Previous Section

3.0 -- Contractor Integrated Technical Information Services (CITIS) SOW

(Detailed Description can be use as a standalone SOW)

The following sections contain the language that could appear in a SOW for development of a CITIS. Text appearing as <SMALL CAPS> within the actual SOW text indicates information input by program managers relevant to their programs. Text appearing as [*italics*] at the end of each paragraph is provided as supplemental information that would not be used in the actual SOW.

> ***Note:*** ***A word of caution about the paragraph numbers illustrated in the sample texts that follow. Paragraph numbering is relative, not absolute. For example, if the solicitation's section C contains more than the digital technical information system requirements illustrated, the paragraph numbers must expand to reflect this fact. Similarly, if the work requirements are moved out of solicitation section C and into a SOW attachment, the other numbering convention of MIL-HDBK-245 would apply. Namely: paragraph 1 is scope, paragraph 2 is applicable documents, and requirements paragraphs are assigned numbers starting with "3".***

3.1 -- SOW Para. 1.0 -- Scope

The contractor shall establish a digital technical information system to provide automation and integration of the generation, delivery, and uses of <XXX PROGRAM> technical information. Unless otherwise specified within the contract, all, or any portion of, the technical information specified herein shall be developed and delivered in a digital form compatible with requirements stated herein. Unless specifically stated herein, the following requirements do not replace or amend requirements for delivery of technical information in non-digital forms specified elsewhere in the contract.

3.2 -- SOW Para. 2.0 -- Applicable Documents

- MIL-STD-974
- MIL-HDBK-59B

[*List all documents that apply.*]

3.3 -- SOW Para. 3.0 -- Specific Requirements

The contractor shall provide a Contractor Integrated Technical Information Service (CITIS) in accordance with the specific requirements as identified herein. MIL-STD-974 shall be used as a guide to CITIS development. The contractor will deliver in place all data associated with this procurement and identified within this SOW and the attached CDRL, unless otherwise noted. This data shall be maintained in an electronic form, and made available to authorized Government users and reviewers, and their assigned representatives, in accordance with the requirements described below.

The CITIS will be required to accommodate <STANDARD DOCUMENTATION SUCH AS TECHNICAL REPORTS

AND MANUALS, ENGINEERING DRAWINGS, AND LOGISTICS DATA>.

3.3.1 -- SOW Para. 3.1 -- CITIS Site Implementation Priorities

CITIS shall be made available to <ALL> locations listed in table 3-1 of the GCO. <PROGRAM OFFICE IN WASHINGTON, DC>, shall serve as the primary installation and testing site. After acceptance of each version of the CITIS software at the primary site, <ALL> other sites shall be allowed access to the current CITIS version.

[*See Desktop Guide Section 5, Exhibit 2, table 3-1, for a sample of the "Data Users Associated with XXX Program" table. If CITIS will not be provided to all locations listed in the GCO, the exceptions or inclusions should be specified here (whichever list is shorter). A copy of the table of locations from the GCO may be included here, if desired. Selection of a primary installation site is not required, but is highly recommended. If a GCO is not being provided with the RFP, a table of Government locations is needed here.*]

3.3.2 -- SOW Para. 3.2 -- CITIS Period of Performance

The <XXX PROGRAM> CITIS period of performance shall begin on <1 JANUARY 1996> and continue until <1 JANUARY 2001> at <PROGRAM OFFICE IN WASHINGTON, DC>. CITIS service shall be available to <ALL> other locations on <1 FEBRUARY 1996> or after CITIS acceptance at the primary site, whichever is later, and continue until <1 JANUARY 2001>.

[*The CITIS period of performance specifies the date when the CITIS is to be made initially available to the Government; it is assumed that the CITIS development phase will begin immediately after contract award and the basic CITIS will be installed and functional by the beginning period of performance date. The period of performance may be specified to be the same for all locations, or it may be different for each location.*]

3.3.3 -- SOW Para. 3.3 -- CITIS Installation

Any peculiar software that must be resident on Government access terminals or computers will be provided and maintained by the contractor. It will also be installed by the contractor if complexity of the software warrants/requires special installation and testing procedures.

3.3.4 -- SOW Para. 3.4 CITIS Data Residency and Storage

Data shall be available through CITIS for a period of <ONE YEAR> after its creation or revision unless otherwise requested by the Government. Exceptions include short-lived data such as meeting agenda, meeting minutes, trip reports, status reports, etc., which will be stored on CITIS for a period of <60 DAYS> after creation or revision. All data shall be archived after its CITIS storage time has expired, unless it has been specified for either deletion or further retention on the CITIS by the Government.

[*If desired, the Government may break down the CITIS data availability further by specifying the residency period for each type of data (e.g., "engineering drawings shall be available via CITIS throughout the life of the contract".) If the archive function is not being required, the program manager must specify the*

disposition of the data after its CITIS storage time is expired. Note that specification of a storage period is not required; the program manager may specify that all data is stored on CITIS throughout the life of the contract.]

3.3.5 -- SOW Para. 3.5 -- Data Classification

The CITIS shall be required to handle <UNCLASSIFIED> data only.

[*Specify each level of classification that the CITIS will be required to handle.*]

3.3.6 -- SOW Para. 3.6 -- Functions & Services

The contractor shall establish a CITIS functionality that supports the interchange of programmatic and technical data between the <XXX PROGRAM> and its prime contractors and between the <XXX PROGRAM> and other Government organizations. The CITIS shall incorporate the following general services:

a) On-line access to contractor-maintained databases containing management, financial, engineering, and logistics program data. On-line access to databases should allow users to perform searches on data, make comments on data, produce and run pre-formatted (standardized) reports with output at their location, produce ad-hoc reports with output at their location, and download selected data to their location for use in further processing.

b) File transfer ability. This capability should allow users to download contractor data files (CDRL data and other information files). This capability should also allow users to upload data files to the contractor (for GFI and information requests).

c) Electronic mail capability compatible with the <CC:MAIL> system. The <CC:MAIL> system will not be the mechanism for transfer/access to large CDRL data deliveries.

d) Electronic notification ability. This capability will provide notification to the government users when digital data are ready for electronic commentary, concurrence, routing, approval and/or inspection.

3.3.6.1 -- SOW Para. 3.6.1 -- Availability and Accessibility

The CITIS shall provide <24-HOUR> on-line service <EVERY> day of the week. Users shall be notified <24> hours in advance of any scheduled maintenance or other events affecting CITIS accessibility.

[*For the standard, unclassified CITIS, 24-hour on-line service is probably a reasonable requirement. When classified data is contained on the CITIS, the Government will probably need to specify the hours and days for which the classified data should be available. Sample language could be: "CITIS shall provide 24-hour on-line service every day of the week for unclassified data. Classified data shall be available between the hours of 7:00 a.m. and 7:00 p.m. EST, on normal working days only (no weekends or holidays)."*]

3.3.6.2 -- SOW Para. 3.6.2 -- Government Furnished Information (GFI)

The contractor shall provide data users with access to GFI via the CITIS. The Government shall provide approximately <25> data items that will include <TECHNICAL MANUALS/TECHNICAL ORDERS, TECHNICAL REPORTS, AND ENGINEERING DRAWINGS>. All GFI provided in digital formats will be available through the CITIS except in cases where files sizes or formats are prohibitive. The technical manuals/technical orders and reports will be provided in <RASTER FORMAT AND STANDARD WORD-PROCESSING FORMATS>, and the engineering drawings will be provided in <STANDARD CAD FORMATS>. The maximum file size for any data item is <5 MB>. GFI shall be included in the data item index, and CITIS users shall be able to, as a minimum, <SEARCH FOR, VIEW, AND DOWNLOAD> all GFI.

[*Specify the approximate number, type, and formats of GFI to the extent possible. If the specific software applications used to create the data are known, they can be listed here. Specify the CITIS functions required for the GFI (not all are appropriate).*]

3.3.6.3 -- SOW Para. 3.6.3 -- Multi-user Access

The CITIS shall provide simultaneous access to <10> users.

3.3.6.4 -- SOW Para. 3.6.4 -- Electronic Mail

The CITIS shall allow each Government user to communicate with the contractor and other users of CITIS via electronic mail. The electronic mail shall be implemented in accordance with the requirements of CCITT X.400 Series of Recommendations for Message Handling Systems.

3.3.6.5 -- SOW Para. 3.6.5 -- Interface Compatibility

The CITIS shall be compatible with <ALL SYSTEMS (HARDWARE AND OPERATING SYSTEMS)> listed in table 5-1 of the GCO. <COMPATIBILITY WITH EVERY SOFTWARE APPLICATION IS NOT REQUIRED.>

[*See Desktop Guide Section 5, Exhibit 2, table 5-1, for a sample of the "Data User Capabilities" table. If the systems listed in the table cover a wide range of hardware and operating systems, the Government may choose to require compatibility with only the most prevalent of the systems in order to reduce the cost of CITIS development. The contractor should develop the CITIS to be compatible with the predominant software used by the Government, but not necessarily every software application (especially if the Government is using older applications).*]

3.3.6.6 -- SOW Para. 3.6.6 -- Communication Protocols

Communication of data between sites via CITIS shall utilize the <TRANSMISSION CONTROL PROTOCOL/INTERNET PROTOCOL (TCP/IP)> and shall be in accordance with <MIL-STD-1778 AND MIL-STD-1777>.

3.3.6.7 -- SOW Para. 3.6.7 -- Training Support

The contractor shall provide CITIS training through development of a <CITIS USER'S MANUAL> that shall instruct users on how to gain access to CITIS, how to locate data, and how to utilize the various CITIS functions. <THE CONTRACTOR SHALL TRAVEL TO THE PRIMARY CITIS SITE TO PROVIDE HANDS-ON

TRAINING AFTER INSTALLATION OF THE COMPLETED CITIS.> <ALL OTHER CITIS LOCATIONS> will receive the CITIS User's Manual and will have access to contractor telephone support for assistance with CITIS installation, access, and usage. The contractor shall update the User's Manual <AFTER EACH MAJOR SYSTEM CHANGE>, and minor changes can be accumulated and a revised document generated when they impact operation significantly.

[*If contractor travel to CITIS user sites for training is desired, specify each or all of the sites to be visited. If there is a large number of CITIS locations, the Government may also want to require the contractor to develop a CITIS Operator's Manual that will provide detailed information on CITIS installation, trouble-shooting, and access.*]

3.3.6.8 -- SOW Para. 3.6.8 -- Telephone Support

The contractor shall provide telephone support between the hours of <7:00 A.M. AND 6:00 P.M. EST>.

3.3.6.9 -- SOW Para. 3.6.9 -- Data Configuration Management

<THE CONTRACTOR SHALL DEVISE A STANDARD FILE NAMING SCHEME THAT SHALL BE EMPLOYED BY ALL ORGANIZATIONS CONTRIBUTING DATA TO THE CITIS. THIS SCHEME SHALL ALLOW THE CITIS USER TO RAPIDLY IDENTIFY DESIRED FILES. ALL FILE NAMES SHALL COMPLY WITH THE MAXIMUM NAME LENGTH ALLOWED BY THE MOST RESTRICTIVE OPERATING SYSTEM USED AT A CITIS LOCATION. IF DOS IS ONE OF THE PRIMARY OPERATING SYSTEMS USED BY THE GOVERNMENT, ALL FILE NAMES WILL COMPLY WITH THE 8.3 (8 CHARACTER NAME PLUS 3 CHARACTER FILE EXTENSION) NAMING CONVENTION.>

[*All requirements listed above are optional.*]

3.3.6.10 -- SOW Para. 3.6.10 -- Security

The contractor shall establish a security system and enforce data protection and integrity standards. System security engineering principles as outlined in <MIL-STD-1785> shall be used. Controls to prevent unauthorized access shall be established and detailed in the System Design Document. The plan shall be based on the results of documented data protection and integrity, threat and vulnerability analysis, risk assessments, and tradeoff analyses. Vulnerabilities that remain after security system design shall be identified. The plan shall include disaster recovery provisions. Security requirements that must be complied with by Government personnel will be identified to the Government in the security section of the System Design Document.

[*If higher data classifications will be required, include information regarding any special security provisions (see paragraph 2.2.4, Section 7 of this Desktop Guide for additional SOW language).*]

3.3.6.11 -- SOW Para. 3.6.11 -- CITIS Functions

The following functions shall be implemented in accordance with the requirements described below.

[*All the functions listed in this paragraph are optional. MIL-STD-974 describes some additional functions that could be required. The choice of CITIS functions must be based on the data use requirements of the program, the existing data interchange capabilities, and the funding available for*

CITIS implementation.]

SOW Para. 3.6.11.1 -- Acknowledge

<CITIS SHALL PROVIDE THE AUTHORIZED GOVERNMENT REPRESENTATIVE THE CAPABILITY TO ACKNOWLEDGE RECEIPT OF DATA ITEMS VIA E-MAIL.>

[*If a methodology other than e-mail is required, specify it here.*]

SOW Para. 3.6.11.2 -- Approve or Disapprove

<THE CITIS SHALL PROVIDE GOVERNMENT USERS WITH THE CAPABILITY TO ELECTRONICALLY SIGNIFY APPROVAL OR DISAPPROVAL OF DATA ITEMS.>

[*If Digital Signature capability will be required as part of the approval process, it should be discussed here.*]

SOW Para. 3.6.11.3 -- Notice of Delivery

<CITIS SHALL PROVIDE THE GOVERNMENT WITH NOTICE OF DELIVERY VIA E-MAIL FOR EACH DATA ITEM MADE AVAILABLE FOR ACCESS.>

[*If a methodology other than e-mail is required, specify it here.*]

SOW Para. 3.6.11.4 -- Search

<CITIS SHALL PROVIDE AUTHORIZED USERS WITH THE ABILITY TO SEARCH FOR AND RAPIDLY LOCATE DATA ITEM INSTANCES.>

SOW Para. 3.6.11.5 -- View

<CITIS SHALL PROVIDE USERS WITH THE CAPABILITY TO DISPLAY CITIS DATA ON-LINE.>

SOW Para. 3.6.11.6 -- Comment

<CITIS SHALL PROVIDE AUTHORIZED USERS WITH THE CAPABILITY TO COMMENT ON CITIS DATA IN ASSOCIATION WITH THE VIEW FUNCTION. COMMENTS RESULTING FROM THIS REVIEW SHALL BE INCLUDED IN THE CITIS EITHER SEPARATELY OR AS APPENDED TO THE REVIEWED DATA AND MADE AVAILABLE TO USERS.>

[*Although on-line comment capability is very useful to have, it can be more difficult to implement that the functions listed in 3.6.11.1 -- 3.6.11.5 and should therefore be considered carefully before being required as part of the CITIS. Can also specify simply that comments will be generated off-line and shall be delivered via e-mail.*]

SOW Para. 3.6.11.7 -- Archive

<THE CONTRACTOR SHALL CREATE AND MAINTAIN AN ARCHIVE OF DATA WHOSE CITIS STORAGE TIME HAS

EXPIRED. THE CONTRACTOR SHALL DETERMINE THE METHOD/MEDIA FOR THIS ARCHIVE. THE CONTRACTOR SHALL TRACK AND INDEX ALL ARCHIVED DATA, AND SHALL PROVIDE ACCESS TO THIS DATA UPON REQUEST. THE CONTRACTOR SHALL PROVIDE AN ON-LINE CAPABILITY FOR USERS TO REQUEST THAT ARCHIVED DATA BE MADE AVAILABLE THROUGH THE CITIS. ALL REQUESTS FOR ARCHIVED DATA SHALL BE ACKNOWLEDGED AND AN APPROXIMATE TIME FRAME FOR AVAILABILITY PROVIDED. REQUESTED DATA SHOULD BE MADE AVAILABLE THROUGH CITIS WITHIN 24 HOURS DURING THE NORMAL WORK WEEK. AN ELECTRONIC MESSAGE SHALL BE SENT TO THE DATA REQUESTER WHEN THE DATA BECOMES AVAILABLE ON THE CITIS. IF THE REQUESTED DATA FILE IS FOUND TO BE LARGER THAN 30 MB IN SIZE, IT WILL NOT BE MADE AVAILABLE ON THE CITIS, AND THE REQUESTER WILL BE NOTIFIED AND QUERIED REGARDING THE PREFERRED PHYSICAL MEDIA FOR DATA DELIVERY.>

[*Program Manager can simply require that the contractor maintain all CITIS data on-line for the life of the contract rather than creating an archive.*]

SOW Para. 3.6.11.8 -- Download

<CITIS SHALL PROVIDE THE CAPABILITY FOR USERS TO DOWNLOAD DATA ITEMS. THE MAXIMUM FILE SIZE THAT SHALL BE DOWNLOADED IS 30 MB IN ORDER TO REDUCE POTENTIAL TELECOMMUNICATIONS PROBLEMS. THE CONTRACTOR SHALL PROVIDE ON-LINE CAPABILITY FOR USERS TO REQUEST PHYSICAL DELIVERY OF DATA FILES TOO LARGE TO DOWNLOAD. USERS SHALL BE PROVIDED WITH A LIST OF POSSIBLE MEDIA FROM WHICH THEY MAY SELECT THE PREFERRED DELIVERY METHOD.>

SOW Para. 3.6.11.9 -- Receive

<CITIS SHALL PROVIDE THE CAPABILITY TO ELECTRONICALLY RECEIVE DATA TRANSMITTED BY THE GOVERNMENT.>

SOW Para. 3.6.11.10 -- Query

<CITIS SHALL PROVIDE THE CAPABILITY FOR USERS TO REQUEST SPECIFIED DATA ITEMS USING STRUCTURED QUERY LANGUAGE (SQL).>

[*The specific query language to be used should be specified here; industry and national standard languages are preferred.*]

3.3.7 -- SOW Para. 3.7 -- Printing Capabilities

The CITIS shall include the capability for users to print information locally and shall allow users to specify a <SINGLE PAGE, A RANGE OF PAGES, OR THE FULL DOCUMENT> for printing. This capability shall be independent of the printer being used.

[*Specify the document printing options desired.*]

3.3.8 -- SOW Para. 3.8 -- Licensing

The contractor shall be responsible for obtaining any licenses required for CITIS users to access the commercial-off-the-shelf (COTS) software applications used to perform the CITIS functions. The Government will assist the contractor in obtaining permission to include any applications developed by other contractors and/or owned by the Government in the CITIS.

3.3.9 -- SOW Para. 3.9 -- Subcontractor Data

The contractor shall provide access to appropriate subcontractor data via the CITIS. The contractor shall determine the method by which the subcontractor shall provide this data and the manner in which it is incorporated into the CITIS.

[*The contractor will determine whether the subcontractors shall be linked to the CITIS network or whether they will simply provide their data in digital formats, and the prime contractor will then load it into CITIS.*]

3.3.10 -- SOW Para. 3.10 -- <XXX PROGRAM> Data Repository

The contractor shall propose an <XXX PROGRAM> working data repository scheme in the System Design Document. Direct access to all contractor and subcontractor databases is the preferred method, but it is not required.

[*The program manager should not typically specify the data repository scheme because the contractor will need to assess the compatibility of the suppliers' and subcontractors' infrastructures with the proposed CITIS before deciding whether to incorporate them into the CITIS network. Government specification of a data repository scheme without prior knowledge of the infrastructures involved could result in substantial unnecessary costs and effort.*]

3.3.11 -- SOW Para. 3.11 -- Equipment and Telecommunications

The Government shall utilize its own hardware, software, and networks to access the CITIS. The Government shall be responsible for installation and maintenance of any dedicated modem and/or high-speed optical lines, if needed, at Government CITIS user facilities. The contractor shall provide an 800-number hotline accessible by a maximum of 10 concurrent users. This hotline shall be available during the hours specified in paragraph 3.6.1.

[*The program manager should specify who will provide CITIS equipment (e.g., computer terminals, modems, etc.) and telecommunications (e.g., dedicated modem or high-speed optical lines). The 800-number hotline is one option for providing dial-up service. Either the contractor or the Government or both may be responsible for providing this equipment/service (see paragraph 5.2.2 of section 6 of the Desktop Guide).*]

3.4 -- SOW Para. 4.0 -- CITIS Acceptance and Testing

CITIS acceptance includes acceptance of the service and CITIS CLIN, assurances of adequate acceptance testing, and electronic data transfer service acceptance. Acceptance of the service and the CITIS CLIN, if utilized, is a verification that the contractor has provided the service as specified. Provision of the CITIS functional requirements specified in the SOW will be verified, including such capabilities as CITIS functions, service availability, and maintenance response.

Assurances of adequate acceptance testing for CITIS shall be obtained via contractor demonstration of the service. The test shall include demonstration of functional capabilities and verification that the CITIS will

handle representative data required to be formally delivered through CITIS without alteration of the data product. Such a test is not required for each delivery, but shall be rerun if major maintenance or modifications have been performed or the sending or receiving systems have been changed enough to warrant additional tests. If specific test data is deemed necessary for adequate testing of a CITIS, that test data shall be provided and results reviewed at the primary CITIS site. On-line access service shall be accepted when it is demonstrated that a person with proper authorization can utilize the contractually required core and tailorable CITIS functions from a terminal or workstation at the primary site or as otherwise agreed.

Electronic data transfer service acceptance shall occur when a single instance of transfer of the specific deliverable type can be achieved, including successful download and retrieval of data into the Government's system. This data may be real product data or test data, as appropriate.

3.5 -- SOW Para. 5.0 -- Final Disposition of Data

Upon completion of the initial CITIS contract, the Government will decide whether the contractor, the Government, or a third-party contractor will continue maintenance of the CITIS.

[*If the final disposition of the data is known, it should be specified here. The program manager will typically want to wait for the CITIS to be developed and its usefulness determined before deciding who, if anyone, should maintain it after the initial contract is completed.*]

4.0 -- Source Selection Criteria

CALS must be emphasized throughout the contract development phase, as incentives for CALS are incorporated into both the draft contract and the Source Selection Plan, to guide the follow-on proposal evaluation phase.

4.1 -- Source Selection Process

The following actions help promote a CALS-presence throughout source selection:

- Ensure that technical requirements facilitate CALS utilization
- Encourage industry identification of CALS alternatives in section "L" of solicitation (Instructions to Offerors)
- Provide positive incentives in section "M" of solicitation (Evaluation Criteria)
- Make CALS an explicit element of Source Selection Plan
- Provide/ensure CALS awareness of Source Selection Evaluation Board.

4.2 -- General Evaluation Factors

General evaluation criteria are used to evaluate the contractor's compliance with CALS sections of the RFP with respect to CALS implementation. Value for "CALS Implementation" shows up in a number of different areas. Offerors' proposals for digital delivery of CDRL items will be evaluated by the area requiring them, e.g., Technical Publications personnel will evaluate the Technical Publications part of proposals. Their evaluation will include assessment of value for delivery of CDRL items in the required

CALS formats. The team also assesses the overall value of proposed data integration capabilities in response to Section L. Overall, the value of applying the CALS strategy should be a lower life-cycle cost and higher quality product.

- Proposals should be awarded higher points for creation of digital data early in the design and development process.

- Proposals should be awarded higher points for early and efficient digital access to and delivery of technical information.

- Proposals should be awarded higher points for on-line access to contractor applications and analyses.

4.3 -- Offerors Ability to Meet Requirements

The source selection evaluation team should have a high confidence in the proposed offeror's ability to meet the following requirements:

- Data acceptance and CITIS functionality,
- System and administrative security capabilities,
- System configuration controls and procedures,
- Proposed transmission methodology,
- Capabilities of database management and retrieval applications, and
- Interchange requirements.

4.4 -- Contractors Approach to CALS (CAC) Evaluation

The proposal evaluation team should consider the following questions when reviewing the CAC:

- Did the offeror's proposal address each of the requirements asked for in the RFP?

- Did the offeror demonstrate a clear understanding of what was being asked for in the area of CALS concepts and policy?

- Did the offeror clearly describe how their digital data infrastructure would interface with or become a CITIS?

- Did the offeror demonstrate knowledge of the CALS Automated Information Systems (e.g., JCALS, JEDMICS, etc.)?

- Did the offeror discuss its past experience with CALS and the creation, management, and use of digital data?

- Did the offeror demonstrate an understanding of the digital data formats that were asked for in the RFP?

- Did the offeror adequately address the issue of digital data security?

- Did the offeror address post-award CALS planning?
- Did the offeror demonstrate an understanding of the digital data verification requirements?
- Did the offeror provide a plan for the integration of its and the Government's infrastructures?
- Did the offeror provide an adequate description of CALS program management?
- Did the offeror demonstrate knowledge of the CALS standards?
- Did the offeror demonstrate an understanding of the CITIS functionality asked for in the RFP?

Section 8
Applying CALS to the Creation, Management, and Use of Technical Data

1.0 -- Introduction

CALS is a Department of Defense (DoD) strategy that enables more effective creation, management, exchange and use of data for the acquisition and support of defense systems and equipment. Technical data is defined as recorded information (regardless of the form or method of the recording) that provides a technical description of an item adequate for supporting the selected acquisition and use strategy and defined and controls the complete design configuration. Applying the CALS strategy to the creation, management, and use of technical data will aid in accomplishing the transition from paper-intensive defense system acquisition and support processes to automated and integrated digital processes.

1.1 -- Purpose

The planning process for the creation, management, and use of technical data in a CALS environment needs to take advantage of the capabilities provided by the automation and integration of information systems. Various data content, media, and format options are available for the delivery of technical data needed to define and support a defense system. The intent of this section is to:

- Describe the various deliverable content, format, and media options for technical data,
- Explain the benefits and caveats for the available options,
- Examine the life cycle considerations for all options,
- Provide a method to determine the cost associated with each option,
- Provide guidance for specific contract language required to support the selection of the options, and
- Describe contractor validation and Government verification procedures.

This section contains information for determining the media and format of digital technical data, with primary emphasis on the information contained in Technical Data Packages (TDPs).

2.0 -- Technical Data

2.1 -- Definitions

2.1.1 -- Technical Data

Technical data is a very broad term used to describe recorded information (regardless of form or method of the recording) of a scientific or technical nature (including computer software documentation) relating to supplies procured by an agency or component of the Department of Defense. Per DFARS 227, technical data does not include computer software, financial, administrative, cost or pricing, management data, or other information incidental to contract administration.

2.1.2 -- Technical Manuals

Technical data that provides instructions for the installation, operation, maintenance, training, and support of a system or equipment may be published as a technical manual. A technical manual normally includes operational and maintenance instructions, parts lists, parts breakdowns, and related technical information or procedures exclusive of administrative procedures. United States Air Force Technical Orders that meet the criteria of the technical manual definition above may also be classified as technical manuals. Because the acquisition of technical manuals involves additional considerations not typically encountered in general technical data acquisition, acquisition of technical manuals is covered in detail in section 9 of this desktop guide.

2.1.3 -- Technical Data Packages

Technical data packages (TDPs) contain the information necessary to describe a defense system and its components in terms of design, engineering, manufacturing, and logistics support. A TDP is required to define and document an engineering design or product configuration sufficient to allow duplication of the original items and is used to support production, engineering, and logistics support activities. Required as a part of an acquisition program, a TDP must be purchased, maintained, and available for use by all activities with a need for access to this information.

TDPs are composed of one or more specific TDP elements and one or more related TDP management data products. Selection of TDP elements and TDP data management products to make up a TDP must be based on the Government's needs for technical data required to support the acquisition and life cycle support strategies for the product being documented. The Government's need for technical data varies greatly from program to program. It may range from conceptual design data used for concept evaluation to a complete set of detailed design data for reprocurement of items essentially identical to the original item. The various TDP elements and management data products are each defined in the next section.

TDP elements and management data products are prepared in accordance with their applicable Data Item Descriptions (DIDs), as tailored and imposed through TDP tailoring forms and contract data requirements lists (CDRLs) in contracts, purchase orders, and Military Interdepartmental Procurement Requests (MIPRs) . TDPs, except conceptual design and developmental design drawings, define the physical and functional characteristics of the approved, tested, and accepted configuration of the item and all its subordinate assemblies, subassemblies, and parts.

Documents referenced in a TDP element will be furnished as an integral part of the TDP element when

essential to meet the information content requirements of the TDP element. Sub-tier references will be submitted to meet all information content requirements. Technical manuals, procedural manuals, maintenance manuals, company drafting manuals, and management plans are not considered as reference documents.

2.1.4 -- Operational and Support Data

Operational and Support (O&S) data includes the technical data required to operate/maintain the system/equipment. O&S data include analyses, trade studies, plans and reports, such as, configuration management plans, reliability and maintainability data, packaging data, provisioning data, etc. Some of the specific types of O&S data include:

- ***Manpower and personnel:*** data regarding the number and skills of military and civilian personnel needed to support operations and maintenance.

- ***Supply support:*** data regarding management actions, procedures, and techniques required to determine requirements for, acquire, catalog, receive, store, transfer, issue, and dispose of secondary items. This includes provisioning for initial support as well as replenishment supply support.

- ***Support and test equipment data:*** data regarding equipment required to support the operation and maintenance of a materiel system. This includes the acquisition of logistics support for the support and test equipment itself.

- ***Training and Training Support data:*** data regarding the processes, procedures, techniques and equipment used to train active and reserve personnel to operate and support a materiel system. Data from sources such as Technical Manuals and TDPs are used to develop training plans and various other training products.

- ***Packaging, handling, storage, and transportability (PHS&T):*** data regarding the resources, processes, procedures, design consideration and methods to ensure that all system, equipment, and support items are preserved, packaged, handled, and transported properly.

- ***Facilities data:*** data regarding real property assets required to support the materiel system.

- ***Reliability and maintainability data:*** data regarding how long a system will operate without failing and how long it will take to fix an item; this information is used to develop support requirements.

3.0 -- Technical Data in the CALS Environment

The technical data manager should be aware that it is possible to acquire technical data in a variety of forms depending upon the needs of the users. Primary considerations for the technical data manager to address when applying CALS to the creation, management, and use of data is the media, format, and content of data deliverables and their respective end users. This section provides definitions/descriptions of the different types of technical data and their formats.

Paper, mylar hard copy, and aperture cards have been included in this discussion of CALS because much of the Government's technical data inventory, and especially drawings, is still available on these media. Government CALS initiatives are being developed to reduce or eliminate the need for these forms of media in the future. The benefits associated with using digital data far exceed what is being discussed in this section. For technical data some benefits of digital data include: (1) Improved handling and reduced storage of data with electronic filing and archiving; (2) reduced costs associated with printing and distributing data by providing on-line access to the data, so that defense personnel could access the data repository from their field activity and view and/or print the specific information they require; and (3) improved accuracy and timeliness of the data, due in part to the simplified incorporation of change pages.

Next Section