these requirements are documented in an existing database, identify the database and the means of access. Do not duplicate data.

Table E.2.1-1 Technical Manuals Identification	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
System:	List system level TMs; include complete title and TM Identification Number (TMIN)/publication number if applicable.

<b>Table E.2.1-1 Technical Manuals Identification</b>	
<b>Data Element</b>	<b>Definition</b>
<b>Subsystem:</b>	List subsystem-level TMs which correlate to each system TM; include complete title and TMIN/publication number if available.
<b>Equipment:</b>	List equipment-level TMs for the equipment which make up each subsystem; include complete title and TMIN/publication number if available.
<b>Component:</b>	List component-level TMs for the components which make up each equipment; include complete title and TMIN/publication number if available.

Figure E.2.1-1 provides an example of a completed table for a Machinery Centralized Control System (MCCS). Use Figure E.2.1-1 for guidance when filling out Table E.2.1-1.

<b>Figure E.2.1-1</b> <i>(Sample of completed Table E.2.1-1, Technical Manuals Identification.)</i>			
<b><u>SYSTEM</u></b>	<b><u>SUBSYSTEM</u></b>	<b><u>EQUIPMENT</u></b>	<b><u>COMPONENT</u></b>
Machinery Centralized Control System S9315-Z9-XXX-010/16555	Logging Unit S1234-X1-YYY-010/16556	Computer Logic Assembly S2468-P2-AAA-010/77777	Shift Matrix S1789-W1-BBB-020/65432
			Sequencer S2345-W2-KLM-030/78910
		Power Supply Assembly S1357-P3-BBB-010/88888	Terminal Board S9753-N1-NOP-050/13568
			Semiconductor Device S7861-L2-NTC-050/24791
	Propulsion and Auxiliary Control Console S5678-X2-ZZZ-010/22543	Propulsion Monitor Panel Assembly S2578-P4-CCC-010/22222	Power Conditioner Assembly S1254-L3-STP-060/23567
			Plasma Display Keyboard S7891-K3-UVV-070/25935
		Power Conditioner Assembly S3469-P5-DDD-010/99999	Power Conditioner S1579-L1-WXY-080/26953
			Electrical Link System S2864-M2-VVV-090/27153

Table E.2.1-2 provides the status of each TM (both commercial and developmental), including TMs for which requirements have yet to be fully defined. Complete one copy of the table for each individual volume required.

Note: Some TMs are developed in multiple volumes (e.g., one for operation, one for maintenance, and one for the illustrated parts breakdown). In this example, one copy of Table E.2.1-2 would be completed for each of the three volumes.

Table E.2.1-2 is also used to identify initial distribution requirements for each TM. Include TMs to be provided to training activities, maintenance depots, outfitting activities, interim support activities, testing activities, etc. TMs targeted for delivery to training activities are part of the training support package defined in Paragraph F.6, Training/Instructional Aids.

Note: Preliminary copies of the TMs must be available for use in developing and conducting initial training courses. If TMs will not be completed in time for initial training, corrective actions are to be addressed in Paragraph E.1.3.

<b>Table E.2.1-2 Technical Manual Development Summary</b> (Complete one copy for each technical manual.)	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
TMIN Requested:	Provide date that TMIN was requested from the Government (MM-DD-YY).
TMIN Received:	Provide date TMIN was received from the Government (MM-DD-YY).
TMIN/Publication Number:	Enter TMIN/publication number assigned by the Government.
Publication NSN:	Identify publication National Stock Number (NSN).
TMCR:	Provide applicable TMCR number.
TMCR Date:	Provide TMCR issue date (MM-DD-YY).
Title:	Enter TM title.
Type :	Identify type of TM being developed [e.g., Preliminary, Standard, Functionally Oriented Maintenance Manual (FOMM), Operator's, Operation and Maintenance]
Level:	Place an "x" in the appropriate space to indicate the level of the TM as follows: System/Subsystem/Equipment/Component. Refer to Table E.2.1-1, Technical Manuals Identification.
Media Format:	Enter the specific format of the TM. (Refer to Part I, Table 11.1, Data/Communications Requirements.)  For example, for Interactive Electronic TMs (IETMs), include the class as follows: Class I: Raster; Class II: ASCII Text; Class III: Linear Database; Class IV: Object Oriented IETM; Class V: Object Oriented with Equipment Interface.
Category:	Identify category of TM as provided in the TMCR.
Status:	Indicate TM development status: outline/book plan, manuscript, preliminary, draft, final, in revision (update or complete revision), or revised (provide revision number).
Maintenance Level:	Indicate the maintenance level supported by the TM (e.g., O-Organizational; I-Intermediate; D-Depot).
TM Publication Date:	Provide publication date of the current version of the TM (MM-DD-YY).
Security Classification:	Indicate the security classification of the TM.
RGL:	Indicate the Reading Grade Level (RGL) to which TM will be written.
System/Subsystem/Equipment/Component Identification:	Identify the system/subsystem/equipment/component supported by the TM. Refer to Part I, Table 6.2-1, Configurations and Physical Characteristics and Table E.2.1-1, Technical Manuals Identification.
Superseded TMIN/Publication Number and Date:	Identify TMIN/publication number and date of the superseded publication, if applicable (MM-DD-YY).

<b>Table E.2.1-2 Technical Manual Development Summary</b> (Complete one copy for each technical manual.)	
<b>Data Element</b>	<b>Definition</b>
Description of Technical Manual:	Provide the purpose/scope of the TM.
TM Participants:	Identify the organization(s) involved in the development and maintenance of the TM as follows:  Note: Individual points of contact are identified in Part I, Table 14.1-1, Program Participants.
Developing Organization:	Identify the activity/organization responsible for development of the TM.
TMMA:	Identify the TM Maintenance Activity (TMMA) by name.
Code Responsible for Verification:	Identify the Government activity (by organization and code) responsible for TM verification.
TM Storage Location:	If the TM will be stored by the TMMA, enter "TMMA" in the space provided. If other than the TMMA, provide six-character Unit Identification Code (UIC) of the activity responsible for storing the TM. [This is where the Fleet will obtain additional copies after initial operational capability (IOC) is achieved.]
<b>Development:</b> Indicate the development plan for the TM by completing the following blocks.	
Date TM Proposed for Development:	Provide date the developing organization submitted request for approval to develop the TM (MM-DD-YY).
Date TM Approved for Development:	Provide date the Government approved the TM for development (MM-DD-YY).
Percent Complete:	In-Process Reviews (IPRs) are used for the review and monitoring of the TM during preparation. Indicate the percent complete as a result of the latest IPR.
Outline/Book Plan:	Provide dates for the outline of the structure and content of the TM as follows:
Submittal:	Provide outline book plan submittal date (MM-DD-YY).
Approval:	Provide date the Government approved the outline book plan (MM-DD-YY).
Manuscript:	Provide dates for the original manuscript of the TM as follows:
Submittal:	Provide manuscript submittal date (MM-DD-YY).
Approval:	Provide date the Government approved the manuscript (MM-DD-YY).
Preliminary/Draft:	Provide dates for preliminary TM as follows:
Submittal:	Provide preliminary TM submittal date (MM-DD-YY).
Approval:	Provide date the Government approved the preliminary TM (MM-DD-YY).
Final/Camera Ready:	Provide dates for final/camera ready (suitable for duplication) TM as follows:
Submittal:	Provide final/camera ready TM submittal date (MM-DD-YY).
Approval:	Provide actual date the Government approved the final/camera ready TM (MM-DD-YY).
Simultaneous Validation/Verification:	Place an "x" in the space provided if the developing organization is proposing that verification for the TM be conducted at the same time as validation of the TM.

**Table E.2.1-2 Technical Manual Development Summary**  
*(Complete one copy for each technical manual.)*

Data Element	Definition
<b>Validation:</b> Complete validation information as follows:	
Start Date:	Provide validation start date proposed by the developing organization (MM-DD-YY). Adequate notice must be given to the Government so the Government can participate in the validation.
Date Completed:	Provide completion date of TM validation (MM-DD-YY).
Method:	Describe the method for validation.
Material/ Equipment Requirements:	Identify material or equipment (e.g., goggles, gloves, support equipment) required to conduct the validation. (Support equipment is listed on Table D.2-1, Identification of Support Equipment.)
Documentation Requirements:	Identify documentation requirements associated with the validation. Provide title and document number. (Refer to Table E.3.2-1, Engineering Drawings Identification.)
Facility Requirements:	If Government facilities will be used for the validation, provide the six-character UIC of the facility. If contractor facilities will be used, provide address.
Safety Precautions:	List safety precautions which must be observed during validation. (Refer to Annex L, Safety.)
Additional Data Required:	Provide additional information as necessary.
<b>Verification:</b> Complete verification information as follows:	
Start Date:	Provide verification start date proposed by the developing organization (MM-DD-YY). The Government is responsible for establishing the verification schedule.
Date Completed:	Provide date TM verification completed (MM-DD-YY).
Method:	Describe the method of verification.
Material/ Equipment Requirements:	Identify material or equipment (e.g., goggles, gloves, support equipment) required to conduct the verification. (Support equipment is listed on Table D.2-1, Identification of Support Equipment.)
Documentation Requirements:	Identify documentation requirements, provide document title and document number. (Refer to Table E.3.2-1, Engineering Drawings Identification.)
Facility Requirements:	If Government facilities will be used for the validation, provide the six-character UIC of the facility. If contractor facilities will be used, provide address.
Safety Precautions:	Identify safety precautions which must be observed during verification. (Refer to Annex L, Safety.)
Navy Support Personnel:	Enter the quantity and rate/rating of Navy personnel required to conduct the verification.
Fleet Support Requirements:	Identify Fleet support requirements associated with the verification (e.g., for shipboard TM verification).
Developing Organization Personnel:	Identify the quantity and title/function of developing organization personnel recommended to support the verification effort.
Additional Data Required:	List additional requirements as specified by the program office.

<b>Table E.2.1-2 Technical Manual Development Summary</b> (Complete one copy for each technical manual.)	
Data Element	Definition
<b>Distribution:</b> Indicate initial distribution requirements for the TM as follows:	
Location (UIC):	Identify the activities at which the TM will be used; use the six-character UIC. Include training activities, maintenance depots, outfitting activities, interim support activities, etc.
Quantity:	Indicate the number of TMs to be provided to this activity.  Note: A two-year quantity of TMs necessary for the initial outfitting of each training course must be provided prior to training commencement.
Initial Production:	<i>For TMs to be delivered to training activities only.</i> Place an "x" in the space provided if initial production TMs will be provided to the training activity.
Initial Training:	<i>For TMs to be delivered to training activities only.</i> Place an "x" in the space provided if the TM will be used to support initial training.
Follow-on Training:	<i>For TMs to be delivered to training activities only.</i> Place an "x" in the space provided if the TM will be used to support follow-on training.

**E.2.2 Technical Manual Quality Assurance Program**  
(Government)

Specify TM QA requirements to be imposed on the contractor.

(Contractor)

After contract award, describe the TM QA organization and procedures, including the control of data during TM development. Discuss methods to monitor and review TM development processes and products. Identify the purpose of reports generated [e.g., TM Deficiency Report (TMDR)] during the TM QA process.

**E.2.2.1 Validation**  
(Contractor)

The validation process evaluates TMs for technical accuracy, adequacy, comprehensibility, and usability.

Note: The validation is normally conducted at the development facility or operational site and involves the performance of operating and maintenance procedures, including checkout, calibration, alignment, removal, installation, and disassembly.

When describing the validation process, explain provisions to ensure the validation method permits the performance of tasks in an environment which closely duplicates (or simulates) service conditions. Provisions must be made to ensure that destructive malfunctions will not be introduced into the equipment during the validation process (e.g., when trying to fault the end item to test maintenance procedures). Data, such as part numbers in illustrated parts breakdowns, hardware and schematic diagrams, and wiring data are checked against current source data. Incorporate validation requirements into Table E.2.1-2.

Address issues identified during validation in Paragraph E.1.3.

**E.2.2.2 Verification**  
*(Government)*

TM verification is performed by the Government to ensure the TM is adequate to support the operation and maintenance of the end item. The verification is conducted using personnel with skill levels equivalent to those of the target operators or maintainers.

Note: Verification consists of the actual performance of operating and maintenance procedures and the detailed evaluation of associated checklists, including those for checkout, calibration, alignment, installation, and removal.

The equipment needed for verification is specified in the TMCR. Document verification requirements on Table E.2.1-2.

Address issues identified during verification in Paragraph E.1.3.

**E.2.3 Technical Manual Maintenance**  
*(Government)*

In Table E.2.1-2, identify the TMMA for each TM. Identify program-unique procedures for developing and integrating updates and revisions into TMs. Include any unique provisions for ensuring that configuration changes [Engineering Change Proposals (ECPs)] are incorporated into TMs and describe the use of Advanced Change Notices (ACNs), Field Change Bulletins (FCBs), and Electronic Information Bulletins (EIBs). (Refer to Annex K, Configuration Management, Paragraph K.3.2, Change Control Tracking, and Paragraph K.5, Configuration Status Accounting.)

Indicate if the TMs for this end item will use the Enhanced Ships Technical Publications System (E-STEPS). E-STEPS is the Navy's primary shipboard TM management information system, located at Naval Sea Data Support Activity (NSDSA).

**E.3 ENGINEERING DRAWINGS**

To manage drawings more effectively, the Navy is automating its engineering data repositories to improve accuracy and availability of technical data through the Engineering Data Management Information and Control System (EDMICS) program. (Refer to Table 11.1-1, Data/Communications Requirements.)

EDMICS is an automated system designed to digitize data to allow for easier storage, retrieval, and reproduction of drawing images in either microfilm, hard copy, or digital format. EDMICS utilizes a combination of optical digital mass storage and magnetic storage, digitizing scanners, graphics, hard copy devices, graphics display workstations, and communications capabilities to allow repositories to acquire, store, retrieve, reproduce, control, and distribute engineering drawings in a more timely and efficient manner.

Information on how engineering change data is to be accepted, approved, validated, maintained, and updated is provided in Annex K, Configuration Management.

**E.3.1 Proprietary Data**  
(Government)

The differences among engineering drawing levels and the ownership of these engineering drawing packages are often a matter of conflict between the Government and developing contractors and vendors/subcontractors. The outright purchase of product engineering drawings is the best method for avoiding legal entanglements over proprietary data. The cost of such a package, however, may outweigh its advantages to the Government. Justify the decision to purchase less than product level drawings.

When discussing proprietary data, address how the Government validates and manages such data. Refer to Part I, Paragraph 8.1, Data Rights.

**E.3.2 Identification**  
(Government)

When completing Table E.3.2-1, refer to Figure E.2-1 for an example of the format. If this data is maintained in a separate tracking system, identify where and how to access the data. Do not duplicate data. (Refer to Part I, Table 6.2-1, Configurations and Physical Characteristics, for the drawing levels for each configuration item.)

<b>Table E.3.2-1 Engineering Drawings Identification</b>	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
System:	List system-level engineering drawings; include complete engineering drawing title and Government/vendor engineering drawing number.
Subsystem:	List subsystem-level engineering drawings which correlate to each system engineering drawing; include complete engineering drawing title and Government/vendor engineering drawing number.
Equipment:	List equipment-level engineering drawings (where such engineering drawings exist) for the equipment which make up each subsystem; include complete title and Government/vendor engineering drawing number.
Component:	List component-level engineering drawings (where such engineering drawings exist) for the components which make up each equipment; include complete engineering drawing title and Government/vendor engineering drawing number.

**E.3.3 Engineering Drawing Quality Assurance Program**  
(Government)

Prior to contract award, identify engineering drawing QA requirements imposed on the contractor.

***(Contractor)***

After contract award, discuss engineering drawing quality review planning and procedures and methods used to monitor and review drawing development processes and products. Identify the records generated by the engineering drawing QA process.

# MASTER ACQUISITION PROGRAM PLAN (MAPP) USER'S HANDBOOK

## ANNEX F. TRAINING AND TRAINING SUPPORT

Training and Training Support comprises the students, courses, instructors, equipment, facilities, curricula, and all other materials required to support the introduction and life-cycle support of the end item.

### F.1 STRATEGY (Government)

When defining the training concept, address the following six areas:

- Type of Training
- Presentation Techniques
- Pipeline
- Presentation Environment
- Presentation Media
- Location

Include methods used to reduce dependence on formal Navy training (e.g., on-board training, in-school training) and use of inter-service training. Discuss techniques to ensure the objectives and requirements of the Training and Training Support program are met.

When addressing training concept drivers, include the impact of the maintenance concept, directives regarding shipboard versus formal training, etc. Identify the general training requirements for military, civilian, and foreign personnel (e.g., which groups require what types of training).

Describe general requirements for any Technical Training Equipment (TTE), Training Devices (TDs), and/or major training aids (e.g., pre-faulted modules) to be used in support of training. Identify the requirements and constraints which necessitate the procurement of TTE/TD. Factors to consider include: safety, readiness deficiencies, instructional staff organization, operational qualifications and experience, workload, manning level, turnover rate, projected class schedule, entry level, pipeline, and attrition rate. Identify the training objectives(s) supported by the TTE/TD.

When addressing the impact of the training program on the training community, discuss the ability of the training community to accommodate the new requirements. Discuss whether training resources are adequate to support surge and mobilization requirements.

For acquisitions which include commercial equipment, explain the impact on the development and establishment of Training and Training Support.

For example, a commercial item acquisition may necessitate extended reliance on factory training until the Navy can establish a formal training program. If training aids or devices are required, use of contractor equipment may be necessary.

If, during the course of follow-on training, training program assessment indicates a requirement for modification to the training system (including modification or addition of TD or TTE), describe the factors which drive the new requirement. Describe how the specified modifications can correct tasks not trained to the established standard, or other deficiencies in the existing method of training.

### F.1.1 Approach

Note: Identify all specifications and standards used in the Training and Training Support program in Part I, Table 13.2-1, Specifications and Standards.

#### *(Government)*

Explain how Training and Training Support requirements will be defined for the end item. Before contract award, either: 1) list specifications and standards to be invoked; or 2) list the specific minimum requirements on which the contractor process will be based. These requirements will be incorporated into the Request For Proposal (RFP). Refer to DoDI 5000.2, Sections 6-H, 7-A, and 7-B. If source data is to be supplied to contractors by the Government, list it in Part I, Table 17-1, Government Furnished Information.

#### *(Contractor)*

After contract award, describe the approved approach for defining and validating Training and Training Support requirements. Include a description of the interface between Training and Training Support and the other support elements, especially between Training and Training Support and the other domains of Human Systems Integration (i.e., human engineering, manpower, personnel, and safety).

Identify source data to be used to determine Training and Training Support requirements. Explain how the results of support requirements analysis tasks will be used (refer to Part I, Paragraph 10.2, Results of Support Requirements Analysis Tasks). Also include data generated as a result of performing Training and Training Support analyses.

For example, if a task and skill analysis is performed under MIL-STD-1379, it would be identified as a task requirement in Part I, Table 10.1-1, Support Requirements Analysis Tasks. The Task and Skills Analysis Report generated as a result of this analysis would be listed in Table 10.2-1, Support Requirements Analysis Reports, and identified in this paragraph as a data source used to define manpower skill and quantity requirements.

When discussing techniques used to ensure the effectiveness of the Training and Training Support program, consider the following:

- Analyzing current training programs of comparable systems to develop baseline(s) for end item training program design and development.

- Ensuring that maintenance tasks are subjected to detailed analysis [e.g., Logistics Support Analysis (LSA)] to provide a database of sufficient detail to permit development of step-by-step procedures. Refer to Part I, Table 10.1-1, Support Requirements Analysis Tasks.
- Incorporation of embedded or other On-the-Job Training (OJT) capability as a method to reinforce training, reduce the need for additional training equipment, etc.
- Scheduling the development of complex and costly training equipment, such as simulators, after design freeze of the end item.

**F.1.2 Roles and Responsibilities**  
(Government/Contractor)

When identifying the roles and responsibilities of training program participants, provide descriptions at the organization level (e.g., Activity XX is the Training Agent (TA) and will be represented at all curriculum in-process reviews). Ensure that each activity or organization described here is listed in Part I, Table 14.1-1, Program Participants.

**F.1.3 Risks and Outstanding Issues**  
(Government/Contractor)

Identify the risks associated with the establishment of Training and Training Support for this end item. For each risk identified, summarize the plan to eliminate or reduce the risk.

For example, a configuration change to the end item has resulted in the delay of technical manual development. Training developers need the updated information to complete the training support materials on time. There is a risk that initial training will have to be delayed unless an alternative can be implemented. The alternative could include providing engineering data to the training developers, the use of red-line manuals to develop training materials, etc.

In the discussion of outstanding issues, include Training and Training Support Independent Logistics Assessment (ILA) findings. Address the impact of each finding and explain how the recommended action will affect the Training and Training Support program. (Refer to Part I, Table 10.4.2-1, Independent Logistics Assessment Summary.)

**F.1.4 Training Alternatives**  
(Government)

Training system alternatives must be given consideration early in the development process. When discussing these alternatives, summarize the process used to identify and evaluate each.

For example, alternatives could include: use of a training device; use of TTE; use of embedded training; use of factory training; use

of a combination of OJT and formal schoolhouse training; use of a combination of training device, TTE, formal training.

As appropriate, use one subparagraph to describe each alternative method considered. For each alternative:

- Provide a description of the alternative.
- Provide an evaluation of the alternative in terms of life-cycle cost relative to its capability to meet training constraints and requirements.
- Provide the justification for selection or rejection of the alternative.

Note: Costs associated with the selected alternative must be reflected in Part I, Table 19.3-1, Logistics Funding Summary.

**F.2 TRAINING COURSES**  
(Contractor)

Identify each training course being developed in support of the end item. This includes hardware, software, and other training. Complete one copy of Table F.2-1 (Section A) for each proposed training course.

<b>Table F.2-1 Training Course Data</b> <b>Section A. General Course Data</b> (Complete one copy for each proposed course.)	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Course Title:	Provide full title of course.
CIN:	(Not applicable for on-board training.) Provide proposed or approved Course Identification Number (CIN); if proposed, but not finalized, indicate by placing (P) after the CIN.
Description:	Provide a brief description of the course (e.g., Theory and Practical Application on the Operation and Organizational Level Maintenance of the End Item).
Developing Organization:	Provide the six-character Unit Identification Code (UIC) of the activity responsible for developing the training.
Course Developer:	Identify activity responsible for course development.
Standard:	If used, identify standard and version for curricula/training materials development. When updating an existing course, the original standard is used unless more than 50% of the course material must be modified. In this event, the standard cited here may differ from the governing standard cited in Part I, Table 13.2-1, Specifications and Standards.
Trainee Population:	Placing an "x" in each appropriate space to indicate if the training is designed for Operators, Operators/Maintainers, Maintainers (indicate level of training: organizational, intermediate, or depot level maintainers), Team Training, Officers, Selected Reserve Training, On-Board Training, and/or Industrial Personnel.

<b>Table F.2-1 Training Course Data</b> <b>Section A. General Course Data</b> <i>(Complete one copy for each proposed course.)</i>	
<b>Data Element</b>	<b>Definition</b>
Type of Training:	<p>Indicate whether training is for Basic Skills, Skill Progression, or Other type of training as follows:</p> <ul style="list-style-type: none"> <li>• Basic skills training provides for the development of fundamental knowledge, skills, and techniques (as in Class "A" School).</li> <li>• Skill progression training provides for the acquisition of advanced knowledge, skills, and techniques (as in Class "C" school) which are necessary for an individual to operate and/or maintain a new equipment, subsystem, or system, usually leading to award of a Navy Enlisted Classification (NEC) code.</li> <li>• "Other" training: specify type of training in space provided (e.g., familiarization training).</li> </ul>
Duration:	Indicate total number of days of training. Course length for courses of five working days or less will equal the number of days. For courses in excess of five working days, include all weekends between the start day and last working day.

**F.2.1 Factory Training**  
*(Contractor)*

When discussing the status of factory training, include constraints related to its development and implementation. Factory training is training provided by a contractor in the operation, maintenance, or employment of a system, equipment, device, or training aid. It can be conducted at the contractor site or Government facilities. Factory training can be either initial or follow-on training. Complete Section B of Table F.2-1 to identify factory training.

<b>Table F.2-1 Training Course Data</b> <b>Section B. Factory Training</b> <i>(Complete one copy for each factory training course at each location.)</i>	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
N/A:	Place an "x" in the space provided if factory training will not be conducted. If this is the case, do not complete this section.
Initial Training:	Place an "x" in the space provided if the factory training will be conducted as initial training.
Follow-on Training:	Place an "x" in the space provided if factory training will be conducted as follow-on training.
Contractor Facilities:	If contractor facilities will be used, identify the location of the contractor facilities at which the course will be conducted.
Start Date:	Provide start date of each iteration of the course at the contractor facility (MM-DD-YY).
Completion Date:	Provide completion date of each iteration of the course at the contractor facility (MM-DD-YY).

<b>Table F.2-1 Training Course Data</b> <b>Section B. Factory Training</b> <i>(Complete one copy for each factory training course at each location.)</i>	
<b>Data Element</b>	<b>Definition</b>
Government Facilities:	Indicate location(s) of Government facilities at which the course will be conducted (e.g., name and location of school).
UIC:	Identify the six-character UIC of Government facility.
MILCON Required:	Place an "x" in the space provided if Military Construction (MILCON) will be required to accommodate training at each Government facility; such requirements must be addressed in Annex H, Facilities.
Start Date:	Provide start date of each iteration of the course at the Government facility (MM-DD-YY).
Completion Date:	Provide completion date of each iteration of the course at the Government facility (MM-DD-YY).

**F.2.2 Initial Training**  
*(Contractor)*

When addressing the status of the initial training, include constraints related to its development and implementation. Initial training is funded by the Training Support Activity (TSA) (normally the program office) until the TA has acquired the capability to train. Discuss the status of efforts to transfer responsibility for initial training from the TSA to the TA. Complete Section C of Table F.2-1 to identify initial training requirements.

<b>Table F.2-1 Training Course Data</b> <b>Section C. Initial Training</b> <i>(Complete one copy for each initial training course at each location.)</i>	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
N/A:	Place an "x" in the space provided if initial training will not be conducted. If this is the case, do not complete this section.
Location:	Indicate location of initial training sites (e.g., name and location of school).
MILCON Required:	Place an "x" in the space provided if MILCON will be required to accommodate the course at the training site. Such requirements must be addressed in Annex H, Facilities.
RFT:	Provide Ready-For-Training (RFT) date for the given course at the given location (MM-DD-YY). The RFT date is the date by which a training system and its associated logistics, maintenance, syllabus, and instructors are certified as available to conduct training.
UIC:	Provide the six-character UIC of the training location.
Instructor:	Identify instructor for this initial training.
Trainees:	Indicate number of personnel planned to attend course (input) in each given category (officer, enlisted, civilian). Indicate the Average On Board (AOB) for each category. Calculate AOB for Navy and Marine Corps personnel only; compute AOB to the nearest tenth using the following formula:  $\text{Navy/Marine Corps Input} \times \frac{\text{Length (days)}}{365}$

<b>Table F.2-1 Training Course Data</b> <b>Section C. Initial Training</b> <i>(Complete one copy for each initial training course at each location.)</i>	
<b>Data Element</b>	<b>Definition</b>
	<p>Note: Length of course in days is obtained from Section A of this table.</p> <p>Provide total chargeable student billets per category. (Data is obtained from Table B.5.2-1, Manpower Requirements.)</p> <p>Note: For initial training, the attrition factor is assumed to be 0 (zero). It therefore does not affect the total number of billets required.</p> <p>The total input, AOB, and chargeable billets will be automatically calculated.</p>
Training Advisory Services:	List training advisory services required. Provide number of personnel, man-weeks, and begin date to meet the RFT date (MM-DD-YY).
Trainee Destination:	List the target destination(s) for trainees upon course completion [e.g., Technical Evaluation/Operational Evaluation (TECHEVAL/OPEVAL) activity, instructors], by six-character UIC, the function to be filled by the trainee(s) (e.g., instructor), and the number of officers/enlisted/civilians to serve that function at that location.
Completion Date:	Provide date initial training course must be completed (MM-DD-YY).

**F.2.3 Follow-on Training**  
*(Government)*

When discussing the status of follow-on training, address constraints related to its development and implementation. Follow-on training is formal school training performed by the TA after the TA has assumed responsibility for conducting the course. Follow-on training includes replacement training. Complete Section D of Table F.2-1 to identify follow-on training requirements.

<b>Table F.2-1 Training Course Data</b> <b>Section D. Follow-on Training</b> <i>(Complete one copy for each follow-on course.)</i>	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
N/A:	Place an "x" in the space provided if no follow-on training is planned for the given course. Do not complete this section of the table.
<b>Part 1: Complete this section of the table to provide general data about the follow-on course. This data applies to all iterations and all locations.</b>	
Course Attrition Factor:	Indicate attrition factor (%) to be used when calculating trainee throughput requirements for follow-on training [obtained from Navy Integrated Training and Resources Administration System (NITRAS) or estimated based on a similar existing course].

<b>Table F.2-1 Training Course Data</b> <b>Section D. Follow-on Training</b> <i>(Complete one copy for each follow-on course.)</i>	
<b>Data Element</b>	<b>Definition</b>
Interservice:	Placing an "x" in the space provided if course will also be used by Marine Corps, Air Force, Army, and/or Other (Specify).
Prerequisites:	Indicate prerequisites for this course by CIN and course title. Identify any prerequisite training for Selected Reserves (SELRES) by placing (S) after the CIN.
NEC/MOS:	Indicate Navy Enlisted Classification (NEC) code/Military Occupational Specialty (MOS) code awarded upon successful completion of the course. Place an "x" in the space provided to indicate if the NEC/MOS is new, existing, or modified. Refer to Table B.5.2-1, Manpower Requirements, and Table F.3-1, Training Pipelines.
NEC/MOS Assignable to SELRES:	For NEC/MOS awarding training course(s) which are 45 days or less in length, place an "x" in the space provided if the NEC/MOS can be attained and maintained within the SELRES.
<b>Part 2: Complete one copy of this section of the table for each proposed training location for the course.</b>	
Location:	Indicate location of follow-on training.
MILCON Required:	Place an "x" in the space provided if MILCON is required to accommodate training at this site. Such requirements must be addressed in Annex H, Facilities.
RFT:	Provide RFT date for the course at the location selected. (MM-DD-YY).
UIC:	Provide six-character UIC of the training activity.
Maximum Class Size:	Indicate the maximum number of students per class.
Begin Date(s):	Provide established start dates for all known iterations of the given course at the given location (MM-DD-YY).
Completion Date(s):	Provide established completion dates for all known iterations of the given course at the given location (MM-DD-YY).
<b>Part 3: Complete this section to indicate the number of trainees required per fiscal year.</b>	
Source of Requirement:	Place an "x" in the appropriate column to indicate the source of the trainee requirement.  <div style="text-align: center;">           FS - Fleet and Fleet Support            FR - Foreign            NM - Non-Military            OS - Other Service            RS - Reserve            IS - Instructor and Support         </div>
Rank/Rate/Rating:	For officers, indicate rank; for enlisted indicate rate/rating.
Navy/Marine Corps:	Indicate whether the billet is Navy (N) or Marine Corps (MC).
Designator:	Provide officer billet designator.
NOBC/PNEC/PMOS:	For officers, provide Navy Officer Billet Classification (NOBC); for enlisted, provide Primary Navy Enlisted Classification/Primary Military Occupational Specialty (PNEC/PMOS).

<b>Table F.2-1 Training Course Data</b> <b>Section D. Follow-on Training</b> <i>(Complete one copy for each follow-on course.)</i>	
<b>Data Element</b>	<b>Definition</b>
SSC/SNEC/ SMOS:	For officers, provide Sub-Specialty Code (SSC); for enlisted, provide Secondary Navy Enlisted Classification/Secondary Military Occupational Specialty (SNEC/SMOS).
AQD:	For officers, provide Additional Qualification Designator (AQD).
ACDU/TAR/ SELRES:	Indicate whether billet is Active Duty (ACDU); Training and Administration of Reserve (TAR); or SELRES. For SELRES, enter both "SR" and the six-character UIC of the Reserve Activity.  Note: Reserve requirements are to be cited for courses of two weeks or less in length only, including segmented courses. (Not required for Aircraft Squadrons transferred to the Naval Reserve.)
FY___ O/E:	For the Current Fiscal Year (CFY) and subsequent fiscal years (FY+1, etc.), indicate the input requirements (number of Officers/Enlisted required to attend training) necessary to attain and sustain Fleet, Fleet support, non-military, foreign, reserve, instructor, and support requirements.
Output:	Navy/Marine Corps output is automatically calculated by applying the school attrition factor to the Navy/Marine Corps input figures. (Refer to School Attrition Factor, above.)
AOB:	Chargeable plus other-than-chargeable billets equal total AOB for each FY. For Navy and Marine Corps personnel only, AOB will be automatically calculated to the nearest tenth using the following formula:  $\frac{\text{Navy/Marine Corps Input} + \text{Output}}{2} \times \frac{\text{Length (days)}}{365}$ Note: Course length for courses of five working days or less will equal the number of days. For courses in excess of five working days include all weekends between the start day and the last working day.
Chargeable:	For each FY, determine the chargeable student billets from AOB. Officer and enlisted students requiring chargeable billets are defined as those on Permanent Change of Station (PCS) orders regardless of the length of training course to which they have been ordered. Officer and Enlisted personnel on Temporary Active Duty (TAD) orders and civilians do not require chargeable student billets. Round off chargeable student billets to the nearest whole number. Not applicable to SELRES.

**F.2.4 On-Board Training**  
***(Government)***

When describing the purpose and status of the on-board training program, include a summary of constraints associated with development and implementation. Identify the type of training provided, including:

- Proficiency training
- Maintenance Training Improvement Program (MTIP)
- Other on-board training packages
- Personnel Qualification Standards (PQS) program(s).

Address on-board training programs in Section A of Table F.2-1. Place "N/A" in the space provided for the course identification number.

**F.2.5 Team Training**  
(Government/Contractor)

Team training is training provided to a group of personnel to perform related or segregated functions as a team. When describing the purpose and status of the program, include a summary of constraints associated with development and implementation. Indicate if team training is not required. Address team training programs in Section A of Table F.2-1. If the team training program will not be assigned a CIN, place "N/A" in the space provided for the CIN and explain the scope and purpose of the course in this paragraph. If team training will be conducted as factory (Section B), initial (Section C), or follow-on (Section D) training, complete the appropriate sections of Table F.2-1.

**F.2.6 Selected Reserve Training**  
(Government)

When describing the status of the program, include a summary of constraints associated with the development and implementation of SELRES training. Identify courses segmented to support SELRES training schedules. Complete Sections A and D of Table F.2-1.

**F.3 TRAINING PIPELINES**  
(Government)

Complete Table F.3-1 to document new training pipelines to support the end item. This table depicts the course progression an individual must complete in order to be qualified to operate and/or maintain the end item, and identifies prerequisite training and certification (e.g., NEC or MOS awarded upon successful completion of the requisite training). Include existing training pipelines and indicate necessary changes. When only a single course must be established (no training pipeline is required), so state. Indicate new NEC/MOS requirements or if an existing NEC/MOS is changed. New NECs/MOSs must be documented in Table B.5.2-1, Manpower Requirements. Indicate the NEC/MOS awarded upon completion of each pipeline. If ordnance or other hazardous material is involved, include provisions for Explosive Ordnance Disposal Training. Hazardous materials are identified in Annex L, Safety.

If training path system documentation is being procured (e.g., MIL-STD-1379 series) or if training pipelines are reflected in other existing program documentation, reference the documentation and identify means of accessing the information instead of completing Table F.3-1.

Table F.3-1 Training Pipelines	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Operator:	Identify each training (proposed/established) pipeline for personnel responsible for operating the end item; indicate each pipeline by job title or rate/rating. Identify the progression of training by listing the CINs of the: "A" School course(s) required; "C" and "F" School courses required; and Prerequisite Skill Progression (specialized) training required. Finally, identify the NEC/MOS awarded upon completion of training indicated for the given pipeline. If the NEC/MOS has been proposed but is not yet approved, place a (P) after the NEC/MOS code.
Maintainer:	Identify each training (proposed/established) pipeline for personnel responsible for maintaining the end item. Indicate each pipeline by job title or rate/rating. Identify the progression of training by listing the CINs of the: "A" School course(s) required; "C" and "F" School courses required; and Prerequisite Skill Progression (specialized) training required. Finally, identify the NEC/MOS awarded upon completion of training indicated for the given pipeline. If the NEC/MOS has been proposed but is not yet approved, place a (P) after the NEC/MOS code.
Operator/ Maintainer:	Identify each training (proposed/established) pipeline for personnel responsible for operating and maintaining the end item; indicate each pipeline by job title or rate/rating to distinguish training paths. Identify the progression of training by listing the CINs of the: "A" School course(s) required; "C" and "F" School courses required; and Prerequisite Skill Progression (specialized) training required. Finally, identify the NEC/MOS awarded upon completion of training indicated for the given pipeline. If the NEC/MOS has been proposed but is not yet approved, place a (P) after the NEC/MOS code.

#### F.4 TECHNICAL TRAINING EQUIPMENT (Government/Contractor)

TTE is a production unit of the end item devoted to the training and instruction of Naval personnel. Program offices or System Commands have the responsibility for the design, development, modernization, and selection of TTE.

If initial production equipment will not be provided to the training command, state the rationale for non-compliance, status of requests for deviation, and actions to develop alternative training. Explain the identification/numbering system used to ensure TTE, and associated documentation, can be tracked through its life cycle.

In Table F.4-1, list and number each TTE separately.

<b>Table F.4-1 Technical Training Equipment Requirements</b> (Complete one copy for each different TTE.)	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
TTE Number:	Provide identification number of the TTE. This number is used when referring to the installation schedule in Part I, Table 16-1, Installation Schedule, which ties specific TTE to installation sites.
TTE Purpose:	Describe the purpose of the TTE.
Procurement Code:	Indicate the reason for the procurement of the TTE as follows:  <ul style="list-style-type: none"> <li>I - Initial Acquisition</li> <li>R - Replacement</li> <li>M - Modernization (e.g., fielded end item has undergone modernization and TTE must undergo the same process)</li> <li>O - Overhaul (e.g., fielded end item has undergone overhaul and existing TTE must be augmented with the new procurement)</li> </ul>
Required to Support Training Device:	Place an "x" in the space provided if the TTE is required in support of a TD identified in Table F.5.1-1.
Training Device Supported:	If the TTE supports a TD, identify the number of the TD supported. (Refer to Table F.5.1-1, Training Device Summary.)
Provided as Initial Production End Item:	Place an "x" in the space provided if the TTE will be the initial production end item. If the initial production end item will <u>not</u> be provided, address the reason for non-compliance in Paragraph F.4.

## F.5 TRAINING DEVICES

TDs are developed to simulate either part or all of the end item so that training can be accomplished without using the end item itself.

Note: If the MAPP under development is for a TD, this section is omitted. Under such conditions, the acquisition of the device will be addressed as any other end item and requirements and plans will be addressed throughout the MAPP.

Note: If this section is completed to describe a TD for the MAPP end item, support for the TD must be identified within this end item MAPP (e.g., spare parts are listed in Table C.5.2-1, Training Supply Support; support equipment is to be listed in Table D.2-1, Identification of Support Equipment).

### F.5.1 Description (Government)

Explain the numbering system used to identify specific TDs.

When describing the physical and functional characteristics of the proposed TD, include a short assessment of how the TD will be used to satisfy training objectives. Describe constraints, instructor/operator/student stations, instructional support features,

number of devices comprising a training suite, and interfaces. Address the ability of the TD to maintain or improve the end item safety risk. This relates to risks identified in Annex L, Safety. Complete Table F.5.1-1 for each TD configuration being acquired.

Note: If identical TDs are being procured, each will be assigned a unique number which is entered in the TD number block in Table F.5.1-1.

<b>Table F.5.1-1 Training Device Summary</b> (Complete one copy for each training device configuration.) <b>Section A. Training Device Requirements</b>	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Training Device:	Provide name of TD using approved nomenclature.
TD Number(s):	Provide identification number(s) of the TD. This number is used in Part I, Table 16-1, Installation Schedule, which relates specific TD to installation sites.
Developing Organization:	Identify the organization and code of the developing organization for the training device.
Course(s) Supported (CIN):	Identify the courses (by CIN) which will be supported by the training device. If the courses are proposed, but not finalized, indicate by placing (P) after the CIN.
Replaced Device(s):	Identify replaced devices using the approved nomenclature for the replaced device.
PHST Candidate:	Place an "x" in the space provided if TD is a Packaging, Handling, Storage, and Transportation (PHST) candidate. Requirements are to specified in Annex I, Packaging, Handling, Storage, and Transportation.
Facilities Candidate:	Place an "x" in the space provided if TD influences Facilities decisions. Describe related facility requirements in Annex H, Facilities, Table H.2-1, Facilities Requirements.

**F.5.2 Acquisition Strategy**  
(Government)

Summarize the acquisition strategy for the TD. Include discussion of trade-offs and the impact on the acquisition strategy and the overall support structure [e.g., the decision to use (or not use) commercial hardware/software].

Identify logistics (e.g., spare parts) and configuration management considerations that may impact the TD acquisition strategy. Provide the concepts, goals, and constraints which will control development of support for the TD. Actual support requirements for the TD are to be reflected in the appropriate sections/annexes of the MAPP. When describing plans to employ evolutionary acquisition strategies [e.g., Pre-Planned Product Improvement (P<sup>3</sup>I) program], discuss the projected phasing of the approach (include target dates for upgrades).

### F.5.3 Evaluation

#### F.5.3.1 Planning

##### *(Government)*

Describe the training effectiveness evaluation process (e.g., assessment of the effectiveness of the training device to lead students to the achievement of the program learning objectives; analysis of training capability based on demonstrated trainee performance improvements directly attributable to the training received on the device being evaluated). If a similar TD has already successfully completed an effectiveness evaluation, an assessment of the new TD may not be required. An evaluation of the "differences" between the two TDs may be sufficient.

Describe how the assessment team will:

- Evaluate the adequacy of curriculum, student/instructor qualifications, and device Integrated Logistics Support (ILS).
- Evaluate the goals to be met by the evaluation (i.e., the specific information that is required from the training effectiveness evaluation about a device or its use).
- Evaluate the adequacy of the TD to support the overall training program.
- Evaluate training tasks accomplished through use of the TD(s).
- Evaluate the standards (criteria) used to determine whether the stated objectives can be or have been met by TD use.
- Evaluate the specific approach that will be used to conduct the evaluation (e.g., evaluation strategy or strategies used; training scenarios; data collected; techniques/procedures that will be used for collecting data; details as to how measuring instruments will be selected, modified, developed, and used during the evaluation; details as to how the collected data will be processed and reported to reflect training effectiveness).

Identify the type of information to be recorded (e.g., TD design deficiencies that limit or preclude effective training, difficulties in establishing optimum or required learning conditions, student progress toward achievement of learning and/or training objectives, student and instructor attitudes relating to the acceptance or rejection of the TD, student proficiency at the end of training as determined using course-based criteria tests).

In Table F.5.1-1, identify resources required to conduct the evaluation.

<b>Table F.5.1-1 Training Device Summary</b> (Complete one copy for each evaluation of this training device.) <b>Section B. Training Device Evaluation Summary</b>	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Concurrent Evaluation:	Place an "x" in the space provided if the TD is used for other course(s), and if the evaluation of the effectiveness of the TD to this course is conducted concurrently with the evaluation of the effectiveness of the TD to the other course.
CIN:	If concurrent evaluation is conducted, enter the CIN of the other course(s) evaluated.
Date of Assessment:	Provide planned dates for beginning and completing the evaluation of the effectiveness of the TD (MM-DD-YY).
Personnel Required:	Indicate the type(s) (rank/rate/rating/civilian/contractor) and quantity of personnel required to monitor, collect, and process the data.
Training Required:	Identify special training requirements for personnel who will monitor, collect, and process the evaluation data.

### F.5.3.2 Results

#### *(Government)*

When describing the process employed to record the results of the evaluation, explain how data will be collected and analyzed to ensure the training objectives are met. Identify what type of information will be recorded (e.g., TD design deficiencies that limit or preclude effective training, difficulties in establishing optimum or required learning conditions, student progress toward achievement or learning and/or training objectives, student and instructor attitudes relating to the acceptance or rejection of the TD, student proficiency at the end of training as determined using course-based criteria tests).

Discuss outstanding issues in Paragraph F.1.3, Risks and Outstanding Issues.

### F.6 TRAINING/INSTRUCTIONAL AIDS

#### *(Government/Contractor)*

Training/instructional aids include training aid equipment (e.g., slide projectors) and instructional literature (e.g., instructor guides and other reference manuals not developed for the end item but provided to the training activity to facilitate training). Requirements for fault demonstration in operator and/or maintenance training courses are identified in Table F.6-1, Training/Instructional Aids, including Pre-Faulted Modules (PFMs) and Fault Insertion Devices (FIDs). When completing Table F.6-1, identify all instructional aids provided to the training activities (e.g., video monitors).

Training/instructional aids constitute one component of the training support package delivered to each training activity. The other components of the training support package are addressed in the related sections/annexes of the MAPP as follows:

<b>Training Support Package Item</b>	<b>MAPP Section/Annex</b>
TTE/TD Supply Support Items:	Supply Support Annex (Table C.5.2-1, Training Supply Support)
General/Special Purpose Tools and Test Equipment and Electronic Test Equipment:	Support Equipment Annex (Table D.2-1, Identification of Support Equipment)
Technical Manuals:	Technical Data Annex (Table E.2.1-2, Technical Manuals Development Summary)

<b>Table F.6-1 Training/Instructional Aids</b> (Complete one copy for each training site.)	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
UIC:	Provide UIC of the training activity.
CIN:	Provide CIN of the course supported by the given training/instructional aid. If the course is proposed, but not finalized, indicate by placing (P) after the CIN.
TTE/TD:	Provide identification number of the TTE/TD supported by the training/instructional aid. If the aid does not support a TTE/TD, enter "N/A" in the space provided.
RDD:	Provide Required Delivery Date (RDD) (date required to meet RFT date) (MM-DD-YY).
Item:	Identify the training/instructional aid to be provided.
Quantity:	Indicate the quantity of the item provided to the given training activity in support of the given course.

# MASTER ACQUISITION PROGRAM PLAN (MAPP) USER'S HANDBOOK

## ANNEX G. COMPUTER RESOURCES SUPPORT

This annex addresses computer resources that are integral to, or embedded in, an end item. Embedded computers are defined as digital computers or processors (e.g., microcomputer, microprocessor) that are an integral component, from a design, procurement, and operations point of view, of tactical end items. A commonly used embedded computer is the AN/UYK-44 which is used in various weapon systems (e.g., TAS MK 23).

Computer Resources Support (CRS) includes not only hardware, software, and firmware, but also related elements such as documentation, support services, supplies, and spare parts. CRS configuration items (hardware, software, and firmware) are identified in Part I, Table 6.2-1, Configurations and Physical Characteristics. The other components of CRS are addressed as a component of the end item in the following annexes of the MAPP:

Support Element	MAPP Annex
Manpower and Personnel	Annex B (Tables B.5.1-1, B.5.2-1)
Supply Support	Annex C (Tables C.3.2-1, C.4.3-1, C.5.1-1, C.5.2-1, C.5.3-1)
Support Equipment	Annex D (Table D.2-1)
Training and Training Support	Annex F (Tables F.2-1, F.3-1, F.4-1, F.5.1-1, F.6-1)
Facilities	Annex H (Table H.2-1)
Packaging, Handling, Storage, and Transportation	Annex I (Table I.2-1)
Safety	Annex L (Table L.2-1)

Because hardware is addressed in Part I, Paragraph 6.0, End Item Description, this annex covers the development and integration of the computer software and firmware required for the hardware to perform its intended function.

### G.1 STRATEGY (Government)

When describing the CRS concept, indicate the degree to which software and firmware will be developed, modified, and/or re-used. When discussing drivers of the CRS strategy, include constraints which shape the CRS program (e.g., the software must run efficiently on a 486 personal computer).

Discuss system architecture. Describe unique system features, use of commercial or Government off-the-shelf software, application of industry standards, and relationship of the system architecture to DoN and DoD standards. Describe plans to implement the architecture in the design process.

Describe plans to obtain data rights and licenses to make the software available for re-use by other Government programs. (Refer to Part I, Paragraph 8.0, Data Rights/Licensing/Warranty Provisions.) Specify plans to include the software on the Products Accepted List, which is a listing of Navy-developed or acquired computer resources that may be used to facilitate the transition to open systems.

Summarize how the system software will be integrated into the end item (internal interfaces). Also identify areas where future integration is likely. When describing how future requirements will be accommodated, include plans for Pre-Planned Product Improvement (P<sup>3</sup>I).

Note: External interfaces are addressed in Part I, Paragraph 2.6, Interfacing Systems and Interoperability.

Note: Navy policy requires maximum use of commercial computer resource products which meet end item requirements. When CRS development is required, open system architecture must be used.

Note: Ada is the programming language mandated for use in all new defense systems and major software modifications of existing systems regardless of size, cost, or functional application. Although Ada is preferred for new system development, Ada may be waived entirely (with Government approval) during software development and when using commercially available, off-the-shelf software that will not be modified.

Note: All waivers and exemptions are listed in Part I, Table 13.3-1, Exemptions.

Note: All certifications are listed in Part I, Table 13.4-1, Certifications.

### **G.1.1 Approach**

Note: Identify all specifications and standards used in the computer resources support program in Part I, Table 13.2-1, Specifications and Standards.

#### ***(Government)***

Explain how CRS requirements will be defined for the end item. Before contract award, either: 1) list specifications and standards to be invoked for CRS requirements; or 2) list the specific minimum requirements on which the contractor process for CRS will be based. These requirements will be incorporated into the Request For Proposal (RFP). If source data is to be supplied to contractors by the Government, list it in Part I, Table 17-1, Government Furnished Information.

For guidance on CRS requirements, refer to DoDI 5000.2, Part 6 and Sections 7-A, 7-C, and 9-A.

**(Contractor)**

After contract award, describe the approach to 1) define CRS requirements and 2) establish the CRS program. Include a description of the process to identify and validate CRS requirements. Ensure that specifications used in the development of embedded computers address operational and support software, data storage and display devices, interface standards, and programming languages.

Explain how other support elements are affected by CRS requirements.

For example, a new computer is introduced as part of the end item. If the Navy does not possess the personnel trained to operate and maintain it, special training programs will have to be developed and new Navy Enlisted Classifications (NECs) may have to be established. In this example, the training will be identified in Annex F, Training and Training Support, and the new NECs would be reflected in both Annex F and Annex B, Manpower/ Personnel.

Include an explanation of the use of simulation to define and implement CRS program requirements. Describe when, why, and how it will be used (refer to Part I, Table 2.5-1, Dynamic Simulation Summary).

Identify source data (reports/etc.) which will be used to define CRS requirements.

When describing management techniques which will ensure the effectiveness of the CRS program, consider use of the following:

- Programmer/software development library
- Rigorous configuration control
- Chief programmer/designer teams and modular construction
- Structured programming and top-down design
- Structured walk-throughs
- Validating design and programming steps back to top level requirements
- Independent review of requirements analyses and design process
- Test plans developed and utilized from design start
- Software simulator(s) to test and maintain software
- Incremental submission and testing of Computer Software Configuration Items (CSCIs)
- Management indicators and metrics/measurable units such as lines of code
- Established debugging and virus protection procedures
- Rigorous source code management procedures

**G.1.2 Roles and Responsibilities**

***(Government/Contractor)***

When identifying the roles and responsibilities of participants in the CRS planning and implementation efforts, provide descriptions at the organization level [e.g., the Software Support Activity (SSA) will perform life-cycle management of the end item software].

Ensure that each activity or contractor organization described here is listed in Part I, Table 14.1-1, Program Participants.

**G.1.3 Risks and Outstanding Issues**

*(Government/Contractor)*

For each CRS risk identified, summarize the plan to eliminate/reduce/manage each risk.

For example, the lead programmer quits the development project in anger. The software development effort is in jeopardy; the integrity of the program may have been compromised. The problem would probably require several courses of action, including checking the software for viruses, assessing the source code, validating associated documentation, etc.

When discussing outstanding issues, include CRS Independent Logistics Assessment (ILA) findings. Address the impact of each finding and explain how the recommended action affects the CRS program. (Refer to Part I, Table 10.4.2-1, Independent Logistics Assessment Summary.)

**G.2 PROCESSING REQUIREMENTS**

*(Government/Contractor)*

Complete one copy of Table G.2-1 to identify the processing requirements associated with each embedded computer used in the end item.

Table G.2-1 Processing Requirements <i>(Complete one copy for each processor.)</i>	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Configuration Item Number:	Provide unique identification number assigned to the processor as provided in Part I, Table 6.2-1, Configurations and Physical Characteristics.
Computer Processor:	Identify type of processor (e.g., Intel 80386, Motorola 68486).
Operating System:	Identify operating system (e.g., UNIX).
Memory Size Utilization:	Identify amount, in megabytes (MB), of Read Only Memory (ROM) required for the processor (e.g., 32 MB, 128 MB).
I/O Capability:	Identify Input/Output (I/O) interfaces required for the processor (e.g., RS-232).
Direct Memory Access:	Indicate amount, in kilobytes (KB), of Random Access Memory (RAM) (also known as Read-Write Memory) required (e.g., 256 KB).
Data Bits:	Identify data bits for communication (0 to 8).
Stop Bits:	Identify stop bits for communication (1 or 0).
Parity:	Enter Odd, Even, or None to indicate parity.
BAUD Rate:	Identify required data transfer rate (e.g., 2400 BAUD).
Processing Speed:	Identify required processing speed [e.g., 33 Megahertz (MHz), 50 MHz, 66 MHz].
Access Time:	Identify required average access time in milliseconds (ms) (e.g., 12 or 30 ms).

Table G.2-1 Processing Requirements (Complete one copy for each processor.)	
Data Element	Definition
Reserve Margin Analysis:	Identify the amount of memory reserved for future expansion (at least 50% is required). Express in percentage.

**G.3 COMMERCIAL SOFTWARE**  
(Government/Contractor)

Commercial CSCIs (software programs) are identified in Part I, Table 6.2-1, Configurations and Physical Characteristics. Use one subparagraph to describe each CSCI being procured. If the CSCI is modified for use, describe the degree of modification required. If extensive modification is required, provide the development plan in Paragraph G.4.1. Include in the discussion how the commercial software will be supported, and discuss its impact on other support elements. (e.g., Will software maintenance be transferred to a Government activity, or will the manufacturer fulfill the role of SSA?)

Note: Licensing agreements and warranties for commercial software are identified in Part I, Paragraph 8.0, Data Rights/Licensing/Warranty Provisions.

**G.4 DEVELOPMENTAL SOFTWARE**

**G.4.1 Scope**  
(Contractor)

Complete one copy of Section A of Table G.4.1-1 to identify the software development scope for each CSCI. When discussing software development procedures, include procedures for submitting software specifications to the contracting agency for review and acceptance. Describe the software engineering environment and tools to be used for software development and maintenance. Software development tools are to be listed in Table G.4.1-1, Section A.

Note: The function of each CSCI is defined in Part I, Table 6.2-1, Configurations and Physical Characteristics.

Table G.4.1-1 CSCI Development Summary (Complete one copy for each CSCI developed.)	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
<b>Section A. CSCI Development Scope</b>	
CSCI:	Identify the CSCI as provided in Part I, Table 6.2-1, Configurations and Physical Characteristics.
Commercial Item:	Place an "x" in the space provided if this CSCI is commercial software which is being modified for end item use.
Security Classification:	Identify security classification of the CSCI.

Table G.4.1-1 CSCI Development Summary (Complete one copy for each CSCI developed.)	
Data Element	Definition
Estimated Lines of Code:	Estimate how many lines of code will be needed to develop the CSCI.
RAM:	Estimate KB of RAM required to operate the CSCI.
ROM:	Estimate MB of ROM required to operate the CSCI. Include specific minimum baseline.
Programming Language(s):	Identify programming language (Ada or other language). If Ada is not used, provide justification for the exemption in Part I, Table 13.3-1, Exemptions.
Tools:	Identify simulations and emulations, software engineering environments, compilers, code auditors, analyzers, drivers, and other tools used in the development of the CSCI.

#### G.4.2 Control

##### *(Government)*

Explain procedures and provisions to verify that the contractor has the capability to support the software development effort. Include planned assessments and/or software capability evaluations.

##### *(Contractor)*

Describe plans for coordinating design and data management efforts to ensure software compatibility (e.g., where two or more contractors are participating in the development or production of the embedded computer system).

Discuss if the software will be developed incrementally. Include those critical activities/tasks that impose the greatest time restrictions on project completion. Include a discussion of constraints which drive development decisions.

Describe procedures for ensuring that all performance and design requirements have been identified and implemented. Discuss plans for prototyping and explain how prototyping will fit into the overall development effort.

Discuss how CSCI Software Development Files (SDFs) will be safeguarded; describe storage procedures and how access to software development documentation and source code will be controlled. Describe procedures for ensuring software analysis, virus protection, and debugging capabilities are developed and implemented as appropriate.

Discuss the use of in-process reviews and other processes to monitor progress and control quality during development. Provide the In-Process Review (IPR) schedule for each CSCI in Section B of Table G.4.1-1.

Table G.4.1-1 CSCI Development Summary (Complete one copy for each CSCI developed.)	
Data Element	Definition
<b>Section B. Software Control</b>	
IPRs:	Provide date(s) to indicate duration of each IPR (MM-DD-YY to MM-DD-YY).

**G.4.3 Validation/Verification**  
**(Contractor)**

In discussing the validation and verification efforts, identify assumptions and constraints that affect validation/verification planning. When discussing the use of Independent Validation and Verification (IV&V) (e.g., the use of a third party software monitor), describe how independence of the IV&V agents will be ensured and how results of IV&V evaluation are recorded and addressed. Specific IV&V points of contact are identified in Part I, Table 14.1-1, Program Participants.

Explain the role of simulation/emulation in validation and verification. Simulation modes of operation and scenarios are identified in Part I, Paragraph 2.5, Dynamic Simulation Requirements.

Complete Section C of Table G.4.1-1 to provide details on the validation and verification program for each CSCI.

<b>Table G.4.1-1 CSCI Development Summary</b> <i>(Complete one copy for each test conducted for this CSCI.)</i>	
Data Element	Definition
<b>Section C. CSCI Validation and Verification</b>	
Validation:	Place an "x" in the space provided if this is a validation of the CSCI (conducted internally by the CSCI developer).
Verification:	Place an "x" in the space provided if this is a verification of the CSCI (conducted by the Government).
IV&V:	Place an "x" in the space provided if this is an independent validation and verification.
IV&V Agent:	If this is IV&V, identify agent (organization and code/contractor company name) responsible for the IV&V of this CSCI.
Incremental Testing:	Place an "x" in the space provided if this CSCI will be tested incrementally. If so, complete one block of Section C for each test.
Test Date:	Provide date of each developmental test for this CSCI (MM-DD-YY).
Testing Method:	Identify testing method(s) used to validate this CSCI.
Results:	Provide the results of this test.
User Documentation Validated:	Place an "x" in the space provided if the CSCI user documentation is successfully validated/verified during this test.

**(Government)**

Discuss procedures that the Government will use to verify contractor conformance with prescribed software specifications.

**G.4.4 Problem/Change Data**  
**(Government/Contractor)**

Complete Section D of Table G.4.1-1 to document problem/recommended change reports on each CSCI received from any user and associated required actions. If an automated system is used to maintain this data, do not complete this section of the table. Instead, identify the system used and explain how to access it.

When describing how problem/failure data will be collected and utilized, explain the numbering system used to track problems/recommended changes and describe how priority codes will be assigned. Include the type(s) of reports produced and the dissemination of change data (i.e., to ensure an integrated support program, change data must be provided to all participating activities).

Table G.4.1-1 CSCI Development Summary	
Data Element	Definition
<b>Section D. Problem/Change Data</b> <i>(Complete one copy for each problem reported on this CSCI.)</i>	
Problem Number:	Provide the problem number assigned.
Submission Date:	Provide date when the problem/recommended change data was submitted for review to the cognizant organization (e.g., developer or SSA) (MM-DD-YY).
Priority Code:	Provide priority code assigned the problem/recommended change; use the following: <div style="margin-left: 40px;">                     1 - Top Priority                      2 - Normal Priority                      3 - Low Priority                 </div>
<b>Originator:</b> <i>(Provide the following data to identify the originator of the problem report.)</i>	
Name:	Provide originator's name (last name first).
Organization:	Provide the originator's organization (i.e., the Government organization and code or company name).
Telephone Number:	Provide originator's telephone number.
<i>(Provide the following to describe the problem and its resolution.)</i>	
Problem Description:	Describe the reported problem/recommended change.
Analyst Assigned:	Identify the analyst assigned to investigate the problem.
Date Assigned:	Provide the date the problem is assigned to the analyst (MM-DD-YY).
Date Completed:	Provide the date the problem is resolved (MM-DD-YY).
Recommended Solution(s):	Provide recommended solution(s) to resolve the problem/recommended change.
Impact(s):	Summarize impact(s) of implementing or not implementing the recommended problem/change data solution(s) (e.g., system cost, system delivery schedules, software to software interfaces, software to hardware interfaces, etc.).
Affected Logistics Support Elements:	Place an "x" in the appropriate space(s) to identify those logistics support elements affected by the problem/change data solution. The impact of approved changes should be reflected in the appropriate MAPP annexes.
Solution Implementation:	Place an "x" in the appropriate space(s) to indicate whether software documentation and/or a new software release is required to implement the solution. If a new software release is required, go to Section F of this table, Life-Cycle Support.

## G.5 SUPPORTING DOCUMENTATION (Contractor)

SDFs comprise the raw development documentation (e.g., source code data, test data, design factors) compiled during the development of the CSCI. Explain the procedures

for maintaining SDFs to record the development process. If SDFs are to be retained after conclusion of the development effort, explain associated storage/tracking procedures. Other technical documentation is developed to support the use of the CSCI (e.g., Function Reference Documents). In Section E of Table G.4.1-1, identify the software documentation, other than technical manuals, necessary to support each CSCI being developed. Such documentation for commercial software is to be listed in Table G.5-1. Associated technical manuals are identified in Table E.2.1-2, Technical Manual Development Summary.

Table G.4.1-1 CSCI Development Summary	
Data Element	Definition
<b>Section E. CSCI Supporting Documentation</b> ( <i>Identify each document supporting this CSCI.</i> )	
Document Name:	Provide name of the software document which supports the end item.
Identifying Number:	Provide document identification number.

Table G.5-1 Supporting Documentation For Commercial Software	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Document Name:	Provide the name of the software document which supports the end item.
Identifying Number:	Provide document identification number.
Supported CSCI(s):	Identify CSCIs supported by this document.

**G.6 TRANSITION**  
(Contractor)

When describing transition procedures, identify constraints and potential barriers to successful transition. Identify SSA support requirements during the transition process (e.g., requirements for physical access to the SSA, support of facility personnel). The SSA is identified in Part I, Table 14.1-1, Program Participants.

Describe terms of conditional transition. That is, if there are outstanding issues/items at the time of transition, describe contractor responsibilities until the SSA accepts full responsibility. Identify each deficiency and provide plan for resolution. Major outstanding issues should be described in paragraph G.1.3, Risks and Outstanding Issues.

Complete Table G.6-1 to identify all items transitioned from the developing activity to the SSA. Include SDFs if transitioned.

Table G.6-1 Materials Transitioned to Software Support Activity	
Data Element	Description
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Asset:	Provide noun name of asset being transitioned to the SSA.

Table G.6-1 Materials Transitioned to Software Support Activity	
Data Element	Description
Identification Number:	Provide identification number of the asset.
Quantity:	Provide the quantity of the asset to be shipped to the specified location.
Destination:	Identify destination by Unit Identification Code (UIC) where the assets are to be shipped.
Date Shipped:	Provide date shipped (MM-DD-YY).

## G.7 LIFE-CYCLE SUPPORT

### (Government)

After transition, describe life-cycle support procedures, including control of stored deliverable software and documentation. Include plans to maintain unmodified copies of each release with the documentation. Discuss procedures to prevent unauthorized modification of the stored software.

Complete Section F of Table G.4.1-1 to identify all new releases of the developed software. Summarize the factors that led to the decision to upgrade or revise the software (refer to Table G.4.1-1, Section D, Problem/Change Data). Identify implementation issues (e.g., concurrent minor hardware upgrade required to support enhanced software) and explain how each will be accommodated. Describe how all new releases will be reflected in the Configuration Status Accounting system (refer to Annex K, Configuration Management).

Table G.4.1-1 CSCI Development Summary (Complete one copy for each CSCI developed.)	
Data Element	Description
<b>Section F. Life-Cycle Support</b> (Complete one copy of this section for each new release of the CSCI.)	
Release Number:	Provide release number of the revision.
Materials Released:	Place an "x" in the applicable space(s) to indicate the media used to distribute the upgraded CSCI.
Location(s) UICs:	Provide location(s) by UIC of each site (include all training sites, ships, aircraft, and shore facilities) to which this version is distributed.
Distribution Date:	Provide date the software release was distributed to each site (MM-DD-YY).
Interface Impact:	Identify changes in interface requirements (e.g., enhanced processing or storage capability).
Documentation Provided:	Place an "x" in the space provided if revised documentation (e.g., user manual change pages, updated user manuals, or new user manuals) was provided as part of the upgrade release package.
Training Provided:	Place an "x" in the space provided if user training (e.g., on-site instruction) was provided as part of the upgrade release package.
Affected TM(s):	Provide number of Technical Manual(s) (TMs) affected by this change. (Refer to Table E.2.1-2, Technical Manual Development Summary.)

<b>Table G.4.1-1 CSCI Development Summary</b> <i>(Complete one copy for each CSCI developed.)</i>	
<b>Data Element</b>	<b>Description</b>
TMMA Notified:	Place an "x" in the space provided if the TMMA for each affected TM has been notified of the change.
Affected Courses:	Provide the Course Identification Number (CIN) of each course affected by the change. (Refer to Table F.2-1, Training Course Data.)
TA Notified:	Place an "x" in the space provided if the Training Agent (TA) has been notified of the change. The TA is identified in Part I, Table 14.1-1, Program Participants.

# MASTER ACQUISITION PROGRAM PLAN (MAPP) USER'S HANDBOOK

## ANNEX H. FACILITIES

Facilities planning must be initiated before Milestone I. If Military Construction (MILCON) funding will be required, budget estimates must be submitted years in advance. Facilities may be required to support end item operation or for training, maintenance, storage, or other support functions.

### H.1 STRATEGY (Government)

When describing Basic Facilities Requirements (BFR) for the end item, consider the following:

- End item mission (Refer to Part I, Paragraph 1.1, Mission Description.)
- Primary function of the facility
- Facility's relationship with operational components
- Mission-related personnel loading (Refer to Annex B, Manpower/Personnel.)

Equipment requirements should be discussed in general terms.

For example, will the facility have to accommodate a large training simulator? Or, will it serve as the only maintenance depot in support of this end item? Will berthing facilities have to be expanded to accommodate additional operating personnel?

Identify the drivers of facilities support for this acquisition (e.g., the requirement to have training provided on east coast or west coast, or the requirement to have maintenance capability on the Gulf Coast and in the northeastern United States). Include aspects of the end item or end item support that could impact facilities requirements.

Discuss the impact of commercial procurements [e.g., compressed schedule, non-Department of Defense (DoD) design] on facilities support planning and implementation.

#### H.1.1 Approach

Note: Identify all specifications and standards used in the facilities program in Part I, Table 13.2-1, Specifications and Standards.

##### (Government)

Before contract award, either: 1) list specifications and standards to be invoked; or 2) list the specific minimum parameters on which the contractor process will be based. If specifications/standards are tailored, define the tailored requirements in this paragraph. These requirements will be incorporated into the Request for Proposal (RFP). If source data is to be supplied to contractors by the Government, list it in Part I, Table 17-1, Government Furnished Information. Refer to DoDI 5000.2, Section 7-A.

*(Contractor)*

Identify source data to be used to determine facilities requirements; include specific reports or output products [e.g., Shore Facilities Planning System (SFPS), Naval Facilities Asset Data Base (NFADB), MILCON Requirements List (RL), or reports from support requirements analysis tasks (refer to Part I, Paragraph 10.2, Results of Support Requirements Analysis Tasks)].

Include an explanation of the use of simulation to define and implement facilities requirements. Describe when, why, and how it will be used (refer to Part I, Table 2.5-1, Dynamic Simulation Summary).

When addressing management techniques used to ensure effectiveness of the facilities program, explain how requirements that affect the program will be communicated to all parties involved in the facilities planning process.

**H.1.2 Roles and Responsibilities**

*(Government/Contractor)*

When identifying the roles and responsibilities of participants in the facilities support planning and implementation efforts, provide descriptions at the organization level (e.g., Activity XX will conduct the preliminary site survey). Ensure that each activity or contractor organization described here is listed in Table 14.1-1, Program Participants.

**H.1.3 Risks and Outstanding Issues**

*(Government/Contractor)*

Address risks that affect facilities support and identify plans to eliminate or reduce the impact of each risk.

For example, a common facilities risk is delay of construction due to bad weather. To mitigate the risk of delay, flexibility should be built into the construction schedule to accommodate the predicted local climate. A contingency plan to address schedule delay might include procurement of additional interim support.

Address Independent Logistics Assessment (ILA) findings that affect facilities (Refer to Part I, Table 10.4.2-1, Independent Logistics Assessment Summary). Address the impact of the findings and explain how the recommended action will affect facilities support.

**H.2 FACILITIES REQUIREMENTS**

*(Government/Contractor)*

To identify general facilities requirements, complete Section A of Table H.2-1. Complete this information even if it is known what facility will be used. Then, complete Section C of Table H.2-1 to identify critical facilities requirements. Be sure to identify only critical facilities requirements which are determined based on mission and end item description, utilization rate, etc.

For example, if the facility must have access to the open ocean, indicate this under "Physical Location." If the facility is to be an aircraft

maintenance depot, a critical requirement might be adequate space for aircraft to maneuver near the depot; indicate this under "Civil Requirements."

The requirements listed in Section C will be used as the basis for performing site surveys.

Figure H.2-1 is a flow chart illustrating the facilities planning process. Refer to Figure H.2-1 for assistance in completing Table H.2-1.

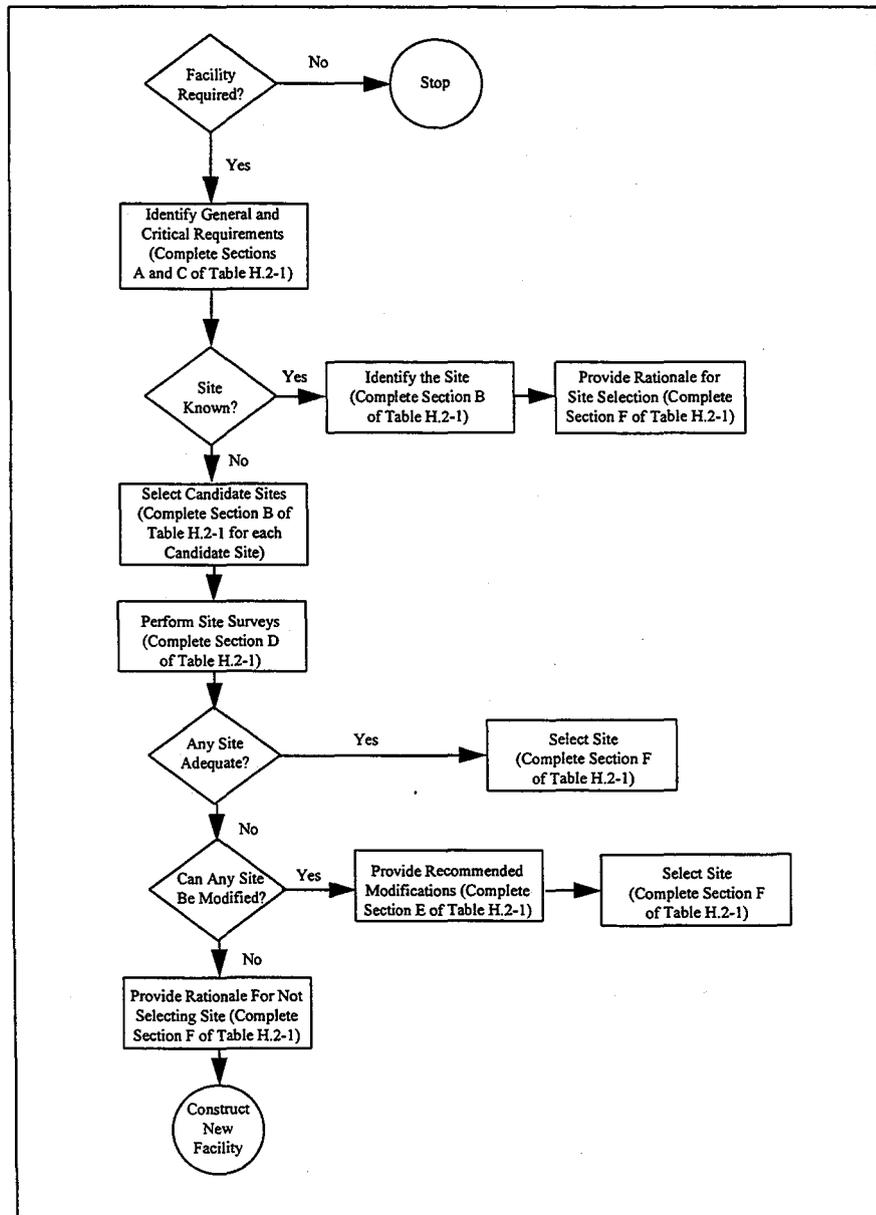


Figure H.2-1 Facilities Planning Process

Note: Table H.2-1 should be updated as appropriate (e.g., refining of requirements, additional site surveys conducted) until the facility selection, modification, or construction is complete.

<b>Table H.2-1 Facilities Requirements</b> (Complete one copy for each facility required.)	
Data Element	Definition
<b>Section A. General Requirements</b>	
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Facility Type:	Enter type of facility required (e.g., maintenance, training)
Classification Required:	Enter security classification (e.g., SECRET) required for the facility.
Required Occupancy Date:	Provide date of required occupancy (MM-DD-YY).
Facility Category Code:	<p>Facility Category Codes are used to identify types of facilities. The standard DoD Category Code contains three digits, with Department of the Navy (DoN) Category Codes containing two additional digits. Enter the five-digit Category Code for the type of facility required.</p> <p>Note: Category Codes must be identified as early as possible in the facilities planning process. For guidance on how to assign Category Codes, consult NAVFAC P-80 and NAVFAC P-72.</p> <p>Some facilities may require more than one Category Code. If this is the case, enter all codes on Table H.2-1.</p> <p>For example, an academic instruction building (Category Code 171-10) may contain an "Operational Trainer Space" (Category Code 171-35) or an "Administrative Space" (Category Code 610-10).</p>
CIN(s):	If planning for a training facility, enter the Course Identification Number(s) [CIN(s)] of the courses requiring the facility.
<b>Section C. Critical Requirements</b>	
<b>Physical Location:</b>	
Special Location Requirements:	List special facilities location requirements (e.g., collation with other facilities, proximity to water).
ESQD Arcs:	Identify Explosive Safety Quantity Distance (ESQD) arcs or other site restriction(s) (e.g., distance away from perimeter of facility for exercises or other events involving explosives).
Ground Operating Danger Area (Aircraft Only):	Indicate ground operating danger area (square feet).
<b>Space Requirements:</b>	
Minimum:	Indicate minimum space required (square feet).
Growth:	Indicate space required (square feet) to accommodate projected growth or improvements.
Equipment Room/Storage Area:	Indicate in cubic feet the additional space required for ancillary equipment (including training and technical equipment and training aids) and/or storage.

<b>Table H.2-1 Facilities Requirements</b> (Complete one copy for each facility required.)	
<b>Data Element</b>	<b>Definition</b>
Floor Loading:	Indicate in pounds per square foot.
False Flooring:	Indicate false flooring required in terms of type of material and number of square feet needed. Include height required above base flooring (inches).
False Overhead:	Indicate false overhead required in terms of type of material and square feet needed. Include drop below ceiling required (inches).
Cable Runs/Wave Guides:	Describe in terms of length, circumference, and type of materials required for conduit needed for cable runs and wave guides.
Windows and/or Special Access:	Describe types, number, material construction, and dimensions of windows and/or special access.
Overhead Hoist:	Indicate (in inches) height required. Include sufficient room for hoist to maneuver.
Maintenance Clearance:	Describe clearance (in inches) required to perform maintenance on equipment in the facility (e.g., back clearance of six inches).
Location/Identification of Utility Services:	Describe location and identification of utility services required inside the facility.
Security Limitation:	Describe requirements for special security provisions [e.g., Sensitive Compartmented Information Facility (SCIF)] in terms of classification level, materials needed, and cubic feet required. Include SCIF information required to safeguard classified data in computer memory.
Antennas:	Indicate clearance requirements in cubic feet.
Takeoff and Landing Distances (Aircraft Only):	Indicate maximum linear feet required (consider various operating conditions).
Landing Ground Roll (Aircraft Only):	Indicate maximum linear feet required (consider various operating conditions).
Critical Field Length (Aircraft Only):	Indicate minimum linear feet required (consider various operating conditions).
<b>Equipment Accommodation Requirements:</b>	
Equipment Interface:	Identify interface of individual units of equipment.
Operator Clearance:	Describe requirements for equipment operator clearance (e.g., head room, sufficient area to operate machinery). State in inches.
Cooling Equipment:	Describe equipment required to cool devices such as computers, etc. Consider insulation factors and heat loads.
Special Alignment:	Describe special alignment requirements (e.g., collocation, assembly) for equipment.
<b>Electrical and Mechanical Requirements:</b>	
Note: For electrical requirements, summarize or estimate the total connected load or other gross quantities of electrical power required.	
Electrical Requirements:	Describe broad requirements in terms of kilowatts, volts, phase, current, frequency, and Electromagnetic Compatibility (EMC). Refer to Paragraph O.1.1, Approach, to confirm EMC requirements for the end item.
Voltage:	Indicate in volts.
Current:	Indicate in amps.

<b>Table H.2-1 Facilities Requirements</b> (Complete one copy for each facility required.)					
<b>Data Element</b>	<b>Definition</b>				
Illumination Intensities:	Indicate in foot candle power.				
Uninterruptible Power:	Indicate minimum requirements. Include duration (hours) and other requirements (kilowatts, volts, phase, current, and frequency).				
Back-up Power:	Indicate minimum back-up power required. Include duration (hours) and amount (volts and amps).				
Emergency Shutdown:	Identify power overload limit at which emergency shutdown will occur.				
Fire Protection:	Indicate type, capacity, and size as applicable.				
Grounding:	Indicate in terms of Alternating Current (AC), Direct Current (DC), Digital, Radio Frequency (RF).				
Generators, Transformers, Converters, Surge Protectors:	Describe major electrical equipment requirements (type and size) and support requirements (kilowatts, volts, phase, current, frequency, and EMC). Refer to Paragraph O.1.1, Approach, to determine EMC requirements for the end item.				
Power Factor:	Indicate percentage and whether leading or lagging.				
Diversity Factor:	Indicate diversity requirements (e.g., between antennas operating on different frequencies).				
Interface Hardware Connectors:	Describe locations and types of interface hardware connectors needed.				
<b>Communications Requirements:</b>					
Telephone/Intercom:	Indicate requirements for local and internal lines, long distance, Wide Area Telecommunications System (WATS), Defense Services Network (DSN), facsimile machines, etc., including secure line requirements.				
Computer:	Indicate requirements for networks, mainframes, modems, etc., including secure line requirements.				
<b>Civil Requirements:</b>					
Special Access Roads:	Indicate number, length, and capacity in tons.				
Overhead Clearance for Vehicles:	Indicate in feet and/or inches for standard and non-standard vehicles. Specify unit of measure.				
Airfield Pavements (Aircraft Only):	Indicate number, length, and capacity in pounds per square foot.				
Parking Apron Requirements (Aircraft Only):	Indicate in square feet.				
Axle or Wheel Loads and Tolerance:	Indicate in tons (+/-).				
Turn Radius (Aircraft Only):	Indicate in square feet.				
Jack Loads and Transfer Requirements:	Indicate load in tons. Specify special transfer requirements.				
<b>Fluids/Gases Requirements:</b>					
Liquid: _____	Specify each liquid. Include information below for each liquid specified:  <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">a. Storage capacity</td> <td style="width: 50%;">a. Indicate in gallons (gal).</td> </tr> <tr> <td>b. Volume used/month</td> <td>b. Indicate in gal. per month.</td> </tr> </table>	a. Storage capacity	a. Indicate in gallons (gal).	b. Volume used/month	b. Indicate in gal. per month.
a. Storage capacity	a. Indicate in gallons (gal).				
b. Volume used/month	b. Indicate in gal. per month.				

<b>Table H.2-1 Facilities Requirements</b> <i>(Complete one copy for each facility required.)</i>		
Data Element	Definition	
	c. Flow rate d. Pressure and tolerance e. Cleanliness f. Temperature and tolerance	c. Indicate in gal. per minute (gpm). d. Indicate in pounds per square inch gage (psig) (+/-). e. Include specifications for cleanliness. f. Indicate in degrees F (F°) (+/-).
Steam:	a. Storage capacity b. Flow rate c. Pressure and tolerance d. Temperature and tolerance	a. Indicate in gal. b. Indicate in pounds/ hour. c. Indicate in pounds per square inch gage (psig) (+/-). d. Indicate in F° (+/-).
Compressed Air/Gas:	a. Storage capacity b. Flow rate c. Pressure and tolerance d. Cleanliness	a. Indicate in gal. b. Indicate in standard cubic feet per minute (SCFM). c. Indicate in pounds per square inch gage (psig) (+/-). c. Include specifications for cleanliness.
<b>Air Conditioning and Heating Requirements:</b>  Note: For air conditioning and heating, summarize or estimate total connected gross load or other gross quantity of utilities required.		
Air Flow Rate:	Indicate in cubic feet per minute (cfm).	
Pressure and Tolerance:	Indicate in psig (+/-).	
Room Heating/Cooling:	a. Temperature and tolerance b. Humidity and tolerance c. Ventilation	a. Indicate in F° (+/-). b. Indicate percentage range. c. Include flow/air exchange rate and ventilation system configuration requirements.
Equipment Heating/Cooling:	a. Temperature and tolerance b. Humidity and tolerance c. Ventilation	a. Indicate in F° (+/-). b. Indicate percentage range. c. Include flow/air exchange rate and ventilation system configuration requirements.
<b>Sewage and Water Requirements:</b>  Note: For sewage and water, summarize or estimate the total connected load or other gross quantities of utilities required. Include pollution abatement requirements.		
Waste Disposal:	a. Volume b. Capacity	a. Indicate in cubic feet. b. Indicate in gal./mo. or gal./day.
Water:	a. Storage capacity b. Volume used/month c. Flow rate d. Pressure and tolerance	a. Indicate in cubic feet. b. Indicate in gal./mo. c. Indicate in gal./min. d. Indicate in psig.

<b>Table H.2-1 Facilities Requirements</b> (Complete one copy for each facility required.)	
Data Element	Definition
	e. Cleanliness f. Temperature and tolerance
	e. Include specifications for cleanliness. f. Indicate in F° (+/-).
<b>Government Support Services:</b>	
Photographic:	List photographic services required.
Reproduction:	List reproduction services required. Identify any security clearances required for equipment and operators.
Security:	List security services (access control, escorts, etc.) required. Indicate security clearances required. Refer to Part I, Paragraph 3.0, Security.
Transportation:	Indicate transportation requirements (e.g., shuttles).
Messing and Berthing:	Indicate personnel support requirements (e.g., barges, barracks, bachelor officers' quarters).
Administrative Support:	Indicate administrative support requirements (e.g., desks, clerical support). Indicate personnel security clearances required. Refer to Part I, Paragraph 3.0, Security.
Ambulance/Medical:	Indicate level of support (e.g., hospital, clinic) required.
Fire and Crash Rescue:	Indicate level of support required (e.g., automotive, airlift) required for fire and crash rescue services.
Technical Library:	Indicate requirements for technical library facilities.
Computer Support:	Indicate requirements for computer support (e.g., to track student records).
<b>Miscellaneous Site Requirements:</b>	
Calibration:	Describe requirements to provide calibration at this site.
Weapons Assembly/Storage:	Describe requirements for weapons assembly or storage. Refer to Table I.2-1, Packaging, Handling, Storage, and Transportation Candidates, Sections C and D.
Towing Data (Aircraft Only):	List towing requirements (e.g., capacity of towing equipment).
Acoustic Level:	Indicate sound-proofing requirements.
Protection Requirements:	Indicate whether special requirements are associated with each of the categories listed: <ul style="list-style-type: none"> <li>a. Vibration/shock</li> <li>b. Corrosion</li> <li>c. Radio Frequency (RF) (Refer to Annex O, Electromagnetic Compatibility.)</li> <li>d. EMC (Refer to Annex O, Electromagnetic Compatibility)</li> <li>e. Radiation</li> <li>f. X-ray</li> <li>g. Hazards of Electromagnetic Radiation to Ordnance (HERO) (Refer to Annex O, Electromagnetic Compatibility).</li> <li>h. Lightning</li> <li>i. Occupational hazards</li> </ul>

### H.2.1 Candidate Sites (Contractor)

After identifying critical facilities requirements, complete Section B of Table H.2-1 to identify candidate sites that may meet the requirements. Several sites might be proposed to accommodate one facilities requirement.

For example, three Navy schools could accommodate a training course. Each of these schools might be surveyed to determine which could most effectively meet the facility requirement. Factors that may influence the decision include location, availability of space, infrastructure, etc.

<b>Table H.2-1 Facilities Requirements</b> <b>Section B. Candidate Site Data</b> (Complete one copy for each candidate site.)	
<b>Data Element</b>	<b>Definition</b>
Facility Location:	Enter the location (e.g., Naval Air Station, Norfolk) of the facility being considered.
UIC:	Enter the six-character Unit Identification Code (UIC) of the candidate site.
Site Survey(s):	Provide date(s) site survey(s) conducted (MM-DD-YY).
Major Claimant:	Enter the major claimant for the candidate site.
SNDL Address:	Enter the Standard Navy Distribution List (SNDL) address of the facility.
Building Number:	Enter the building number of the candidate site.
Room Number:	Enter the room number of the candidate site, if applicable.
Estimated Readiness Date:	Provide date the facility is estimated to be ready for occupancy (MM-DD-YY).
Facility Security Classification:	Enter the security classification (e.g., SECRET) of the facility being considered.

### H.2.2 Site Surveys (Contractor)

During the survey of each proposed site, report results by returning to Table H.2-1 and completing Section D. Update Section D as additional information becomes available (through interim discussions with site representatives, additional site surveys, etc.).

### H.2.3 Site Recommendations (Contractor)

After evaluating site survey results, use Section E of Table H.2-1 to provide recommendations for modification or alteration of existing facilities to accommodate the end item.

For example, an existing facility may be suitable if a room can be enlarged to accommodate heavy equipment.

**H.2.4 Site Selection Decision**  
**(Government)**

Complete Section F of Table H.2-1 to indicate if each candidate site was, or was not, selected to support the end item.

Note: Ensure these requirements are reflected in Table 19.3-1, Logistics Funding Summary.

<b>Table H.2-1 Facilities Requirements</b> <b>Section F. Selection Decision</b> <i>(Complete one copy for each candidate site.)</i>	
<b>Data Element</b>	<b>Definition</b>
Site Not Selected:	Place an "x" in the space provided if this facility was <u>not</u> selected for support of the end item.
Rationale:	Briefly explain why this site was not selected (e.g., major modifications required that are cost prohibitive).
Site Selected:	Place an "x" in the space provided if this facility was <u>selected</u> for support of the end item.
Rationale:	Provide a brief reason for selecting this facility (e.g., with minor modification and minimum cost impact, this facility best suits the needs of the end item).
Drawing/Specification Number:	Reference the standard drawing/specification number(s) that depict facility requirements.
Project Number:	The project number (e.g., P-001) is used to describe a specific project that is planned. Project numbers should reflect the type of funding (i.e., P-MILCON, R-Repair, C-Construction by Special Project). The project number identifies a project throughout its life, and is retired when a project is completed or deleted from the program. Each activity, with a separate UIC, may use any project number from 001 to 999, but the number may only be used once for the UIC. Related but separate facilities should be considered distinct projects, each with its own project number.
TSA Installation Project Number:	If planning for a training facility enter the Training Support Agency (TSA) Installation Project Number.
Engineering Site Survey(s):	Provide date(s) engineering site survey(s) conducted (MM-DD-YY).
On-site Verification Visit(s):	Provide date(s) on-site verification visit(s) conducted (MM-DD-YY).
Walk-through Date:	Provide date of final walk-through (MM-DD-YY).
Acceptance Date:	Provide date of facility acceptance.
Accepted By:	Enter the name of the major claimant representative or other individual verifying acceptance of the facility. Also list this individual in Part I, Table 14.1-1, Program Participants.

# MASTER ACQUISITION PROGRAM PLAN (MAPP) USER'S HANDBOOK

## ANNEX I. PACKAGING, HANDLING, STORAGE, AND TRANSPORTATION

Packaging, Handling, Storage, and Transportation (PHST) planning depends on the nature of the end item and will vary from program to program. At one end of the spectrum are field activities responsible for the design of special purpose containers to transport and store sensitive cargo. These organizations require extremely detailed information, not only on the PHST candidate itself, but also on all the factors that determine the specifications for the packaging (e.g., environmental sensitivity, projected methods of transport/storage/stowage, certification requirements). At the other end of the spectrum are programs with minimal PHST requirements, such as commercial items delivered with commercial packaging; such programs will only require certification that the commercial packaging meets military requirements.

PHST requirements can significantly impact not only end item design, but also the other elements of program planning. PHST candidates which include hazardous material or ordnance must be examined from the perspectives of maintenance, training, safety, support equipment, etc. Ensure that planning for such items is consistent with and reflected in all related MAPP annexes.

### I.1 STRATEGY (Government)

Identify top-level PHST requirements and the major factors and constraints which drive them.

For example, if the end item is a sensitive electronic device, special planning in all four disciplines (packaging, handling, storage, and transportation) may be required. A constraint may be that the device will be transported internationally by surface transportation. This transportation constraint would drive special packaging requirements which will be defined in Paragraph I.2.1.

Explain the impact of commercial item acquisition on PHST and the impact of handling, storage, and transportation requirements on commercial item selection.

For example, a commercial item may generate the requirement for assessment/testing of the commercial container to verify its suitability for military application. On the other hand, the selection of a particular commercial item may in part be based on its ability to meet an end item storage requirement (e.g., the ability to withstand extended storage in areas of high humidity).

### **I.1.1 Approach**

Note: Identify all specifications and standards used in the PHST program in Part I, Table 13.2-1, Specifications and Standards.

#### ***(Government)***

Explain how PHST requirements will be defined for the end item. Before contract award, either: 1) list specifications and standards to be invoked, or 2) list the specific minimum requirements on which the contractor process will be based. Include regulations which govern the packaging, handling, storage, and transportation of this end item (e.g., international regulations, federal laws). If specifications/standards are tailored, define the tailored requirements in this paragraph. These requirements will be incorporated into the Request for Proposals (RFP). If source data is to be supplied to contractors by the Government, list it in Part I, Table 17-1, Government Furnished Information. Refer to DoDI 5000.2, Sections 6-E and 7-A.

#### ***(Contractor)***

After contract award, describe the approved process for defining PHST requirements. Explain the following:

- How analyses will be used to determine all PHST-related requirements. Identify source data used to support this analysis (e.g., Packaging Requirements Data, Packaging Developmental Data, Transportability Report; refer to Part I, Paragraph 10.2, Results of Support Requirements Analysis Tasks).
- Procedures to ensure compliance with applicable regulations [(e.g., compliance with United Nations standards and 49 Code of Federal Regulations (CFR) Parts 100 - 178 for hazardous material)]. Also explain how subcontractor compliance will be monitored.
- The process to ensure that PHST procedures (e.g., handling and storage of explosives) are in accordance with governing policy documents or oversight/approval authorities [e.g., explosives handling and storage methods have obtained Weapon System Explosives Safety Review Board (WSESRB) approval].
- How PHST data will be integrated into other facets of the acquisition program, including hardware design and support.
- The process used to validate PHST solutions.

### **I.1.2 Roles and Responsibilities**

Note: The two major organizations with which a program office should interface on PHST issues are the Naval Supply Systems Command (NAVSUP) and the PHST Excellence Center at Naval

Weapons Station (NWS) Earle. NAVSUP manages a variety of handling and packaging items through the Ships Parts Control Center (SPCC)/Aviation Supply Office (ASO). NWS Earle performs a wide variety of PHST functions, including: packaging design; test and in-service engineering; Fleet interface including stowage, strike-up, and Underway Replenishment (UNREP); and explosives safety support.

***(Government/Contractor)***

When identifying the roles and responsibilities of participants in the PHST support planning and implementation efforts, provide descriptions at the organization level. Ensure that each activity or contractor organization described here is listed in Part I, Table 14.1-1, Program Participants.

**I.1.3 Risks and Outstanding Issues**

***(Government/Contractor)***

Identify risks which may hinder the success of the PHST program. For each risk identified, summarize the plan to eliminate or reduce the risk.

For example, an aircraft module is to be transported by commercial truck, and the module exceeds Department of Transportation maximum size requirements for travel on interstate highways. The risk is that delivery will be delayed. The plan to reduce the risk could include obtaining a waiver from the Department of Transportation to transport the module on secondary highways during restricted hours.

In the discussion of outstanding issues, describe known or anticipated PHST problems [e.g., Transportability Problem Items (TPIs), safety/environmental considerations], and provide proposed plans for resolution. Include PHST Independent Logistics Assessment (ILA) findings. Address the impact of each finding and explain how the recommended action affects the PHST program. (Refer to Part I, Table 10.4.2-1, Independent Logistics Assessment Summary).

**I.2 PACKAGING, HANDLING, STORAGE, AND TRANSPORTATION REQUIREMENTS**

Note: PHST candidates are identified in Part I, Table 6.2-1, Configurations and Physical Characteristics; Table D.2-1, Identification of Support Equipment; and Table F.5.1-1, Training Device Summary.

***(Contractor)***

When completing Table I.2-1, be consistent in units of measurement; use either metric or English units. The table should initially be developed as soon as a potential PHST candidate is identified, and updated throughout the acquisition as requirements and configurations evolve. Table I.2-1 is to be tailored for each PHST candidate.

For example, PHST candidates with existing packaging will require completion of only a few data elements. A new development PHST candidate which has special requirements (e.g., explosives) may require the completion of most data elements to ensure that all factors are considered.

The table is not to be completed for ship acquisition programs where the responsibility for PHST is transferred to the shipbuilder. However, ship programs are to use this paragraph to identify issues which could impact the design and/or implementation of the PHST program (e.g., limits on deck strength, overhead heights/clearances, shipboard flow routes, and elevator capacities and access).

<b>Table I.2-1 PHST Candidate Profile</b> <b>Section A. Candidate Summary</b> <i>(Complete one copy for each PHST candidate.)</i>	
<b>Data Element</b>	<b>Definition</b>
<b>Date:</b>	Provide date of initial data entry or modification (MM-DD-YY).
<b>Configuration Item Number:</b>	If the PHST candidate is the end item or a component of the end item, provide the Configuration Item Number as provided in Part I, Table 6.2-1, Configurations and Physical Characteristics.
<b>NSN:</b>	If the PHST candidate is support equipment, provide the National Stock Number (NSN) as provided in Table D.2-1, Identification of Support Equipment.
<b>TD Number:</b>	If the PHST candidate is a Training Device (TD), provide the identification number of the TD as provided in Table F.5.1-1, Training Device Summary.
<b>Manufacturers Part Number:</b>	Provide the Manufacturers Part Number of the PHST candidate.
<b>CAGE:</b>	Provide the Commercial and Government Entity (CAGE) code for the PHST candidate.
<b>Interface Requirements:</b>	Describe interface requirements which have an impact on the design of the PHST support for this candidate item.
<b>Security Required:</b>	Place an "x" in the space provided if the item requires special security procedures during packaging, handling, storing, or transportation. Specific requirements are to be addressed in Paragraphs I.2.1, I.2.2, I.2.3, and/or I.2.4 as appropriate. Refer to Part I, Paragraph 3.0, Security.

**I.2.1 Packaging**  
*(Government/Contractor)*

Describe the use of advanced techniques to address packaging issues (e.g., use of new materials, bar coding). Describe security requirements associated with packaging. Document packaging requirements for each packaging candidate item in Section B of Table I.2-1.

**Table I.2-1 PHST Candidate Profile**  
**Section B. Packaging Requirements**  
*(Complete one copy for each PHST candidate.)*

<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Packaging Requirements:	Place an "x" under "Yes" if the item requires packaging. If there are no packaging requirements, go to Section C of this table.
Package Used for Grounding:	Place an "x" under "Yes" if the packaging must ground the item.
Package Provides Special Environmental Protection:	Place an "x" under "Yes" if the packaging is required to shield the item from damage due to environmental sensitivity. If yes, describe requirements.
Package Requires Special Testing:	Place an "x" under "Yes" if the item requires special testing such as Vertical Replenishment (VERTREP) certification or shock testing. If yes, describe requirements.
Disposable Package Acceptable:	Place an "x" under "Yes" if disposable packaging is acceptable.
Package Accommodates Item Documentation:	Place an "x" under "Yes" if the item is shipped in the same container as its documentation (e.g., record book, technical manual).
Special Packaging Procedures Required:	Place an "x" under "Yes" if special procedures (e.g., top-loading only) are associated with packaging. If yes, describe requirements.
Inventory Tracking Required for the Package:	Place an "x" under "Yes" if the item will be tracked by means of an inventory tracking system. Identify the system [e.g., Conventional Ammunition Integrated Management System (CAIMS)].
Unique Camouflage or Color Requirements:	Place an "x" under "Yes" if the packaging has camouflage/color requirements. Identify requirement in space provided.
Package Contains Multiple Items:	Place an "x" under "Yes" if the package holds more than one unit. If yes, indicate number in space provided.
Package Used For Less Than Full Shipment:	Place an "x" under "Yes" if the package is used for less than full shipments.
New Packaging Must Be Designed/ Developed	Place an "x" under "Yes" if new packaging must be designed and developed for the item. If so, complete the following as soon as the need is identified.
Packaging Design Agent:	Identify the organization and code of the activity with cognizance over the design of the package.
Packaging In-Service Engineering Agent:	Identify the organization and code of the In-Service Engineering Agent (ISEA) responsible for life-cycle engineering of the packaging.
Packaging Inventory Manager:	Identify the organization and code of the cognizant packaging inventory manager.
Packaging Procurement Agent:	Identify the organization and code of the activity responsible for procuring the packaging.

<b>Table I.2-1 PHST Candidate Profile</b> <b>Section B. Packaging Requirements</b> <i>(Complete one copy for each PHST candidate.)</i>	
Data Element	Definition
Prototype Packaging Required:	Place an "x" under "Yes" if prototype packaging is required. Provide required delivery date for prototype packaging (MM-DD-YY).
Production Packaging Delivery Date:	Provide required delivery date for production packaging (MM-DD-YY).
Preservation Requirements:	Place an "x" under "Yes" if there are preservation procedures associated with the package (e.g., maintenance procedures which must be performed on the package to preserve it). Identify the preservation requirements.
Packaging Maintenance Concept:	Provide the maintenance concept for the package (e.g., reusable containers may require maintenance before they are returned to the stocking activity). Ensure that the maintenance concept for the package/container does not conflict with the end item maintenance concept.

### **I.2.1.1 Design**

*(Government/Contractor)*

If packaging must be designed in support of the end item, describe the packaging design effort. Describe the methodology used to identify and resolve packaging constraints or problems. Identify alternative packaging solutions considered and summarize results of trade-offs (e.g., commercial versus military standard packaging, long life reusable containers versus non-reusable containers, specialized versus general purpose containers).

Identify packaging design issues which affect other PHST elements (e.g., the need for oversized containers, the need for the design to support vertical replenishment). Discuss the definition of maintenance requirements for packages/containers and the development of the maintenance concept. Explain the process to ensure the maintenance concepts of the package/container and end item are compatible.

### **I.2.1.2 Packaging Test and Approval**

*(Government/Contractor)*

Describe the methods to be used to test and approve new packaging and packaging procedures.

### **I.2.2 Handling**

*(Government/Contractor)*

Identify trade-off factors (e.g., availability, quantities to be handled, type of materials handled, multiple/single application equipment). Describe alternative handling solutions considered and summarize results of trade-offs (e.g., power assist handling, portable versus platform-integrated equipment). Describe the use

of advanced technology to address handling issues (e.g., special-purpose robotics).

When identifying handling requirements for platform (i.e., ship or aircraft) programs, discuss handling constraints which will affect the PHST decisions of installed systems. Discuss the methodology for ensuring that platform handling requirements are developed and documented.

If handling equipment is required and has been identified, it is listed in Table D.2-1, Identification of Support Equipment. If there are outstanding handling requirements, these are documented in Section C of Table I.2-1. Once a solution has been developed, the handling equipment is to be added to Table D.2-1, Identification of Support Equipment.

<b>Table I.2-1 PHST Candidate Profile</b> <b>Section C. Handling Requirements</b> <i>(Complete one copy for each PHST candidate.)</i>	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Handling Solution Must Be Developed:	Place an "x" under "Yes" if a handling solution must be designed/developed for this PHST candidate item.  If there are no requirements to design/develop handling solutions, go to Section D of this table.
Platform Requirement:	Place an "x" under "Yes" if the handling equipment must be able to be used on board ship or aircraft.
Handling Constraints:	Place an "x" under "Yes" if there are unique handling constraints (e.g., odd size requirements). In the space provided, specify unique features of the PHST candidate that influence handling equipment design decisions. Consider the item when packaged and unpackaged.
Environmental Conditions:	Briefly describe the environmental conditions under which the handling equipment will be operated and stored/stowed.
Equipment Inventory Manager:	Identify the organization and code of the handling equipment inventory manager.
Equipment Procurement Agent:	Identify the organization and code of the activity responsible for procuring the handling equipment.
Prototype Equipment Required:	Place an "x" under "Yes" if prototype handling equipment is required. If so, provide required delivery date for prototype equipment (MM-DD-YY).
Production Equipment Delivery Date:	Provide required delivery date for production handling equipment (MM-DD-YY).

**I.2.3 Storage/Stowage**  
**(Government/Contractor)**

Identify trade-off factors (e.g., the cost of space, shelf-life of the item, special segregation requirements, classified materials security, temperature or humidity control, requirements for observation/inspection/maintenance of stored items, and stacking height requirements or limitations). Describe alternative storage/stowage solutions considered and summarize results of trade-offs. Describe the use of advanced technology to address storage/stowage issues (e.g., automated inventory systems).

Ensure storage facility requirements are reflected in Table H.2-1, Facilities Requirements.

Discuss ship stowage requirements which could affect the PHST program, including stowage density and deck strength requirements, tie-down provisions, deck mount requirements, and obstructions and overhead heights/clearances within storerooms and magazines.

Document storage and stowage requirements in Section D of Table I.2-1.

<b>Table I.2-1 PHST Candidate Profile</b> <b>Section D. Storage/Stowage Requirements</b> <i>(Complete one copy for each PHST candidate.)</i>	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Storage and Stowage Requirements:	Place an "x" under "Yes" to indicate that storage/stowage requirements exist. If no storage/stowage requirements exist, go to Section E of this table.
Item Stored/Stowed in Package:	Place an "x" under "Yes" if the PHST candidate is stored/stowed within its container/packaging.  Note: If the item is stored both in <u>and</u> out of its packaging, check both this box and the next.
Item Stored/Stowed out of Package:	Place an "x" under "Yes" if the PHST candidate is stored/stowed outside its container/packaging.
Specific Density Restrictions:	Place an "x" under "Yes" if restrictions on storage/stowage density exist (e.g., in the area of munitions, there may be restrictions on the number of units which can be stored per specified area). Explain restrictions in the space provided.
Item "Deep Stored":	Place an "x" under "Yes" if the PHST candidate is stored longer than 18 months without maintenance or inspection.
Special Storage Facility Requirements:	Place an "x" under "Yes" if the storage facility requires special features to accommodate the PHST candidate and/or its packaging. Summarize requirements in the space provided. Requirements are to be reflected in Table H.2-1, Facilities Requirements.
Stacking Limits:	Place an "x" under "Yes" if specific stacking limitations exist (e.g., maximum stacking height of 3 loaded containers). Explain limits.

**I.2.4 Transportation**  
**(Government/Contractor)**

Describe how the end item will be transported and identify any constraints which would affect transportation decisions. Describe alternative transportation solutions considered and summarize results of trade-offs, including the use of advanced technology to address transportation issues (e.g., transport via new vertical replenishment system). Describe the methods used to ensure transportation procedures are validated and approved before implementation.

Identify those items for which it may be necessary to secure waivers or deviations from specific customs procedures, and provide justification for the waiver/ deviation (e.g., special assignment airlift requirements). Identify waivers/exemptions in Part I, Table 13.3-1, Exemptions.

Discuss Military Standard Transportation and Movement Procedures (MILSTAMP) and describe how documentation and communications will be provided for in-transit control of shipments.

Complete Section E of Table I.2-1 to list transportation documentation.

<b>Table I.2-1 PHST Candidate Profile</b> <b>Section E. Transportation Documentation</b> <i>(Complete one copy for each PHST candidate.)</i>	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Shipping/Transportation Deliverables Required:	Place an "x" under "Yes" to indicate whether supporting documentation will be developed.
Title:	Provide title of document. Examples include: <ul style="list-style-type: none"> <li>• Truck Load Plan</li> <li>• Ship Load Plan</li> <li>• Rail Car Load Plan</li> <li>• Air Load Plan</li> <li>• Certificate of Equivalency</li> <li>• Competent Approval Authority</li> <li>• Department of Transportation Exemption</li> <li>• Containerization Plan</li> </ul>
Developing Agency:	Identify the agency (organization and code) responsible for developing the document.

# MASTER ACQUISITION PROGRAM PLAN (MAPP) USER'S HANDBOOK

## ANNEX J. RELIABILITY AND MAINTAINABILITY

The Reliability and Maintainability (R&M) program is concerned with mission essential components. Components which do not contribute directly to the functional tasks of a primary mission are normally considered non-essential.

### J.1 STRATEGY (Government)

In describing the scope of the R&M program, summarize the R&M requirements to be included in the end item specifications. Identify strategies employed to enhance R&M, including the use of redundancy, remove and replace procedures, built-in test capability, etc. Explain how R&M considerations will be reflected in end item design.

When discussing R&M in commercial item acquisitions, include how R&M factors affect the decision to use commercial items and/or components.

For example, a commercial item is identified which fulfills the need but has a slightly lower reliability than is required. This can drive a decision to 1) not procure the commercial item; or 2) achieve required availability through redundancy or other means.

Note: R&M parameters should be established prior to Milestone I so that a comprehensive market analysis of alternative commercial solutions can be performed.

#### J.1.1 Approach

Note: Identify all specifications and standards used in the R&M program in Part I, Table 13.2-1, Specifications and Standards.

Note: R&M requirements are identified in Part I, Table 2.2-1, End Item Performance Requirements/Critical Characteristics/Readiness Objectives. Table 2.2-1 also records test results and demonstrated values of R&M requirements.

#### (Government)

Before contract award, either: 1) list specifications and standards to be invoked for the R&M program; or 2) list the specific minimum parameters on which the contractor process will be based. If specifications/standards are tailored, define the tailored requirements in this paragraph. These requirements will be incorporated into the Request for Proposal (RFP). Refer to DoDI 5000.2, Section 6-C.

If source data is to be supplied to contractors by the Government, list it in Part I, Table 17-1, Government Furnished Information.

Include an explanation of the use of simulation to define and implement R&M program requirements. Describe when, why, and how simulation will be used. (Refer to Part I, Table 2.5-1, Dynamic Simulation Summary).

Only a few components may undergo R&M analyses. These are selected by the program office based on criticality of the component to the reliability and operational availability of the end item. The components selected to undergo R&M analysis are identified in Part I, Table 6.2-1, Configurations and Physical Characteristics.

Complete Table J.1.1-1 to identify each R&M task/analysis to be performed.

Table J.1.1-1 Reliability and Maintainability Tasks (Complete one copy for each task.)	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Standard:	Place an "x" in the appropriate space to indicate whether this R&M task is governed by a commercial or Government standard.
Performed By:	Place an "x" in the appropriate space to indicate whether this R&M task is to be performed by a contractor or by the Government.
Standard:	Provide number of the standard invoking the task. If no standard is used (i.e., if the task is part of a contractor-developed process), enter "N/A".
Tailored:	Place an "x" in the space provided if the standard is tailored.
Activity/ Organization:	Provide the six-character Unit Identification Code (UIC) of the Government activity responsible for performing the task, or provide the name of the contractor responsible for the task.  Note: The full address of the contractor is to be provided in Table 14.1-1, Program Participants.
Task Title:	Identify the title of the task to be performed.
Task/Paragraph Number:	Identify the number of the task or the number of the paragraph in which task requirements are defined; use formal task number derived from invoked specifications/standards or contractor-developed number.
Tailoring Provisions:	Specify how the task is to be tailored. (i.e., Provide specific tailoring instructions, such as, "Omit paragraphs 10.2, 13.1, and 14.7.")
CIs to be Analyzed:	Identify the Configuration Items (CIs) which will undergo this analysis. (Refer to Part I, Table 6.2-1, Configurations and Physical Characteristics.)
Results:	Summarize the results of this R&M task. Indicate if the results will impact end item design or support. Indicate if the results of this task will provide input data to support requirements analysis tasks listed in Part I, Table 10.1-1, Support Requirements Analysis Tasks.

**(Contractor)**

Explain how the R&M program will be conducted in response to Government requirements. Include flow-down of requirements from the Government through to subcontractors/vendors.

**J.1.2 Roles and Responsibilities**  
*(Government/Contractor)*

When identifying the roles and responsibilities of participants in the R&M program, provide descriptions at the organization level [e.g., Activity XX will perform Failure Modes, Effects, and Criticality Analysis (FMECA)]. Explain how subcontractor performance will be monitored. Ensure that each activity or contractor organization described here is listed in Part I, Table 14.1-1, Program Participants.

**J.1.3 Risks and Outstanding Issues**  
*(Government/Contractor)*

Identify risks which may hinder the success of the R&M program (e.g., insufficient data to perform R&M analysis). For each risk area, identify the approach planned to reduce the impact of, or eliminate, the risk.

For the discussion of outstanding issues, include issues raised at in-process reviews and other management meetings. Include related Independent Logistics Assessment (ILA) findings, addressing the impact of each finding and explaining how the recommended action will impact the R&M program. (Refer to Part I, Table 10.4.2-1, Independent Logistics Assessment Summary.)

**J.2 RESULTS**  
*(Government/Contractor)*

In Table J.1.1-1, summarize the results of each task. Explain how the results will be reflected in the acquisition program (e.g., design requires modification, maintenance concept needs revision, redundant systems are required to achieve required operational availability).

# MASTER ACQUISITION PROGRAM PLAN (MAPP) USER'S HANDBOOK

## ANNEX K. CONFIGURATION MANAGEMENT

Configuration Management (CM) is the process for documenting and controlling the functional and physical characteristics of the end item. The end item is broken down into Configuration Items (CIs) which are "configuration worthy" or "functionally significant" hardware, firmware, or software items. A system, subsystem, equipment, or component will typically be a CI if it:

- Requires any element of logistics support,
- Requires supporting technical information for operation and maintenance, or
- Is necessary to describe the physical hierarchy of an end item down to the lowest repairable unit (LRU).

Note: In this annex, CIs comprise both hardware and Computer Software Configuration Items (CSCIs). The actual CIs are listed in Part I, Table 6.2-1, Configurations and Physical Characteristics.

CM comprises the following interrelated elements:

Configuration Identification. The selection of an item for configuration control, the determination of the types of documentation to identify each CI, and the issuance of identifiers (typically alphabetic, numeric, or alphanumeric). The configuration identification process will establish a formal configuration baseline which incorporates the CI and its supporting documentation.

Configuration Control. The systematic proposal, evaluation, acceptance or rejection, and implementation of changes to established configuration baselines.

Configuration Status Accounting (CSA). The recording and reporting of the initial CI baseline and all subsequent changes using a logical and consistent configuration identification system.

Configuration Audits. The formal examination of the functional or physical characteristics of a CI to establish the criteria for, or verify the development of, a configuration baseline.

Technical Reviews. A series of reviews [e.g., Preliminary Design Review (PDR), Critical Design Review (CDR)] which monitor the progress of CI/baseline development.

### K.1 STRATEGY (Government)

When describing the scope of the CM program, explain whether a formal CM program is imposed. If not, explain how technical and performance adequacy and accuracy will

be maintained throughout the end item's life cycle. If this is a commercial item acquisition, explain how the CM program is affected.

### **K.1.1 Approach**

Note: Identify all specifications and standards used in the configuration management program in Part I, Table 13.2-1, Specifications and Standards.

#### ***(Government)***

Identify the CM requirements to be imposed on the contractor. Include both hardware and software configuration control. Also describe how CM will be integrated with Integrated Logistics Support (ILS) and other disciplines internal to the program during design, acquisition, and operation. Before contract award, either: 1) list specifications and standards invoked for the CM program; or 2) list the specific minimum parameters on which the contractor process will be based. If specifications/standards are tailored, define the tailored requirements in this paragraph. These requirements will be incorporated into the Request for Proposal (RFP). If source data is to be supplied to contractors by the Government, list it in Part I, Table 17-1, Government Furnished Information. Refer to DoDI 5000.2, Section 9-A.

#### ***(Contractor)***

Describe how the CM program will fulfill Government requirements. When discussing management techniques for the CM program, address procedures for ensuring CM is reflected throughout the acquisition program. Include flowdown of requirements from the Government to the subcontractor.

### **K.1.2 Roles and Responsibilities**

#### ***(Government/Contractor)***

When identifying the roles and responsibilities of participants in the CM planning and implementation effort, provide descriptions at the organization level [e.g., Activity XX, the Configuration Data Manager (CDM), is responsible for maintaining CSA]. Ensure that each activity or individual described here is listed in Part I, Table 14.1-1, Program Participants.

In Table K.1.2-1, identify interfacing Configuration Control Boards (CCBs) and Interface Control Working Groups (ICWGs).

Note: Ship/aircraft program office personnel often serve as ad hoc representatives on CCBs and/or ICWGs for installed systems or equipment. Similarly, system/equipment program representatives attend ship/aircraft meetings to ensure the impact of design changes are fully assessed and understood.

Members of the CCB for this end item are in Part I, Table 14.1-1, Program Participants.

Table K.1.2-1 Interfacing Configuration Control Board(s)/Interface Control Working Groups	
Data Element	Definition
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Interfacing CCB/ICWG:	Provide name of interfacing CCB or ICWG.
Relationship:	Describe the relationship of this end item to the interfacing CCB/ICWG.

### K.1.3 **Risks and Outstanding Issues**

#### *(Government/Contractor)*

Describe CM risk factors (e.g., multiple configurations, interoperability requirements, new development technologies) and include plans to reduce or avoid program impacts (e.g., schedule delays, loss of configuration control). If the end item includes commercial products, discuss the impact on the CM program (e.g., the ability to adjust to possible configuration changes which are beyond the Navy's control).

Discuss outstanding technical or programmatic issues that might impact configuration control, including plans for resolution. Include Independent Logistics Assessment (ILA) findings. Address the impact of each finding and explain how the recommended action affects the CM program. These findings are identified in Part I, Table 10.4.2-1, Independent Logistics Assessment Summary.

## K.2 CONFIGURATION IDENTIFICATION

### K.2.1 **Baselines**

#### *(Contractor)*

When identifying the current configuration baseline for the end item, state whether it is a Functional, Allocated, or Product Baseline:

- The Functional Baseline establishes end item level performance requirements and is supported by conceptual design drawings and a system (A) specification. It is usually established prior to the start of the Engineering and Manufacturing Development acquisition phase.
- The Allocated Baseline establishes performance requirements for CIs subordinate to the end item. It is supported by development design drawings and development (B) specifications. It is usually established during the Engineering and Manufacturing Development acquisition phase.
- The Product Baseline establishes the physical characteristics or manufacturing requirements for the end item. It is supported by product drawings and a set of product (C) specifications, process (D) specifications, and material (E) specifications. It is usually established early in the Production and Deployment acquisition phase.

### K.2.2 **Configuration Item Numbering**

The purpose of the CI numbering system is to define the top-down breakdown for the end item relative to its next higher assembly. The indenturing for the end item is

reflected in the CI numbering system used in Part I, Table 6.2-1, Configurations and Physical Characteristics.

**(Government)**

Identify the method selected and rationale for the selection [e.g., Logistics Support Analysis Control Number (LCN), Expanded Ship Work Breakdown Structure (ESWBS), Hierarchical Structure Code (HSC)/Functional Group Code (FGC), Work Unit Code (WUC)].

**K.3 CONFIGURATION CHANGE CONTROL AND PROCESSING**

**K.3.1 Management**

**(Government)**

Describe the general procedures for the review and approval of configuration changes.

Complete one copy of Table K.3.1-1 to identify the review and approval authorities associated with each type of change which could apply to this end item. Select from the following types of changes:

<b>Table K.3.1-1 Configuration Change Control Board Review Authorities</b> <i>(Complete one copy for each applicable type of configuration change.)</i>	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Change Classification:	<p>Select from the following types of changes. Fill out one form for each type of change that may apply to this end item.</p> <p>ECP Class I: Class I ECPs are engineering changes which are mission-critical or offer significant benefit to the Government. Such changes are required to correct deficiencies, add or modify interface or operability requirements, provide significant change to the operational capability or supportability, allow substantial life-cycle cost savings, or prevent slippage in production schedules. Class I ECPs are assigned justification codes (see below).</p> <p>ECP Class II: Class II ECPs are engineering changes which impact none of the Class I factors and may be implemented by the contractor without government approval. They correct drawing errors, add clarifying notes, and substitute alternative acceptable material.</p> <p>SCN: A Specification Change Notice (SCN) identifies each specification which would require revision if the ECP is approved. (DD Form 1696 applies.)</p> <p>DCN: A Design Change Notice (DCN) adds, deletes, or modifies previously delivered and approved Provisioning Technical Documentation (PTD). (Refer to Table C.2.4-1, Provisioning Technical Documentation.)</p>

<b>Table K.3.1-1 Configuration Change Control Board Review Authorities</b> <i>(Complete one copy for each applicable type of configuration change.)</i>	
<b>Data Element</b>	<b>Definition</b>
	<p><b>RFD/RFW:</b> A Request For Deviation (RFD) allows the manufacturer to depart temporarily from the applicable approved configuration documentation for a specific quantity of units prior to development. A Request for Waiver (RFW) permits the contractor to deliver items to the Government which do not comply with the applicable technical requirements. (DD Form 1694 applies.)</p> <p><b>NOR:</b> A Notice of Revision (NOR) defines revisions to drawings, associated lists, or other reference documents which require revision after ECP approval. A NOR is normally applicable where documents affected by the ECP are not controlled by the activity preparing the ECP. (DD Form 1695 applies.)</p>
Class I ECP Justification Code:	<p>If describing the review and approval authorities for a Class I ECP, indicate the justification code. Fill out one copy of this form for each justification code that has different review and approval authorities.</p> <p style="margin-left: 40px;">           B - Interface            C - Compatibility            D - Deficiency            O - Operational or logistics support            P - Production stoppage            R - Cost reduction            S - Safety            V - Value engineering         </p>
Reviewers:	Identify, by organization and code, reviewing activities for this type of change.
Approval Authority:	Identify, by organization and code, the approval authority for this type of change.
Distribution:	List organizations/codes to which the approved change is to be distributed.

Note: Table K.3.1-1 identifies the general processing procedures for each type of change. It is not designed to track individual changes to end item design.

**(Contractor)**

Identify specific procedures to ensure effective configuration control throughout the design and development of the end item. Discuss procedures for integrating approved configuration changes into the support structure (i.e., throughout all support/logistics disciplines).

**K.3.2 Change Control Tracking**  
*(Contractor)*

Discuss procedures to monitor the status of proposed and approved changes. Identify the change control tracking system and organization responsible for maintaining the system.

**K.4 CONFIGURATION AUDITS**  
*(Government/Contractor)*

Explain how Functional Configuration Audits (FCAs) and Physical Configuration Audits (PCAs) will be conducted. Discuss how results will be recorded, deficiencies corrected, and results reported.

- FCAs are formal examinations of the functional characteristics of a CI, conducted prior to acceptance, to verify that the CI has achieved the requirements specified in the functional and allocated configuration documentation.
- PCAs are formal examinations of an "as-built" CI against its technical documentation to establish or verify the Product Baseline. PCAs are also conducted after delivery and during an item's operational life cycle [e.g., Integrated Logistics Overhauls (ILOs)].

Dates of FCAs and PCAs are to be included in Table 15-1, Program Events. After each audit, identify the CIs audited in Table 6.2-1, Configurations and Physical Characteristics.

**K.5 CONFIGURATION STATUS ACCOUNTING**  
*(Government)*

When defining CSA database requirements, specify the Data Element Numbers (DENs) or database fields required to develop and maintain CSA data in a format consistent with the life-cycle CSA databases. These are:

- For aircraft: The Modification Management Information System (MODMIS) and Technical Directive Status Accounting (TDSA). Both databases are subsets of the Naval Aviation Logistics Data Analysis (NALDA) system.
- For ships: The Ship Configuration and Logistics Support Information System (SCLSIS) and the Real-Time Outfitting Management Information System (ROMIS).

These requirements will be reflected in the Request for Proposal (RFP).

Describe the process to ensure that configuration changes (e.g., modifications in design, modifications occurring during overhauls, and fleet maintenance actions) are reflected in the CSA database.

Discuss measures to ensure that logistics changes are made to support configuration changes.

**(Contractor)**

Describe plans for accomplishing contractual CSA tasking. Identify the software used and rationale for selection. Explain how contractor processes (e.g., use of Micro-CSA) will interface with Government-required CSA databases.

# MASTER ACQUISITION PROGRAM PLAN (MAPP) USER'S HANDBOOK

## ANNEX L. SAFETY

The purpose of a safety program is to ensure that hazards are identified and addressed throughout the life cycle of the end item. Safety analyses must be initiated during the earliest stages of end item design; results must be factored into trade-off analyses and reflected in the planning for each logistic element. The goal of the safety program is to field an end item for which each potential hazard has been identified and eliminated or reduced to the greatest extent possible.

### L.1 STRATEGY

#### *(Government)*

When describing the safety program for the end item, ensure that the total system, including design, testing, manufacture, and support, is evaluated for safety considerations.

When discussing life-cycle safety considerations, discuss procedures to ensure:

- Complete lists of warnings, cautions, and procedures are incorporated in operations and maintenance manuals and training materials.
- Training for engineers, technicians, programmers, and testing, operating, and maintenance personnel incorporates safety objectives and requirements.
- Objectives and requirements of the safety program are integrated with other disciplines (e.g., training, configuration management, facilities, test and evaluation) throughout the end item's life cycle.

When discussing commercial items, explain the impact on end item safety.

For example, instruction manuals accompanying commercial equipment are found to contain inadequate warnings, cautions, and notes. This may require development of documentation to supplement the manuals.

#### L.1.1 Approach

Note: Identify all specifications and standards used in the safety program in Part I, Table 13.2-1, Specifications and Standards.

#### *(Government)*

Before contract award, list specifications and standards invoked, or specific minimum requirements of the safety program. If specifications/standards are tailored, define the tailored requirements in this paragraph. These requirements will be incorporated into the Request For Proposal (RFP). If source data is to be supplied to contractors by the Government, list it in Part I, Table 17-1, Government Furnished Information. Refer to DoDI 5000.2, Section 6-I.

Complete Table L.1.1-1 to identify the safety analyses/tasks to be performed.

<b>Table L.1.1-1 Safety Tasks</b> <i>(Complete one copy for each task.)</i>	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Standard:	Place an "x" in the appropriate space to indicate whether this task is governed by a Government or commercial standard.
Performed by:	Place an "x" in the appropriate space to indicate whether the task is to be performed by the Government or a contractor.  Note: If, in establishing the safety requirements program, the Government assigns responsibility for specific tasks to "contractor", these tasks must be included as requirements in the RFP.
Standard:	Provide number of the standard invoking the task. If no standard is used (i.e., if the task is part of a contractor-developed process), enter "N/A".
Tailored:	Place an "x" in the space provided if the standard is tailored.
Activity/ Organization:	Provide the six-character Unit Identification Code (UIC) of the Government activity responsible for performing the task, or provide the name of the contractor responsible for the task.  Note: The full address of the contractor is to be provided in Table 14.1-1, Program Participants.
Task Title:	Identify the title of the task to be performed.
Task/Paragraph Number:	Identify the number of the task or the number of the paragraph in which task requirements are defined; use formal task number derived from invoked specifications/standards or contractor-developed number.
Tailoring Provisions:	Specify how the task is to be tailored. (i.e., Provide specific tailoring instructions, such as, "Omit paragraph 10.2, 13.1, and 14.7".)
Results:	Summarize results of the task. Indicate if the results will impact end item design or support.

***(Contractor)***

When discussing the approach used to define safety requirements for the end item, include reports or output products used as source data [e.g., preliminary hazard analysis, results of support requirements analysis tasks (refer to Part I, Paragraph 10.2, Results of Support Requirements Analysis Tasks)]. Include methods for hazard identification associated with the system, subsystem, components, software, etc. during analyses.

**L.1.2 Roles and Responsibilities**

***(Government/Contractor)***

When identifying roles and responsibilities of participants in the safety planning and implementation efforts, provide descriptions at the organization level. Identify the individual who serves as the overall point of contact with authority to authorize necessary action in response to identified hazards in Part I, Table 14.1-1, Program Participants; also include all other activities and contractor organizations described in this paragraph. Discuss interface with other disciplines within and among the Government, contractor, and subcontractor organizations.

### L.1.3 Risks and Outstanding Issues

*(Government/Contractor)*

Identify safety risks for the end item. For each risk, provide a method for eliminating or mitigating the risk.

For example, as part of a trade-off analysis, it is determined that the cost of completely eliminating a hazard is prohibitive. It is decided that reducing the likelihood of hazard occurrence through enhanced training and warnings in technical documentation is the best that can be achieved.

When discussing outstanding issues related to the safety program, address safety-related Independent Logistics Assessment (ILA) findings. Address the impact of each finding and explain how the recommended action will impact the safety program. (Refer to Part I, Table 10.4.2-1, Independent Logistics Assessment Summary).

### L.2 RESULTS

*(Contractor)*

Summarize the results of each safety task/analysis in the "Results" block of Table L.1.1-1. Use Table L.2-1 to describe each hazard identified through the conduct of safety analysis, the configuration change process, or other source.

Describe the process which will ensure that hazards and associated safety precautions are reflected throughout the end item support system (i.e., technical documentation, training, etc.).

<b>Table L.2-1 Hazard Identification and Control</b> <i>(Complete one copy for each hazard identified.)</i>	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or data modification (MM-DD-YY).
CI Number:	Enter Configuration Item (CI) number with which the hazard is associated. Refer to Part I, Table 6.2-1, Configurations and Physical Characteristics.
<b>Source of Identification:</b>	
Task Title:	Enter title of the task during which the hazard was identified.
Preliminary:	Place an "x" in the appropriate space to indicate if the hazard was detected during a preliminary hazard analysis.
System:	Place an "x" in the appropriate space to indicate if the hazard was detected during a system hazard analysis.
Subsystem:	Place an "x" in the appropriate space to indicate if the hazard was detected during a subsystem hazard analysis.
ECP Number:	If the hazard was identified in an Engineering Change Proposal (ECP), provide the number of the ECP.
Other:	If the hazard was identified through means/methods not identified above (e.g., report from the Fleet), specify the means/ methods here.
Date Hazard Identified:	Provide date the hazard was initially identified (MM-DD-YY).
Hazard Number:	Number each identified hazard with a unique numeric identifier. For HM, assign an identifier that relates the HM to an Material Safety Data Sheet (MSDS) with the same identifier.

<b>Table L.2-1 Hazard Identification and Control</b> <i>(Complete one copy for each hazard identified.)</i>	
<b>Data Element</b>	<b>Definition</b>
Hazard Risk Index:	Indicate the Hazard Risk Index for the item. Refer to MIL-STD-882 for guidance on how to assign Hazard Risk Indices.
Hazard Description:	Provide an overall description of the hazard or hazardous material (e.g., risk of combustion at temperature higher than 105°F). Also place an "x" in the space next to applicable hazard type(s). Select hazard type from the following definitions:
<b>Hazard Type:</b>	Indicate, by placing an "x" in each appropriate space, the type(s) of hazard presented by this CI.
Hazardous Chemical:	Chemical that is a physical hazard or a health hazard per 29 CFR Section 1910.1200 (c), and, with some exceptions, as specified in the "Community Right to Know" Law of 1986 [Superfund Amendments and Reauthorization Act (SARA), Title III].
Hazardous Material:	Ammunition, weapons, explosives and explosive actuated devices, pyrotechnics, etc. (Refer to Part I, Paragraph 4.3.2, Environmental Impact.)
Environmental Hazards:	Operating environments including: vibration, extreme temperatures/humidity, extreme weather/sea conditions, noise, airspace clearance, exposure to toxic substances, etc.
Hazardous Component:	Components of the end item which constitute a potential hazard.
Hazardous Waste:	Discarded or abandoned hazardous material including discarded gaseous, liquid, semi-solid, or solid materials (containerized or otherwise).
Malfunctions to the System, Subsystems, Components, or Software:	Components of a system, subsystem, component, or computer software product whose errors can result in a potential hazard, or loss of predictability or control of a system.
Safety Related Interface Hazards:	Interface considerations among various elements of the end item (e.g., material compatibility, electromagnetic interference, inadvertent activation).
Operations, Test, Maintenance:	Potentially hazard-inducing built-in tests, diagnostics, and emergency procedures (e.g., human error analysis of operator functions, equipment layout, lighting requirements, etc.) Also includes test-unique hazards that will be a direct result of the test and evaluation of the item (refer to Annex Q, Test and Evaluation).
Other (Specify):	Hazard type not indicated above; specify.
Location of HM:	Identify the location(s) of hazardous material (e.g., in storage rooms, inside operating equipment, etc.). Be specific.
MSDS Received:	For each item of hazardous material, provide date (MM-DD-YY) the Material Safety Data Sheet (MSDS) for the item(s) was/were received.  Note: Shore activities using hazardous material must possess a manufacturer's MSDS for each hazardous material on hand. If no MSDS sheet exists for the material, contact the manufacturer to obtain one.
MSDS Location(s):	Indicate the location of the MSDS for each item of hazardous material. The MSDS must be easily accessible.

<b>Table L.2-1 Hazard Identification and Control</b> <i>(Complete one copy for each hazard identified.)</i>	
<b>Data Element</b>	<b>Definition</b>
Hazardous Material Point of Contact:	For each hazardous material, fill in the name, activity or company, code or other designator, and telephone number of the point of contact for hazardous material control and management.
Personal Protection Required:	Indicate type(s) of personal protection required in the case of contact with the hazard (e.g., safety goggles, face washes, gloves).
Mishap Potential:	Describe potential for mishap (e.g., "...it is likely that this container will develop a leak if dropped.")
Conditions Under Which Mishap Occurs:	Describe the conditions under which the mishap is most likely to occur.
Resolution:	Define resolution implemented or plan of action to eliminate, or reduce to acceptable level, the hazard identified.
Hazardous Waste Disposal Procedures:	Provide special disposal procedures/requirements for hazardous waste.
Status of Control Implementation:	Provide date of status (MM-DD-YY) and describe status of implementing each approved control mechanism.

**L.3 ELECTROSTATIC DISCHARGE CONTROL**  
*(Contractor)*

Describe the Electrostatic Discharge (ESD) controls to be imposed on suppliers of ESD-sensitive items. Refer to Table 6.2-1, Configurations and Physical Characteristics, for configuration items which require protection from ESD.

# MASTER ACQUISITION PROGRAM PLAN (MAPP) USER'S HANDBOOK

## ANNEX M. QUALITY ASSURANCE

Maintaining effective quality control requires a rigorous, event-oriented management process that emphasizes effective acquisition planning, ongoing communication with users, and aggressive risk management by both Government and industry. Quality must be integrated throughout all elements of a program. This annex addresses the Quality Assurance (QA) processes established to ensure effective and efficient design and development of the end item.

### M.1 STRATEGY

#### M.1.1 Approach

Note: Identify all specifications and standards used in the QA program in Part I, Table 13.2-1, Specifications and Standards.

##### *(Government)*

When describing the QA strategy for the end item, explain how quality will be integrated throughout all aspects of end item development. Include such factors as strategic planning and allocation of resources. Describe the procedures for establishing, reviewing, and tracking the QA program for the end item. Before contract award, either 1) list specifications and standards to be invoked for QA requirements; or 2) list the specific minimum requirements on which the contractor process for QA will be based. Commercial standards, such as the International Organization of Standards (ISO) 9000 series, may be used without waiver but are also to be listed in Table 13.2-1.

##### *(Contractor)*

Describe how the QA program will be implemented. Explain the process for ensuring a complete review of the requirements of the contract to identify and make timely provisions for special controls, processes, test equipment, fixtures, tooling, and skills required for ensuring effective quality control. Include the following:

- Source inspection, subcontractor QA, and all incoming supplies and services.
- Special environments, processes, calibration, materials, work flow, and functional areas to achieve QA program objectives.
- Documentation, evaluation, product quality audits, special instructions, reports, accept-reject criteria, and Acceptable Quality Levels (AQLs).
- Inspection of parts, assemblies, and nonconforming material.
- An explanation of the use of simulation to define and implement QA program requirements. Describe when, why, and how simulation will be used. (Refer to Part I, Table 2.5-1, Dynamic Simulation Summary).

If specific contractor QA plans are implemented, list them in Part I, Table 13.1-1, Program Documents.

In discussing commercial end item components, discuss how to ensure commercial items meet quality standards established for the end item.

**M.1.2 Roles and Responsibilities**  
*(Government/Contractor)*

When identifying the roles and responsibilities of participants in the QA planning and implementation efforts, provide descriptions at the organization level. Consider including the designation of a Government QA representative to periodically review the procedures being implemented. If the QA program is large enough, designation of a full time, on-site Government QA representative may be required. (List this representative in Part 1, Table 14.1-1, Program Participants.) As the acquisition evolves, include a description of the overall quality organization and the responsibility and authority of each functional element.

**M.1.3 Risks and Outstanding Issues**  
*(Government/Contractor)*

For each risk identified, describe the accompanying risk reduction method(s).

For example, the quality of the end item may be compromised if an effective deficiency tracking system is not established early in the development process. If deficiencies go unaddressed, or remedial action is not communicated effectively to all appropriate participants, the effectiveness of the end item and the support program could be seriously damaged. To reduce this risk, an automated flagging system could be instituted to highlight outstanding deficiencies and/or an automated distribution system could be used to communicate results throughout the organization.

In the discussion of outstanding issues, address QA Independent Logistics Assessment (ILA) findings. Address the impact of each finding and explain how the recommended action will impact the QA program. (Refer to Part I, Table 10.4.2-1, Independent Logistics Assessment Summary).

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## ANNEX N. HUMAN ENGINEERING

Human engineering is the discipline which examines the interface between humans and equipment. It is the domain of Human Systems Integration (HSI) which is concerned with the study of:

- Physical and mental capabilities and limitations
- Anthropometric and biomedical criteria
- Mission, function, and human requirements analyses
- Skills, knowledge, and aptitudes
- Performance assessments

Note: The other domains of HSI are addressed in: Annex B, Manpower/Personnel; Annex F, Training and Training Support; and Annex L, Safety.

Human engineering considerations must be reflected in end item design from the earliest stages of the acquisition. In many cases, human engineering considerations will drive design.

### N.1 STRATEGY

*(Government)*

When describing the scope of the human engineering program, identify the projected operating environment, performance requirements, etc. that may impact the human engineering program for this end item. Include a discussion of the work environment, crew stations, and facilities that affect human performance under normal, unusual, and emergency conditions. Include:

- Weather and climate aspects
- Atmospheric conditions
- Range of accelerative forces (positive and negative)
- Acoustics
- Vibration
- Possibility of disorientation
- Adequacy of work space
- Adequacy of physical, visual, and auditory links between personnel and their equipment
- Physical or emotional fatigue
- Biomedical and habitability constraints

When discussing commercial item acquisition, explain how human engineering considerations were factored into the procurement decision.

## N.1.1 Approach

Note: Identify all specifications and standards used in the human engineering program in Part I, Table 13.2-1, Specifications and Standards.

### *(Government)*

Before contract award, either: 1) list specifications and standards to be invoked for the human engineering program; or 2) list the specific minimum parameters on which the contractor process will be based. If specifications/standards are tailored, define the tailored requirements in this paragraph. These requirements will be incorporated into the Request For Proposal (RFP). Refer to DoDI 5000.2, Section 6-H.

### *(Contractor)*

After contract award, explain how the human engineering program will be conducted. Describe the process to determine the optimum balance of human functions, hardware functions, and software functions required to operate and maintain the end item.

If simulation is used, address the overall human engineering simulation concept and the benefits derived (refer to Part I, Table 2.5-1, Dynamic Simulation Summary).

Identify data (e.g., output from detail drawing reviews, results of end item mission analyses) used to analyze human engineering requirements. If source data is to be supplied to the contractor by the Government, list it in Part I, Table 17-1, Government Furnished Information.

Explain how human engineering considerations will be reflected throughout the acquisition program. Include human engineering involvement in: the development of equipment operating and maintenance procedures, the formulation of operator and maintainer personnel requirements, the development of operational and technical publications, and the design of the training system.

Also address human engineering participation in the following areas:

- Studies, tests, and mock-up evaluations
- Design reviews
- End item/equipment/component design
- Performance specification preparation and reviews
- Performance of system effectiveness studies

## N.1.2 Roles and Responsibilities

### *(Government/Contractor)*

When identifying the roles and responsibilities of participants in the human engineering program for this end item, provide descriptions at the organization level (e.g., Activity XX will perform time-motion studies). Ensure that representatives from participating activities or contractor organizations described here are identified in Part I, Table 14.1-1, Program Participants.

### **N.1.3 Risks and Outstanding Issues**

*(Government/Contractor)*

When describing the risks associated with implementing the human engineering program, include issues such as the lack of source data. Explain how each risk will be eliminated or reduced (e.g., explain the estimating techniques which will be used until adequate data is made available).

In the discussion of outstanding issues, include human engineering Independent Logistics Assessment (ILA) findings (identified in Part I, Table 10.4.2-1, Integrated Logistics Assessment Summary); address the impact of each finding and explain how the recommended action will impact the human engineering program.

### **N.2 RESULTS**

*(Contractor)*

Summarize the results and implications of the human engineering analyses performed. Emphasize critical errors. A "critical error" is the performance of, or failure to perform, an action which, if not accomplished in accordance with end item requirements, will most likely have adverse effects on cost, end item reliability, efficiency, effectiveness, or safety.

When identifying human engineering impacts on end item design or support, explain the techniques to mitigate the impact [e.g., "the design requires the following modification" (specify what kind of modification will be made), or "warnings will be included in all technical and training documentation"].

Use standard subparagraph structure to address each finding and its impact on the end item. Include the impact on other disciplines (e.g., test and evaluation, other HSI domains). Provide a recommended solution for each finding.

# MASTER ACQUISITION PROGRAM PLAN (MAPP) USER'S HANDBOOK

## ANNEX O. ELECTROMAGNETIC COMPATIBILITY

An effective Electromagnetic Compatibility (EMC) program enables the end item to operate in its intended operational environment without experiencing or causing degradation due to electromagnetic radiation. Electromagnetic Interference (EMI) control techniques and measures and careful electromagnetic engineering design are used to enhance performance and eliminate, reject, or suppress undesirable emissions. EMC program level planning begins with the identification of a mission need. Critical characteristics related to EMC are listed in Table 2.2-1, End Item Performance Requirements/Critical Characteristics/Readiness Objectives.

### O.1 STRATEGY

#### *(Government)*

When describing the objectives of the EMC program, include specific EMI control measures used in design of the end item. Discuss EMC considerations which drive end item support decisions and plans.

For commercial item acquisitions, explain the impact on the EMC program and schedule. Explain how EMC requirements are factored into the commercial item acquisition process (e.g., market survey, identification of candidate items, candidate item assessment, and selection).

#### O.1.1 Approach

Note: Identify all specifications and standards used in the EMC program in Part I, Table 13.2-1, Specifications and Standards.

#### *(Government)*

Before contract award, either: 1) list specifications and standards to be invoked, or 2) list the specific minimum requirements on which the contractor process must be based. If specifications/standards are tailored, define the tailored requirements in this paragraph. These requirements will be incorporated into the Request For Proposal (RFP). If source data is to be supplied to contractors by the Government, list it in Part I, Table 17-1, Government Furnished Information. Refer to DoDI 5000.2, Section 6-G.

#### *(Contractor)*

After contract award, explain how the EMC program will be conducted. Include:

- A description of the process to identify and validate EMC requirements including the identification of electromagnetic parameters.
- An explanation of the use of simulation to define and implement EMC program requirements. Describe when, why, and how it will be used (refer to Part I, Table 2.5-1, Dynamic Simulation Summary).

Identify source data to be used to determine EMC program requirements.

When describing the analyses and predictions of EMI control techniques, discuss methods established for obtaining or estimating missing data and identify those analyses for which such data will be used. The extent of the analytic effort should support:

- The tailoring of requirements to meet low or unusually severe Radiation Hazards (RADHAZ), Hazards of Electromagnetic Radiation to Ordnance (HERO), Hazards of Electromagnetic Radiation to Personnel (HERP), and Hazards of Electromagnetic Radiation to Fluids (HERF);
- Coordination with survivability measures for Electromagnetic Pulse (EMP) to ensure low level EMI protection of device ports; and
- The preparation of risk analyses and trade-offs.

When discussing management techniques used to ensure the effectiveness of the EMC program, consider the following:

- Ensuring the end item will be designed to be mutually compatible with other electric or electronic equipment within the expected operational environment
- Ensuring testing is conducted in the intended operational environment by qualified field test facilities
- Establishing a radio frequency management program to ensure intentionally radiated radio frequency energy complies with national and international procedures and requirements

#### **O.1.2 Roles and Responsibilities** *(Government/Contractor)*

Indicate the assigned responsibility for control of EMC program equipment or other items (e.g., contractor, subcontractor, Government). Explain the responsibilities of EMC-related review boards (e.g., to monitor each frequency requirement).

When identifying the roles and responsibilities of participants in the EMC program planning and implementation efforts, provide descriptions at the organization level. Ensure that each activity or contractor organization described here is listed in Part I, Table 14.1-1, Program Participants.

**O.1.3 Risks and Outstanding Issues**

*(Government/Contractor)*

Identify the risks associated with the establishment of EMC support for the end item. For each risk identified, summarize the plan to eliminate or reduce the risk.

**O.2 ELECTROMAGNETIC ENVIRONMENT**

*(Contractor)*

When describing the projected Electromagnetic Environment (EME) for the end item, include friendly emitters, including those associated with joint force platforms and civil systems.

Identify the data and method(s) used to define the projected EME. Include the use of available knowledge/databases to obtain a description of the EME.

Identify data which is missing and which would prevent identification of the EME parameters. Describe the estimating techniques used to accommodate analytical requirements.

**O.3 ELECTROMAGNETIC INTERFERENCE CONTROL**

*(Contractor)*

Describe the results of the EMI analyses identified in Paragraph O.1.1, Approach. Explain how findings are communicated throughout the acquisition program. Identify those results which drive design decisions and/or modifications as well as those which have an impact on end item support. Include the specific design techniques and procedures that will be employed to meet each contractual emission and susceptibility requirement. Address the following as applicable:

- EMI mechanical design techniques, including decisions about the following materials and construction techniques:
  - Types of metals, casting, finishes, and hardware employed in the design
  - Type of construction [e.g., compartmentalizing; filter mounting and isolation of other parts; type and characteristics of filtering used on openings, including ventilation ports, access hatches, windows, metal faces and control shafts; and type of attenuation characteristics of Radio Frequency (RF) gaskets used on all internal and external mating surfaces]
  - Shielding and design practices employed for determining shielding effectiveness
  - Corrosion control procedures
  - Methods of bonding equipment under test overlapping surfaces (e.g., surface preparation and gasketing)

- Electrical and electronic wiring design, including cable types or characteristics, cable routing, cable separation, and grounding philosophy. If cable shielding is employed, describe shield types and termination methods.
- Electrical and electronic circuit design, including the following:
  - Justification of selected filter characteristics [e.g., including type, attenuation, technical reasons for selecting types of filters, and line-to-ground capacitance values of Alternating Current (AC) and Direct Current (DC) power line filters]
  - Part location and separation for reducing EMI
  - Location, shielding, and isolation of critical circuits

#### **O.4 FREQUENCY SPECTRUM MANAGEMENT**

##### ***(Contractor)***

Explain the process for submitting Frequency Allocation Requests (DD Form 1494) anticipated during end item development. Actual dates of submission are to be provided in Part I, Table 15-1, Program Events.

When discussing the frequency spectrum conservation approach, discuss both general and specific design requirements to include:

- General
  - Frequency management
  - Information-bandwidth minimization
  - Power and sensitivity minimization
  - Frequency allocation applications
  - Cabling, grounding and bonding guidelines
  - Shielding and filtering guidelines
- Specific
  - EMI mechanical design
  - Electrical/electronic wiring design
  - Electrical/electronic circuit design
  - Prediction and analysis

#### **O.5 ELECTROMAGNETIC COMPATIBILITY PROGRAM ASSESSMENT**

##### ***(Contractor)***

Describe how the effectiveness of the EMC program will be evaluated. Under circumstances where the program will not be subjected to external oversight, the

effectiveness of the EMC program/EMI control measures will be self-evaluated. Assessment will be performed in a simple, informal manner, and compared against the EMC requirements established in Paragraph O.1 and listed in Part I, Table 2.2-1, End Item Performance Requirements/Critical Characteristics/Readiness Objectives.

Describe the planned EMC self-assessment process, using the following guidelines:

- **For Milestone I:**

- Electromagnetic Environmental Effects (E<sup>3</sup>) problems, impacts, or advantages will be presented in the decision process for each end item alternative considered.
- The end item will be required to attain specified operating performance in the intended EME without degrading co-resident systems in use at the same time.
- A baseline program for EMC with other pertinent E<sup>3</sup> disciplines will be established to ensure identification and implementation of control measures during development.

- **For Milestone II:**

- Projections of EME for the end item will be based upon E<sup>3</sup> control requirements for engineering development.
- Problems will be resolved through affordable engineering techniques.
- Requirements for E<sup>3</sup> control measures and verifying tests, trials, and surveys will be established for engineering development.
- The end item will obtain a frequency allocation.

- **For Milestone III:**

- The end item will pass tests of E<sup>3</sup> control measures to ensure requirements are met.
- The equipment will demonstrate specified operational performance in the intended EME without causing EMI or unresolvable electromagnetic hazards.

- **For Project Acceptance Test & Evaluation:**

Note: This milestone is set at the occurrence of Project Acceptance Test & Evaluation (PAT&E), First Article Inspection, or other similar event. (Refer to Annex Q, Test and Evaluation.)

- The E<sup>3</sup> control requirements established for the production model will match characteristics attained in the approved engineering development model.
- Test results for the production model will be equal to or greater than the characteristics of the approved engineering development model.

- **For Milestone IV:**

Note: Objectives for Milestone IV will occur when project re-enters development.

In the event of reprourement or redevelopment, E<sup>3</sup> deficiencies revealed during the service life of the end item will be eliminated.

# MASTER ACQUISITION PROGRAM PLAN (MAPP) USER'S HANDBOOK

## ANNEX P. SURVIVABILITY

There is no requirement for a single Government program plan that addresses survivability exclusively. There are, however, numerous contractor-developed plans that address various aspects of survivability planning (e.g., Hardness Surveillance Plan). The plans incorporated in the MAPP are those which provide management-level data. Depending on the nature of the program, the information in this annex may be supported by one or several stand-alone plans which provide extremely detailed discussions of survivability-related procedures and plans. If such plans are produced, they should be listed in Part I, Table 13.1-1, Program Documents.

Survivability considerations must be factored into the overall design, upgrade, or modification of any end item that must survive some level of threat at any time during its life cycle in order to be operationally effective or suitable. Survivability requirements are established in light of all anticipated threats, including: conventional, electronic, and initial nuclear weapons effects; Nuclear, Biological, and Chemical (NBC) contamination; advanced threats such as high power microwave, kinetic energy weapons, and directed energy weapons; and terrorism or sabotage. (Refer to Part I, Paragraph 1.3, Threat.) The survivability program for the end item must be tailored to counteract the identified threats and must reflect the results of trade-off analyses and other studies.

The purpose of this annex is to describe the decision factors and plans for implementing a survivability program tailored to the end item. Refer to DoDI 5000.2, Section 6-F, for additional discussion of survivability program management.

### P.1 STRATEGY (Government)

In describing the strategy to address survivability requirements, describe the integration of survivability factors into the end item design process.

Explain how survivability requirements drive procurement decisions (e.g., survivability requirements can drive the decision to procure, not to procure, or to ruggedize a commercial item/component).

Note: Survivability requirements are presented in the Mission Need Statement (MNS) and in Part I, Table 2.2-1, End Item Performance Requirements/ Critical Characteristics/Readiness Objectives.

#### P.1.1 Approach

Note: Identify all specifications and standards used in the survivability program in Part I, Table 13.2-1, Specifications and Standards.

***(Government)***

Before contract award, explain how survivability program requirements are to be defined. Either: 1) list specifications and standards to be invoked, or 2) list the specific minimum requirements on which the contractor process must be based. If specifications/standards are tailored, define the tailored requirements in this paragraph. These requirements will be incorporated into the Request For Proposal (RFP). If source data is to be supplied to contractors by the Government, list it in Part I, Table 17-1, Government Furnished Information. Refer to DoDI 5000.2, Section 6-H.

***(Contractor)***

After contract award, explain how Government requirements will be met. Explain how hardness surveillance candidates will be identified (refer to Part I, Table 6.2-1, Configurations and Physical Characteristics). Identify the specific analyses which will be used to identify end item survivability features and requirements; include trade-off analyses used to define the optimum balance between survivability, capability, support, cost, schedule, etc.

Include the following for each hardness design analysis planned:

- Scope
- Technical means (models, codes, etc.)
- Sources of input data
- Interrelationships with the planned hardness testing activity

Include an explanation of the use of simulation to define, validate, and implement survivability program requirements. Describe when, why, and how simulation will be used (refer to Part I, Table 2.5-1, Dynamic Simulation Summary).

Note: Survivability characteristics requiring unique facility support (e.g., electromagnetic pulse test facilities, electronic warfare environment, climate controlled hangars) are to be addressed in Table H.2-1, Facilities Requirements.

**P.1.2 Roles and Responsibilities**

***(Government/Contractor)***

When identifying the roles and responsibilities of participants in the survivability program, provide descriptions at the organization level (e.g., degradation analysis will be conducted at Activity XX). Ensure that each activity or contractor organization described here is listed in Part I, Table 14.1-1, Program Participants.

***(Contractor)***

Identify the contractor organizational element assigned responsibility and authority for implementing the survivability program. Explain how Government survivability program requirements will be disseminated to and imposed on subcontractors/vendors. Describe how subcontractor/vendor compliance and performance will be monitored.

**P.1.3 Risks and Outstanding Issues**

*(Government/Contractor)*

Identify risks associated with the development and/or implementation of the recommended survivability approach. Include discussion of critical survivability technology shortfalls and associated research requirements. When discussing NBC survivability risk mitigation, describe alternative NBC survivability approaches considered, and the risks associated with the recommended approaches.

When discussing outstanding survivability issues, include related Independent Logistics Assessment (ILA) findings. Address the impact of each finding and explain the impact of the recommended action on the survivability program. (Refer to Part I, Table 10.4.2-1, Integrated Logistics Assessment Summary.)

**P.2 RESULTS OF ANALYSES**

Note: Part I, Table 6.2-1, Configurations and Physical Characteristics, provides for the identification of hardness surveillance candidates, the assignment of hardness degradation codes, a description of the expected degradation, and circumstances under which the degradation is likely to occur.

*(Contractor)*

Summarize the results of each analysis and explain the impact of findings on the design and support of the end item. Identify the recommended mix of survivability methodologies [e.g., threat effect tolerance, hardness, active defense, avoidance, proliferation, reconstitution (including damage repair), deception, and redundancy] and describe the factors that contributed to the development of the recommended approach.

Provide results to the component level in Part I, Table 6.2-1, Configurations and Physical Characteristics.

**P.3 BATTLE DAMAGE REPAIR**

*(Government/Contractor)*

Address the acquisition and implementation of battle damage repair procedures, supplies, tools, manuals, and training to ensure rapid return to battle of damaged end items. Describe the method(s) to ensure that battle damage repair plans address hardness maintenance and surveillance requirements.

**P.4 HARDNESS ASSURANCE, MAINTENANCE, AND SURVEILLANCE**

**P.4.1 Critical Activities**

*(Government/Contractor)*

Identify those activities including training, inspections, parts, procedures, and configuration control that are critical to maintaining survivability and hardening characteristics of the end item throughout the end item's life cycle.

**P.4.2 Hardness Assurance, Maintenance, and Surveillance Requirements**  
***(Government/Contractor)***

Summarize the procedures to ensure the integrity of end item survivability features and characteristics, including hardened characteristics, throughout the life cycle of the end item. Include plans for periodic evaluations to be conducted by using activities to ensure requisite characteristics have not been compromised.

If stand-alone Hardness Assurance, Maintenance, and Surveillance (HAMS) plans have been developed to provide detailed discussion on specific aspects of the survivability program, refer to those plans and summarize their key features. (List such plans in Part I, Table 13.1-1, Program Documents.)

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## ANNEX Q. TEST AND EVALUATION

Developmental/operational test and evaluation procedures are designed to verify that end items:

- Are approved for production,
- Meet the mission needs,
- Meet minimum operational performance requirements of the operating forces, and
- Are supportable.

Developmental test and evaluation is used to evaluate the technical adequacy of the end item. Operational testing evaluates the end item (operated by typical users) in an environment as operationally realistic as possible, including threats representative of hostile forces and the expected range of natural environmental conditions.

Note: End item requirements and associated thresholds are listed in Part I, Table 2.2-1, End Item Performance Requirements/Critical Characteristics/Readiness Objectives. The thresholds are used to establish testing requirements.

### Q.1 STRATEGY (Government)

When describing the strategy for the test and evaluation program, discuss how the testing will be conducted. Include the use of simulation, incremental testing, testing environments, etc.

Explain the impact of commercial item acquisition on the test and evaluation program and schedule. Factors that should be discussed include:

- Assessment of the differences between the commercial operating environment and the projected military environment.

For example, if the commercial item is designed for use in an environment identical to the intended military environment, no testing may be required.

- The applicability of commercial test data.

#### Q.1.1 Approach

Note: Identify all specifications and standards used in the test and evaluation program in Part I, Table 13.2-1, Specifications and Standards.

***(Government)***

Before contract award, either: 1) list specifications and standards to be invoked, or 2) list the specific minimum requirements on which the contractor process must be based. If specifications/standards are tailored, define the tailored requirements in this paragraph. These requirements will be incorporated into the Request for Proposal (RFP). If source data is to be supplied to contractors by the Government, list it in Part I, Table 17-1, Government Furnished Information. Refer to DoDI 5000.2, Part 8.

***(Contractor)***

After contract award, explain how Government test and evaluation requirements will be met. Describe techniques which will be used to ensure the effectiveness of the test and evaluation program. Include discussion of the following:

- Procedures to ensure the supportability of the end item is adequately assessed.
- Procedures to ensure plans for testing are prepared early in the acquisition process and include all developmental and qualification tests at the system and subsystem levels.
- Procedures to ensure initial operational testing is conducted during the transition from development to production, using the latest end item configuration.
- Procedures to ensure production acceptance testing is conducted on the end item to ensure the effectiveness of the manufacturing processes, equipment, and procedures.
- An explanation of the intended use of incremental testing.
- An explanation of the projected use of simulation to support test and evaluation program objectives. Describe when, why, and how simulation will be used (refer to Part I, Table 2.5-1, Dynamic Simulation Summary).
- If concurrent development and production are planned, the extent of testing to be accomplished before production release. (Refer to Part I, Paragraph 7.1, Overview).
- Government participation in contractor developmental and operational testing of the end item.

**Q.1.2 Roles and Responsibilities**

***(Government/Contractor)***

When identifying the roles and responsibilities of participants in the test and evaluation program, provide descriptions at the organization level. Ensure that each activity or contractor organization described here is listed in Part I, Table 14.1-1, Program Participants.

**Q.1.3 Risks and Outstanding Issues**

*(Government/Contractor)*

Identify the risks associated with establishment and implementation of the test and evaluation program. Identify any characteristic which has not or will not be adequately tested because of lack of funding or physical resources. For each risk identified, summarize the plan to eliminate or reduce the risk.

For example, a risk might be that Operational Evaluation (OPEVAL) will be delayed because the training program will not be ready in time to support OPEVAL team training. To overcome this shortfall, the manufacturer could be tasked to conduct training at the factory. This would require contract action and the allocation of funds.

When identifying outstanding issues, explain those which could compromise the effectiveness of the test and evaluation program. Discuss the planned corrective action for each issue.

**Q.2 TEST AND EVALUATION SUMMARY**

*(Government/Contractor)*

Complete one copy of Table Q.2-1 for each test (developmental or operational) planned or conducted for this end item. Issues and general requirements associated with each test will be discussed narratively in paragraph Q.3, Developmental Test and Evaluation, or in paragraph Q.4, Operational Test and Evaluation, depending on the type of test being conducted. Each test may also be supported by detailed test plans and results reports. If this is the case, these documents should be listed in Part I, Table 13.1-1, Program Documents.

Note that Table Q.2-1 is also used to document resources required for each test. List any resources required to support the test in addition to those listed in the following sections of the MAPP:

<b>Support Element</b>	<b>MAPP Annex</b>
Manpower/Personnel	Table B.5.2-1, Manpower Requirements
Support Equipment	Table D.2-1, Identification of Support Equipment
Technical Manuals	Table E.2.1-2, Technical Manual Development Summary
Training	Table F.2-1, Training Course Data Form, Section C, Initial Training

<b>Table Q.2-1 Test and Evaluation Summary</b> (Complete one copy for each developmental or operational test planned or conducted.)	
<b>Data Element</b>	<b>Definition</b>
Date:	Provide date of initial data entry or modification (MM-DD-YY).
Test Title:	Identify the test proposed or conducted (e.g., DT-II, DT-III, OT, PAT&E).
Developmental Test:	Place an "x" in the space provided if this is a developmental test.
Operational Test:	Place an "x" in the space provided if this is an operational test.
Configuration Item:	Identify the Configuration Item (CI) number of the end item tested. (For CI numbers, refer to Part I, Table 6.2-1, Configurations and Physical Characteristics.)  Indicate the model of the end item being tested by checking the appropriate space, as follows:
Prototype:	Place an "x" in the space provided if this is a prototype model of the end item.
Engineering Development Model:	Place an "x" in the space provided if this is the engineering development model of the end item.
Pre-production:	Place an "x" in the space provided if this is the pre-production model of the end item.
Production:	Place an "x" in the space provided if this is the production model of the end item.
Test Location:	Identify where the testing will take place. For Government facilities, use the six-character Unit Identification Code (UIC); for contractor facilities, use the full address.
Test Objectives:	List the objectives of the test (i.e., identify the end item characteristics which will be tested). (Refer to Part I, Table 2.2-1, End Item Performance Requirements/Critical Characteristics/Readiness Objectives.)
Date(s) of Test:	Enter the dates of testing (from MM-DD-YY through MM-DD-YY). If the entire test is conducted in one day, place the same date in each field.
<b>Support Requirements.</b> Some support required for testing is listed in the appropriate MAPP annex as indicated on the previous page. Identify additional support requirements for this test by completing the following.	
Ranges and Facilities:	Identify the specific test ranges/facilities required for this test at the location indicated above.  Note: If the facilities are not adequate to support full testing, or are such that adequate testing of a function or required characteristic is not possible, this should be addressed in the subparagraph addressing this test and, if this could affect the adequacy of the whole test and evaluation program, in Paragraph Q.1.3, Risks and Outstanding Issues.
Threat Systems/Simulators:	Describe requirements for all threat systems/simulators.

<b>Table Q.2-1 Test and Evaluation Summary</b> (Complete one copy for each developmental or operational test planned or conducted.)	
<b>Data Element</b>	<b>Definition</b>
Simulations/ Models/ Testbeds:	Identify simulations required, including computer-driven simulation models and hardware/software-in-the-loop testbeds for this test. In the subparagraph addressing this test, explain how simulations/models/testbeds will be validated before use. (Refer to Part I, Table 2.5-1, Dynamic Simulation Summary.)
Interface Requirements:	Describe interface requirements for the test (e.g., water supply, use of hazardous materials).
Special Requirements:	Discuss any other special requirements for this test such as: special data processing/databases, unique mapping/charting/geodesy products, extreme physical environmental conditions, or restricted/special use air/sea/landscapes.
<b>Targets/Expendables/Special Instrumentation/Other Resources:</b> Identify requirements for additional resources by completing the following. Additional resources can include targets, flares, chaff, sonobuoys, smoke generators, acoustic countermeasures, etc.	
Description:	Describe the resource item required, by name or brief description.
Quantity:	Indicate the number of this resource item required.
NSN:	Provide the National Stock Number of the item, if available. If this is not a stock numbered item, leave this blank.
Date Required:	Indicate the date by which the resource item must be delivered (MM-DD-YY).
GFE:	Place an "x" in the space provided if the resource item is being provided by the Government [i.e., is Government Furnished Equipment (GFE)].
Safety Precautions:	Identify special safety precautions which must be observed due to test-induced hazards (refer to Annex L, Table L.2-1, Hazard Identification and Control).
<b>Nuclear, Biological, and Chemical Survivability Testing Only.</b> (Refer to Annex P, Survivability.)	
Monitor Points:	Identify the points on the CI to be monitored during the testing (e.g., rivets, seams).
Ambient Conditions:	Describe the ambient conditions (e.g., temperature, humidity) under which the test is being conducted.
Test Sample Operation Mode:	Describe the operation modes (e.g., full power, emergency power) under which the item is being tested.
Sample Size:	Provide sample size.
<b>Operational Test and Evaluation Only.</b> Complete the following for each OPEVAL conducted.	
Operational Force Test Support:	Identify the type and timing of aircraft flying hours, ship steaming days, on-orbit satellite contacts/coverage, and other critical operating force support.
Results Summary:	Summarize the major findings of the test. Identify specific functions/components which performed inadequately.  Note: Results of end item characteristics testing are to be recorded in Part I, Table 2.2-1, End Item Performance Requirements/ Critical Characteristics/Readiness Objectives. Use this section to explain the causes(s) of deficiencies recorded in Table 2.2-1.

### **Q.3 DEVELOPMENTAL TEST AND EVALUATION**

#### **Q.3.1 Overview**

*(Government/Contractor)*

Explain how developmental test and evaluation will:

- Verify the status of engineering and manufacturing development progress,
- Verify that design risks have been minimized,
- Verify that test feedback procedures are in place,
- Verify contract technical performance requirements have been met,
- Certify readiness for operational test.

Explain procedures for ensuring that survivability characteristics are not compromised during testing. (Refer to Annex P, Survivability.)

Note: Major deficiencies identified during developmental test and evaluation, and associated corrective actions, should be reflected in appropriate sections of the MAPP (e.g., if a significant technical deficiency results in a schedule delay, this should be discussed in Part I, Paragraph 5.0, Risk Assessment).

#### **Q.3.2 Developmental Test Summary**

*(Government/Contractor)*

Use one subparagraph for each developmental test planned or conducted, including Production Acceptance Test and Evaluation (PAT&E); use the title of the test as recorded in Table Q.2-1 for the subparagraph title to enable reviewers to correlate the narrative discussions with the appropriate copy of Table Q.2-1. In each subparagraph:

- Explain if the configuration of the item being tested differs from the projected production model [e.g., If testing is being performed on the Engineering Development Model (EDM) and previous testing has resulted in proposed changes to be designed into the EDM that have not yet been implemented, explain how this may affect the interpretation of test results.]
- Identify other known test limitations that may affect the evaluator's ability to draw conclusions; explain the projected impact of these limitations, and describe how each impact will be reduced or accommodated.
- When addressing test events, scenarios, and design concepts, describe the use of specific threat systems, surrogates, countermeasures, and testbeds. If incremental testing is being conducted, identify the components or functions scheduled for assessment during the test.
- Describe how performance in natural environmental conditions (e.g., humidity, fog, icing, wind, high sea state), representative of the intended area of operations, will be tested. Describe the procedures to compensate for differences between the demonstration environment and operational environment.

- Identify the type, number, availability, and fidelity requirements for threat systems/simulators required to support the test.

Note: If threat simulation is not adequate to support full testing, or is such that adequate testing of a function or required characteristic is not possible, this should be addressed in the subparagraph addressing this test and, if this could affect the adequacy of the whole test and evaluation program, in Paragraph Q.1.3, Risks and Outstanding Issues.

When describing Nuclear, Biological, and Chemical (NBC) survivability testing procedures, include a discussion of how the procedures relate to reliability and maintainability, survivability, and maintenance of the end item. Discuss requirements and plans for underground testing.

Note: Limit the nuclear portion of the NBC survivability test and evaluation strategy to residual radiological contamination (e.g., fallout, rainout, neutron-induced gamma activity).

When discussing the overall live fire test and evaluation strategy for the end item, describe the following:

- Critical live fire test and evaluation issues
- Management of the live fire test and evaluation program
- Related live fire test and evaluation efforts
- Evaluation plan and shot selection process

#### **Q.4 OPERATIONAL TEST AND EVALUATION**

##### **Q.4.1 Overview**

*(Government/Contractor)*

Summarize operational issues which must be examined during operational testing to assess the end item's capability to perform its intended mission.

Explain procedures for ensuring that survivability characteristics are not compromised during testing. (Refer to Annex P, Survivability.)

Note: Major deficiencies identified during operational test and evaluation, and associated corrective actions, should be reflected in appropriate sections of the MAPP (e.g., a shortage of manpower required to meet mission requirements could result in a failure of the test, and would be discussed in Annex B, Manpower/Personnel).

**Q.4.2 Operational Test Summary**  
***(Government/Contractor)***

Use one subparagraph for each operational test planned or conducted; use the title of the test as recorded in Table Q.2-1 for the subparagraph title to enable reviewers to correlate the narrative discussions with the appropriate copy of Table Q.2-1. In each subparagraph, address the following:

- Test events
- Test environment
- Plans for interoperability and compatibility testing with other weapons and support systems
- Type of personnel who will operate and maintain the end item

Identify additional sources of information (e.g., developmental testing, testing of related systems, modeling, simulation) required to supplement each test.

Describe the planned method of evaluation for each scheduled test. Explain the reasons for using selected models and simulations.

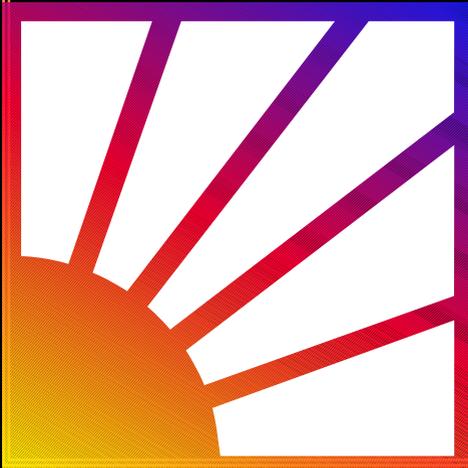
Explain if the configuration of the item being tested differs from the projected production model (e.g., if testing is being performed on a pre-production model and previous testing has resulted in proposed changes to be designed into the pre-production model that have not yet been implemented, explain how this may affect the interpretation of test results).

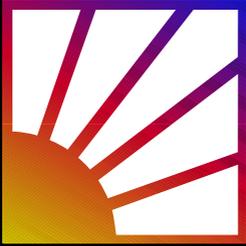
Identify other known test limitations that may affect the evaluator's ability to draw conclusions; explain the projected impact of these limitations, and describe how each impact will be reduced or accommodated (e.g., threat realism, resource availability, limited operational environments, limited support environment, maturity of tested configuration items, safety).

Automated Master Acquisition  
Planning Program

# MAPP 2000

*“The Next Generation”*



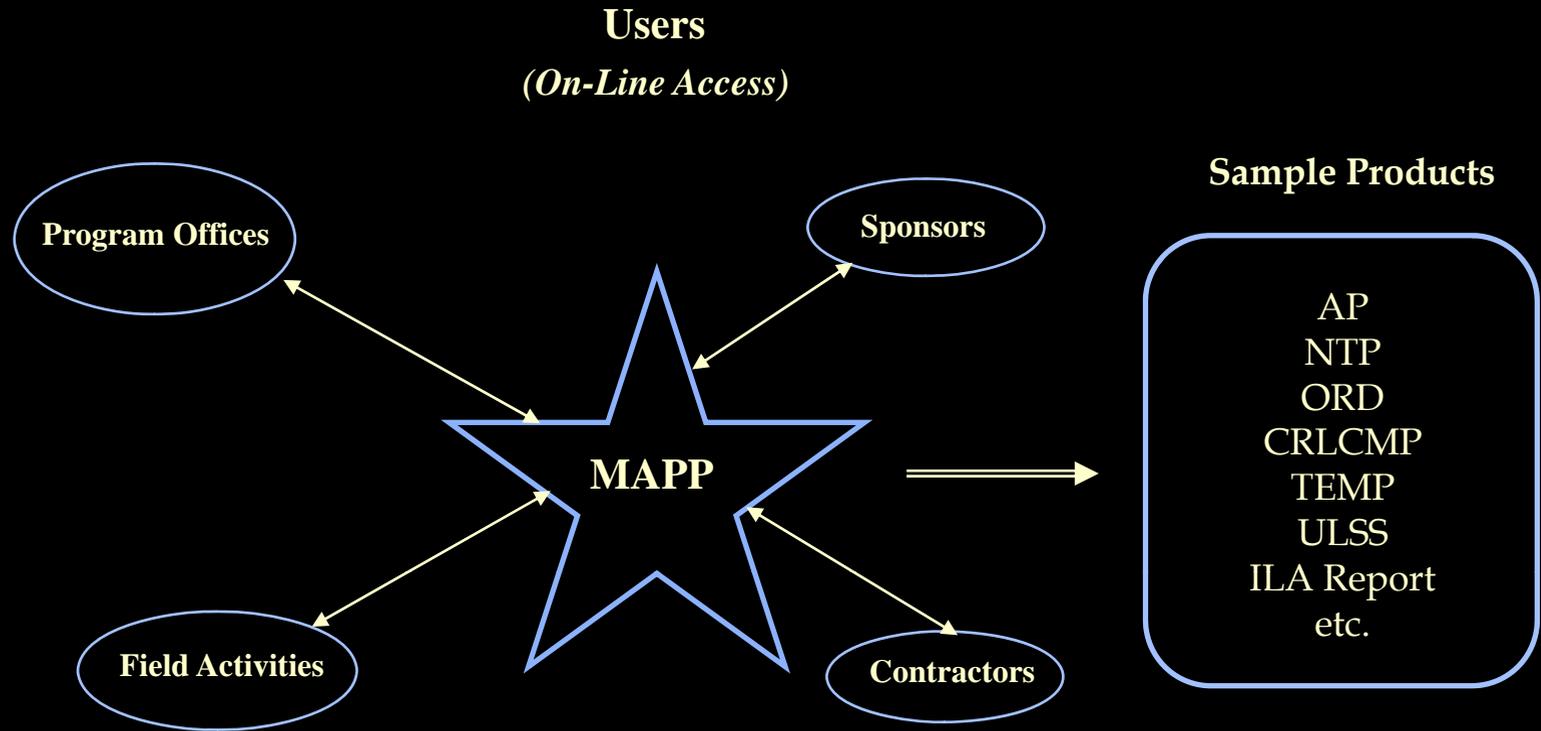


# MAPP Is...

- A database which serves as an electronic repository for acquisition program planning data
  - Used by Program Offices throughout the life cycle to *define, direct, document, and monitor* program decisions
- A Government/Industry Performance Specification
  - Developed with input from Program Offices, field activities and contractors
- An acquisition reform initiative
  - endorsed by ASN (RD&A) AR - “Certificate of Excellence” (May 1996)
  - used throughout the Navy Systems Commands (SYSCOMs), and
  - currently being reviewed/implemented in other Government agencies (i.e., FAA, SBA, Army, Air Force, Coast Guard, etc.)

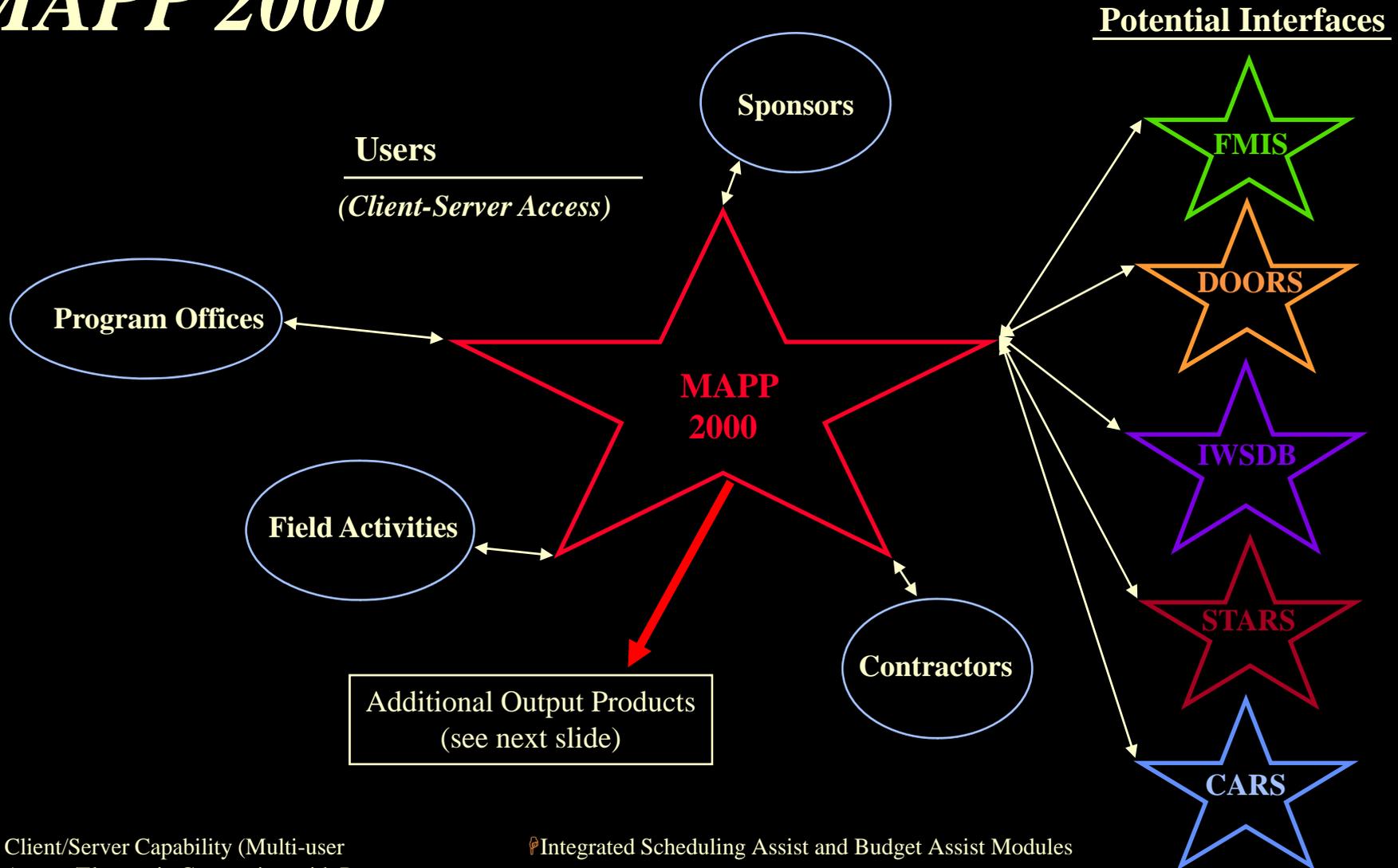
***Better Data Cheaper and Faster***

# MAPP Today...



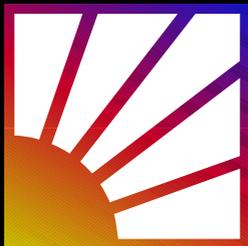
- Relational Database/Master Repository for Program Data
- *Windows* Environment; Structured Query Language (SQL) Compliant
- Uses Runtime System
- Development Guidance via On-line Help Screens
- Tailorable to ACAT, Acquisition Phase, and Assessed Risk
- Pre-formatted Output Reports
- Exportable in Rich Text Format (RTF) for use with Most Popular Word Processing Programs/ Excel for Tabular Data

# MAPP 2000



- ☞ Client/Server Capability (Multi-user Access/Electronic Connection with Program Participants)
- ☞ Integration with AMAS, NAVAIR IWSDB, DOORS, FMIS, STARS, & Other Designated Databases
- Contracts Management/Milestone Documentation

- ☞ Integrated Scheduling Assist and Budget Assist Modules
- ☞ Advanced Access Rights Assigned at Program Office Level
- ☞ Automatic Back-up
- ☞ Improved On-line Review/Approval Capability
- ☞ Workflow Management, Review/Comment, and Signature Page Capabilities
- ☞ Expanded On-line Help Screens
- ☞ Data Encryption/Security Features



# MAPP 2000

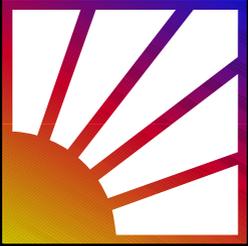
## *Additional Output Products*

### Products/Information

Pre-Solicitation Requirements  
SOW/CDRLs  
Source Selection Plans  
Proposal Evaluation Plan  
Performance Specifications  
Budget Estimates/Funding Requirements  
Funding Documents (PRs, Invoices, MIPRs)  
Small Purchase Documentation  
Status Reports/Schedules

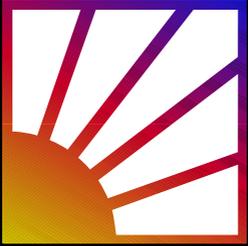
### Milestone/Management Output Reports (examples):

Executive Summary  
Support Concepts Summary  
Support Requirements Summary  
Test Plans/Results Summary  
Live Fire Test and Evaluation Waiver  
LRIP Report for Ships and Satellites  
Environmental Effects Summary  
Manpower Estimate Report  
Mission Needs Statement  
Operational Requirements Document  
System Threat Assessment Summary  
Acquisition Strategy Report  
Exit Criteria



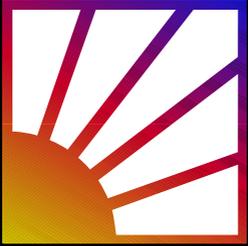
# *MAPP 2000* Features

- Client/Server architecture (single and multi-user versions)
- Enhanced Relational Data Base Management System (RDBMS) with latest MS Windows application
- New DoD 5000 Milestone Documents incorporated
- Enhanced output report capability
- Improved text formatting capability
- Expanded access rights
- Automated interfaces with workflow manager, project scheduler, internet browser, & external Navy systems (i.e., DOORS, STARS, FMIS, SPS)



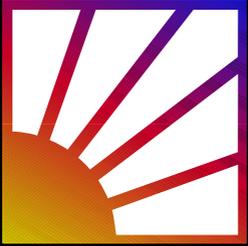
# *MAPP 2000* Features (cont'd)

- Storage of other program documents in the database
- Capability to attach notes to text paragraphs
- Data encryption and security functions (FIPS 140.1 compliant)
- Help from the menu bar
- Enhanced capability to manipulate figures
- Year 2000 compliant

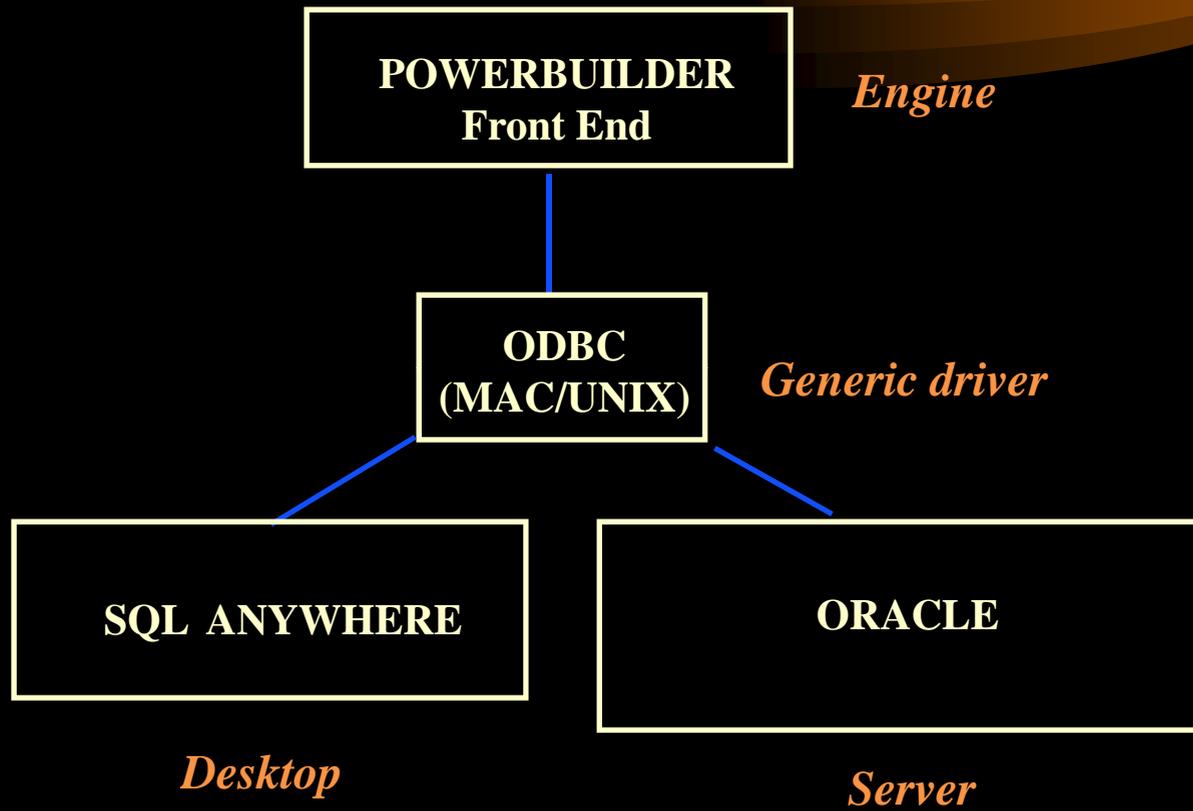


# *MAPP 2000 Approach*

- Generate client/server back-end database using baseline MAPP information model
- Maximize reuse of existing MAPP query logic and screen design
- Incorporate modules to support ad hoc reporting, budget, and text processing
- Build single and multi-user versions concurrently
- Implement incremental testing



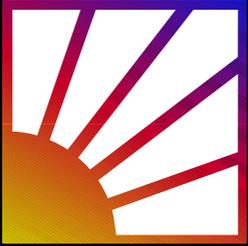
# MAPP 2000 Architecture





# Management Issues

- Changing acquisition policy and procedures
- Integration/Interface with other DoD/DoN office automation initiatives (i.e., NAVAIR IWSDB, AMAS/CMS)
- DoD/Other Government Agency Application
- Technology
- Funding
  - Program Offices
  - ASN(RD&A)
  - Field Activities
- Note: Contractual vehicle is not an issue (GSA Schedule)



# *Funding Profile*

## **Funding Source**

## **Funding Amount**

**Program A**

**\$140K**

**Program B**

**\$140K**

**Program C**

**\$140K**

**Program D**

**\$140K**

**Program E**

**\$140K**

**Program F**

**\$140K**

**Field Activity A**

**\$140K**

**Field Activity B**

**\$140K**

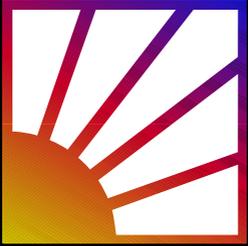
**Field Activity C**

**\$140K**

**ASN (RD&A)**

**\$140K**

**\$1.4M Funding  
for Development  
and Support of  
MAPP 2000**



# *Funding Profile*

**Funding Source**

**Funding Amount**

**PEO/Major Program A**

**\$475K**

**PEO/Major Program B**

**\$475K**

**Program C**

**\$150K**

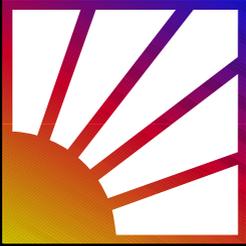
**Field Activity A**

**\$150K**

**ASN (RD&A)**

**\$150K**

**\$1.4M Funding  
for Development  
and Support of  
MAPP 2000**



# For More Information

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**MAPP on ASN Acquisition Reform (Center of Excellence)**

**Web Site:**

**<http://www.acq-ref.navy.mil/mapphome.html>**

**Find MAPP in the Center of Excellence**