NOT MEASUREMENT SENSITIVE

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DEPARTMENT OF DEFENSE
STANDARD PRACTICE
TECHNICAL DATA PACKAGES

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

1. SCOPE

1.1 Scope. This standard 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).

1.1.1 Selective application. Selection of the TDP Level, Type, Elements and TDP data management products to make up a TDP must be based on the Procuring Activity's need for technical data required to support the acquisition and life cycle support strategies for the product being documented. The Procuring Activity's' need for technical data varies greatly from program to program.

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

Comments, suggestions, or questions this document should be addressed to: Commander, U S Army ARDEC, ATTN: RDAR-QES-E, Picatinny Arsenal, NJ 07806-5000 or emailed to ardecstdzn@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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2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4 and 5 of this standard. This section does not include documents listed in other sections or recommended for additional information or as examples.

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
MIL-STD-962	Defense Standards Format and Content
MIL-STD-2073-1	Standard Practice for Military Packaging
DOD-STD-2101	Classification of Characteristics

DEPARTMENT OF DEFENSE HANDBOOKS

MIL-HDBK-780 Standard Microcircuit

(Copies of these documents are available online at http://assist.daps.dla.mil/quicksearch/ 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.

DEPARTMENT OF DEFENSE MANUALS

DoD Manual 4100.39M	Federal Logistics Information System (FLIS) Procedures Manual
DoD Manual 5220.22-M	Department of Defense Industrial Security Manual for Safeguarding Classified Information.
DoD Directive 5230.24	Distribution Statements on Technical Documents
DoD Directive 5230.25	Withholding of Unclassified Technical Data From Public Disclosure
DFARS Part 227	Defense Federal Acquisition Regulation Supplement for Patents, Data and Copyrights

DFARS Part 252	Defense Federal Acquisition Regulation Supplement for Solicitations, Provisions and Contract Clauses
FAR 2.101	Federal Acquisition Regulation Definitions
Federal Cataloging Handbook H4/H8	Commercial and Government Entity (CAGE) Codes

(Applications for copies of DoD Manual 5520.22-M and DoD Directive 5230.24 are available from the Defense Technical Information Center (DTIC), http://www.dtic.mil. The Federal Cataloging Handbook H4/H8 is available from the Commander, Defense Logistics Services Center, and Battle Creek, MI 49037-3084 at http://www.dlis.dla.mil/hseries.asp. Copies of DFARS documents are available online at http://www.acq.osd.mil/dpap/dars/dfarspgi/current/index.html.)

FEDERAL PUBLICATION

Federal Standardization Manual

(Copies of Federal Standardization Manual are available from the General Service Administration, Centralized Mailing List Service (7CAFL), P.O. Box 6477, Ft. Worth, TX 76115.)

2.3 Non-Government publications. The following documents form a part of this standard 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 Y14.1	Decimal Inch Drawing Sheet Size and Format
ASME Y14.1M	Metric Sheet Size and Format
ASME Y14.24	Types and Applications of Engineering Drawings
ASME Y14.34	Associated Lists
ASME Y14.35M	Revision of Engineering Drawings and Associated Documents
ASME Y14.41	Digital Product Definition Data Practices
ASME Y14.5	Dimensioning and Tolerancing
ASME Y14.100	Engineering Drawing Practices

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

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

ISO/IEC 12207	System and Software Engineering - Software Lifecycle Processes
ISO 32000-1	Document Management - Portable Document Format.

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

AMERICAN NATIONAL STANDARDS INSTITUTE

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

(Copies of free and purchased parts of the standard are available at: http://www.ansi.org/.)

NATIONAL AEROSPACE STANDARDS

NAS 3500 Technical Data Package: Composition, Communication, and Application

(Copies of this document are available from the Aerospace Industries Association of America, inc. 1000 WILSON BLVD, ARLINGTON, VA 22209)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, 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. DEFINITIONS

3.1 For the purposes of this standard, the following definitions apply:

3.1.1 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).

3.1.2 Commercial And Government Entity (CAGE) code. A five character code listed in Cataloging Handbook H4/H8, Commercial and Government Entity 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 part number is assigned. The CAGE Code was previously called manufacturer's code, code identification number or Federal Supply Code for Manufacturers (FSCM).

3.1.3 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.

3.1.4 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 2.101)

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

3.1.6 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.

3.1.7 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 Clause 252.227-7014)

3.1.8 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 Clause 252.227-7014) ISO/IEC Standard 12207 uses the term "software life cycle data" to address software documentation.

3.1.9 Conceptual design data. Data such as drawings or 3-Dimensional (3D) models, which describe the engineering concepts on which a proposed technology or design approach is based.

3.1.10 Configuration Item (CI). A product or an aggregation of products that accomplishes an end-use function and is deemed important enough to require separate configuration management documentation and control.

3.1.11 Cosmetic 3D model. A Computer Aided Design (CAD) 3D model sufficiently defined to provide a visual understanding of the item, but which does not contain full design disclosure. Generally key interface characteristics and features such as weight and center of gravity will be sufficiently defined for the intended purpose. Sometimes referred to as a shrinkwrap, visualization, or limited design disclosure 3D model.

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

3.1.13 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".

3.1.14 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).

3.1.15 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)

3.1.16 Developmental design data. Data 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.

3.1.17 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)

3.1.18 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. (ASME Y14.1)

3.1.19 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.

3.1.20 Limited design disclosure models. A Computer Aided Design (CAD) 3-Dimensional model sufficiently defined to provide a visual understanding of the item, but which does not contain full design disclosure. Generally key interface characteristics and features such as weight and center of gravity will be sufficiently defined for the intended purpose. Sometimes referred to as a shrinkwrap, visualization, or cosmetic model.

3.1.21 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.

3.1.22 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)

3.1.23 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.

3.1.24 Procuring Activity. The Government or private organization which establishes the requirements for an end item, service or set of data, and is responsible for the issuance of a contract or solicitation for these goods or services.

3.1.25 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

3.1.26 Product model data. A 3 dimensional (3D) geometric representation of a design that includes digital information required for full product definition.

3.1.27 Quality Assurance Provisions (QAP). Documented requirements, procedures and criteria necessary for demonstrating that products conform to design requirements.

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

3.1.29 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.

3.1.30 Special Packaging Instruction (SPI). Instructions which document military packaging requirements for an item, as distinct from commercial packaging. These instructions cover methods of preservation to protect materiel against environmentally induced corrosion and deterioration, physical and mechanical damage, and other forms of degradation during storage, multiple handling and shipment of materiel in the defense transportation system. Special Packaging Instructions will 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.

3.1.31 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.

3.1.32 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)

3.1.33 Standardization document. A document, such as a specification, standard or handbook, developed for the purpose of standardizing items, materials, processes or procedures (MIL-STD-962).

3.1.34 Standard Microcircuit Drawing (SMD). 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. (MIL-HDBK-780).

3.1.35 Supplementary Technical Data (STD). Data related to or in support of a TDP, but not an inherent part of the TDP, which is provided as reference material or is explanatory in nature. For example, Supplementary Technical Data for a particular configuration item could include manufacturing instructions, simulations, work flow data, inspection equipment or procedures (which are not required as an inherent part of the TDP or TDP element), manufacturing machine code, design studies, analysis studies, test results, safety data sheets, etc.

3.1.36 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 Clause 252.227-7013).

3.1.37 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, patterns, performance

requirements, quality assurance provisions, software documentation and packaging details.

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

3.1.39 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.

3.1.40 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.

3.1.41 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.

4. GENERAL REQUIREMENTS

4.1 General. This section covers general requirements for Technical Data Packages.

4.2 TDP levels. TDP levels provide for a natural progression of a design from its inception to production. A particular TDP Level may be ordered to define a conceptual design, a developmental prototype or limited production design, or the highest type of engineering drawing/model required for quantity production of the item or system by the original developer or any other capable producer. TDPs shall consist of one of three Levels:

(1) Conceptual Level
(2) Developmental Level
(3) Production Level

4.3 TDP types. TDP Types describe the form and format of the technical data and shall consist of one or more of the following types:

4.3.1 Type 2D: 2-Dimensional (2D) Technical Data Package

4.3.2 Type 3D: 3-Dimensional (3D) Technical Data Package. Type 3D comes in one of the following type subsets:

a. 3D models only
b. 3D models with associated 2D drawings

4.4 TDP elements. TDP Elements describe the various component parts of the TDP.

a. Conceptual design drawings/models.

b. Developmental design drawings/models and associated lists.

c. Product drawings/models and associated lists.

d. Commercial drawings/models and associated lists.

e. Special Inspection Equipment (SIE) drawings/models and associated lists.

f. Special Tooling (ST) drawings/models and associated lists.

g. Specifications.

h. Software documentation.

i. Special Packaging Instruction (SPI) documents, drawings/models and associated lists.

j. Quality assurance provisions.

4.5 TDP data management products. TDP Data Management Products are used by the Procuring Activity to control and manage the TDP creation process.

a. Source control drawing/model approval request.

b. Drawing/model number assignment report.

c. Proposed critical manufacturing process description.

5. DETAILED REQUIREMEMENTS

5.1 General. TDPs define the physical and functional characteristics of the accepted configuration of the item and its subordinate assemblies, subassemblies, and parts thereof. TDP levels, types, elements and TDP data management products shall be identified in accordance with this standard and applicable data item descriptions, as tailored and imposed through the TDP Option Selection Worksheet (Figure 1) 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.

5.2 Requirements for 3D TDPs. When 3-dimensional models are required for a production level TDP, the models shall be a complete, accurate, fully defined representation 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, or associated with, the 3D model to include but not limited to dimensions, materials, tolerances, datums, drawing notes, revision data, etc.

5.2.1 2D drawings based on 3D Models. Data on 2D drawings based on the 3D models shall be sourced to the maximum extent possible from the 3D model. There shall be no conflict in data between the 3D model and its associated 2D drawing.

5.2.2 Format of 3D TDP. Format of the 3D TDP based models shall be as directed by the contract or purchase order. In general, 3D 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)

5.3 Preparation and management.

5.3.1 Use of Government and non-Government standardization documents. TDP documents

shall not be prepared or submitted that contain requirements already defined by existing standardization documents, if these standardization documents are available in the Acquisition Streamlining and Standardization Information System (ASSIST) (http://assist.daps.dla.mil) or from the independent societies governing the documents. Reference these documents instead. When the requirements in such standardization documents do not completely fulfill the requirements of an item, the standardization document shall be referenced, and the TDP element shall describe the variations necessary to fulfill the requirements.

5.3.1.1 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. Other national standardization documents of foreign countries shall not be used without the approval of the 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.

5.3.2 Reference documents. Documents referenced in a TDP element shall be furnished as part of that element, with the exception of those specified in 5.3.2.1. The following types of documents shall not be referenced in a TDP element: technical manuals, procedural manuals, maintenance manuals, company drafting manuals, management plans, uncontrolled documents or unreleased documents. However, when information essential to meeting the content of a TDP element (such as default surface texture values) is contained within such prohibited documents, that information shall be extracted from the reference document and included in the TDP.

5.3.2.1 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), do not need to be submitted as part of a TDP element.

5.3.3 Existing data. Use existing data when possible, provided it meets the following requirements:

a. The rights-in-data are consistent with the contract stipulations;

b. It is furnished at a cost equal to or less than creating new data;

c. It is identified by a CAGE Code, document number, title, and applicable contract number(s).

d. Any nonstandard symbols, drawing or documentation practices used are explained in the document or in a referenced document.

e. It contains a revision scheme which is compatible with the TDP element of which it will be submitted or can be modified to a compatible revision scheme.

5.3.3.1 Company standards. When the use of company standards is permitted by the contract or purchase order, company standards shall meet the requirements of 5.3.3 for existing data plus the following:

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 5.3.1 and 5.3.2, and shall meet the same requirements as a company standard.

5.3.4 Language and clarity. Unless otherwise specified, 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 understandable by people knowledgeable in the subject matter presented.

5.4 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 3D models shall display classification marking clearly visible when the 3D model is first opened.

5.5 Marking of technical data. 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 DFARS Clauses 252.227-7013 and 7014; a distribution statement in accordance with DoD Directive 5230.24 and 5230.25; and export control notice. Care shall be exercised to match the appropriate distribution statement with the appropriate rights-in-data legend. When 3D TDP data is used, the 3D models shall display applicable restriction markings, legends, and statements clearly visible when the 3D model is opened or be provided in a location or manner which is clearly identifiable to the user.

5.6 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. This requirement does not alter current 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 this paragraph.

5.6.1 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 or be clearly identified within the electronic dataset or model.

5.7 TDP levels, types and elements. TDPs shall consist of one or more of the following TDP levels, types and elements as specified in the contract or purchase order and TDP Option Selection Worksheet.

5.7.1 TDP Levels.

5.7.1.1 Conceptual level - A conceptual design TDP shall consist of those TDP elements necessary to define design concepts in graphic form, and include appropriate textual information required for analysis and evaluation of those concepts. The data will generally consist of simple sketches/models, artist renderings and/or basic textual data.

5.7.1.2 Developmental level - A developmental prototype/limited production TDP shall consist of those TDP elements necessary to provide sufficient data to support the analysis of a specific design approach, the fabrication of prototype materiel for test or experimentation, and limited production by the original design organization or with assistance from the original design organization.

5.7.1.3 Production level - A production level TDP shall consists of those TDP elements necessary to provide the design, engineering, manufacturing, inspection, packaging and quality assurance provisions information necessary to enable the procurement or manufacture of an 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. Production data shall reflect the approved, tested, and accepted configuration of the defined delivered item.

5.7.2 TDP types. TDP Type describes the form and format of the data as imposed by the applicable data item descriptions, TDP Option Selection Worksheet (Figure 1) and Contract Data Requirements Lists (CDRL) in the contract, purchase orders, and Military Interdepartmental Procurement Requests (MIPRs).

5.7.2.1 Type 2D: 2-Dimensional Technical Data Package (2D TDP) – A 2D TDP is based on 2 dimensional engineering line drawings. 2D engineering drawings can be manually generated, or generated in a digital form.

5.7.2.2 Type 3D: 3-Dimensional Technical Data Package (3D TDP)- A 3D TDP is based on computer based 3–dimensional models that are capable of generating, when required, 2D engineering drawings. Type 3D TDPs shall consist of one of the following type subsets:

a. 3D models only
b. 3D models with associated 2D drawings

5.7.3 TDP elements. TDP Elements describes the various component parts of the TDP and are defined as follows:

5.7.3.1 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.

5.7.3.2 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 material 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.

5.7.3.3 Product drawings/models and associated lists. Product drawings/models and associated lists shall be prepared to provide the design, engineering, and manufacturing 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. This together with other TDP elements forms a Production Level TDP which will be used to support the product throughout its lifecycle.

5.7.3.4 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.

5.7.3.4.1 Design disclosure. The degree of design disclosure on commercial drawings/models and associated lists, whether full design disclosure or limited design disclosure, shall be as stated in the contract or purchase order.

5.7.3.4.2 Data rights. Rights in data for commercial drawings/models and associated list shall be as stated in the contract or purchase order.

5.7.3.5 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.

5.7.3.6 Special Tooling (ST) 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.

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

5.7.3.7.1 Defense specifications. Defense specifications shall be prepared in accordance with MIL-STD-961 as coordinated, limited or interim specifications.

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

5.7.3.7.3 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.

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

5.7.3.9 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 protect, store 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.

5.7.3.10 Quality Assurance Provisions (QAP). Quality assurance provisions shall be prepared to identify any special test, inspections, measurements or certifications required to ensure the item being defined meets is intended performance. Form and format of the quality assurance provision shall be as required in the contract or purchase order.

5.8 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.

5.8.1 Source Control Drawing (SOCD) approval request. Source control drawing approval request shall be prepared and submitted to the Procuring Activity specified in the contract or purchase order as having approval authority. Each potential source control item shall be approved by the Procuring Activity prior to inclusion of the source control drawing in the TDP.

5.8.2 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.

5.8.3 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 Procuring Activity cited in the contract or purchase order as having approval authority before it is designated as mandatory in TDP documents.

5.9 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.

5.10 CAGE codes. When CAGE Codes are to be applied to documents used in TDPs and TDP elements, only valid codes identified in the Federal Cataloging Handbook H4/H8 shall be used.

5.10.1 Type CAGE codes. Type “A" or “E” 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 (DOD 4100.39, Vol 10 Table 90).

5.11 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.

5.12 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.

5.13 Limited design disclosure models: When a type 3D TDP is required and a subcomponent to the end item does not require complete design disclosure, (such as a commercial item, purchased item, etc.), a 3D model of the subcomponent shall be provided. The subcomponent's 3D model need not be fully defined, but shall be sufficient to provide adequate visualization, interface characteristics, accurate weight and center of gravity information as required (i.e. cosmetic model) (see para 3.1.20).

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

a. Inclusion of all documents, including sub-tier references, required to meet the information content requirements of the TDP element except those identified in 5.3.2.1.

b. 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.)

c. Completeness and accuracy of the TDP documents 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 Procuring Activity has approved, tested, or accepted.

d. Electronic submittals shall open in the appropriate software without regeneration errors.

e. The use of National Aerospace Standard NAS 3500 "Technical Data Package: Composition, Communication, and Application" may be used to facilitate the acceptance and inspection of the TDP if required in the contract or purchase order.

TDP OPTION SELECTION WORKSHEET

SYSTEM: DATE PREPARED:

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

1. TDP Level (X and complete as applicable .)

A. ☐ CONCEPTUAL LEVEL
☐ DEVELOPMENTAL LEVEL
☐ PRODUCTION LEVEL

B. REMARKS:

2. TYPE AND FORMAT (X all that apply and complete as applicable .)

A.

☐ TYPE 2D: 2D DRAWINGS

☐ TYPE 3D: 3D MODELS ONLY
☐ TYPE 3D: 3D MODELS WITH ASSOCIATED 2D DRAWINGS

B.
☐ NATIVE CAD (SPECIFY TYPE) _____
☐ ISO 10303 STEP FORMAT (Specify STEP PROTOCOL AP203, AP 214 etc.)
_____
☐ ISO 32000 PORTABLE DOCUMENT FORMAT _____
☐ OTHER ELECTRONIC FORMAT (SPECIFY TYPE)
_____
☐ HARDCOPY _____

REMARKS : _____

3. CAGE Code AND DOCUMENT NUMBERS	A. ☐ CONTRACTOR CAGE AND DOCUMENT NUMBERS ☐ GOVERNMENT CAGE (COMPLETE 3B & 3C OR 3D)	D. To Be Assigned By:
B. USE CAGE CODE:	C. USE DOCUMENT NUMBERS:	

4. DRAWING FORMATS (X one and complete as applicable)

☐ CONTRACTOR FORMAT.
☐ GOVERNMENT FORMAT.
REMARKS: _____

5. TDP ELEMENTS REQUIRED (X all that apply)

☐ ELEMENTS REQUIRED TO BE DETERMINED BY CONTRACTOR - OR THE FOLLOWING ARE REQUIRED:

☐ CONCEPTUAL DRAWINGS/MODELS AND ASSOCIATED LISTS
☐ DEVELOPMENTAL DESIGN DRAWINGS/MODELS AND ASSOCIATED LISTS
☐ PRODUCT DRAWINGS/MODELS AND ASSOCIATED LISTS
☐ COMMERCIAL DRAWINGS/MODELS AND ASSOCIATED LISTS
☐ QUALITY ASSURANCE PROVISIONS
☐ SPECIAL INSPECTION EQUIPMENT (SIE) DRAWINGS/MODELS AND ASSOCIATED LISTS
☐ SPECIAL TOOLING (ST) DRAWINGS/MODELS AND ASSOCIATED LISTS
☐ SPECIFICATIONS
☐ SOFTWARE DOCUMENTATION
☐ SPECIAL PACKAGING INSTRUCTIONS (SPI) DRAWINGS/MODELS AND ASSOCIATED LISTS

6. ASSOCIATED LIST (X and complete as applicable)

☐ A. PARTS LIST (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)

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

☐ ASME Y14.100 ENGINEERING DRAWING PRACTICES WITH APPENDICES: ☐ B ☐ C ☐ D ☐ E	☐ ASME Y14.24 TYPES AND APPLICATIONS OF ENGINEERING DRAWINGS ☐ ASME Y14.34 ASSOCIATED LIST ☐ ASME Y14.35M REVISION OF ENGINEERING DRAWINGS AND ASSOCIATED LIST ☐ ASME Y14.41 DIGITAL PRODUCT DEFINITION DATA PRACTICES ☐ ASME Y14.5 DIMENSIONING AND TOLERANCING	☐ OTHER STANDARDS APPLY AS DESCRIBED: COMPANY STANDARDS PERMITTED ☐YES ☐NO

8. OTHER TAILORING (Attach additional sheets as necessary)

FIGURE 1: TDP Option Selection Worksheet

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 standard are intended for use in a wide variety of functions in the life cycle of materiel developed 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 Procuring Activity in ensuring that TDP elements acquired under this standard conform to contractual requirements.

6.2 Acquisition requirements. Acquisition documents should specify the following:

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

b. If required, the specific issue of individual documents referenced. (See 2.0)

c. The TDP level, type and elements to be supplied. (See 4.2, 4.3 and 4.4)

d. The TDP data management products to be supplied. (See 4.5 and Appendix A)

e. Whether or not company standards are permitted. (See 5.3.3.1)

f. A completed TDP Option Selection Worksheet. The TDP Option Selection Worksheet is 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 5.6; and if so, the location and method of application.

6.3 Data requirements. This standard 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 should be listed on the Contract Data Requirements List (DD Form 1423).

Reference Paragraph	DID Number	DID Title	Suggested Tailoring
5.7.3.1	DI-SESS-81001D	Conceptual Design Drawings/Models	Appendix A
5.7.3.2	DI-SESS-81002E	Developmental Design Drawings/Models and Associated Lists	Appendix A
5.7.3.3	DI-SESS-81000D	Product Drawings/Models and Associated Lists	Appendix A
5.7.3.4	DI-SESS-81003D	Commercial Drawings/Models and Associated Lists	Appendix A
5.7.3.5	DI-SESS-81004D	Special Inspection Equipment Drawings/Models and Associated Lists	Appendix A
5.7.3.6	DI-SESS-81008D	Special Tooling Drawings/Models and Associated Lists	Appendix A
5.8.1	DI-SESS-81010D	Source Control Drawing Approval Request	Appendix A
5.8.2	DI-SESS-81011D	Drawing Number Assignment Report	Appendix A
5.8.3	DI-SESS-81012D	Proposed Critical Manufacturing Process Description	Appendix A

The above DID's were current as of the date of this standard. The ASSIST database should be researched at http://assist.daps.dla.mil/quicksearch/ or http//:assist.daps.dla.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 ISO/IEC 12207.

6.3.3 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.

6.5 Basic engineering drawing practices. Basic engineering drawing practices for commercial applications are invoked though reference to ASME Y14.100. For other than strictly commercial applications (for example DOD design activities) reference should be made to ASME Y14.100, with or without Appendices. ASME Y14.100 will require extensive tailoring to exclude unnecessary requirements. Such tailoring should carefully consider the contractual objectives and the logistic intent. A tailoring guide, Appendix A, is included in ASME Y14.100 to facilitate the tailoring process.

6.5.1 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 Y14.34, ASME Y14.35M and ASME Y14.41 should be regarded as a closely interdependent set of ASME standards.

6.6 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 Procuring Activity should specify the required STEP Application Protocol(s) (AP) and/or a specific native CAD format as a minimum in the TDP Option Selection Worksheet based on the intended uses.

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

6.8 Special Inspection Equipment (SIE). To be considered mandatory to the manufacture of an item, the SIE should 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 5.7.3.5)

6.9 Contractors specifications. A contractor's specifications for items such as materials or processes are considered company standards. See 3.1.5 and 5.3.3.1.

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 extent of the changes.

6. 11 Subject term (keyword) listing.

Drawings and associated lists
Drawing number assignment report
Packaging
Product model
Proposed critical manufacturing process description
SIE descriptive documentation
Source control drawing approval request
Special tooling drawings
Specifications
Test requirements document
2D TDP
3D TDP
TDP elements
TDP level

APPENDIX A

SELECTION AND ORDERING GUIDANCE

A.1 SCOPE

A.1.1 Scope. This Appendix provides guidance for Procuring Activity personnel on the acquisition of the various types of technical data and the completion of the TDP Option Selection Worksheet, Figure 1, of this standard. This appendix is not a mandatory part of this standard, however the TDP Option Selection worksheet is mandatory if it forms part of a contract or purchase order.

A.2 REQUIREMENTS

A.2.1 General. Procuring Activities acquiring technical data are required to carefully review their respective needs for technical data and TDP data management products.

A.2.1.1 Tailoring. Procuring 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 need is acquired. Tailoring decisions will take into consideration the commercial or military nature of the materiel being procured and its developmental status. Procuring Activities shall carefully assess tailoring of data to ensure the necessary level of form, fit and function data is obtained.

A.2.2. Selecting and ordering TDP levels . The determination as to the level of TDP shall be made based on the nature of the item being procured, the lifecycle phase of the product, and the level of data required by the Procuring Activity.

A.2.3. Selecting and ordering TDP types . The determination as to the type of TDP (type 2D or type 3D) shall be made based on the nature of the item being procured. Three Dimensional (3D) based TDPs are preferred especially when the item is mechanical in nature.

A.2.4 Selecting and ordering TDP elements. When ordering TDP elements below, require the generation of a TDP containing the required elements in the Statement of Work. Cite the appropriate DID and reference a TDP Option Selection Work Sheet in the CDRL. Complete a TDP Option Selection Work Sheet (including tailoring) and include it in the solicitation, contract or purchase order.

A.2.4.1 Conceptual design drawings/models. Conceptual design drawings/models (DI-SESS-81001D) 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.

A.2.4.2 Developmental design drawings/models and associated lists. Developmental design drawing/models and associated lists (DI-SESS-81002D) 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 data should only be ordered under contracts when a limited

set of data is sufficient for the intended purpose.

A.2.4.3 Product drawings/models and associated lists. Product drawings/models and associated lists (DI-SESS-81000D) 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 and are part of a Production Level TDP. When product drawings/models are ordered for large, complex items such as major weapons systems, tailoring decisions should include consideration of ordering commercial drawings/models 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 shall 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.

A.2.4.4 Commercial drawings/models and associated lists. Commercial drawings/models and associated lists (DI-SESS-81003D) 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 production level TDP. Furthermore, the acquisition of technical data shall conform to the requirements of DFARS Part 211. Prior to contracting for commercial drawings/models, the Procuring 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).

A.2.4.5 Special Inspection Equipment (SIE) drawings/models and associated lists. SIE drawings/models and associated lists (DI-SESS-81004D) 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.

A.2.4.6 Special Tooling (ST) drawings/models and associated lists. Special tooling drawings/models (DI-SESS-81008D) are used to permit the Procuring Activity or an alternate source to duplicate the functional requirements of tooling that are mandatory for the manufacture of the item. These drawings/models are intended for limited production of tooling used in a manufacturing environment. ST drawings/models 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/models should be ordered only under contracts containing tasks for engineering and manufacturing development or production.

A.2.4.7 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.2.4.8.

b. 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 shall be ordered as separate data items on the CDRL.

A.2.4.8 Software documentation.

a. Selection. Software documentation is acquired to support software products imbedded in the end item, component systems thereof, or special inspection equipment cover by the TDP. Refer to ISO/IEC 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.2.4.9 Packaging data.

a. Selection. Prior to ordering packaging data, an engineering task to develop packaging requirements shall 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.

b. 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.2.4.10 Quality assurance provisions.

a. Selection. Quality Assurance Provisions (QAPs) are acquired to permit the manufacturer, Government or an alternate source to test and inspect the item being defined to ensure acceptability. Quality assurance provisions should be ordered only under contracts containing tasks for engineering and manufacturing development or production. Product drawings/models containing characteristics which are classified as critical, major or minor in accordance with DOD-STD-2101 shall have QAPs.

b. Ordering. Require the generation of a TDP containing QAPs in the Statement of Work. The form and format of the QAP shall be clearly delineated in the Statement of Work. Complete a TDP Option Selection Worksheet (including tailoring) and include it in the solicitation, contract or purchase order.

A.2.5 TDP data management products and their uses.

A.2.5.1 Source Control Drawing (SOCD) approval request.

a. Selection. SOCD approval requests are used to ensure that only valid source qualification requirements are included in the TDP. Under Public Law, the Government will

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-81010D in the CDRL. Identify the Government activity having source control drawing approval authority and any tailoring in Block 16 of the CDRL.

A.2.5.2 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-81011D in the CDRL and enter the tailoring in Block 16 of the CDRL.

A.2.5.3 Proposed critical manufacturing process description.

a. Selection. The proposed critical manufacturing process description is used to provide the Procuring Activity with the opportunity to approve or disapprove the documentation of a manufacturing process as critical in the TDP. However, Procuring Activity 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-81012D in the CDRL. Identify the Procuring Activity having critical manufacturing process approval authority and any tailoring in Block 16 of the CDRL.

A.3 TDP OPTION SELECTION WORKSHEET GUIDANCE

The TDP Option Selection Worksheet shall be used to identify selected options and tailoring requirements. Additional sheets may be attached to the form as necessary. The following paragraphs provide more detailed guidance on completing the TDP Option Selection Worksheet.

A.3.1. Headings.

A.3.1.1 Contract No. Enter the number of the acquisition document shown in Block E, Contract/PR No., of the DD Form 1423.

A.3.1.2 Exhibit No. Enter the number or letter, which appears in Block B, Exhibit, of the DD Form 1423.

A.3.1.3 CLIN. Enter the contract line item number from Block A, Contract Line Item No., of the DD Form 1423.

A.3.1.4 CDRL data item No(s). Enter the data item number(s) 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.3.2 Completing the TDP option selection worksheet. The following is required to complete the TDP Option Selection Worksheet.

A.3.2.1 Block 1. TDP level. Check the level of TDP required.

A.3.2.2 Block 2. TDP type and format. The options in this block determine the TDP type and format. Determination on type and format should be made based on the governments need for a particular type and format of TDP. In general, during the production phase of the lifecycle, 3D models with associated 2D drawings or fully annotated 3D models are preferred. During the conceptual development and prototype phase, 3D models alone may be sufficient. The format (i.e. native CAD, STEP, or other electronic format) will be clearly stated in the SOW with an understanding of how lifecycle maintenance of the TDP will be performed.

A.3.2.3 Block 3. CAGE code and document numbers. 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. 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 the Procuring 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. If the Procuring 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.3.2.4 Block 4. 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.3.2.5 Block 5. TDP elements required. This option determines the elements of the TDP used to fulfill the design disclosure requirements of TDP element to be delivered.

A.3.2.5.1 Elements required to be determined by the contractor. 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.3.2.5.2 Each element selected. This option gives the Procuring Activity the authority to direct the contractor as to which types of element to use by individual selection of each element. This may be further tailored for each component, subassembly or part.

A.3.2.6 Block 6. Associated list. This block is used to define the Government’s requirements for associated lists as defined in ASME Y14.34.

A.3.2.6.1 Parts lists. Either "INTEGRAL" or "SEPARATE" should be selected. This option requires the contractor to use either an integral or separate parts list for the specific

item or part being documented.

A.3.2.6.2 Data lists. Either "REQUIRED" or "NOT REQUIRED" shall 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 will 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.3.2.6.3 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.3.2.6.4 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.3.2.6.5 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.3.2.6.6 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.3.2.7 Block 7. Applicability of drawing standards. This block is used to indicate the applicability of drawing standards.

A.3.2.8 Block 8. Other tailoring. This block may be used to tailor any requirement of MIL-STD-31000, ASME Y14.100 with appropriate appendices, a DID, or any other document affecting the content, format, or media of the data product.

CONCLUDING MATERIAL

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

Preparing Activity:
Army - AR
(Project: SESS-2009-002)

Review Activities:
Army – AC, AV, CR, EA, MI, MR, PT, SM, TM
Navy – AS, CG, CH, EC, MC, ND, NP, SA, SH, TD
Air Force – 01, 08, 10, 11, 13, 19, 33, 94, 99
DLA – CC
Other – CM, DI, HS, MA, MP, NS, SE, SO, SP