NOT MEASUREMENT SENSITIVE

MIL-DTL-31000C
9 July 2004
SUPERSEDING
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14 December 2001

DETAIL SPECIFICATION

TECHNICAL DATA PACKAGES

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

1. SCOPE.

1.1 Scope. This specification prescribes the requirements for preparing a technical data package (TDP), which is composed of one or more TDP elements and related TDP data management products (See 6.1). This specification does not apply to financial, management, or contract administrative data.

1.1.1 Selective application. Selection of the TDP type and elements and TDP data management products to make up a TDP must be based on the Government's need 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 for concept evaluation to a complete set of detailed design data for reprocurement of items essentially identical to the original item.

1.1.2 Tailoring implementation. All requirements herein are subject to tailoring. These requirements, as well as the requirements of specific TDP types and elements and TDP data management products selected for inclusion in the TDP, should be tailored by the Government prior to release of the solicitation. This includes the requirements stated in data item descriptions, Government or non-Government standards, and requirements for the media and methods of delivery.

1.2 Classification. This specification covers the following elements of TDP types, elements and data management products. (See 6.2)

Comments, suggestions, or questions this document should be addressed to: Commander, U S Army RDECOM ARDEC, ATTN: AMSRD-AAR-AIC-S, Picatinny Arsenal, NJ 07806-5000 or emailed to ardec-stdzn@pica.army.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at www.dodssp.daps.mil.

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1.2.1 TDP types.

Type 2D. 2-Dimensional(2D) Technical Data Package

Type 3D. 3-Dimensional(3D) Technical Data Package

1.2.2 TDP elements.

a Conceptual design drawings.

b. Developmental design drawings and associated lists.

c. Product drawings and associated lists.

d. Commercial drawings and associated lists.

e. Special inspection equipment (SIE) drawings and associated lists.

f. Special tooling (ST) drawings and associated lists.

g. Specifications.

h. Software documentation.

i. Special packaging instructions (SPI) drawings/models and associated lists.

1.2.3 TDP data management products.

a. Source control drawing approval request.

b. Drawing number assignment report.

c. Proposed critical manufacturing process description.

2. APPLICABLE DOCUMENTS.

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

FEDERAL STANDARDS

FED-STD-376	Preferred Metric Units for General Use by the Federal Government

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-961	Defense and Program-Unique Specifications Format and Content

(Copies of these documents are available online at http://assist.daps.dla.mil/quick search/ or www.dodssp.daps.mil or from the Standardization Document Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2.2 Other Government documents and publications. The following other Government documents and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation or contract.

DoD Manual 5220.22-M	Department of Defense Industrial Security Manual for Safeguarding Classified Information.
DoD Directive 5230.24	Distribution Statements on Technical Documents
	Federal Standardization Manual
Federal Cataloging	Commercial and Government Entity (CAGE)
Handbook H4/H8	Publication

(Applications for copies of DoD Manual 5220.22-M and DoD Directive 5230.24 should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402-0001. Copies of the Cataloging Handbook H4/H8 are available from the Commander, Defense Logistics Services Center, and Battle Creek, MI 49017-3084. Copies of the Federal Standardization Manual are available from the General Services Administration, Centralized Mailing List Service (7CAFL), P. O. Box 6477, Ft. Worth, TX 76115.)

2.2.3 Non-Government publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents are those cited in the solicitation.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME Y14.41	Digital Product Definition Data Practices

(Copies of these documents are available from www.asme.org or ASME information Central Orders/Inquiries, P.O. Box 2300, Fairfield, NJ 07007-2300)

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)/ELECTRONIC INDUSTRIES ALLIANCE (EIA)

IEEE/EIA 12207 Standard for Information Technology – Software Lifecycle Processes

(Copies of this document are available from www.ieee.org or IEEE Service Center, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08854-1331.)

US PRODUCT MODEL DATA ASSOCIATION

ISO 10303 STandard for the Exchange of Product model data (STEP)

(Application for copies should be sent to: https://www.uspro.org/ or USPRO, Suite 204, 5300 International Boulevard, N. Charleston, SC 29418.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS.

3.1 General. TDP elements and TDP data management products shall be identified in accordance with this specification and applicable data item descriptions, as tailored and imposed through TDP Option Selection Worksheets (Figures 1 through 8) and contract data requirements lists (CDRL) in contracts, purchase orders, and Military Interdepartmental Procurement Requests (MIPRs). See Appendix A for guidance on selection of TDP elements and data management products. TDPs, except conceptual design and developmental design drawings/models, shall define the physical and functional characteristics of the approved, tested, and accepted configuration of the item and its subordinate assemblies, subassemblies, and parts thereof. These requirements apply to data prepared by either manual or automated methods, such as Computer Aided Design(CAD) and Computer Aided Manufacturing(CAM) systems, or combinations thereof. Furthermore, these requirements apply to data using either U. S. customary units of measurement, the International System of Units (SI), or combinations thereof.

3.1.2 General Requirements for 3D TDPs. When 3-dimensional solid models are the basis for the product data element, the solid models shall be complete, accurate, fully defined representations of the item and contain every feature the item being represented is intended to contain. All information necessary to adequately define the item shall be contained in the 3D solid model to include but not limited to materials, tolerances, geometric tolerances, drawing notes, revision data, etc.

3.1.2.1 2D data based on 3D model. Data on 2D drawings based on the 3D solid models shall be sourced to the maximum extent possible from the 3D solid model. There shall be no conflict in data between the 3D solid model and its associated 2D drawing.

3.1.2.2 Format of 3D TDP. Format of the 3D TDP based solid models shall be as directed by the contractual documents. In general, solid models shall be in accordance with (ISO) 10303 STandard for the Exchange of Product model data (STEP), or in a native 3D CAD format capable of being exported to ISO 10303 STEP format. (See A3.2)

3.2 Preparation and management.

3.2.1 Use of Government and non-Government standardization documents. TDP documents shall not be prepared or submitted to indicate document requirements, which are defined, by existing Government or non-Government standardization documents of the United States, or international standardization documents available in the Acquisition Streamlining and Standardization Information System (ASSIST) (http://assist.daps.dla.mil) or from the independent societies governing the documents. These requirements shall be specified by reference to the appropriate standardization document. When the requirements in such standardization documents do not completely fulfill the design or performance requirements of an item, TDP documents for the item may invoke the requirements of the standardization document and specify the variations necessary to fulfill the design or performance requirements.

3.2.1.1 Use of international and foreign standardization documents. International Standardization Organization / International Electrotechnical Commission (ISO/IEC) standardization documents adopted by the American National Standards Institute (ANSI) for use in the United States may be used to define requirements on TDP documents. National standardization documents of foreign countries and European Standards (NORMEs) (EN) shall not be used without the approval of the Government procuring activity. The use of international and foreign standardization documents in multinational programs subject to a memorandum of understanding between governments shall be governed by the terms of that agreement.

3.2.2 Reference documents. Except as specified in 3.2.2.1, documents referenced in a TDP element shall be furnished as an integral part of that element, when essential to meet the information content requirements of the TDP element. Technical manuals, procedural manuals, maintenance manuals, company drafting manuals, and management plans shall not be considered as reference documents. When information essential to meeting the information content requirements of a TDP element (such as default surface texture values) are contained in such documents, that information shall be delineated on the applicable TDP document or incorporated in a document acceptable for inclusion in the TDP element.

3.2.2.1 ASSIST and non-Government standardization documents Referenced documents available in ASSIST and non-Government standardization documents available from the issuing non-Government standards body, such as the American Society of Mechanical Engineers (ASME), shall not be submitted as part of a TDP or TDP element.

3.2.3 Existing data When existing data meets the following criteria, or can be modified or revised to meet the following criteria, it shall be used in lieu of preparing new data:

a. It is furnished with rights-in-data consistent with the contract stipulations regarding data rights;

b. It is furnished at a cost to the Government equal to or less than the cost of preparing new data;

c. It meets the legibility and reproducibility requirements for the TDP element of which it is to be a part;

d. It meets the information content requirements of the TDP element of which it is to be a part;

e. It is identified by a Commercial and Government Entity (CAGE) Code, document number, title, and applicable contract number(s).

f. Any nonstandard symbols, drawing or documentation practices used are explained in the document or in a document referenced on the document containing the nonstandard symbol or practice.

g. It meets the language and clarity requirements of 3.2.4.

h. Any revisions to the existing data are made in accordance with one of the following:

(1) The revisions are made using the same preparation guidelines as were used in preparing the existing data, or

(2) All existing characteristics of the existing data are updated to the new preparation guidelines used in making the revisions.

3.2.3.1 Company standards When the use of company standards is permitted by the contract or purchase order, company standards shall meet the requirements of 3.2.3 for existing data plus the following (See 6.8):

a. If the company standard defines a vendor item, the standard shall provide the same information as a vendor item control drawing (or specification control drawing) for the identification and procurement of an interchangeable item, and

b. All documents referenced in the standard shall also be supplied as required by 3.2.1 and 3.2.2, and shall meet the same requirements as a company standard.

3.2.3.2 Exemption for commercial drawings/models Commercial drawings/models and associated lists are exempt from the requirements of 3.2.3 and 3.2.3.1.

3.2.4 Language and clarity. Unless otherwise specified by a multinational agreement, TDP documents shall be in the English language. Requirements, including explanations of non-standard practices or symbols, shall be delineated clearly, concisely, and without ambiguity so that their correct interpretation is readily discernible by people knowledgeable in the subject matter presented.

3.2.5 Automated document preparation. TDP documentation, regardless of the method of preparation (for example computer, plotter, or photosetter), shall satisfy the format and content requirements of specifications and standards controlling those documents as invoked and tailored in the contract or purchase order. Hard copy deliverable of such documents shall be human readable without additional interpretation. Digital deliverables shall be human readable when processed by appropriate digital interpretation programs. Variations from the controlling specifications and standards that do not adversely affect the legibility and reproducibility of deliverable media or the integrity of the data content are permitted, unless otherwise prohibited by the contract or purchase order.

3.3 Protecting classified information. TDPs or parts thereof, containing classified information shall be protected and marked in accordance with the Department of Defense Industrial Security Manual for Safeguarding Classified Information, DOD Manual 5220.22-M. When 3D TDP data is used, the solid models shall display classification marking clearly visible when the solid model is first opened.

3.4 Protecting information with restrictions TDPs or parts thereof, containing information subject to restrictions shall be protected in accordance with the appropriate guidance, contract, or agreement. Requirements for the restriction of access, availability, proprietary data, or use of all TDP documents prepared by or for the DoD shall be marked by inclusion of the appropriate restriction statements. Examples of restriction statements include: the rights-in-data legends in accordance with Defense Acquisition Regulation Supplement (DFARS) Part 252, Solicitation Provisions and Contract Clauses 252.227-7013 and 7014; a distribution statement in accordance with DoD Directive 5230.24; and export control notice. Care must be exercised to match the appropriate rights-in-data legend with the appropriate

distribution statement. When 3D TDP data is used, the solid models shall display applicable restriction markings, legends, and statements clearly visible when the solid model is first opened.

3.5 Contract numbers and contractor identification. When required by the contract, purchase order or applicable data item description TDP documents shall identify the contractor and contract number under which the document is prepared or delivered, or both. See 6.2.

3.5.1 Application of contract numbers and contractor identification. When contract numbers and contract identifications are required on TDP documents they shall meet the legibility and reproducibility requirements applicable to the document and be within the prescribed borders or margins of the document. See 6.2.

3.5.2 Contract numbers in data rights legends. The requirements of 3.5 and 3.5.1 do not alter current Defense Federal Acquisition Regulation Supplement (DFARS) requirements for identifying contractors and prime contract numbers in rights-in-data legends. Furthermore, contractor identifications and contract numbers in rights-in-data legends do not satisfy the requirements of 3.5 and 3.5.1.

3.6 TDP types and elements. TDPs shall consist of one or more of the following TDP types and elements as specified in the contract or purchase order and TDP Option Selection Worksheet. Only the TDP elements that are listed on the DD Form 1423, Contract Data Requirements List of the contract or purchase order are required to be delivered to the Government. See 6.2.

3.6.1 TDP Types.

3.6.1.1 Type 2D: 2-Dimensional Technical Data Package (2D TDP) – A 2D TDP shall be of detail or content sufficient for the support production, and engineering and logistics support based on 2D engineering drawings. 2D engineering drawings can be manually generated, or generated in a digital form with or without a 3D model.

3.6.1.2 Type 3D: 3-Dimensional Technical Data Package (3D TDP)- A 3D TDP shall be of detail and content sufficient for the support of production, engineering and logistics support, and be based on fully parametric, computer based solid model and capable of generating, when specified, 2D engineering drawings.

3.6.2 TDP elements.

3.6.2.1 Conceptual design drawings/models. Conceptual design data shall be prepared to define design concepts in graphic form, and include appropriate textual information required for analysis and evaluation of those concepts.

3.6.2.2 Developmental design drawings/models and associated lists Developmental design drawings/models and associated lists shall be prepared to provide sufficient data to support the analysis of a specific design approach and the fabrication of prototype materiel for test or experimentation. Data and lists required to present a design approach may vary from simple sketches to complex drawings, or may be a combination of both.

3.6.2.3 Product drawings/models and associated lists. Product drawings/models and associated lists shall be prepared to provide the design, engineering, manufacturing, and quality assurance requirements information necessary to enable the procurement or manufacture of an item essentially identical to the original item. The product shall be defined to the extent necessary for a competent manufacturer to produce an item, which duplicates the physical, interface, and functional characteristics of the original

product, without additional design engineering effort or recourse to the current design activity. Product data shall reflect the approved, tested, and accepted configuration of the defined delivered item.

3.6.2.4 Commercial drawings/models and associated lists. Commercial drawings/models and associated lists provide engineering and technical information in support of end products, or designated portions thereof, which are commercially developed items, commercial off-the-shelf items (COTS), or items not developed at Government expense. These data and lists shall be in accordance with the commercial design documentation practices of the contractor or supplier of the item.

3.6.2.5 Special inspection equipment (SIE) drawings/models and associated lists. SIE drawings/models and associated lists shall be prepared to provide the data required to manufacture or assemble SIE, which is mandatory to successfully, produce the item. The SIE shall be defined in detail to the extent necessary for a competent manufacturer to manufacture or assemble SIE, which duplicates the performance characteristics of the original SIE. SIE is also known as special test equipment.

3.6.2.6 Special tooling drawings/models and associated lists. Special tooling drawings/models and associated lists shall be prepared to provide the data required to manufacture special tooling which is mandatory to successfully produce the item. The special tooling shall be defined in detail to the extent necessary for a competent manufacturer to produce tooling which duplicates the performance characteristics of the original tooling.

3.6.2.7 Specifications. Specifications shall be prepared as performance specifications or detail specifications as required in the contract or purchase order.

3.6.2.7.1 Defense specifications. Defense specifications, performance or detail, shall be prepared in accordance with MIL-STD-961 as coordinated, limited coordinated or “USED IN LIEU OF" limited coordinated specifications.

3.6.2.7.2 Program-unique specifications. Program-unique specifications, performance or detail, shall be prepared in accordance with MIL-STD-961 as item, material, process, software, item or system specifications.

3.6.2.7.3 Commercial item descriptions (CIDs). CIDs shall be prepared in accordance with the Federal Standardization Manual to describe, by functional, performance, or essential physical requirements, available commercial products or services.

3.6.2.8 Software documentation. Documentation for software imbedded imbedded in the hardware defined in the TDP or special inspection equipment related to the hardware shall be prepared in accordance with IEEE/EIA 12207.

3.6.2.9 Special packaging instructions (SPI) drawings/models and associated lists. Packaging requirements and data shall be as specified in the contract or order. Special packaging instructions, drawings/models and associated lists shall be prepared to provide the data required to manufacture special packaging which is mandatory to successfully produce and transport the item. The special packaging shall be defined in detail to the extent necessary for a competent manufacturer to produce packaging which duplicates the performance characteristics of the original packaging.

3.7 TDP data management products. When specified in the contract or purchase order, the following data management products related to the management and control of TDPs shall be prepared. Only the TDP data management products that are listed on the DD Form 1423, Contract Data Requirements List (CDRL) of the contract or purchase order are required to be delivered to the Government. See 6.2.

3.7.1 Source control drawing approval request. Source control drawing approval requests shall be prepared and submitted to the cognizant Government activity specified in the contract or purchase order as having approval authority. Each potential source control item shall be approved by the Government activity having source control drawing approval authority prior to inclusion of the source control drawing in the TDP. See 6.3. When a 3D TDP is provided, and the source control item is a subset of a fully defined assembly, a solid model of the source control item shall be provided. The source control item's solid model need not be fully defined, but shall be sufficient to provide interface characteristics, accurate weight and center of gravity information as required.

3.7.2 Drawing number assignment report. A drawing number assignment report shall be prepared to identify and describe the use of Government drawing numbers by the contractor. See 6.3.

3.7.3 Proposed critical manufacturing process description. Proposed critical manufacturing process descriptions shall be prepared to describe manufacturing processes, which are critical to meeting the design requirements of the item. The process shall be approved as critical by the Government activity cited in the contract or purchase order as having approval authority before it is designated as mandatory in TDP documents. See 6.3 and 6.5.9.

3.8 Legibility and reproducibility. All documents prepared or submitted shall meet the legibility and reproducibility requirements of the specification or standard controlling the media in which the data is to be delivered. As a minimum, all lines, symbols, letters, and numerals shall be readable even if no other legibility or reproducibility requirements are specified in the contract or purchase order.

3.9 Commercial and Government Entity (CAGE) Codes. When CAGE Codes are to be applied to documents used in TDPs and TDP elements, the valid codes identified in Federal Cataloging Handbook H4/H8 shall be used.

3.9.1 Sources of supply. Type "A" codes shall be used to identify design activities and vendors' part or identifying numbers and sources of supply except when industry marketing customs dictate otherwise. When the design activity or vendor of a specific item customarily licenses a distributor to perform the final steps of manufacture exclusively, the Type F code for the distributor may be used.

3.9.2 Old terms for CAGE Code. References on existing documents or preprinted document forms using the terms "FSCM" or "Code Ident." need not be revised for the sole purpose of conversion to "CAGEC" or "CAGE Code". Such conversion, if required, should be made concurrently with other needed changes. See 6.9.

3.10 Metric documents. When the contract or purchase order specifies the use of the metric system (SI), TDP documents shall be identified as metric documents and conform to FED-STD-376. .

3.11 Digital approval systems. TDP elements subject to approval may use signature or approval indicators. Approval indicators may be applied by a Digital Approval System. Digital Approval Systems shall satisfy the contracting activity requirements for uniqueness, verifiability, and sole control.

4. VERIFICATION.

4.1 Inspection of TDP. TDP type and elements including TDP documents prepared by subcontractors, shall be inspected for the following:

a. Compliance with the requirements of this specification and applicable data item descriptions as tailored in the contract or purchase order.

b. Inclusion of all documents, including sub-tier references, required to meet the information content requirements of the TDP element except those identified in 3.2.2.1.

c. Accuracy of the assignment and identification of security markings, restriction statements (for example distribution statements), export control notices, rights-in-data legends, and other special markings.

d. Inclusion of contract numbers and contractor identifications.

e. Legibility and reproducibility.

f. TDP components have not been prepared for requirements, which could be met by existing standardization documents.

g. References to standardization documents are in compliance with 3.2.1.

h. Completeness and accuracy of the TDP documents, including required quality assurance information, in describing the design of the item, its subassemblies, and component parts. The design to be described by the TDP documents is that configuration of the item the Government has approved, tested, or accepted. .

i. Both Type 2D and Type 3D TDPs shall open in the appropriate software without regeneration errors or warnings.

4.2. Inspection of TDP data management products. TDP data management products and the components thereof, including documents prepared by subcontractors, shall be inspected for the following:

a. Compliance with the requirements of this specification and applicable data item descriptions as tailored in the contract or purchase order.

b. Inclusion of all documents, including sub-tier references, required to meet the information disclosure requirements of the TDP data management product.

c. Accuracy of the assignment and identification of security markings, distribution statements, export control notices, rights-in-data legends, and other special markings.

d. Inclusion of contract numbers and contractor identifications, when applicable.

d. Legibility and reproducibility.

5. PACKAGING.

For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2).

6. NOTES.

(This section contains information of a general or explanatory nature, which may be helpful, but is not mandatory.)

6.1 Intended use. TDP elements procurable under this specification are intended for use in a wide variety of functions in the life cycle of materiel developed or procured by or for the Department of Defense. Some examples of these functions are design evaluation, design development, provisioning, procurement (competitive and non-competitive), manufacture, transportation, installation, maintenance, modification, and engineering and logistics support. TDP data management products are intended for use by the acquiring activity in ensuring that TDP elements acquired under this specification conform to contractual requirements.

6.2 Acquisition requirements. Acquisition documents must specify the following:

a. Title, number, and date of this specification.

b. If required, the specific issue of individual documents referenced. (See 2.2.1)

c. The TDP type and elements to be supplied. (See 1.2.1, 1.2.2 and 3.6)

d. The TDP data management products to be supplied. (See 1.2.3, 3.7 and Appendix A)

e. Whether or not company standards are permitted. (See 3.2.3.1)

f. A completed TDP Option Selection Worksheet for models, drawings and associated lists (conceptual, developmental, product, commercial, special inspection equipment, special packaging instructions and special tooling) and specifications. See figures 1 through 8. The TDP Option Selection Worksheets are used to specify options and tailoring for models, drawings and specifications being acquired as TDP elements.

g. Whether or not subcontractor identifications and subcontract numbers are required in accordance with 3.5; and if so, the location and method of application.

h. Any restrictions on the use of variations allowed by 3.2.5.

6.3 Data requirements. This specification has been assigned an Acquisition Management Systems Control number authorizing it as the source document for the following DIDs. When it is necessary to obtain the data, the applicable DIDs must be listed on the Contract Data Requirements List (DD Form 1423).

Reference Paragraph	DID Number	DID Title	Suggested Tailoring
3.6.2.1	DI-SESS-81001C	Conceptual Design Drawings/Models	Appendix A
3.6.2.2	DI-SESS-81002C	Developmental Design Drawings/Models and Associated Lists	Appendix A
3.6.2.3	DI-SESS-81000C	Product Drawings/Models and Associated Lists	Appendix A
3.6.2.4	DI-SESS-81003C	Commercial Drawings/Models and Associated Lists	Appendix A
3.6.2.5	DI-SESS-81004C	Special Inspection Equipment Drawings/Models and Associated Lists	Appendix A
3.6.2.6	DI-SESS-81008C	Special Tooling Drawings/Models and Associated Lists	Appendix A
3.7.1	DI-SESS-81010C	Source Control Drawing Approval Request	Appendix A
3.7.2	DI-SESS-81011C	Drawing Number Assignment Report	Appendix A
3.7.3	DI-SESS-81012C	Proposed Critical Manufacturing Process Description	Appendix A

The above DID's were current as of the date of this specification. The ASSIST database should be researched at http://assist.daps.dla.mil/quicksearch/ or www.dodssp.daps.mil to ensure that only current and approved DID's are cited on DD Form 1423.

6.3.1 DIDs for specifications. Applicable DIDs and tailoring instructions for acquiring performance, detailed, and program-unique specifications are specified in MIL-STD-961.

6.3.2 DIDs for software documentation. Applicable “Information items” (a commercial equivalent to a DID) for acquiring software documentation (also known as software lifecycle data) are specified in IEEE/EIA 12207.

6.3.2 DIDs for packaging data. Applicable DIDs and tailoring instructions for acquiring packaging data are specified in MIL-STD-2073-1.

6.4 Supersession history. MIL-T-31000, dated 15 December 1989 replaced DOD-D-1000B dated 28 October 1977; MIL-T-47500(MI) dated 24 March 1989; MIL-T-47500/1(MI) dated 24 March 1989; MIL-T-47500/2(MI) dated 24 March 1989; MIL-T-47500/3(MI) dated 24 March 1989; MIL-T-47500/4(MI) dated 24 March 1989; MIL-T-47500/5(MI) dated 24 March 1989; and MIL-T-47500/6(MI) dated 24 March 1989.

6.4.1 Follow-on procurements for existing programs. Programs which passed acquisition Milestone 1 (or an equivalent point) prior to 1 July 1990 (see DOD 5000.2-R) may continue to use DoD-

D-1000B or the MIL-T-47500 series documents for follow-on procurements if doing so is cost effective. However, acquiring activities should consider an orderly transition to MIL-DTL-31000 on those programs that are still in the early phases of the acquisition cycle.

6.4.2 Transition considerations. The decision as to whether or not to transition an existing program to MIL-DTL-31000 requirements must take into consideration the impact on the contractor. Changes to existing contracts will require negotiation with the contractor. Follow-on procurements awarded to the same contractor may also result in cost impacts to the program. However, continuing to use obsolete specifications will have cost impacts later in the acquisition cycle. Follow-on procurements that are to be awarded competitively or placed with a new contractor should cite MIL-DTL-31000.

6.4.3 Basic Engineering Drawing Practices. The inclusion of Appendices in ASME Y14.100 has allowed the cancellation of MIL-STD-100. Accordingly, basic engineering drawing practices for commercial applications are invoked through reference to ASME Y14.100, and for other than strictly commercial applications, for example DoD design activities, reference must be made to ASME Y14.100 and associated Appendices B through E, as applicable. Application of ASME Y14.100, with or without Appendices, for contractual purposes will necessitate extensive tailoring to exclude unnecessary requirements. Such tailoring should carefully consider the contractual objectives and the logistics intent. A tailoring guide, Appendix A, is included in ASME Y14.100 to facilitate the tailoring process.

6.4.3.1 Y14.100 Appendices are as follows:

a. Appendix A – Tailoring

b. Appendix B – Non-Commercial Drawing Practices

c. Appendix C – Drawing Titles

d. Appendix D - Numbering, Coding and Identification

e. Appendix E – Markings on Engineering Drawings

6.4.3.2 Interdependent standards. ASME Y14.100 is not a stand-alone document for the purpose of addressing basic engineering drawing practices. For the purpose of addressing basic engineering drawing practices, ASME Y14.100, ASME Y14.24, ASME Y14.34M and, ASME Y14.35M should be regarded as a closely interdependent set of ASME standards.

6.4.4 Reference to non-Government standards. MIL-STD-100 has been canceled in its entirety and incorporated into the non-Government standard ASME Y14.100. Every effort was made to harmonize the availability of the applicable NGSs to the requirements of the various TDP elements obtainable through MIL-DTL-31000C. However, users of this specification, may find that some needed NGSs are not available or fail to support basic document preparation requirements. In order to overcome this condition, the user should be prepared to detail the needed documentation practice directly in the statement of work. Past issues of documents, such as the various revisions to MIL-STD-100, may be used in attempting to establish the needed detail for entry into the statement of work.

6.4.5 Digital product definition data. ISO 10303 provides content and format for the exchange of digital TDPs and 3 dimension product model data in a neutral file format. The decision as to whether or not to transition an existing hard copy or 2 dimension drawing to digital TDPs and 3 dimension product model data requirements must take into consideration the impact on the contractor. Changes to existing contracts will require negotiation with the contractor. Follow-on procurements awarded to the

same contractor may also result in cost impacts to the program. However, continuing to use hard copy or 2 dimensional drawings will have cost impacts later in the acquisition cycle. Follow-on procurements that are to be awarded competitively or placed with a new contractor should cite ISO 10303 and/or a specific native CAD format as a minimum. The orderer should specify the required STEP application Protocol(s) (AP) in the Option Selection Worksheet based on the intended uses.

6.5 Definitions. For the purposes of this specification, the following definitions apply:

6.5.1 Associated list. A tabulation of engineering information pertaining to an item depicted on an engineering drawing or on a set of drawings. For example: parts list, data list, and index list. (See ASME Y14.34M).

6.5.2 Commercial and Government Entity code. A five character code listed in Cataloging Handbook H4/H8, Commercial and Government Entity (CAGE) Code, which is assigned to commercial and Government activities that manufacture or develop items, or provide services or supplies for the Government. When used with a drawing number or part number, the CAGE Code designates the design activity from whose series the drawing or PIN is assigned. The CAGE Code was previously called manufacturer's code, code identification number or Federal Supply Code for Manufacturers (FSCM).

6.5.3 Commercial drawings. Drawings prepared by a commercial design activity, in accordance with that activity's documentation standards and practices, to support the development and manufacture of a commercially developed product.

6.5.4 Commercial Item. A product, material, code, component, subsystem, or system sold or traded to the general public in the course of normal business operations at prices based on established catalog or market prices. (FAR 11.001)

6.5.5 Company standard. A company document, which establishes engineering and technical limitations and applications for items, materials, processes, methods, designs and engineering practices unique to that company. (NOTE: Company standards are not considered to be non-Government standards.)

6.5.6 Competent manufacturer. A manufacturer that has demonstrated the capability to produce similar products at the same state of the art in the same or similar lines of technology.

6.5.7 Computer software. Computer programs, source code, source code listings, object code listings, design details, algorithms, processes, flow charts, formulae and related material that would enable the software to be reproduced, recreated, or recompiled. Computer software does not include computer data bases or computer software documentation. (DFARS Part 252.227-7014)

6.5.8 Computer software documentation. Owners manuals, user's manuals, installation instructions, operating instructions, and other similar items, regardless of storage medium, that explain the capabilities of the computer software or provide instructions for using the software. (DFARS Part 252.227-7014) IEEE/EIA Standard 12207 uses the term "software life cycle data" to address software documentation.

6.5.9 Conceptual design data. Data such as drawings or 3D solid models, which describe the engineering concepts on which a proposed technology or design approach is based.

6.5.10 Cosmetic solid model. A Computer Aided Design (CAD) 3-Dimensional solid model sufficiently defined to provide a visual understanding of the item, but not fully defined in all respects.

6.5.11 Critical manufacturing process. A process is critical if it is the only known method, which will result in the production of an acceptable item.

6.5.12 Design maturity. The extent to which the final design or configuration of an item has been defined by the engineering process. For example, the design of a sheet metal cover having all holes in its mounting hole pattern fully dimensioned and toleranced for final size, location and orientation would be considered to be more mature than the design of a similar cover having its mounting hole pattern defined as “Drill at assembly".

6.5.13 Detailed design data. Technical data that describes the physical configuration and performance characteristics of an item or component in sufficient detail to ensure that an item or component produced in accordance with the technical data will be essentially identical to the original item or component. (DFARS, Part 227).

6.5.14 Detail specification. A specification that specifies design requirements, such as material to be used, how a requirement is to be achieved, or how an item is to be fabricated or constructed. A specification that contains both performance and detailed requirements is still considered a detail specification. (MIL-STD-961)

6.5.15 Developmental design drawings. Drawings which describe the physical and functional characteristics of a specific design approach to the extent necessary to permit the analytical evaluation of the ability of the design approach to meet specified requirements and enable the development, manufacture and testing of prototype or experimental materiel.

6.5.16 Drawing. An engineering document or digital data file(s) that discloses (directly or by reference), by means of graphic or textual presentations, or by combinations of both, the physical or functional requirements of an item. (ASME Y14.100)

6.5.17 Drawing form. A sheet of drafting material displaying the basic format features such as title block, general tolerance blocks and margins in accordance with ASME Y14.1 or ASME Y14.1M.

6.5.18 Drawing format. The arrangement and organization of information or content within a drawing is called drawing format. This includes such features as the size and arrangement of blocks, notes, lists, revision information, and the use of optional or supplemental blocks.

6.5.19 End product. An end product is an item, such as an individual part or assembly, in its final or completed state. (ASME Y14.24). An end product is also known as an end item.

6.5.20 Non-Government standardization document. A standardization document developed by a private sector association, organization or technical society which plans, develops, establishes or coordinates standards, specifications, handbooks or related documents. Company standards are not considered as non-Government standardization documents.

6.5.21 Performance specification. A performance specification is a specification that states requirements in terms of the desired results with criteria for verifying compliance, but without stating the methods for achieving the required results. A performance specification defines the functional requirements for the item, the environment in which it must operate, and interface and interchangeability characteristics. (MIL-STD-961)

6.5.22 Physical configuration audit (PCA). This audit is a formal examination of the “as-built" configuration of a configuration item against its technical documentation to establish or verify the configuration item's product baseline.

6.5.23 Product drawings. Engineering drawings which provide the design, engineering, manufacturing and quality support information necessary to permit a competent manufacturer to produce an interchangeable item which duplicates the physical and performance characteristics of the original design without additional design engineering or recourse to the design activity

6.5.24 Product model data. A three dimensional (3D) geometric representation of a design that includes digital information.required for full product definition. Additional attributes are provided to enable digital sharing, exchange and archiving of design, analysis, manufacturing, maintenance, repair, and reprocurement information.

6.5.25 Reference documents. Documents referred to in a TDP element, which contain information necessary to meet the information content requirements of that TDP element.

6.5.26 Special inspection equipment (SIE). Either single or multi-purpose integrated test units engineered, designed, fabricated or modified to perform special purpose testing of an item in the manufacturing process. It consists of items or assemblies of equipment that are interconnected and interdependent so as to become a new functional entity for inspection or testing purposes. SIE is also known as special test equipment.

6.5.27 Special Packaging Instruction (SPI). An item is considered special if drawings, sketches, illustrations, models, narrative type instructions or specialized containers are required to specify packaging details or requirements. Items with peculiar characteristics such as weight, configuration, fragility, or other considerations that cannot be classified as common or selective are considered special group items. When an item has been determined to be in the special group category, a Special Packaging Instruction shall be required and prepared in accordance with Appendix E of MIL-STD-2073-1 and as specified in the contract and Contract Data requirements List.

6.5.28 Special tooling. Unique tooling which is mandatory to the manufacture of an acceptable item. It differs from tooling designed to increase manufacturing efficiency in that the use of the special tool imparts some characteristic to the item which is necessary for satisfactory performance and cannot be duplicated through other generally available manufacturing methods. Examples of special tooling would be jigs, dies, fixtures, molds, patterns and other equipment or manufacturing aids that absolutely must be used in order to produce a satisfactory item.

6.5.29 Specification. A document prepared to support acquisition that describes essential technical requirements for materiel and the criteria for determining whether those requirements are met. (MIL-STD-961)

6.5.30 Standardization document. A document, such as a specification, standard or handbook, developed for the purpose of standardizing items, materials, processes or procedures.

6.5.31 Standard Microcircuit Drawing. A Government unique drawing type used to define the physical and performance characteristics of commercial microcircuits in Federal Supply Class 5962 used in military applications

6.5.32 Start Part or Template. An initial 3D solid model containing basic model formatting information such as attributes, parameters, datum planes, notes, etc. required in each 3D solid model.

6.5.33 Technical data. Recorded information, regardless of the form or method of the recording of a scientific or technical nature (including computer software documentation). The term does not include computer software or data incidental to contract administration, such as financial or management information. (DFARS Part 252.227-7013).

6.5.34 Technical data package (TDP). A technical description of an item adequate for supporting an acquisition strategy, production, and engineering and logistics support. The description defines the required design configuration or performance requirements, and procedures required to ensure adequacy of item performance. It consists of applicable technical data such as models, drawings, associated lists, specifications, standards, performance requirements, quality assurance requirements, software documentation and packaging details.

6.5.35 Technical data package document. A document that is part of a TDP element.

6.5.36 Technical data package element. A data product that is an actual component of the TDP. A TDP element provides all or part of the information necessary to define the item being documented by the TDP.

6.5.37 Technical data package data management product. A data product that is used to monitor and control the development and maintenance of the TDP. A TDP data management product contains information about the TDP rather than the item being documented.

6.5.38 Verification. All examinations, tests and inspections necessary to verify that an item meets the physical and functional requirements for which it was designed, to verify that a component, part or subassembly will perform satisfactorily in its intended application, or that an item conforms to specified requirements.

6.6 Commercial drawings. The acquisition of commercial drawings almost always involves rights in data and intellectual property issues. These issues must be clearly defined in the contract or purchase order in accordance with DFARS Part 211 and Part 227. This specification and its related data item descriptions will not be used to circumvent the DFARS requirements.

6.7 Special inspection equipment (SIE). To be considered mandatory to the manufacture of an item, the SIE must be the only known inspection equipment that can be used to test or inspect parameters that cannot be inspected effectively with commercially available equipment. (See 3.6.5)

6.8 Contractors specifications. A contractor's specifications for such things as materials or processes are considered company standards. See 3.2.3.1 and 6.5.5.

6.9 FSCM and Code Ident. Although it is not mandatory to update the terms “FSCM" or “Code Ident." it is recommended that the new terminology be integrated into TDP documents and pre-printed forms when practical.

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

6.11 Subject term (keyword) listing.

Drawings and associated lists
Drawing number assignment report
Packaging data
Product model data
Proposed critical manufacturing process description
SIE descriptive documentation
Source control drawing approval request
Special tooling drawings
Specifications
Test requirements document

TDP OPTION SELECTION WORKSHEET
PRODUCT DRAWINGS AND ASSOCIATED LISTS

A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT ***(X and complete as applicable .)***

	a. ORIGINALS (Specify current design activity's full size reproducible drawing or digital data file(s) on which is kept the revision record recognized as official) (Identify specification, type, grade and class, etc.)
	b. REPRODUCTIONS (Identify specifications, type, grade and class, etc., and quantity of each)
	c. DIGITAL DATA (Identify specification, exchange media, etc. and specify original (master) or copy)

2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)

	a. CONTRACTOR
	b. GOVERNMENT Complete (1) and (2) or (3)

(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:

3. DRAWING FORMATS AND DRAWING FORMS (X one and complete as applicable)

	a. CONTRACTOR FORMATS. Forms to be supplied by contractor.
	b. GOVERNMENT FORMATS. Forms to be supplied by contractor. Samples supplied by (Specify)
	c. GOVERNMENT FORMATS. Forms to be supplied as Government Furnished Material by (Specify)

4. TYPES OF DRAWINGS SELECTION (X one)

	a. CONTRACTOR SELECTS		b. GOVERNMENT SELECTS (Specify in Item 8)

5. ASSOCIATED LISTS (X and complete as applicable)

	a. PARTS LISTS (X one)		(1) Integral		(2) Separate
	b. DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)
	c. INDEX LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)
	d. WIRING LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)
	e. INDENTURED DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)
	f. APPLICATION LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)

6. DETAILS (X one)

	a. MULTIDETAIL DRAWINGS PERMITTED		b. MONODETAIL DRAWINGS MANDATORY

7. APPLICABILITY OF STANDARDS. The following Standards apply: (X as applicable)

	a. ASME Y14.100, ENGINEERING DRAWING PRACTICES (COMMERCIAL)	B. C. D. E.	b. ASME Y14.100, WITH APPENDICES B, C, D, E		c. ASME Y14.34 ASSOCIATED LISTS		d. EXISTING STANDARDS DO NOT APPLY

8. OTHER TAILORING (Attach additional sheets as necessary)

FIGURE 1. TDP Option Selection Worksheet-Product Drawings and Associated List

TDP OPTION SELECTION WORKSHEET PRODUCT SOLID MODELS			
A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.
1. DELIVERABLE PRODUCT (and complete X as applicable.)			
	a. 3-DIMENSIONAL SOLID MODELS (Specify format(s) (Native CAD, STEP, AP, IGES, etc.)		
	b.3-D SOLID MODELS ASSOCIATED DRAWINGS (If 2-D drawings based on 3-D solid models are required, indicate here and fill out TDPOPTION SELECTION WORKSHEET-PRODUCT DRAWINGS AND ASSOCIATED LIST (FIGURE 1.)		
2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)			
	a. CONTRACTOR		
	b. GOVERNMENT (Complete (1) and (2) or (3)		
(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:	
3. 3-D SOLID MODEL REQUIREMENTS (X one and complete as applicable)			
	a. CONTRACTOR FORMAT. Models built to contractor requirements.		
	b. GOVERNMENT FORMAT. 3-D solid models built to government requirements and formats. (Specify government modeling applicable specifications or SOW paragraphs.)		
4. APPLICABILITY OF STANDARDS (Apply an X as applicable)			
	a. ASME Y14.41, Digital Product Definition Data Practices		b. Existing Standards Do Not Apply
5. OTHER TAILORING (Attach additional sheets as necessary)			

FIGURE 1a. TDP Option Selection Worksheet-Product Solid Models

TDP OPTION SELECTION WORKSHEET
CONCEPTUAL DESIGN DRAWINGS

A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT ***(and complete X as applicable .)***

	a. ORIGINALS (Specify current design activity's full size reproducible drawing or digital data file(s) on which is kept the revision record recognized as official) (Identify specification, type, grade and class, etc.)
	b. REPRODUCTIONS (Identify specifications, type, grade and class, etc., and quantity of each)
	c. DIGITAL DATA (Identify specification, exchange media, etc. and specify original (master) or copy)

2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)

	a. CONTRACTOR
	b. GOVERNMENT (Complete (1) and (2) or (3)

(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:

3. DRAWING FORMATS AND DRAWING FORMS (X one and complete as applicable)

	a. CONTRACTOR FORMATS. Forms to be supplied by contractor.
	b. GOVERNMENT FORMATS. Forms to be supplied by contractor. Samples supplied by (Specify)
	c. GOVERNMENT FORMATS. Forms to be supplied as Government Furnished Material by (Specify)

4. TYPES OF DRAWINGS SELECTION (X one)

	a. CONTRACTOR SELECTS		b. GOVERNMENT SELECTS (Specify in Item 8)

5. APPLICABILITY OF STANDARDS. The following Standards apply: (X as applicable)

	a. ASME Y14.100, ENGINEERING DRAWING PRACTICES (COMMERCIAL)		b. ASME Y14.100, WITH APPENDICES B, C, D, E		c. ASME Y14.34 ASSOCIATED LISTS		d. EXISTING STANDARDS DO NOT APPLY
		E.					

6. OTHER TAILORING (Attach additional sheets as necessary)

FIGURE 2. TDP Option Selection Worksheet-Conceptual Design Drawings

TDP OPTION SELECTION WORKSHEET
CONCEPTUAL DESIGN SOLID MODELS

A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT (and complete X as applicable.)

	a. 3-DIMENSIONAL SOLID MODELS (Specify format(s) (Native CAD, STEP, AP. IGES, etc.)
	b.3-D SOLID MODELS ASSOCIATED DRAWINGS (If 2-D drawings based on 3-D solid models are required, indicate here and fill out TDPOPTION SELECTION WORKSHEET- CONCEPTUAL DESIGN DRAWINGS AND ASSOCIATED LIST (FIGURE 2.)

2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)

	a. CONTRACTOR
	b. GOVERNMENT (Complete (1) and (2) or (3)

(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:

3. 3-D SOLID MODEL REQUIREMENTS (X one and complete as applicable)

	a. CONTRACTOR FORMAT. Models built to contractor requirements.
	b. GOVERNMENT FORMAT. 3-D solid models built to government requirements and formats. (Specify government modeling applicable specifications or SOW paragraphs.)

4. APPLICABILITY OF STANDARDS. (Apply an X as applicable)

	a. ASME Y14.41, Digital Product Definition Data Practices		**b. Existing Standards Do Not Apply**

5. OTHER TAILORING (Attach additional sheets as necessary)

FIGURE 2a. TDP Option Selection Worksheet-Conceptual Design Solid Models

TDP OPTION SELECTION WORKSHEET
DEVELOPMENTAL DESIGN DRAWINGS AND ASSOCIATED LISTS

A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT ***(*****and complete X as applicable .*****)***

	a. ORIGINALS (Specify current design activity's full size reproducible drawing or digital data file(s) on which is kept the revision record recognized as official) (Identify specification, type, grade and class, etc.)
	b. REPRODUCTIONS (Identify specifications, type, grade and class, etc., and quantity of each)
	c. DIGITAL DATA (Identify specification, exchange media, etc. and specify original (master) or copy)

2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)

	a. CONTRACTOR
	b. GOVERNMENT (Complete (1) and (2) or (3)

(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:

3. DRAWING FORMATS AND DRAWING FORMS (X one and complete as applicable)

	a. CONTRACTOR FORMATS. Forms to be supplied by contractor.
	b. GOVERNMENT FORMATS. Forms to be supplied by contractor. Samples supplied by (Specify)
	c. GOVERNMENT FORMATS. Forms to be supplied as Government Furnished Material by (Specify)

4. TYPES OF DRAWINGS SELECTION (X one)

	a. CONTRACTOR SELECTS		b. GOVERNMENT SELECTS (Specify in Item 8)

5. ASSOCIATED LISTS (X and complete as applicable)

	a. PARTS LISTS (X one)		(1) Integral		(2) Separate		(3) Contractor's Option
	b. DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	c. INDEX LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	d. WIRING LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	e. INDENTURED DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	f. APPLICATION LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		

6. DETAILS (X one)

	a. MULTIDETAIL DRAWINGS PERMITTED		b. MONODETAIL DRAWINGS MANDATORY

7. APPLICABILITY OF STANDARDS. The following Standards apply: (X as applicable)

	a. ASME Y14.100, ENGINEERING DRAWING PRACTICES (COMMERCIAL)	C. D. E.	b. ASME Y14.100, WITH APPENDICES B, C, D, E		c. ASME Y14.34 ASSOCIATED LISTS		d. EXISTING STANDARDS DO NOT APPLY

8. OTHER TAILORING (Attach additional sheets as necessary)

FIGURE 3. TDP Option Selection Worksheet-Developmental Design Drawings and Associated Lists

TDP OPTION SELECTION WORKSHEET DEVELOPMENTAL DESIGN SOLID MODELS			
.A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO	C. CLIN	D. CDRL DATA ITEM NO.
1. DELIVERABLE PRODUCT (and complete X as applicable.)			
a. 3-DIMENSIONAL SOLID MODELS (Specify format(s) (Native CAD, STEP, AP, IGES, etc.)			
b.3-D SOLID MODELS ASSOCIATED DRAWINGS (If 2-D drawings based on 3-D solid models are required, indicate here and fill out TDPOPTION SELECTION WORKSHEET-DEVELOPMENTAL DESIGN DRAWINGS AND ASSOCIATED LIST (FIGURE 3.)			
2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)			
a. CONTRACTOR			
b. GOVERNMENT (Complete (1) and (2) or (3)			
(1) Use CAGE Code:	(2) Use Document Numbers:	(3) To Be Assigned By:	
3. 3-D SOLID MODEL REQUIREMENTS (X one and complete as applicable)			
a. CONTRACTOR FORMAT. Models built to contractor requirements.			
b. GOVERNMENT FORMAT. 3-D solid models built to government requirements and formats. (Specify government modeling applicable specifications or SOW paragraphs.)			
4. APPLICABILITY OF STANDARDS (Apply an X as Applicable)			
	ASME Y14.41, Digital Product Definition Data Practices		**Existing Standards Do Not Apply**
5. OTHER TAILORING (Attach additional sheets as necessary)			

FIGURE 3a. TDP Option Selection Worksheet-Developmental Design Solid Models

TDP OPTION SELECTION WORKSHEET COMMERCIAL DRAWINGS/MODELS AND ASSOCIATED LISTS			
A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.
1. DELIVERABLE PRODUCT *(*and complete X as applicable *.)*			
	a. MODEL PRODUCT DATA		
	(1) MODELS (Specify formats) (Native CAD, STEP, AP, IGES, etc.)		
	(2) MODELS WITH DRAWINGS (Identify specification type, grade, and class, etc.)		
	b. 2D		
	(1). ORIGINALS (Specify current design activity's full size reproducible drawing or digital data file(s) on which is kept the revision record recognized as official) (Identify specification, type, grade and class, etc.)		
	(2). REPRODUCTIONS (Identify specifications, type, grade and class, etc., and quantity of each)		
	(3). DIGITAL DATA (Identify specification, exchange media, etc. and specify original (master) or copy)		
2. OTHER TAILORING (Attach additional sheets as necessary.			

FIGURE 4. TDP Option Selection Worksheet – Commercial drawings and Associated Lists

TDP OPTION SELECTION WORKSHEET
SPECIAL INSPECTION EQUIPMENT DRAWINGS AND ASSOCIATED LISTS

A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT ***(and complete X as applicable .)***

	a. ORIGINALS (Specify current design activity's full size reproducible drawing or digital data file(s) on which is kept the revision record recognized as official) (Identify specification, type, grade and class, etc.)
	b. REPRODUCTIONS (Identify specifications, type, grade and class, etc., and quantity of each)
	c. DIGITAL DATA (Identify specification, exchange media, etc. and specify original (master) or copy)

2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)

	a. CONTRACTOR
	b. GOVERNMENT (Complete (1) and (2) or (3)

(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:

3. DRAWING FORMATS AND DRAWING FORMS (X one and complete as applicable)

	a. CONTRACTOR FORMATS. Forms to be supplied by contractor.
	b. GOVERNMENT FORMATS. Forms to be supplied by contractor. Samples supplied by (Specify)
	c. GOVERNMENT FORMATS. Forms to be supplied as Government Furnished Material by (Specify)

4. TYPES OF DRAWINGS SELECTION (X one)

	a. CONTRACTOR SELECTS		b. GOVERNMENT SELECTS (Specify in Item 7)

5. ASSOCIATED LISTS (X and complete as applicable)

	a. PARTS LISTS (X one)		(1) Integral		(2) Separate		(3) Contractor's Option
	b. DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	c. INDEX LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	d. WIRING LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	e. INDENTURED DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	f. APPLICATION LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		

6. APPLICABLITY OF STANDARDS. The following Standards apply: (X as applicable)

	a. ASME Y14.100, ENGINEERING DRAWING PRACTICES (COMMERCIAL)	B. C. D. E.	b. ASME Y14.100, WITH APPENDICES B, C, D, E		c. ASME Y14.34 ASSOCIATED LISTS		d. EXISTING STANDARDS DO NOT APPLY

7. OTHER TAILORING (Attach additional sheets as necessary)

FIGURE 5. TDP Option Selection Worksheet-Special Equipment Drawings and Associated Lists

TDP OPTION SELECTION WORKSHEET
SPECIAL INSPECTION EQUIPMENT SOLID MODELS

A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT (and complete X as applicable.)

	a. 3-DIMENSIONAL SOLID MODELS (Specify format(s) (Native CAD, STEP, AP, IGES, etc.)
	b.3-D SOLID MODELS ASSOCIATED DRAWINGS (If 2-D drawings based on 3-D solid models are required, indicate here and fill out OPTION SELECTION WORKSHEET-SPECIAL INSPECTION EQUIPMENT DRAWINGS AND ASSOCIATED LIST (FIGURE 5.)

2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)

	a. CONTRACTOR
	b. GOVERNMENT (Complete (1) and (2) or (3)

(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:

3. 3-D SOLID MODEL REQUIREMENTS (X one and complete as applicable)

	a. CONTRACTOR FORMAT. Models built to contractor requirements.
	b. GOVERNMENT FORMAT. 3-D solid models built to government requirements and formats. (Specify government modeling applicable specifications or SOW paragraphs.)

4.**OTHER TAILORING (attach additional sheets as necessary)**

FIGURE 5A. TDP Option Selection Worksheet- Special Inspection Equipment Solid Models

TDP OPTION SELECTION WORKSHEET
SPECIAL TOOLING DRAWINGS AND ASSOCIATED LISTS

A.CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT *(and complete X as applicable .)*

	a. ORIGINALS (Specify current design activity's full size reproducible drawing or digital data file(s) on which is kept the revision record recognized as official) (Identify specification, type, grade and class, etc.)
	b. REPRODUCTIONS (Identify specifications, type, grade and class, etc., and quantity of each)
	c. DIGITAL DATA (Identify specification, exchange media, etc. and specify original (master) or copy)

2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)

	a. CONTRACTOR
	b. GOVERNMENT (Complete (1) and (2) or (3)

(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:

3. DRAWING FORMATS AND DRAWING FORMS (X one and complete as applicable)

	a. CONTRACTOR FORMATS. Forms to be supplied by contractor.
	b. GOVERNMENT FORMATS. Forms to be supplied by contractor. Samples supplied by (Specify)
	c. GOVERNMENT FORMATS. Forms to be supplied as Government Furnished Material by (Specify)

4. TYPES OF DRAWINGS SELECTION (X one)

	a. CONTRACTOR SELECTS		b. GOVERNMENT SELECTS (Specify in Item 7)

5. ASSOCIATED LISTS (X and complete as applicable)

	a. PARTS LISTS (X one)		(1) Integral		(2) Separate		(3) Contractor's Option
	b. DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	c. INDEX LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	d. WIRING LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	e. INDENTURED DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	f. APPLICATION LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		

6. APPLICABILITY OF STANDARDS. The following Standards apply: (X as applicable)

	a. ASME Y14.100, ENGINEERING DRAWING PRACTICES (COMMERCIAL)	B.	b. ASME Y14.100, WITH APPENDICES B, C, D, E		c. ASME Y14.34 ASSOCIATED LISTS		d. EXISTING STANDARDS DO NOT APPLY
		C.					
		D.					
		E.					

7. OTHER TAILORING (Attach additional sheets as necessary)

FIGURE 6. TDP Option Selection Worksheet-Special Tooling Drawings and Associated Lists

TDP OPTION SELECTION WORKSHEET
SPECIAL TOOLING SOLID MODELS

A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT (and complete X as applicable.)

	a. 3-DIMENSIONAL SOLID MODELS (Specify format(s) (Native CAD, STEP, AP, IGES, etc.)
	b.3-D SOLID MODELS ASSOCIATED DRAWINGS (If 2-D drawings based on 3-D solid models are required, indicate here and fill out TDPOPTION SELECTION WORKSHEET-SPECIAL TOOLING DRAWINGS AND ASSOCIATED LIST (FIGURE 3.)

2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)

	a. CONTRACTOR
	b. GOVERNMENT (Complete (1) and (2) or (3)

(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:

3. 3-D SOLID MODEL REQUIREMENTS (X one and complete as applicable)

	a. CONTRACTOR FORMAT. Models built to contractor requirements.
	b. GOVERNMENT FORMAT. 3-D solid models built to government requirements and formats. (Specify government modeling applicable specifications or SOW paragraphs.)

4. APPLICABILITY OF STANDARDS (Apply an X as applicable)

	ASME Y14.41, Digital Product Data Practices		Existing Standards Do Not Apply

5. OTHER TAILORING (attach additional sheets as necessary)

FIGURE 6a. TDP Option Selection Worksheet-Special Tooling Solid Models

TDP OPTION SELECTION WORKSHEET
SPECIFICATIONS

A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. ITEM, PROCESS OR MATERIAL

	2. COMMERCIAL ITEM DESCRIPTIONS
	3. DEFENSE SPECIFICATIONS. (X one and complete as applicable)

	a. MIL-PRF		b. MIL-DTL		c. PROGRAM UNIQUE		
	(1) Coordinated		(1) Coordinated		(1) PERFORMANCE		(2) DETAIL
	(2) Limited Coordinated		(2) Limited Coordinated		a. System		a. System
	(3) Interim		(3) Interim		b. Item		b. Item
					c. Software		c. Software
					d. Material		d. Material
					e. Process		e. Process

4. ASSOCIATED DOCUMENTS PER MIL-STD-961. The Following documents associated with defense specifications are required under the
CDRL data item number referenced herein. (X and complete as applicable)

	a. DOCUMENT	b. CDRL DATA ITEM NO.		a. DOCUMENT	b. CDRL DATA ITEM NO.
	(1) Supplements			(5) Cancellation Notice	
	(2) Amendments			(6) Reinstatement Notice	
	(3) Validation Notice			(7) Military Specification Sheets	
	(4) Inactive for New Design Notice				

5. DELIVERABLE PRODUCT (X and complete as applicable)

a. ORIGINALS

	(1) Camera Ready Master
	(2) Digital Data (Detail in item 6, including requirement for diskettes with Portable Document Format or Printer Description Language, and Word Processing Program.

6. OTHER TAILORING (Attach additional sheets as necessary)

FIGURE 7. TDP Option Selection Worksheet-Specifications

TDP OPTION SELECTION WORKSHEET
SPECIAL PACKAGING INSTRUCTIONS DRAWINGS AND ASSOCIATED LISTS

A.CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT ***(and complete X as applicable .)***

	a. ORIGINALS (Specify current design activity's full size reproducible drawing or digital data file(s) on which is kept the revision record recognized as official) (Identify specification, type, grade and class, etc.)
	b. REPRODUCTIONS (Identify specifications, type, grade and class, etc., and quantity of each)
	c. DIGITAL DATA (Identify specification, exchange media, etc. and specify original (master) or copy)

2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)

	a. CONTRACTOR
	b. GOVERNMENT (Complete (1) and (2) or (3)

(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:

3. DRAWING FORMATS AND DRAWING FORMS (X one and complete as applicable)

	a. CONTRACTOR FORMATS. Forms to be supplied by contractor.
	b. GOVERNMENT FORMATS. Forms to be supplied by contractor. Samples supplied by (Specify)
	c. GOVERNMENT FORMATS. Forms to be supplied as Government Furnished Material by (Specify)

4. TYPES OF DRAWINGS SELECTION (X one)

	b. CONTRACTOR SELECTS		b. GOVERNMENT SELECTS (Specify in Item 7)

5. ASSOCIATED LISTS (X and complete as applicable)

	a. PARTS LISTS (X one)		(1) Integral		(2) Separate		(3) Contractor's Option
	b. DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	c. INDEX LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	d. WIRING LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	e. INDENTURED DATA LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		
	f. APPLICATION LISTS (X one)		(1) Not Required		(2) Required (Specify levels of assembly)		

6. APPLICABILITY OF STANDARDS. The following Standards apply: (X as applicable)

	a. ASME Y14.100, ENGINEERING DRAWING PRACTICES (COMMERCIAL)	B. C. D. E.	b. ASME Y14.100, WITH APPENDICES B, C, D, E		c. ASME Y14.34 ASSOCIATED LISTS		d. EXISTING STANDARDS DO NOT APPLY

7. OTHER TAILORING (Attach additional sheets as necessary)

FIGURE 8. TDP Option Selection Worksheet-Special Packaging Instructions Drawings and Associated Lists

TDP OPTION SELECTION WORKSHEET
SPECIAL PACKAGING INSTRUCTIONS SOLID MODELS

A. CONTRACT NO.	B. EXHIBIT/ATTACHMENT NO.	C. CLIN	D. CDRL DATA ITEM NO.

1. DELIVERABLE PRODUCT (and complete X as applicable.)

	a. 3-DIMENSIONAL SOLID MODELS (Specify format(s) (Native CAD, STEP, AP, IGES, etc.)
	b.3-D SOLID MODELS ASSOCIATED DRAWINGS (If 2-D drawings based on 3-D solid models are required, indicate here and fill out TDPOPTION SELECTION WORKSHEET-SPECIAL TOOLING DRAWINGS AND ASSOCIATED LIST (FIGURE 3.)

2. CAGE CODE AND DOCUMENT NUMBERS (X ONE)

	a. CONTRACTOR
	b. GOVERNMENT (Complete (1) and (2) or (3)

(1) Use CAGE Code	(2) Use Document Numbers	(3) To Be Assigned By:

3. 3-D SOLID MODEL REQUIREMENTS (X one and complete as applicable)

	a. CONTRACTOR FORMAT. Models built to contractor requirements.
	b. GOVERNMENT FORMAT. 3-D solid models built to government requirements and formats. (Specify government modeling applicable specifications or SOW paragraphs.)

4. APPLICABILITY OF STANDARDS (Apply an X as applicable)

	ASME Y14.41, Digital Product Data Practices		Existing Standards Do Not Apply

5. OTHER TAILORING (attach additional sheets as necessary)

FIGURE 8a. TDP Option Selection Worksheet – Special Packaging Instructions Solid Models

APPENDIX A

SELECTION AND ORDERING GUIDANCE

A.1 SCOPE.

A.1.1 Scope. This Appendix provides guidance for Government personnel on the acquisition of the various types of technical data and the completion of the TDP Option Selection Worksheets, Figures 1 through 8, of this specification. This appendix is not a mandatory part of this specification.

A.2 APPLICABLE DOCUMENTS.

A.2.1 Government documents.

A.2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATION

MIL-PRF-5480	Data, Engineering and Technical Reproduction, Performance Specification

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-1840	Automated Interchange of Technical Information
MIL-STD-2073-1	Standard Practice for Military Packaging

(Copies of these documents are available on line at http:assist.daps.dla.mil/quicksearch/ or www.dodssp.daps.mil or from the Standardization Document Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

A.2.1.2 Other Government documents. The following other Government documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

Public Law 98-525 Defense Procurement Reform Act of 1984.

(Copies of Public Law 98-525 are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-0001.)

A.2.1.3 Non-Government publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of documents are cited in the solicitation.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME Y14.24	Types and Applications of Engineering Drawings
ASME Y14.34M	Associated Lists
ASME Y14.42	Digital Approval Systems
ASME Y14.100	Engineering Drawing Practices

(Copies of these documents are available from www.asme.org or ASME information Central Orders/Inquiries, P.O. Box 2300, Fairfield, NJ 07007-2300)

A.3 ACQUISITION TECHNIQUES.

A.3.1 General. Government activities acquiring technical data are required to carefully review their respective needs for technical data and TDP data management products. Each TDP element and each TDP data management product shall be ordered as a separate entry on the DD Form 1423, Contract Data Requirements List (CDRL) included in the contract or purchase order. For some TDP elements, standard ordering forms, identified as Tailoring Forms have been developed.

A.3.1.1 Tailoring. Department of Defense activities shall evaluate the cost of data items in relation to their value in the design, production, management, reprocurement, logistics support and use of the product. (The DD Form 1423, Block 18, Estimated Total Price, is the means to establish the cost of each data item.) In addition, activities acquiring data shall tailor the requirements for each data product to ensure that only the minimum essential data necessary to meet the Government's needs is acquired. Tailoring decisions must take into consideration the commercial or military nature of the materiel being procured and its developmental status.

A.3.2. Selecting and ordering TDP types and elements The determination as to the type of TDP (type 2D or type 3D) must be made based on the nature of the item being procured. 3D based TDPs are generally preferred especially when the item is mostly mechanical in nature, is subject to a significant number of interfaces with other systems, or in which future design upgrades and changes are likely. 2D based drawings, which are a part of a 3D solid model, are required when type b TDP is used during the production phase of the lifecycle. 2D drawings as part of a 3D TDP are not necessarily required during conceptual phases of the lifecycle.

A.3.2.1 Industry practice. Where there is intent to accept digital product definition data, model

only or model plus digital drawings, current industry practice should be considered in the form of ASME Y14.41.

A.3.3 TDP elements.

A.3.3.1 Conceptual design drawings/models.

a. Selection. Conceptual design drawings/models are used when there is a need to verify preliminary design and engineering and confirm that the technology is feasible and that the design concept has the potential to be useful in meeting a specific requirement. Conceptual design drawings/models should only be ordered under contracts containing concept exploration and research tasks.

b. Ordering. Require the generation of a TDP containing conceptual design drawings/models in the Statement of Work. Cite DI-SESS-81001C and reference a TDP Option Selection Worksheet in the CDRL. Complete a TDP Option Selection Worksheet (including tailoring) and include it in the solicitation, contract or purchase order. A.4 contains guidance on completing a TDP Option Selection Worksheet.

A.3.3.2 Developmental design drawings/models and associated lists.

a. Selection. Developmental design drawings/models and associated lists are used to describe a specific design approach. They provide the information to produce materiel for test or experimentation, and for the analytical evaluation of the inherent ability of the design approach to attain the required performance. Developmental design drawings/models should only be ordered under contracts containing program definition and risk reduction.

b. Ordering. Require the generation of a TDP containing developmental design drawings/models and associated lists in the Statement of Work. Cite DI-SESS-81002C and reference a TDP Option Selection Worksheet in the CDRL. Complete a TDP Option Selection Worksheet (including tailoring) and include it in the solicitation, contract or purchase order. A.4 contains guidance on completing the TDP Option Selection Worksheet.

A.3.3.3 Product drawings/models and associated lists.

a. Selection. Product drawings/models and associated lists should be selected when there is a current or future need for the Government to procure or manufacture the equipment, components, or spares and repair parts from either the original manufacturer or an alternate source. Product drawings/models should be ordered only under contracts containing engineering and manufacturing development or production tasks. When product drawings/models are ordered for large, complex items such as major weapons systems, tailoring decisions should include consideration of ordering commercial drawings for selected commercial items used as subassemblies. It should also be noted that where there are fully justified DoD peculiar drawing practices requirements, such as the DoD

system for Numbering, Coding and Identification, ASME Y14.100 and applicable appendices must be invoked**.** The use of the appendices to ASME Y14.100 will usually be associated with product drawings indicating a DoD activity as design activity and an end item requiring Government logistics support.

b. Ordering. Require the generation of a TDP containing product drawings and associated lists in the Statement of Work. Cite DI-SESS-81000C and reference the TDP Option Selection Worksheet in the CDRL. Complete a TDP Option Selection Worksheet (including tailoring) and include it in the solicitation, contract or purchase order. Section A.4 contains guidance on completing the TDP Option Selection Worksheet.

A.3.3.4 Commercial drawings/models and associated lists.

a. Selection. Commercial drawings/models and associated lists are used to obtain existing information regarding commercial items acquired by the Government and used as end items or as selected subassemblies of Government developed items. They are not to be used for documenting vendor items in a product drawing package. Furthermore, the acquisition of technical data must conform to the requirements of DFARS Subpart 211. Prior to contracting for commercial drawings/models, the acquiring activity should review the drawings/models for their adequacy for the Government's intended uses for the drawings/models. Commercial drawings/models and associated lists should not be acquired as a substitute for product drawings/models and associated lists when the item is developed at Government expense. Commercial drawings/models will most often be ordered under contracts for engineering and manufacturing development or production (including commercial item acquisition).

b. Ordering. Require the generation of a TDP containing commercial drawings/models and associated lists in the statement of work. Cite DI-SESS-81003C and reference a TDP Option Selection Worksheet in the CDRL. Complete a TDP Option Selection Worksheet (including tailoring) and include it in the solicitation, contract or purchase order. Section A.4 contains guidance on completing the TDP Option Selection Worksheet.

A.3.3.5 Special inspection equipment (SIE) drawings/models and associated lists.

a. Selection. SIE drawings/models and associated lists are used for the limited production of SIE required to inspect and test a specific hardware system. SIE drawings/models are not adequate to procure and maintain logistic support of standard military inspection systems and test equipment, which are deployed throughout the maintenance and user communities. This data is intended for use in alternate manufacturing or inspection environments only. If SIE is required for the maintenance and logistics support of the item when deployed, the same types of drawings should be ordered for that SIE as is ordered for the item the SIE supports. SIE drawings/models should only be ordered under contracts containing tasks for engineering and manufacturing development or production.

b. Ordering. Require the generation of a TDP containing SIE drawings and associated lists in the Statement of Work. Cite DI-SESS-81004C and reference the TDP Option Selection Worksheet in the CDRL. Complete a TDP Option Selection Worksheet (including tailoring) and include it in the solicitation, contract or purchase order. Section A.4 contains guidance on completing the TDP Option Selection Worksheet.

A.3.3.6 Special tooling (ST) drawings and associated lists.

a. Selection. Special tooling drawings are used to permit the Government or an alternate source to duplicate the functional requirements of tooling that are mandatory for the manufacture of the item. These drawings are intended for limited production of tooling used in a manufacturing environment. ST drawings may not be adequate to procure and maintain logistic support of tooling which is deployed throughout the maintenance and user communities. If ST is required for the maintenance and logistics support of the item when deployed, the same types of drawings should be ordered for that ST as is ordered for the item the ST supports. ST drawings should be ordered only under contracts containing tasks for engineering and manufacturing development or production.

b. Ordering. Require the generation of a TDP containing special tooling drawings and associated lists in the Statement of Work. Cite DI-SESS-81008C and reference the TDP Option Selection Worksheet in the CDRL. Complete a TDP Option Selection Worksheet (including tailoring) and include it in the solicitation, contract or purchase order. A.4 contains guidance on completing the TDP Option Selection Worksheet.

A.3.3.7 Specifications.

a. Selection. Refer to MIL-STD-961 for guidance in determining the types of specifications to be acquired, or the Federal Standardization Manual for guidance on composing Commercial Item Descriptions. For specifications related to software documentation see A.3.2.9.

c. Ordering. Require the generation of a TDP containing specifications in the Statement of Work. Cite the appropriate DID as listed in MIL-STD-961 in the CDRL. Reference the completed TDP Option Selection Worksheets in the CDRL. Complete a TDP Option Selection Worksheet (including tailoring) and include it in the solicitation, contract or purchase order. Additional documentation associated with specifications must be ordered as separate data items on the CDRL. A.4 contains guidance on completing the TDP Option Selection Worksheet.

A.3.3.8 Software documentation.

a. Selection. Software documentation is acquired to support software products imbedded in the end item, component systems thereof, or special inspection equipment covered by the TDP. Refer to IEEE/EIA 12207 for information on selecting and tailoring software documentation for inclusion in TDPs.

b. Ordering. Require the generation of software documentation in the TDP for each software product in the Statement of Work.

A.3.3.9 Packaging data.

a. Selection. Prior to ordering packaging data, an engineering task to develop packaging requirements must be included in the contract or purchase order. For additional information on the use and selection of packaging data products refer to MIL-STD-2073-1.

d. Ordering. Require the generation of a TDP containing packaging data in the Statement of Work. Cite the appropriate DID as listed in MIL-STD-2073-1 in the CDRL and enter the tailoring in Block 16 of the CDRL.

A.3.4 TDP data management products and their uses.

A.3.4.1 Source control drawing approval request.

a. Selection. Source control drawing (SOCD) approval requests are used to ensure that only valid source qualification requirements are included in the TDP. Under Public Law 98-525, the Defense Procurement Reform Act of 1984, the Government must actively seek multiple sources for any item for which source qualification is a requirement. This obligation applies to source control items as well as qualified products list (QPL) and qualified manufacturers list (QML) items. However, Government personnel should take into consideration the adverse impacts of such approval processes on contract costs and schedules, especially when such approval processes are extended throughout the subcontract chain.

b. Ordering. Require the generation of source control drawing approval requests in the Statement of Work. Cite DI-SESS-81010C in the CDRL. Identify the Government activity having source control drawing approval authority and any tailoring in Block 16 of the CDRL.

A.3.4.2 Drawing number assignment report.

a. Selection. A drawing number assignment report provides the information necessary to complete Government design activity records on the use of specific Government drawing numbers. This report should be acquired only when drawings and associated lists are to be identified with Government CAGE Codes and document numbers.

b. Ordering. Require the generation of drawing number assignment reports in the Statement of Work. Cite DI-SESS-81011C in the CDRL and enter the tailoring in Block 16 of the CDRL.

A.3.4.3 Proposed critical manufacturing process description.

a. Selection. The proposed critical manufacturing process description is used to provide the Government design activity with the opportunity to approve or disapprove the documentation of a

manufacturing process as critical in the TDP. However, Government personnel should take into consideration the adverse impacts of such approval processes on competitive procurement, contract costs and schedules, especially when such approval processes are extended throughout the subcontract chain.

b. Ordering. Require the generation of proposed critical manufacturing process descriptions in the Statement of Work. Cite DI-SESS-81012C in the CDRL. Identify the Government activity having critical manufacturing process approval authority and any tailoring in Block 16 of the CDRL.

A.4 TDP Tailoring forms. TDP Option Selection Worksheets, Figures 1 through 8, shall be used to identify selected options and tailoring for engineering drawings and specifications. These Worksheets are to be used as an extension of the Remarks block (Block 16) of the CRDL (DD Form 1423). When information to be entered in a block of the TDP tailoring form is too extensive for the space available, it may be continued in the Other Tailoring block of the form. Additional sheets may be attached to the forms as necessary. When a CDRL contains multiple entries for the same data product, such as options, the same tailoring form may be used to cover identical data products. The following paragraphs provide more detailed guidance on completing the TDP tailoring forms.

A.4.1. Headings.

A.4.1.1 Contract No. Enter the number of the acquisition document shown in Block E, Contract/PR No., of the DD Form 1423.

A.4.1.2 CLIN. Enter the contract line item number from Block A, Contract Line Item No., of the DD Form 1423.

A.4.1.3 Exhibit No. Enter the number or letter, which appears in Block B, Exhibit, of the DD Form 1423.

A.4.1.4 CDRL Data Item No. Enter the data item number from Block 1, Data Item No., of the DD Form 1423 entry for which the tailoring form is being prepared. If the form applies to more than one CDRL data item, enter all applicable data item numbers.

A.4.2 Tailoring forms for drawings. The following choices are required to complete the tailoring forms for drawings and associated lists (Figures 1 through 8).

A.4.2.1 Deliverable product. The options in this block determine the media in which the data product will be delivered. The choices are not exclusive to each other, and the same set of drawings may be acquired in more than one form.

A.4.2.1.1 Originals. Originals should be ordered only if the Government intends to assume design control authority by taking possession of the drawing masters and responsibility for maintaining the drawing package. If this option is selected, the media on which the drawings are to be prepared must

be specified by reference to an applicable specification or standard, including type, grade, class or material thickness, as applicable.

A.4.2.1.2 Reproductions. Reproductions are the most common form of deliverable product for drawings. They may or may not be suitable for producing additional copies. Refer to MIL-PRF-5480 for additional information on the types of reproductions, which can be acquired. The types and quantities of each type of reproduction required shall be specified by reference to applicable specifications or standards including type, grade, and class as applicable.

A.4.2.1.3 Digital data. DoD Regulation 5000.2-R, Part 3 states that all new contracts shall require on-line access or delivery of their programmatic and technical data in digital form unless analysis shows that life-cycle costs would be increased by doing so. However, caution must be exercised to ensure that the delivered digital data can be received, stored, retrieved and used by the Government.

A.4.2.2 CAGE Code and document numbers. This choice is exclusive. It determines how the drawings and associated lists will be identified.

A.4.2.2.1 Contractor. When contractor CAGE Code and document numbers are specified, the documents will be identified with the CAGE Code and document numbers of the contractor or subcontractor having design activity responsibility. Usually the Government will not be able to assume control of the drawing originals (masters), except through a subsequent data acquisition action.

A.4.2.2.2 Government. If the Government intends to take delivery of the drawing originals and to assume design activity responsibility at some time in the future, then the documents should be identified with a Government CAGE Code and Government document numbers. If this option is selected, additional information must be specified as follows:

a. If the acquiring activity has already determined the CAGE Code and Government document numbers to be used, the CAGE Code should be entered in the "USE CAGE CODE" block and the range of document numbers entered in the "USE DOCUMENT NUMBERS" block.

b. If the acquiring activity has not determined the Government CAGE Code and Government document numbers which are to be used, then the Government activity that will specify this information should be identified in the "TO BE ASSIGNED BY:" block.

A.4.2.3 Drawing formats and drawing forms. These options specify the drawing format to be used and assign responsibilities for providing the drafting material or media (drawing forms) on which the documents are to be generated.

A.4.2.3.1 Contractor format, forms to be supplied by contractor. This option should be selected if the documents are to be identified with the contractor's CAGE Code and contractor document

numbers. This option may also be used when Government CAGE Code and document numbers are to be used for document identification if the exact format is optional.

A.4.2.3.2 Government format, forms to be supplied by contractor. This option requires the contractor to acquire and use drawing media in the Government's specified format. If selected, the Government activity responsible for providing sample drawing forms must be specified. Usually this option is not cost effective, as the contractor must special order drawing forms in several different sizes. At best it should be used only on acquisitions, which will require the delivery of a very large number of original drawings.

A.4.2.3.3 Government format, forms to be supplied as Government Furnished Material. This is the most cost effective option, when the Government is acquiring drawings with Government CAGE Codes and Government document numbers, and requires the use of a specific drawing format. If selected, the Government activity that will supply the drawing forms shall be specified.

A.4.2.4 Types drawings selection. This option assigns the responsibility for determining the details of the use of various types of drawings to fulfill the design disclosure requirements of TDP element to be delivered.

A.4.2.4.1 Contractor selects. This choice permits the contractor to use its own judgment as to how to structure the drawing package to provide the required design disclosure for the TDP element. It does not diminish the contract requirements for design disclosure.

A.4.2.4.2 Government selects. This option gives the Government the authority to direct the contractor as to which types of drawings to use for each component, subassembly or part. If selected, the types of drawings to be used must be specified. When selected, this option should be tailored to permit the contractor the maximum freedom in the use of various drawing types, which the Government can give.

A.4.2.5 Associated lists. These choices shall be completed to define the Government's requirements for associated lists as defined in ASME Y14.34.

A.4.2.5.1 Parts lists. Unless there is a specific Government requirement for integral or separate parts lists, "CONTRACTOR'S OPTION" should be selected. This option allows the contractor to use either an integral or separate parts list as best suits the specific item or part being documented, as well as the contractor's normal documentation practices and manufacturing procedures.

A.4.2.5.2 Data lists. Either "REQUIRED" or "NOT REQUIRED" must be selected. Data lists aid in assembling larger sets of drawings. Therefore, data lists should be required on most acquisitions of complex items. When data lists are required, the contractor must be given guidance as to the levels of assembly at which they are required. For example, an electronic system composed of input and output sections made up of equipment racks containing replaceable drawers may require data

lists at the drawer, rack, section and system (or end-item) level. Other terms for the required levels may be used.

A.4.2.5.3 Index lists. Select either "REQUIRED" or "NOT REQUIRED." Index lists are not normally needed for small or moderate sized drawing packages of items that are not complex. However, they help in assembling the larger drawing packages required for major equipments, systems and subsystems. The assembly level at which index lists are required shall be specified.

A.4.2.5.4 Wire lists. Select either "REQUIRED" or "NOT REQUIRED". A wire lists is prepared to provide information necessary for making wire connections. A wire list may be prepared for one or more related assemblies.

A.4.2.5.5 Indentured data lists. Select either "REQUIRED" or "NOT REQUIRED". An indentured data list is prepared to show all the documents for a complete system or end item in a top down, generation tree order.

A.4.2.5.6 Application lists. Select either "REQUIRED" or "NOT REQUIRED". Application lists are prepared when data such as "Next Assembly" and "Used On" are required in a separate list.

A.4.2.6 Details. These options address the use of multidetail and detail assembly drawings in the drawing package. These choices have an impact on the number of drawings to be prepared, and, subsequently, the cost of the data. For additional information on drawing types and applications see ASME Y14.24.

A.4.2.6.1 Multidetail drawings permitted. This option permits the contractor to use multidetail drawings and to determine whether or not to use a detail assembly drawing or a combination of an assembly drawing and a detail drawing to document a specific item or part. This option does not prohibit the use of monodetail drawings where practical.

A.4.2.6.2 Monodetail drawings mandatory. This option prohibits the use of multidetail and detail assembly drawings. This increases the number of drawings to be prepared and the cost of the data package. Monodetail drawings are generally considered more suitable to large scale manufacturing environments than multidetail drawings; however, both can be used. Tabulated drawings and inseparable assembly drawings are still permitted when monodetail drawings are specified as mandatory.

A.4.2.7 Applicability of ASME Y14.100 (developmental design drawings only). The applicability of ASME Y14.100 with appropriate appendices to developmental design drawings shall be specified on the applicable TDP Option Selection Worksheet. Only those requirements essential to meeting the Government's needs for document preparation, control and format should be specified. In addition, since these drawings are not intended for repository storage or use in logistics support of the item, each selected requirement should be tailored to allow the contractor the maximum freedom permissible. Decisions regarding the applicability of ASME Y14.100 with appropriate appendices to

developmental design drawings must take into account potential future requirements for other TDP elements such as product drawings.

A.4.2.8 Other tailoring. This block may be used to tailor any requirement of MIL-DTL-31000, ASME Y14.100 with appropriate appendices, a DID, or any other document affecting the content, format, or media of the data product.

A.4.3 Tailoring forms for specifications. The following choices are required to complete the tailoring forms for Department of Defense and program-unique specifications:

A.4.3.1 Item, process or material. Identify the item, the process or the material for which the specification is to be prepared. More than one item, process or material may be specified if the same type of specification is to be prepared for each. If additional space is required, the listing may be continued in The "Other Tailoring" block. When the listing is continued in "Other Tailoring", Block 1 shall contain an appropriate cross reference.

A.4.3.2 Specification Type. See MIL-STD-961.

A.4.3.2.1 Coordination range (Department of Defense only). If either LIMITED COORDINATION or "USED IN LIEU OF" LIMITED COORDINATION specifications are selected, specify the degree or range of coordination required. For example, Navy-wide or Army Tank-Automotive Command and Army Missile Command.

A.4.3.3 Associated documents. This block is for reference only. Identify the documents associated with specifications, which are also required under the contract or purchase order. Each type of associated document to be delivered shall be ordered as a separate data item on the DD Form 1423. MIL-STD-961 identifies the types of documents associated with specifications and specifies the characteristics of each.

A.4.3.3.1 CDRL data item no. Enter the data item number from Block 1 of the entry on the DD Form 1423, which places the associated document on order.

A.4.3.4 Deliverable product. The options in this block determine the form in which the data product will be delivered. The choices are not exclusive to each other, and the same specification may be delivered in more than one form.

A.4.3.4.1 Originals. Originals should be ordered if the Government intends to assume responsibility for maintaining the specification. If this option is selected, the media on which the document is to be delivered must be specified.

A.4.3.4.2 Reproductions. The numbers and kinds of reproductions required must be specified by reference to applicable specifications or standards including type, grade and class, as applicable.

A.4.3.4.3 Digital data. Digital data is the preferred delivery method for data. However, caution must be exercised to ensure that the digital data is delivered in an electronic format that can be received, stored, retrieved and used by the Government.

A.5 Other data acquisition considerations.

A.5.1 Continuous Acquisition and Life-Cycle Support (CALS) implementation. The following paragraphs provide guidance on acquiring data products in digital form:

A.5.1.1 Department of Defense policy. DoD Instruction 5000.2 states that technical data will be prepared, delivered and used in digital form unless it is not cost-effective for the Government. In addition, maximum use should be made of available contractor automated databases. MIL-STD-1840 identifies procedures for exchanging large quantities of engineering and technical support data among heterogeneous computer systems. It is often called the umbrella standard for Continuous Acquisition and Life Cycle Support (CALS) because it identifies other standards, specifications, and practices to be used in a CALS solution. The DoD Joint Technical Architecture (JTA) 4.0, (http://www.jta.itsi.disa.mil/) identifies ISO 10303 as an emerging standard. The JTA provides DoD systems with the basis for the needed seamless interoperability. The JTA defines the service areas, interfaces, and standards (JTA elements applicable to all DoD systems, and its adoption is mandated for the management, development, and acquisition of new or improved systems throughout DoD. Defense Logistics Agency funded the ISO 10303 STEP application Handbook 2.0 (https://www.uspro.org) to provide information on the scope and availability of STEP Application Protocols. ISO 10303 has been identified as a mechanism for procurement of digital product model data for future programs.

A.5.2 Data requirements versus work tasks. Contractual data requirements cannot be used to impose design requirements on the item being procured or engineering work tasks on the contractor. Such tasks shall be identified in the Statement of Work of the contract or purchase order or in a design requirements specification.

A.5.3 Previous submission. Government activities acquiring technical data shall tailor the delivery and submission requirements for TDPs to avoid unnecessary charges to the Government resulting from duplicate delivery of data products.

A.5.4 Digital approval systems. Any Digital Approval System must as a minimum satisfy the requirements for uniqueness, verification, and control. More detailed considerations for Digital Approval Systems are contained in ASME Y14.42.

CONCLUDING MATERIAL

Custodians:

Army-AR
Navy-OS
Air Force-16
DLA-DH

Preparing activity:

Army-AR

(Project: SESS-0056)

Review activities:

Army-AC, AV, CR, IE, MI, PT, SM, TM2
Navy-AS, CG, CH, EC, MC, ND, NP, SA, SH, TD
Air Force-01, 08, 10, 11, 13, 19, 33, 94, 99
DLA-CC
OSD-SO, HS, MA, SE, SP
OTHER-CM, DI, MP, NS

The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at www.dodssp.daps.mil.