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DEPARTMENT OF DEFENSE HANDBOOK

GUIDE TO THE GENERAL STYLE AND FORMAT OF S1000D TECHNICAL MANUAL DATA MODULES

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FOREWORD

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

2. This handbook provides guidance and examples to be used with MIL-STD-3031 for the preparation of technical publications required to support the various types of equipment and weapon systems within the Department of the Army (DA). This handbook is for guidance only. This handbook cannot be cited as a requirement. If it is, the contractor does not have to comply.

3. This document supplements Army Departmental Manuals, Directives, and Military Standards, and provides basic and fundamental information on Extensible Markup Language (XML) as it applies to MIL-STD-3031.

4. The figures appearing within this handbook are fictitious and are used only as examples to illustrate format. If any conflict occurs between the text of the document and the figures in this document, the text applies.

5. The use of Courier font changes in this handbook represent XML elements, attributes, values, and examples, (for example, **`<issueDate year="2009" month="01" day="25"/>`**).

6. Comments, suggestions, or questions should be addressed to USAMC Logistics Support Activity, ATTN: AMXLS-AP, Redstone Arsenal, AL 35898-7466 or emailed to logsa.tmss@conus.army.mil. Since contact information can change, you may want to verify the currency of this address information using the Acquisition Streamlining and Standardization Information System (ASSIST) database at https://assist.daps.dla.mil/.

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CONTENTS

Paragraph Page

1. SCOPE 1
1.1 Scope. 1
1.2 Purpose. 1

2. APPLICABLE DOCUMENTS 2
2.1 General. 2
2.2 Government documents. 2
2.2.1 Specifications, standards, and handbooks. 2
2.2.2 Other Government documents and publications. 2
2.3 Non-Government publications. 2

3. DEFINITIONS 4

4. GENERAL GUIDANCE 5
4.1 General. 5
4.2 Data modules. 5
4.2.1 Identification and status section. 6
4.2.2 Content section. 15
4.2.3 Common constructs. 15
4.3 Warnings and cautions. 21
4.4 Publication structure. 21
4.5 Table of Contents 24
4.6 Reuse. 24
4.6.1 Paragraph significant data. 25
4.6.2 Quantity data. 26
4.6.3 Reuse of Warnings and cautions. 26
4.6.4 Technical information repository data modules. 27
4.6.5 Container data module. 27
4.7 Style sheets. 28
4.8 Graphics. 29
4.8.1 Information Control Number (ICN). 30
4.8.2 Graphic formats. 31
4.8.3 Graphic types. 31
4.8.4 Engineering drawings. 31
4.8.5 Diagrams. 32
4.9 Business rules. 38
4.9.1 General. 38
4.9.2 Constraints. 39
4.9.3 Sources of business rules. 39
4.9.4 Development of business rules. 39
4.10 Schemas. 40
4.10.1 Schema association. 41
4.11 Information management. 41
4.11.1 Data module lists. 42

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CONTENTS

Paragraph Page

4.12 Content matrices. 44
4.12.1 General. 44
4.12.2 Content selection table columns. 45
4.12.3 Tailoring the content selection tables. 46
4.12.4 Multiple data modules. 47
4.12.5 Multiple nested publication modules. 47
4.12.6 Project-specific publications. 50
4.13 Display devices. 50
4.14 Compact Disk (CD) and Digital Video Disk (DVD) preparation. 50
4.14.1 Compact Disk/Digital Video Disk (CD/DVD) label data. 50
4.14.2 Publication Module Code (PMC). 50
4.14.3 Compact Disk/Digital Video Disk (CD/DVD) set number. 51
4.14.4 Equipment Media (EM) number, Initial Distribution Number (IDN), and Publication Identification Number (PIN). 51
4.14.5 Supersession data. 51
4.14.6 Copyright notice. 51
4.14.7 Distribution statement. 51
4.14.8 Export control notice. 52
4.14.9 Destruction notice. 52
4.14.10 Protective markings. 52
4.14.11 Information not contained on Compact Disk/Digital Video Disk (CD/DVD) face. 52
4.15 Compact Disk/Digital Video Disk (CD/DVD) mailer data. 52
4.15.1 Outside panel of Compact Disk/Digital Video Disk (CD/DVD) mailer. 52
4.15.2 Inside of mailer (left panel). 53
4.15.3 Inside of mailer (right panel). 53
4.16 Jewel case flyleaf data. 54

5. DETAILED GUIDANCE 55
5.1 Data module types. 55
5.1.1 General. 55
5.1.2 Descriptive information. 56
5.1.3 Procedural information. 58
5.1.4 Crew/operator information. 63
5.1.5 Fault information. 70
5.1.6 Checklist information. 74
5.1.7 Maintenance planning information. 76
5.1.8 Illustrated parts data information. 87
5.1.9 Publication module. 92
5.1.10 Process information. 106
5.1.11 Business Rules EXchange (BREX). 108
5.1.12 Technical repository information. 117
5.1.13 Applicability. 121
5.1.14 Container. 122
5.2 Information sets. 122
5.2.1 General. 122

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CONTENTS

Paragraph Page

5.2.2 Front matter. 123
5.2.3 Rear matter. 126
5.2.4 General information, equipment description and theory of operation. 128
5.2.5 Operator instructions. 139
5.2.6 Troubleshooting procedures. 151
5.2.7 Maintenance instructions. 159
5.2.8 Parts information. 201
5.2.9 Supporting information. 208
5.2.10 Destruction of equipment to prevent enemy use. 223
5.2.11 Battle Damage Assessment and Repair (BDAR). 225
5.3 Miscellaneous publication types. 226
5.4 Specialized content. 227
5.4.1 General. 227
5.4.2 National Stock Number (NSN) authoring. 227
5.4.3 Index flags. 228
5.4.4 Attribute **`keepWithNext`**. 229
5.4.5 Item characteristic. 230
5.4.6 Preliminary requirements. 230

6. COMPREHENSIBILITY WITH READING GRADE LEVEL 236
6.1 Comprehensibility. 236
6.2 Sampling plan for inspection. 236
6.2.1 Derivation of samples. 236
6.2.2 Applicable tests. 236
6.2.3 Extended local samples. 236
6.2.4 Validation of readability. 237
6.2.5 Critical scanning. 237
6.2.6 Systematic sampling of Technical Manuals (TMs). 238
6.3 Reading grade level measures. 239
6.3.1 Counts for narrative text. 239
6.3.2 Automatic counting equipment. 240
6.3.3 Manual counting technique. 240
6.4 Calculation of Reading Grade Level (RGL). 240
6.4.1 Overall Grade Level (OGL). 240

7. NOTES 242
7.1 Intended use. 242
7.2 Subject term (key word) listing. 242

APPENDIX A Information Sets Grouped by Data Module Type 243
A.1 SCOPE 243
A.2 Information sets by data module type. 243

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CONTENTS

Figure Page

FIGURE 1. Publication breakdown. 6
FIGURE 2. Data module identification and status section. 7
FIGURE 3. Example of identification and status display. 8
FIGURE 4. Functional Group Code (FGC)-to-Standard Numbering System (SNS) conversion. 10
FIGURE 5. Sample output of data module address. 12
FIGURE 6. Reason for update markup. 14
FIGURE 7. Sample output of data module status. 15
FIGURE 8. Sample output of change marking. 16
FIGURE 9. Sample output of simple and unordered random lists. 18
FIGURE 10. Sample output of a definition list. 19
FIGURE 11. Sample output of a table. 20
FIGURE 12. Common information markup. 21
FIGURE 13. Alert examples. 21
FIGURE 14. Familiar publication divisions. 22
FIGURE 15. Example of body content structure. 23
FIGURE 16. Example of a chapter structure. 24
FIGURE 17. Designator symbol markup. 25
FIGURE 18. Sample output of paragraph significant data. 26
FIGURE 19. Sample output of a reused (page-based) warning. 27
FIGURE 20. Information Control Number (ICN) based on a Commercial and Government Entity (CAGE) code. 30
FIGURE 21. Information Control Number (ICN) based on a model identification code. 31
FIGURE 22. Example of highway and point-to-point methods for signal flow. 35
FIGURE 23. Example of oval connectors to continue signals. 36
FIGURE 24. Example of signal returns and breakoff symbols to continue signals – single sheet diagram. 37
FIGURE 25. Example of boat symbols, block technique, pyramid method to continue signals-multisheet diagram. 38
FIGURE 26. Publication process. 43
FIGURE 27. Content selection. 43
FIGURE 28. Information sets. 44
FIGURE 29. Content selection table example. 45
FIGURE 30. Partial sustainment maintenance manual content selection table. 47
FIGURE 31. Nested publication modules. 49
FIGURE 32. Example of CD mailer outside front, spine, and back. 54
FIGURE 33. Paragraphs cannot follow subparagraphs. 57
FIGURE 34. Sample output of theory of operation. 58
FIGURE 35. Preparation for storage or shipment markup. 59
FIGURE 36. Sample output of preparation for storage or shipment. 62
FIGURE 37. Crew drill step markup. 64
FIGURE 38. Sample output of `crewDrillStep`. 69
FIGURE 39. Sample output of fault isolation. 74

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CONTENTS

Figure Page

FIGURE 40. Preventive Maintenance Checks and Services (PMCS) markup. 75
FIGURE 41. Sample Preventive Maintenance Checks and Services (PMCS) output. 76
FIGURE 42. Maintenance allocation overview. 77
FIGURE 43. Tools list overview. 78
FIGURE 44. Remarks list overview. 78
FIGURE 45. Maintenance Allocation Chart (MAC) markup. 79
FIGURE 46. Sample output for Maintenance Allocation Chart (MAC). 86
FIGURE 47. Illustrated Parts Data (IPD) quick view. 88
FIGURE 48. Item sequence number optional children. 89
FIGURE 49. Generic part data markup. 90
FIGURE 50. Illustrated Parts Data (IPD) markup. 91
FIGURE 51. Sample output of a parts list. 92
FIGURE 52. Publication module identification and status section. 94
FIGURE 53. Main (parent) publication module code. 95
FIGURE 54. Nested publication module code. 96
FIGURE 55. Multiple equipment identifiers. 97
FIGURE 56. Publication module entry examples. 98
FIGURE 57. Parent publication module identification and status section markup. 99
FIGURE 58. Parent publication module content markup. 100
FIGURE 59. Sample output of a publication module cover page. 106
FIGURE 60. How a layered Business Rules EXchange (BREX) works. 109
FIGURE 61. Standard Numbering System (SNS) example. 111
FIGURE 62. Technical information repository (controls and indicators) markup. 119
FIGURE 63. Sample output of the controls and indicators technical information repository... 120
FIGURE 64. Sample output of population via implicit referencing. 121
FIGURE 65. Assembly of Interactive Electronic Technical Publication (IETP) introductory screens. 126
FIGURE 66. Sample output of the authentication block. 128
FIGURE 67. Generic fault isolation procedure flow. 157
FIGURE 68. Sample output of generic fault isolation procedure. 159
FIGURE 69. Sample output of checking unpacked equipment. 201
FIGURE 70. Sample output of Components Of End Item (COEI), method A. 215
FIGURE 71. Basic Issue Items (BII) (Method A) markup example. 217
FIGURE 72. Sample output of Basic Issue Items (BII), method A. 222
FIGURE 73. National Stock Number (NSN) breakdown. 228
FIGURE 74. Example output of index flag. 229
FIGURE 75. Sample output of preliminary requirements. 235

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CONTENTS

Table Page

TABLE I. Data module code breakdown. 9
TABLE II. Common constructs. 15
TABLE III. Generated symbols. 28
TABLE IV. Schema and Extensible Markup Language (XML) references. 40
TABLE V. Data module types supporting Army requirements. 55
TABLE VI. Data module types not required for use in Army technical publications. 56
TABLE VII. Additional data module types and schema fragments. 56
TABLE VIII. Standard Numbering System (SNS) rules and data module code attributes. 110
TABLE IX. Front matter, content requirements. 123
TABLE X. Rear matter, content requirements. 126
TABLE XI. General information, equipment description and theory of operation, content requirements. 129
TABLE XII. Operator instructions, content requirements. 139
TABLE XIII. Troubleshooting procedures, content requirements. 152
TABLE XIV. Maintenance instructions, content requirements. 160
TABLE XV. Parts information, content requirements. 202
TABLE XVI. Catalog Sequence Number (CSN). 205
TABLE XVII. Supporting information, content requirement. 208
TABLE XVIII. Destruction information, content requirements. 223
TABLE XIX. Battle Damage and Repair (BDAR) information, content requirements. 225
TABLE XX. Determining basic number of samples 238
TABLE XXI. Sample computations to demonstrate use of formulas. 240
Table A-I. Data module complexity. 243
Table A-II. Procedural information sets. 243
Table A-III. Descriptive information sets. 245
Table A-IV. Fault information sets. 247
Table A-V. Crew information sets. 247
Table A-VI. Technical repository, process, checklist, Illustrated Parts Data (IPD), & maintenance planning information sets. 248

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1. **SCOPE**

1.1 Scope.

This handbook provides guidance for the development of Army publications in Extensible Markup Language (XML) in accordance with S1000D and MIL-STD-3031. The handbook is designed to support the requirements contained in MIL-STD-3031 and provides guidance, tutorials, and examples to aid publication developers in the publication development process. This handbook is for guidance only and cannot be cited as a requirement.

1.2 Purpose.

The purpose of the handbook is to facilitate the work of publications developers and users responsible for creating or using XML publications in compliance with the requirements of MIL-STD-3031. It is designed to be a guide for use by publications developers and users to allow maximum reuse and sharing of common publications' source data.

This handbook provides expanded Army-specific information and guidance to supplement S1000D and MIL-STD-3031.

Display output will vary depending on publishing processes and viewer capabilities, therefore, only one possible display output is included.

For information regarding the implementation of S1000D, please refer to the Implementation Guide available from https://www.logsa.army.mil/mil40051/S1000D.cfm.

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2. APPLICABLE DOCUMENTS

2.1 General.

The documents listed below are not necessarily all of the documents referenced herein, but are those needed to understand the information provided by this handbook.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks.

The following specifications, standards, and handbooks form a part of this document to the extent specified herein.

STANDARDS

MIL-STD-3031	—	Army Business Rules for S1000D: International Specification for Technical Publications Utilizing a Common Source Data Base

(Copies of the above standards are available online at https://assist.daps.dla.mil/ or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, 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.

AR 25-30	—	The Army Publishing Program
DA PAM 25-40	—	Army Publishing: Action Officer's Guide

(Copies are available online at http://www.apd.army.mil/ or from Commander, U.S. Army Publishing Agency, Distribution Operations Facility, ATTN: JDHQSV-PAS, 1655 Woodson Road, St. Louis, MO 63114-6128.)

DODI 5200.01-R	—	Information Security Program
DODD 5220.22-M	—	National Industrial Security Program Operating Manual
DODD 5230.24	—	Distribution Statements on Technical Documents
DODD 5230.25	—	Withholding of Unclassified Technical Data From Public Disclosure

(Copies of DOD documents are available online at http://www.dtic.mil/whs/directives/.)

2.3 Non-Government publications.

The following documents form a part of this document to the extent specified herein.

AEROSPACE AND DEFENCE INDUSTRIES ASSOCIATION OF EUROPE (ASD)

S1000D	—	International specification for technical publications utilizing a common source data base.

(Copies are available online at http://www.s1000d.org/ or from the Aerospace and Defence Industries Association of Europe, 270 Avenue de Tervuren, B-1150 Brussels, Belgium.)

WORLD WIDE WEB CONSORTIUM (W3C)

REC-xpath20-20070123	—	XML Path Language (XPath) 2.0

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(Copies are available online at http://www.w3c.org/ or from MIT, 32 Vassar Street, Room 32-G515, Cambridge, MA 02139 USA.)

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3. **DEFINITIONS**

Refer to MIL-STD-3031 for a list of applicable definitions.

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4. GENERAL GUIDANCE

4.1 General.

This section contains guidance regarding subjects that are applicable to the majority of data module types. For guidance related to specific data module types, refer to 5.

Data modules are self-contained units of data that, when combined properly, can form a publication (refer to 4.2).

4.2 Data modules.

Technical manual data, developed in accordance with MIL-STD-3031, is divided into individual, stand alone units of information called data modules.

A combination of data modules are used to create a publication that describes the product and support equipment, as well as procedures to maintain, troubleshoot, and operate the product. Data modules can vary in size, depending on the complexity of the equipment or procedure.

A data module provides information to support the product or end item. Each data module has an identification and status section (element **`<identAndStatusSection>`**) (refer to 4.2.1) and a content section (element **`<content>`**) (refer to 4.2.2).

From an Interactive Electronic Technical Publication (IETP) standpoint, most data modules function in the same way except for those items that include diagnostics and the process data module. Functionality differences occur because the IETP can be interfaced with a logic engine that based on user or other input, determines the correct sequence in which to display technical data in an IETP. The logic engine is a software component that determines what path to follow through the publication. The IETP provides functionality to the soldier beyond the capability of page-based technical manuals.

A nested publication module is used to define a group of related data modules that can be combined to create a portion of a publication (for example, a section or a chapter). A group of nested publication modules can be combined into a single, parent (main) publication module which defines an IETP or page-based technical manual as a whole (refer to Figure 1).

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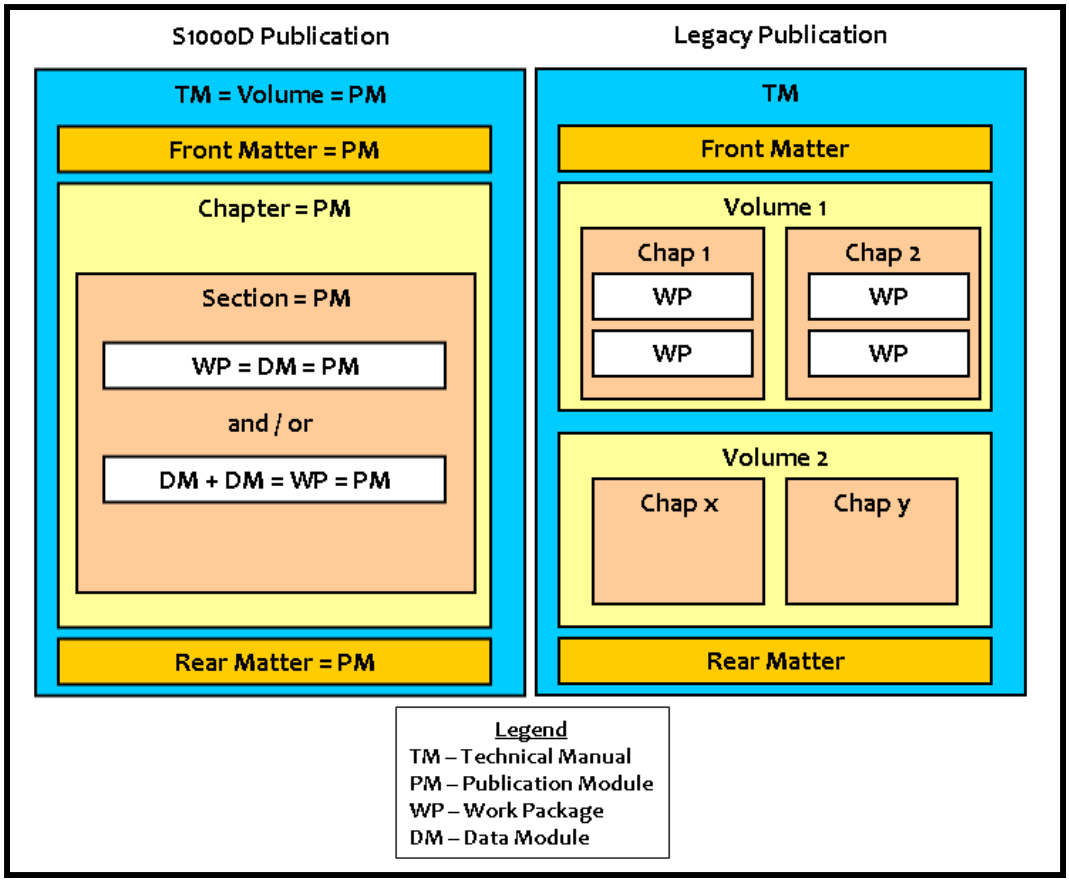

FIGURE 1. Publication breakdown.

4.2.1 Identification and status section.

4.2.1.1 General.

Each data module contains an identification and status section (element **`<identAndStatusSection>`**). Although this section is almost identical in every data module type, it is quite different in the publication module (refer to 5.1.9).

Refer to Figure 2 for an overview of the data module identification and status section.

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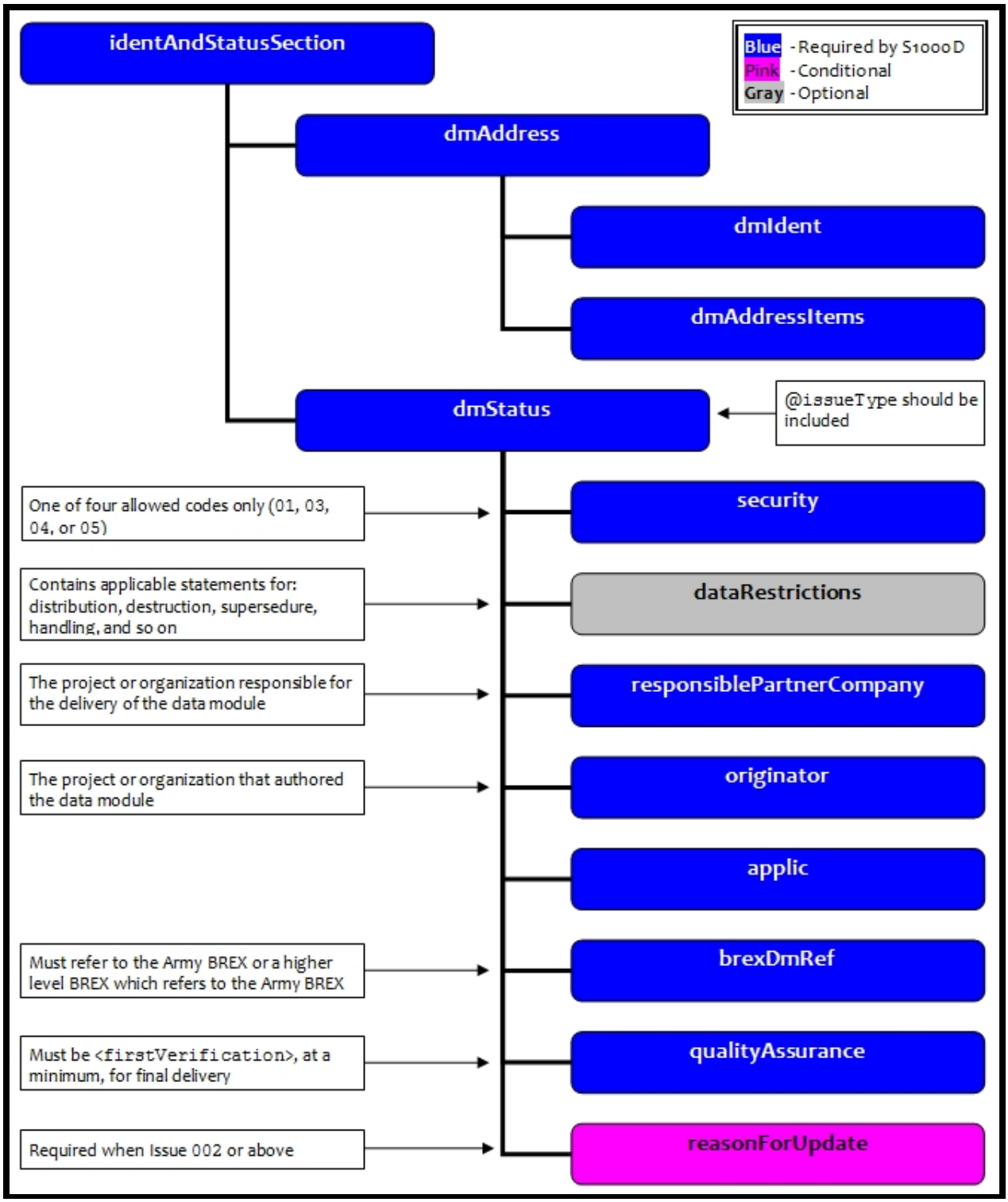

FIGURE 2. Data module identification and status section.

The identification and status section consists of two parts, the data module address (element **`<dmAddress>`**) (refer to 4.2.1.2) and the data module status (element **`<dmStatus>`**) (refer to 4.2.1.3).

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Metadata for each data module is contained within the identification and status section. This metadata provides information about that data module. The information therein can be used for management purposes. Typical information in this metadata includes: title, date, unique identifier, security classification, and more.

The "IDSTATUS" function of an IETP viewer, when enabled, displays part or all of the identification and status section of the data module or publication module currently selected (refer to Figure 3). Refer to MIL-STD-3031 for more information regarding "output specification" for IETP-required main menu bar functions.

IDENTIFICATION AND STATUS SECTION

Data Module Code:	DMC-MYBIKE-A-00-00-00-0100A-607E-B				
Language / Country:	en / US	**Issue # / In-Work #:**	000 / 01	**Issue Date:** (YYYY-MM-DD)	2010-09-22
DM Title: (Tech. Name – Info Name)	Big Bad Bike – Repair parts information				
Security classification:	Unclassified		**Issue Type:**	New	
RPC and/or Code:	Your Company		**Originator and/or Code:**	BTAS COE, 07GB6	
Applicability:	All		**Quality Assurance:**	Unverified	
BREX DM Reference:	DMC-USARMY-0000-00-00-00-00A-022A-D (United States Army – Business rules exchange data module)				

FIGURE 3. Example of identification and status display.

4.2.1.2 Data module address.

4.2.1.2.1 General.

The data module address consists of two information parts: the data module identification and the data module address items. Information displayed to the user from the data module address includes the data module code, issue number, issue date, and data module title. The display location of these items varies depending on the output type (page-based or IETP).

4.2.1.2.2 Data module identification.

The data module identification (element **`<dmIdent>`**) contains the unique data module identifier, language, and issue information.

Optionally, projects may use the data module code extension (element **`<identExtension>`**). This should be considered when, for example, a project has developed two similar data modules for two countries, but each contains slightly different content. Because the data modules both apply to the same end item and differ only because of the country's configurations, the extension provides an easy way to recognize which data module belongs to which country. Refer to S1000D for additional information on the data module code extension.

4.2.1.2.2.1 Data module code.

Within the data module identification is the data module code (element **`<dmCode>`**). The data module code consists of 13 attributes: **`modelIdentCode`**, **`systemDiffCode`**, **`systemCode`**, **`subSystemCode`**, **`subSubSystemCode`**, **`assyCode`**, **`disassyCode`**, **`disassyCodeVariant`**,

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`infoCode`, **`infoCodeVariant`**, **`itemLocationCode`**, **`learnCode`**, and **`learnEventCode`** (the last two are optional).

NOTE

In XML, the use of the symbol "@" is commonly used as an abbreviation for "attribute." It is also used in eXtensible Style sheet Language (XSL) when specifying an attribute in a path or node. This abbreviation may also used when creating structure object rules used within a Business Rules EXchange (BREX) data module (refer to 5.1.11).

All of these attributes are covered in detail in S1000D. Further instruction regarding the population of these attributes can be found in MIL-STD-3031.

TABLE I. Data module code breakdown.

	DMC XML	Length	Comments
	`<dmCode>`	17-41 characters	Data module code breakdown
	Hardware type		
	`@modelIdentCode`	2 thru 14 alphanumeric characters	Model identification code (MIC)
	`@systemDiffCode`	1 thru 4 alphanumeric characters	System difference code (SDC)
SNS	**`@systemCode`**	1 (optional) plus 2 alphanumeric characters	System
SNS	**`@subSystemCode`**	1 alphanumeric character	Subsystem
SNS	**`@subSubSystemCode`**	1 alphanumeric character	Sub-subsystem
SNS	**`@assyCode`**	2 or 4 alphanumeric characters	Unit or assembly
	`@disassyCode`	2 alphanumeric characters	Disassembly code (DC)
	`@disassyCodeVariant`	1 thru 3 alphanumeric characters	Disassembly code variant (DCV)
	Information type		
	`@infoCode`	3 alphanumeric characters	Information code (IC)
	`@infoCodeVariant`	1 alphanumeric character	Information code variant (ICV)
	`@itemLocationCode`	1 alphanumeric character	Item location code (ILC)
	Learn type (optional)		
	`@learnCode`	3 alphanumeric characters	Learn code (LC) (begins with "H" or "T")
	`@learnEventCode`	1 alpha character	Learn event code (LEC)
	DMC-YYYYYYYYYYYYYY - YYYY - YYY-YY-YYYY - YYYYY - YYYY - Y - YYYA (Note: DMC segments not underlined represent a fixed-character length.)		

4.2.1.2.2.1.1 Functional Group Code (FGC) assignment.

An FGC is an alphanumeric code used to identify a particular system, subsystem, component/assembly, or part of the system/equipment used for development of Maintenance Allocation Charts (MACs), narrative technical manuals, and Parts Lists.

A standardized method of FGC assignment for commodity types of components/items is normally established by the acquiring authority (for example, technical publications community). These standardized assignments make it easier for the user in the field to cross-reference between different technical manuals of equipment maintained by that organization. For instance, engines may always be documented under an FGC of "**`04`**" across all Army helicopter types.

The FGC sequence of the MAC will dictate the sequence of entries in the narrative technical manual and Illustrated Parts Data (IPD). A basic (usually two-position) group code is assigned to identify major components, assemblies, and subassemblies and associate them with a functional system.

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Subordinate subfunctional groups/subassemblies are coded to relate back to the basic (top position) FGC in a sequential, Next Higher Assembly (NHA) relationship (that is, top-down breakdown structure).

The maximum length of an FGC is 11 characters, in accordance with GEIA-STD-0007. If an FGC is expected to exceed 11 characters, another branch should be created for the logical breakdown of that component or assembly in order not to exceed the maximum length. Any further breakdown level would not require a separate maintenance data module and should be included in the data module for the NHA.

4.2.1.2.2.1.1.1 Data Module Code (DMC) population

In accordance with MIL-STD-3031 Revision A, FGCs should be used to populate the Standard Numbering System (SNS) which follows the breakdown as identified in the MAC and Parts List. An SNS is limited to 6 to 8 alphanumeric characters, not including the Material Item Category Code (MICC). When necessary, the subsystem and sub-subsytem codes may be converted from (two) digits to an alpha character using the mapping shown in Figure 4.

The middle column identifies the DMC SNS attributes and the applicable SNS rules element (used within the project or organization's BREX) to identify the applicable SNS.

FGC-to-SNS

FGC Positions	SNS: DMC @/BREX <snsRules> child	Char
1-2	System: @systemCode/<snsSystem>	2
3-4	Subsystem: @subSystemCode/<snsSubSystem>	1
5-6	Sub-Subsystem: @subSubSystemCode/<snsSubSubSystem>	1
7-10	Unit or assembly: @assyCode/<snsAssy>	2 or 4
FGC: 0102010100 (10 char) ⇨ SNS: 01-CB-0100 (8 char)		

FGC-to-SNS (Positions 3-4 and 5-6)

FGC Digits	Code	FGC Digits	Code	FGC Digits	Code
00	A	12	M	24	Y
01	B	13	N	25	Z
02	C	14	O	26	0
03	D	15	P	27	1
04	E	16	Q	28	2
05	F	17	R	29	3
06	G	18	S	30	4
07	H	19	T	31	5
08	I	20	U	32	6
09	J	21	V	33	7
10	K	22	W	34	8
11	L	23	X	35	9

FIGURE 4. Functional Group Code (FGC)-to-Standard Numbering System (SNS) conversion.

4.2.1.2.2.1.2 Alternate use of disassembly code.

The disassembly code is conventionally used to identify the breakdown condition of an assembly to which maintenance information applies. Alternately, the disassembly code can also be used for sequentially numbering multiple data modules that address the same end item and topic.

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When the content for a particular topic is judged by the project to be too lengthy for a single data module, the disassembly code can be used to differentiate the data module codes for the multiple data modules needed to produce the desired content. The use of the disassembly code in this manner is only allowed on descriptive data modules and it cannot be used when topic-specific information codes are available to otherwise segment the information. Additional restrictions are described in MIL-STD-3031.

An example of this alternate use of the disassembly code is with Theory of Operation (IC 042F). If an end item requires copious amounts of information to properly address this topic (i.e., more than the equivalent of 30 printed pages), the program may decide to segment the information into sections each appearing in a separate data module. In this case, all items in the data module code are identical (except for the disassembly code) because the end item and topic are the same. The disassembly code is available to provide data module code differentiation.

4.2.1.2.3 Data module address items.

Information populating the data module address items (element **<dmAddressItems>**) are not a part of the unique identifier. These include the issue date and data module title.

New publication and data modules, when released, will have an issue number (attribute **issueNumber**) of **"001."** Publication and data modules will continue to increment the issue number until the end of their lifecycles. For issue numbers above **"001,"** the attribute **issueType** should indicate whether the issue is: changed, deleted, revised, status only change, reinstated with content change, reinstated with content completely revised, or reinstated with status only change. The attribute **issueType** should not include the value **"new"** unless the attribute **issueNumber** is **"001"** or less.

4.2.1.2.4 Markup example.

```
<dmAddress>
<dmIdent>
<dmCode modelIdentCode="MYBIKE" systemDiffCode="A" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="00" disassyCode="01"
disassyCodeVariant="00A" infoCode="607" infoCodeVariant="E"
itemLocationCode="B"/>
<language countryIsoCode="US" languageIsoCode="en"/>
<issueInfo issueNumber="000" inWork="01"/>
</dmIdent>
<dmAddressItems>
<issueDate year="2010" month="09" day="22"/>
<dmTitle>
<techName>Big Bad Bike</techName>
<infoName>Repair parts information</infoName>
</dmTitle>
</dmAddressItems>
</dmAddress>
```

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4.2.1.2.5 Output.

IDENTIFICATION SECTION					
Data Module Code:	DMC-MYBIKE-A-00-00-00-0100A-607E-B				
Language / Country:	en / US	**Issue # / In-Work #:**	000 / 01	**Issue Date:** (YYYY-MM-DD)	2010-09-22
DM Title: (Tech. Name – Info Name)	Big Bad Bike – Repair parts information				

FIGURE 5. Sample output of data module address.

4.2.1.3 Data module status.

4.2.1.3.1 General.

The data module status section contains general information about the status of the data module including, but not limited to: security, responsible partner company, originator, applicability, BREX reference, quality assurance, and reason for update. The display of this content varies depending on need and presentation medium.

NOTE

In accordance with MIL-STD-3031 Revision A, the use of the attribute **`issueType`** on element **`<dmStatus>`** is required. Projects following a prior version of MIL-STD-3031 are strongly encouraged to use this attribute to distinguish whether a data module is new, changed, revised, deleted, and so on, as well as for forward compatibility.

Refer to 5.1.9.1.1.6 for publication module status guidance.

4.2.1.3.2 Data restrictions.

The element **`<dataRestrictions>`** is available to all data module types including the publication module. Historically, publications were identified as a whole regarding availability, supersedure, disclosure, distribution, export control, destruction, and general purpose. Today with S1000D, technical data is exchanged and reused more often and in smaller chunks.

DOD Directive 5230.25, though dated, does not limit the definition of technical data to an entire publication.

All data modules and publication modules should be identified with applicable notices (availability, supersedure, disclosure, distribution, export control, destruction, and general purpose).

NOTE

The use of data restrictions, in accordance with MIL-STD-3031 Revision A, is required for all publication and data modules.

4.2.1.3.3 Responsible partner company.

In accordance with MIL-STD-3031 Revision A, the responsible partner company (element **`<responsiblePartnerCompany>`**) should be populated with the project or organization responsible for the delivery of the data module or nested publication module. The responsible partner company element for parent publication modules should be populated with the issuing

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authority, for example "Headquarters, Department of the Army" for all Department of the Army (DA) authenticated publications.

The responsible partner company element contains the organization that is accountable for the data.

4.2.1.3.4 Originator.

In accordance with MIL-STD-3031 Revision A, the originator (element **<originator>**) should be populated with the project or organization that authored the data module. The element <**originator**>, when used within the main (parent) publication module, should be populated with the project or organization who will be delivering the technical manual.

The element **<originator>** contains the organization that developed the data. It is possible that the responsible partner company and the originator are the same organization.

Refer to 5.1.9.2.1 for an example of the main (parent) publication module.

4.2.1.3.5 Reason for update.

Beginning with issue **"002"** of a data module, the element **<reasonForUpdate>** is included. Standard statements describing the reason for update should be created and used by a project. Each statement is then categorized to fit into the default definitions (editorial, technical, markup, or applicability changes). If any statement does not fall under a default category, projects can define their own values for the attribute **updateReasonType** and document those definitions in the project BREX.

When referencing the reason for update in the **<content>** of the data module, include the attribute **reasonForUpdateRefIds** and the applicable identification value(s).

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4.2.1.4 Markup example.

```
<dmStatus issueType="new">
<security securityClassification="01"/>
<responsiblePartnerCompany>
<enterpriseName>Your Company</enterpriseName>
</responsiblePartnerCompany>
<originator enterpriseCode="07GB6">
<enterpriseName>BTAS COE</enterpriseName>
</originator>
<applic>
<displayText/>
</applic>
<brexDmRef>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="USARMY" systemDiffCode="0000"
systemCode="00" subSystemCode="0" subSubSystemCode="0"
assyCode="00" disassyCode="00" disassyCodeVariant="A"
infoCode="022" infoCodeVariant="A" itemLocationCode="D"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>United States Army</techName>
<infoName>Business rules exchange data module</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
</brexDmRef>
<qualityAssurance>
<unverified/>
</qualityAssurance>
<reasonForUpdate updateReasonType="urt01"
updateHighlight="0" id="rfu-001">
<simplePara>Correction to text</simplePara>
<reasonForUpdate updateReasonType="urt02"
updateHighlight="1" id="rfu-002">
<simplePara>Safety issue update</simplePara>
</reasonForUpdate>
</reasonForUpdate>
</dmStatus>
```

Attribute	Use
updateReasonType	Defined category
id	Referenced in <content> of data module, as needed
updateHighlight	Indicates inclusion (“1”) in Highlights data module

FIGURE 6. Reason for update markup.

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4.2.1.5 Output.

STATUS SECTION			
Security classification:	Unclassified	**Issue Type:**	New
RPC and/or Code:	Your Company	**Originator and/or Code:**	BTAS COE, 07GB6
Applicability:	All	**Quality Assurance:**	Unverified
BREX DM Reference:	DMC-USARMY-0000-00-00-00-00A-022A-D (United States Army – Business rules exchange data module)		

FIGURE 7. Sample output of data module status.

4.2.2 Content section.

4.2.2.1 General.

Each data module type contains a content section (typically, element **`<content>`**). However, three types of data modules vary in the naming of the element **`<content>`**. The comment data module, for example, uses the element **`<commentContent>`** instead of the element **`<content>`**. The data dispatch note (**`ddn`** schema) and the data module list (**`dml`** schema) data module types also use different content naming (elements **`<ddnContent>`** and **`<dmlContent>`**, respectively).

Since each DM type is different, each content structure is equally different.

Refer to 5.1 for more information on data module types.

4.2.2.2 Output.

Output will vary, according to the data module type. Refer to 5.1 for specific data module types.

4.2.3 Common constructs.

TABLE II. Common constructs.

Common construct	Reference	Affected data module types (schema)
Change marking	4.2.3.1	All
Referencing	4.2.3.2	All
Lists	4.2.3.3	Available in most data module's identification and status section within **`<copyright>`**. Not allowed within the element **`<content>`** of business rules exchange (**`brex`** schema), comment, container, data module list (**`dml`** schema), and publication module (**`pm`** schema)
Titles	4.2.3.4	All
Tables	4.2.3.5	Checklist, crew, descriptive (**`descript`** schema), fault, learning, procedural (**`proced`** schema), process, maintenance planning (**`schedul`** schema), and SCORM content (**`scormcontentpackage`** schema)

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TABLE II. Common constructs.

Common construct	Reference	Affected data module types (schema)
Common information	4.2.3.6	Available in procedural (**proced** schema), fault, checklist, and maintenance planning (**schedul** schema)

4.2.3.1 Change marking.

Change marking identifies data that has been changed since the last release of a data module. It consists of information that is new, corrects, improves, or clarifies the data module. Change markings are presented as vertical black lines spanning the area of the change in the outside margin for page-based publications and the left margin for IETPs.

Changes can be identified at the word or sentence level using the element **<changeInline>**. In the example below, the type of change is declared as a modification (other options include new and deleted) and the change mark should be displayed (per the attribute **changeMark** and the value of "**1**"). Refer to S1000D for additional information on change marking.

4.2.3.1.1 Change marking example.

```
<proceduralStep id="stp-001">
<para>Remove the <changeInline changeType="modify"
changeMark="1">four</changeInline> bolts.</para>
</proceduralStep>
```

4.2.3.1.2 Output.

▌1	Remove the four bolts.

FIGURE 8. Sample output of change marking.

4.2.3.2 Referencing.

References are used to direct a reader to another publication or data module, or to a specific location within a data module. Two types of references are used: internal and external. Internal references, or cross-references, can link to a specific location within the current data module. Common internal reference destinations are tables, figures, and steps. External references can link to other data modules, publication modules, or other documents or publications. An IETP will present a hyperlink (also known as a link) which, when activated, takes the user directly to the target reference. Page-oriented publications typically substitute a reference for the link (for example, "Refer to Table 1-1").

Common internal references use the element **<internalRef>**; however, other content-specific internal references are also allowed. These other reference types include, but are not limited to: functional items (element **<functionalItemRef>**), circuit breakers (element **<circuitBreakerRef>**), controls or indicators (element **<controlIndicatorRef>**), zones, (element **<zoneRef>**), access points (element **<accessPointRef>**), footnotes (element **<footnoteRef>**).

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Referencing is accomplished by the use of the attribute **id** and attribute **internalRefId**. The attribute **id** is located on the target, for example a step or figure, and the attribute **internalRefId** refers to that target identification.

Refer to S1000D for additional information on referencing.

4.2.3.2.1 Identification attribute values.

When determining a value format for the attribute **id**, the use of a logical prefix is recommended. A prefix pattern for attribute values is necessary in order to ensure and maintain consistency throughout the publication. This can assist an author in locating the correct object to be referenced. Common practice, in accordance with S1000D, is the use of a value prefix followed by a hyphen and four digits (for example, "**stp-0001**"). This is instrumental in providing a unique identifier.

Value prefixes should provide enough information for the user to instantly identify a figure, table, paragraph, step, and so on. Several examples are suggested in S1000D, including, but not limited to: "**fig**," "**tab**," "**par**," and "**stp**."

4.2.3.2.2 Attribute **referredFragment**.

The attribute **referredFragment** may be used when it is necessary to refer to a specific location within another data module. In accordance with S1000D, this referencing is allowed only into the Illustrated Parts Data (IPD), maintenance planning, and technical repository data modules.

4.2.3.3 Lists.

In general, it is good practice to be consistent in element use and population. Lists, however, are an exception. Lists may or may not contain titles depending on their intended purpose. Lists, in general, vary greatly from one to another and the mandatory use of titles is not practical. Three types of lists are available: sequential (ordered), random (unordered or simple), and definition.

Both sequential and random lists identify individual list items within the element **<listItem>**. A list item (element **<listItem>**) may contain a note (element **<note>**), a paragraph (element **<para>**), or both.

Sequential lists are fully explained in S1000D.

4.2.3.3.1 Random lists.

Two types of random lists (element **<randomList>**) are used: simple and unordered. Simple random lists do not use bullets and indent the list items (attribute **listItemPrefix**, value "**pf01**"). Unordered random lists allow for different bullets (attribute **listItemPrefix**, value "**pf02**") at different levels and also indent the list items. The difference between the two is in the presentation.

4.2.3.3.1.1 Random list example.

```
<para>The wheels include these parts:
<randomList listItemPrefix="pf02">
<listItem>
<para>Hub</para>
</listItem>
```

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```
<listItem>
<para>Spokes</para>
</listItem>
<listItem>
<para>Metal rim</para>
</listItem>
<listItem>
<para>Rubber tire</para>
</listItem>
</randomList>
</para>
```

4.2.3.3.1.2 Random list output.

The wheels include these parts:
- Hub
- Spokes
- Metal rim
- Rubber tire

FIGURE 9. Sample output of simple and unordered random lists.

4.2.3.3.2 Definition lists.

Definition lists are slightly different from random or sequential lists. A definition list may contain a title (element **`<title>`**) or a definition list header (element **`<definitionListHeader>`**) or both. The definition list header is useful for identifying two columns of data, whether they are terms and definitions, index or illustration numbers and descriptions, or various other possibilities.

4.2.3.3.2.1 Definition list example.

```
<definitionList>
<definitionListHeader>
<termTitle>Usable On Code</termTitle>
<definitionTitle>Used On</definitionTitle>
</definitionListHeader>
<definitionListItem>
<listItemTerm>VRP</listItemTerm>
<listItemDefinition>
<para>CB534B Roller</para>
</listItemDefinition>
</definitionListItem>
<definitionListItem>
<listItemTerm>SWR</listItemTerm>
<listItemDefinition>
<para>CB534C Roller</para>
</listItemDefinition>
</definitionListItem>
</definitionList>
```

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4.2.3.3.2.2 Definition list output.

Usable On Code	Used on
VRP	CB534B Roller
SWR	CB534C Roller

FIGURE 10. Sample output of a definition list.

4.2.3.3.3 Lists in warnings, cautions, and notes.

Specific list types are allowed within warnings, cautions, and notes as well. Warnings and cautions allow only the use of attention random lists (element **`<attentionRandomList>`**), while notes allow both attention random and attention sequential lists (elements **`<attentionRandomList>`** and **`<attentionSequentialList>`**, respectively). The uses of both list types are defined by the schema.

4.2.3.4 Titles.

Titles should be populated consistently. Title presentation varies depending on the title type, refer to MIL-STD-3031 for details. Titles are allowed within many elements including, but not limited to: primary paragraphs (element **`<levelledPara>`**), tables (element **`<table>`**), figures (element **`<figure>`**), and multimedia (element **`<multimedia>`**).

4.2.3.4.1 Title example.

```
<title>Complete Bicycle</title>
```

4.2.3.5 Tables.

The purpose of a table is to display information for comparison, lookup, and readability. The data should describe multiple objects with common properties. A general rule of thumb is if the data can be visualized in a spreadsheet or grid layout, it is tabular data.

Tables should not be used for style or formatting purposes. The content should be presented to reflect the applicable element and not the desired format or style.

Some information may appear as tabular data, but is not authored using the element **`<table>`**. This is also referred to as "content-tagged" data. An example of content-tagged data is maintenance allocation chart information (refer to 5.1.7).

4.2.3.5.1 Table example.

```
<table id="tab-0001" frame="all">
<title>Shifter correlation</title>
<tgroup cols="2">
<colspec colnum="1" colname="col1" colwidth="*"/>
<colspec colnum="2" colname="col02" colwidth="1.50*"/>
<thead>
<row>
<entry colsep="0" colname="col1">
<para><emphasis emphasisType="em01">Shifter Location</emphasis></para>
</entry>
<entry colsep="0" colname="col02">
<para><emphasis emphasisType="em01">Affected Gears</emphasis></para>
```

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```
</entry>
</row>
</thead>
<tbody>
<row rowsep="0">
<entry colsep="0" colname="col1">
<para>Left</para>
</entry>
<entry colsep="0" colname="col02">
<para>The buttons on the left shifter changes the gears on the front
derailleur.</para>
</entry>
</row>
<row rowsep="0">
<entry colsep="0" colname="col1">
<para>Right</para>
</entry>
<entry colsep="0" colname="col02">
<para>The buttons on the right shifter changes the gears on the rear
derailleur.</para>
</entry>
</row>
</tbody>
</tgroup>
</table>
```

4.2.3.5.2 Output

Table 2 Shifter correlation

Shifter Location	Affected Gears
Left	The buttons on the left shifter changes the gears on the front derailleur.
Right	The buttons on the right shifter changes the gears on the rear derailleur.

FIGURE 11. Sample output of a table.

4.2.3.6 Common information.

Common information (element **`<commonInfo>`**) is used to contain data that applies to the entire data module. It can contain general information, introductory material, special information, and other similar information.

The element **`<commonInfo>`** is available in the procedural, fault, checklist, and maintenance planning data modules.

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4.2.3.6.1 Common information example.

```
<commonInfo>
<commonInfoDescrPara>
<title>SECURITY PROCEDURES</title>
<para>For security procedures involved in
storage and shipment of the bicycle, refer
to <externalPubRef>
<externalPubRefIdent>
<externalPubCode>AR 190-13</externalPubCode>
</externalPubRefIdent>
</externalPubRef>.</para>
</commonInfoDescrPara>
</commonInfo>
```

In accordance with MIL-STD-3031, the element <commonInfoDescrPara> must contain additional structures within the element <commonInfo>.

FIGURE 12. Common information markup.

4.3 Warnings and cautions.

Warnings, cautions, and notes are often referred to as "alerts." However, these different alerts are not presented the same way (refer to MIL-STD-3031 for more information). A warning identifies a clear danger for injury or death to the person performing an operation or procedure. A caution identifies risk of damage to the equipment. A note is used to highlight essential procedures, conditions, or statements or convey important instructional data to the user.

Procedure

1 Remove the bolts.

WARNING

Fuel and oil are very slippery. Immediately wipe up any spills. Failure to follow this warning may cause injury.

2 Place container under fuel filter element. Open drain valve on bottom of fuel filter and collect sample in container. Close drain valve.

FIGURE 13. Alert examples.

4.4 Publication structure.

Publication modules are used to define content and structure within the publication. The content can be divided into combined tasks, sections, chapters, appendices, and so on. By initially outlining a publication, the basic structure of the publication is defined. Using this outline, it is easy to determine when and where a publication module is needed.

At a minimum, the outline should contain the main publication divisions: front matter, body content, and rear matter (refer to Figure 14). The content requirements for these divisions is dependent upon the type of publication and the method of display, in accordance with MIL-STD-3031. The MIL-STD-3031 content selection matrices (Appendix A) identify some of these publication divisions for each publication type, additional publication divisions will be needed by most programs and can be established by project decisions.

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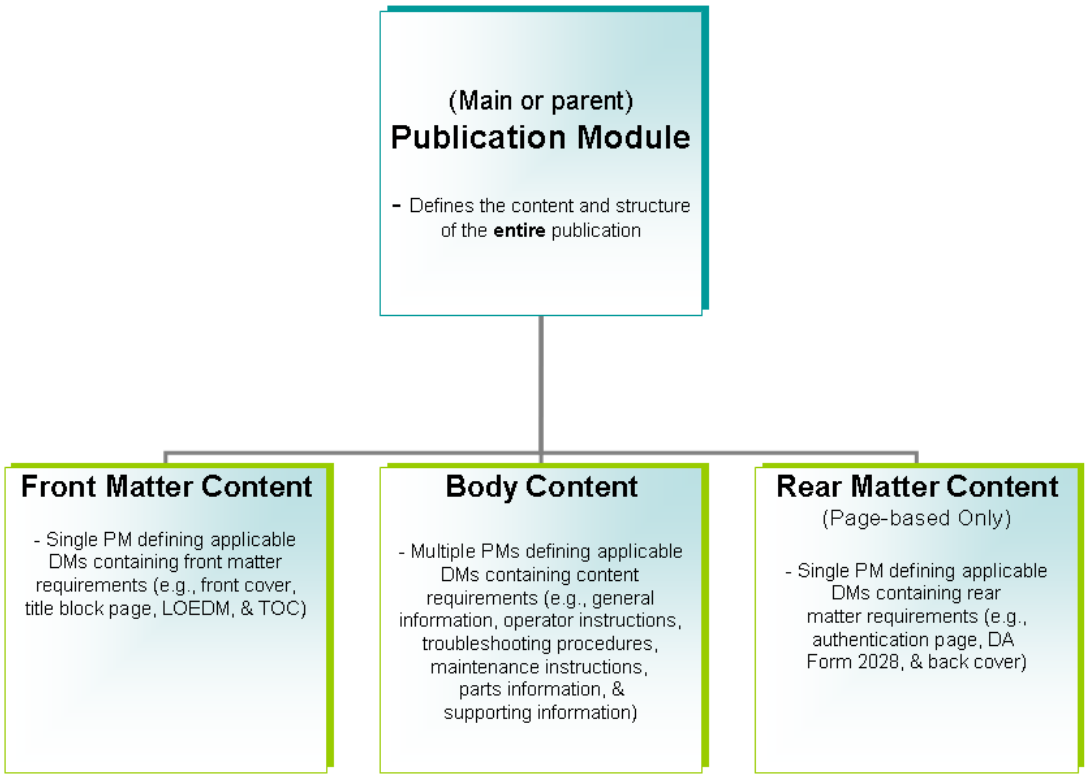

FIGURE 14. Familiar publication divisions.

Each of these divisions (front matter, body content, and rear matter) may consist of multiple data modules, publication modules, or a mixture of both.

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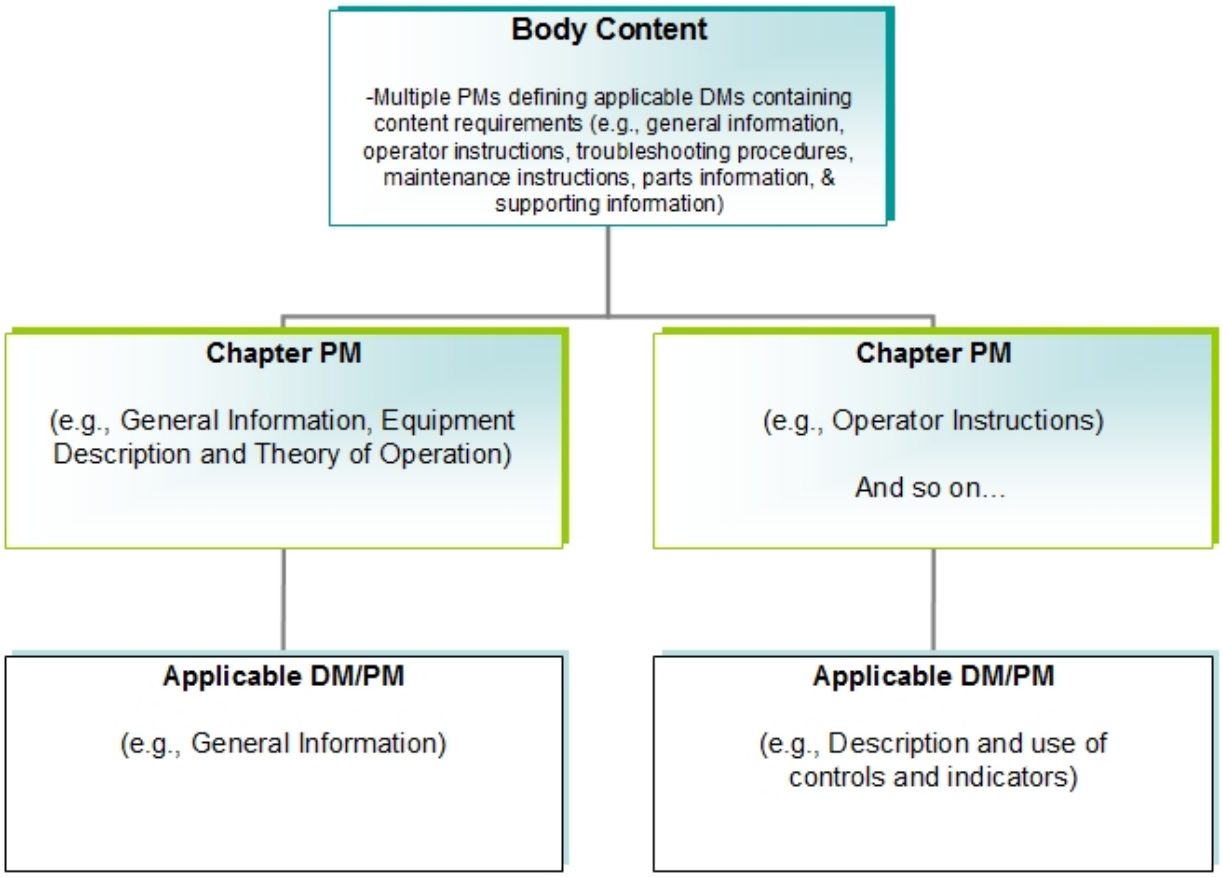

FIGURE 15. Example of body content structure.

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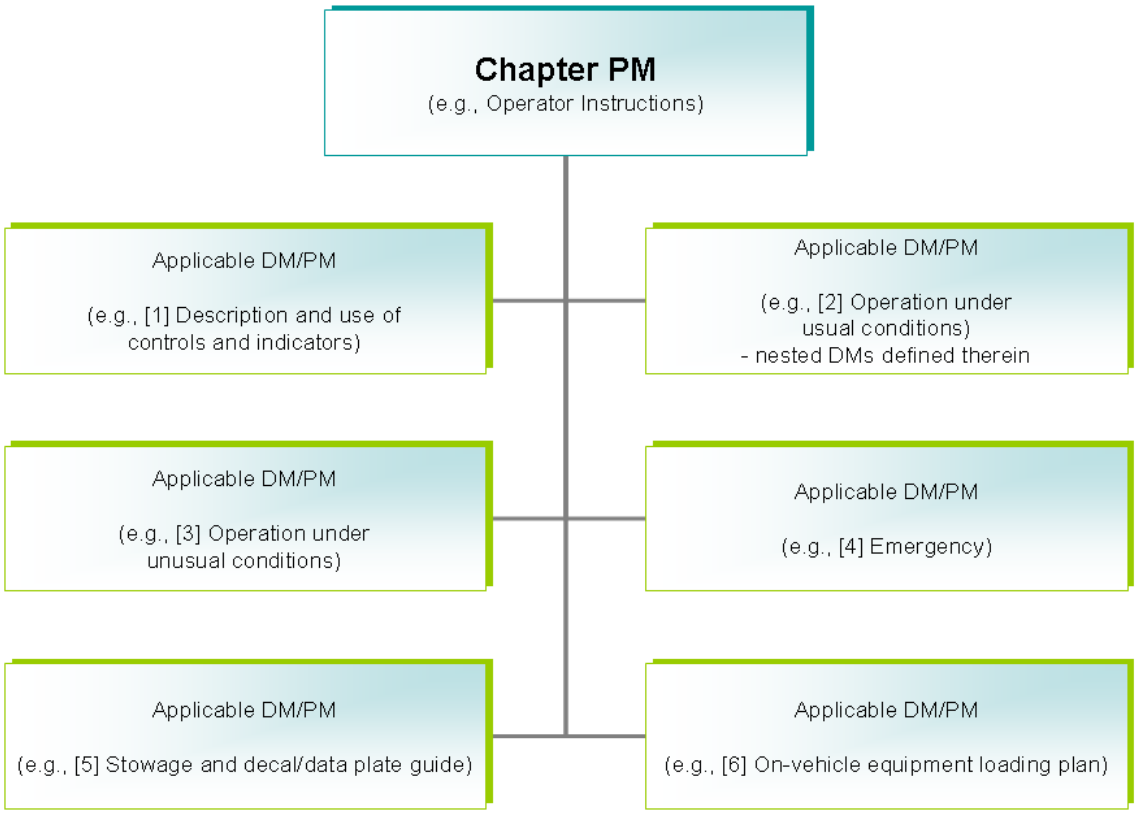

FIGURE 16. Example of a chapter structure.

4.5 Table of Contents

A Table of Contents is typically auto-generated by the developer's publishing system. The parent publication module contains references to applicable data modules, additional publication modules, and, perhaps, external publications. This parent publication module can be used as a source for an auto-generated Table of Contents or as the Table of Contents itself.

MIL-STD-3031 dictates that the Table of Contents is ordered as instructed by the applicable content matrix. This is required as a minimum for all publications. A project can provide additional Table of Content views (in IETP) at their discretion (for example, ordered by system breakdown).

4.6 Reuse.

Data modules contain text in the form of an XML instance. Data modules can be reused in any number of publications. Multiple publications may list a common data module as a part of each publication.

In addition to the data module itself, the S1000D specification provides several options for the reuse of data. These options include: a use of paragraph significant data (refer to 4.6.1) and a use of quantity data (refer to 4.6.2), and the use of two different data module types – the technical information repository data module (refer to 4.6.4) and the container data module (refer to 4.6.5).

An option for reusing warnings and cautions (refer to 4.6.3) is also available.

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Additionally, reuse can be achieved by reusing graphics. Graphics are not limited to a single data module.

4.6.1 Paragraph significant data.

Paragraph significant data (element **`<inlineSignificantData>`**) is defined as data whose meaning is significant and contains specific information that can be identified. Many types of paragraph significant data exist (for example, circuit breakers, zones, and supplies). The original use of paragraph significant data is to mark data that contains significant meaning (for example, a lubricant or manufacturer code).

Paragraph significant data can also be used to identify significant data that is authored in a corresponding technical information repository data module. Authoring these data types within technical information repository data modules and then referencing from other data modules allows the technical information to be stored in a controlled and organized manner and shared across a project.

Paragraph significant data is not limited to the technical information repository data modules. Paragraph significant data may also be identified within other data module types as allowed by the schemas.

Identification of paragraph significant data is achieved through the use of attribute values. The attribute **`significantParaDataType`** includes S1000D-defined values and allows for project-defined values.

In an Army (or any US Service) program, technical information repository data modules may be used in the authoring environment to help manage data. But data modules that are delivered for presentation and use should have all technical information repository dependencies resolved. It is important that each data module can be validated and verified without relying on any references to technical information repository data. Refer to 4.6.4.

Refer to MIL-STD-3031 for Army-defined values and the open range for project-defined values.

4.6.1.1 Markup example.

```
<para>The designator symbol <inlineSignificantData
significantParaDataType="psd55">CA</inlineSignificantData>
is used throughout this manual to identify text,
illustrations, and performance data for aircraft
equipped with the Improved Constant Area Exhaust
Stacks. The designator symbol
<inlineSignificantData
significantParaDataType="psd55">IR</inlineSignificantData>
identifies text, illustrations, and performance data for
aircraft equipped with the Infra Red Reducing Exhaust Stacks.
Data which has no icons applies to both.</para>
```

Value definition:
`psd55` - Designator symbol

FIGURE 17. Designator symbol markup.

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4.6.1.2 Output.

The designator symbol **CA** is used throughout this manual to identify text, illustrations, and performance data for aircraft equipped with the Improved Constant Area Exhaust Stacks. The designator symbol **IR** identifies text, illustrations, and performance data for aircraft equipped with the Infra Red Reducing Exhaust Stacks. Data which has no icons applies to both.

FIGURE 18. Sample output of paragraph significant data.

4.6.2 Quantity data.

Quantity data identifies data corresponding to a numeric value with a special meaning (for example, torque values). The element **`<quantity>`** can be very specific (for example, length, weight, pressure) and defined by the configurable attribute **`quantityType`**.

Quantity data is identified and used in much the same way as paragraph significant data. The attribute **`quantityType`** includes S1000D-defined values and allows for project-defined values.

Refer to MIL-STD-3031 for Army-defined values and the open range for project-defined values.

Refer to S1000D for additional information regarding quantity data.

4.6.3 Reuse of Warnings and cautions.

Procedures often contain the same warning or caution in several locations. The drawbacks for these duplicated alerts are: 1) typographical errors, 2) inconsistent wording, and 3) unnecessarily large files (file bloat). Rather than re-authoring the alerts each time they are needed, the reuse of an alert should be considered to help reduce inconsistencies and errors.

Currently a single method exists for reusing warnings and cautions. This is done with the warnings and cautions collection which was introduced in S1000D Issue 4.0. This enables warnings and cautions to be authored in data modules at the top of the content (element **`<content>`**), within the element **`<warningsAndCautions>`**. This implements a reference mechanism for data reuse.

Warnings and cautions that are authored within the collection are not displayed until they are referenced. The user will not see the collection contents at the top of the data module, but in the applicable location where the reference is included.

Use of the collection concept is recommended only when alerts are used multiple times within a data module. The traditional method of authoring as needed is recommended when each alert is used only once in a data module.

NOTE

Care should be taken to ensure that wording is exact when reuse is being considered. Even a punctuation difference can change the warning dramatically.

Lastly, warnings and cautions that apply to the end item, or a part thereof, may be authored in descriptive data modules in only one specific circumstance. In the Army, this is a single data module containing applicable warnings and cautions typically within a warning or safety summary (refer to MIL-STD-3031). These warnings and cautions in the safety summary cannot be reused from other data modules since no method currently exists for reusing portions of content from other data modules.

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4.6.3.1 Markup examples.

(Authored in the collection)

```
<warningsAndCautions>
<warning id="warn-0001">
<warningAndCautionPara>Fuel and oil are very slippery. Immediately
wipe up any spills. Failure to follow this warning may cause
injury.</warningAndCautionPara>
</warning>
...
</warningsAndCautions>
```

(Reused later in a step)

```
<proceduralStep @id="stp-002" warningRefs="warn-0001">
<para>Place container under fuel filter element. Open drain valve on
bottom of fuel filter and collect sample in container. Close drain
valve.</para>
</proceduralStep>
```

4.6.3.2 Output.

WARNING

Fuel and oil are very slippery. Immediately wipe up any spills. Failure to follow this warning may cause injury.

2 Place container under fuel filter element. Open drain valve on bottom of fuel filter and collect sample in container. Close drain valve.

FIGURE 19. Sample output of a reused (page-based) warning.

4.6.4 Technical information repository data modules.

The technical information repository is a data module type that may cause potential problems in a production environment. The use of the technical repository is still a new concept and has not been fully developed. The reuse of data contained in the technical information repository may cause issues with configuration management of the data. If the data in a technical information repository changes, it causes a corresponding change within a data module. At this time there is no way to safely configuration manage these data changes at the sub-data module level. Projects should plan how to handle updates to technical information repository information before using this data module type. As the use of the technical information repository matures, so will this guidance.

4.6.5 Container data module.

The container data module is a data management tool that is not directly displayed to the user. Its use is beneficial when product configuration or other conditions may affect detailed procedures during maintenance. The container data module provides a way to group together data modules which achieve the same goal, but the details of that procedure may differ depending on current conditions (for example, configuration - different models or environment - ice or sand). Use of the applicability construct will determine which version of the data modules in the container to present to the end user.

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The container data module can be used in an example where there is an A model and a B model of an end item that differ by the weapon that is mounted on it. The IETP can link to a static container data module code for the procedure to mount the weapon. But depending on the model (A or B) as directed by the applicability data, the user will be presented only with the correct model weapon mounting procedure data modules within the container, not both possibilities.

4.7 Style sheets.

Style sheets are applied to XML files to transform the document into a displayable form (print or screen) using XSL. Standard XSL style sheets for use with S1000D-compliant publications will be available from https://www.logsa.army.mil/mil40051/S1000D.cfm. The style sheets should be considered baseline as differences in transformation engines will require modifications of the style sheets for individual projects' use.

The use of non-standard or proprietary style sheets is discouraged. Proprietary style sheets indicate possible non-conformance to current requirements (for example, look-and-feel or viewer functionality). Using the code from the standard style sheets to the maximum extent possible is encouraged. Use of modular code when developing style sheets is desirable and provides for ease of update when making necessary tweaks to support generation tools.

Style sheets may also generate text during the transformation process. The generated text may be based on an element or an attribute. Table III provides an example of generated symbols, defined from attributes used in flight manuals, as well as auto-generated step labels and separators (extended lines).

Per MIL-STD-3031, there is a requirement to produce "End of…" statements at the conclusion of each data module, as applicable. These statements are not authored, but generated using style sheets. The style sheet looks for a specific element such as **`</figure>`** or **`</dmodule>`** and generates an applicable statement such as "End of Figure" or "End of [data module title]," respectively.

TABLE III. Generated symbols.

Sample XML	Auto-Generated Display
`<crewDrillStep separatorStyle="none" crewStepCondition="csc01 csc02 csc03">` **`<para>Switches and controls. Set as follows:</para>`**	The [**`crewStepCondition="csc01 csc02 csc03"`**] generates the symbols "(O)," "★," and "*" before the auto-generated step label, as follows: (O)★* 1. Switches and controls. Set as follows:
`<crewDrillStep separatorStyle="line" crewStepCondition="csc04">` **`<challengeAndResponse>`** **`<challenge>`** **`<para>LED HEADLIGHT switch</para>`** **`</challenge>`** **`<response>`**	The [**`separatorStyle="line"`**] generates an extended line between a **`<challenge>`** and a **`<response>`**, as follows: (N) a. LED HEADLIGHT switch — As required.

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TABLE III. Generated symbols.

Sample XML	Auto-Generated Display

`<para>As required.</para>`
`</response>`
`</challengeAndResponse>`
`</crewDrillStep>`	

4.8 Graphics.

Graphics provide a user with a visual representation that allows for easier identification of the equipment or a specific part. The purpose of graphics in technical data is to augment and clarify the text, keeping in mind the objective is to reduce the length of explanations describing functions, procedures, and so on.

A graphic is defined via the element **`<figure>`**. This element defines the title and graphic, or graphics, which make up the figure. A legend or explanatory list is also allowed. Some figures may contain multiple graphics, also referred to as "sheets." Sheets are used when a single graphic cannot depict the equipment (or part) legibly or in its entirety. This may be due to excessive detail or multiple callouts (or hotspots) which overcrowd the graphic.

NOTE

Multiple graphics for multi-sheet figures should be authored in the order to be displayed.

Foldouts contain schematics, over-sized tables, graphs, or charts (in accordance with MIL-STD-3031).

A graphic entity is declared at the top of the XML file while the corresponding figure is authored in the file at the applicable location. The entity name (shown in the graphic entity example below as "**`ICN-S1000DBIKE-AAA-D000000-0-U8025-00536-A-04-1`**") is identical to the value of the attribute **`infoEntityIdent`** for the element **`<graphic>`**.

An example of a graphic notation identifier:

```
<!NOTATION cgm PUBLIC "-//USA-DOD//NOTATION Computer Graphics
Metafile//EN">
```

An example of a graphic entity:

```
<!ENTITY ICN-S1000DBIKE-AAA-D000000-0-U8025-00536-A-04-1 SYSTEM
"./illustrations/ICN-S1000DBIKE-AAA-D000000-0-U8025-00536-A-04-1.CGM"
NDATA cgm>
```

An example of a figure defined in the content:

```
<figure id="fig-0001">
<title>Complete bicycle</title>
<graphic infoEntityIdent="ICN-S1000DBIKE-AAA-D000000-0-U8025-00536-A-
04-1">
</graphic>
</figure>
```

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4.8.1 Information Control Number (ICN).

Every illustration sheet or multimedia object in a data module is identified by an ICN The ICN is a unique identifier and is related to one or more data modules. Each sheet will have its own ICN. The ICN will be either Commercial and Government Entity (CAGE) code based (using the company or organization code) or based on the model identification code. MIL-STD-3031 allows either method when creating the ICN.

It is the intent of MIL-STD-3031 to help a project manage costs associated with management of ICNs as much as possible. It is recommended that selection of the ICN method be left up to the originator of the graphic as this typically results in the lowest cost while still providing program-unique ICNs.

An ICN is contained within: graphics (element **`<graphic>`**), symbols (element **`<symbol>`**), and multimedia objects (element **`<multimediaObject>`**).

4.8.1.1 Commercial And Government Entity (CAGE)-based Information Control Number (ICN).

The CAGE code based ICN is comprised of five parts: prefix (always "ICN"), CAGE code (5 characters), unique identifier (5-10 characters), issue number (3 digits), and security classification (2 digits). A CAGE-based ICN is 15-20 characters in length, not including the prefix. Refer to S1000D for additional information on these components.

Refer to Figure 20 for a depiction of components which comprise an ICN based on the CAGE code.

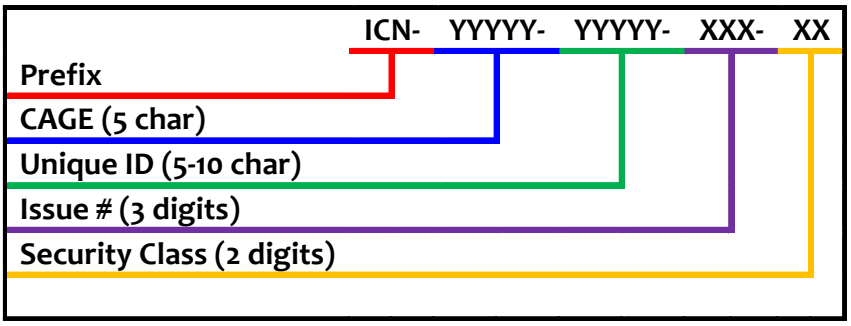

FIGURE 20. Information Control Number (ICN) based on a Commercial and Government Entity (CAGE) code.

4.8.1.2 Model identification based Information Control Number (ICN).

The model identification based ICN is comprised of ten parts: prefix (always "ICN"), Model Identification Code (MIC) (2-14 characters), System Difference Code (SDC) (1-4 characters), Standard Numbering System (SNS) (6-9 characters), Responsible Partner Company (RPC) code (1 character), CAGE code (5 characters), unique identifier (5 characters), variant code (1 alpha character), issue number (3 digits), and security classification (2 digits). A model ID-based ICN is 26-44 characters in length, not including the prefix. Refer to S1000D for additional information on these components..

NOTE

An ICN based on the model identification code contains five additional components compared to the CAGE-based ICN.

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Refer to Figure 21 for a depiction of components which comprise an ICN based on the model identification code.

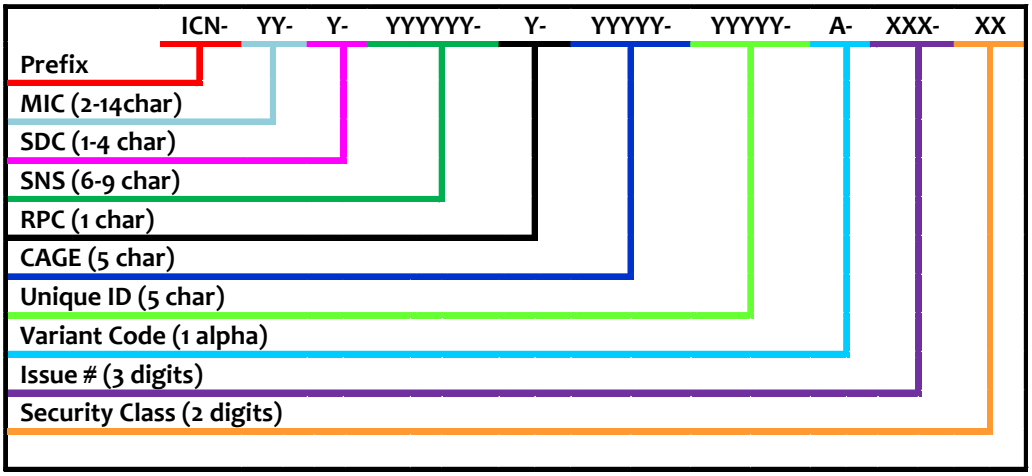

FIGURE 21. Information Control Number (ICN) based on a model identification code.

4.8.2 Graphic formats.

Acceptable graphic formats should be delivered in one of the three graphic formats: W3C REC-WebCGM-20011217, Web Computer Graphic Metafile (WebCGM); Portable Network Graphic (PNG) or Joint Photographers Experts Group (JPEG). If these formats do not meet your needs, other commercial graphic formats are acceptable if approved by the acquiring activity.

a. The CGM file format is the preferred graphics file format.
b. All graphics files for a particular IETM should be applied in the same graphics format if practical. Otherwise, files may be delivered in any combination of the allowable formats.
c. Appropriate header and identification information should be included in each graphics file. Refer to the applicable specification for the specific requirements.

4.8.3 Graphic types.

As applicable, the following types of graphics should be used in the preparation of both paged-based Technical Manuals (TMs) and IETPs.

a. Line drawings.
b. Photographs.
c. Engineering drawings.
d. Diagrams.
e. Charts and graphs.
f. Tools and test equipment illustrations.

4.8.4 Engineering drawings.

If line drawings are produced from three-dimensional (3-D) engineering drawings, they should be modified only to show important details more clearly. Different thickness of lines is not necessary in an IETP, however, primary lines that create the basic outline (object line) of the drawing components should have sufficient density (darkness), line weight, and sharpness to accommodate printing.

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4.8.5 Diagrams.

The following paragraphs describe various types of diagrams that may be required to support the operation and maintenance data contained in the publication.

4.8.5.1 Designations, diagrams, and symbols.

Designations, diagrams, graphic symbols, and letter symbols used on illustrations should be in accordance with S1000D and MIL-STD-3031, as applicable.

a. As specified by the acquiring activity, new designations, diagrams, and symbols not covered by the specifications may be used if explained in the "How To Use This Manual" or "How To Use This IETP" data module.
b. Symbols should be spelled out when the symbols cannot be reproduced by the equipment or software used to prepare the final reproducible copy (for example, "plus" for "+").

4.8.5.2 General methods.

The following general guidance for diagram development is as follows:

a. Layout. Most diagrams, position of signals, and components should be prepared in functional order. (For example, signals are shown in functional order, not connection pin number order.)

    (1) Avoid clutter - allow no more than 3 components per square inch or 20 crossed lines per four square inches.
    (2) Allow one-eighth inch between parallel lines. Functional flow within diagrams is left-to-right/top-to-bottom, with right-to-left feedback.
    (3) Diagrams should be laid out to eliminate jogs in lines where possible.

b. Consistency. A standard referencing system for associated text, signal flow, and other diagrams should be used.

    (1) Standard graphic symbols should be used when possible.
    (2) If special graphic symbols are required, they should be made visually distinctive from other graphic symbols used and included in a special symbols chart.
    (3) Official nomenclature should be used for hardware, controls, indicators, switches, and so on; consistent, standard nomenclature is used for functions, signals, and so on.

c. Appropriate detail. All information required to fulfill the intended purpose of the diagram should be used; overcrowding should be avoided.

    (1) Complete detail should be provided for hardware, function, signal identification, measurement data (voltages and waveforms), explanatory text, connectors, terminal boards, pin numbers, signal names, reference designators, component values and tolerances, replacement components, etc.
    (2) All inputs and outputs should be clearly labeled. In single-page/frame diagrams, termination points are shown for every relevant wire, pipe, etc. In multipage/frame diagrams, unterminated line segments should be identified by appropriate symbols with references maintaining continuity from page-to-page or frame-to-frame.
    (3) To the extent possible and to keep diagram format consistent for readability, place inputs and associated labels near the diagram left or top edge and outputs and

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associated labels near the diagram right or bottom edge. The continued portions of multisheet or multiframe diagrams and schematics should align or should be labeled.

(4) For locating information, relevant components should be identified on the diagram or referenced/linked to an explanatory listing. Where applicable, the wording on the diagram should correspond exactly with the wording in the text.

d. Inappropriate data. Data not related to the purpose of the diagram should not be included. Pertinent detail of nonrepairable and nonreplaceable components should be held to a minimum.

4.8.5.3 Portraying signal flow.

Signal flow, especially for electrical and electronic equipment, critically affects the understandability of diagrams. To assist the user in following the diagram, where possible, major signal or pressure flow should be from left to right, and feedback or return flow should be from right to left. For IETPs, signal flow can be indicated using animation or color. As applicable, the methods for portraying signal flow outlined in 4.8.5.4 through 4.8.5.4.2 should be used.

4.8.5.4 Signal connections.

Signal connections can be portrayed in one of three methods.

a. Point-to-point method. Shows each signal separately with a continuous line to represent its flow (refer to Figure 22).
b. Highway method. Blends two or more signals together in a single line (refer to Figure 22). This method is useful in showing the flow of a group of related signals. Any number of signals may be blended together. Any signal that has been blended into the main line is blended out at some other point on the line. Once a signal has been blended out of a line, it can no longer be present on that line. Each signal blended in or blended out of the line should be identified.
c. Interrupted flow method. Use special symbols to interrupt signal flow. This method may be used within a single sheet of a diagram, between sheets/frames of a diagram, or between diagrams. Refer to 4.8.5.4.1 for types of special symbols used to interrupt signal flow.

4.8.5.4.1 Techniques within a single sheet of a diagram.

Interrupted flow within a single sheet diagram is depicted using one of the following techniques.

a. Oval connector. Used to continue signals from one area of a sheet to another area.

(1) Any number of signals may be bracketed together.
(2) Each signal is identified at its source bracket and destination bracket.
(3) Oval connectors should have a unique letter identifier inside the oval (refer to Figure 23).
(4) The position of the source and destination connectors can be identified by zone numbers or hot linked (refer to 4.8.6.4.2.b).

b. Signal returns. Used to continue signal returns within a single sheet/frame of a diagram.

(1) Returns have a unique number identifier inside the network.

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(2) Each return is labeled the first time it appears on the diagram (preferably on the left edge of the diagram) (refer to Figure 24).

c. Breakoff symbols. Only power forms, clock pulses, and other multiuse, minor symbols use the breakoff symbol technique.

(1) Each signal is identified adjacent to its break-off symbols.
(2) The source of signals is shown at the left edge of the diagram (refer to Figure 24).

4.8.5.4.2 Techniques between sheets of a diagram.

Interrupted flow between sheets/frames of a diagram should be depicted using one of the following techniques.

a. Boat symbol. Used to continue signals from the right edge of one sheet/frame to the left edge of the following sheet/frame within a multi-sheet/multi-frame diagram (adjacent sheets/frames of a diagram only). Used for single signals only.

(1) Boat symbols have a unique letter inside the boat (refer to Figure 25).

b. Oval connector. Used to continue signals from one area of a diagram to another. Application is the same as within a single sheet/frame of a diagram (refer to Figure 23). For page-based publications, identification of source and destination areas, the following zoning guidance is recommended for multi-sheet diagrams:

(1) Vertical zones are numbered; horizontal zones are lettered.
(2) The number of horizontal zones is limited to 10.
(3) Zones are always numbered as below, even if not all zones are used on any sheet.

Sheet1 Starts with Zone 1
Sheet2 Starts with Zone 11
Sheet3 Starts with Zone 21, etc.

4.8.5.4.3 Techniques between diagrams.

Interrupted flow between diagrams/frames is depicted using one of the following techniques.

a. Block technique. Figure number (name optional), connector and pin numbers, and zone numbers are included (refer to Figure 25). For IETPs, hotlinks are used in lieu of zone numbers.
b. Oval connectors. Source and destination figure numbers are inserted before zone references (refer to Figure 23). For IETPs, hotlinks are used in lieu of zone references.
c. Pyramid diagram. Diagram number is included from one diagram to another. (For example, include reference to 1 on diagram 2 and reference to 2 on diagram 1.) (Refer to Figure 25.) For IETPs, hotlinks are used in lieu of diagram number references.

4.8.5.5 Signal difference.

Various techniques are available to indicate signal flow, signal importance, and type, such as the following.

a. Use wide lines to represent major signals.
b. Use special arrowheads to indicate signal types.
c. Use different colors if approved by the acquiring activity.

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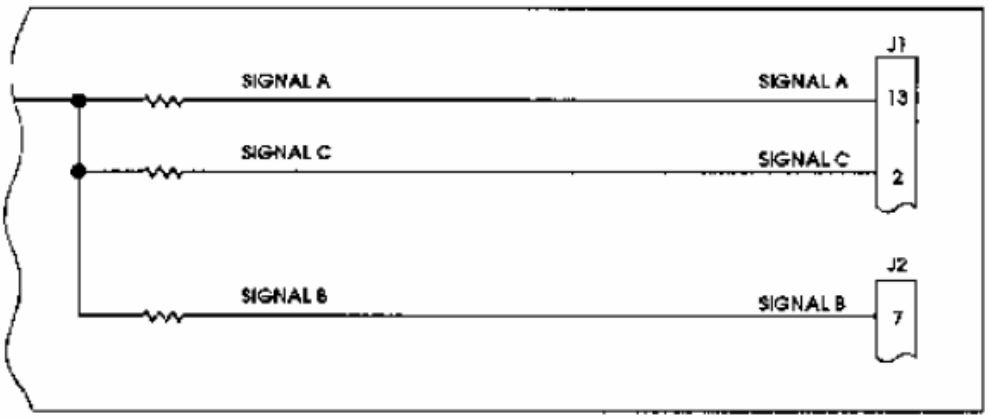
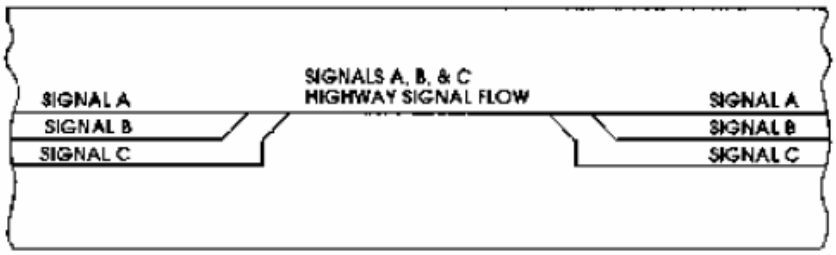
4.8.5.6 Signal junctions.

The relative importance of signals may also be indicated by the way signal junctions are represented. Subordinate junctions are used to indicate differences in signal importance. Coordinate junctions are used to indicate equality in signal importance.



POINT-TO-POINT METHOD FOR SIGNAL FLOW



HIGHWAY METHOD FOR SIGNAL FLOW

FIGURE 22. Example of highway and point-to-point methods for signal flow.

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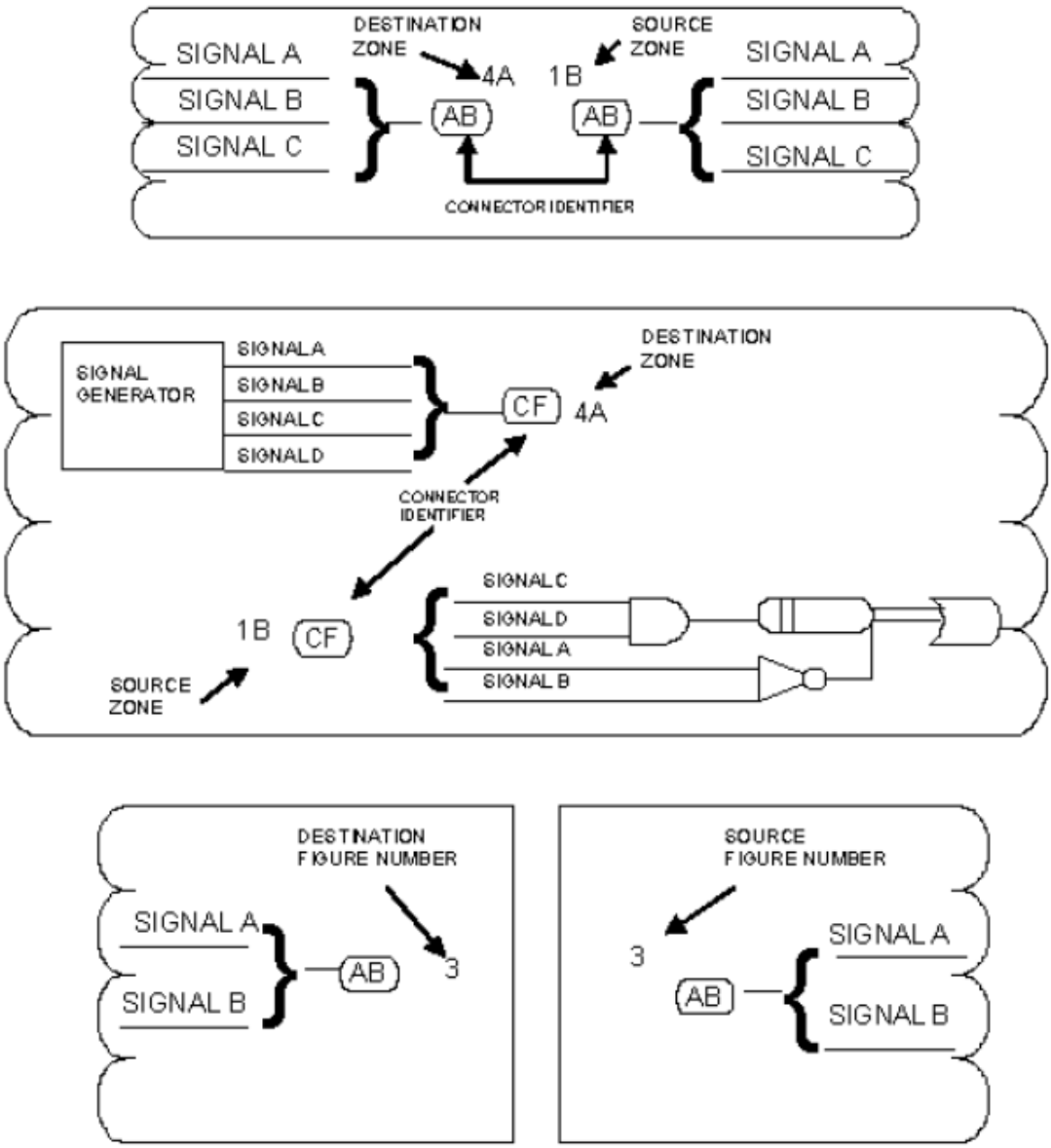

FIGURE 23. Example of oval connectors to continue signals.

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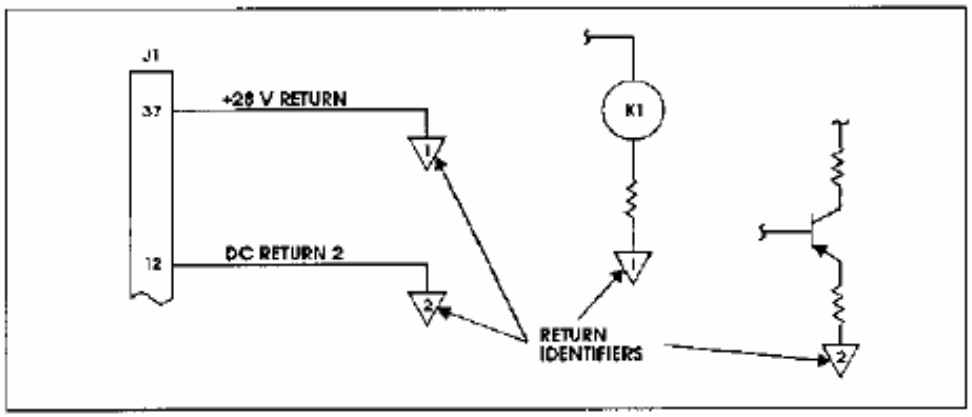
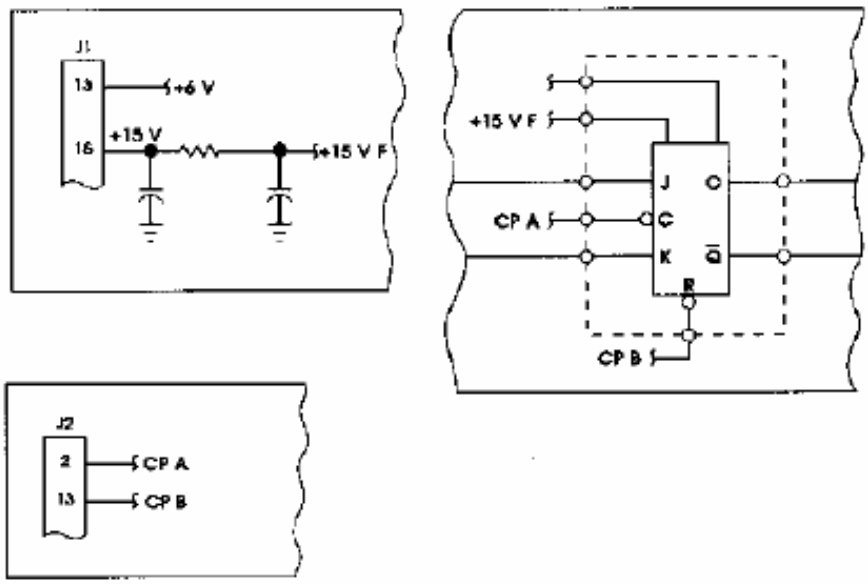


SIGNAL RETURNS USED TO CONTINUE SIGNAL



BREAKOFF SYMBOLS USED TO CONTINUE SIGNALS

FIGURE 24. Example of signal returns and breakoff symbols to continue signals – single sheet diagram.

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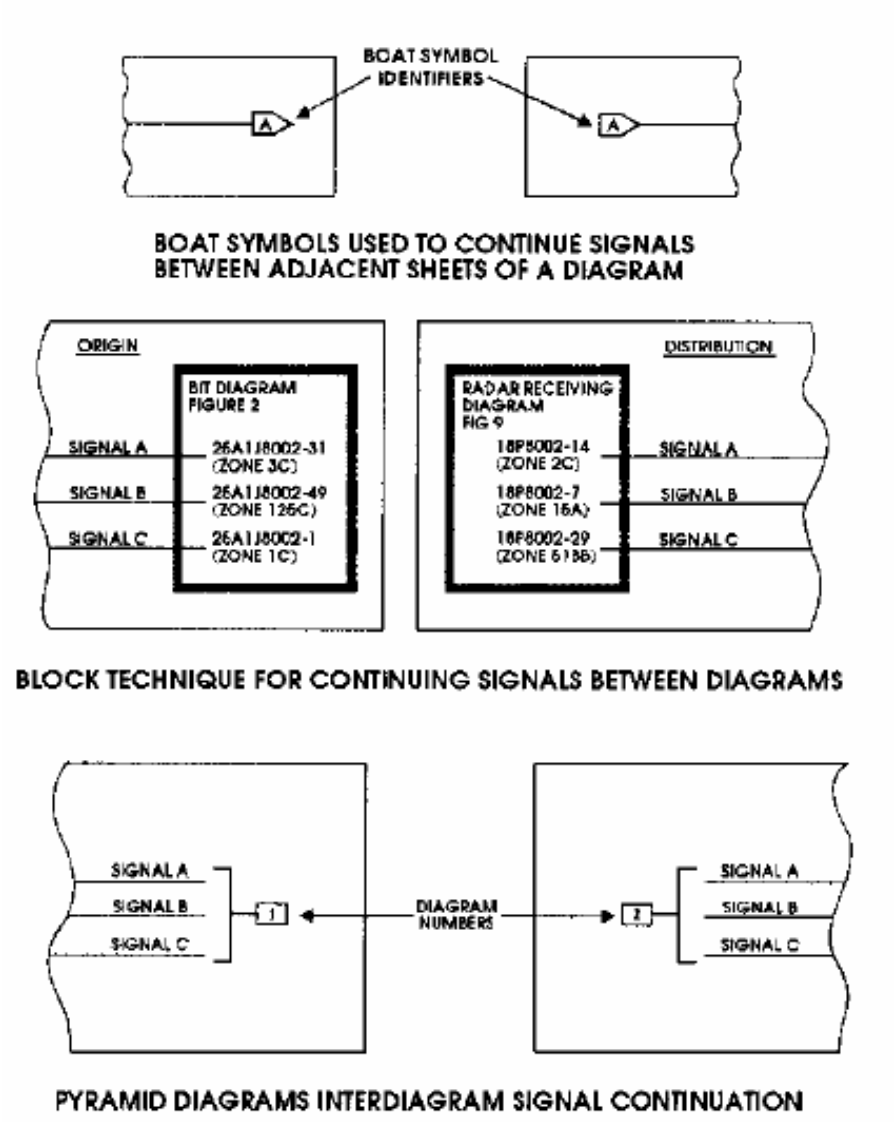

FIGURE 25. Example of boat symbols, block technique, pyramid method to continue signals-multisheet diagram.

4.9 Business rules.

4.9.1 General.

Since S1000D contains extensive information on business rules, the topic is only briefly addressed here.

S1000D is designed to cater to many different organizations, business processes, and types of products. Tailoring is required to apply S1000D to specific organizations and projects. Contractual documentation refers to or includes the description of each project's specific tailoring in the form of business rules.

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4.9.2 Constraints.

Business rules are not permitted to change the S1000D schema or its basic philosophies, but are restricted to tailoring within the specification. Business rules cannot contradict or change a mandatory rule in S1000D. After contract award, the contractor and the Government should collaborate to determine a complete set of business rules for the project by making decisions on every item on the list (refer to MIL-STD-3031, Appendix C) and any other business rules required by the unique nature of the program. It is also important that the business rules be clearly documented to avoid misunderstandings and to ensure that project deliverables meet expectations.

NOTE

Business rules should reference any applicable source(s) and not repeat the content.

4.9.3 Sources of business rules.

S1000D explicitly identifies the vast majority of possible business rule decisions. MIL-STD-3031 extends this decision point identification by providing business rules for all decision points that are the responsibility of the DOD or the Army. All remaining identified project decision points are documented and are provided in Appendix C of MIL-STD-3031. It is expected that the unique characteristics of many projects will require additional business rules that were not anticipated by either S1000D or MIL-STD-3031.

4.9.4 Development of business rules.

Development of business rules should take into consideration the constraints in 4.9.2. New business rules should be clearly written in contractual language (i.e., use of "shall" statements) so that users cannot misinterpret them. Consideration of any and all possible misinterpretations should be identified and any that are found should be corrected.

Documenting project decisions cannot be done at one time. Many decisions will not be known at the onset, but others will. It is recommended that a project attempt to answer the overarching decision points first. Some of these overarching decisions include: identifying model identification codes, specific use of certain data module types, end item breakdown (to determine the SNS), completing as much as possible of the functionality and content matrices, and so on.

Also, when initially reviewing decision points, a project can quickly eliminate decision points that do not apply.

For example, if a project had previously decided not to use the learning, process, technical information repository, and wiring data modules types, all decision points that apply to these data module types can be quickly eliminated. The project can then address decision points related to these topics with an entry similar to, "Use of the learning data module type is prohibited by Project X." If the project has also determined only two publication types, operator’s manual and field maintenance manual including parts list, will be developed, only decision points applicable to these manuals need to be considered. Any other business rules that are not related to the content requirements of the decided publication types (as defined by the content selection matrices) can be quickly eliminated.

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NOTE

The use of full sentences is recommended to ensure the decision is clearly understood.

Many rules are related to the identification and status section which is common in multiple data module types. The rules pertaining to this section should take into consideration all the data module types which may be affected. The final decision will apply equally, whether it be to a description data module, ipd, brex, techrep, or other similar data type.

It is also possible that a decision made regarding the identification and status section could affect other data module types in the content section (element **`<content>`**). For example, the skill level (element **`<skillLevel>`**) also includes the attribute **`skillLevelCode`**. The business rule decision, within identification and status, requires a project to determine the use and definition of the element **`<skillLevel>`**. The description states its use is for training and, if used, is applied consistently to all data modules. If the project determined training would not be involved and made a blanket decision to disallow the use of **`<skillLevel>`** and its attribute **`skillLevelCode`**, issues could arise in the future without a clearly stated business rule. If the project needed to identify a skill level on certain procedural steps, the blanket decision to prohibit the use of the attribute **`skillLevelCode`** would create a conflict.

As long as the statement is clear, issues like this will not occur. Stating something similar to, "Within the identification and status section of data modules only, the element **`<skillLevel>`** and its attribute **`skillLevelCode`** shall not be used." This provides the author of the Business Rules EXchange (BREX) a clear target of what should not be allowed, but does not prohibit the use or definition elsewhere.

NOTE

This is only an example regarding a clear decision. In accordance with MIL-STD-3031 Revision A the use of the element <**`skillLevel`**>, within the identification and status section, is prohibited.

4.10 Schemas.

With the release of Issue 4.0, S1000D applies to only XML-authored content. While Document Type Definitions (DTDs) also support XML, only XML Schema Definitions (XSD) are used to define the structure of all S1000D XML instances.

Many Web sites are dedicated to XML and provide basic-to-advanced knowledge. Some of these sites are listed in Table IV.

TABLE IV. Schema and Extensible Markup Language (XML) references.

Title	URL
XML Training Center - Introduction to XML	http://www.uwplatt.edu/web/wtc/xml/index.html
XML Web Development Resource - XML Programming Developer's Guide	http://www.xml-training-guide.com/
DTDs versus XML Schema: A Practical Study	http://webdb2004.cs.columbia.edu/papers/6-1.pdf
XML Primer	http://www.w3schools.com/web/web_xml.asp
XML QuickStart	http://www.devx.com/projectcool/Article/19944

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TABLE IV. Schema and Extensible Markup Language (XML) references.

Title	URL
Zvon: XML basics quick start	http://www.zvon.org/o_html/group_xml_newbie.html
Essential XML Quick Reference: A Programmer's Reference to XML, XPath, XSLT, XML Schema, SOAP, and more (Free book)	http://www.theserverside.net/tt/books/addisonwesley/EssentialXML/index.tss

4.10.1 Schema association.

In order to validate an XML document or file, a schema is associated with each XML file. This is also known as a schema declaration. A schema is declared on the root element, as attribute values, of an XML file.

First, the attribute **`xmlns:xsi`** includes the value "**`http://www.w3.org/2001/XMLSchema-instance`**" in order to use the attribute **`xsi:noNamespaceSchemaLocation`**. This declares the namespace for XML Schema (and its prefix **`xsi:`**). The **`noNamespaceSchemaLocation`** attribute is defined in that namespace.

This attribute then allows the declaration of a schema for elements that do not have a namespace prefix. The attribute **`xsi:noNamespaceSchemaLocation`** contains the location of the schema with which to validate the XML file. For example:

```
<documentRoot xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="YourSchema.xsd">
...
```

To specify the S1000D descriptive data module type, use the following:

```
<dmodule xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="http://www.s1000d.org/S1000D_4-
0/xml_schema_flat/descript.xsd" ...>
...
</dmodule>
```

Most XML editors are able to generate sample XML files which include the correct schema location information and all basic required elements and attributes. Any related schemas will also be automatically declared. This is useful to create a template containing all Army and project-required elements and attributes. Templates will differ for each data module type (for example, descriptive or procedural).

4.11 Information management.

Information management, in accordance with S1000D, relates to information control numbers and data module lists.

Refer to 4.8.1 for additional information regarding information control numbers.

Refer to 4.11.1 for information regarding data module lists.

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Figure 26 depicts the publication process. The first step in the process is to identify the publication type, such as Operator's Manual (OPI). Using this information, the content selection begins by selecting the information sets (from the content selection matrices in MIL-STD-3031), data module types, and information codes. Figure 27 and Figure 28 demonstrate specific details of this process.

Delivery of paper products is normally camera-ready output that has been developed from an XML document instance and XSL. The Contract Data Requirements List (CDRL) will specify the appropriate requirement(s). A page-based technical manual delivery is normally a page-oriented digital product (in other words, a page turner) that can be viewed on an electronic display.

4.11.1 Data module lists.

The data module list (**dml** schema) can be used to define a Data Module Requirement List (DMRL) or a Common Source Data Base (CSDB) Status List (CSL).

The draft DMRL is derived from the requirements defined in the project's content selection matrix (refer to MIL-STD-3031). The DMRL is the instrument used to define the quantity as well as types of data modules required by the project. For example, the content selection matrix is used by the project to indicate that lubrication procedures will be required, and that those procedures will be produced with procedural data modules using a specified information code and information name. The DMRL will further indicate each specific instance of a lubrication procedure data module that will be produced based on the equipment and its maintenance needs.

After coordination and agreement between the government and the vendor, the DMRL is formalized. This information feeds a CSL which will be used to capture the status of the data modules as they proceed through the process. And, finally, the data modules and publication modules are produced using the previous information as the guideline.

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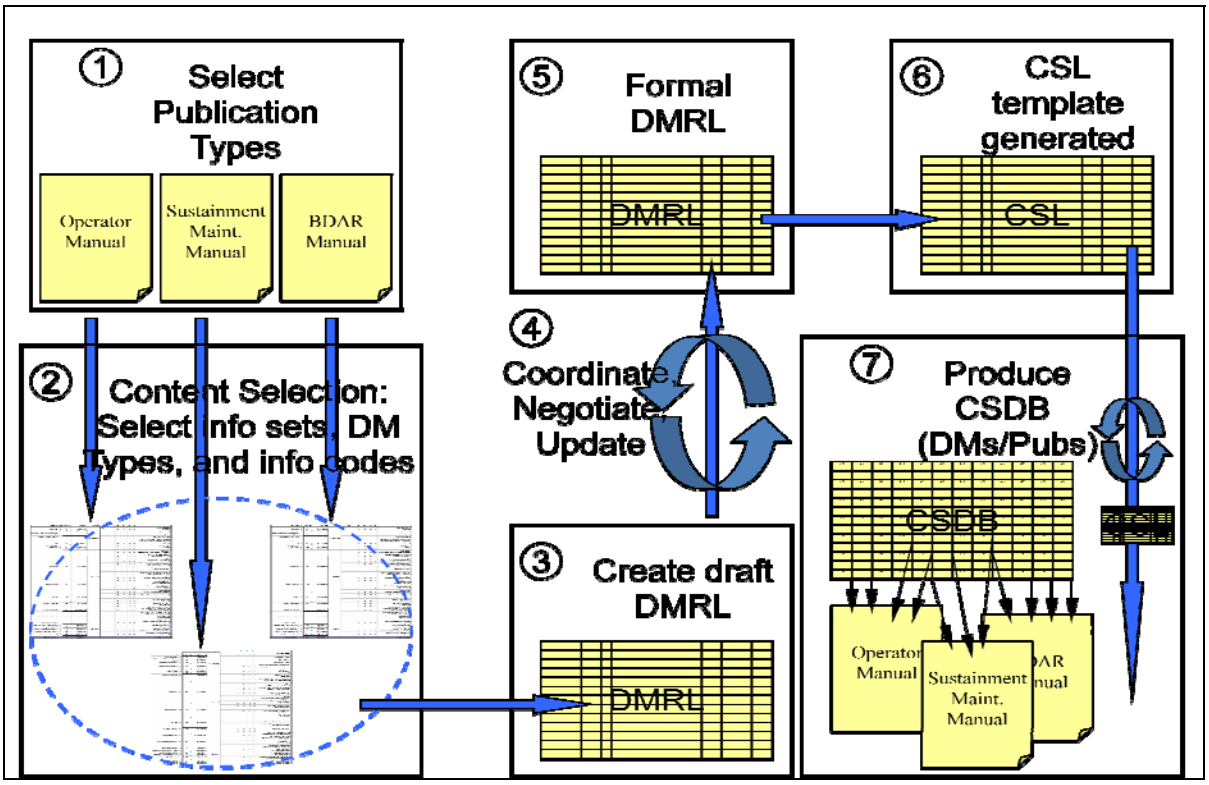

FIGURE 26. Publication process.

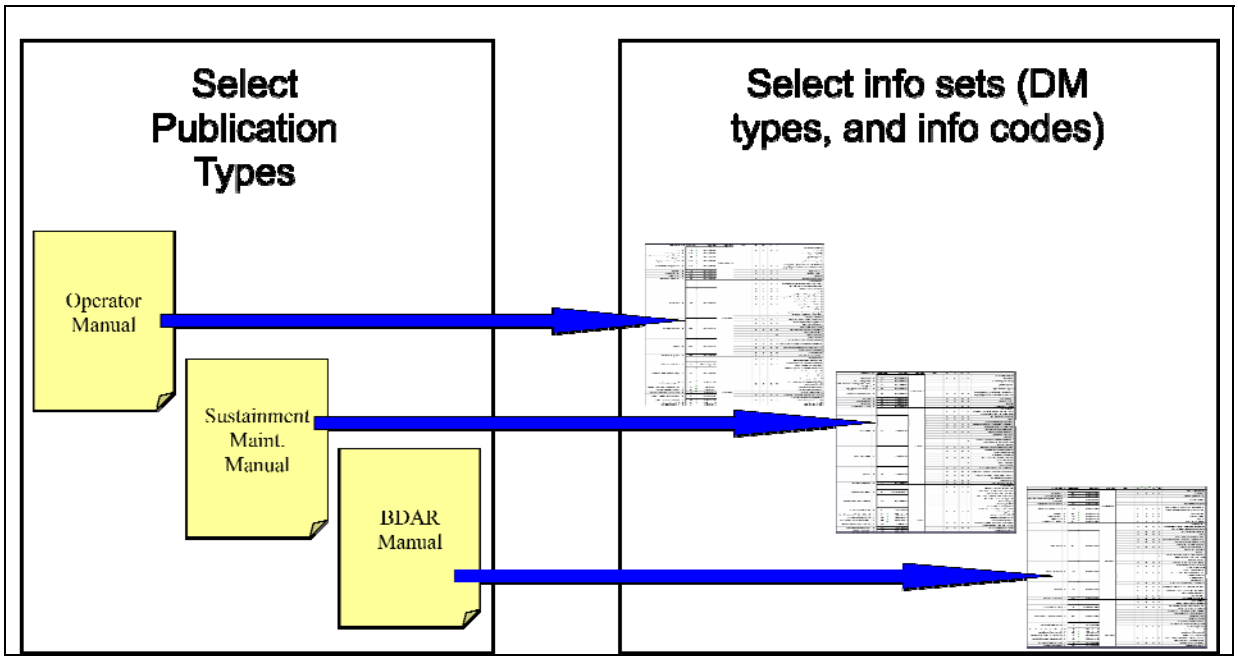

FIGURE 27. Content selection.

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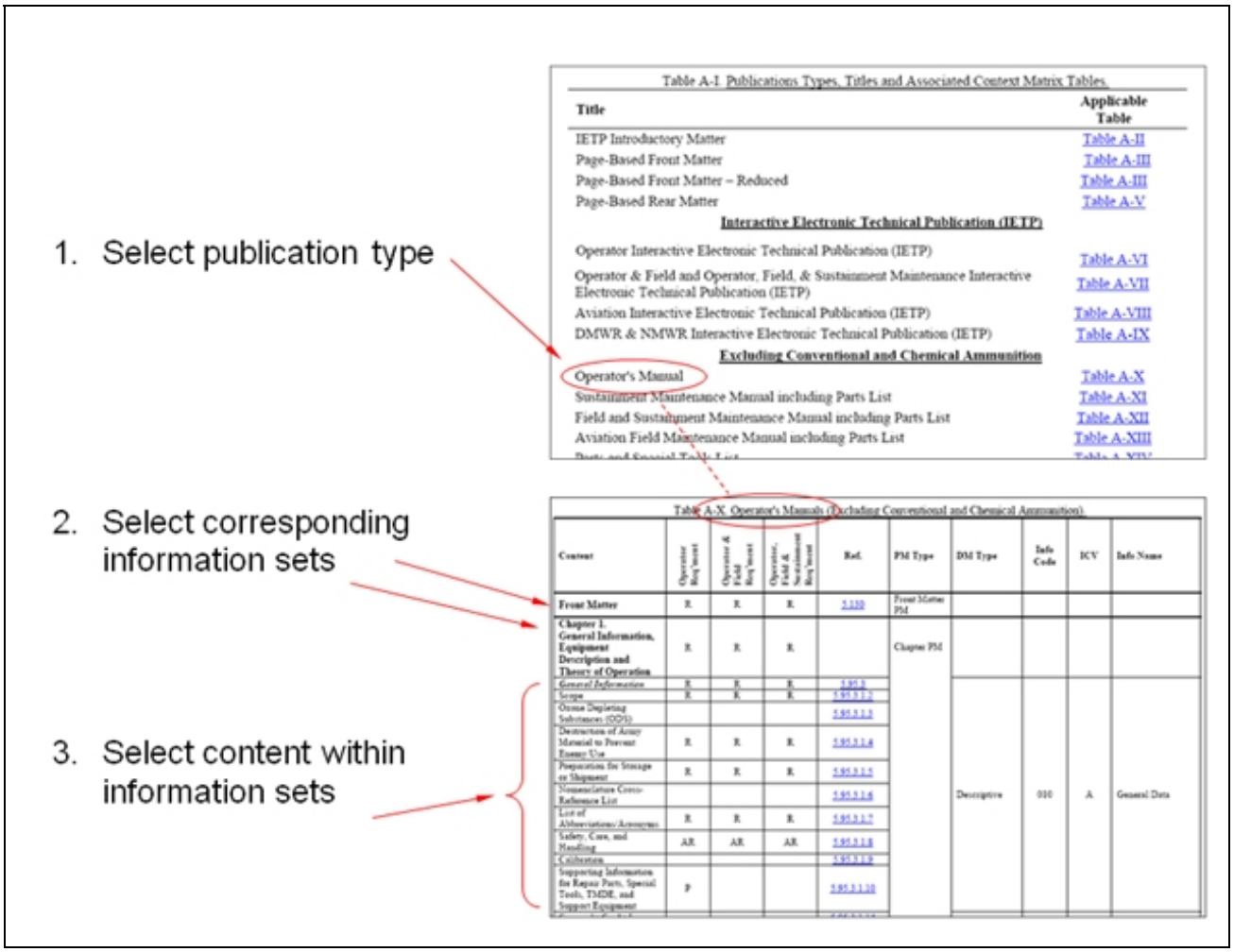

FIGURE 28. Information sets.

Data module lists consist of an identification and status section (element **`<identAndStatusSection>`**) and a content section (element **`<dmlContent>`**). While similar to other data module types, the structure of a data module list has significant differences.

For example, instead of including a data module code, the data module list includes the element **`<dmlCode>`** which includes five required attributes: **`modelIdentCode`**, **`senderIdent`**, **`dmlType`**, **`yearOfDataIssue`**, and **`seqNumber`**.

NOTE

Projects should ensure accurate population of the attributes in accordance with S1000D. Although the element names are similar, there are significant differences between the attributes used within a data module list code (element **`<dmlCode>`**) and a data module code (element **`<dmCode>`**).

4.12 Content matrices.

4.12.1 General.

MIL-STD-3031, Appendix A, contains 36 content selection tables. These tables are designed to indicate content requirements and options for various purposes and publications. The tables are

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tailorable by projects through the use of editable versions that are available for download from https://www.logsa.army.mil/mil40051/S1000D.cfm.

The content selection tables in MIL-STD-3031 are derived from the Army requirements as documented in various Army standards. The content requirements from the legacy standards have been modified for use with S1000D projects. In many cases, the S1000D data module concept allows for changes that were not necessary or possible in the legacy standards.

4.12.2 Content selection table columns.

Content Requirement	Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
FRONT MATTER		5.128.1					
Front Cover	R	5.128.1.1.3	Generated from PM metadata		N/A	N/A	
(MC) Promulgation Letter	AR	5.128.1.1.4	Front Matter PM	Descriptive	023	M	Promulgation letter
Warning Summary	AR	5.128.1.1.5		Descriptive	012	J	Safety summary
Revision Summary	AR	5.128.1.1.6		Descriptive	003	C	Revision summary
List of Effective Data Modules	R	5.128.1.1.7		Descriptive	00S	A	List of effective data modules
Title Block Page	R	5.128.1.1.8		Descriptive	001	A	Title page
Table of Contents	R	5.128.1.1.9		Descriptive	009	A	Table of contents
Glossary		5.128.1.1.10		Descriptive	006	A	List of terms
How to Use This Manual		5.128.1.1.11		Descriptive	018	B	How to use this manual

FIGURE 29. Content selection table example.

Each table contains the following columns:

a. Content Requirement – This column contains the name of the content requirement. Legacy terms, familiar to users of MIL-STD-40051, are used in this column to facilitate a better understanding of S1000D terminology.
b. Req. – This column is the requirement column and the cells contain a marker indicating if the corresponding content is required (R), prohibited (P), optional (blank), or to be prepared as required (AR).
c. Ref. – This column contains a reference to the narrative description (in MIL-STD-3031) of the corresponding content requirement. Authors should refer to the narrative to ensure that all mandatory parts of each content requirement are satisfied.
d. PM Type – Each table includes one or more publication module type columns. These provide the human readable meaning for the attribute values for **`pmEntryType`** in the publication module schema of the corresponding nested publication. In the Figure 29 example, the **`pmEntryType`** value is **`"pmt51,"`** which equates to Front matter. Refer to MIL-STD-3031 for a complete list of **`pmEntryType`** values.
e. DM Type – The data module type column indicates the schema that should be used to prepare the corresponding data module.
f. Info Code – The information code column identifies the code that should be used to populate the attribute **`infoCode`** in the data module's **`<dmCode>`** element.

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g. ICV – This column contains the value for the attribute **`infoCodeVariant`** in the data module's **`<dmCode>`** element.
h. Info Name – This column contains the information name that directly corresponds to the information code and variant of the data module (element **`<infoName>`**). The information name is often the same or similar to the legacy term in the content column.

4.12.3 Tailoring the content selection tables.

As indicated, the project is expected to tailor the Req. column to customize the content requirements to match the needs of the project and their equipment. The columns may also be tailored as described below:

a. Content – No tailoring is permitted or necessary in this column.
b. Req. – This column requires the most tailoring. Projects may not change any cells indicated as R (required) or P (prohibited). Projects should tailor the cells for the optional content to indicate if it is required or prohibited (or possibly AR (as required)). In some (but not all) cases the project may be able to indicate that AR content is either required or prohibited. The AR content is required if the condition or the equipment is present. For example, in Marine Corps publications, the Promulgation Letter is required; but for the other Services, it is not. If a project is developing a publication for Army use only, the Promulgation Letter should be marked as P.
c. Ref. – No tailoring is permitted or necessary in this column.
d. PM Type – The content selection matrices provide a representation of the minimum requirements for Army technical publications. The nested publications identified in the tables are required, but they can be added to through project tailoring. For example, a large nested chapter publication module (**`pmEntryType="pmt52"`**), may be subdivided into smaller portions by using additional nested section publication modules (**`pmEntryType="pmt53"`**). Refer to MIL-STD-3031 for a complete list of **`pmEntryType`** values. This may be done to improve readability, content organization, or to partially replicate legacy work package structures.

NOTE

The work package is a legacy concept that is deliberately not maintained in MIL-STD-3031. The nested section publication module can be used to group work package-like content together but it is not possible to consolidate preliminary requirements from multiple data modules and present them to the user at a "work package" level.

Refer to 4.12.5 and 5.1.9.1.1.3 for additional information about expanded use of nested publication modules.

e. DM Type – No tailoring is permitted or necessary in this column.
f. Info Code, ICV, Info Name – These columns are only tailorable when PD (project decision) appears in the Info Code column. This indicates that the project needs to specify the content that is only partially indicated by the content requirement. An example of this is in the Page-Based Rear Matter content selection table. In the Content row for Foldout Pages, PD is marked in the Info Code column. This indicates that the project should identify the correct information code, variant, and information name for the content that is found in the foldout (for example, 051A Wiring Diagram).

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4.12.4 Multiple data modules.

The content selection tables can only indicate one data module for each identified requirement when in fact multiple data modules (or multiple nested publication modules) may be required. For example, in the Sustainment Maintenance Manual content selection table (refer to Figure 30), only one troubleshooting data module is listed. And each data module contains one procedure. The publication will actually need one data module for each required troubleshooting procedure.

Content Requirement	MM0 & M0B Req.	Ref.	PM Type	DM Type	Info Code	ICV	Info Name
*TROUBLESHOOTING PROCEDURES	AR	5.86.1.18		Descriptive	018	C	Troubleshooting introduction
				Procedural	PD		General troubleshooting procedures and precautions
				Procedural	331	B	Pretest setup procedures
				Fault	421	B	Troubleshooting procedure
				Procedural	334	B	Post-troubleshooting shutdown procedures

FIGURE 30. Partial sustainment maintenance manual content selection table.

Additional examples where multiple data modules will be needed include maintenance procedures such as lubrication and installation. The content selection tables will list lubrication and installation only once in the maintenance chapter (to identify that they are required and to specify the information codes and information names), but, in fact, a dedicated data module is needed for each lubrication procedure and for each installation procedure required by the equipment.

By starting with the content selection tables and then adding the additional instances of data modules that are needed (for multiple occurrences of the same content type), the project is well on its way to populating their DMRL.

4.12.5 Multiple nested publication modules.

In the same Sustainment Maintenance Manual example, the complete troubleshooting procedure is made up of several data modules (Troubleshooting Introduction, Pretest Setup, Troubleshooting, and Post-Troubleshooting Shutdown). A project will likely choose to use a nested section publication module to group these related data modules together (**`pmEntryType="pmt53"`**). Refer to MIL-STD-3031 for a complete list of **`pmEntryType`** values. If this is done, there will be one troubleshooting nested publication module for each required procedure. Figure 31 provides an illustration of this concept.

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The example is an illustration of the first portion of a Sustainment Maintenance Manual. It includes the parent publication (Sustainment Maintenance Manual), a nested front matter publication module, a nested general information publication module with five data modules, a nested Troubleshooting master index chapter, and a nested troubleshooting procedures chapter.

The content selection table provides an indication of a single example of a troubleshooting procedure, but in reality many would be needed for moderately complex equipment. In the troubleshooting example in Figure 31, three nested section publication modules contain individual troubleshooting and operational checkout procedures.

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PM - Sustainment Maintenance Manual

Nested PM - Front Matter (`pmEntryType=pmt51` [Front matter])
- DESCRIPTIVE DM Title Page (001A)
- DESCRIPTIVE DM Safety Summary (012J)
- DESCRIPTIVE DM List of Effective Data Modules (00SA)
- DESCRIPTIVE DM Table of Contents (009A)
- DESCRIPTIVE DM List of Terms (006A)
- DESCRIPTIVE DM How to Use This Manual (018B)

Nested PM - Chapter 1. General Information, Equipment Description and Theory of Operation (`pmEntryType=pmt52` [Chapter])
- DESCRIPTIVE DM General Data (010A)
- DESCRIPTIVE DM General Information (010B)
- DESCRIPTIVE DM Equipment Description and Data (000B)
- DESCRIPTIVE DM Theory of Operation (042F)

Nested PM - Chapter 2. Troubleshooting Procedures (`pmEntryType=pmt52` [Chapter])
- DESCRIPTIVE DM Malfunction Index (410F)

Nested PM – Operational Checkout – Unit A (`pmEntryType=pmt53` [Section])
- DESCRIPTIVE DM Introduction (018V)
- Procedural DM Pretest Setup Procedures (331B)
- Procedural DM Operational Checkout Test Procedure (320C)
- Procedural DM Post-Operation Checkout Shutdown Procedures (334C)

Nested PM – Operational Checkout – Unit B (`pmEntryType=pmt53` [Section])
- DESCRIPTIVE DM Introduction (018V)
- Procedural DM Pretest Setup Procedures (331B)
- Procedural DM Operational Checkout Test Procedure (320C)
- Fault DM Message Index (410G)
- Procedural DM Post-Operation Checkout Shutdown Procedures (334C)

Nested PM – Troubleshooting – Unit C (`pmEntryType=pmt53` [Section])
- DESCRIPTIVE DM Troubleshooting Introduction (018C)
- Procedural DM Pretest Setup Procedures (331B)
- Fault DM Troubleshooting Procedure (421B)
- Procedural DM Post-Troubleshooting Shutdown Procedures (334C)

FIGURE 31. Nested publication modules.

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4.12.6 Project-specific publications.

The content selection tables can also be combined to meet the unique requirements of a project. For example, a project may have a requirement for an IETP that includes the Sustainment Maintenance Manual content requirements but they also have requirements to provide a Preventive Maintenance Checklist and content for Preparation for Shipment of Army Aircraft. This can be accomplished by combining those three content selection matrices into one. The project will have to make decisions regarding order of content and care should be taken to not duplicate content unnecessarily (such as front and rear matter).

4.13 Display devices.

Consideration should be given for capabilities of intended display devices. It is recommended to design for the least capable display device (for example, 8-bit or monochrome devices). The use of color should be controlled by human factors studies or usability testing. The operational environment and equipment in use should dictate some rules regarding the colors used. There can be operational considerations such as night operations, red-light conditions, and where color has special meaning. Any colors that are used should comply with the rules in S1000D (Authoring - Illustration rules and multimedia).

4.14 Compact Disk (CD) and Digital Video Disk (DVD) preparation.

The section includes guidance for the preparation of information for the DVD/CD face, flyleaf, jewel case, and mailer for IETPs which is in addition to the instructions contained in DA PAM 25-40.

4.14.1 Compact Disk/Digital Video Disk (CD/DVD) label data.

The CD/DVD will have a label that includes at least the following information:

a. Branch(es) of Service.
b. Publication Module Code (refer to 4.14.2).
c. CD/DVD set number, as applicable (for example., 1 of 4) (refer to 4.14.3).
d. Equipment Media (EM) number (refer to 4.14.4).
e. Initial Distribution Number (IDN) (refer to 4.14.4).
f. Publication Identification Number (PIN) (refer to 4.14.4).
g. Supersession data (refer to 4.14.5).
h. Copyright information, as applicable (refer to 4.14.6).
i. Distribution Statement (refer to 4.14.7).
j. Export Control Notice, as applicable (refer to 4.14.8).
k. Destruction Notice (refer to 4.14.9).
l. Other protective markings (refer to 4.14.10).
m. Operating System requirements (for example, Windows 2000 or higher).
n. Date of CD/DVD.
o. Compression information, if applicable.

4.14.2 Publication Module Code (PMC).

This should be the PMC assigned to the IETP.

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4.14.3 Compact Disk/Digital Video Disk (CD/DVD) set number.

If there are two or more discs used as a result of the series and size of related equipment/weapon system manuals, then number the discs, as applicable, 1 of 2, 1 of 3, and so on. If only one disc is utilized, leave blank.

4.14.4 Equipment Media (EM) number, Initial Distribution Number (IDN), and Publication Identification Number (PIN).

Before generating a pre-master IETP, a request should be made for assignment of the numbered authentication block, EM number, PIN, and IDN from Army Publishing Directorate (APD). This request can be made either by accessing the Case Management System (CASM) database, PAILS database, or by e-mail 30 days prior to submission of a DA Form 260 to APD and release of the official CD/DVD to APD for replication.

4.14.5 Supersession data.

For first-time CD/DVDs, the following statement should be printed on the label:

"This is the first disc in this series." When a disc is superseded, the statement should be printed accordingly; for example, "This disc supersedes XXXX, dated (date)."

4.14.6 Copyright notice.

If the CD/DVD contains material that is covered by a copyright, the label should contain the copyright notice as directed by MIL-STD-3031.

4.14.7 Distribution statement.

When one or all of these notices are applicable, the notice(s) should be printed on the CD/DVD label. The following Distribution Restriction statements should be used for either IETPs as applicable:

a. Distribution Restriction B. Use the following statement verbatim:

"DISTRIBUTION RESTRICTION STATEMENT B. Distribution authorized to U.S. Government agencies only. This determination was made on (insert CD/DVD date) based on the highest level of distribution restriction of any Interactive Electronic Technical Publication (IETP) on the disc. Requests for release of IETPs included on this disc should be referred to the proponent as listed on the front cover of the IETP."

b. Distribution Restriction C. Use the following statement verbatim:

"DISTRIBUTION RESTRICTION STATEMENT C. Distribution authorized to U.S. Government agencies and their contractors only. This determination was made on (insert CD/DVD date) based on the highest level of distribution restriction of any Interactive Electronic Technical Publication (IETP) on the disc. Requests for release of IETPs included on this disc should be referred to the proponent as listed on the front cover of the IETP."

c. Distribution Restriction D. Use the following statement verbatim:

"DISTRIBUTION RESTRICTION STATEMENT D. Distribution authorized to the DoD and U.S. DoD contractors only. This determination was made on (insert CD/DVD date) based on the highest level of distribution restriction of any Interactive Electronic Technical Publication (IETP) on the disc. Requests for release of IETPs

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included on this disc should be referred to the proponent as listed on the front cover of the IETP."

d. Distribution Restriction E. Use the following statement verbatim:

"DISTRIBUTION RESTRICTION STATEMENT E. Distribution authorized to DoD components only. This determination was made on (insert CD/DVD date) based on the highest level of distribution restriction of any Interactive Electronic Technical Publication (IETP) on the disc. Requests for release of IETPs included on this disc should be referred to the proponent as listed on the front cover of the IETP."

e. Distribution Restriction: For Official Use Only (FOUO). Distribution Statement B applies to FOUO.

4.14.8 Export control notice.

If the CD/DVD contains information that is subject to export control (as directed by DODD 5230.25), the label should contain an export control statement as specified in DODD 5230.24.

4.14.9 Destruction notice.

All CD/DVD labels should contain the following destruction notice:

"Destroy by any means possible to prevent disclosure of contents or reconstruction of the document."

Classified data should also be compliant with DODD 5220.22-M and DODI 5200.01-R.

4.14.10 Protective markings.

Protective markings information (for example, FOUO) should be printed on the CD/DVD label.

4.14.11 Information not contained on Compact Disk/Digital Video Disk (CD/DVD) face.

The face of the CD/DVD should not contain the following:

a. The command seal or emblem of the Department of Defense, Department of the Army, or local command.
b. More than two colors. Use of multicolor will be approved only when it makes a decisive contribution to the intended purpose of the product. The criteria and standards for using more than two colors on the face of the disc should follow the guidance in AR 25-30.
c. Contractor/company logos or names.

4.15 Compact Disk/Digital Video Disk (CD/DVD) mailer data.

4.15.1 Outside panel of Compact Disk/Digital Video Disk (CD/DVD) mailer.

Refer to Figure 32 for example.

4.15.1.1 Outside panel of Compact Disk/Digital Video Disk (CD/DVD) mailer (front).

The outside panel of the disc mailer (front) should contain the following:

a. The return address "Commander, U. S. Army Publishing Agency, Distribution Operations Facility, ATTN: JDHQSV-PAS, 1655 Woodson Road, St. Louis, MO 63114-6128" in the upper left-hand corner.
b. A bold, single line placed between the address and the capitalized words "**OFFICIAL BUSINESS**."

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c. The word "**CONTENT**" above the EM number, date of the CD/DVD, and IDN.
d. The words "**FRAGILE**" and "**HANDLE WITH CARE**" printed in the lower left-hand corner.

4.15.1.2 Outside panel of mailer (back).

The PIN number should be printed in the lower right-hand corner.

4.15.1.3 Outside of mailer (spine).

The spine should contain the EM number and the date of the CD/DVD.

4.15.2 Inside of mailer (left panel).

The branch of service, IDN, PIN, and name of weapon system/equipment should be printed, immediately followed by the FOUO notice, or other protective markings (if applicable), Destruction notice, and installation instructions, using boldface type for emphasis, as follows:

a. Distribution statement. Use one of the statements in 4.14.7.
b. Destruction notice. Use the following statement verbatim:

"**DESTRUCTION NOTICE**. Send to National Security Agency for destruction. See right side of mailer for instructions."

c. Installation instructions and operating environment. Detailed installation instructions should be printed here according to the specific software being utilized. Instructions for uninstalling the disc contents should also be included.

4.15.3 Inside of mailer (right panel).

The following information should be printed verbatim, using boldface and/or capital letters for emphasis as indicated: The authentication of the CD/DVD should be printed immediately following the below information. The PIN should be printed in the lower right-hand corner of the mailer panel.

"**DESTRUCTION INSTRUCTIONS**. National Security Agency (NSA) accepts Distribution Restricted CDs/DVDs for destruction and meets environmental standards. If your local facility does not handle CD/DVDs, send expired ones FIRST CLASS to Director, National Security Agency, 9800 Savage Road, ATTN: CMC S714, Suite 6890, Fort George G. Meade, MD 20755-6000.

REQUIRED PROCEDURES: Ship ONLY WHOLE discs. Do not send sleeves, mailers, cases. No need to scratch discs going to NSA. Maximum box size and weight: 18 inches in height, width, or length, and 40 pounds. Send no more than 10 boxes at a time. If shipper wants receipt, include documentation/destruction form and enter total discs in box; if others want receipt, also include self-addressed envelope. SINGLE wrap outside box with brown paper. If loose discs rattle, mark box "Rattle OK."

CHANGES AND REVISIONS. To get future changes and revisions to this IETP: Submit a subscription change requirement using Standard Army Publications Systems (STARPUBS). For details, see DA PAM 25-33. Include the Initial Distribution Number (IDN) shown on the face of the disc. Also, include the quantity needed. Units who fail to submit a subscription change requirement will not get future changes and revisions to this IETP. If you submit a subscription for this disc, reduce or delete your requirements for the paper version of the publications contained on this disc, as appropriate."

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4.16 Jewel case flyleaf data.

If a jewel case is used, rather than a printed mailer, the flyleaf should contain the same information as indicated for the mailer.

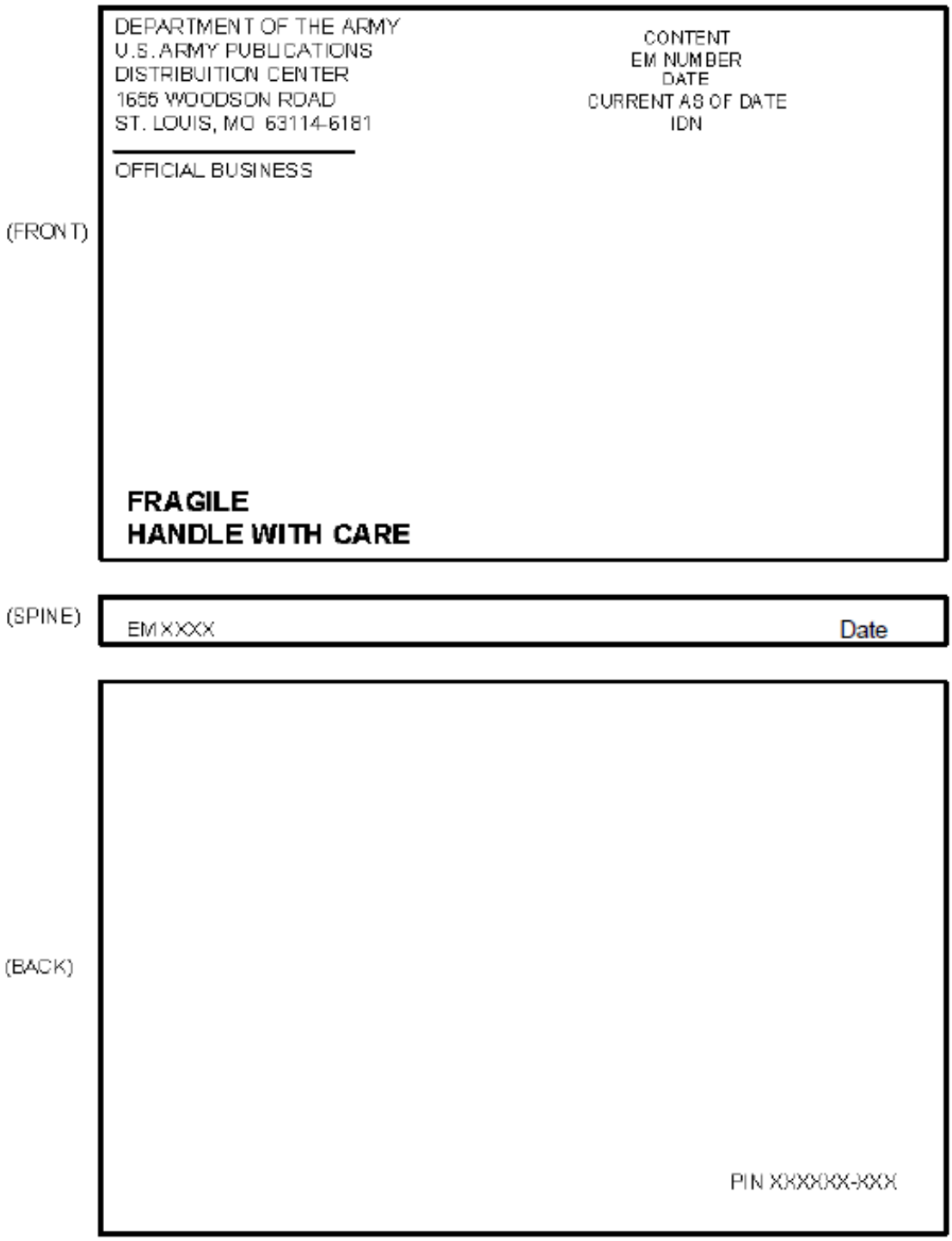

FIGURE 32. Example of CD mailer outside front, spine, and back.

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5. DETAILED GUIDANCE

5.1 Data module types.

5.1.1 General.

The data module types (and associated schemas) listed in Table V support current Army requirements. These data module types are listed in the content selection matrix of Appendix A in MIL-STD-3031 and are required to be used for the associated content. The data module types (and associated schemas) listed in Table VI are not required for use in Army technical publications. Last, Table VII lists any remaining data module types (and schemas) or schema fragments included with S1000D.

TABLE V. Data module types supporting Army requirements.

Type		Content	Schema	Notes
5.1.2	Descriptive	Descriptive information	`descript`	Typically authored using paragraphs.
5.1.3	Procedural	Procedural information	`proced`	Typically authored using steps.
5.1.4	Crew	Crew/Operator information	`crew`	Two types: descriptive w/procedural or only procedural
5.1.5	Fault	Fault/Troubleshooting information	`fault`	Typically contains troubleshooting/fault information. Allows for five types of fault information. These are fault reporting (in terms of isolated, detected, observed or correlated faults) or fault isolation.
5.1.6	Checklist	Checklist information	`checklist`	Used to present shortened procedures with maintenance checklist data.
5.1.7	Maintenance Planning	Maintenance Planning information	`schedul`	Used to capture maintenance allocation data.
5.1.8	IPD	Illustrated Parts Data information	`ipd`	Used to contain the illustrated parts catalog information.
5.1.9	Publication Module	Entire publication or parts therein	`pm`	Used as a wrapper that identifies front matter, rear matter, sections, chapters, volumes, or an entire publication.
5.1.10	Process	Process information	`process`	Used to contain interactive processing structures providing the capability to sequence other data modules or steps within it.
5.1.11	BREX	Business Rules EXchange	`brex`	Used to capture the following: specific rules, definitions, patterns, allowed or prohibited values.
5.1.12	Technical Repository	Technical Repository information	`techrep`	Used to capture and represent reusable information.
5.1.13	Applicability Cross-Reference	Applicability Cross-Reference information	`applic crossref table`	Used to declare product attributes.
5.1.13.2	Conditions Cross-Reference	Conditions Cross-Reference information	`condcross reftable`	Used to declare conditions that can affect the applicability of data.
5.1.13.3	Products Cross-Reference	Products Cross-Reference information	`prdcross reftable`	Used as a repository for defining product instances and associating values to product attributes and conditions for each product instance.

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TABLE V. Data module types supporting Army requirements.

Type	Content	Schema	Notes
5.1.14 Container	Container information	`container`	Used to provide a mechanism to associate several alternate data modules representing the same data.

TABLE VI. Data module types not required for use in Army technical publications.

Type	Content	Schema (flat)	Notes
Wiring Data	Wiring Data information	`wrngdata`	Used to capture and represent the wiring data of the Product such as wire data, harness data, electrical equipment data and standard parts data.
Wiring Data Description	Wiring Data Description information	`wrngflds`	Used to define the occurrence, the names and the meanings of the elements and attributes that are used in the wiring data modules
Training	Training information	`learning`	Used for training information development.

TABLE VII. Additional data module types and schema fragments.

Type	Schema (flat)	Notes
Comment	`comment`	Used for comments or responses to a comment or both.
Dublin Core	`dc` (fragment)	Used for DDN.
Data Dispatch Notes	`ddn`	Used for interchange of data between customer and vendor.
Data Module List	`dml`	Used to plan, manage, and control the CSDB for individual projects.
Notations	`notations`	Used to declare multimedia (for example, audio, video, 3-D) and miscellaneous (for example, DOC, PDF, XLS) types of data.
Resource Description Framework	`rdf` (fragment)	Used for DDN.
SCORM Content	`scormcontent package`	Used to construct SCORM content packages. The package contains references to data modules, graphics and multimedia and other SCORM content in the order and structure the SCO is delivered.
XML Companion File	`xcf` (fragment)	Used as a companion file for WebCGM.
XML Linking Language	`xlink` (fragment)	Used to provide the linking mechanism for referencing.

5.1.2 Descriptive information.

5.1.2.1 General.

Descriptive data modules are used to capture and represent descriptive information. Descriptive content uses paragraphs and subparagraphs to breakdown information in logical blocks. The content is authored within primary paragraphs (element **`<levelledPara>`**) and paragraphs (element **`<para>`**), and may be enhanced with figures (element **`<figure>`**), tables and foldouts (elements **`<table>`** and **`<foldout>`**, respectively), or multimedia (element **`<multimedia>`**).

Refer to Table A-III for a list of descriptive information sets.

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An example of a descriptive data module is the Theory of Operation content requirement (refer to 5.1.2.3). This information is typically authored within a primary paragraph (element **<levelledPara>**), subparagraphs or secondary paragraphs (nested element **<levelledPara>**), paragraphs (element **<para>**), and other allowed elements as needed.

5.1.2.2 Data flow.

A descriptive data module may contain any of the following elements as the first child: **<para>**, **<warning>**, **<caution>**, **<note>**, **<levelledPara>**, **<figure>**, **<multimedia>**, **<foldout>**, **<table>**, or **<caption>**.

When authoring descriptive data modules, it is important to plan the flow of data. For example, if the nesting of subparagraphs (element **<levelledPara>**) is needed, the structure does not allow a paragraph (element **<para>**) to follow a subparagraph. Refer to Figure 33.

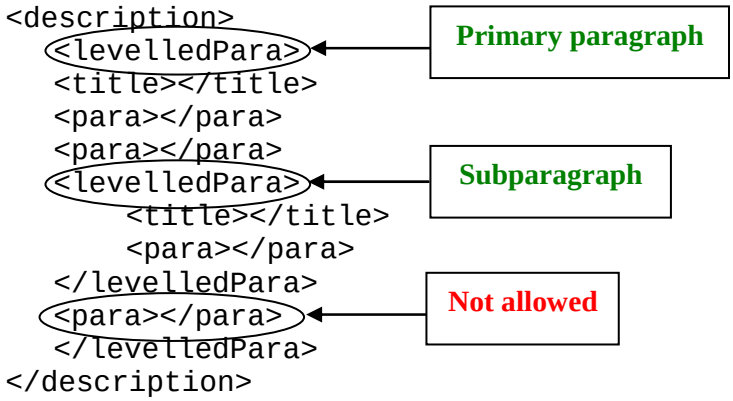

FIGURE 33. Paragraphs cannot follow subparagraphs.

5.1.2.3 Theory of operation markup example.

```
<description>
<levelledPara id="par-001">
<title>INTRODUCTION</title>
<para>This data module explains how components of the bicycle work
together.</para>
<para>Theory of operation is the same for the Mountain storm Mk1 or
Brook trekker Mk9 bicycle. The Mountain storm Mk1 bicycle is shown
unless otherwise indicated.</para>
</levelledPara>
<levelledPara id="par-002">
<title>BASIC OPERATION</title>
<para>The bicycle is designed to get you from one point to another
virtually free of additional expense.</para>
<para>The bicycle is controlled by a single operator.</para>
<para>Motion is initiated by the use of the pedals.</para>
<para>Steering is controlled by the handlebars.</para>
<para>Use the brakes to slow down or come to a complete stop.</para>
</levelledPara>
...
</description>
```

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5.1.2.4 Output.

US ARMY BICYCLE - THEORY OF OPERATION

References

Table 1 References

Chap No./Document No.	Title
None	

1 INTRODUCTION

This data module explains how components of the bicycle work together.

Theory of operation is the same for the Mountain storm Mk1 or Brook trekker Mk9 bicycle. The Mountain storm Mk1 bicycle is shown unless otherwise indicated.

2 BASIC OPERATION

The bicycle is designed to get you from one point to another virtually free of additional expense.

The bicycle is controlled by a single operator.

Motion is initiated by the use of the pedals.

Steering is controlled by the handlebars.

Use the brakes to slow down or come to a complete stop.

FIGURE 34. Sample output of theory of operation.

5.1.3 Procedural information.

5.1.3.1 General.

Procedural data modules are used to capture and represent procedural information. The content is typically authored to include steps. This information set can include common information (4.2.3.6), preliminary requirements (5.4.6), procedural steps, and closing requirements all within a single procedural data module.

Each procedural step is labeled automatically (for example, "1, 2, 3") using a style sheet. Nesting steps within each other creates sub-steps (for example, "1.1, 1.2, 1.3") containing additional or expanded details.

Refer to Table A-II for a list of procedural information sets.

Occasionally, some steps may need to be displayed with other steps or figures. This may be achieved with the use of the attribute **`keepWithNext`** (refer to 5.4.4).

An example of a procedural data module is the Preparation for Storage or Shipment content requirement (refer to 5.1.3.2).

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5.1.3.2 Preparation for storage or shipment markup example.

```
<procedure>
<commonInfo>
<commonInfoDescrPara>
<title>SECURITY PROCEDURES</title>
<para>For security procedures involved in storage and shipment of the bicycle,
refer to <externalPubRef>
<externalPubRefIdent>
<externalPubCode>AR 190-13</externalPubCode>
</externalPubRefIdent>
</externalPubRef>.</para>
</commonInfoDescrPara>
</commonInfo>
<preliminaryRqmts>
<reqCondGroup>
<reqCondNoRef>
<reqCond>Dry bicycle</reqCond>
</reqCondNoRef>
</reqCondGroup>
<reqPersons>
<personnel numRequired="1">
<personCategory personCategoryCode="Maintainer"/>
<estimatedTime unitOfMeasure="hr">0.25</estimatedTime>
</personnel>
</reqPersons>
<reqSupportEquips>
<supportEquipDescrGroup>
<supportEquipDescr id="seq-0001">
<name>Specialist toolset</name>
<identNumber>
<manufacturerCode>KZ666</manufacturerCode>
</identNumber>
<reqQuantity unitOfMeasure="EA">1</reqQuantity>
</supportEquipDescr>
<supportEquipDescr id="seq-0002">
<name>Hook (large, rubber-coated, ceiling)</name>
<identNumber>
<manufacturerCode/>
</identNumber>
<reqQuantity unitOfMeasure="EA">1</reqQuantity>
</supportEquipDescr>
</supportEquipDescrGroup>
</reqSupportEquips>
<reqSupplies>
<supplyDescrGroup>
<supplyDescr id="sup-0001">
<name>General lubricant</name>
<identNumber>
<manufacturerCode>KZ222</manufacturerCode>
</identNumber>
<reqQuantity>As required</reqQuantity>
</supplyDescr>
<supplyDescr id="sup-0002">
<name>Cleaning rag</name>
<identNumber>
<manufacturerCode/>
</identNumber>
<reqQuantity unitOfMeasure="EA">3</reqQuantity>
</supplyDescr>
```

Preliminary requirements follow common information.

FIGURE 35. Preparation for storage or shipment markup.

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```
<supplyDescr id="sup-0003">
<name>Plastic sheet</name>
<identNumber>
<manufacturerCode/>
</identNumber>
<reqQuantity unitOfMeasure="EA">1</reqQuantity>
</supplyDescr>
<supplyDescr id="sup-0004">
<name>Duct tape</name>
<identNumber>
<manufacturerCode/>
</identNumber>
<reqQuantity unitOfMeasure="EA">1</reqQuantity>
</supplyDescr>
<supplyDescr id="sup-0005">
<name>Mesh bag</name>
<identNumber>
<manufacturerCode/>
</identNumber>
<reqQuantity unitOfMeasure="EA">1</reqQuantity>
</supplyDescr>
</supplyDescrGroup>
</reqSupplies>
<reqSpares>
<noSpares/>
</reqSpares>
<reqSafety>
<safetyRqmts>
<warning id="wrn-001">
<warningAndCautionPara>Do not get <internalRef internalRefId="sup-0001"
internalRefTargetType="supequip" xlink:actuate="onRequest"
xlink:show="replace" xlink:href="sup-0001"/> into your eyes. If it gets into
your eyes, wash them immediately in clean, warm
water.</warningAndCautionPara>
</warning>
</safetyRqmts>
</reqSafety>
</preliminaryRqmts>
<mainProcedure>
<proceduralStep id="stp-0001">
<para>Use the brush from the <internalRef internalRefId="seq-0001"
internalRefTargetType="supequip" xlink:actuate="onRequest"
xlink:show="replace" xlink:href="seq-0001"/> to clean the brakes, the shift
levers, the sprockets and the tires. Look for dirt caked around the
derailleurs, brakes, and bottom bracket.</para>
</proceduralStep>
<proceduralStep id="stp-0002">
<para>Wipe down the bike with the <internalRef internalRefId="sup-0002"
internalRefTargetType="supequip" xlink:actuate="onRequest"
xlink:show="replace" xlink:href="sup-0002"/>.</para>
</proceduralStep>
<proceduralStep id="stp-0003">
<para>Lubricate the chain and sprockets. Use <internalRef
internalRefId="sup-0001" internalRefTargetType="supequip"
xlink:actuate="onRequest" xlink:show="replace" xlink:href="sup-0001"/>. Spin
the pedals and shift through gears to distribute the lubricant
thoroughly.</para>
</proceduralStep>
```

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```
<procedure>
<commonInfo>
<commonInfoDescrPara>
<title>SECURITY PROCEDURES</title>
<para>For security procedures involved in storage and shipment of the bicycle,
refer to <externalPubRef>
<externalPubRefIdent>
<externalPubCode>AR 190-13</externalPubCode>
</externalPubRefIdent>
</externalPubRef>.</para>
</commonInfoDescrPara>
</commonInfo>
<preliminaryRqmts>
<reqCondGroup>
<reqCondNoRef>
<reqCond>Dry bicycle</reqCond>
</reqCondNoRef>
</reqCondGroup>
<reqPersons>
<personnel numRequired="1">
<personCategory personCategoryCode="Maintainer"/>
<estimatedTime unitOfMeasure="hr">0.25</estimatedTime>
</personnel>
</reqPersons>
<reqSupportEquips>
<supportEquipDescrGroup>
<supportEquipDescr id="seq-0001">
<name>Specialist toolset</name>
<identNumber>
<manufacturerCode>KZ666</manufacturerCode>
</identNumber>
<reqQuantity unitOfMeasure="EA">1</reqQuantity>
</supportEquipDescr>
<supportEquipDescr id="seq-0002">
<name>Hook (large, rubber-coated, ceiling)</name>
<identNumber>
<manufacturerCode/>
</identNumber>
<reqQuantity unitOfMeasure="EA">1</reqQuantity>
</supportEquipDescr>
</supportEquipDescrGroup>
</reqSupportEquips>
<reqSupplies>
<supplyDescrGroup>
<supplyDescr id="sup-0001">
<name>General lubricant</name>
<identNumber>
<manufacturerCode>KZ222</manufacturerCode>
</identNumber>
<reqQuantity>As required</reqQuantity>
</supplyDescr>
<supplyDescr id="sup-0002">
<name>Cleaning rag</name>
<identNumber>
<manufacturerCode/>
</identNumber>
<reqQuantity unitOfMeasure="EA">3</reqQuantity>
</supplyDescr>
```

Preliminary requirements follow common information.

Figure 35. Preparation for storage or shipment markup – Continued.

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```
<proceduralStep id="stp-0004">
<para>Install a <internalRef internalRefId="seq-0002"
internalRefTargetType="supequip" xlink:actuate="onRequest"
xlink:show="replace" xlink:href="seq-0002"/> in a ceiling corner. This will
hold a bike vertically against the wall.</para>
</proceduralStep>
<proceduralStep id="stp-0005">
<para>Place any accessories into the <internalRef internalRefId="sup-0005"
internalRefTargetType="supequip" xlink:actuate="onRequest"
xlink:show="replace" xlink:href="sup-0005"/> and hang on the bike.</para>
</proceduralStep>
<proceduralStep id="stp-0006">
<para>Use the <internalRef internalRefId="sup-0003"
internalRefTargetType="supequip" xlink:actuate="onRequest"
xlink:show="replace" xlink:href="sup-0003"/> to completely cover the bike.
Check to see there are no exposed areas. Use the <internalRef
internalRefId="sup-0004" internalRefTargetType="supequip"
xlink:actuate="onRequest" xlink:show="replace" xlink:href="sup-0004"/> to
secure the <internalRef internalRefId="sup-0003"
internalRefTargetType="supequip" xlink:actuate="onRequest"
xlink:show="replace" xlink:href="sup-0003"/> in place.</para>
</proceduralStep>
</mainProcedure>
<closeRqmts>
<reqCondGroup>
<noConds/>
</reqCondGroup>
</closeRqmts>
</procedure>
```

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```
<procedure>
<commonInfo>
<commonInfoDescrPara>
<title>SECURITY PROCEDURES</title>
<para>For security procedures involved in storage and shipment of the bicycle,
refer to <externalPubRef>
<externalPubRefIdent>
<externalPubCode>AR 190-13</externalPubCode>
</externalPubRefIdent>
</externalPubRef>.</para>
</commonInfoDescrPara>
</commonInfo>
<preliminaryRqmts>
<reqCondGroup>
<reqCondNoRef>
<reqCond>Dry bicycle</reqCond>
</reqCondNoRef>
</reqCondGroup>
<reqPersons>
<personnel numRequired="1">
<personCategory personCategoryCode="Maintainer"/>
<estimatedTime unitOfMeasure="hr">0.25</estimatedTime>
</personnel>
</reqPersons>
<reqSupportEquips>
<supportEquipDescrGroup>
<supportEquipDescr id="seq-0001">
<name>Specialist toolset</name>
<identNumber>
<manufacturerCode>KZ666</manufacturerCode>
</identNumber>
<reqQuantity unitOfMeasure="EA">1</reqQuantity>
</supportEquipDescr>
<supportEquipDescr id="seq-0002">
<name>Hook (large, rubber-coated, ceiling)</name>
<identNumber>
<manufacturerCode/>
</identNumber>
<reqQuantity unitOfMeasure="EA">1</reqQuantity>
</supportEquipDescr>
</supportEquipDescrGroup>
</reqSupportEquips>
<reqSupplies>
<supplyDescrGroup>
<supplyDescr id="sup-0001">
<name>General lubricant</name>
<identNumber>
<manufacturerCode>KZ222</manufacturerCode>
</identNumber>
<reqQuantity>As required</reqQuantity>
</supplyDescr>
<supplyDescr id="sup-0002">
<name>Cleaning rag</name>
<identNumber>
<manufacturerCode/>
</identNumber>
<reqQuantity unitOfMeasure="EA">3</reqQuantity>
</supplyDescr>
```

Preliminary requirements follow common information.

Figure 35. Preparation for storage or shipment markup – Continued.

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5.1.3.3 Output.

S1000D Bike - Preparation for storage or shipment

References

Table 1 References

Chap No./Document No.	Title
None	

General information

SECURITY PROCEDURES

For security procedures involved in storage and shipment of the bicycle, refer to AR 190-13.

Preliminary requirements

Required conditions

Table 2 Required conditions

Action/Condition	Data module/Technical publication
Dry bicycle	

Required persons

Table 3 Required persons

Quantity	Category	Skill level	Trade/Trade code	Estimated time
1	Maintainer			0.25 hr

Support equipment

Table 4 Support equipment

Name	CAGE/Reference	Quantity	Remark
Specialist toolset	KZ666	1 EA	
Hook (large, rubber-coated, ceiling)		1 EA	

Consumables, materials, and expendables

Table 5 Consumables, materials, and expendables

Name	CAGE/Reference	Quantity	Remark
General lubricant	KZ222	As required	
Cleaning rag		3 EA	
Plastic sheet		1 EA	
Duct tape		1 EA	
Mesh bag		1 EA	

Spares

Table 6 Spares

Name	CAGE/Reference	Quantity	Remark
None			

Safety conditions

WARNING

Do not get General lubricant into your eyes. If it gets into your eyes, wash them immediately in clean, warm water.

Procedure

1 Use the brush from the Specialist toolset to clean the brakes, the shift levers, the sprockets and the tires. Look for dirt caked around the derailleurs, brakes, and bottom bracket.

2 Wipe down the bike with the Cleaning rag.

3 Lubricate the chain and sprockets. Use General lubricant. Spin the pedals and shift through gears to distribute the lubricant thoroughly.

4 Install a Hook (large, rubber-coated, ceiling) in a ceiling corner. This will hold a bike vertically against the wall.

5 Place any accessories into the Mesh bag and hang on the bike.

6 Use the Plastic sheet to completely cover the bike. Check to see there are no exposed areas. Use the Duct tape to secure the Plastic sheet in place.

Requirements after job completion

Required conditions

Table 7 Required conditions

Action/Condition	Data module/Technical publication
None	

FIGURE 36. Sample output of preparation for storage or shipment.

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5.1.4 Crew/operator information.

5.1.4.1 General.

Crew data modules are used to capture and represent information used by crew/operators. This data module type allows two types of data: flight reference card information (element **<crewRefCard>**) or crew-related descriptive information (element **<descrCrew>**). All aircrew procedural information should be prepared with the flight reference card information (element **<crewRefCard>**) in accordance with MIL-STD-3031. An example is a manual generated on flight reference cards. Descriptive information should be prepared with the descriptive branch (element **<descrCrew>**), except front and rear matter, in accordance with MIL-STD-3031.

The main difference between the two branches is that the descriptive information branch (element **<descrCrew>**) allows primary paragraphs (element **<levelledPara>**). This is useful when describing, for example, designator symbols and weight and balance information.

The flight reference card information branch (element **<crewRefCard>**) allows multiple crew drills (element **<crewDrill>**). Each of these drills can contain a check. If multiple checks are authored into a single data module, maintaining the file could become burdensome.

NOTE

When authoring aircraft checks (for example, preflight check, before exterior check, exterior check, interior check), the use of multiple data modules is recommended.

By authoring individual data modules for each check, projects can ensure that the checks are performed in the proper sequence. This can be accomplished by either listing the data modules in order in the publication module or by numbering and linking the data modules to follow the correct order in accordance with MIL-STD-3031. It will be easier to maintain individual data modules because 1) only affected checks are updated and, 2) file sizes are not as large as a combined data module and, therefore, easier to locate the affected data.

Refer to Table A-V for a list of crew information sets.

The markup example below shows how challenges and responses are authored within a crew drill step, along with special conditions.

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5.1.4.2 Markup example.

```
<crew>
<crewRefCard>
<title>Pre-ride inspection</title>
<crewDrill>
<title>Brakes</title>
<subCrewDrill>
<title>Pads</title>
<crewDrillStep crewStepCondition="csc51 csc01">
<challengeAndResponse>
<challenge>
<para>Pads</para>
</challenge>
<response>
<para>Free of unwanted material</para>
</response>
</challengeAndResponse>
</crewDrillStep>
<crewDrillStep crewStepCondition="csc01">
<challengeAndResponse>
<challenge>
<para>Pads</para>
</challenge>
<response>
<para>Acceptable pad width</para>
</response>
</challengeAndResponse>
</crewDrillStep>
<crewDrillStep crewStepCondition="csc01">
<challengeAndResponse>
<challenge>
<para>Pads</para>
</challenge>
<response>
<para>Acceptable pad clearance</para>
</response>
</challengeAndResponse>
</crewDrillStep>
</subCrewDrill>
<subCrewDrill>
<title>Callipers</title>
<crewDrillStep crewStepCondition="csc01 csc03">
<challengeAndResponse>
<challenge>
<para>Link Wire</para>
</challenge>
<response>
<para>Firmly attached</para>
</response>
</challengeAndResponse>
</crewDrillStep>
</subCrewDrill>
<subCrewDrill>
<title>Levers</title>
<crewDrillStep>
<challengeAndResponse>
<challenge>
<para>Levers</para>
</challenge>
```

Attribute `crewStepCondition` value definitions:

- **`csc01`** - Equipment is installed or available
- **`csc02`** - Detailed procedure for the step is in the condensed checklist
- **`csc03`** - Mandatory step for all through-flights used for combat/tactical operations
- **`csc04`** - Mandatory for night flights
- **`csc51`** - Duties that are the responsibility of the pilot
- **`csc52`** - Task or step that requires a flight engineer function or response
- **`csc53`** - Performance of the step is mandatory for all maintenance test flights
- **`csc54`** - Task or step required by the operator's manual

FIGURE 37. Crew drill step markup.

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```
<response>
<para>Approximately 1 inch of travel before engagement</para>
</response>
</challengeAndResponse>
</crewDrillStep>
<crewDrillStep>
<challengeAndResponse>
<challenge>
<para>Levers</para>
</challenge>
<response>
<para>Space between lever and handlebar when
fully pulled</para>
</response>
</challengeAndResponse>
</crewDrillStep>
</subCrewDrill>
<subCrewDrill>
<title>Cables</title>
<crewDrillStep crewStepCondition="csc51">
<challengeAndResponse>
<challenge>
<para>Cables</para>
</challenge>
<response>
<para>No cuts or fraying</para>
</response>
</challengeAndResponse>
</crewDrillStep>
</subCrewDrill>
</crewDrill>
<crewDrill>
<title>Tires</title>
<crewDrillStep crewStepCondition="csc01">
<challengeAndResponse>
<challenge>
<para>Pressure</para>
</challenge>
<response>
<table id="tbl-001" frame="all">
<title>Correlation of tire pressure and terrain</title>
<tgroup cols="3">
<colspec colnum="1" colname="col1" colwidth="*"/>
<colspec colnum="2" colname="col2" colwidth="*"/>
<colspec colnum="3" colname="col3" colwidth="*"/>
<thead>
<row rowsep="1">
<entry colsep="0" colname="col1">
<para><emphasis emphasisType="em01">Tire Pressures</emphasis></para>
</entry>
<entry colsep="0" colname="col2" valign="bottom">
<para><emphasis emphasisType="em01">Min</emphasis></para>
</entry>
<entry colsep="0" colname="col3" valign="bottom">
<para><emphasis emphasisType="em01">Max</emphasis></para>
</entry>
</row>
</thead>
```

Attribute `crewStepCondition` value definitions:

- **csc01** - Equipment is installed or available
- **csc02** - Detailed procedure for the step is in the condensed checklist
- **csc03** - Mandatory step for all through-flights used for combat/tactical operations
- **csc04** - Mandatory for night flights
- **csc51** - Duties that are the responsibility of the pilot
- **csc52** - Task or step that requires a flight engineer function or response
- **csc53** - Performance of the step is mandatory for all maintenance test flights
- **csc54** - Task or step required by the operator's manual

FIGURE 37. Crew drill step markup – Continued.

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```
<tbody>
<row rowsep="0">
<entry colsep="0" colname="col1">
<para>Off Road</para>
</entry>
<entry colsep="0" colname="col2">
<para>35lbs</para>
</entry>
<entry colsep="0" colname="col3">
<para>40lbs</para>
</entry>
</row>
<row rowsep="0">
<entry colsep="0" colname="col1">
<para>On Road</para>
</entry>
<entry colsep="0" colname="col2">
<para>55lbs</para>
</entry>
<entry colsep="0" colname="col3">
<para>60lbs</para>
</entry>
</row>
</tbody>
</tgroup>
</table>
</response>
</challengeAndResponse>
</crewDrillStep>
<crewDrillStep crewStepCondition="csc01">
<challengeAndResponse>
<challenge>
<para>Tires</para>
</challenge>
<response>
<para>No cracks or splits</para>
</response>
</challengeAndResponse>
</crewDrillStep>
</crewDrill>
<crewDrill>
<title>Wheels</title>
<crewDrillStep crewStepCondition="csc01">
<challengeAndResponse>
<challenge>
<para>Wheels</para>
</challenge>
<response>
<para>No loose bearings</para>
</response>
</challengeAndResponse>
</crewDrillStep>
<crewDrillStep>
<challengeAndResponse>
<challenge>
<para>Wheels</para>
</challenge>
```

Attribute `crewStepCondition` value definitions:

- **`csc01`** - Equipment is installed or available
- **`csc02`** - Detailed procedure for the step is in the condensed checklist
- **`csc03`** - Mandatory step for all through-flights used for combat/tactical operations
- **`csc04`** - Mandatory for night flights
- **`csc51`** - Duties that are the responsibility of the pilot
- **`csc52`** - Task or step that requires a flight engineer function or response
- **`csc53`** - Performance of the step is mandatory for all maintenance test flights
- **`csc54`** - Task or step required by the operator's manual

FIGURE 37. Crew drill step markup – Continued.

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```
<response>
<para>True</para>
</response>
</challengeAndResponse>
</crewDrillStep>
<crewDrillStep crewStepCondition="csc01">
<challengeAndResponse>
<challenge>
<para>Spokes</para>
</challenge>
<response>
<para>Not broken</para>
</response>
</challengeAndResponse>
</crewDrillStep>
<if>
<caseCond>Spokes not broken</caseCond>
<crewDrillStep>
<challengeAndResponse>
<challenge>
<para>Spokes</para>
</challenge>
<response>
<para>Tight</para>
</response>
</challengeAndResponse>
</crewDrillStep>
</if>
<crewDrillStep crewStepCondition="csc01">
<challengeAndResponse>
<challenge>
<para>Axel Nuts</para>
</challenge>
<response>
<para>Tight</para>
</response>
</challengeAndResponse>
</crewDrillStep>
</crewDrill>
<crewDrill>
<title>Headset</title>
<crewDrillStep>
<challengeAndResponse>
<challenge>
<para>Headset bearings</para>
</challenge>
<response>
<para>Tight</para>
</response>
</challengeAndResponse>
</crewDrillStep>
</crewDrill>
```

Attribute `crewStepCondition` value definitions:

- **`csc01`** - Equipment is installed or available
- **`csc02`** - Detailed procedure for the step is in the condensed checklist
- **`csc03`** - Mandatory step for all through-flights used for combat/tactical operations
- **`csc04`** - Mandatory for night flights
- **`csc51`** - Duties that are the responsibility of the pilot
- **`csc52`** - Task or step that requires a flight engineer function or response
- **`csc53`** - Performance of the step is mandatory for all maintenance test flights
- **`csc54`** - Task or step required by the operator's manual

FIGURE 37. Crew drill step markup – Continued.

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```
<crewDrill>
<title>Chain</title>
<crewDrillStep crewStepCondition="csc01">
<challengeAndResponse>
<challenge>
<para>Links</para>
</challenge>
<response>
<para>Easy movement of links</para>
</response>
</challengeAndResponse>
</crewDrillStep>
</crewDrill>
<crewDrill>
<title>Handlebar</title>
<warning>
<warningAndCautionPara>Do not ride with a cracked stem</warningAndCautionPara>
</warning>
<if>
<caseCond>Stem cracked</caseCond>
<crewDrillStep crewStepCondition="csc52">
<crewProcedureName>
<para>Replace stem</para>
</crewProcedureName>
</crewDrillStep>
</if>
<elseIf>
<caseCond>Stem is loose</caseCond>
<crewDrillStep>
<crewProcedureName>
<para>Tighten stem</para>
</crewProcedureName>
</crewDrillStep>
</elseIf>
<if>
<caseCond>Handlebars twist in stem</caseCond>
<crewDrillStep>
<crewProcedureName>
<para>Tighten clamp bolt</para>
</crewProcedureName>
</crewDrillStep>
</if>
</crewDrill>
</crewRefCard>
</crew>
```

Attribute `crewStepCondition` value definitions:

- **`csc01`** - Equipment is installed or available
- **`csc02`** - Detailed procedure for the step is in the condensed checklist
- **`csc03`** - Mandatory step for all through-flights used for combat/tactical operations
- **`csc04`** - Mandatory for night flights
- **`csc51`** - Duties that are the responsibility of the pilot
- **`csc52`** - Task or step that requires a flight engineer function or response
- **`csc53`** - Performance of the step is mandatory for all maintenance test flights
- **`csc54`** - Task or step required by the operator's manual

FIGURE 37. Crew drill step markup – Continued.

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5.1.4.3 Output.

Pre-ride inspection

Brakes

Pads

O (1) Pads..... Free of unwanted material

O 2. Pads..... Acceptable pad width

O 3. Pads..... Acceptable pad clearance

Callipers

O* 1. Link Wire..... Firmly attached

Levers

1. Levers..... Approximately 1 inch of travel before engagement

2. Levers..... Space between lever and handlebar when fully pulled

Cables

(1) Cables..... No cuts or fraying

Tires

O 1. Pressure.....

Table 2 Correlation of tire pressure and terrain

Tire Pressures	Min	Max
Off Road	35lbs	40lbs
On Road	55lbs	60lbs

O 2. Tires..... No cracks or splits

Wheels

O 1. Wheels..... No loose bearings

2. Wheels..... True

O 3. Spokes..... Not broken

If Spokes not broken

4. Spokes..... Tight

O 5. Axel Nuts..... Tight

Headset

1. Headset bearings..... Tight

Chain

O 1. Links..... Easy movement of links

Handlebar

WARNING

Do not ride with a cracked stem

If Stem cracked

1. Replace stem

Else if Stem is loose

2. Tighten stem

If Handlebars twist in stem

3. Tighten clamp bolt

FIGURE 38. Sample output of `crewDrillStep`.

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5.1.5 Fault information.

5.1.5.1 General.

The fault data module is used to capture fault reporting and fault isolation information.

The fault reporting branch collects information on isolated, detected, observed, or correlated faults as separate data modules.

The fault isolation branch gives the diagnostic path to isolate a faulty item. It includes the procedures and path to follow for locating the fault.

Fault reporting is used to enable a technician or diagnostic system to indicate faults through the use of data modules. Isolated and detected faults are normally identified via the onboard computer system. Observed faults are usually those observed by a maintainer or crew member. The correlated faults are a combined list of correlated and recognized faults by the onboard diagnostics.

Refer to Table A-IV for a list of fault information sets.

5.1.5.2 Fault uses.

The fault data module may be used to support the following:

a. Provide listings, descriptions and procedures related to isolated faults and references to data modules required to effect the repair.
b. Provide listing, descriptions and procedures related to detected faults and references to data modules to effect the repair.
c. Provide listings, descriptions and procedures related to observed faults and references to data modules to effect the repair.
d. Optionally provide a listing of correlated faults, their descriptions, procedures to isolate the fault, and references to data modules to effect the repair.

5.1.5.3 Markup examples.

5.1.5.3.1 Fault isolation.

```
<faultIsolation>
<faultIsolationProcedure>
<fault faultCode="NYCJD04"/>
<faultDescr>
<descr>Tire does not function correctly</descr>
</faultDescr>
<isolationProcedure>
<preliminaryRqmts>
<reqCondGroup>
<noConds/>
</reqCondGroup>
<reqSupportEquips>
<supportEquipDescrGroup>
<supportEquipDescr id="seq-0001">
<name>Tire pressure gauge</name>
<identNumber>
<manufacturerCode>KZ666</manufacturerCode>
</identNumber>
```

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```
<reqQuantity unitOfMeasure="EA">1</reqQuantity>
</supportEquipDescr>
<supportEquipDescr>
<name>Specialist toolset</name>
<identNumber>
<manufacturerCode>KZ666</manufacturerCode>
</identNumber>
<reqQuantity unitOfMeasure="EA">1</reqQuantity>
</supportEquipDescr>
</supportEquipDescrGroup>
</reqSupportEquips>
<reqSupplies>
<noSupplies/>
</reqSupplies>
<reqSpares>
<noSpares/>
</reqSpares>
<reqSafety>
<noSafety/>
</reqSafety>
</preliminaryRqmts>
<isolationMainProcedure>
<isolationStep id="istp-0001">
<action>Use the tire pressure gauge (<internalRef internalRefId="seq-
0001" internalRefTargetType="supequip" xlink:actuate="onRequest"
xlink:show="replace" xlink:href="seq-0001"/>) to do a check of the
pressure</action>
<isolationStepQuestion>What is the tire pressure
reading?</isolationStepQuestion>
<isolationStepAnswer>
<listOfChoices>
<choice nextActionRefId="istp-0002">More than 2700 hPa</choice>
<choice nextActionRefId="istp-0003">Between 100 hPa and 2700
hPa</choice>
<choice nextActionRefId="istp-0004">Less than 100 hPa</choice>
</listOfChoices>
</isolationStepAnswer>
</isolationStep>
<isolationProcedureEnd id="istp-0002">
<action>Deflate the tire until the pressure is 2700 hPa</action>
</isolationProcedureEnd>
<isolationProcedureEnd id="istp-0003">
<action>Inflate the tire as given in <dmRef xlink:type="simple"
xlink:actuate="onRequest" xlink:show="replace"
xlink:href="URN:S1000D:DMC-S1000DBIKE-AAA-DA0-10-20-00AA-215A-
A"><dmRefIdent>
<dmCode modelIdentCode="S1000DBIKE" systemDiffCode="AAA"
systemCode="DA0" subSystemCode="1" subSubSystemCode="0" assyCode="20"
disassyCode="00" disassyCodeVariant="AA" infoCode="215"
infoCodeVariant="A" itemLocationCode="A"/></dmRefIdent></dmRef>
</action>
</isolationProcedureEnd>
```

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```
<isolationStep id="istp-0004">
<action>To do a check of the tire for damage</action>
<isolationStepQuestion>Is there damage to the
tire?</isolationStepQuestion>
<isolationStepAnswer>
<yesNoAnswer>
<yesAnswer nextActionRefId="istp-0005"/>
<noAnswer nextActionRefId="istp-0006"/>
</yesNoAnswer>
</isolationStepAnswer>
</isolationStep>
<isolationProcedureEnd id="istp-0005">
<action>Replace the tire (refer to <dmRef xlink:type="simple"
xlink:actuate="onRequest" xlink:show="replace"
xlink:href="URN:S1000D:DMC-S1000DBIKE-AAA-DA0-10-20-00AA-921A-
A"><dmRefIdent><dmCode modelIdentCode="S1000DBIKE"
systemDiffCode="AAA" systemCode="DA0" subSystemCode="1"
subSubSystemCode="0" assyCode="20" disassyCode="00"
disassyCodeVariant="AA" infoCode="921" infoCodeVariant="A"
itemLocationCode="A"/></dmRefIdent></dmRef> )</action>
</isolationProcedureEnd>
<isolationProcedureEnd id="istp-0006">
<action>Replace the inner-tube (refer to <dmRef xlink:type="simple"
xlink:actuate="onRequest" xlink:show="replace"
xlink:href="URN:S1000D:DMC-S1000DBIKE-AAA-DA0-10-10-00AA-921A-
A"><dmRefIdent><dmCode modelIdentCode="S1000DBIKE"
systemDiffCode="AAA" systemCode="DA0" subSystemCode="1"
subSubSystemCode="0" assyCode="10" disassyCode="00"
disassyCodeVariant="AA" infoCode="921" infoCodeVariant="A"
itemLocationCode="A"/></dmRefIdent></dmRef>)</action>
</isolationProcedureEnd>
</isolationMainProcedure>
<closeRqmts>
<reqCondGroup>
<noConds/>
</reqCondGroup>
</closeRqmts>
</isolationProcedure>
</faultIsolationProcedure>
</faultIsolation>
```

5.1.5.3.2 Fault reporting.

```
<faultReporting>
<detectedFault id="flt-0002" faultCode="NYCJD00">
<faultDescr>
<descr>The rear wheel does not operate correctly</descr>
</faultDescr>
<detectionInfo detectionType="Major">
<detectedLruItem>
<lru>
<name>Tire</name>
```

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```
<identNumber>
<manufacturerCode>KT666</manufacturerCode>
</identNumber>
</lru>
</detectedLruItem>
</detectionInfo>
<isolateDetectedFault>
<lruItem>
<lru>
<name>Rear wheel</name>
<identNumber>
<manufacturerCode>KZ333</manufacturerCode>
</identNumber>
</lru>
</lruItem>
</isolateDetectedFault>
<remarks>
<simplePara>Prepare the rear wheel for the removal of the
tire</simplePara>
</remarks>
</detectedFault>
</faultReporting>
```

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5.1.5.4 Output.

Fault isolation procedure

1	Use the tire pressure gauge (Tire pressure gauge) to do a check of the pressure
2	What is the tire pressure reading?
2.1	More than 2700 hPa: Go to Step 3.
2.2	Between 100 hPa and 2700 hPa: Go to Step 4.
2.3	Less than 100 hPa: Go to Step 5.
3	Deflate the tire until the pressure is 2700 hPa
	Go to Requirements after job completion.
4	Inflate the tire as given in S1000DBIKE-AAA-DA0-10-20-00AA-215A-A
	Go to Requirements after job completion.
5	To do a check of the tire for damage
6	Is there damage to the tire?
6.1	Yes: Go to Step 7.
6.2	No: Go to Step 8.
7	Replace the tire (refer to S1000DBIKE-AAA-DA0-10-20-00AA-921A-A)
	Go to Requirements after job completion.
8	Replace the inner-tube (refer to S1000DBIKE-AAA-DA0-10-10-00AA-921A-A)
	Go to Requirements after job completion.

Requirements after job completion

Required conditions

Table 6 Required conditions

Action/Condition	Data module/Technical publication
None	

FIGURE 39. Sample output of fault isolation.

5.1.6 Checklist information.

5.1.6.1 General.

The maintenance checklists and inspections data modules are used for maintenance checklists that require procedural tasks to be presented with the maintenance data. These are not full procedures such as those contained in procedural data modules. The **`checklist`** schema is robust enough to accommodate many forms of maintenance checklist data.

Items such as Preventive Maintenance Checks and Services (PMCS) tables, preventive maintenance inspection forms, and special inspections can be marked up using the checklist schema. (Refer to 5.2.7.3.) Refer to Table A-VI for a list of checklist information sets.

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PMCS are maintenance tasks used to identify potential equipment problems. It includes quick turnaround repairs by component replacement, minor repairs, and performance of scheduled services at specific maintenance levels. PMCS also includes the performance of periodic scheduled checks to monitor the condition of equipment items.

5.1.6.2 Markup example

```
<checkList checkListCategory="clc02">
<checkListInfo>
<checkListItems>
<checkListItem>
<itemNumber>7</itemNumber>
<threshold thresholdType="interval"
thresholdUnitOfMeasure="th02">
<thresholdValue>Before</thresholdValue>
</threshold>
<equip>
<name>Internal Fire Extinguishers</name>
<catalogSeqNumberRef catalogSeqNumberValue="1"/>
</equip>
<checkListProcedure crewMemberType="cm52">
<checkListStep>
<para>Check engine compartment fire extinguisher.</para>
<checkListStep>
<para>Check wire or lead seals on engine compartment fire
extinguisher.</para>
<equipmentNotAvailable>
<para>Wire or lead seals on engine compartment fire extinguisher are missing
broken or improperly laced.</para>
</equipmentNotAvailable>
</checkListStep>
<checkListStep>
<para>Check that pressure gauge on engine compartment fire extinguisher is in
green or yellow zone.</para>
<equipmentNotAvailable>
<para>Pressure gauge on engine compartment fire extinguisher reads in red
zone.</para>
</equipmentNotAvailable>
</checkListStep>
</checkListStep>
</checkListProcedure>
</checkListItem>
</checkListItems>
</checkListInfo>
</checkList>
```

Value definitions:

clc02 - PMCS
th02 - Flight cycles
cm52 - Driver

FIGURE 40. Preventive Maintenance Checks and Services (PMCS) markup.

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5.1.6.3 Output.

Preventive Maintenance Checks and Services

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED		PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
7	Before	Internal Fire Extinguishers	Driver		
			1	Check engine compartment fire extinguisher.	
			1.1	Check wire or lead seals on engine compartment fire extinguisher.	Wire or lead seals on engine compartment fire extinguisher are missing broken or improperly laced.
			1.2	Check that pressure gauge on engine compartment fire extinguisher is in green or yellow zone.	Pressure gauge on engine compartment fire extinguisher reads in red zone.

FIGURE 41. Sample Preventive Maintenance Checks and Services (PMCS) output.

5.1.7 Maintenance planning information.

5.1.7.1 General.

Schedule data modules are used to contain maintenance planning information. Only two branches are used by the Army in this data module. The first branch used is the common information branch (element **`<commonInfo>`**). The element **`<commonInfo>`** is used in multiple schemas and is documented in 4.2.3.6. The only other branch used is maintenance allocation (element **`<maintAllocation>`**).

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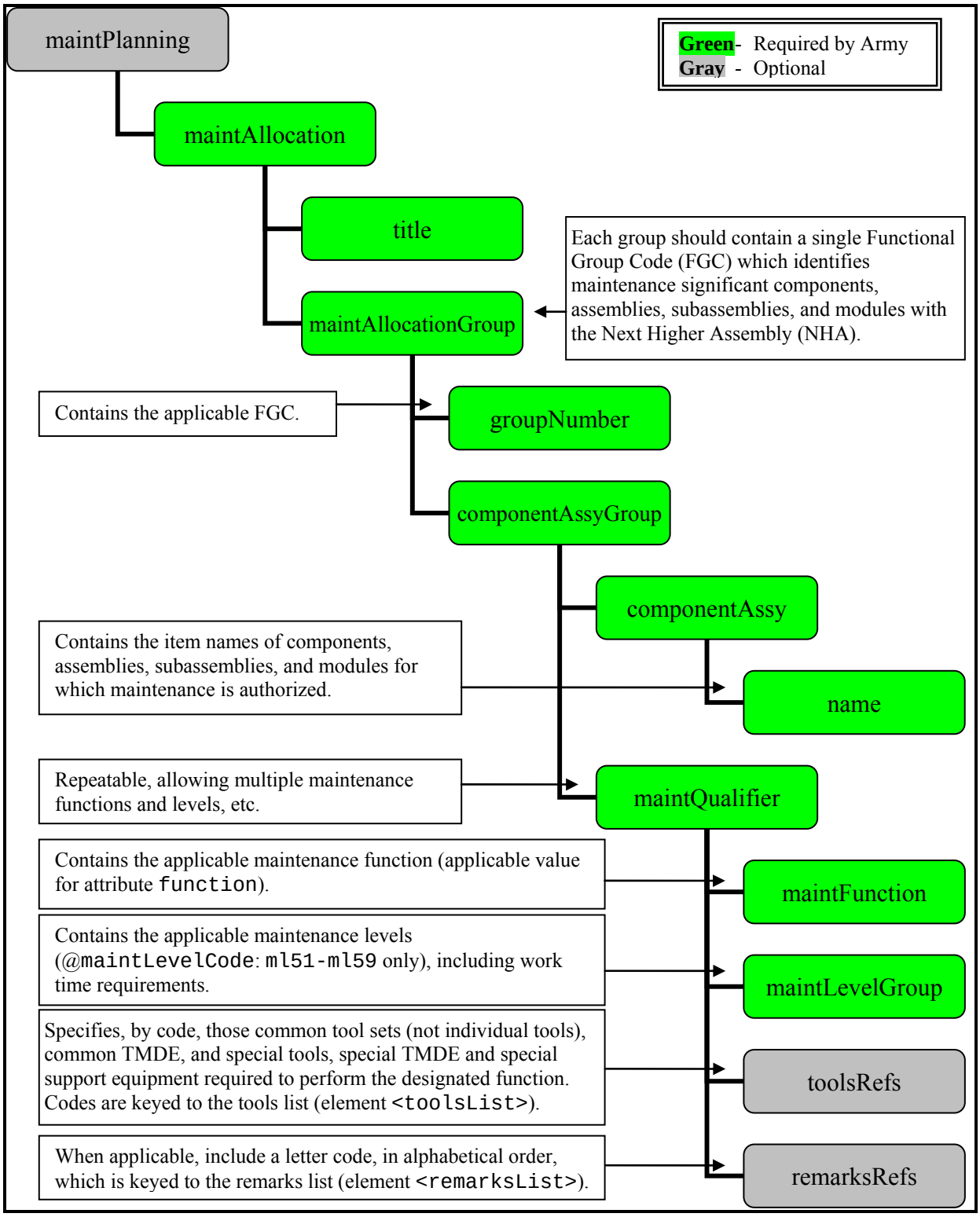

FIGURE 42. Maintenance allocation overview.

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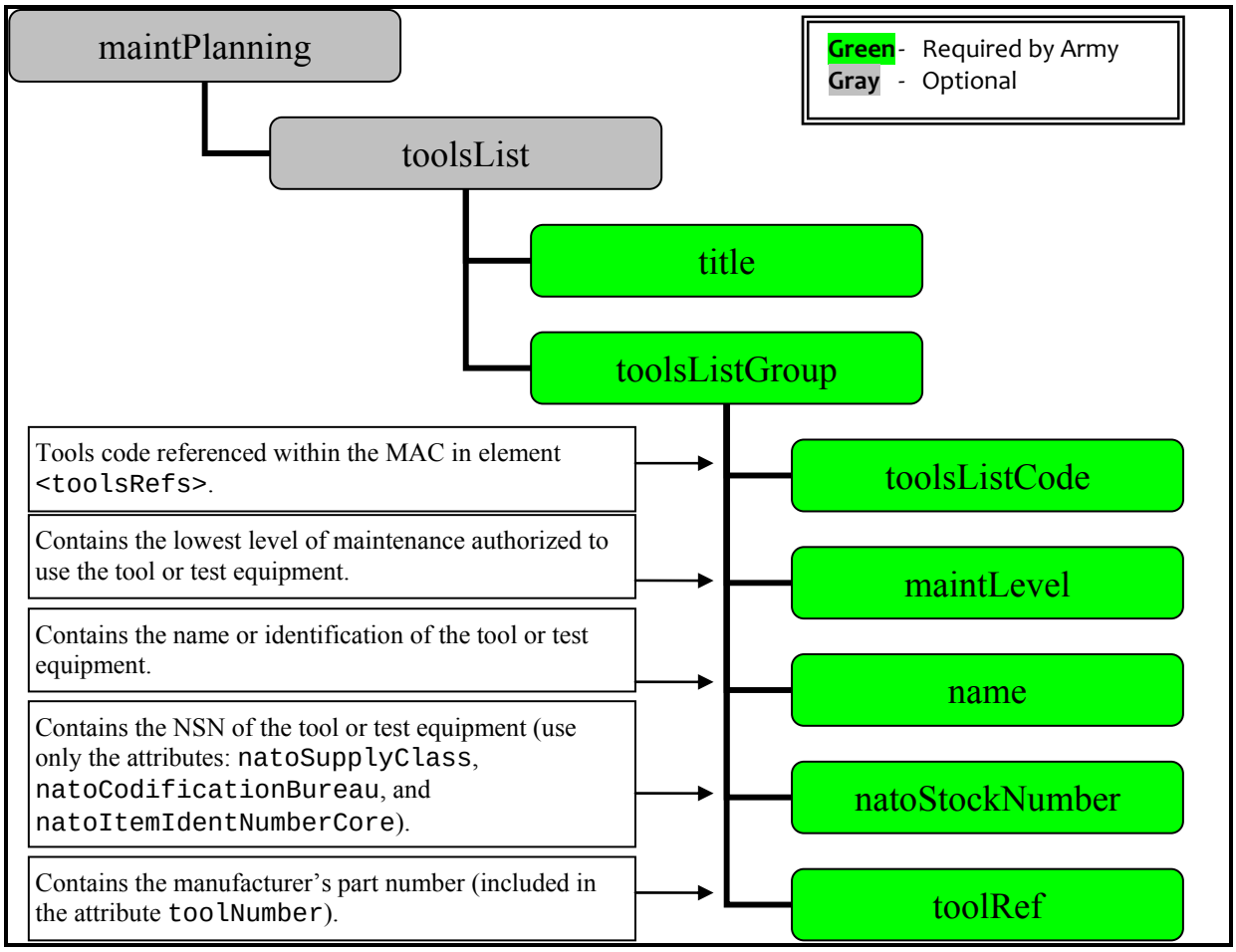

FIGURE 43. Tools list overview.

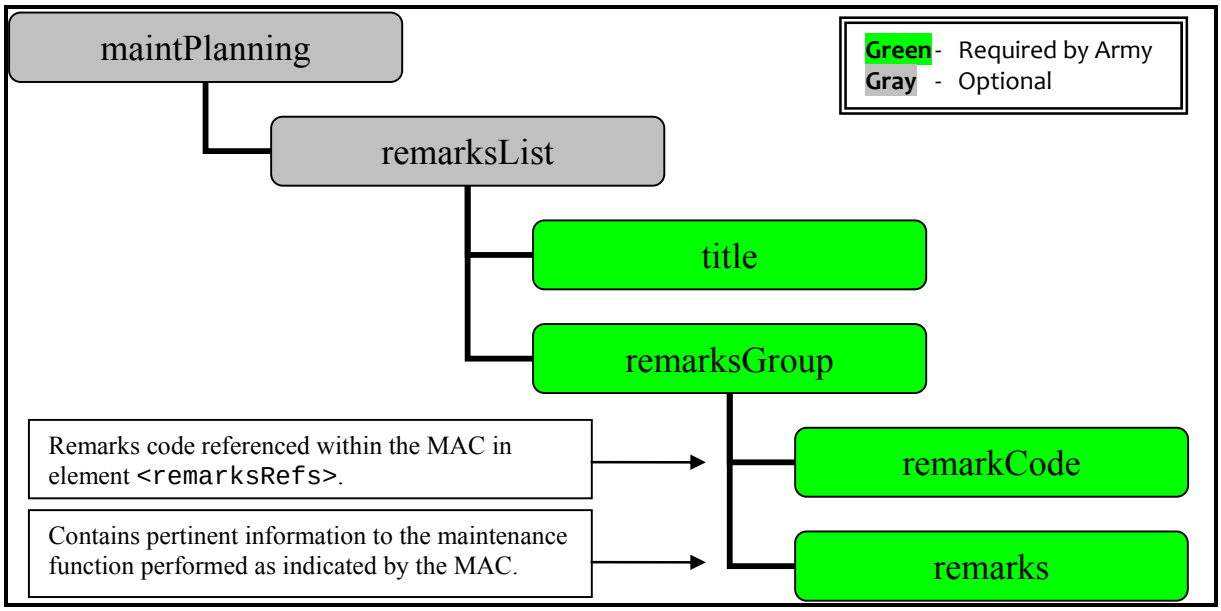

FIGURE 44. Remarks list overview.

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An example of a maintenance planning data module is a standard Maintenance Allocation Chart (MAC), the primary tool for assigning tasks. The MAC designates overall authority and responsibility for the performance of maintenance functions on an item of equipment. The MAC is found in equipment publications (technical manuals) that contain field-level (Standard: crew (C) and maintainer (F) and Aviation: AMC (O) and ASB (F)) maintenance procedures.

5.1.7.2 Markup example.

```
<maintPlanning>
<maintAllocation>
<title>MAC for TSEC/ST-34</title>
<maintAllocationGroup>
<groupNumber>00</groupNumber>
<componentAssyGroup>
<componentAssy>
<name>TSEC/ST-34</name>
</componentAssy>
<maintQualifier>
<maintFunction function="ft01"/>
<maintLevelGroup>
<maintLevel
maintLevelCode="ml51">0.1</maintLevel>
</maintLevelGroup>
<remarksRefs>
<internalRef
internalRefId="rem-A">A</internalRef>
</remarksRefs>
</maintQualifier>
<maintQualifier>
<maintFunction function="ft03"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml51">0.2</maintLevel>
</maintLevelGroup>
<remarksRefs>
<internalRef internalRefId="rem-B">B</internalRef>
</remarksRefs>
</maintQualifier>
<maintQualifier>
<maintFunction function="ft08"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml51">0.4</maintLevel>
</maintLevelGroup>
<toolsRefs>
<internalRef internalRefId="tool-1">1</internalRef>
</toolsRefs>
```

Attribute `function` value definitions:

- **`ft01`** - inspect
- **`ft02`** - test
- **`ft03`** - service
- **`ft08`** - replace
- **`ft09`** - repair

Attribute `maintLevelCode` value definitions:

- **`ml51`** - crew (non-aviation)
- **`ml52`** - maintainer (non-aviation)
- **`ml54`** - below depot (non-aviation)
- **`ml55`** - depot (non-aviation)

FIGURE 45. Maintenance Allocation Chart (MAC) markup.

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```
<remarksRefs>
<internalRef internalRefId="rem-A">A</internalRef>
<internalRef internalRefId="rem-B">B</internalRef>
</remarksRefs>
</maintQualifier>
<maintQualifier>
<maintFunction function="ft02"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml51">0.3</maintLevel>
</maintLevelGroup>
<remarksRefs>
<internalRef internalRefId="rem-E">E</internalRef>
</remarksRefs>
</maintQualifier>
<maintQualifier>
<maintFunction function="ft09"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml52">1.5</maintLevel>
</maintLevelGroup>
<toolsRefs>
<internalRef internalRefId="tool-1">1</internalRef>
<internalRef internalRefId="tool-2">2</internalRef>
</toolsRefs>
<remarksRefs>
<internalRef internalRefId="rem-F">F</internalRef>
</remarksRefs>
</maintQualifier>
<maintQualifier>
<maintFunction function="ft09"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml54">2.0</maintLevel>
</maintLevelGroup>
<toolsRefs>
<internalRef
internalRefId="tool-1">1</internalRef>
<internalRef
internalRefId="tool-2">2</internalRef>
<internalRef
internalRefId="tool-3">3</internalRef>
<internalRef
internalRefId="tool-4">4</internalRef>
<internalRef
internalRefId="tool-5">5</internalRef>
</toolsRefs>
<remarksRefs>
<internalRef
internalRefId="rem-G">G</internalRef>
<internalRef
internalRefId="rem-H">H</internalRef>
</remarksRefs>
</maintQualifier>
<maintQualifier>
<maintFunction function="ft09"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml55">2.0</maintLevel>
</maintLevelGroup>
<toolsRefs>
<internalRef internalRefId="tool-1">1</internalRef>
<internalRef internalRefId="tool-2">2</internalRef>
<internalRef internalRefId="tool-3">3</internalRef>
<internalRef internalRefId="tool-4">4</internalRef>
<internalRef internalRefId="tool-5">5</internalRef>
```

Attribute `function` value definitions:

- **`ft01`** - inspect
- **`ft02`** - test
- **`ft03`** - service
- **`ft08`** - replace
- **`ft09`** - repair

Attribute `maintLevelCode` value definitions:

- **`ml51`** - crew (non-aviation)
- **`ml52`** - maintainer (non-aviation)
- **`ml54`** - below depot (non-aviation)
- **`ml55`** - depot (non-aviation)

FIGURE 45. Maintenance Allocation Chart (MAC) markup – Continued.

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```
<internalRef internalRefId="tool-6">6</internalRef>
<internalRef internalRefId="tool-7">7</internalRef>
<internalRef internalRefId="tool-8">8</internalRef>
</toolsRefs>
<remarksRefs>
<internalRef internalRefId="rem-I">I</internalRef>
</remarksRefs>
</maintQualifier>
<maintQualifier>
<maintFunction function="ft09"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml55">16.0</maintLevel>
</maintLevelGroup>
<toolsRefs>
<internalRef internalRefId="tool-1">1</internalRef>
<internalRef internalRefId="tool-2">2</internalRef>
<internalRef internalRefId="tool-3">3</internalRef>
<internalRef internalRefId="tool-4">4</internalRef>
<internalRef internalRefId="tool-5">5</internalRef>
<internalRef internalRefId="tool-6">6</internalRef>
<internalRef internalRefId="tool-7">7</internalRef>
<internalRef internalRefId="tool-8">8</internalRef>
</toolsRefs>
<remarksRefs>
<internalRef internalRefId="rem-J">J</internalRef>
</remarksRefs>
</maintQualifier>
</componentAssyGroup>
</maintAllocationGroup>
<maintAllocationGroup>
<groupNumber>01</groupNumber>
<componentAssyGroup>
<componentAssy>
<name>POWER UNIT STP</name>
</componentAssy>
<maintQualifier>
<maintFunction function="ft01"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml51">0.1</maintLevel>
</maintLevelGroup>
</maintQualifier>
<maintQualifier>
<maintFunction function="ft02"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml51">0.3</maintLevel>
</maintLevelGroup>
</maintQualifier>
<maintQualifier>
<maintFunction function="ft09"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml52">1.8</maintLevel>
</maintLevelGroup>
</maintQualifier>
<maintQualifier>
<maintFunction function="ft09"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml54">2.0</maintLevel>
</maintLevelGroup>
</maintQualifier>
```

Attribute `function` value definitions:

- **`ft01`** - inspect
- **`ft02`** - test
- **`ft03`** - service
- **`ft08`** - replace
- **`ft09`** - repair

Attribute `maintLevelCode` value definitions:

- **`ml51`** - crew (non-aviation)
- **`ml52`** - maintainer (non-aviation)
- **`ml54`** - below depot (non-aviation)
- **`ml55`** - depot (non-aviation)

Figure 45. Maintenance Allocation Chart (MAC) markup – Continued.

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```
<maintQualifier>
<maintFunction function="ft09"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml55">2.0</maintLevel>
</maintLevelGroup>
</maintQualifier>
</componentAssyGroup>
</maintAllocationGroup>
<maintAllocationGroup>
<groupNumber>0101</groupNumber>
<componentAssyGroup>
<componentAssy>
<name>PRINT CIRCUIT BOARDS</name>
</componentAssy>
<maintQualifier>
<maintFunction function="ft00"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml51"/>
</maintLevelGroup>
</maintQualifier>
</componentAssyGroup>
</maintAllocationGroup>
<maintAllocationGroup>
<groupNumber>010101</groupNumber>
<componentAssyGroup>
<componentAssy>
<name>E-EB/01</name>
</componentAssy>
<maintQualifier>
<maintFunction function="ft01"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml52">0.1</maintLevel>
</maintLevelGroup>
</maintQualifier>
<maintQualifier>
<maintFunction function="ft08"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml52">0.5</maintLevel>
</maintLevelGroup>
</maintQualifier>
<maintQualifier>
<maintFunction function="ft02"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml55">1.0</maintLevel>
</maintLevelGroup>
</maintQualifier>
<maintQualifier>
<maintFunction function="ft09"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml52">0.5</maintLevel>
</maintLevelGroup>
</maintQualifier>
<maintQualifier>
<maintFunction function="ft08"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml55">2.0</maintLevel>
</maintLevelGroup>
</maintQualifier>
</componentAssyGroup>
</maintAllocationGroup>
```

Attribute `function` value definitions:

- **`ft01`** - inspect
- **`ft02`** - test
- **`ft03`** - service
- **`ft08`** - replace
- **`ft09`** - repair

Attribute `maintLevelCode` value definitions:

- **`ml51`** - crew (non-aviation)
- **`ml52`** - maintainer (non-aviation)
- **`ml54`** - below depot (non-aviation)
- **`ml55`** - depot (non-aviation)

FIGURE 45. Maintenance Allocation Chart (MAC) markup – Continued.

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```
<maintAllocationGroup>
<groupNumber>010102</groupNumber>
<componentAssyGroup>
<componentAssy>
<name>SWITCHING ASSEMBLY</name>
</componentAssy>
<maintQualifier>
<maintFunction function="ft01"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml51">0.1</maintLevel>
</maintLevelGroup>
</maintQualifier>
</componentAssyGroup>
</maintAllocationGroup>
<maintAllocationGroup>
<groupNumber>02</groupNumber>
<componentAssyGroup>
<componentAssy>
<name>LOGIC UNIT</name>
</componentAssy>
<maintQualifier>
<maintFunction function="ft01"/>
<maintLevelGroup>
<maintLevel maintLevelCode="ml51">--</maintLevel>
</maintLevelGroup>
</maintQualifier>
</componentAssyGroup>
</maintAllocationGroup>
</maintAllocation>
<toolsList>
<title>Tools and Test Equipment for TSEC/ST-34</title>
<toolsListGroup>
<toolsListCode
id="tool-1">1</toolsListCode>
<maintLevel
maintLevelCode="ml51">C</maintLevel>
<name>Automatic test system ST-51</name>
<natoStockNumber
natoSupplyClass="5810"
natoCodificationBureau="00"
natoItemIdentNumberCore="0894599"/>
<toolRef toolNumber="TSEC/ST-51"/>
</toolsListGroup>
<toolsListGroup>
<toolsListCode
id="tool-2">2</toolsListCode>
<maintLevel
maintLevelCode="ml52">F</maintLevel>
<name>Multimeter, digital</name>
<natoStockNumber natoSupplyClass="6625" natoCodificationBureau="01"
natoItemIdentNumberCore="1392512"/>
<toolRef toolNumber="AN/PSM-45"/>
</toolsListGroup>
```

Attribute `function` value definitions:

- **`ft01`** - inspect
- **`ft02`** - test
- **`ft03`** - service
- **`ft08`** - replace
- **`ft09`** - repair

Attribute `maintLevelCode` value definitions:

- **`ml51`** - crew (non-aviation)
- **`ml52`** - maintainer (non-aviation)
- **`ml54`** - below depot (non-aviation)
- **`ml55`** - depot (non-aviation)

FIGURE 45. Maintenance Allocation Chart (MAC) markup – Continued.

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```
<toolsListGroup>
<toolsListCode id="tool-3">3</toolsListCode>
<maintLevel maintLevelCode="ml54">H</maintLevel>
<name>Multimeter, digital</name>
<natoStockNumber natoSupplyClass="6625"
natoCodificationBureau="01"
natoItemIdentNumberCore="1452430"/>
<toolRef toolNumber="AN/USM-486"/>
</toolsListGroup>
<toolsListGroup>
<toolsListCode id="tool-4">4</toolsListCode>
<maintLevel maintLevelCode="ml54">H</maintLevel>
<name>Oscilliscope</name>
<natoStockNumber natoSupplyClass="6625"
natoCodificationBureau="01"
natoItemIdentNumberCore="1677647"/>
<toolRef toolNumber="AN/USM-488"/>
</toolsListGroup>
<toolsListGroup>
<toolsListCode id="tool-5">5</toolsListCode>
<maintLevel maintLevelCode="ml54">H</maintLevel>
<name>Power supply (0-35 VDC 24k)</name>
<natoStockNumber natoSupplyClass="6130"
natoCodificationBureau="00"
natoItemIdentNumberCore="0065224"/>
<toolRef toolNumber="HP 6434B 86"/>
</toolsListGroup>
<toolsListGroup>
<toolsListCode id="tool-6">6</toolsListCode>
<maintLevel maintLevelCode="ml55">D</maintLevel>
<name>Power supply tester</name>
<natoStockNumber/>
<toolRef toolNumber="ON502427"/>
</toolsListGroup>
<toolsListGroup>
<toolsListCode id="tool-7">7</toolsListCode>
<maintLevel maintLevelCode="ml55">D</maintLevel>
<name>Repair and soldering center (page)</name>
<natoStockNumber natoSupplyClass="4940"
natoCodificationBureau="01"
natoItemIdentNumberCore="0314541"/>
<toolRef toolNumber="PRC-350C/equip"/>
</toolsListGroup>
<toolsListGroup>
<toolsListCode
id="tool-8">8</toolsListCode>
<maintLevel
maintLevelCode="ml55">D</maintLevel>
<name>Tool, kit, electroinc equipment</name>
<natoStockNumber
natoSupplyClass="5160"
natoCodificationBureau="00"
natoItemIdentNumberCore="6106177"/>
<toolRef toolNumber="TK-105/6"/>
</toolsListGroup>
</toolsList>
```

Attribute `function` value definitions:

- **`ft01`** - inspect
- **`ft02`** - test
- **`ft03`** - service
- **`ft08`** - replace
- **`ft09`** - repair

Attribute `maintLevelCode` value definitions:

- **`ml51`** - crew (non-aviation)
- **`ml52`** - maintainer (non-aviation)
- **`ml54`** - below depot (non-aviation)
- **`ml55`** - depot (non-aviation)

FIGURE 45. Maintenance Allocation Chart (MAC) markup – Continued.

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```
<remarksList>
<title>Remarks for TSEC/ST-34</title>
<remarksGroup>
<remarkCode id="rem-A">A</remarkCode>
<remarks><simplePara>External</simplePara></remarks>
</remarksGroup>
<remarksGroup>
<remarkCode id="rem-B">B</remarkCode>
<remarks><simplePara>Preventive maintenance checks and services
(PMCS)</simplePara></remarks>
</remarksGroup>
<remarksGroup>
<remarkCode id="rem-C">C</remarkCode>
<remarks><simplePara>Replace rack installed unit, 0.4
hrs</simplePara></remarks>
</remarksGroup>
<remarksGroup>
<remarkCode id="rem-D">D</remarkCode>
<remarks><simplePara>Bench top use only, 0.1 hrs</simplePara></remarks>
</remarksGroup>
<remarksGroup>
<remarkCode id="rem-E">E</remarkCode>
<remarks><simplePara>Self-test</simplePara></remarks>
</remarksGroup>
<remarksGroup>
<remarkCode id="rem-F">F</remarkCode>
<remarks><simplePara>Repair by PMA and authorized component replacement
only</simplePara></remarks>
</remarksGroup>
<remarksGroup>
<remarkCode id="rem-G">G</remarkCode>
<remarks><simplePara>Complete unit and subassembly repair (except STP-34
switching assembly and E-EB/1)</simplePara></remarks>
</remarksGroup>
<remarksGroup>
<remarkCode id="rem-H">H</remarkCode>
<remarks><simplePara>Complete unit and subassembly
repair</simplePara></remarks>
</remarksGroup>
<remarksGroup>
<remarkCode id="rem-I">I</remarkCode>
<remarks><simplePara>In compliance with TSEC/ST-34CIDOS</simplePara></remarks>
</remarksGroup>
<remarksGroup>
<remarkCode id="rem-J">J</remarkCode>
<remarks><simplePara>Function performed by specialized repair activity (SRA)
(Theater COMSEC Logistics Support Center-Europe or Lexington-Blue Grass Army
Depot)</simplePara></remarks>
</remarksGroup>
</remarksList>
</maintPlanning>
```

FIGURE 45. Maintenance Allocation Chart (MAC) markup – Continued.

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5.1.7.3 Output.

Table 2 MAC for TSEC/ST-34

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL FIELD CREW C	FIELD MAIN-TAINER F	SUSTAINMENT BELOW DEPOT H	SUSTAINMENT DEPOT D	(5) TOOLS AND EQUIPMENT REF CODE	(6) REMARKS CODE
00	TSEC/ST-34	Inspect	0.1					A
		Service	0.2					B
		Replace	0.4				1	A, B
		Test	0.3					E
		Repair		1.5			1, 2	F
		Repair			2.0		1, 2, 3, 4, 5	G, H
		Repair				2.0	1, 2, 3, 4, 5, 6, 7, 8	I
		Repair				16.0	1, 2, 3, 4, 5, 6, 7, 8	J
01	POWER UNIT STP	Inspect	0.1					
		Test	0.3					
		Repair		1.8				
		Repair			2.0			
		Repair				2.0		
0101	PRINT CIRCUIT BOARDS							
010101	E-EB/01	Inspect		0.1				
		Replace		0.5				
		Test				1.0		
		Repair		0.5				
		Replace				2.0		
010102	SWITCHING ASSEMBLY	Inspect	0.1					
02	LOGIC UNIT	Inspect	–					

Table 3 Tools and Test Equipment for TSEC/ST-34

TOOLS OF TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	C	Automatic test system ST-51	5810–00–089–4599	TSEC/ST-51
2	F	Multimeter, digital	6625–01–139–2512	AN/PSM-45
3	H	Multimeter, digital	6625–01–145–2430	AN/USM-486
4	H	Oscilliscope	6625–01–167–7647	AN/USM-488
5	H	Power supply (0-35 VDC 24k)	6130–00–006–5224	HP 6434B 86
6	D	Power supply tester		ON502427
7	D	Repair and soldering center (page)	4940–01–031–4541	PRC-350C/equip
8	D	Tool, kit, electronic equipment	5160–00–610–6177	TK-105/6

Table 4 Remarks for TSEC/ST-34

REMARKS CODE	REMARKS
A	External
B	Preventive maintenance checks and services (PMCS)
C	Replace rack installed unit, 0.4 hrs
D	Bench top use only, 0.1 hrs
E	Self-test
F	Repair by PMA and authorized component replacement only
G	Complete unit and subassembly repair (except STP-34 switching assembly and E-EB/1)
H	Complete unit and subassembly repair
I	In compliance with TSEC/ST-34CIDOS
J	Function performed by specialized repair activity (SRA) (Theater COMSEC Logistics Support Center-Europe or Lexington-Blue Grass Army Depot).

FIGURE 46. Sample output for Maintenance Allocation Chart (MAC).

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5.1.8 Illustrated parts data information.

5.1.8.1 General.

The IPD data module is used to contain information about parts lists. Each data module contains one illustration followed by the associated parts information. The parts data module can be provided as a standalone publication or as part of another publication. (Refer to 5.2.8.)

Refer to Table A-VI for a list of IPD information sets.

Refer to Figure 47 for an IPD overview.

Refer to Figure 48 for additional item sequence number (element **`<itemSequenceNuber>`**) child elements not depicted in Figure 47.

NOTE

Figure 47 and Figure 48 do not include all available elements and attributes.

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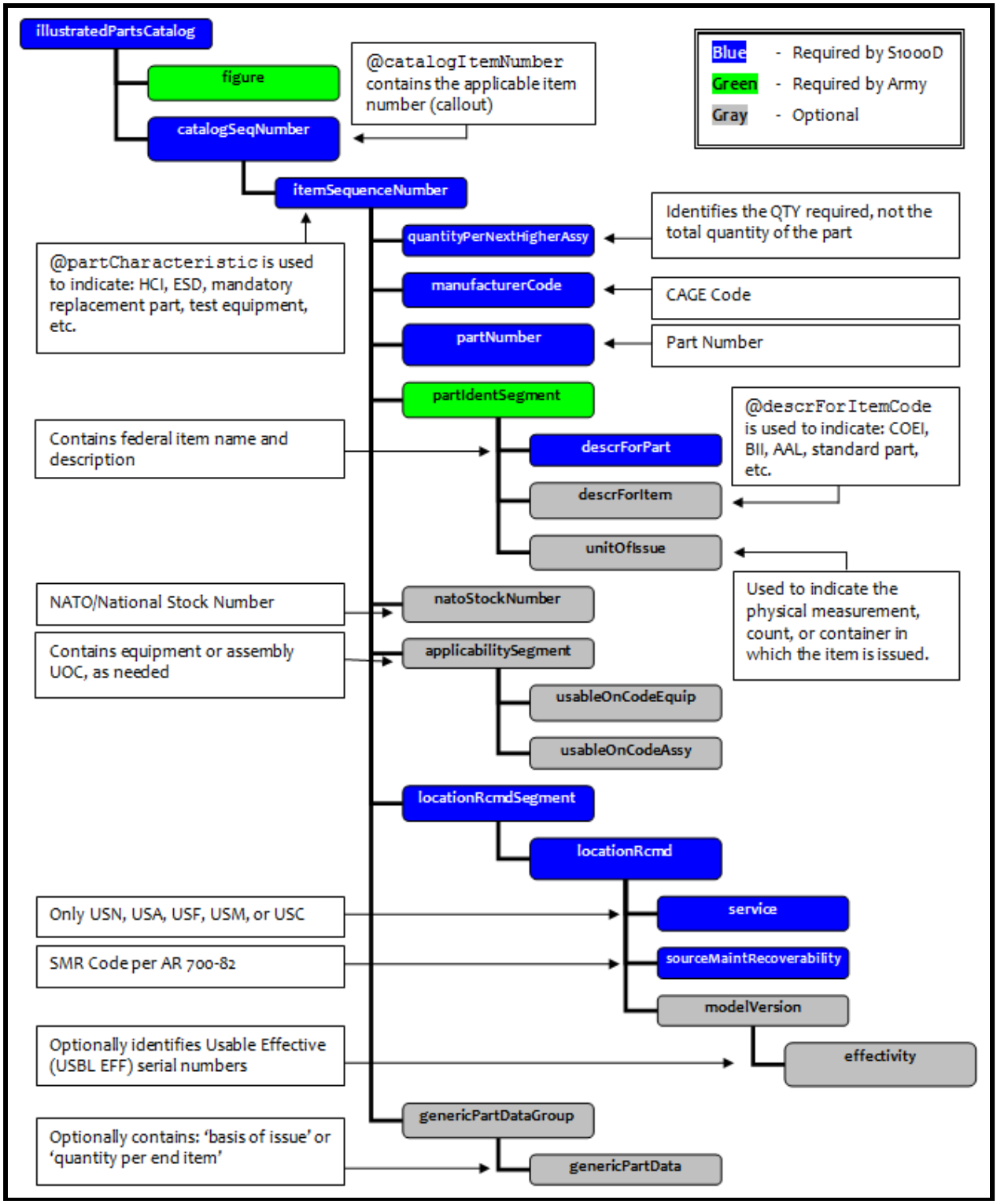

FIGURE 47. Illustrated Parts Data (IPD) quick view.

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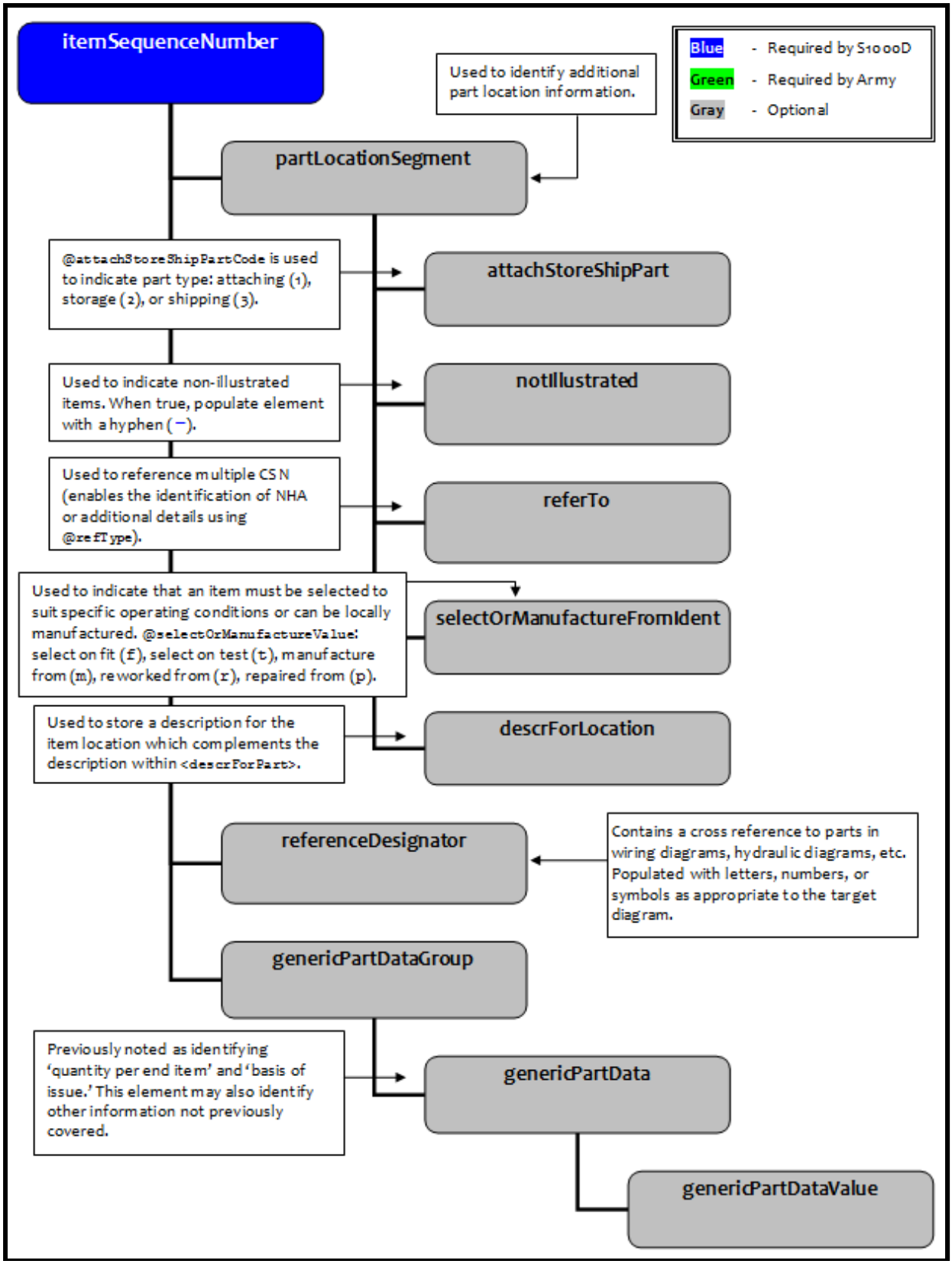

FIGURE 48. Item sequence number optional children.

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5.1.8.2 Generic part data.

The Army has defined two types of generic part data (element **<genericPartData>**): **"qtyPerEndItem"** and **"basisOfIssue."** The attribute **genericPartDataName** contains the applicable definition. The value **"qtyPerEndItem"** is used by only the Marine Corps. The value **"basisOfIssue"** is used to indicate the Basis of Issue (BOI). The content of the element **<genericPartDataValue>** contains the value defined by the attribute **genericPartDataName**.

Note the use of the attribute genericPartDataName for Quantity Per End Item (Marines Only) and Basis of Issue (BOI).

```
<genericPartDataGroup>
<genericPartData genericPartDataName="qtyPerEndItem">
<genericPartDataValue>1</genericPartDataValue>
</genericPartData>
<genericPartData genericPartDataName="basisOfIssue">
<genericPartDataValue>1 Per 1-15 End
Items</genericPartDataValue>
</genericPartData>
</genericPartDataGroup>
```

FIGURE 49. Generic part data markup.

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5.1.8.3 Markup example.

```
<illustratedPartsCatalog>
<figure id="fig-0001">
<title>Bicycle</title>
<graphic infoEntityIdent="ICN-S1000DBIKE-AAA-D000000-0-U8025-00536-B-04-
1"/>
</figure>
<catalogSeqNumber
catalogSeqNumberValue="D00000001 000 "
catalogItemNumber="000 " indenture="1">
```

The @catalogSeqNumberValue contains the CSN, including the figure number (bold **01**), which is used to generate the IPD figure number.

Note that @catalogItemNumber contains a four-character value, the last position (here) being a space. Since there is no item number variant, it is omitted.

```
<itemSequenceNumber itemSeqNumberValue="00A">
<quantityPerNextHigherAssy>1</quantityPerNextHigherAssy>
<manufacturerCode>70466</manufacturerCode>
<partNumber>STANDARD</partNumber>
<partIdentSegment>
<descrForPart>Bicycle</descrForPart>
</partIdentSegment>
<natoStockNumber natoSupplyClass="2340" natoCodificationBureau="00"
natoItemIdentNumberCore="0257871"/>
<locationRcmdSegment>
<locationRcmd>
<service>USA</service>
<sourceMaintRecoverability>PAFFF</sourceMaintRecoverability>
</locationRcmd>
</locationRcmdSegment>
</itemSequenceNumber>
</catalogSeqNumber>
<catalogSeqNumber catalogItemNumber="001 " indenture="2">
<itemSequenceNumber itemSeqNumberValue="00A">
<quantityPerNextHigherAssy>1</quantityPerNextHigherAssy>
<manufacturerCode>80244</manufacturerCode>
<partNumber>GG16847</partNumber>
<partIdentSegment>
<descrForPart>Assembly, Frame</descrForPart>
</partIdentSegment>
<natoStockNumber natoSupplyClass="2340" natoCodificationBureau="01"
natoItemIdentNumberCore="3954419"/>
<locationRcmdSegment>
<locationRcmd>
<service>USA</service>
<sourceMaintRecoverability>PAFDD</sourceMaintRecoverability>
</locationRcmd>
</locationRcmdSegment>
</itemSequenceNumber>
</catalogSeqNumber>
<catalogSeqNumber catalogItemNumber="002 " indenture="3">
<itemSequenceNumber itemSeqNumberValue="00A">
<quantityPerNextHigherAssy>1</quantityPerNextHigherAssy>
<manufacturerCode>53380</manufacturerCode>
<partNumber>3C0882-A01</partNumber>
<partIdentSegment>
<descrForPart>Assembly, Seat</descrForPart>
</partIdentSegment>
```

Insert <applicabilitySegment> (after NSN) if UOC is needed.

FIGURE 50. Illustrated Parts Data (IPD) markup.

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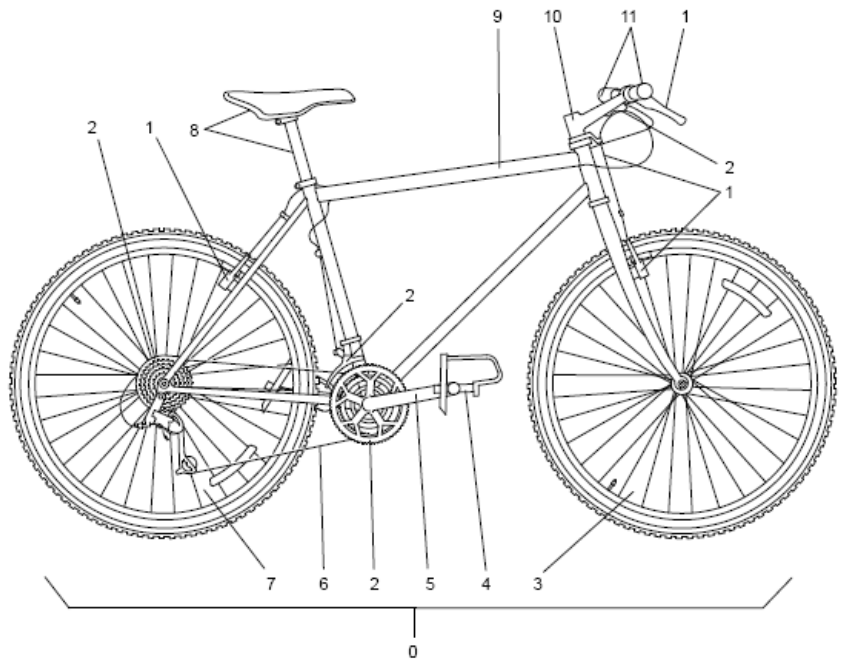
```
<natoStockNumber natoSupplyClass="2540" natoCodificationBureau="01"
natoItemIdentNumberCore="2944882"/>
<locationRcmdSegment>
<locationRcmd>
<service>USA</service>
<sourceMaintRecoverability>PAGDD</sourceMaintRecoverability>
</locationRcmd>
</locationRcmdSegment>
</itemSequenceNumber>
</catalogSeqNumber>
</illustratedPartsCatalog>
```

FIGURE 50. Illustrated Parts Data (IPD) markup – Continued.

5.1.8.4 Output.



ICN-S1000DBIKE-AAA-D000000-0-U8025-00536-B-04-1

Figure 1. Bicycle.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 00 Bicycle FIGURE 01 Bicycle	
000	PAFFF	2340-00-025-7871	70466	STANDARD	Bicycle	1
001	PAFDD	2340-01-395-4419	80244	GG16847	. Assembly, Frame	1
002	PAGDD	2540-01-294-4882	53380	3C0882-A01	. . Assembly, Seat	1
					END OF FIGURE	

FIGURE 51. Sample output of a parts list.

5.1.9 Publication module.

5.1.9.1 General.

A publication module is used to identify a task (multiple procedures), section, entire chapter, entire volume, or an entire publication (refer to 4.4). Like other data module types, the publication module also contains an identification and status section (element

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`<identAndStatusSection>`) (refer to 5.1.9.1.1) as well as a content section (element **`<content>`**) (refer to 5.1.9.1.2).

Refer to Figure 52 for an overview of the publication module identification and status section.

Refer to Figure 2 for an overview of the data module identification and status section.

NOTE

Publication modules do not contain a BREX data module reference (element **`<brexDmRef>`**). Projects should use care to ensure all requirements are met since the publication module cannot be validated via BREX (refer to 5.1.11).

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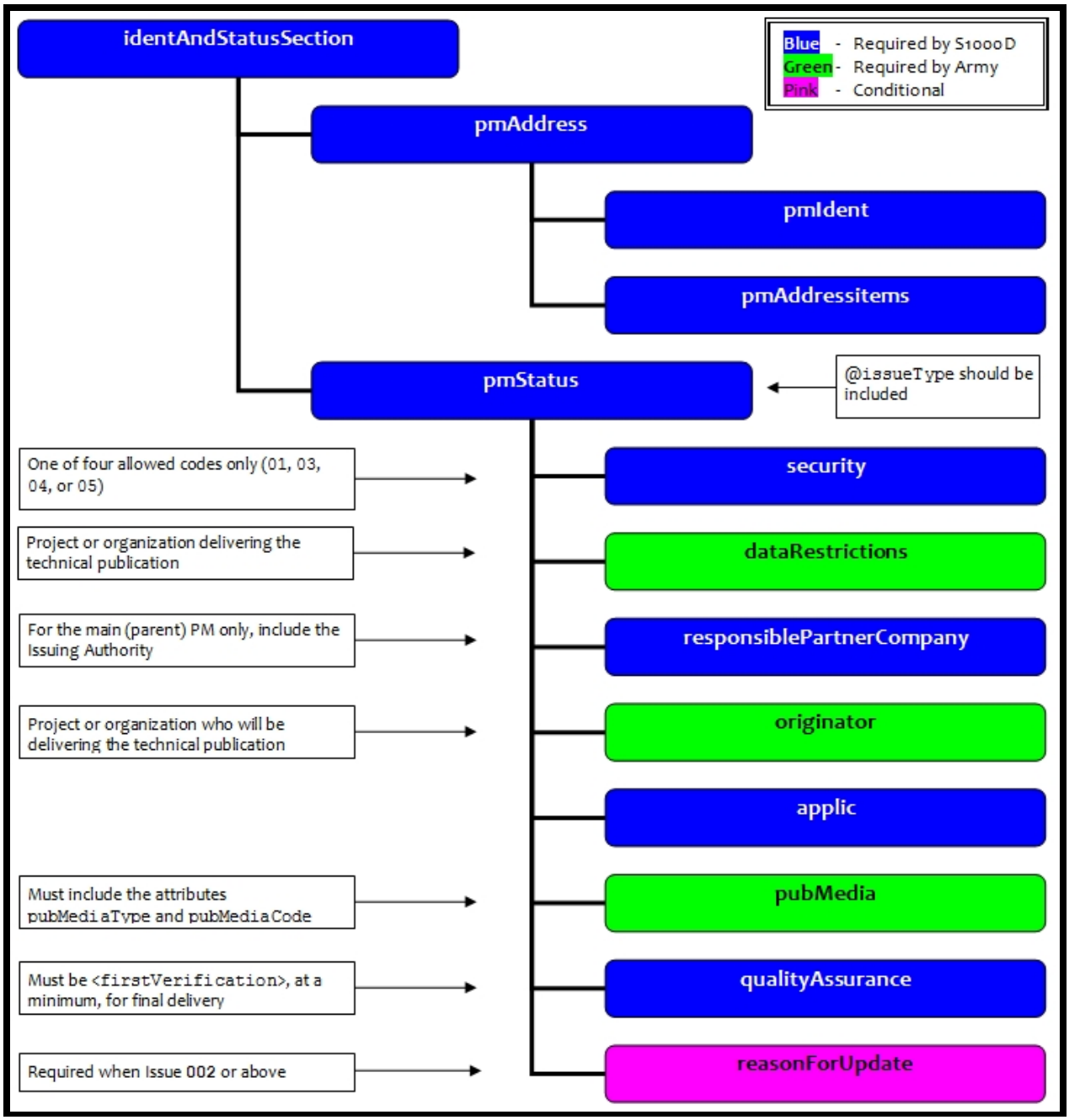

FIGURE 52. Publication module identification and status section.

5.1.9.1.1 Publication module identification and status section.

This section, when used to define a stand-alone publication module, contains the publication information displayed to the user, similar to a cover page. This includes the publication module code, publication title, issue date, security classification, and other applicable identification information.

Similar to other data module types, the two branches in the identification and status section contain the (publication) module address (element **`<pmAddress>`**) (refer to 5.1.9.1.1.1) and the (publication) module status (element **`<pmStatus>`**) (refer to 5.1.9.1.1.6) branches.

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5.1.9.1.1.1 Publication module address.

Within the publication module address, the identification and address items are similar to their data module counterparts.

Within the identification branch (element **<pmIdent>**), the only difference is the publication module code (element **<pmCode>**), instead of the now familiar data module code (element **<dmCode>**). The publication module code includes only four attributes as opposed to the thirteen attributes on the data module code (element **<dmCode>**).

5.1.9.1.1.2 Publication module code.

A publication module code, in accordance with MIL-STD-3031, can define an entire publication, a volume, or a nested publication module (refer to 5.1.9.1.1.3).

The four attributes that make up a publication module code are: **modelIdentCode**, **pmIssuer**, **pmNumber**, and **pmVolume**.

The attribute **modelIdentCode** is populated, in accordance with MIL-STD-3031, in line with the same decisions for populating the data module code.

The attribute **pmIssuer** does not follow the recommended S1000D population, but instead should be populated according to the business rules agreed to by the joint services (refer to MIL-STD-3031). This consists of a one-character issuing authority code, followed by a four-character Federal Supply Classification (FSC).

The attribute **pmNumber** is populated, in accordance with MIL-STD-3031, using a three-character publication code followed by a two-character sequence number.

Only volumes will increment the two-digit attribute **pmVolume**.

S1000D	Model ID Code	Issuing Authority		Number of Publication		Volume Number
<pmCode>	(2-14 char) @modelIdentCode	(5 char) @pmIssuer		(5 char) @pmNumber		(2 digits) @pmVolume
JS/Army	(Registered) Model ID (2-14 char)	Issuing Authority (1 char)	Category (FSC) (4 char)	Type of Pub (3 char)	Seq. # (2 char)	00 (Default)

FIGURE 53. Main (parent) publication module code.

5.1.9.1.1.3 Nested publication modules.

The difference for the population of nested publication modules is the publication number (attribute **pmNumber**), which is assigned by the project, and the static population of the volume (attribute **pmVolume**), which is always "**00**."

The publication number (attribute **pmNumber**), when used for defining nested structures (for example, data module, section, or chapter), can be populated with an identification or value prefix to assist in determining the information set and the order it should be displayed. Identification or value prefixes for chapters may use the pattern "**C0001-C9999**," sections could follow with "**C01S1-C99SZ**," allowing 99 chapters and 36 sections.

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For example, if supporting information exists in Chapter 6, then the publication number could use "**C0006**" as the five-character value. Sections could use "**C6S01**, **C6S02**, …" or "**C06S1-C06SZ**" depending on the quantity of sections and chapters. Whatever method is decided, it should be consistent throughout the chapter and, if possible, the entire publication. Keep in mind, the publication module title (provided in MIL-STD-3031 within the content selection matrices) contains full information similar to "Supporting Information" and will help clarify the contents defined therein.

S1000D	Model ID Code *	Issuing Authority *		Number of Publication	Volume Number
<pmCode>	(2-14 char) @modelIdentCode	(5 char) @pmIssuer		(5 char) @pmNumber	(2 digits) @pmVolume
JS/Army	(Registered) Model ID (2-14 char)	Issuing Authority (1 char)	Category (FSC) (4 char)	DM, Section, or Chapter Wrapper ID (5 char)	00 (Only)

* No change

FIGURE 54. Nested publication module code.

5.1.9.1.1.4 Publication module address items.

Another difference from the data module address is the population of the publication module title (element **<pmTitle>**). Data modules contain two child elements which include the technical name and information name whereas a publication module contains two elements **<pmTitle>** and, optionally, **<shortPmTitle>**.

5.1.9.1.1.5 Equipment nomenclature.

The official end item nomenclature consists of a name and one or more optional identifiers: model number, part number, National Stock Number (NSN), End Item Code (EIC), or a mixture of these.

When only one of each type of identifier is applicable, identifiers can be included in the short publication module title (element **<shortPmTitle>**).

When two or more of the same type of identifier is applicable, they should be grouped accordingly and listed within applicability (element **<applic>**) (refer to Figure 55).

Figure 55 is a very basic example for the use of applicability.

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```
<applic>
<displayText>
<simplePara>NOMENCLATURE MODEL YYYYYY (NSN XXXX-XX-XXX-XXXX)</simplePara>
<simplePara>NOMENCLATURE MODEL YYYYYY (NSN XXXX-XX-XXX-XXXX)</simplePara>
</displayText>
</applic>
```

Y – Alphanumeric characters (character limit not specified)
X – Numerals only (NSN consists of 13 digits)

FIGURE 55. Multiple equipment identifiers.

5.1.9.1.1.6 Publication module status.

In addition to the [schema] required elements, the publication module, in accordance with MIL-STD-3031, requires the use of the following elements: **`<language>`**, **`<dataRestrictions>`**, **`<originator>`**, **`<pubMedia>`**, and **`<reasonForUpdate>`** (issue **`"002"`** and above). The attribute **`pubMediaType`** is also required on the element **`<pubMedia>`**, in accordance with MIL-STD-3031.

Refer to 4.2.1.3.3 for information regarding responsible partner company and to 4.2.1.3.4 for information regarding originator.

5.1.9.1.2 Publication module content section.

This section is used to define the contents of a single task (which may consist of multiple data modules), a section, a chapter or an entire publication or volume. The contents can reference data modules, publication modules, external publications, or a mixture of these references.

NOTE

It is important to decide if and how publication module nesting will be used. For smaller publications, the use of multiple publication modules may not be desired. This decision is heavily dependent upon the publishing system and process.

The main or parent publication module should define all of the applicable documents that, when combined, construct the publication.

The applicable documents defining the publication are included within a publication module entry (element **`<pmEntry>`**). This element can include the attribute **`pmEntryType`** (refer to MIL-STD-3031 for allowed values). A publication module entry may include: a data module reference (element **`<dmRef>`**), a publication module reference (element **`<pmRef>`**), an external publication reference (element **`<externalPubRef>`**), a nested publication module entry (element **`<pmEntry>`**) or any combination of these elements. Refer to Figure 56 for an example of how these elements can be combined.

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• (Front Matter)	→ (<pmEntry pmEntryType="pmt51">)
– Safety summary	→ <dmRef>
– Revision summary	→ <dmRef>
– LOEDM	→ <dmRef>
– How to use…	→ <dmRef>
• (Chap)	→ (<pmEntry pmEntryType="pmt52">)
• General Information, Equipment Description and Theory of Operation	→ <pmRef>
– General Information	→ (Nested pmEntry) <pmEntryTitle>
• General Data	→ <dmRef>
• General Information	→ <dmRef>
– Equipment description and data	→ <dmRef>
– Instructions for the use, transportation, handling, storage, or disposal	→ <dmRef>
– Theory of operation	→ <dmRef>
• (Chap)	→ (<pmEntry pmEntryType="pmt52">)
• Operator Instructions	→ <pmRef>
– Description and Use of Operator Controls and Indicators	→ <dmRef>
– Operation Under Usual Conditions	→ (Nested pmEntry) <pmEntryTitle>
• Normal Operation Procedures	→ <dmRef>
• …	→ …
– Operation Under Unusual Conditions	→ (Nested pmEntry) <pmEntryTitle>
• Unusual Environment/Weather	→ <dmRef>
• …	→ …
– Stowage and Decal/Data Plate Guide	→ <dmRef>

FIGURE 56. Publication module entry examples.

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5.1.9.2 Markup example.

5.1.9.2.1 Parent publication module identification and status section example.

```
<identAndStatusSection>
<pmAddress>
<pmIdent>
<pmCode modelIdentCode="ARMYBIKE" pmIssuer="12340" pmNumber="OPI01" pmVolume="00"/>
<language countryIsoCode="US" languageIsoCode="en"/>
<issueInfo inWork="01" issueNumber="000"/>
</pmIdent>
<pmAddressItems>
<issueDate day="09" month="06" year="2009"/>
<pmTitle>OPERATOR'S MANUAL</pmTitle>
<shortPmTitle>EQUIPMENT NAME MODEL X (NSN 0000-00-000-0000) (EIC XXX)</shortPmTitle>
</pmAddressItems>
</pmAddress>
<pmStatus issueType="new">
<security securityClassification="01"/>
<dataRestrictions>
<restrictionInstructions>
<dataDistribution>DISTRIBUTION STATEMENT A: Approved for public release; distribution
is unlimited.</dataDistribution>
<exportControl>
<exportRegistrationStmt>
<simplePara>WARNING: Export control statement here.</simplePara>
</exportRegistrationStmt>
</exportControl>
<dataDestruction>DESTRUCTION NOTICE: Destroy by any means possible to prevent
disclosure of contents or reconstruction of the document.</dataDestruction>
</restrictionInstructions>
<restrictionInfo>
<policyStatement>Classification source and reason for classification of this
publication per DODI 5200.001-R.</policyStatement>
</restrictionInfo>
</dataRestrictions>
<responsiblePartnerCompany>
<enterpriseName>HEADQUARTERS, DEPARTMENT OF THE ARMY</enterpriseName>
</responsiblePartnerCompany>
<originator enterpriseCode="07GB6">
<enterpriseName>BTAS COE</enterpriseName>
</originator>
<applic>
<displayText/>
</applic>
<pubMedia pubMediaCode="PDF" pubMediaType="PDF - Optimized for Standard page size"/>
<qualityAssurance>
<firstVerification verificationType="tabtop"/>
<secondVerification verificationType="onobject"/>
</qualityAssurance>
<remarks>
<simplePara>GENERAL NOTICE: General purpose notices may appear here.</simplePara>
</remarks>
</pmStatus>
</identAndStatusSection>
```

FIGURE 57. Parent publication module identification and status section markup.

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5.1.9.2.2 Parent publication module content example.

```
<content>
<pmEntry pmEntryType="pmt51">
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="ARMYBIKE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="00" disassyCode="00"
disassyCodeVariant="0" infoCode="012" infoCodeVariant="J"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Army Bicycle</techName>
<infoName>Safety summary</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="ARMYBIKE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="00" disassyCode="00"
disassyCodeVariant="0" infoCode="003" infoCodeVariant="C"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Army Bicycle</techName>
<infoName>Revision summary</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="ARMYBIKE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="00" disassyCode="00"
disassyCodeVariant="0" infoCode="00S" infoCodeVariant="A"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Army Bicycle</techName>
<infoName>List of effective data modules</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
```

pmEntryType Values
pmt51 - Front matter
pmt52 - Chapter

FIGURE 58. Parent publication module content markup.

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```
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="ARMYBIKE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="00" disassyCode="00"
disassyCodeVariant="0" infoCode="018" infoCodeVariant="B"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Army Bicycle</techName>
<infoName>How to use this manual</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
</pmEntry>
<pmEntry pmEntryType="pmt52">
<pmEntry>
<pmRef xlink:href="PMC-USARMYBIKE-12340-C0001-00_001-00_EN-US.xml"
xlink:actuate="onRequest">
<pmRefIdent>
<pmCode modelIdentCode="ARMYBIKE"
pmIssuer="12340" pmNumber="C0001"
pmVolume="00"/>
</pmRefIdent>
<pmRefAddressItems>
<pmTitle>General Information, Equipment
Description and Theory of Operation</pmTitle>
</pmRefAddressItems>
</pmRef>
<pmEntry>
<pmEntryTitle>General Information</pmEntryTitle>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="ARMYBIKE"
systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0"
assyCode="00" disassyCode="00"
disassyCodeVariant="0" infoCode="010"
infoCodeVariant="A" itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Army Bicycle</techName>
<infoName>General data</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="ARMYBIKE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="00" disassyCode="00"
disassyCodeVariant="0" infoCode="010" infoCodeVariant="B"
itemLocationCode="A"/>
</dmRefIdent>
```

Note
XLink attributes are typically populated by the IETP compiler or during the publishing process. They should not be populated manually.

If this publication module (<pmRef>) did not exist, only <pmEntryTitle> would be included with the same contents in <pmTitle>. Similar to "General Information" below.

Provides only a header for the applicable data modules that fall under it.

pmEntryType Values
pmt51 - Front matter
pmt52 - Chapter

Figure 58. Parent publication module content markup – Continued.

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```
<dmRefAddressItems>
<dmTitle>
<techName>Army Bicycle</techName>
<infoName>General information</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
</pmEntry>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="ARMYBIKE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="00" disassyCode="00"
disassyCodeVariant="0" infoCode="000" infoCodeVariant="B"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Army Bicycle</techName>
<infoName>Equipment description and data</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="ARMYBIKE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="00" disassyCode="00"
disassyCodeVariant="0" infoCode="800" infoCodeVariant="L"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Army Bicycle</techName>
<infoName>Instructions for the use, transportation, handling, storage, or
disposal</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="ARMYBIKE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="00" disassyCode="00"
disassyCodeVariant="0" infoCode="042" infoCodeVariant="F"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Army Bicycle</techName>
<infoName>Theory of operation</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
</pmEntry>
</pmEntry>
```

pmEntryType Values

pmt51 - Front matter

pmt52 - Chapter

Figure 58. Parent publication module content markup – Continued.

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```
<pmEntry pmEntryType="pmt52">
<pmRef>
<pmRefIdent>
<pmCode modelIdentCode="ARMYBIKE" pmIssuer="12340" pmNumber="C0002"
pmVolume="00"/>
</pmRefIdent>
<pmRefAddressItems>
<pmTitle>Operator Instructions</pmTitle>
</pmRefAddressItems>
</pmRef>
<pmEntry>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="ARMYBIKE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="00" disassyCode="00"
disassyCodeVariant="0" infoCode="042" infoCodeVariant="F"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Army Bicycle</techName>
<infoName>Description and Use of Operator Controls and Indicators</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
<pmEntry>
<pmEntryTitle>Operation Under
Usual Conditions</pmEntryTitle>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="ARMYBIKE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="00" disassyCode="00"
disassyCodeVariant="0" infoCode="131" infoCodeVariant="A"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Army Bicycle</techName>
<infoName>Normal Operation Procedures</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
</pmEntry>
<pmEntry>
<pmEntryTitle>Operation Under
Unusual Conditions</pmEntryTitle>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="ARMYBIKE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="00" disassyCode="00"
disassyCodeVariant="0" infoCode="142" infoCodeVariant="B"
itemLocationCode="A"/>
</dmRefIdent>
```

pmEntryType Values
pmt51 - Front matter
pmt52 - Chapter

Provides only a header for the applicable data modules that fall under it.

Provides only a header for the applicable data modules that fall under it.

Figure 58. Parent publication module content markup – Continued.

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```
<dmRefAddressItems>
<dmTitle>
<techName>Army Bicycle</techName>
<infoName>Unusual Environment/Weather</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
</pmEntry>
<!-- Any other Operator Instruction DMs listed here -->
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="ARMYBIKE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="00" disassyCode="00"
disassyCodeVariant="0" infoCode="067" infoCodeVariant="B"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Army Bicycle</techName>
<infoName>Stowage and Decal/Data Plate Guide</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
</pmEntry>
</pmEntry>
<pmEntry pmEntryType="pmt52">
<pmRef>
<pmRefIdent>
<pmCode modelIdentCode="ARMYBIKE" pmIssuer="12340" pmNumber="C0003"
pmVolume="00"/>
</pmRefIdent>
<pmRefAddressItems>
<pmTitle>Maintenance Instructions</pmTitle>
</pmRefAddressItems>
</pmRef>
<!-- pmEntry with required DMs and other applicable maintenance DMs-->
</pmEntry>
<pmEntry pmEntryType="pmt52">
<pmRef>
<pmRefIdent>
<pmCode modelIdentCode="ARMYBIKE" pmIssuer="12340" pmNumber="C0004"
pmVolume="00"/>
</pmRefIdent>
<pmRefAddressItems>
<pmTitle>Supporting Information</pmTitle>
</pmRefAddressItems>
</pmRef>
<pmEntry>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="ARMYBIKE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="00" disassyCode="00"
disassyCodeVariant="0" infoCode="017" infoCodeVariant="B"
itemLocationCode="A"/>
```

pmEntryType Values
pmt51 - Front matter
pmt52 - Chapter

Figure 58. Parent publication module content markup – Continued.

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```
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Army Bicycle</techName>
<infoName>References</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="ARMYBIKE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="00" disassyCode="00"
disassyCodeVariant="0" infoCode="105" infoCodeVariant="D"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Army Bicycle</techName>
<infoName>Components of End Item (COEI) List</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="ARMYBIKE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="00" disassyCode="00"
disassyCodeVariant="0" infoCode="105" infoCodeVariant="C"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Army Bicycle</techName>
<infoName>Basic Issue Items (BII) List</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="ARMYBIKE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="00" disassyCode="00"
disassyCodeVariant="0" infoCode="070" infoCodeVariant="D"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Army Bicycle</techName>
<infoName>Expendable and Durable Items List</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
</pmEntry>
</pmEntry>
</content>
```

pmEntryType Values

pmt51 - Front matter

pmt52 - Chapter

Figure 58. Parent publication module content markup – Continued.

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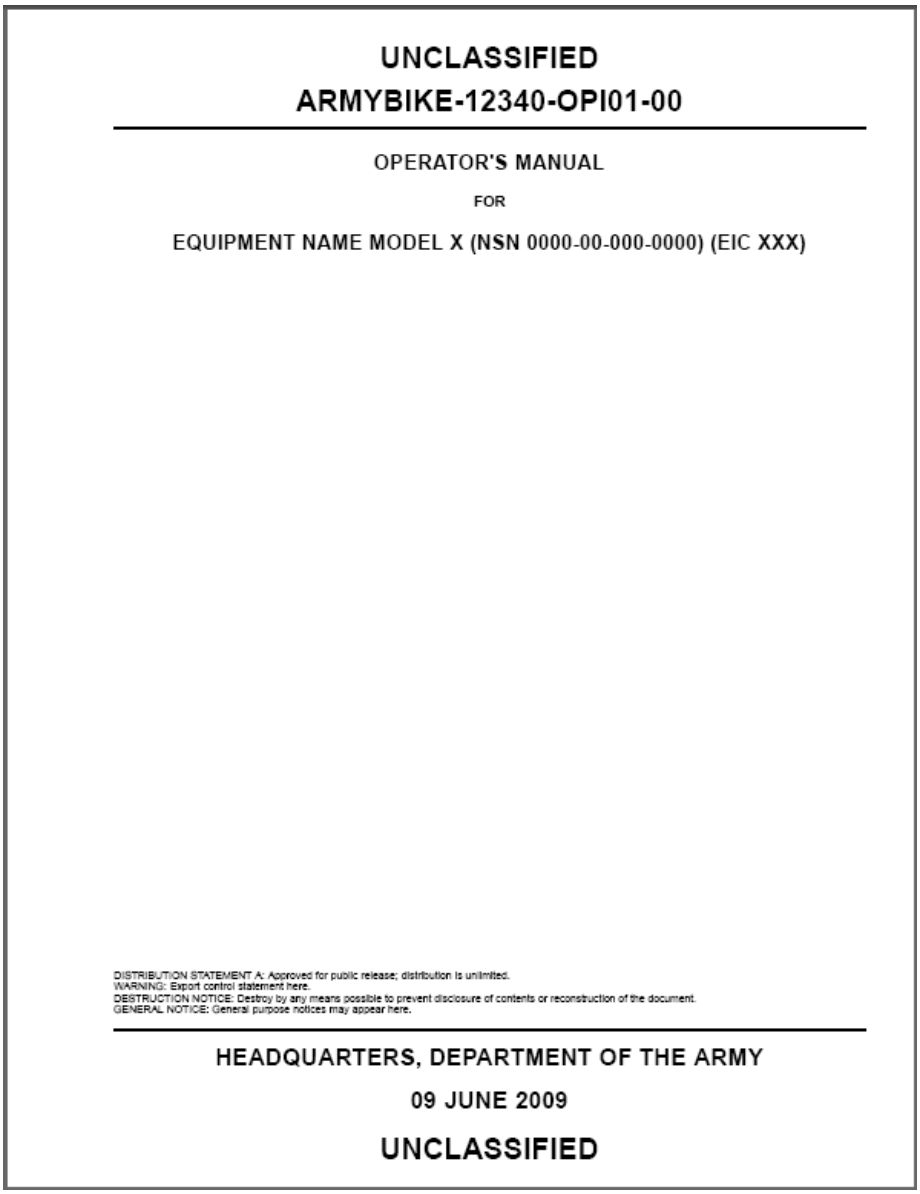
5.1.9.3 Output.



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ARMYBIKE-12340-OPI01-00

OPERATOR'S MANUAL

FOR

EQUIPMENT NAME MODEL X (NSN 0000-00-000-0000) (EIC XXX)

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.
WARNING: Export control statement here.
DESTRUCTION NOTICE: Destroy by any means possible to prevent disclosure of contents or reconstruction of the document.
GENERAL NOTICE: General purpose notices may appear here.

HEADQUARTERS, DEPARTMENT OF THE ARMY

09 JUNE 2009

UNCLASSIFIED

FIGURE 59. Sample output of a publication module cover page.

5.1.10 Process information.

5.1.10.1 General.

The process data module should be used when state manipulation or dialogs are needed, and that other appropriate data modules (i.e., procedural) should be used when state manipulation or dialogs are not needed. State manipulation is the act of changing a variable that is capable of change or of being changed, stored in a state table. The state table may be the function of either the IETP presentation application or some form of Maintenance Information System that includes IETP presentation capability. A state table provides the IETP and/or user with information on the condition of the task being performed or changes in system or user defined

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variables. Manipulation occurs through an interface such as a dialog box, form input, or menu selections. Manipulation may affect variables, task conditions, or changes in a system. Dialogs provide input via menu selection choices or direct input from a user. Refer to S1000D for more information on the process data module and examples.

Refer to Table A-VI for a list of process information sets.

5.1.10.2 Process data module development.

The process data module is developed differently from other data module types. It is used exclusively for IETPs. The process data module also allows external applications to run from the IETP.

The process data module may be used in IETPs to support the following:

a. Troubleshooting, where the logic engine evaluates user input.
b. Maintenance actions, based on user actions and state table values.
c. System operational checkouts, where specific limits should be met.
d. Any data module that may need real time processing of information.

5.1.10.3 Process data module concept.

The process data module concept is relatively simple. Various branches or paths are authored, providing all possible states and conditions a user may encounter. These are based on configuration, condition, location, or other factors of the equipment. The IETP uses its logic engine to evaluate results and follow a set path as determined by the author. It will also manage system variables (for example, system configuration - model number or system parameters - tire pressure) and read and load state table information. If a final result cannot be determined, the logic engine and/or process data module may go through several iterations, each time asking for user input, to help resolve and narrow down the specific issue until a final determination can be made.

5.1.10.4 Process data module peculiarities.

The process data module is unique in several respects. Several elements in the process data module schema, require an understanding of concepts such as Boolean operations (e.g., yes or no logic), mathematical expressions (e.g., less than, greater than), an understanding of the difference between numbers (e.g., real or integer) and strings (e.g., characters such as "a," "b," "?" and numbers not used for mathematical functions), looping, if/then concepts, as well as the use of variables.

5.1.10.4.1 Expression.

The expression, one of the most complex elements, allows the author to set various evaluation parameters. These allow the logic engine to determine the validity of the input data. An example of this is checking the tire pressure (in the bike example). Expression elements, coupled with other parameters can be used to determine if an input is true, false, high, low, or within acceptable tolerances.

5.1.10.4.2 External application.

The process data module allows the user or the presentation application to run external applications (element <**externalApplication**>). An application may be tools, such as diagnostic software or an external graphics viewer. The IETP presentation application may also

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send or receive information from that application. This is extremely useful when using automated diagnostic or operational testing software.

5.1.10.4.3 Help Information.

The element <**helpInfo**> is used to populate the optional "help" button within the element <**dialog**>. This feature is designed to provide additional information about a specific dialog. This is useful when additional information regarding the content is needed. Help information could provide the user with a specific format for the input data, for example, "When entering the tire pressure, do not include the unit of measure (e.g., PSI), include only the numeric reading." This should not be confused with the information needed by the user and displayed by a "message." While help information is selectable by the user the "message" will always be displayed.

5.1.10.4.4 Assertion.

The element <**assertion**> , a child of element <**dmLoop**>, assigns state variables. It is similar to the MIL-STD-2361 element <**statemanipulation**>.

5.1.11 Business Rules EXchange (BREX).

5.1.11.1 General.

A BREX data module records computer-verifiable business rules decisions for a project or organization as well as documented decisions. Computer-verifiable decisions are decisions that can be verified via a computer. Determining which decisions are computer-verifiable is dependent upon the BREX tool (refer to 5.1.11.1.2). Typically, narrative decisions cannot be validated with a BREX, the business decision entry (element **<structureObjectRule>**) acts as a record only.

An example of a narrative decision, using (MIL-STD-3031) BR #5.18.2.2, is:

> "The definition of the issue date for data modules is to be determined by the project in its business rules. This can be, for example, the input date (i.e., the release to Common Source Database (CSDB) date), or the cut-off date for the information."

Since a computer cannot determine which issue date has been agreed upon, this is not computer-verifiable and considered a narrative decision.

Refer to 5.1.11.5 for information regarding the Army BREX.

5.1.11.1.1 Layered Business Rules EXchange (BREX).

The use of the layered business rules structure allows a project or organization to restrict more general rules at a higher BREX level. For example, an organization may allow values between **"A"** through **"M,"** but a project may further limit the allowable values to **"A"** through **"H."** Refer to Figure 60 for an example.

While the schema validates the structure of the document, the BREX allows for the validation and use of specific values, elements, and attributes of an organization or project. The project BREX calls a higher level BREX and ensures compliance of higher level rules.

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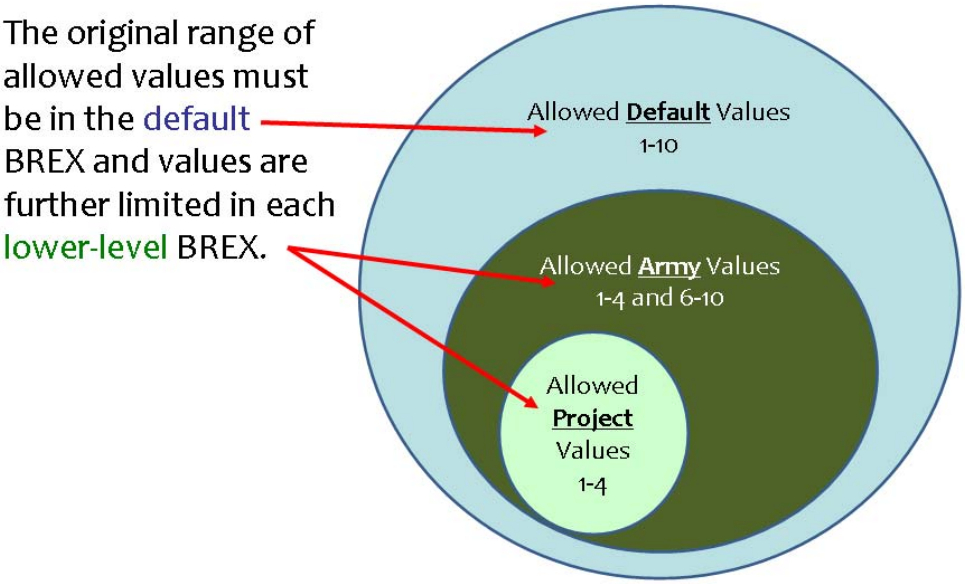

FIGURE 60. How a layered Business Rules EXchange (BREX) works.

5.1.11.1.2 Business Rules EXchange (BREX) tools.

BREX tools are applications or scripts that can automatically generate computer-verifiable tests from an existing BREX data module. One possibility for a BREX tool is transforming any element **`<objectPath>`** which includes the attribute **`allowedObjectFlag`**. These could be transformed into an XSL file containing true or false tests used to validate data modules. Tests can also be generated to test for any allowed values.

Projects may opt to purchase editors or third party tools or use a combination of tools that support BREX validation. Optionally, tools can be developed in-house to verify compliance with BREX. Tools can be created using a combination of XSL and scripts.

Refer to 5.1.11.6 for information on available utilities.

5.1.11.2 Business Rules EXchange (BREX) content.

Two branches are available in the BREX content section (element **`<content>`**). The references branch (element **`<refs>`**) allows references to other supporting data modules or publications (refer to 5.1.11.2.1). The business rules exchange branch (element **`<brex>`**) contains all the rules specified by a BREX data module.

5.1.11.2.1 References branch.

The references branch (element **`<refs>`**) contains references to external documents or publications. These may be data modules or legacy publications. Examples of references from a BREX data module include policy supporting the business rules, background information to explain why the rule exists, or external publication of business rules. In the markup example below, MIL-STD-3031 is referenced since the majority of Army business rules reside in an external document and not within the Army BREX.

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5.1.11.2.2 Markup example.

```
<refs>
<externalPubRef>
<externalPubRefIdent>
<externalPubCode>MIL-STD-3031</externalPubCode>
<externalPubTitle>ARMY BUSINESS RULES FOR S1000D: INTERNATIONAL
SPECIFICATION FOR TECHNICAL PUBLICATIONS UTILIZING A COMMON SOURCE
DATA BASE</externalPubTitle>
<externalPubIssueInfo>
<externalPubIssue>31 MARCH 2009</externalPubIssue>
</externalPubIssueInfo>
</externalPubRefIdent>
</externalPubRef>
</refs>
```

5.1.11.2.3 Business Rules EXchange (BREX) branch.

The business rules exchange section (element **<brex>**) also contains two branches: SNS rules (refer to 5.1.11.2.4) and context rules (refer to 5.1.11.2.5).

5.1.11.2.4 Standard Numbering System (SNS) rules branch.

The SNS rules branch (element **<snsRules>**) provides descriptions of systems and is used for the documentation of SNS.

The element **<snsDescr>** contains a description of each system. Each system (subsystem, sub-subsystem, or assembly) contains a code (element **<snsCode>**) and title (element **<snsTitle>**).

The SNS code should match the SNS used within the project or publication data modules, whichever the BREX applies. For example, within the **<snsRules>** structure, the element **<snsSystem>** contains the equivalent of attribute **systemCode** within the element **<dmCode>**. Refer to Table VIII for data module code-to-SNS rules mapping. Also refer to 4.2.1.2.2.1.1 for FGC-to-SNS conversion guidance.

TABLE VIII. Standard Numbering System (SNS) rules and data module code attributes.

Data Module Code Attribute	SNS Description	SNS Rules Element
systemCode	System	**<snsSystem>**
subSystemCode	Subsystem	**<snsSubSystem>**
subSubSystemCode	Sub-subsystem	**<snsSubSubSystem>**
assyCode	Assembly or Unit	**<snsAssy>**

Each of the SNS codes can also be included in the structure rules (refer to 5.1.11.2.5.1) as allowed values for the SNS attributes within a data module code. As this is redundant, projects should consider how the BREX tool will address the options and determine where to populate the SNS for validation.

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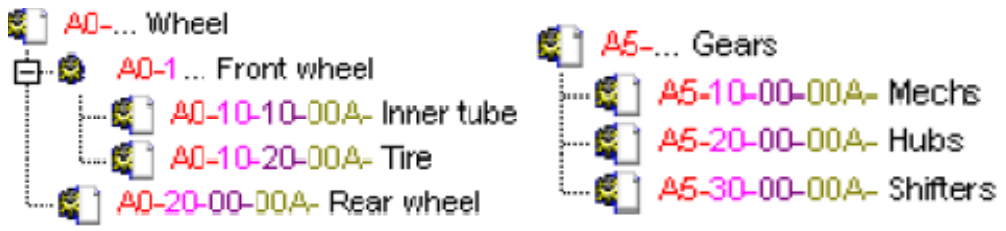

SNS Rules

#	Code	Description	Title
1.	A0	System	Wheel
	1	SubSystem	Front Wheel
	0	SubSubSystem	
	10	Assembly	Inner tube
	20	Assembly	Tire
	2	SubSystem	Rear Wheel
2.	A5	System	Gears
	1	SubSystem	Mechs
	2	SubSystem	Hubs
	3	SubSystem	Shifters

FIGURE 61. Standard Numbering System (SNS) example.

Using the bike breakdown (bike samples are available from http://www.s1000d.org/) and the SNS example (red, pink, and purple characters only) shown in Figure 61. The XML in 5.1.11.2.4.1 could be included as a part of the BREX within **`<snsRules>`**. In accordance with S1000D, when the sub-subsystem contains a zero, the subsystem is represented as a whole. Therefore, although the SNS may contain additional zeroes and there is no need to define them further within the SNS rules.

For example, using the "gears" in Figure 61, there are three "whole" subsystems:

SNS: A5-10-00 - Mechs

SNS: A5-20-00 - Hubs

SNS: A5-30-00 - Shifters

So, only the system and subsystem for each is populated, refer to the example in 5.1.11.2.4.1.

5.1.11.2.4.1 Markup example.

```
<snsSystem>
<snsCode>A0</snsCode>
<snsTitle>Wheel</snsTitle>
<snsSubSystem>
<snsCode>1</snsCode>
<snsTitle>Front Wheel</snsTitle>
<snsSubSubSystem>
<snsCode>0</snsCode>
<snsTitle></snsTitle>
<snsAssy>
```

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```
<snsCode>10</snsCode>
<snsTitle>Inner tube</snsTitle>
</snsAssy>
<snsAssy>
<snsCode>20</snsCode>
<snsTitle>Tire</snsTitle>
</snsAssy>
</snsSubSubSystem>
</snsSubSystem>
<snsSubSystem>
<snsCode>2</snsCode>
<snsTitle>Rear Wheel</snsTitle>
</snsSubSystem>
</snsSystem>
<snsSystem>
<snsCode>A5</snsCode>
<snsTitle>Gears</snsTitle>
<snsSubSystem>
<snsCode>1</snsCode>
<snsTitle>Mechs</snsTitle>
</snsSubSystem>
<snsSubSystem>
<snsCode>2</snsCode>
<snsTitle>Hubs</snsTitle>
</snsSubSystem>
<snsSubSystem>
<snsCode>3</snsCode>
<snsTitle>Shifters</snsTitle>
</snsSubSystem>
</snsSystem>
```

5.1.11.2.5 Context rules branch.

The context rules branch (element **`<contextRules>`**) define the rules for different contexts within a project or organization. This element is repeatable and the use of the attribute **`rulesContext`** allows a specific schema target.

The context rules branch is further divided into two additional branches: structure rules (element **`<structureObjectRuleGroup>`**) and notation rules (element **`<notationRuleList>`**).

Both structure rules and notation rules are allowed within a single data module.

5.1.11.2.5.1 Structure rules.

Structure rules (element **`<structureObjectRuleGroup>`**) contain all rules specific to the use of elements and attributes for all the various data module types used by the project or organization. It contains the elements, attributes, values, patterns and formats that are allowed or prohibited. It can also include all documented decisions agreed upon by a project or organization.

A group consists of multiple rules(element **`<structureObjectRule>`**) which is further broken down into a path(element **`<objectPath>`**) (refer to 5.1.11.2.5.2), optional use (element **`<objectUse>`**) (refer to 5.1.11.2.5.3), and optional value(s) (element **`<objectValue>`**) (refer to 5.1.11.2.5.4).

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All undocumented attribute values should be included in the BREX to verify that values are valid.

5.1.11.2.5.2 Object path.

The object path contains the location of the target element or attribute within the schema structure. The element **<objectPath>** also allows the attribute **allowedObjectFlag** which can prohibit (value of "**0**") or require (value of "**1**") the use of the object. The object path should relate as close as possible to the business rule decision.

Object paths contain an XPath address, refer to XML Path Language (XPath) 2.0 for more information.

For example, if the existing business rule decision required the use of the attribute **id**, then the object path would include, **//@id**. However, if the decision required the use of the attribute **id** on only procedural steps, then the object path would include, **//proceduralStep/@id**.

Since the decision required the use of the attribute, the **allowedObjectFlag** would also be included and the markup for the latter decision would look like:

```
<objectPath allowedObjectFlag="1">//proceduralStep/@id</objectPath>
```

5.1.11.2.5.3 Object use.

The object use contains a specific description and intended use for the object (element, attribute, or notation). The Army BREX contains the related business rule as the object use. Using the example above, the applicable object use would look similar to the following:

```
<objectUse>The attribute id is required on all procedural
steps.</objectUse>
```

5.1.11.2.5.4 Object value.

The object value (element **<objectValue>**) often contains a short description of the intended meaning along with the value, range, or pattern. A mixture of multiple or single values, ranges of values, or patterns of values may be included in a single rule.

An object value, using the attribute **valueForm**, specifies whether or not the allowed value is a single value, a range of values, or a pattern. When a single value is declared, the attribute **valueAllowed** contains a value inserted as a string (alphanumeric and no spaces). When a range of values is declared, the attribute **valueAllowed** should include a tilde (~) between the beginning and end values (for example, **"1~10,"** meaning "one through ten"). When a pattern is declared, the attribute **valueAllowed** contains the pattern, which consists of a regular expression (refer to S1000D for more information on the BREX data module).

If a project decision included a value format to follow for the attribute **id** (in the examples above), the pattern could be included in the object value. (Refer to MIL-STD-3031 for more information on the "Use of the attribute **id**" business rule.) For example, if all procedural step identifiers were prefixed with "**stp**" and followed by a hyphen and then four digits, the following object value would apply:

```
<objectValue valueForm="pattern" valueAllowed="stp-\d{4}">Procedural
step identification</objectValue>
```

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In this example, "Procedural step identification" is the short description for the specified object value.

Any values for attribute **id** on procedural steps that did not consist of "**stp**," followed by a hyphen, and four digits would generate an error upon BREX validation.

5.1.11.2.5.5 Notation rules.

Notation rules (element **<notationRuleList>**) contain excluded notations. Notations are any items that are not XML (for example, DOC, PDF, JPG, and MP3). Notations describe the format of the data to be included. Therefore, notation rules limit the formats allowed by a project or organization.

5.1.11.3 Markup example.

The structure rule markup example contains only the standard maintenance level codes allowed for the project, used for MAC (refer to 5.1.11.3.1). Since the attribute **allowedObjectFlag** is not used (on element **<objectPath>**), the attribute **maintLevelCode** is neither required nor prohibited, it is simply allowed (with specific values).

NOTE

Since the Army BREX contains values for both standard and aviation maintenance levels, the inclusion of the standard maintenance levels below indicates that the project will use only these maintenance levels for a MAC. If the project included aviation maintenance levels within the MAC (for example, values "**ml56**" through "**ml59**") and did not include those allowed values within the BREX, an error would be displayed upon BREX validation.

The notation rule markup example disallows the use of the WAV audio format within a project (refer to 5.1.11.3.2).

5.1.11.3.1 Structure rule markup example.

```
<structureObjectRule>
<objectPath>//@maintLevelCode</objectPath>
<objectUse>ERROR - Value out of range: (Only Standard values allowed:
ml51-ml55) Attribute maintLevelCode - Maintenance Level Code (Chap
3.9.6.1, Table 22) (MIL-STD-3031 #5.34.1.7 and #5.46.1.21)</objectUse>
<objectValue valueForm="single" valueAllowed="ml51">Crew (C)
(standard)</objectValue>
<objectValue valueForm="single" valueAllowed="ml52">Maintainer (F)
(standard)</objectValue>
<objectValue valueForm="single" valueAllowed="ml53">SRA (L)
(standard)</objectValue>
<objectValue valueForm="single" valueAllowed="ml54">Below depot (H)
(standard)</objectValue>
<objectValue valueForm="single" valueAllowed="ml55">Depot (D)
(standard)</objectValue>
</structureObjectRule>
```

5.1.11.3.2 Notation rule markup example.

```
<notationRuleList>
<notationRule>
```

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```
<notationName allowedNotationFlag="0">WAV</notationName>
<objectUse>Waveform audio format is prohibited</objectUse>
</notationRule>
</notationRuleList>
```

5.1.11.4 Output.

Output is dependent on the tool(s) being used. It displays results of the validation.

5.1.11.5 Army Business Rules Exchange (BREX).

The DMC of the U.S. Army BREX, applicable to MIL-STD-3031, is:

"**DMC-USARMY-0000-00-00-00-00A-022A-D**."

After the model identification code "**USARMY**," the System Difference Code (SDC) "**0000**" identifies the applicable version of MIL-STD-3031. With the initial release of MIL-STD-3031, an SDC of "**0000**" indicates this base version. In the future, the first two positions of the SDC will increment alphabetically to identify a revision. The third and fourth positions will remain numeric, identifying changes.

SDC example:	
Initial Release:	0000 (Base version)
Change 1:	00**01**
1st Revision:	**0A**00
3rd Revision, 4th Change:	0C04

The U.S. Army BREX is available at https://www.logsa.army.mil/mil40051/S1000D.cfm.

In accordance with MIL-STD-3031, all Army projects should reference the Army BREX. When a command or organization creates a BREX for sub-projects to follow, only that command or organizational BREX should reference the Army BREX. The sub-project BREX should reference the upper-level (command or organizational) BREX.

The Army BREX was tested using a script that generated XSL and the EZ BREX Checker utility (refer to 5.1.11.6). Some business rules used more open wording as opposed to the inclusion of "shall." The inclusion of these rules caused a re-evaluation of the wording contained within the object path (element **<objectPath>**). The idea was to generate messages that identified either an error or a warning, instead of only errors using only the content of **<objectUse>**. An earlier version of the script generated a phrase before violated rules or out-of-range value inclusion. This was found limiting, allowing only errors to be identified. With the revision of the wording used in **<objectUse>** and the removal of the generated phrases from the script, it is now possible to generate warnings.

Warnings should be manually verified which result in a slower, but more accurate validation process.

For example, the following warning is generated if the element **<reqPersons>** is not included:

> "WARNING - Manual verification needed: (Verify the use of the element /reqPersons/.) The element /reqPersons/ shall be included, but not populated when it is not necessary to specify skill but only to indicate persons required ("As required"). (MIL-STD-3031 #5.27.1.5)"

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Not every procedure requires personnel, therefore, the element **<reqPersons>** may be missing in one or more data modules. When validated against the BREX, the generated log(s) may contain the warning instructing the need for manual verification to ensure there is no requirement for personnel.

5.1.11.6 EZ BREX Checker (EZBC).

The use of EZBC is not required, however, there should be some means of validating data modules against the applicable BREX.

EZBC is a user-friendly, front-end which applies the Swedish-developed XSL BREX script. The XSL script converts the contents of a BREX into XSL. EZBC takes the generated XSL, validates any selected data modules, and generates individual logs (one for each data module, refer to 5.1.11.6.1) which contain the results of the validation.

NOTE

BREX validation should not be performed a single time, but multiple times. Many of the generated errors report only a single occurrence when there could be multiple occurrences. For example, the generated error will not state, "five procedural steps are missing an ID" – only that the attribute **id** is missing from the element **<proceduralStep>** and only stated a single time.

The EZBC package is available at https://ussmg.btas.com/. It is located under the "documents" tab under the Tools & Technologies Group. There are no fees associated with the use of this utility.

5.1.11.6.1 Log entries.

Log entries may differ, depending on the source BREX that is selected. The information generated in a log is derived from the contents of the element **<objectUse>** of the source BREX.

The following log entry information is based solely on the contents of the Army BREX.

Each log entry provides specific information, derived from the Army BREX, which is applicable to its sister data module. The sister data module and the log have identical filenames, except the log is appended with ".txt" for easier recognition. This information is extracted from the object use (element **<objectUse>** within **<structureObjectRule>**) of the Army BREX, which contains the following information: generated phrase; guidance to correct the entry; Army business decision; possible S1000D chapter reference; possible joint service rule indicator "(JS)"; and, MIL-STD-3031 paragraph reference(s).

The generated phrase identifies the log entry as either: an error or a warning. Two types of errors are possible: rule violated (either something required is missing or something prohibited is included) or value out of range (something other than allowed values is included). A warning dictates the need for manual verification.

Following the generated phrase, a parenthetical statement is included. This statement provides guidance to correct the log entry.

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NOTE

As some log entries are warnings and not errors, it is not always possible to resolve these entries. Therefore, the entry could reappear each time the data module is validated against the BREX.

The Army business decision is included to eliminate the need for constant cross-referencing.

In some instances, the S1000D chapter is included (this is true for all Chapter 3.9.6.1 configurable attribute tables).

Whenever a joint service rule is included, it is indicated by "(JS)." Currently, a joint service BREX is not available.

The majority of entries contain a single reference within MIL-STD-3031, but there are several entries that contain multiple references.

5.1.12 Technical repository information.

5.1.12.1 General.

The technical information repository data module may contain information that will be referenced [throughout the publication]. Several types of data are supported via the technical repository data module. These types of data include functional items, circuit breakers, parts, zones, access points, tools, enterprises, supplies, supply requirements, functional/physical areas (prohibited in accordance with MIL-STD-3031), and controls and indicators.

Refer to Table A-VI for a list of technical repository information sets.

5.1.12.2 Controls and indicators.

NOTE

Projects that do not require the ability to reuse controls and indicators should use the descriptive data module.

When using the technical information repository for description and use of controls and indicators, a single figure or multiple figures may be included. Projects should determine the best method for grouping figures and controls and indicator descriptions before authoring.

For projects with few controls and indicators and dependent upon the size of the figure, all descriptions can be included in a single control indicator group (element **`<controlIndicatorGroup>`**).

Controls and indicators that have multiple settings, like zones on a gauge, switch positions, and different colors or display text (for example, "on" or "off"), may be further described within a separate control or indicator function (element **`<controlIndicatorFunction>`**). The display changes, or values, should be identified as paragraph significant data (element **`<inlineSignificantData>`**) with the attribute **`significantParaDataType`** set to a value of "**`psd10`**.") Style sheets may then use this identification to style the value of the control or indicator differently (for example, bold or uppercase). Refer to 4.7 for additional information on style sheets.

Since this is the only location in the publication where controls and indicators are described, it is recommended to provide as much detail as possible. For example, if a headlight exists with three

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switch positions (off, low, and high), each position could be briefly described to provide enhanced information on the use of that headlight.

5.1.12.2.1 Referencing controls and indicators.

Once all controls and indicators are identified in the technical repository, they can be referenced as needed in other data modules. This allows controls and indicator information to be updated, when needed, a single time in a single location. When referenced, the control or indicator name will always be consistent.

NOTE

Projects should decide the best approach for referencing, implicit or explicit, when authoring controls and indicators via the technical information repository.

Two methods of referencing the technical information repository are used: implicit or explicit.

Implicit referencing generally requires less tagging as it consists of the control or indicator reference (element **`<controlIndicatorRef>`**) and the corresponding value for the attribute **`controlIndicatorNumber`**. The attribute **`controlIndicatorNumber`** contains the same value originally authored in the controls and indicators technical information repository on the element **`<controlIndicatorSpec>`**.

Explicit referencing also uses the element **`<controlIndicatorRef>`**, however, the inclusion of the attribute **`controlIndicatorNumber`** and its corresponding value is not necessary. At a minimum, the data module reference (element **`<dmRef>`**) within the element **`<refs>`** is needed and the control or indicator number (attribute **`controlIndicatorNumber`**) is then populated in the attribute **`referredFragment`** in order to point to the specific control or indicator.

5.1.12.3 Technical information repository controls and indicators markup example.

Take, for example, a bicycle with only four controls or indicators. With such limited content, only one technical repository data module is necessary, within a single control or indicator group (element **`<controlIndicatorGroup>`**) along with a single graphic.

With only our indicator keys to identify in the figure, the task is fairly simple. The figure is first declared in the XML instance (refer to 4.8) and then inserted at the top of the control or indicator group (element **`<controlIndicatorGroup>`**). Then, each indicator key is identified and described within its own control and indicator information (element **`<controlIndicatorSpec>`**). Each control or indicator key (element **`<controlIndicatorKey>`**) contains the index number (or callout) from the related figure.

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controlIndicatorNumber - required for implicit references or used as the value in attribute referredFragment for explicit references
controlIndicatorKey - Index or callout value

```
<controlIndicatorRepository>
<controlIndicatorGroup>
<figure>
<title>Bicycle controls and indicators</title>
<graphic infoEntityIdent="ICN-07GB6-CI001-0010-01"/>
</figure>

<controlIndicatorSpec controlIndicatorNumber="ci-0001">
<controlIndicatorKey>1</controlIndicatorKey>
<controlIndicatorName>LED Taillight</controlIndicatorName>
<controlIndicatorDescr>
<controlIndicatorFunction>Lights illuminate automatically when brakes are
engaged.</controlIndicatorFunction>
</controlIndicatorDescr>
</controlIndicatorSpec>

<controlIndicatorSpec controlIndicatorNumber="ci-0002">
<controlIndicatorKey>2</controlIndicatorKey>
<controlIndicatorName>Chrome Bell</controlIndicatorName>
<controlIndicatorDescr>
<controlIndicatorFunction>Press to sound bell. Normally used to signal a need
for attention.</controlIndicatorFunction>
</controlIndicatorDescr>
</controlIndicatorSpec>
<controlIndicatorSpec controlIndicatorNumber="ci-0003">
<controlIndicatorKey>3</controlIndicatorKey>
<controlIndicatorName>LED Headlight</controlIndicatorName>
<controlIndicatorDescr>
<controlIndicatorFunction>Push button to turn light <inlineSignificantData
significantParaDataType="psd10">on</inlineSignificantData> or
<inlineSignificantData
significantParaDataType="psd10">off</inlineSignificantData>.</controlIndicato
rFunction>
</controlIndicatorDescr>
</controlIndicatorSpec>

<controlIndicatorSpec controlIndicatorNumber="ci-0004">
<controlIndicatorKey>4</controlIndicatorKey>
<controlIndicatorName>Platform Pedals</controlIndicatorName>
<controlIndicatorDescr>
<controlIndicatorFunction>Control the acceleration of the
bicycle.</controlIndicatorFunction>
</controlIndicatorDescr>
</controlIndicatorSpec>
</controlIndicatorGroup>
</controlIndicatorRepository>
</techRepository>
```

FIGURE 62. Technical information repository (controls and indicators) markup.

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5.1.12.4 Output.

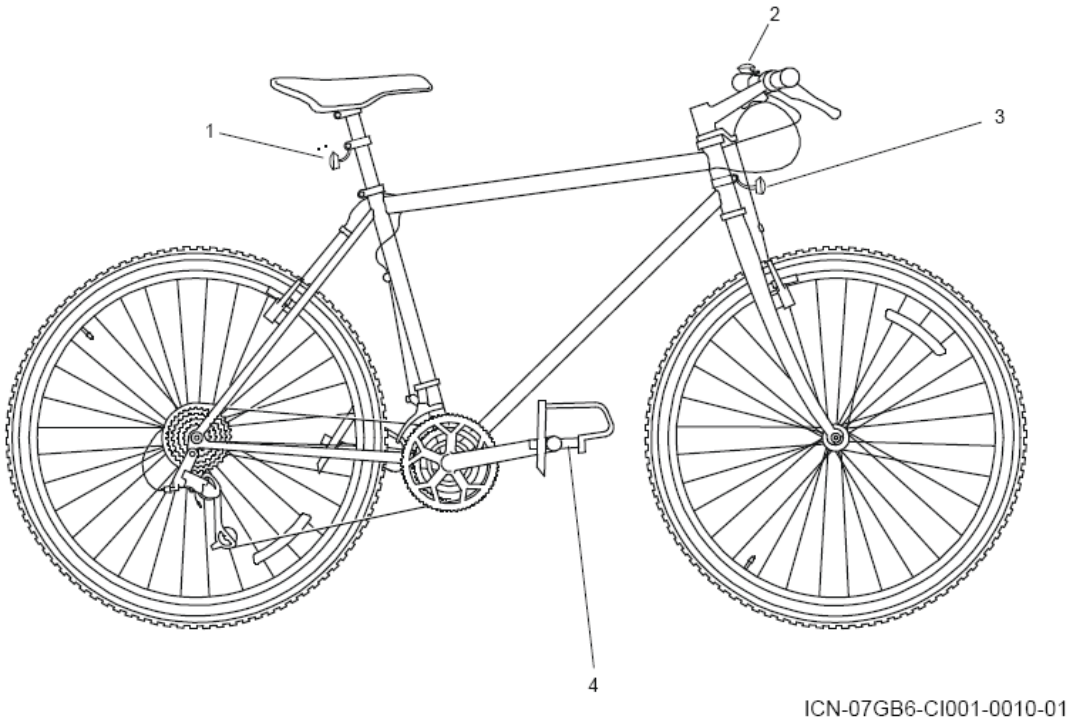

Figure 1. Bicycle controls and indicators.

Table 1 Bicycle controls and indicators

Key	Control/Indicator	Function
1	LED Taillight	Lights illuminate automatically when brakes are engaged.
2	Chrome Bell	Press to sound bell. Normally used to signal a need for attention.
3	LED Headlight	Push button to turn light on or off.
4	Platform Pedals	Control the acceleration of the bicycle.

FIGURE 63. Sample output of the controls and indicators technical information repository.

5.1.12.5 Implicit markup example.

In each bolded occurrence below, the reference is replaced with the control or indicator name (element **`<controlIndicatorName>`**) that was entered in the technical information repository which corresponds to the value "**`ci-0004`**" as populated for the attribute **`controlIndicatorNumber`**.

NOTE

Although the element **`<title>`** includes the same text within the control/indicator reference, references are not allowed within the element **`<title>`**.

```
<levelledPara id="par-B005">
<title>Platform Pedals</title>
```

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```
<para>The <controlIndicatorRef controlIndicatorNumber="ci-0004"/> are
at the bottom of the seat tube. You operate the <controlIndicatorRef
controlIndicatorNumber="ci-0004"/> to move the bicycle forward.</para>
</levelledPara>
```

5.1.12.6 Output.

6 PLATFORM PEDALS

The platform pedals are at the bottom of the seat tube. You operate the platform pedals to move the bicycle forward.

FIGURE 64. Sample output of population via implicit referencing.

5.1.13 Applicability.

Applicability is the state or condition when associated data is valid (i.e., applying to a certain configuration, model, or even environmental condition). Applicability may also be used to describe how data modules pertain to different customers for delivery. The term "effectivity" is not used by S1000D.

There are two main models for implementing applicability in S1000D: applicability for the whole data module and applicability within a data module. Applicability for the whole data module is established in the identification and status section and establishes filtering that is applied for all information in the data module. Applicability within the data module allows for filtering at a more granular level and is established by the use of attribute **`applicRefId`** within the data module's content section.

Both models use three associated specialty data modules: the applicability cross-reference table, the conditions cross-reference table, and the product cross reference table.

5.1.13.1 Applicability cross-reference.

The applicability cross-reference table data module is used to declare product attributes that are typically established at the time of manufacture and apply throughout the life cycle (for example, serial number or model). The applicability cross-reference data module is the central point of reference for applicability declarations. It provides references to the conditions cross-reference table and the products cross-reference table.

5.1.13.2 Conditions cross-reference.

The conditions cross-reference table data module is used to declare any conditions that can be used for filtering the data. This can include environment, temperature, or the state of completion of service bulletins.

5.1.13.3 Products cross-reference.

The products cross-reference table data module is a repository for defining specific product instances. It lists specific end items, typically by identification number, for data filtering purposes.

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5.1.14 Container.

Container data modules are useful when a reference needs to target different configurations, environments, or other conditions. For example, a procedure to change a tire could be affected by the model. If the tire was attached by four bolts for Model X, but Model Y used five attaching bolts, then the referenced tire-changing procedure would depend on which model was the target. By referencing a container data module, flexibility is available for multiple configurations and/or models.

A container data module's contents includes only references (element **<refs>**). These references can include applicability to determine which configuration or model is applicable. When a model changes, the data module reference would never need to be updated, only the container data module contents.

A container data module could also be used when referencing other publications (forms, pamphlets, regulations, directives, etc.). Whether a publication number and/or its title change, a container data module could easily manage this change without a need to update each and every data module which contained the actual publication reference. Refer to 4.6.5.

5.2 Information sets.

5.2.1 General.

Information sets are grouped content within a publication such as General Information, Operator Instructions, Troubleshooting Procedures, Maintenance Instructions, Parts Information, Supporting Information, and so on. Information sets do not have related information codes.

The content defined within those information sets are the content requirements. Content requirements are identified with information codes and information code variants.

The content selection matrix (refer to MIL-STD-3031) identifies which information sets are required in a publication type as well as content requirements within those information sets.

Content requirements, used in conjunction with the content selection matrix, define the depth and breadth of technical content and are used to identify what type of technical information is contained in the data module. The content requirement is identified by the information code and variant used in the data module code. This method allows for quick identification of the information contained in the data module. Information sets are identified in section 5. Content requirement information codes may be found in the Army Business Rules document MIL-STD-3031.

Refer to 4.4 for additional information regarding publication structure.

This section consists of a breakdown of information sets used within publications. Some information sets may be required in a different information group from those shown below (refer to MIL-STD-3031 for exact requirements).

NOTE

Not all information sets listed in the following tables are required. Refer to MIL-STD-3031 for publication requirements.

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5.2.2 Front matter.

5.2.2.1 General.

All front matter is authored using descriptive data modules (refer to 5.1.2) or auto-generated from metadata within the main publication module. Each content requirement is authored as an individual data module.

Front matter data modules are defined in a nested publication module. Nested publication modules populate the attribute **pmNumber** differently than a publication module which is used to define an entire publication (refer to 5.1.9.1.1.1). An example for populating the attribute **pmNumber**, when defining front matter, is the value "**FRONT**" since there is likely to be only one publication module containing front matter. Uppercase characters, digits, or a mixture are allowed (no spaces, hyphens, or underscores) with a required fixed length of five (5).

NOTE

Hyphens are used in specific locations within a publication module code. Although hyphens can be inserted and will parse, their use within attribute **pmNumber** is not in accordance with the presentation of the publication module code and should not be included.

Refer to Figure 65 for IETP assembly guidance.

TABLE IX. Front matter, content requirements.

Content Requirement	DM Type	Individual DM	Notes
Front Matter	PM		Parent publication module inclusion: If front matter will be included directly into the parent publication module, all of the content should be contained within a **<pmEntry>** within the content section (element **<content>**). The element **<pmEntry>** should include the attribute **pmEntryType** with a value of "**pmt51**" (Front Matter). After **<pmEntry>**, include the applicable content requirements populated as separate data module references (element **<dmRef>**). Each data module reference is included within the same publication module entry (element **<pmEntry>**). Refer to 5.1.9.2.2 for an example. Separate publication module inclusion: A separate "Front Matter" publication module should populate the identification and status section (element **<identAndStatusSection>**)

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TABLE IX. Front matter, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			to reflect the content. For example, **<pmTitle>** could contain "Front Matter" and the publication module code (element **<pmCode>**) attribute **pmNumber** could contain the value of "**FRONT**." The content section (element **<content>**) population would be the same as the parent publication module (listed above). Content requirements include, as applicable: Identification information, front cover, title block page, IETP installation data, CD content screen, promulgation letter, safety summary, revision summary frame, LOEDM, TOC, list of terms, how to use, and DA Form 2028.
+Front Cover	Publication	Y	Auto-generated from the main (parent) publication module.
^(MC) Promulgation Letter	Descriptive	Y	Authored within a figure (element **<figure>**).
Safety Summary	Descriptive	Y	Authored with primary paragraphs (element **<levelledPara>**), warnings and cautions (elements **<warning>** and **<caution>**, respectively), definition lists (element **<definitionList>**), and other elements as needed. The safety summary includes first aid data, and explanations of all general safety warning icons and hazardous material icons used in the manual. It also includes descriptions and hazardous materials warnings that have major impact throughout the publication. Refer to MIL-STD-3031 for additional information regarding the safety summary.
Revision Summary	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and definition list (element **<definitionList>**) or table (element **<table>**) and other elements as needed.
+List of Effective Data Modules	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and table (element **<table>**), other elements as

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TABLE IX. Front matter, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			needed.
+Title Block Page	Descriptive	Y	Can also be auto-generated by a publishing system using content from the main (parent) publication module.
Table of Contents	Descriptive	Y	Revise in next release of MIL-STD-3031 to allow projects the use of publication module. All publication content could already exist in the parent publication module.
+Glossary	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and definition list (element **<definitionList>**), other elements as needed.
How To Use This IETP/Manual	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, figures, and tables as needed.
DA Form 2028	Descriptive	Y	Page-oriented publications include a DA Form 2028 in the Rear Matter.
+ Page-Based Only ^ Marine Corp Only			

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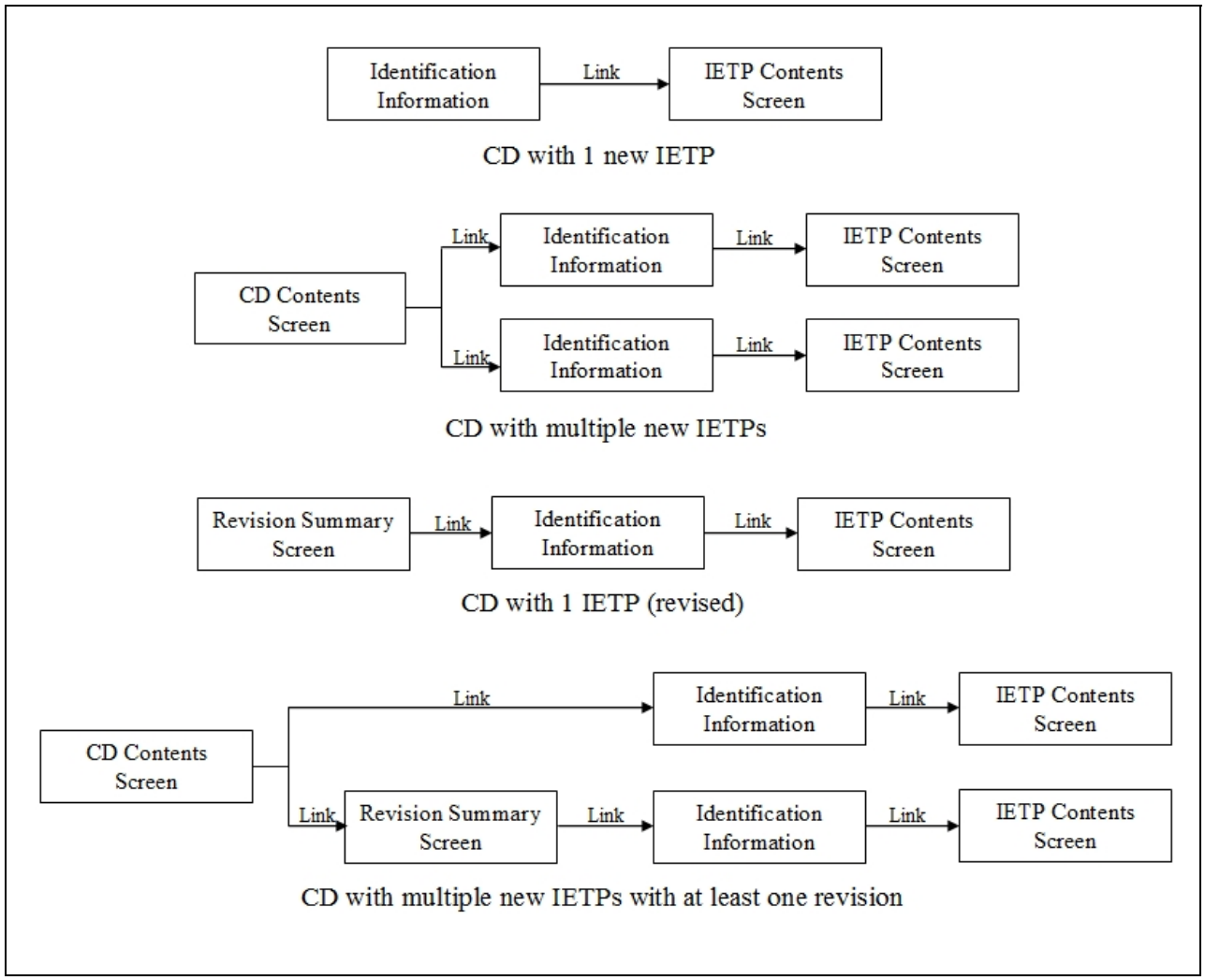

FIGURE 65. Assembly of Interactive Electronic Technical Publication (IETP) introductory screens.

5.2.3 Rear matter.

5.2.3.1 General.

Rear matter contains content for page-oriented publications only. Each content requirement is authored using an individual, descriptive data module (refer to 5.1.2).

Like front matter (refer to 5.2.2), rear matter is defined within a single publication module. An example for the population of the attribute **`pmNumber`** is the value "**`REAR0`**."

TABLE X. Rear matter, content requirements.

Info Set	DM Type	Individual DM	Notes
Rear Matter	PM		Parent publication module inclusion: If rear matter will be included directly into the parent publication module, all of the content should be contained within a **`<pmEntry>`** within the

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TABLE X. Rear matter, content requirements.

Info Set	DM Type	Individual DM	Notes
			content section (element **<content>**). The element **<pmEntry>** should include the attribute **pmEntryType** with a value of "**pmt57**" (Rear Matter). After **<pmEntry>**, include the applicable content requirements populated as separate data module references (element **<dmRef>**). Each data module reference is included within the same publication module entry (element **<pmEntry>**). Refer to 5.1.9.2.2 for a front matter example (which is similar). Separate publication module inclusion: A separate "Rear Matter" publication module should populate the identification and status section (element **<identAndStatusSection>**) to reflect the content. For example, **<pmTitle>** could contain "Rear Matter" and the publication module code (element **<pmCode>**) attribute **pmNumber** could contain the value of "**REAR0**." The content section (element **<content>**) population would be the same as the parent publication module (listed above). Content requirements include, as applicable: Alphabetical index, DA Form 2028, authentication page, foldout pages, and back cover.
Alphabetical Index	Descriptive	Y	Auto-generated
DA Form 2028	Descriptive	Y	Refer to Table IX. IETPs may include a URL, link to a fillable PDF, or author as in a page-based manual. Page-based only: Authored within a figure (element **<figure>**).
Authentication Page	Descriptive	Y	Authored within a figure (element **<figure>**). Refer to 5.2.3.2 for a markup example.
Foldout Pages	Descriptive	Y	Projects need to determine applicable information codes and information code

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TABLE X. Rear matter, content requirements.

Info Set	DM Type	Individual DM	Notes
			variants based on the content of the figure. Refer to 4.8 regarding graphics.
Back Cover	Descriptive	Y	Authored within a figure (element **`<figure>`**).

5.2.3.2 Authentication block markup example.

```
<description>
<figure id="fig-001">
<title>Authentication Block</title>
<graphic infoEntityIdent="ICN-1L6T4-AUTHENT-001-01"/>
</figure>
</description>
```

5.2.3.3 Output.

By Order of the Secretary of the Army:

PETER J. SCHOOMAKER
General, United States Army
Chief of Staff

Official:

JOYCE E. MORROW
Administrative Assistant to the
Secretary of the Army
0635401

DISTRIBUTION: To be distributed in accordance with the initial distribution number (IDN) 381111, requirements for TM 9-2320-303-10.

FIGURE 66. Sample output of the authentication block.

5.2.4 General information, equipment description and theory of operation.

5.2.4.1 General.

Descriptive information with theory of operation are prepared for weapon systems, major equipment, components, and applicable support and interface equipment. Information required to provide the user with a physical description, and functionally explain how the weapon system or equipment operates should be included.

In accordance with MIL-STD-3031, the general information, equipment description, and theory of operation chapter should be prepared and subdivided into individual information sets to

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provide the user with information for general requirements, descriptive data about the weapon system or equipment, and an explanation of how the weapon system or equipment works. Weapon system and equipment description and theory of operation data should be developed in narrative or tabular form, or by whatever method is the most simple or effective method for conveying the specific TM/IETP application. Descriptive information should not contain any procedural data or warnings, cautions, or notes. When necessary for clarity or improved understanding, illustrations should be used to support the narrative or tabular information.

Depending on the publication, this information set generally consists of five different data modules. Since some content requirements are combined into single data modules, Table XI separates the content by information names, followed by the information sets, indented to show the hierarchy.

TABLE XI. General information, equipment description and theory of operation, content requirements.

Content Requirement	DM Type	Individual DM	Notes
General Information, Equipment Description, and Theory of Operation	PM		Parent publication module inclusion: If general information will be included directly into the parent publication module, all of the content should be contained within a **`<pmEntry>`** within the content section (element **`<content>`**). The element **`<pmEntry>`** should include the attribute **`pmEntryType`** with a value of "**`pmt52`**" (Chapter). After **`<pmEntry>`**, the element **`<pmEntryTitle>`** should include "General Information, Equipment Description, and Theory of Operation" followed by the applicable content requirements populated as separate data module references (element **`<dmRef>`**). Each data module reference is included within the same publication module entry (element **`<pmEntry>`**). Refer to 5.1.9.2.2 for an example. Separate publication module inclusion: A separate "general information" publication module identification and status section should reflect the content. For example, **`<pmTitle>`** should contain "General Information, Equipment Description, and Theory of Operation" and the publication module code (element **`<pmCode>`**)

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TABLE XI. General information, equipment description and theory of operation, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			attribute **pmNumber** could contain the value of "**C0001**" (Chapter 1). (Refer to 5.1.9.1.1.3 for more information on populating the attribute **pmNumber**.) The content section (element **<content>**) population would be the same as the parent publication module (listed above). Content requirements include, as applicable: General data, general information, equipment description and data, instructions for the use, transportation, handling, storage, or disposal, and theory of operation.
General Data	Descriptive	Y	The included content requirements below reside in this data module. The data module information name (element **<infoName>**) should be "General Data" as indicated in the first column.
^Maintenance Activities		N	Authored within a subparagraph (element **<levelledPara>**).
Scope		N	A brief statement describing what is covered in the TM/IETP. As applicable, the following information should also be included: a. Type of manual. b. Model number(s) and equipment name(s). c. Purpose of equipment. d. Special inclusions in the manual, such as drill procedures or on-vehicle loading plans. Authored within a subparagraph (element **<levelledPara>**) and other elements as needed.
Ozone Depleting Substances (ODS)		N	The use of Class 1 ODS for new acquisitions has been curtailed by Executive Order, Public Law, and related Army policy. ODSs are listed in Title VI of the Clean Air Act. For systems procured and fielded prior to the date these became effective (June 1993) that use a Class 1 ODS, a listing of those substances required to operate and maintain the system should be included in the manual. After June 1993, this requirement applies to any system

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TABLE XI. General information, equipment description and theory of operation, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			procured or fielded that requires the use of a Class 1 ODS, where the use of the ODS has been properly documented and waived. The procuring activity will provide a list of Class 1 ODS on request. Authored within a subparagraph (element **<levelledPara>**).
Destruction of Army Materiel to Prevent Enemy Use		N	Reference should be made to the appropriate data modules covering the destruction of Army materiel to prevent enemy use as provided by the proponent activity. Authored within a subparagraph (element **<levelledPara>**) containing the applicable data module reference (element **<dmRef>**). Refer to 4.2.3.2 for more information on referencing.
Preparation for Storage or Shipment		N	Reference should be made to the preparation for storage or shipment procedures, including packaging and administrative storage, found in the applicable maintenance instructions information sets. Authored within a subparagraph (element **<levelledPara>**) containing the applicable data module reference (element **<dmRef>**). Refer to 4.2.3.2 for more information on referencing.
Nomenclature Cross-Reference List		N	A cross-reference list should be prepared when unofficial nomenclature (common name) is approved by the proponent activity. A statement on how to access the nomenclature cross-reference list should also be included. Authored within a subparagraph (element **<levelledPara>**) and definition list therein.
List of Abbreviations/Acronyms		N	A list should be prepared consisting of all abbreviations, acronyms, signs, or symbols used in the manual/IETP. For aircraft only, a statement should be prepared that abbreviations are in accordance with ASME Y14.38, except when the abbreviation stands for a marking actually found in the aircraft.

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TABLE XI. General information, equipment description and theory of operation, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			Authored within a subparagraph (element **<levelledPara>**) and definition list therein.
Safety, Care, and Handling		N	The following general precautions and safety regulations should be prepared. a. (Ammunition TMs/IETPs) Information is prepared to comply with DA PAM 385-63. References to applicable Army Regulations (ARs) for range safety and danger zones during training and combat should be included. Explanations and official definitions should be prepared for such safety-related terms as "misfire," "hang fire," and "cook-off," which describe characteristics associated with the specific items(s) covered by the TM/IETP under preparation. A reference to AR 385-64 and DA PAM 385-64 should be made for general ammunition care, handling, and safety. b. For TMs/IETPs covering equipment with radioactive parts or components, information should be prepared to comply with Nuclear Regulatory Commission provisions, and references to applicable ARs and safety TMs/IETP on radioactive materials should be included. If additional coverage on radioactive materials is needed, but is not included in applicable TMs/IETPs, instructions should be prepared as required. In addition, the following information should be prepared for inclusion throughout the TM/IETP. (1) Nuclear warning notices should be placed at the beginning of any instruction covering procedures that will expose personnel to a nuclear radiation hazard. (2) Procedures to be followed prior to maintenance actions, or in the event of breakage of radioactive parts or components, including safety, care, and handling instructions.

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TABLE XI. General information, equipment description and theory of operation, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			(3) Radioactive parts or components are shown and identified on a parts location diagram or illustration, and warning notices. (4) A list of radioactive parts or components and the type and quantity of radioactive material involved should be included as part of equipment data. (5) Instructions for the disposal of radioactive material, such as the requirement to double bag all broken tritium sources in plastic. c. Electrostatic Discharge (ESD) control standards for the protection of electrical and electronic parts, assemblies, and equipment should be prepared. The ESD classes should be identified. Refer to MIL-STD-1686 and MIL-HDBK-263, which contain ESD control procedures and material necessary to protect these items. For classifications of ESD marking procedures. d. (DMWRs/NMWRs only) When applicable, reference should be made to the electromagnetic compatibility standards that apply to the equipment covered in the DMWR/NMWR. Authored within a subparagraph (element **`<levelledPara>`**).
Calibration		N	Equipment requiring calibration should be identified, and reference should be made to the publication containing the applicable calibration procedure. Authored within a subparagraph (element **`<levelledPara>`**). containing the applicable publication reference (element **`<externalPubRef>`** or **`<pmRef>`**, if applicable).
*Supporting Information for Repair Parts, Special Tools, TMDE, and Support Equipment		N	A reference to the Parts List and Maintenance Allocation Chart (MAC) should be included. When no special tools or equipment are required, it should

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TABLE XI. General information, equipment description and theory of operation, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			be so stated. If tools are to be fabricated, reference is made to the Illustrated List of Manufactured Items information set should be included. Authored within a subparagraph (element **<levelledPara>**).
Copyright Credit Line		N	TMs/IETPs should not contain copyrighted material except as specified in the Federal Acquisition Regulations (FARs) and Defense Federal Acquisition Regulation (DFAR) Supplement. When copyrighted material is included in a TM/IETP, the author should obtain prior written permission from the copyright owner or authorized agent for its use. The written permission should contain a statement declaring whether or not a copyright credit line is required. When a copyright credit line is required, the information should appear as the last paragraph of the general information data module. Authored within a subparagraph (element **<levelledPara>**).
General Information	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**).
Maintenance Forms, Records, and Reports		N	Verbatim text to be included as applicable. Refer to MIL-STD-3031. Authored within a subparagraph (element **<levelledPara>**).
Reporting Equipment Improvement Recommendations (EIR)		N	Verbatim text to be included as applicable. Refer to MIL-STD-3031. Authored within a subparagraph (element **<levelledPara>**).
*Hand Receipt (HR) Information		N	Verbatim text to be included as applicable. Refer to MIL-STD-3031. Authored within a subparagraph (element **<levelledPara>**).
Corrosion Prevention and Control (CPC)		N	Verbatim text to be included as applicable. Refer to MIL-STD-3031. Authored within a subparagraph (element **<levelledPara>**).
Warranty Information		N	Verbatim text to be included as applicable. Refer to MIL-STD-3031. Authored within a subparagraph

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TABLE XI. General information, equipment description and theory of operation, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			(element **<levelledPara>**).
*Quality of Material		N	Verbatim text to be included as applicable. Refer to MIL-STD-3031. Authored within a subparagraph (element **<levelledPara>**).
Nuclear Hardness		N	Verbatim text to be included as applicable. Refer to MIL-STD-3031. Authored within a subparagraph (element **<levelledPara>**). Note: Any step or procedure that should be identified as HCP, should include the attribute **itemCharacteristic** with a value of "**ic01**."
*Quality Assurance (QA)		N	When specified by the acquiring activity, reference should be made to the pertinent QA or include the appropriate general QA information. If QA information is not referenced but is included in the manual/IETP, it should be stated that the text of each quality assurance procedure or step in the manual is preceded (and highlighted) by the addition of "QA check." For aircraft maintenance TMs/IETPs, include a reference to FM 3-04-500. The abbreviation "QA" should be defined either in a note or in the text. Authored within a subparagraph (element **<levelledPara>**). Note: Any step or procedure that should be identified as QA, should include the attribute **itemCharacteristic** with a value of "**ic03**."
*Flight Safety Critical Aircraft Part		N	Verbatim text to be included as applicable. Refer to MIL-STD-3031. Authored within a subparagraph (element **<levelledPara>**).
+Engineering Change Proposals (ECP)		N	Verbatim text to be included as applicable. Refer to MIL-STD-3031. Authored within a subparagraph (element **<levelledPara>**).
+Modifications		N	Verbatim text to be included as applicable. Refer to MIL-STD-3031. Authored within a subparagraph (element **<levelledPara>**).

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TABLE XI. General information, equipment description and theory of operation, content requirements.

Content Requirement	DM Type	Individual DM	Notes
+Deviations and Exceptions		N	Verbatim text to be included as applicable. Refer to MIL-STD-3031. Authored within a subparagraph (element **<levelledPara>**).
+Mobilization Requirements		N	Verbatim text to be included as applicable. Refer to MIL-STD-3031. Authored within a subparagraph (element **<levelledPara>**).
+Cost Considerations		N	Verbatim text to be included as applicable. Refer to MIL-STD-3031. Authored within a subparagraph (element **<levelledPara>**).
Equipment Description and Data	Descriptive	Y	If the descriptive data is provided in a separate operator's manual, a paragraph referencing the equipment description and data in the operator's manual should suffice. Additional equipment description and data required for a higher maintenance level, but not included in the operator's manual, should be included. This information set should not contain any operator or maintenance procedures. All information should be nested within a primary paragraph (element **<levelledPara>**) and other elements as needed.
Equipment Characteristics, Capabilities, and Features		N	An overall description of the equipment should be prepared, including general capabilities, special features, and other like information (for example, applications, limitations) which will be helpful in the operation and maintenance of the equipment. Unless otherwise directed, the information may be in narrative or tabular format. a. The equipment type should be stated, as the following equipment features: portability or mobility, operational and special environment, and remote control. b. Components and their functions should not be described unless essential to continuity. For functional data, reference should be made to theory of operation. c. When equipment covered varies in scope and application or has

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TABLE XI. General information, equipment description and theory of operation, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			several applications within an end item, a brief explanation of the multiple usages and a simple diagram showing all aspects of a typical application should be prepared. d. For ammunition TMs/IETPs, packing and packaging information should be prepared, including number of rounds per pack. Authored within a subparagraph (element **`<levelledPara>`**).
*Location and Description of Major Components		N	Equipment location information should be prepared including external and internal views of the equipment used to show general features and all major components. This information should not duplicate information contained in the equipment data requirements and the equipment characteristics, capabilities, and features. Refer to MIL-STD-3031 for additional information. Authored within a subparagraph (element **`<levelledPara>`**).
Differences Between Models		N	Significant differences affecting interchangeability should be identified. Specifically, differences associated with equipment models or units of the same model should be indicated that would affect operator or maintenance actions. These differences are related explicitly to equipment model, part number, or serial number ranges in such a manner that the TM/IETP user can identify the specific equipment configuration involved. When model differences exist but have no effect on operation or maintenance, this fact is stated. Authored within a subparagraph (element **`<levelledPara>`**) and table therein.
Equipment Data		N	a. Performance data is prepared, including numerical and other standard-related data applying to operational and maintenance functions. The equipment data summarizes the specific

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TABLE XI. General information, equipment description and theory of operation, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			capabilities and limitations of the equipment and other critical data needed by the TM/IETP user for maintenance of the equipment. Vehicle and cargo space dimensions and metric and other equivalents should be included. b. For systems, a list of the environmental control requirements, such as limited temperature, humidity, or other limited conditions should be prepared. Reference should be made to the data module(s) containing information on damage to be expected from exceeding these limits and procedures for minimizing the damage. c. A summary is prepared that lists the effects of weather conditions on equipment affecting system capability or causing equipment damage. This summary should include references to any special servicing procedures that should be accomplished because of climatic changes, such as adding antifreeze to coolants. d. The energy efficiency rating should be included for products that directly consume energy in normal operations and that commonly have a method of expressing energy efficiency. Authored within a subparagraph (element **<levelledPara>**) and definition list or table therein.
Instructions for the Use, Transportation, Handling, Storage, or Disposal	Procedural	Y	Instructions for the use, transportation, handling, storage, or disposal of such substances as fuels, toxic and hazardous substances, chemicals, ordnance, and munitions should be prepared. These instructions should meet the applicable requirements of the Federal Environmental Protection Standards (standards to be provided by the acquiring activity).
*****Theory of Operation	Descriptive	Y	Theory of operation should be prepared to provide the user with adequate

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TABLE XI. General information, equipment description and theory of operation, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			background information to support and perform maintenance tasks and troubleshooting on the weapon system, equipment, or components. DMWR/NMWR should include this information set as required by the acquiring activity. The amount of detail and complexity of the theory of operation presentation should be in accordance with the Logistics Management Information (LMI) maintenance concept, the Maintenance Allocation Chart (MAC), or an approved maintenance plan. This information set should not contain any operator or maintenance procedures. Refer to MIL-STD-3031 for additional information. All information should be nested within a primary paragraph (element **`<levelledPara>`**) and subparagraphs, lists, and tables as needed. Refer to 5.1.2.3.
* Not all Publication Types + DMWR/NMWR Only ^ Only Aircraft Preventive Maintenance (Excluding Conventional and Chemical Ammunition)			

5.2.5 Operator instructions.

5.2.5.1 General.

Operator instructions are prepared for weapon systems, major equipment, components, and applicable support and interface equipment. Operating instructions describe the operation authorized for the operator/crew. Procedures and supporting illustrations are prepared so that personnel can prepare the weapon system/equipment for operation, identify and locate operational controls and indicators, and operate the weapon system/equipment safely and efficiently in both normal and emergency conditions. Unless otherwise specified, an operator instructions chapter is used for operator data. Multiple chapters are used for equipment that is very complex or that has multiple configurations.

This information set consists of many data modules; the majority of them are procedural.

TABLE XII. Operator instructions, content requirements.

Content Requirement	DM Type	Individual DM	Notes
Operator instructions	PM		Parent publication module inclusion: If operator instructions will be

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TABLE XII. Operator instructions, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			included directly into the parent publication module, all of the content should be contained within a **<pmEntry>** within the content section (element **<content>**). The element **<pmEntry>** should include the attribute **pmEntryType** with a value of "**pmt52**" (Chapter). After **<pmEntry>**, the element **<pmEntryTitle>** should include "Operator Instructions" followed by the applicable content requirements populated as separate data module references (element **<dmRef>**). Each data module reference is included within the same publication module entry (element **<pmEntry>**). Refer to 5.1.9.2.2 for an example. Separate publication module inclusion: A separate "operator instructions" publication module identification and status section should reflect the content. For example, **<pmTitle>** should contain "Operator Instructions" and the publication module code (element **<pmCode>**) attribute **pmNumber** could contain the value of "**C0002**" (Chapter 2). (Refer to 5.1.9.1.1.3 for more information on populating the attribute **pmNumber**.) The content section (element **<content>**) population would be the same as the parent publication module (listed above). Content requirements include, as applicable: Description and use of operator controls and indicators, operation under usual conditions, operation under unusual conditions, emergency, stowage and decal/data plate guide, and on-vehicle equipment loading plan.
+Description and Use of Operator Controls and Indicators	Descriptive	Y	Information is prepared for the description and use of all system or

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TABLE XII. Operator instructions, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			equipment controls and indicators. A description and use of controls and indicators is prepared for each equipment, assembly, or control panel having controls and indicators. Controls and indicators are described using either the tabular or narrative option and used consistently throughout the operator instructions. Refer to MIL-STD-3031 for additional details. Three authoring methods are available: descriptive (narrative or tabular) and technical information repository. When authoring this content using a descriptive data module, a primary paragraph (element **`<levelledPara>`**) and subparagraphs (element **`<levelledPara>`**) contain the information in a narrative method while a primary paragraph (element **`<levelledPara>`**) and a table (element **`<table>`**) contain the information in a tabular method. Refer to 5.1.12 for authoring guidance on the technical information repository authoring method.
Operation Under Usual Conditions	PM	N	Instructions to operate the weapon system/equipment and auxiliary equipment in all modes of operation should be prepared. Any combination of control settings that will create a hazard to personnel or cause damage to equipment is preceded by a warning or caution. Instructions to ensure proper grounding should be prepared. "Operation Under Usual Conditions" should be a publication module entry title (element **`<pmEntryTitle>`**) within the chapter publication module. It should include the following individual data modules, as applicable: Security measures for electronic data; Siting requirements; Shelter requirements; Assembly and preparation for use; Initial adjustments. Before use and self-test; Operating procedures; Decals and instruction plates; Operating auxiliary equipment; Preparation for movement;

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TABLE XII. Operator instructions, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			and, Decals and instruction plates. Refer to 5.1.9.2.2 for a parent content example which includes this entry.
Security Measures for Electronic Data	Descriptive	Y	This is applicable to both Operation under usual conditions and Operation under unusual conditions. Instructions for handling, loading, purging, overwriting, or unloading classified electronic data under usual/unusual conditions. These instructions are developed when the systems are classified or have non-volatile on-board memory that requires to be cleared prior to transportation or other action that allows the data to be accessed by unauthorized personnel. Instructions should meet the requirements of current regulations as they pertain to automation security. All information should be nested within a primary paragraph (element **`<levelledPara>`**) and subparagraphs, lists, and tables as needed.
Siting Requirements	Procedural	Y	Siting requirements may be part of "Operation under usual conditions" (operator) or "Service upon receipt" (maintenance). When siting instructions specific to the equipment exist, these instructions are prepared. Note that "siting" refers to the physical site for the equipment and is not limited to topics related to "line of sight. Operational features are considered, such as the following: a. Location. b. Proximity to power sources. c. Effective ranges. d. Terrain requirements to avoid screening reflections, ground clutter, and other poor operational conditions due to terrain. e. Technical requirements. f. Shelter locations. g. Compensating for adverse siting conditions. h. When the equipment contains large components, such as towers and antennas, which require orientation

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TABLE XII. Operator instructions, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			to a baseline during siting. i. Mobile equipment oriented during installation. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Shelter Requirements	Procedural	Y	Shelter requirements may be part of "Operation under usual conditions" (operator) or "Service upon receipt" (maintenance). When equipment is normally housed in a permanent or semi-permanent shelter (other than a military truck, van, or transportable shelter) during use, the following information is prepared: a. Amount of floor, wall, and height space required to house the equipment. b. A plan for a typical layout. c. Required weight capacity of the building floor. d. Dimensions required for installed equipment. e. Total weight that the floor should support and the area in square feet over which the total weight will be distributed. f. Environmental conditions (for example, venting). g. Power requirements. h. Unusual requirements specific to the equipment, such as air-conditioning. i. Architectural and engineering data on beam sizes, lengths, bending moments, and required supports should not be included. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure

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TABLE XII. Operator instructions, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			(element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Assembly and Preparation for Use	Procedural	Y	Procedures are prepared when unpacking, assembly, and installation is required. When the equipment is shipped or delivered in specially designed containers, unpacking instructions are prepared. If the containers are to be used again, kept for future use, turned in to supply, or if any special disposition is required, the necessary procedures are prepared. Assembly and installation procedures are prepared when needed. These instructions are supported by illustrations. As applicable, power requirements, connections, and initial control settings needed for installation purposes are included. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Initial Adjustments, Before Use and Self-Test	Procedural	Y	Procedures are prepared when any routine checks, self-test, or adjustments that the operator should make before putting the equipment in operation is required. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Operating Procedures	Procedural	Y	The following operating instructions should be prepared, as applicable. a. All steps necessary to bring the equipment from OFF through STANDBY condition to full operation, including all necessary warnings and cautions.

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TABLE XII. Operator instructions, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			b. Procedures for each mode of operation; e.g., manual, automatic, local, remote, etc. The use and relative advantage of each mode should also be described. c. Description of the equipment's anti-jamming and interference reduction features, the advantage of each feature, and the operating procedures to be followed. Supporting illustrations (such as indicator displays, waveforms, etc.) that provide typical observations of jamming and interference for evaluation by the operator should be included. d. Operator turn-off procedures, including all steps necessary to bring the equipment from full operation through STANDBY to OFF condition. e. Operating procedures for misfire, hangfire, and other events applicable to ammunition. f. Operating procedures explaining how the equipment is operated in conjunction with auxiliary equipment or how it operates when integrated with other equipment. g. When specified by the acquiring activity, operating procedures containing the identification, loading, initializing, and downloading of applicable operational and diagnostic software are included. Identification of the software should include the purpose, configuration applicability, and version information. Procedures that verify that the proper software has been loaded and is operating properly are also included. Examples of specific types of data that may be applicable to these data modules are: h. Descriptions of screen data and interpretation of message formats. i. Operator actions based on screen display. j. Data entry by the Operator.

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TABLE XII. Operator instructions, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			k. Saving or purging data. l. Processing of messages. m. Software transfer procedures. n. Reviewing message and entry formats. The following considerations should be taken into account when preparing operating procedures: a. Initial safety requirements (actions, inspections, and emergency turn-off procedures). b. If a particular operating procedure or step is assigned to a specific crew-served position (e.g., gunner), the assignment should be indicated. c. Connection of any accessory equipment not permanently connected. d. Instructions for obtaining or confirming the presence of all critical inputs such as power, coolant, air, signal, air-conditioning, etc. Specific values for critical inputs (power, coolant, air, and so on.) should also be included. e. Procedures for setting controls and making adjustments which should be accomplished by the operator before equipment turn-on. f. Procedures for determining operational readiness and the acceptable indications expected from built-in indicators, such as meters, lamps, gauges, displays, and recorder readouts. g. Milestones in the operational status of the equipment, indicated by brief statements, such as "The generator is now in STANDBY." h. Visual or audible observations which occur as a result of an operator action, such as boom lowering, sweep rotation, blower motor running, and so on. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element

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TABLE XII. Operator instructions, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			<preliminaryRqmts>). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Operating Auxiliary Equipment	Procedural	Y	If applicable, procedures should be prepared for putting any auxiliary equipment into operation, operating it, and putting it in standby or shutdown status. If these procedures are published in another publication covering the auxiliary equipment, reference should be made to that publication. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Preparation for Movement	Procedural	Y	Preparation for movement procedures are prepared if the equipment is designed for movement and it can be readied for movement by the operator. Procedures should be prepared for actions such as disassembly, folding, and telescoping. Illustrations are prepared, as required, to support the text. This information should not duplicate the "Assembly and preparation for Use" contents. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Decals and Instruction Plates	Descriptive	Y	Decals and instruction plates may also be included under "Operation under unusual conditions." Decals and operating instruction plates located on the equipment, which are essential for operation, are clearly illustrated, so that all information is legible. Related warning and caution decals and plates

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TABLE XII. Operator instructions, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			should be included. An illustration(s) should be prepared to show the location of all applicable decals and plates. All information should be nested within a primary paragraph (element **`<levelledPara>`**) and subparagraphs, lists, and tables as needed.
Operation Under Unusual Conditions	PM	N	Instructions should be prepared for operation under unusual conditions. Preventive or protective measures to be taken beyond the operator's capabilities are identified. Instructions to ensure proper grounding of equipment are prepared, as applicable. "Operation Under Unusual Conditions" should be a publication module entry title (element **`<pmEntryTitle>`**) within the chapter publication module. It should include the following individual data modules, as applicable: Security measures for electronic data; Unusual environment/weather; Fording and swimming; Interim CBRN decontamination procedures, Jamming and ECM procedures; and, Degraded operation procedures. Refer to 5.1.9.2.2 for a parent content example which includes this entry.
Unusual Environment / Weather	Procedural	Y	Procedures are prepared for operation under conditions of extreme moist heat, extreme dry heat, extreme cold, salt air, sea spray, dust storms, sand storms, high altitudes, snow, mud, and other similar adverse environmental/weather conditions. Ranges of environmental/weather operating conditions considered for the system addressed should be defined. Procedural information may include common information (element **`<commonInfo>`**) prior to the preliminary requirements (element **`<preliminaryRqmts>`**). This is followed by the main procedure (element **`<mainProcedure>`**) and close requirements (element **`<closeRqmts>`**).

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TABLE XII. Operator instructions, content requirements.

Content Requirement	DM Type	Individual DM	Notes
Fording and Swimming	Procedural	Y	If applicable, procedures for fording and swimming the equipment should be provided. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Interim Chemical, Biological, Radiation, and Nuclear (CBRN) Decontamination Procedures	Procedural	Y	As applicable and specified by the acquiring activity, interim general CBRN decontamination procedures to be performed until CBRN decontamination facilities are available should be prepared. Other decontamination publications should be referenced only when necessary. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Jamming and Electronic Countermeasures (ECM) Procedures	Procedural	Y	As applicable, procedures are prepared for operation of the equipment in an ECM environment through transmitted and reflected deception signals and through transmitted and reflected jamming. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Degraded Operation Procedures	Procedural	Y	When operation of the equipment in a degraded condition is required, procedures are prepared for temporarily adapting the equipment and the operating procedures to meet the

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TABLE XII. Operator instructions, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			reduction of power, partial failure, failure of a portion of the equipment, or similar conditions. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Emergency	Procedural	Y	As applicable, emergency procedures for, but not limited to, operating and shutting down equipment during emergency conditions should be prepared. Pages containing emergency information should have a dark border that indicates to the user that they are emergency pages, in accordance with MIL-STD-3031. Procedures covering operation of the equipment during emergency conditions (control failure, air failure, lube oil failure, loss of cooling water, etc.) should be provided. Emergency operating instructions are included. A warning or a caution to return the equipment to proper operation when the emergency is over should also be included. Procedures to turn the equipment off during an emergency (fire, water, smoke, hazard to personnel, loss of coolant, normal power, etc.) should be provided. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Stowage and Decal / Data Plate Guide	Descriptive	Y	This data module should be prepared as directed by the acquiring activity. The

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TABLE XII. Operator instructions, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			guide plan should include information provided by the acquiring activity. A brief scope statement should be prepared explaining the purpose of the data module. Data on the location of applicable COEIs, BIIs, and AAL items should be prepared. An illustration is included to facilitate the location of the items. Data on the location of all decals and data plates should be prepared. As applicable, illustrations detailing the locations of the decals and data plates are included. All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
On-Vehicle Equipment Loading Plan	Descriptive	Y	This data module is prepared when applicable to the equipment. The loading plan includes information provided by the acquiring activity. A brief scope statement is prepared explaining the purpose of the loading plan and identifying the equipment covered by the on-vehicle equipment loading plan data module. An illustration identifying and locating the on-vehicle equipment is included. External and internal views are used, if necessary. As applicable, both tactical and nontactical situation loading configurations are shown.
+ Project decision for DM type.			

5.2.6 Troubleshooting procedures.

5.2.6.1 General.

Troubleshooting refers to the specific maintenance or repair tasks to correct a fault. Troubleshooting data is test and fault isolation oriented.

Troubleshooting procedures are prepared for weapon systems, major equipment, components, and applicable support and interface equipment. Troubleshooting procedures isolate faults to the part(s) based on the MAC for repair or replacement at the maintenance level addressed. Troubleshooting procedures begin with testing observed problems, a fault symptom or a malfunction, and result in a diagnosis to a single fault/failure.

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Troubleshooting and supporting illustrations are prepared so that operator/crew and maintenance personnel can perform all required operator through depot level (overhaul) troubleshooting.

Troubleshooting instructions cover all items comprising the weapon system/equipment, such as assemblies, subassemblies, components, wiring, junction boxes, and accessories. Troubleshooting instructions include information resulting from the detailed inspection and the observed behavior while inspecting the non-working part/equipment/system. Instructions include, or reference to, functional descriptions of subsystems being diagnosed to aid the operator/technician. The method used for identifying system equipment test points, including the requirements and methods of determining defects through visual inspection, should also be explained.

The troubleshooting procedures information set uses a mixture of data module types, including descriptive, procedural, fault, process, and publication. While most content requirements are individual data modules, there is a single (descriptive) data module which includes several content requirements. The content requirements, listed in Table XIII, list either the content requirement or the information name in Column 1, depending on the grouping. Refer to MIL-STD-3031 for specific requirements.

TABLE XIII. Troubleshooting procedures, content requirements.

Content Requirement	DM Type	Individual DM	Notes
Troubleshooting Procedures	PM		Parent publication module inclusion: If troubleshooting procedures will be included directly into the parent publication module, all of the content should be contained within a **`<pmEntry>`** within the content section (element **`<content>`**). The element **`<pmEntry>`** should include the attribute **`pmEntryType`** with a value of "**`pmt52`**" (Chapter). After **`<pmEntry>`**, the element **`<pmEntryTitle>`** should include "Troubleshooting Procedures" followed by the applicable content requirements populated as separate data module references (element **`<dmRef>`**). Each data module reference is included within the same publication module entry (element **`<pmEntry>`**). Refer to 5.1.9.2.2 for an example. Separate publication module inclusion: A separate "troubleshooting procedures" publication module identification and status section should reflect the content. For

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TABLE XIII. Troubleshooting procedures, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			example, **<pmTitle>** should contain "Troubleshooting Procedures" and the publication module code (element **<pmCode>**) attribute **pmNumber** could contain the value of "**C0003**" (Chapter 3). (Refer to 5.1.9.1.1.3 for more information on populating the attribute **pmNumber**.) The content section (element **<content>**) population would be the same as the parent publication module (listed above). Content requirements include, as applicable:
Introduction	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Technical Description	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Technical Description		N	Authored within a subparagraph (element **<levelledPara>**) with lists, tables, and so on as needed.
Equipment Description and Data		N	Authored within a subparagraph (element **<levelledPara>**) with lists, tables, and so on as needed.
Controls and Indicators		N	Authored within a subparagraph (element **<levelledPara>**) or, in accordance with MIL-STD-3031, as a separate data module.
Theory of Operation		N	Authored within a subparagraph (element **<levelledPara>**) with lists, tables, and so on as needed.
Malfunction Index	Descriptive	Y	Index may be authored in a table along with any additional information as needed (paragraphs, lists, etc.).
Symptom Index	Descriptive	Y	Index may be authored in a table along with any additional information as needed (paragraphs, lists, etc.).
System/Subsystem Index	Descriptive	Y	Index may be authored in a table along with any additional information as needed (paragraphs, lists, etc.).
Preshop Analysis	Procedural	Y	Procedural information may include common information (element

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TABLE XIII. Troubleshooting procedures, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			<commonInfo>) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Component Checklist	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Operational Checkout	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Operational Checkout Test Procedure	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Message Index	Descriptive	Y	Index may be authored in a table along with any additional information as needed (paragraphs, lists, etc.).
Fault Code Reference Index	Descriptive	Y	Index may be authored in a table along with any additional information as needed (paragraphs, lists, etc.).
Post-Operational Checkout Shutdown Procedures	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Pretest Setup Procedures	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element

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TABLE XIII. Troubleshooting procedures, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			<preliminaryRqmts>). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Troubleshooting Procedure	Fault	Y	One troubleshooting procedure is authored per data module within the fault isolation branch. Refer to 5.2.6.3 for more information.
Post-Troubleshooting Shutdown Procedures	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Diagnostics Procedure	Process	Y	Refer to 5.1.10.
Location Diagrams	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.

5.2.6.2 Troubleshooting procedures data modules.

Troubleshooting procedures include detecting, isolating, and correcting, aircraft, aircraft systems or other types of weapon system, and their subsystems, and equipment failures and malfunctions. Data modules relate to a specific symptom or to a system, assembly, or component.

When required, an introduction should be included explaining how the troubleshooting procedures are to be used to perform troubleshooting and how they relate to the associated operational checkout data modules. The introductory information should be included in a descriptive data module, in accordance with MIL-STD-3031.

Any general procedures, precautions, and pretest setup procedures should be included within procedural data modules, in accordance with MIL-STD-3031.

The fault isolation branch (element **<faultIsolation>**) should be used to author troubleshooting procedures.

Preliminary requirements, within the element **<isolationProcedure>**, should be included for each troubleshooting procedure data module. Refer to 5.4.6 for additional information on preliminary requirements.

Although two methods are allowed, in accordance with MIL-STD-3031, only one method is included in this handbook. This method uses the fault data module to author a YES-NO logic troubleshooting procedure.

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In accordance with S1000D, one main procedure (element **`<isolationMainProcedure>`**) is allowed per data module.

Each isolation step (element **`<isolationStep>`**) includes an indication or condition (in the form of a question) within the element **`<isolationStepQuestion>`**. The question is followed by either a yes or no answer (element **`<yesNoAnswer>`**) or a list of choices (element **`<listOfChoices>`**).

Answers are then directed to either a new question (within a new step) or an end to the isolation procedure. The isolation procedure end (element **`<isolationProcedureEnd>`**) could then contain an action (for example, "Close the valve," "Notify supervisor," or reference another data module or publication). Additionally, the isolation procedure end could also reference a closeup procedure (element **`<closeRqmts>`**). Refer to Figure 67 for an example and 5.2.6.3 for the associated markup example.

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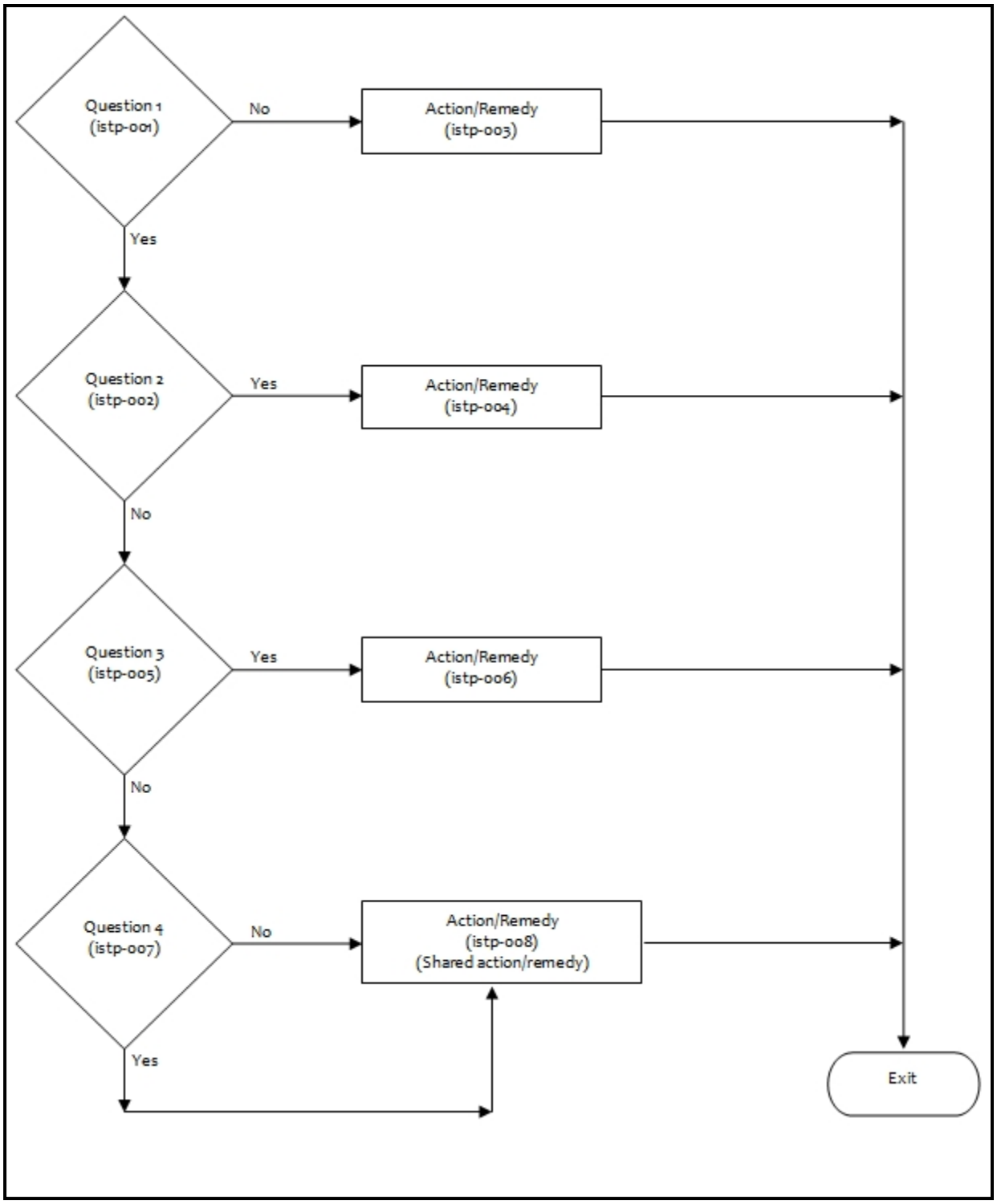

FIGURE 67. Generic fault isolation procedure flow.

5.2.6.3 Markup example.

```
<isolationMainProcedure>
<isolationStep id="istp-001">
<isolationStepQuestion>Question 1?</isolationStepQuestion>
```

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```
<isolationStepAnswer>
<yesNoAnswer>
<yesAnswer nextActionRefId="istp-002"/>
<noAnswer nextActionRefId="istp-003"/>
</yesNoAnswer>
</isolationStepAnswer>
</isolationStep>
<isolationProcedureEnd id="istp-003">
<action>Action/Remedy</action>
</isolationProcedureEnd>
<isolationStep id="istp-002">
<isolationStepQuestion>Question 2?</isolationStepQuestion>
<isolationStepAnswer>
<yesNoAnswer>
<yesAnswer nextActionRefId="istp-004"/>
<noAnswer nextActionRefId="istp-005"/>
</yesNoAnswer>
</isolationStepAnswer>
</isolationStep>
<isolationProcedureEnd id="istp-004">
<action>Action/Remedy</action>
</isolationProcedureEnd>
<isolationStep id="istp-005">
<isolationStepQuestion>Question 3?</isolationStepQuestion>
<isolationStepAnswer>
<yesNoAnswer>
<yesAnswer nextActionRefId="istp-006"/>
<noAnswer nextActionRefId="istp-007"/>
</yesNoAnswer>
</isolationStepAnswer>
</isolationStep>
<isolationProcedureEnd id="istp-006">
<action>Action/Remedy</action>
</isolationProcedureEnd>
<isolationStep id="istp-007">
<isolationStepQuestion>Question 4?</isolationStepQuestion>
<isolationStepAnswer>
<yesNoAnswer>
<yesAnswer nextActionRefId="istp-008"/>
<noAnswer nextActionRefId="istp-008"/>
</yesNoAnswer>
</isolationStepAnswer>
</isolationStep>
<isolationProcedureEnd id="istp-008">
<action>Notify supervisor.</action>
</isolationProcedureEnd>
</isolationMainProcedure>
```

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5.2.6.4 Output.

Fault isolation procedure

1	Question 1?
1.1	Yes: Go to Step 3.
1.2	No: Go to Step 2.
2	Action/Remedy
	Go to Requirements after job completion.
3	Question 2?
3.1	Yes: Go to Step 4.
3.2	No: Go to Step 5.
4	Action/Remedy
	Go to Requirements after job completion.
5	Question 3?
5.1	Yes: Go to Step 6.
5.2	No: Go to Step 7.
6	Action/Remedy
	Go to Requirements after job completion.
7	Question 4?
7.1	Yes: Go to Step 8.
7.2	No: Go to Step 8.
8	Notify supervisor.
	Go to Requirements after job completion.

FIGURE 68. Sample output of generic fault isolation procedure.

5.2.7 Maintenance instructions.

5.2.7.1 General.

Maintenance instructions are prepared for major weapon systems, equipment, components and applicable support and interface equipment. Maintenance procedures and supporting illustrations are prepared so that maintenance personnel can perform all required operator through depot level (overhaul) maintenance.

Maintenance instructions are prepared for all items comprising the weapon system/equipment, such as assemblies, subassemblies, components, wiring, junction boxes, and accessories. Tasks are presented in the order in which they are performed. Sound engineering principles and techniques, approved Logistics Management Information (LMI), service experience, performance data on similar equipment, and all other reliability, maintainability, and supportability (RMS) and Operational Availability (Ao) data available should be used in the preparation of specific maintenance instructions. Maintenance data modules should be arranged

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to coincide with the Functional Group Code (FGC) sequence followed in the MAC or parts information.

The majority of maintenance instruction content requirements use the procedural data module. However, other types of data modules are also used. The content requirements, listed in Table XIV, are in no specific order and should not be followed as such. Since many maintenance requirements are repeated throughout maintenance chapters, each requirement is listed a single time in Table XIV. Refer to MIL-STD-3031 for specific information set organization.

Maintenance instructions consist of maintenance procedure data modules, created using the procedural schema, and general information data modules, created using the descriptive schema. Preventive Checks and Services (PMCS), which also fall under maintenance instructions, are created using the checklist schema. These data modules are then grouped using a publication module to create the set of maintenance instructions.

Common information (element **`<commonInfo>`**) may be included prior to the preliminary requirements (the element **`<preliminaryRqmts>`**). These are followed by the main procedure (element **`<mainProcedure>`**). The **`<mainProcedure>`** consists of a series of steps, figures, and tables, as needed. Closing requirements are included within the element **`<closeRqmts>`**.

Refer to 5.4.6 for additional information on preliminary requirements.

TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
Maintenance Instructions	PM		Parent publication module inclusion: If maintenance instructions will be included directly into the parent publication module, all of the content should be contained within a **`<pmEntry>`** within the content section (element **`<content>`**). The element **`<pmEntry>`** should include the attribute **`pmEntryType`** with a value of "**`pmt52`**" (Chapter). After **`<pmEntry>`**, the element **`<pmEntryTitle>`** should include "Maintenance Instructions" followed by the applicable content requirements populated as separate data module references (element **`<dmRef>`**) or nested publication module reference (element **`<pmRef>`**) as needed. Some content, such as Service Upon Receipt, is nested in another **`<pmEntry>`** which includes the applicable data module references as needed.

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			Refer to 5.1.9.2.2 for an example. Separate publication module inclusion: A separate "maintenance instructions" publication module identification and status section should reflect the content. For example, **<pmTitle>** should contain "Maintenance Instructions" and the publication module code (element **<pmCode>**) attribute **pmNumber** could contain the value of "**C0004**" (Chapter 4). (Refer to 5.1.9.1.1.3 for more information on populating the attribute **pmNumber**.) The content section (element **<content>**) population would be the same as the parent publication module (listed above). Content requirements include, as applicable: PMCS introduction, PMCS, service upon receipt (see notes for this content), equipment/user fitting instructions (personal use equipment), preventive maintenance inspection (aircraft only), maintenance, general maintenance, lubrication instructions, facilities, overhaul inspection procedures (OIP), depot mobilization requirements, quality assurance, illustrated list of manufactured items, torque limits, aircraft inventory master guide (aircraft only), storage of aircraft (aircraft only), weighing and loading (aircraft only), wiring diagrams, auxiliary equipment maintenance instructions, and ammunition maintenance instructions.
PMCS Introduction	Descriptive	Y	PMCS introduction data module should explain the purpose and use of the PMCS data. Refer to MIL-STD-3031 for information set requirements.
PMCS, Including Lubrication Instructions	Checklist	Y	Preventive maintenance checks and services (PMCS) should be prepared and based upon the principles of Reliability Centered Maintenance

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			(RCM) logic and should include PMCS information, periodic lubrication instruction (extensive lubrication instructions may be included in a lubrication data module), and applicable scheduled corrosion inspections. Refer to MIL-STD-3031 for information set requirements. Refer to 5.2.7.2.
Service Upon Receipt	PM	N	Service upon receipt information sets contain information required for the user to ensure that the equipment will be adequately inspected, serviced, and operationally tested before it is subjected to use. For equipment that requires extensive service upon receipt, this information set is further subdivided, as described below. "Service Upon Receipt" could be a nested publication module entry (element **<pmEntry>**) within the maintenance chapter publication module. The element **<pmEntryTitle>** should be included and contain, "Service Upon Receipt." Each of the applicable data modules would then follow (populated with separate **<dmRef>** elements): Siting, shelter, service upon receipt of material (see notes for this content), installation instructions, assembly of equipment, special application installation instructions, van and shelter procedure, preliminary servicing of equipment, preliminary checks and adjustment of equipment, preliminary calibration of equipment, circuit alignment, ammunition marking, classification of defects, handling ammunition, procedures to activate ammunition, other/additional service upon receipt tasks, and follow-on maintenance.
Siting	Procedural	Y	Siting instructions peculiar to the equipment are prepared, as applicable. In preparing the instructions, operational and maintenance features

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			should be considered, such as the following: a. Location. b. Proximity to power sources. c. Effective ranges. d. Terrain requirements to avoid screening, reflections, ground clutter, and other poor operational conditions due to terrain. e. Technical requirements. f. Shelter locations. g. Compensating for adverse siting conditions. h. When the equipment contains large components such as towers and antennas that require orientation to a baseline during siting. i. Mobile equipment oriented during installation. Siting requirements may be part of "Operation under usual conditions" (operator) or "Service upon receipt" (maintenance). Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Shelter	Procedural	Y	For equipment normally housed in a permanent or semi-permanent shelter (other than a military truck, van, or transportable shelter) during use, the following information is prepared. a. Amount of floor, wall, and height space required. b. A plan for a typical layout. c. Required weight capacity of the building floor. d. Dimensions required for installed equipment. e. Total weights that the floor should support and the area in square feet over which the total weight will be distributed.

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			f. Environmental conditions (for example, venting). g. Power requirements. h. Unusual requirements specific to equipment, such as air-conditioning. j. Architectural and engineering data on beam sizes, lengths, bending moments, and required supports are not included. Shelter requirements may be part of "Operation under usual conditions" (operator) or "Service upon receipt" (maintenance). Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Service Upon Receipt of Materiel	PM	N	"Service Upon Receipt of Materiel" could be a nested publication module entry (element **<pmEntry>**) within the maintenance chapter publication module. The element **<pmEntryTitle>** should be included and contain, "Service Upon Receipt of Materiel." Each of the applicable data modules would then follow (populated with separate **<dmRef>** elements): Unpacking, checking unpacked equipment, and processing unpacked equipment.
Unpacking	Procedural	Y	As a minimum, the following information should be prepared. a. Any special sequence of action necessary to protect the equipment. b. If a special design reusable container is involved for either the end item or components which are authorized for replacement, instructions should be prepared to report or reenter the empty container through

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			supply channels. instructions should be prepared on how to package the unserviceable component in the empty container in the same manner that the new component was packaged if a component is being replaced. c. Man-hour requirements and total man-hours required for unpacking the equipment. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Checking Unpacked Equipment	Checklist	Y	Instructions should be prepared for a condition check of the shipment (including that of pallets, containers, boxes, and legibility of markings). The following data should be included. a. Packaging material. For each item of a component requiring inspection, acceptable, reparable, and non-reparable conditions should be provided. b. Equipment components. A table should be provided that lists, by location, each item of a component requiring inspection. For each of these items an action should be provided and, if applicable, a reference made to another data module. c. In addition, the following is inserted as stated here. "Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on SF 361, Transportation Discrepancy Report. Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with applicable

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			service instructions (e.g., for Army instructions, see DA PAM 750-8). Check to see whether the equipment has been modified." Refer to 5.2.7.4.
Processing Unpacked Equipment	Procedural	Y	Instructions are prepared for processing the unpacked equipment, as long as they do not conflict with any warranty provisions. The following information is prepared, as applicable. a. Any special skills required by processing personnel. b. All caustic, corrosive, and/or toxic material used during processing should be identified and applicable warnings and cautions given. c. Instructions on safe disposal of waste products generated during processing actions. d. Man-hour requirements and total man-hours required for processing the equipment. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Installation Instructions	Procedural	Y	Instructions are prepared to install the equipment properly, including use of tools; to make the necessary interconnections; and to lubricate, calibrate, and adjust the equipment. a. Cable diagrams are included or referenced as necessary. When cable assemblies are not supplied but are required for bench test setup, instructions are prepared for fabricating interconnecting cable assemblies from spares and bulk supplies. The part number, drawing number, and

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			manufacturer or designer for each part of the cable assembly is shown, and wires, connectors, pin connections, and letters or other designators are identified. b. Instructions are prepared for any mating connectors that call for a special procedure either to make the proper connection or to prevent damage to the connector. Cautions are included where necessary. c. A wiring diagram is prepared which fully identifies each wire to be connected, by color code or wire number if applicable. This diagram shows the location of each pertinent terminal, which is identified by number or other marking, if available, or by position if neither is available. Where appropriate, voltage readings should be annotated. d. All alternate connection patterns required for various modes of operation are shown and explained. e. Only one diagram is used to illustrate interconnection patterns which appear more than once within the same equipment. f. For installation of plug-in items, diagrams are prepared or referenced showing the location of items that are not installed in the equipment when received. Instructions are prepared whenever special techniques or connections are required. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Assembly of Equipment	Procedural	Y	a. Instructions are prepared for assembling equipment that has been shipped unassembled.

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			When the equipment is to be shelf or rack mounted, instructions are also prepared for assembly of the rack, if necessary, and installation of the equipment in the rack. As applicable, power requirements, connections, and initial control settings needed for installation purposes are included. b. When the equipment is shipped or delivered in specially designed containers, unpacking instructions are prepared. If the containers are to be used again, kept for future use, turned in to supply, or require a special disposition method, the necessary procedures to restore the containers are included. c. For security measures for electronic data, instructions are prepared for handling, loading, purging, overwriting, or unloading classified electronic data under usual conditions. Instructions should meet current security regulations as they pertain to automation security. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Installation of the equipment	Procedural		a. Installation instructions should be prepared for all of the following actions (including placing, mounting, and attaching). 1) Cable and wiring interconnections. 2) Proper use of special tools. b. Installation instructions should identify all dimensions that should be maintained in placing, mounting, or attaching items. c. When initial adjustments can be

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			made efficiently during installation, such adjustments should be included. d. For equipment designed and intended for use in more than one type of installation (e.g., field, fixed station, and mobile), instructions should be prepared for each type of installation involved. e. If performance of any step in the installation instructions requires the assistance of personnel from a higher level of maintenance, this should be stated in a note similar to the below: "NOTE The following installation procedure should be made with the assistance of (*insert level*) maintenance personnel (*include Military Occupational Specialty (MOS), if applicable*). " f. Installation instructions should be considered complete only when they include instructions for: 1) All required installation options (e.g., Electrostatic Discharge (ESD) control requirements). 2) Accessory items. 3) Auxiliary items (those that extend or increase equipment capability). 4) Grounding of the equipment for both safety and proper operation. 5) Torque requirements.
Special Application Installation Instructions	Procedural	Y	Installation instructions, which are common to all special applications of a system, are prepared. Details resulting from the installation but peculiar only to the equipment into which the system is being installed are omitted (for example, special treatment required when installing the system in a vehicle or aircraft). Procedural information may include common information (element

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			<commonInfo>) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Van and Shelter Procedure	Procedural	Y	The following information is prepared only to the extent required for the applicable level of maintenance. a. Instructions are prepared for the removal and replacement of each nonpermanent unit. b. Installation instructions are not prepared when the equipment is permanently installed in vans or shelters. c. Diagrams and instructions are prepared which pertain to electrical and interconnection wiring, exclusive of wiring peculiar to the equipment on which the installation is being made (for example, headlight, ignition wiring). d. Instructions are prepared for cable run locations, equipment locations, circuit breaker panels, and other similar details. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Preliminary Servicing of Equipment	Procedural	Y	Instructions for all lubrication required on newly installed equipment should be prepared. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			<closeRqmts>).
Preliminary Checks and Adjustment of Equipment	Procedural	Y	Instructions for all checks and adjustments to be made on newly installed equipment should be prepared. Information on the location of items such as controls and check points are prepared or referenced. Instructions are prepared for checks and adjustments that are made before equipment is put into operation and for all other checks required to ensure proper operation of the equipment. These instructions include the following, as applicable: a. Checks for interconnections. b. Checks for grounding, including earth ground connections, earth conditioning for conduction, as well as a check of the grounding circuit for negligible resistance. c. Checks for adequate clearance for rotating or moving devices. d. Checks of initial settings of all controls that are preset before power is applied. e. All other checks needed to determine that power can be applied without injuring personnel or damaging the equipment. f. Firm seating and connection of all plug-in parts, mating connectors, jacks, and plugs. g. Cable and wire harness routing, dressing, and fastening. h. Cautions against damaging transistors, diodes, and other electrically sensitive items. i. Replacement of all covers, inspection and access doors, and plates. j. Operation of safety interlocks and switches. k. Operation of ventilating louvers and intake and exhaust ports. l. Operation and content of liquid cooling systems. m. Lubricants and Corrosion Prevention Control (CPC) procedures. n. Switch and control settings that

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			are preset at installation (installer's adjustments). o. Presetting and adjustment of automatic controls. p. Terminal connections. q. Required terminal or capacitor strapping. r. Preliminary test measurements. s. Presetting operator's controls. t. Normal operating checks. u. After-installation orientation. v. Burn-in of parts. w. ESD control standards. x. After operations, shutdown, checks, and inspections. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Preliminary Calibration of Equipment	Procedural	Y	Instructions for all calibration to be made on newly installed equipment should be prepared. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Circuit Alignment	Procedural	Y	Instructions should be prepared for circuit alignment procedures. Applicable instructions are prepared in the following order. a. External connections. Connections to external lines required for each installation option are included. Connection instructions should conform to the requirements for installing wiring and cabling interconnections. b. Switch settings, patch panel connections, and internal control

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			settings. Instructions are prepared for all switch settings, patch panel connections, and internal control settings required for each installation option and mode of operation. c. Alignment procedures. Instructions are prepared for all alignment procedures, including any variations required for different installation options and modes of operation. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Ammunition Marking	Procedural	Y	Instructions should be prepared for marking ammunition and ammunition containers. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Classification of Defects	Procedural	Y	Procedures are prepared for performing visual inspection of ammunition/containers (pallets, boxes, etc.) and include classification and disposition of defective ammunition/containers. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Ammunition Handling	Procedural	Y	Procedures should be prepared for

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			handling ammunition. a. Unpack. As a minimum, the following information are prepared. 1) Any special sequence of action necessary to protect the ammunition. 2) If a special design reusable container is involved for either the end item or components, which are authorized for replacement, instructions are prepared to report or reenter the empty container through supply channels. 3) Man-hour requirements and total man-hours required for unpacking the ammunition. b. Pack. As a minimum, the following information is prepared. 1) Any special sequence of action necessary to protect the ammunition. 2) Instructions are prepared on how to package defective ammunition. 3) Man-hour requirements and total man-hours required for packing the ammunition. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Procedures to Activate Ammunition	Procedural	Y	Procedures should be prepared for activation of ammunition, mines, etc., preparatory to detonation. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**)

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			and close requirements (element **<closeRqmts>**).
Other Service Upon Receipt Task	Procedural	Y	Additional service upon receipt task may be developed when the specific type of service upon receipt tasks are not covered in MIL-STD-3031. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Follow-On Maintenance	Procedural	Y	As applicable, instructions should be prepared for follow-on maintenance and it will be the last task in the data module. Follow-on is a maintenance condition which is accomplished sometime following the completion of a task to clean up or undo actions performed during the task. Follow on maintenance may be in a separate referenced procedural data module with an information code appropriate to the task performed. For example, in order to fix a component a task might require that an access panel be removed. The panel would then need to be replaced as a follow-on action. This task might be performed sometime after the repair task is completed, but not immediately after the repair task. Other maintenance tasks might be performed in the same area before the follow-on task is accomplished. May apply to both "Service upon receipt" and "Maintenance" tasks. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
Equipment/User Fitting Instructions (Personal Use Equipment)	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Preventive Maintenance Inspection (Aircraft Only)	Checklist	Y	Refer to 5.1.6.
Maintenance			Maintenance tasks should be prepared for each authorized maintenance level. For each maintenance task, illustrations should be used to support or clarify the text, including schematics, wiring diagrams, parts location drawings and other visual aids. Refer to MIL-STD-3031 for exact requirements. If a heading is needed (within the Table of Contents), this may be included as a nested **<pmEntry>** followed by a **<pmEntryTitle>** containing, "Maintenance." Each of the applicable data modules would then follow (populated with separate **<dmRef>** elements).
Inspect			Instructions detailing all required inspections to determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel) may be prepared.
Test and Inspection	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Inspection of conventional and chemical ammunition or components containing radioactive materials	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			<preliminaryRqmts>). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Pre-embarkation inspection	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Inspection of Installed Items	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Inspection - Acceptance and Rejection Criteria	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Testing	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Servicing	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			<closeRqmts>).
Adjust	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Alignment	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Calibration	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Removal procedure	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Install procedure	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Replace	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Repair	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Painting	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Overhaul procedure	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Rebuild	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Lubrication	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**)

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			and close requirements (element **<closeRqmts>**).
Mark	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Pack procedure	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Unpacking	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Preservation procedure	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Assembly and Preparation for Use	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Assembly procedure	Procedural	Y	Procedural information may include common information (element

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			<commonInfo>) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Disassembly procedure	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Clean	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Non-Destructive Testing Inspection (NDTI)	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Radio Interference Suppression	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Placing In Service	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			(element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Ground Handling			Descriptions, instructions, and necessary cautions and warnings for ground handling of the aircraft/equipment, including any information needed in extreme cold, heat, humidity, dust, or other unusual or extreme conditions should be prepared. Instructions for folding and unfolding appropriate parts such as rotor blades or wings, rudders, and fans should also be included. For aircraft, instructions should be prepared that are required for blocking and supporting the aircraft during performance of the operation or procedure involved. The following ground handling procedures may be provided: Towing, jacking, parking, mooring, covering, hoisting, sling loading, and external power.
Towing	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Jacking	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Parking	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
Mooring	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Covering	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Hoisting	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Sling loading	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
External power	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Preservation, Packaging, and Marking	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			<preliminaryRqmts>). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Preparation for Storage or Shipment	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**). Refer to 5.1.3.2 for an example.
Arm	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Load	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Unload	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Software maintenance	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**)

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			and close requirements (element **<closeRqmts>**).
Additional Maintenance Task	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Follow-On Maintenance	Procedural	Y	As applicable, instructions should be prepared for follow-on maintenance and it will be the last task in the data module. Follow-on is a maintenance condition which is accomplished sometime following the completion of a task to clean up or undo actions performed during the task. Follow on maintenance may be in a separate referenced procedural data module with an information code appropriate to the task performed. For example, in order to fix a component a task might require that an access panel be removed. The panel would then need to be replaced as a follow-on action. This task might be performed sometime after the repair task is completed, but not immediately after the repair task. Other maintenance tasks might be performed in the same area before the follow-on task is accomplished. May apply to both "Service upon receipt" and "Maintenance" tasks.
General Maintenance	Procedural	Y	General maintenance information set should be prepared as directed by acquiring activity and contain common, general, or standard maintenance procedures applicable to other maintenance information sets contained within the TM/IETP that require the general maintenance procedures to complete the tasks. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Lubrication Instructions	Procedural	Y	Lubrication schedules should be prepared to present all applications and procedures, lubricants, and lubrication points to completely lubricate equipment. Refer to MIL-STD-3031 for requirements. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Facilities	Descriptive	Y	Facilities data module (DMWR/NMWR only) should be prepared as directed by acquiring activity. A description of all facilities, such as test stands, test tracks, clean rooms, shielded rooms, or other facilities that are required to do the maintenance work should be included. Reference is provided for any specifications or standards that these facilities meet. When approved by the acquiring activity, data from these standards may be included in the procedures. All information should be within primary paragraphs (element **<levelledPara>**), tables, subparagraphs and so on as needed.
Overhaul Inspection Procedures (OIP)	Procedural	Y	Unless otherwise specified by the acquiring activity, overhaul inspection procedures (OIP) data modules (DMWRs/NMWRs only) are prepared for items that have parts with specific characteristics, wear limits, specified performance requirements, or fatigue characteristics or tolerances. A separate data module is provided for each item containing such parts. Within each data module, a separate OIP is provided for each part of the

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			item that requires a critical inspection. Refer to MIL-STD-3031 for additional information. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Depot Mobilization Requirements	Descriptive	Y	When specified and provided by the acquiring activity, the modifications, deletions, or additions to the preshop analysis or overhaul procedures required during mobilization are included. Refer to MIL-STD-3031 for additional information. All information should be within primary paragraphs (element **<levelledPara>**), tables, subparagraphs and so on as needed.
Quality Assurance	Descriptive	Y	Refer to MIL-STD-3031 for exact requirements. All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Illustrated List of Manufactured Items	Descriptive	Y	The illustrated list of manufactured items information is prepared as directed by acquiring activity and identify and should contain introduction and manufacturing procedures information which identifies and includes technical information for each item authorized to be manufactured or fabricated by field or sustainment personnel. When applicable, links may be made to fabrication instructions for tools and equipment. Refer to MIL-STD-3031 for additional information. May apply to both "Maintenance" tasks and "Auxiliary equipment maintenance instructions." All information should be nested

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Torque Limits	Procedural	Y	This data module is prepared as directed by acquiring activity using information prepared to provide applicable torque values (expressed in lb-ft or lb-in. terms), data as to bolt grade markings and their proper identification, and specific torque sequencing requirements. Refer to MIL-STD-3031 for additional information. May apply to both "Maintenance" tasks and "Auxiliary equipment maintenance instructions." Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Aircraft Inventory Master Guide (Aircraft Only)	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Storage of Aircraft (Aircraft Only)			This information set should be prepared as directed by the acquiring activity.
Flyable Storage of Aircraft	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Short Storage of Aircraft	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			(element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Intermediate Storage of Aircraft	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Weighing and Loading (Aircraft Only)	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Wiring Diagrams	Descriptive	Y	May apply to both "Maintenance" tasks and "Auxiliary equipment maintenance instructions." All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, figures, and tables as needed.
Auxiliary Equipment Maintenance Instructions	PM		Parent publication module inclusion: If auxiliary equipment maintenance instructions will be included directly into the parent publication module, all of the content should be contained within a **<pmEntry>** within the content section (element **<content>**). The element **<pmEntry>** should include the attribute **pmEntryType** with a value of "**pmt52**" (Chapter). After **<pmEntry>**, the element **<pmEntryTitle>** should include "Auxiliary Equipment Maintenance Instructions" followed by the applicable content requirements populated as separate data module references (element **<dmRef>**). Each data module

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			reference is included within the same publication module entry (element **<pmEntry>**). Refer to 5.1.9.2.2 for an example. Separate publication module inclusion: A separate "auxiliary equipment maintenance instructions" publication module identification and status section should reflect the content. For example, **<pmTitle>** should contain "Auxiliary Equipment Maintenance Instructions" and the publication module code (element **<pmCode>**) attribute **pmNumber** could contain the value of "**C0005**" (Chapter 5). (Refer to 5.1.9.1.1.3 for more information on populating the attribute **pmNumber**.) The content section (element **<content>**) population would be the same as the parent publication module (listed above). Content requirements include, as applicable: Auxiliary equipment maintenance, illustrated list of manufactured items, torque limits, and wiring diagrams.
Auxiliary Equipment Maintenance	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Illustrated List of Manufactured Items	Descriptive	Y	May apply to both "Maintenance" tasks and "Auxiliary equipment maintenance instructions."
Torque Limits	Procedural	Y	May apply to both "Maintenance" tasks and "Auxiliary equipment maintenance instructions." Procedural information may include common information (element **<commonInfo>**) prior to the

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Wiring Diagrams	Descriptive	Y	May apply to both "Maintenance" tasks and "Auxiliary equipment maintenance instructions."
Ammunition Maintenance Instructions	PM		Parent publication module inclusion: If ammunition maintenance instructions will be included directly into the parent publication module, all of the content should be contained within a **<pmEntry>** within the content section (element **<content>**). The element **<pmEntry>** should include the attribute **pmEntryType** with a value of "**pmt52**" (Chapter). After **<pmEntry>**, the element **<pmEntryTitle>** should include "Ammunition Maintenance Instructions" followed by the applicable content requirements populated as separate data module references (element **<dmRef>**). Each data module reference is included within the same publication module entry (element **<pmEntry>**). Refer to 5.1.9.2.2 for an example. Separate publication module inclusion: A separate "ammunition maintenance instructions" publication module identification and status section should reflect the content. For example, **<pmTitle>** should contain "Ammunition Maintenance Instructions" and the publication module code (element **<pmCode>**) attribute **pmNumber** could contain the value of "**C0006**" (Chapter 6). (Refer to 5.1.9.1.1.3 for more

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			information on populating the attribute **pmNumber**.) The content section (element **<content>**) population would be the same as the parent publication module (listed above). Content requirements include, as applicable: Ammunition maintenance, ammunition marking information, and foreign ammunition (NATO).
Ammunition Maintenance	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Ammunition Marking Information	Procedural	Y	An ammunition marking information data module should be prepared as directed by the acquiring activity and provide applicable information on ammunition marking, classification, identification, care and handling, preservation, transportation, authorized rounds, preparation for firing, fuses, and packing. Reusable original packaging and containers are identified for return or temporary storage of ammunition in its original configuration. Information on classifying, identifying, caring for, handling, and so on, non-ammunition Class V items are prepared, when applicable. Individual paragraphs are prepared for each ammunition type/classification. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Foreign Ammunition (NATO)	Procedural	Y	Foreign ammunition (NATO) data module(s) to describe foreign

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TABLE XIV. Maintenance instructions, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			ammunition is prepared when applicable. Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).

5.2.7.2 Preventive Maintenance Checks and Services (PMCS) introduction.

The PMCS introduction is prepared using a descriptive data module to contain only the PMCS introductory data. This is authored in accordance with the descriptive data module as specified in 5.1.2.

5.2.7.3 Preventive Maintenance Checks and Services (PMCS).

PMCS identifies detailed requirements and intervals for conducting preventive maintenance checks and services such as scheduled lubrications and equipment checks. The checklist schema provides a number of optional elements that, when combined, are used to create a PMCS table.

The PMCS content begins with the **<checkList>** element and the attribute **checkListCategory** set to "**clc02**." The PMCS checklist is created using a number of **<checkListItems>**. The elements **<zoneRef>** and **<workArea>** are not used. Of the optional items in **<checkListItem>**, the elements **<itemNumber>**, **<threshold>**, **<equipment>**, and **<checkListProcedure>** are used to contain the PMCS data. The **<equipmentNotAvailable>** element of the **<checkListStep>** is used to identify those conditions where the equipment is removed from service until repaired.

Refer to 5.1.6 for additional information and a PMCS markup example.

5.2.7.4 Checking unpacked equipment.

Checking unpacked equipment contains instructions for a condition check of the shipment (including pallets, containers, boxes and legibility of markings). The checklist schema will be used to markup location and each item of a component requirement inspection. For each item requiring inspection, a series of inspection actions should be included. A remarks section may also be included to indicate any remarks with regards to the condition of the equipment. A markup example is included in 5.2.7.4.1.

5.2.7.4.1 Markup example.

```
<content>
<refs>
<dmRef>
<dmRefIdent>
```

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```
<dmCode modelIdentCode="EXAMPLE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="01" disassyCode="00"
disassyCodeVariant="A" infoCode="310" infoCodeVariant="A"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Container</techName>
<infoName>Visual examinations</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="EXAMPLE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="05" disassyCode="00"
disassyCodeVariant="A" infoCode="310" infoCodeVariant="A"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Control Surfaces</techName>
<infoName>Visual examinations</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
<externalPubRef>
<externalPubRefIdent>
<externalPubCode>SF 361</externalPubCode>
<externalPubTitle>Transportation Discrepancy Report</externalPubTitle>
</externalPubRefIdent>
</externalPubRef>
</refs>
<checkList checkListCategory="clc51">
<commonInfo>
<commonInfoDescrPara>
<title>Checking Unpacked Equipment</title>
<para>Inspect the equipment for damage incurred during shipment. If
the equipment has been damaged, report the damage on <externalPubRef>
<externalPubRefIdent>
<externalPubCode>SF 361</externalPubCode>
<externalPubTitle>Transportation Discrepancy Report</externalPubTitle>
</externalPubRefIdent>
</externalPubRef>. Check the equipment against the packing slip to see
if the shipment is complete. report all discrepancies in accordance
with applicable service instructions (e.g., for Army instructions see
<externalPubRef>
<externalPubRefIdent>
<externalPubCode>DA PAM 750-8</externalPubCode>
<externalPubTitle>The Army Maintenance Management System (TAMMS) Users
Manual</externalPubTitle>
</externalPubRefIdent>
```

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```
</externalPubRef>).</para>
<para>Check to see whether the equipment has been modified.</para>
<table id="tbl-001" colsep="0" rowsep="0">
<title>Inspection Criteria for Packaging</title>
<tgroup cols="4">
<colspec colname="col1"/>
<colspec colname="col2"/>
<colspec colname="col3"/>
<colspec colname="col4"/>
<spanspec namest="col1" spanname="1to4" nameend="col4"/>
<thead>
<row rowsep="1">
<entry colsep="0">
<para><emphasis emphasisType="em01">COMPONENT</emphasis></para>
</entry>
<entry colsep="0">
<para><emphasis emphasisType="em01">ACCEPTABLE</emphasis></para>
</entry>
<entry colsep="0">
<para><emphasis emphasisType="em01">REPARABLE</emphasis></para>
</entry>
<entry colsep="0">
<para><emphasis emphasisType="em01">NONREPARABLE</emphasis></para>
</entry>
</row>
</thead>
<tbody>
<row rowsep="1">
<entry spanname="1to4">
<para>Wooden Boxes and Crates</para>
</entry>
</row>
<row rowsep="0">
<entry colsep="0">
<para>Hardware</para>
</entry>
<entry colsep="0">
<para>Operative and tight.</para>
<para>Nails, screws, and Fasteners.</para>
</entry>
<entry colsep="0">
<para>Inoperative or loose.</para>
<para>Nails, screws, and fasteners.</para>
</entry>
<entry colsep="0">
<para>None.</para>
<para>None.</para>
</entry>
</row>
<row rowsep="0">
<entry colsep="0">
<para>Ends</para>
```

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```
</entry>
<entry colsep="0">
<para>Free form damage.</para>
</entry>
<entry colsep="0">
<para>Broken or missing cleats and handles.</para>
</entry>
<entry colsep="0">
<para>Damage that requires disassembly of box.</para>
</entry>
</row>
<row rowsep="1">
<entry colsep="0">
<para>Wood</para>
</entry>
<entry colsep="0">
<para>Splits less than 3 inches long, no closer than 1 inch to edge of
board or adjoining split. The board must be secured by at least one
nail on each side of the split when it extends to the end of the
board.</para>
</entry>
<entry colsep="0">
<para>Splits more than 3 inches but no closer than 1 inch to edge of
board or adjoining split, or 1/2-inch wide. That can be repaired by
use of corrugated fasteners.</para>
</entry>
<entry colsep="0">
<para>Splits closer than 1 inch to edge of board or adjoining split or
over 1/2-inch wide.</para>
</entry>
</row>
<row rowsep="1">
<entry spanname="1to4">
<para>Fiber Containers</para>
</entry>
</row>
<row rowsep="0">
<entry colsep="0">
<para>Metal Ends</para>
</entry>
<entry colsep="0">
<para>Minor rust, cracks, indentations, or splits that would not
impair water proofing or serviceability of container.</para>
</entry>
<entry colsep="0">
<para>None.</para>
</entry>
<entry colsep="0">
<para>Perforations, excessive rust, or ends which are crushed or not
securely crimped to body.</para>
</entry>
</row>
```

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```
<row rowsep="0">
<entry colsep="0">
<para>Body and Cap</para>
</entry>
<entry colsep="0">
<para>No leaks, cuts, or gouges.</para>
</entry>
<entry colsep="0">
<para>Cuts, tears, gouges not closer than 1 inch to closure, less than
1/2 square inch in area, and unpenetrated layers that can be spot
painted.</para>
</entry>
<entry colsep="0">
<para>Cuts, tears, or gouges closer than 1 inch to closure, more than
1/2 square inch in area, or through all impregnated layers.</para>
</entry>
</row>
</tbody>
</tgroup>
</table>
</commonInfoDescrPara>
</commonInfo>
<preliminaryRqmts>
<reqCondGroup>
<noConds/>
</reqCondGroup>
<reqSupportEquips>
<supportEquipDescrGroup>
<supportEquipDescr id="seq-001">
<name>Measuring Tape</name>
<identNumber>
<manufacturerCode/>
</identNumber>
<toolRef toolNumber="0-555-0020">
<refs>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="EXAMPLE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="01" disassyCode="00"
disassyCodeVariant="A" infoCode="062" infoCodeVariant="B"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Equipment Name</techName>
<infoName>Tool Identification List</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
</refs>
</toolRef>
<toolRef toolNumber="XT-007" manufacturerCodeValue="0AAA0"/>
```

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```
<reqQuantity/>
</supportEquipDescr>
</supportEquipDescrGroup>
</reqSupportEquips>
<reqSupplies>
<noSupplies/>
</reqSupplies>
<reqSpares>
<noSpares/>
</reqSpares>
<reqSafety>
<noSafety/>
</reqSafety>
</preliminaryRqmts>
<checkListInfo>
<!-- Table 2. M29 and M30 Control Surfaces and Containers -->
<checkListItems>
<workArea>Container</workArea>
<checkListItem>
<name>Components</name>
<checkListProcedure>
<checkListStep>
<para>Inspect for rust, fungus, paint damage, and deformation</para>
<equipmentNotAvailable>
<para>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="EXAMPLE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="01" disassyCode="00"
disassyCodeVariant="A" infoCode="310" infoCodeVariant="A"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Container</techName>
<infoName>Visual examinations</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
</para>
</equipmentNotAvailable>
</checkListStep>
<checkListStep>
<para>Reject container if damage prevents it from functioning
properly.</para>
<remarks>
<simplePara>-</simplePara>
</remarks>
</checkListStep>
</checkListProcedure>
</checkListItem>
</checkListItems>
```

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```
<checkListItems>
<workArea>M29</workArea>
<checkListItem>
<name>Control Surfaces</name>
<checkListProcedure>
<checkListStep>
<para>Inspect for dents and scratches on post, trailing edge phenolic,
skin, and closure plate.</para>
<equipmentNotAvailable>
<para>
<dmRef>
<dmRefIdent>
<dmCode modelIdentCode="EXAMPLE" systemDiffCode="0" systemCode="00"
subSystemCode="0" subSubSystemCode="0" assyCode="05" disassyCode="00"
disassyCodeVariant="A" infoCode="310" infoCodeVariant="A"
itemLocationCode="A"/>
</dmRefIdent>
<dmRefAddressItems>
<dmTitle>
<techName>Control Surfaces</techName>
<infoName>Visual examinations</infoName>
</dmTitle>
</dmRefAddressItems>
</dmRef>
</para>
</equipmentNotAvailable>
</checkListStep>
<checkListStep>
<para>Reject control surface:</para>
<remarks>
<simplePara>-</simplePara>
</remarks>
<checkListStep>
<para>If post dents or scratches exceed 0.002 in. (0.051 mm).</para>
</checkListStep>
<checkListStep>
<para>If trailing edge phenolic dents exceed 0.040 in. (10.160
mm).</para>
</checkListStep>
<checkListStep>
<para>If skin dents exceed 0.030 in. (7.620 mm) within 2 in. (50.800
mm) of post.</para>
</checkListStep>
<checkListStep>
<para>If closure plate dents exceed 0.030 in. (7.620 mm) within 2 in.
(50.800 mm) of post.</para>
</checkListStep>
</checkListStep>
</checkListProcedure>
</checkListItem>
</checkListItems>
<checkListItems>
```

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```
<workArea>M30</workArea>
<checkListItem>
<name>Control Surfaces</name>
<checkListProcedure>
<checkListStep>
<para>Inspect for dents and scratches on post and skin.</para>
<remarks>
<simplePara>-</simplePara>
</remarks>
</checkListStep>
<checkListStep>
<para>Skin dents or scratches up to 0.050 in. (12.700 mm) are
allowable, but should be blended.</para>
<remarks>
<simplePara>-</simplePara>
</remarks>
<checkListStep>
<para>Reject control surface if post dents or scratches exceed 0.002
in. (0.051 mm).</para>
<remarks>
<simplePara>-</simplePara>
</remarks>
</checkListStep>
</checkListStep>
</checkListProcedure>
</checkListItem>
</checkListItems>
</checkListInfo>
</checkList>
</content>
```

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5.2.7.4.2 Output.

Checking Unpacked Equipment

LOCATION	ITEM		ACTION	REMARKS
Container	Components	1	Inspect for rust, fungus, paint damage, and deformation	EXAMPLE-0-00-00-01-00A-310A-A
		2	Reject container if damage prevents it from functioning properly.	-
M29	Control Surfaces	1	Inspect for dents and scratches on post, trailing edge phenolic, skin, and closure plate.	EXAMPLE-0-00-00-05-00A-310A-A
		2	Reject control surface:	-
		2.1	If post dents or scratches exceed 0.002 in. (0.051 mm).	
		2.2	If trailing edge phenolic dents exceed 0.040 in. (10.160 mm).	
		2.3	If skin dents exceed 0.030 in. (7.620 mm) within 2 in. (50.800 mm) of post.	
		2.4	If closure plate dents exceed 0.030 in. (7.620 mm) within 2 in. (50.800 mm) of post.	
M30	Control Surfaces	1	Inspect for dents and scratches on post and skin.	
		2	Skin dents or scratches up to 0.050 in. (12.700 mm) are allowable, but should be blended.	-
		2.1	Reject control surface if post dents or scratches exceed 0.002 in. (0.051 mm).	-

FIGURE 69. Sample output of checking unpacked equipment.

5.2.8 Parts information.

5.2.8.1 General.

The Parts List provides authorized spares and repair parts; special tools; special Test, Measurement, and Diagnostic Equipment (TMDE); and other special support equipment required for performance of all levels of maintenance of the weapon system/equipment, subsystems, assemblies, and components. It authorizes the requisitioning, issue and disposition of spares, repair parts and special tools in accordance with the Source, Maintenance and Recoverability (SMR) codes. Unless otherwise specified by the acquiring activity, all parts information for all levels of maintenance, including depot, should be in a single Parts List. When separate Part Lists are specified by the acquiring activity, they should be grouped either by system, subsystem, or by maintenance level.

Parts information consists of a mix of two data module types: descriptive and IPD. A parts manual is prepared by grouping parts data modules into a publication module. A separate parts information manual may be prepared:

a. For large or complex weapons systems, or
b. When prescribed by the acquiring activity.

When a separate publication is prepared, it will normally be a combined maintenance publication and will contain all parts for all levels of maintenance. Depot level repair parts may be included; however, depot parts are usually not included in non-depot publications.

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All parts information content requirements are prepared as individual data modules, as identified in Table XV. Refer to MIL-STD-3031 for exact requirements.

TABLE XV. Parts information, content requirements.

Content Requirement	DM Type	Individual DM	Notes
Parts Information	PM		Parts lists should be prepared for weapon systems, major components and applicable support and interface equipment. Refer to MIL-STD-3031 for requirements. Parent publication module inclusion: If parts information will be included directly into the parent publication module, all of the content should be contained within a **<pmEntry>** within the content section (element **<content>**). The element **<pmEntry>** should include the attribute **pmEntryType** with a value of "**pmt52**" (Chapter). After **<pmEntry>**, the element **<pmEntryTitle>** should include "Parts Information" followed by the applicable content requirements populated as separate data module references (element **<dmRef>**). Each data module reference is included within the same publication module entry (element **<pmEntry>**). Refer to 5.1.9.2.2 for an example. For the repair parts list, it is possible to include **<pmRef>** with any applicable dmRefs. Separate publication module inclusion: A separate "parts information" publication module identification and status section should reflect the content. For example, **<pmTitle>** should contain "Parts Information" and the publication module code (element **<pmCode>**) attribute **pmNumber** could contain the value of "**C0007**" (Chapter 7). (Refer to 5.1.9.1.1.3 for more information on populating the attribute **pmNumber**.) The content section (element **<content>**) population would be

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TABLE XV. Parts information, content requirements.

Content Requirement	DM Type	Individual DM	Notes
			the same as the parent publication module (listed above). Content requirements include, as applicable: Parts introduction, repair parts list, repair parts for special tools, kits parts list, bulk items, special tools list, NSN index, part number index, and reference designator index.
Parts Introduction	Descriptive	Y	All information should be nested within a primary paragraph (element **`<levelledPara>`**) and subparagraphs, lists, and tables as needed. Refer to 5.2.8.2.
Repair Parts List	IPD	Y	Each data module, in accordance with MIL-STD-3031, should include one Functional Group Code (FGC) and a corresponding figure and list of repair part items. All information is contained within one or more catalog sequence numbers (element **`<catalogSeqNumber>`**). One or more item sequence numbers (element **`<itemSequenceNumber>`** follow providing detailed information about each part identified in the corresponding figure. Refer to 5.2.8.3.
Repair Parts for Special Tools	IPD	Y	Authored similarly to the Repair Parts List. If applicable, only one data module containing all Repair Parts for Special Tools is included.
Kit Parts List	IPD	Y	Authored similarly to the Repair Parts List. If applicable, only one data module containing all Kits part items is included.
Bulk Items	IPD	Y	Authored similarly to the Repair Parts List. If applicable, only one data module containing all Bulk Items is included.
Special Tools List	IPD	Y	Authored similarly to the Repair Parts List. If applicable, only one data module containing all Special Tools is included. The Basis of Issue (BOI) should be displayed on the last line under the item description.

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TABLE XV. Parts information, content requirements.

Content Requirement	DM Type	Individual DM	Notes
NSN Index	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Part Number Index	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Reference Designator Index	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.

5.2.8.2 Repair parts introduction.

Using the appropriate information code, as defined in MIL-STD-3031, a descriptive data module will be used for the repair parts introduction content requirement. (Refer to 5.1.2 for reference on how to markup a descriptive data module.) This section includes information that is common to all parts list data modules. It consists primarily of verbatim text as provided in the business rules document MIL-STD-3031. The text to be used is based on the type of publication being acquired. The repair parts introduction should include:

a. A scope stating the maintenance level or levels and the components the parts listings support.
b. A listing of the types of data modules included in the parts listing.
c. An explanation of the columns used in the illustrated parts data publication. This includes an explanation of the SMR codes used in the parts lists.
d. An explanation of the columns used in the reference index.
e. Any special information that may be needed. This section includes:

    (1) Instructions on how to locate repair parts.
    (2) An optional listing of UOCs or other methods to identify configuration applicability. This list will be included if multiple configurations are listed in the parts lists.
    (3) An optional list of related publications. This list will be included if the parts list is contained in a separate publication.
    (4) An optional list of abbreviations that contains abbreviations found only in the illustrated parts data publication.

f. Though the majority of the illustrated parts data introduction is boilerplate text, the introduction may contain other information at the discretion of the acquiring activity. Other information commonly found in the introduction include a listing of CAGE codes with their associated name and address or an overview graphic showing how the parts listings are broken down.

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5.2.8.3 Repair parts list.

A repair parts list data module includes one figure followed by the appropriate parts information. The figure is optional in the schema, but is required for Army publications, in accordance with MIL-STD-3031. The element **`<functionalItemCode>`** is used to identify the FGC of the repair parts list. This is identified in the identification and status section.

5.2.8.3.1 Catalog Sequence Number (CSN).

NOTE

In accordance with MIL-STD-3031, only CSNs following the chapterized IPD may be used.

The CSN (element **`<catalogSeqNumber>`**) groups the repair parts content. The attribute **`catalogSeqNumberValue`** contains the figure number and figure number variant in addition to other information (SNS, item number, and item number variant). In accordance with S1000D, the IPD figure number is derived from the CSN. The attribute **`indenture`** is used to identify the level of the part. For example, the main component is set to **`indenture="1"`** and the first subcomponent is identified as **`indenture="2"`** and so on.

NOTE

In accordance with MIL-STD-3031, indenture levels cannot exceed five levels.

The attribute **`catalogItemNumber`** contains the applicable item number (or callout) and item number variant, if any, depicted in the associated figure. The item number and item number variant information is also contained in the attribute **`catalogSeqNumberValue`**. The attribute **`catalogItemNumber`** value allows only four positions. The fourth position may contain a space if no item number variant exists. Note that the item number variant is indicated by the last position within the attribute **`catalogSeqNumberValue`** and may also contain a space if no item number variant exists.

The CSN breakdown is provided in Table XVI. Figure numbers, within a CSN, are limited to two positions.

TABLE XVI. Catalog Sequence Number (CSN).

Position	Chapterized IPD
1 and 2	System (SNS) ‡
3	Subsystem (SNS)
4	Sub-Subsystem (SNS)
5 and 6	Unit or Assembly (SNS) ‡
7 and 8	Figure number
9	Figure number variant
10, 11 and 12	Item number
13	Item number variant
‡ 14 character includes MICC; 15 char includes 4-char Assy; 16 char includes both MICC and 4-char Assy	

Refer to Figure 47 for a visual overview of the IPD structure and Figure 48 for additional child elements of item sequence number (element **`<itemSequenceNumber>`**).

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5.2.8.3.2 Common part elements.

The element **<itemSequenceNumber>** is the parent element for all of the common part elements. This is a required element and multiples can exist within the element **<catalogSeqNumber>**. The first element required in this container is **<quantityPerNextHigherAssy>**. This element is used to identify the quantity required and is not a total quantity of the part. The element **<manufacturerCode>** is used to identify the CAGE code of the manufacturer of the part. The element **<partNumber>** is required and is used to house the manufacturer's identifier for the part being described.

The element **<partIdentSegment>** contains one required element and numerous optional elements. The **<descrForPart>** element includes the federal item name and description of the part. Any special material, markings, dimensions, handling, or other relevant information may be included in the description. The optional element **<descrForItem>** includes the attribute **descrForItemCode** which identifies whether the part is a standard part, component of end item part, or other classification. Another optional element **<unitOfIssue>** identifies the physical measurement, count, or container in which the item is issued.

The element **<natoStockNumber>** is optional. It should be used to record the national stock number of the part when available.

The optional element **<applicabilitySegment>** contains the child elements **<usableOnCodeItem>** and **<usableOnCodeAssembly>** which are used to identify the configuration usage of the current part, as applicable.

The required element **<locationRcmdSegment>** contains one or more element **<locationRcmd>**. Within element **<locationRcmd>** two required elements, **<service>** and **<sourceMaintRecoverability>**, and an optional element, **<modelVersion>**, are included. The required element **<service>** contains a three-letter code indicating the originating service of the part. The SMR code is captured using the element **<sourceMaintRecoverability>**. This code is used to identify maintenance activities that are performed on an item. The SMR code identifies the lowest maintenance level allowed to repair the item. The element **<modelVersion>** includes the child element **<effectivity>** which is used to identify a range of applicable units or engines. Usable effective serial numbers can be captured within the element **<effectivity>** as applicable.

5.2.8.3.3 Other part elements.

The generic part data group, **<genericPartDataGroup>**, is used to store additional items required in the parts list. This element is customized to identify quantity per end item and basis of issue item. The element **<genericPartData>** uses the attribute **genericPartDataName** to identify quantity per end item (Marines only) or basis of issue item. The element **<genericPartDataValue>** contains the value of this item.

5.2.8.3.4 Other repair parts lists.

Repair Parts for Special Tools, Kit Parts List, Bulk Items List, and Special Tools List are marked up as previously defined for repair parts list. It is unlikely that a Special Tools List or Bulk Items List will require indenture and in those cases the attribute value should be set to **indenture="1"** for the initial CSN (in each IPD data module). The information code and

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information code variant are used to identify the part list type. When the indenture for multiple items does not change, these items can be grouped under a single **<catalogSeqNumber>**. Each of these items is then authored within a separate **<itemSequenceNumber>**.

5.2.8.3.5 Output considerations.

The Basis of Issue (BOI) (used in the Special Tools List) should be displayed on the last line under the item description, in the DESCRIPTION AND USABLE ON CODE (UOC) column, for individual items, sets, or kits. The BOI should indicate the quantity of the items, that is, sets or kits authorized to support a quantity of end items/assembly(s) or a specific military unit. For example, BOI: 1 auth for 1-12 equip or BOI: 1 per BN HQ when BN has SVC CO.

5.2.8.3.6 Other optional content.

Special parts characteristics such as mandatory replacement, hardness critical, flight safety, etc., may be identified by using the optional attribute **partCharacteristic** on element **<itemSequenceNumber>**. Repair parts lists may also include the following optional content:

a. Unit of issue (use of element **<unitOfIssue>** within element **<partIdentSegment>**) identifies the physical measurement, the count, or when neither is appropriate, the container or shape of an item for the purposes of requisitioning by and issued to the end user.
b. Unit of issue can be further clarified by using the element **<unitOfIssueQualificationSegment>**). The element **<unitOfIssue>** may contain a specific unit such as "box", "gallon", or "roll". It may be necessary to include additional information to identify the unit of issue. In that case, the use of attribute **unitOfIssue** within element **<unitOfIssueQualificationSegment>** and the child element **<quantityPerUnit>** can be used to further define the item. For example, if the item is 100 foot roll of tape, the **<unitOfIssue>** is "roll," **unitOfIssue** within element **<unitOfIssueQualificationSegment>** would be "feet," and **<quantityPerUnit>** would be set to "100."
c. Mandatory replacement information is noted by the use of attribute **partCharacteristic** on element **<itemSequenceNumber>**.
d. Reference designator (element **<referenceDesignator>**), an alpha-numeric code that when used provides a top down breakdown of the major component. Development of reference designators is based on the requirements in ANSI Y 32.16. Additional information on reference designators may also be found in AMC-P 700-25 available through the LOGSA web site.
e. The next higher assembly (use of element **<referTo>** within element **<partLocationSegment>**) is used to identify any specifically listed next higher assembly for the current part.
f. A reference to parts breakdown can be accomplished with the use of element **<referTo>** within element **<partLocationSegment>**.

Refer to 5.1.8.3 for a markup example.

5.2.8.3.7 Element **<partLocationSegment>**.

The element **<partLocationSegment>** is used to identify additional part location data. There are five children within the element **<partLocationSegment>**: element

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<attachStoreShipPart>, element **<notIllustrated>**, element **<referTo>**, element **<selectOrManufactureFromIdent>**, and element **<descrForLocation>**.

a. The element **<attachStoreShipPart>** identifies whether or not the item is an attaching, storage, or shipping part. The attribute **attachShipStorePartCode** contains the value identifying the item.
b. The element **<notIllustrated>** allows quick identification of an item which is not depicted in the corresponding figure. This element is populated with only a hyphen.
c. The element **<referTo>** contains a reference to one or more Initial Provisioning Project (IPP) or CSN. The attribute **catalogSeqNumberValue** of the element **<catalogSeqNumberRef>** should be used to record the Next Higher Assembly (NHA) item for the current part, if applicable. The use of this element enables the identification of the NHA or additional reference for details. It is recommended that the element **<catalogSeqNumberRef>** is used instead of the element **<initialProvisioningProjectRef>**. The reason for this is that the element **<initialProvisioningProject>** (the source reference for the element **<initialProvisioningProjectRef>** is an S2000M element). The attribute **refType** allows for five possible item identification values: "**nha**," "**det**" (details), "**equivalent**," "**substitute**," or "**attaching**."

NOTE

In accordance with MIL-STD-3031 Revision A, the use of the element **<initialProvisioningProject>** is prohibited.

d. The element **<selectOrManufactureFromIdent>** indicates an item is selected to suit specific operating conditions or when the item can be locally manufactured.
e. The element **<descrForLocation>** contains an additional description of the item location which complements the federal item description within the element **<descrForPart>**.

5.2.9 Supporting information.

5.2.9.1 General.

All content requirements are authored using an individual, descriptive data module, except for a MAC. MACs are the only Army content requirement that are authored using the maintenance planning (schedule) data module. Refer to 5.1.2 for more information on descriptive data modules.

TABLE XVII. Supporting information, content requirement.

Content Requirement	DM Type	Individual DM	Notes
Supporting Information	PM		Parent publication module inclusion: If supporting information will be included directly into the parent publication module, all of the content should be contained within a **<pmEntry>** within the content section (element **<content>**). The element **<pmEntry>** should

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TABLE XVII. Supporting information, content requirement.

Content Requirement	DM Type	Individual DM	Notes
			include the attribute **pmEntryType** with a value of "**pmt52**" (Chapter). After **<pmEntry>**, the element **<pmEntryTitle>** should include "Supporting Information" followed by the applicable content requirements populated as separate data module references (element **<dmRef>**). Each data module reference is included within the same publication module entry (element **<pmEntry>**). Refer to 5.1.9.2.2 for an example. Separate publication module inclusion: A separate "supporting information" publication module identification and status section should reflect the content. For example, **<pmTitle>** should contain "Supporting Information" and the publication module code (element **<pmCode>**) attribute **pmNumber** could contain the value of "**C0005**" (Chapter 5). (Refer to 5.1.9.1.1.3 for more information on populating the attribute **pmNumber**.) The content section (element **<content>**) population would be the same as the parent publication module (listed above). Content requirements include, as applicable: References, introduction for MAC, MAC, COEI list, BII list, AAL, expendable and durable items list, tool identification list, mandatory replacement parts, CSI, support items, and additional supporting information.
References	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Introduction for MAC	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as

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TABLE XVII. Supporting information, content requirement.

Content Requirement	DM Type	Individual DM	Notes
			needed.
Maintenance Allocation Chart	Schedule	Y	Refer to 5.1.7.
Components of End Item (COEI) List	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Basic Issue Items (BII) List	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Additional Authorization List (AAL)	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Expendable and Durable Items List	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Tool Identification List	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Mandatory Replacement Parts	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Critical Safety Items (CSI)	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Support Items	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Additional Supporting Information	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.

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5.2.9.2 Components Of End Item (COEI) list.

The COEI list is prepared as an inventory for the equipment to ensure safe and efficient operation. The format of the COEI should be based on the number of items and usability. When only a few items are used, the illustrations will be placed above the tabular listing (Method A). When numerous items are used, the illustrations may be included within the tabular listing for better usability (Method B).

The COEI will also include the introductory verbatim text in accordance with MIL-STD-3031.

5.2.9.2.1 Markup example – method A.

```
<description>
<levelledPara id="par-001">
<title>INTRODUCTION</title>
<levelledPara id="par-001a">
<title>SCOPE</title>
<para>The COEI for the Roller, helps inventory items for safe and
efficient operation of the equipment.</para>
</levelledPara>
<levelledPara id="par-001b">
<title>GENERAL</title>
<para>Components of End Item (COEI). This list is for information
purposes only and is not authority to requisition replacements. These
items are part of the Roller. As part of the end item, these items
must be with the end item whenever it is issued or transferred between
property accounts. Items of COEI are removed and separately packaged
for transportation or shipment only when necessary. Illustrations are
furnished to help you find and identify the items.</para>
</levelledPara>
<levelledPara id="par-001c">
<title>EXPLANATION OF COLUMNS IN THE COEI LIST</title>
<para>
<sequentialList>
<listItem>
<para>Column (1) Item Number. Gives you the reference number of the
item listed.</para>
</listItem>
<listItem>
<para>Column (2) National Stock Number (NSN). Identifies the stock
number of the item to be used for requisitioning purposes.</para>
</listItem>
<listItem>
<para>Column (3) Description, Part Number/(CAGEC). Identifies the
Federal item name (in all capital letters) followed by a minimum
description when needed. The stowage location of COEI is also included
in this column. The last line below the description is the part number
and the Commercial and Government Entity Code (CAGEC) (in
parentheses).</para>
</listItem>
<listItem>
```

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```
<para>Column (4) Usable On Code. Indicates a code if the item needed
is not the same for different models of equipment. Usable on Codes for
the roller are:
<definitionList>
<definitionListHeader>
<termTitle>Usable On Code</termTitle>
<definitionTitle>Used on</definitionTitle>
</definitionListHeader>
<definitionListItem>
<listItemTerm>VRP</listItemTerm>
<listItemDefinition>
<para>CB534B Roller</para>
</listItemDefinition>
</definitionListItem>
<definitionListItem>
<listItemTerm>SWR</listItemTerm>
<listItemDefinition>
<para>CB534C Roller</para>
</listItemDefinition>
</definitionListItem>
</definitionList>
</para>
</listItem>
<listItem>
<para>Column (5) U/I. Unit of Issue (U/I) indicates the physical
measurement or count of the item as issued per the National Stock
Number shown in column (2).</para>
</listItem>
<listItem>
<para>Column (6) Qty Rqr. Indicates the quantity required.</para>
</listItem>
</sequentialList>
</para>
<figure id="fig-001">
<title>Components of End Item List</title>
<graphic infoEntityIdent="ICN-07GB6-COEIROLLER-001-01">
</graphic>
</figure>
<table id="tbl-001">
<tgroup cols="6">
<colspec colnum="1" colname="col1" rowsep="0" colsep="1"
align="center" colwidth="1*"/>
<colspec colnum="2" colname="col2" rowsep="0" colsep="1"
align="center" colwidth="3*"/>
<colspec colnum="3" colname="col3" rowsep="0" colsep="1" align="left"
colwidth="5*"/>
<colspec colnum="4" colname="col4" rowsep="0" colsep="1"
align="center" colwidth="2*"/>
<colspec colnum="5" colname="col5" rowsep="0" colsep="1"
align="center" colwidth="1*"/>
<colspec colnum="6" colname="col6" rowsep="0" colsep="1"
align="center" colwidth="1*"/>
```

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```
<thead>
<row>
<entry valign="bottom">
<para><emphasis emphasisType="em01">Item Number</emphasis></para>
</entry>
<entry valign="bottom">
<para><emphasis emphasisType="em01">National Stock Number
(NSN)</emphasis></para>
</entry>
<entry align="center" valign="bottom">
<para><emphasis emphasisType="em01">Description, Part
Number/(CAGEC)</emphasis></para>
</entry>
<entry valign="bottom">
<para><emphasis emphasisType="em01">Usable On Code</emphasis></para>
</entry>
<entry valign="bottom">
<para><emphasis emphasisType="em01">U/I</emphasis></para>
</entry>
<entry valign="bottom">
<para><emphasis emphasisType="em01">Qty Rqr</emphasis></para>
</entry>
</row>
</thead>
<tbody>
<row rowsep="0">
<entry valign="top">
<para>1</para>
</entry>
<entry valign="top">
<para>5340-01-181-2579</para>
</entry>
<entry valign="top">
<para>PADLOCK</para>
<para>5P-8502/(11083)</para>
</entry>
<entry valign="top">
<para>VRP</para>
<para>SWR</para>
</entry>
<entry valign="top">
<para>EA</para>
</entry>
<entry valign="top">
<para>4</para>
</entry>
</row>
<row rowsep="0">
<entry valign="top">
<para>2</para>
</entry>
<entry valign="top">
```

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```
<para>5340-01-257-6042</para>
</entry>
<entry valign="top">
<para>KEY</para>
<para>5P-8500/(11083)</para>
</entry>
<entry valign="top">
<para>VRP</para>
<para>SWR</para>
</entry>
<entry valign="top">
<para>EA</para>
</entry>
<entry valign="top">
<para>2</para>
</entry>
</row>
<row rowsep="0">
<entry valign="top">
<para>3</para>
</entry>
<entry valign="top">
<para>5930-00-715-1939</para>
</entry>
<entry valign="top">
<para>KEY, SWITCH</para>
<para>8398/(13445)</para>
</entry>
<entry valign="top">
<para>VRP</para>
<para>SWR</para>
</entry>
<entry valign="top">
<para>EA</para>
</entry>
<entry valign="top">
<para>1</para>
</entry>
</row>
</tbody>
</tgroup>
</table>
</levelledPara>
</levelledPara>
</description>
```

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5.2.9.2.2 Output.

1 INTRODUCTION

1.1 SCOPE

The COEI for the Roller, helps inventory items for safe and efficient operation of the equipment.

1.2 GENERAL

Components of End Item (COEI). This list is for information purposes only and is not authority to requisition replacements. These items are part of the Roller. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Items of COEI are removed and separately packaged for transportation or shipment only when necessary. Illustrations are furnished to help you find and identify the items.

1.3 EXPLANATION OF COLUMNS IN THE COEI LIST

1 Column (1) Item Number. Gives you the reference number of the item listed.

2 Column (2) National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

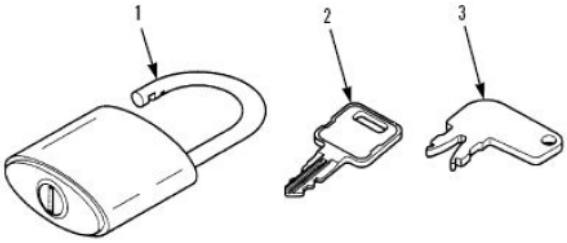
3 Column (3) Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of COEI is also included in this column. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

4 Column (4) Usable On Code. Indicates a code if the item needed is not the same for different models of equipment. Usable on Codes for the roller are:

Usable On Code	Used on
VRP	CB534B Roller
SWR	CB534C Roller

5 Column (5) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (2).

6 Column (6) Qty Rqr. Indicates the quantity required.



ICN-07GB6-COEIROLLER-001-01

Figure 1. Components of End Item List.

Item Number	National Stock Number (NSN)	Description, Part Number/(CAGEC)	Usable On Code	U/I	Qty Rqr
1	5340-01-181-2579	PADLOCK	VRP	EA	4
		5P-8502/(11083)	SWR		
2	5340-01-257-6042	KEY	VRP	EA	2
		5P-8500/(11083)	SWR		
3	5930-00-715-1939	KEY, SWITCH	VRP	EA	1
		8398/(13445)	SWR		

FIGURE 70. Sample output of Components Of End Item (COEI), method A.

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5.2.9.3 Basic Issue Items (BII) list.

Two methods are available for displaying BII. Method A displays the end items before the BII list and contains the illustration number in column one. Method B displays the end item in column two of the BII list. When only a few items are listed, Method A is recommended. Both methods author the BII in a tabular format.

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5.2.9.3.1 Markup example – method A.

```
<description>
<levelledPara id="par-001">
<title>INTRODUCTION</title>
<levelledPara id="par-001a">
<title>Scope</title>
<para>The BII for the Roller, helps inventory items for safe and
efficient operation of the equipment.</para>
</levelledPara>
<levelledPara id="par-001b">
<title>General</title>
<para>Basic Issue Items (BII). These essential items are required to
place the Roller in operation, operate it, and to do emergency
repairs. Although shipped separately packaged, BII shall be with the
(enter name of end item) during operation and when it is transferred
between property accounts. Listing these items is your authority to
request/requisition them for replacement based on authorization of the
end item by the TOE/MTOE. Illustrations are furnished to help you find
and identify the items.</para>
</levelledPara>
<levelledPara id="par-001c">
<title>Explanation of Columns in the BII List</title>
<para>
<sequentialList>
<listItem>
<para>Column (1) Item Number. Gives you the reference number of the
item listed.</para>
</listItem>
<listItem>
<para>Column (2) National Stock Number (NSN). Identifies the stock
number of the item to be used for requisitioning purposes.</para>
</listItem>
<listItem>
<para>Column (3) Description, Part Number/(CAGEC). Identifies the
Federal item name (in all capital letters) followed by a minimum
description when needed. The stowage location of BII is also included
in this column. The last line below the description is the part number
and the Commercial and Government Entity Code (CAGEC) (in
parentheses).</para>
</listItem>
<listItem>
<para>Column (4) Usable On Code. When applicable, gives you a code if
the item you need is not the same for different models of equipment.
These codes are identified below:
<definitionList>
<definitionListHeader>
<termTitle>Code</termTitle>
<definitionTitle>Used on</definitionTitle>
</definitionListHeader>
```

FIGURE 71. Basic Issue Items (BII) (Method A) markup example.

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```
<definitionListItem>
<listItemTerm>VRP</listItemTerm>
<listItemDefinition>
<para>CB534B Roller</para>
</listItemDefinition>
</definitionListItem>
<definitionListItem>
<listItemTerm>SWR</listItemTerm>
<listItemDefinition>
<para>CB534C Roller</para>
</listItemDefinition>
</definitionListItem>
</definitionList>
</para>
</listItem>
<listItem>
<para>Column (5) U/I. Unit of Issue (U/I) indicates the physical
measurement or count of the item as issued per the National Stock
Number shown in column (2).</para>
</listItem>
<listItem>
<para>Column (6) Qty Rqr. Indicates the quantity required.</para>
</listItem>
</sequentialList>
</para>
<figure id="fig-001">
<title>Basic Issue Items</title>
<graphic infoEntityIdent="ICN-07GB6-BII01-001-01"/>
</figure>
<table id="tbl-001">
<title>Basic Issue Items List</title>
<tgroup cols="6">
<colspec colnum="1" colname="col1" rowsep="0" colsep="1"
align="center" colwidth="1.1*"/>
<colspec colnum="2" colname="col2" rowsep="0" colsep="1"
align="center" colwidth="3.2*"/>
<colspec colnum="3" colname="col3" rowsep="0" colsep="1" align="left"
colwidth="5*"/>
<colspec colnum="4" colname="col4" rowsep="0" colsep="1"
align="center" colwidth="1.5*"/>
<colspec colnum="5" colname="col5" rowsep="0" colsep="1"
align="center" colwidth="0.75*"/>
<colspec colnum="6" colname="col6" rowsep="0" colsep="1"
align="center" colwidth="0.75*"/>
<thead>
<row>
<entry valign="bottom">
<para><emphasis emphasisType="em01">Item Number</emphasis></para>
</entry>
<entry valign="bottom">
<para><emphasis emphasisType="em01">National Stock Number
(NSN)</emphasis></para>
</entry>
<entry align="center" valign="bottom">
<para><emphasis emphasisType="em01">Description, Part
Number/(CAGEC)</emphasis></para>
</entry>
```

Method A is shown here with only one graphic per table.

Figure 71. Basic Issue Items (BII) (Method A) markup example – Continued.

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```
<entry valign="bottom">
<para><emphasis emphasisType="em01">Usable On Code</emphasis></para>
</entry>
<entry valign="bottom">
<para><emphasis emphasisType="em01">U/I</emphasis></para>
</entry>
<entry valign="bottom">
<para><emphasis emphasisType="em01">Qty Rqr</emphasis></para>
</entry>
</row>
</thead>
<tbody>
<row rowsep="0">
<entry valign="top"><para>1</para></entry>
<entry valign="top"><para>4930-00-253-2478</para>
</entry>
<entry valign="top"><para>LUBRICATING GUN, HAND</para>
<para>
<identNumber>
<manufacturerCode>11083</manufacturerCode>
<partAndSerialNumber>
<partNumber>8F9866</partNumber>
</partAndSerialNumber>
</identNumber>
</para>
</entry>
<entry valign="top"><para>VRP</para>
<para>SWR</para></entry>
<entry valign="top"><para>EA</para></entry>
<entry valign="top"><para>1</para></entry>
</row>
```

Normally displayed as "8F9866/(11083)."

Note that although the CAGE is authored first, it is displayed **after** the part number.

For data mining purposes, projects may opt to use these additional elements (within <identNumber>) rather than just including the data in a <para> (see example below).

```
<row rowsep="0">
<entry valign="top">
<para>2</para></entry>
<entry valign="top"><para>4930-00-497-5926</para></entry>
<entry valign="top">
<para>COUPLING, GREASE GUN</para>
<para>9F2636 (Part of 8F9866)/(11083)</para>
</entry>
<entry valign="top"><para>VRP</para>
<para>SWR</para></entry>
<entry valign="top">
<para>EA</para></entry>
<entry valign="top">
<para>1</para></entry>
</row>
<row rowsep="0">
<entry valign="top">
<para>3</para></entry>
<entry valign="top">
<para>5120-00-189-7985</para></entry>
<entry valign="top">
<para>SOCKET, SOCKET WRENCH: TWELVE POINT, 1/2 IN.
DRIVE, 3/4 IN.</para>
<para>ST1224/(05506)</para></entry>
<entry valign="top">
<para>VRP</para>
<para>SWR</para></entry>
<entry valign="top">
<para>EA</para></entry>
<entry valign="top">
<para>1</para></entry>
</row>
```

If there is no need to identify part numbers or manufacturer (CAGE) codes (for data mining), authoring of this data may be included in just the <para>.

Note

The authoring of this data should be in the order to be displayed.

Figure 71. Basic Issue Items (BII) (Method A) markup example – Continued.

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```
<row rowsep="0">
<entry valign="top"><para>4</para></entry>
<entry valign="top"><para>5120-01-054-7131</para></entry>
<entry valign="top"><para>WRENCH, BOX AND OPEN END, COMBINATION: 13
MM</para>
<para>600-13MMX13MM/(15526)</para></entry>
<entry valign="top"><para>VRP</para>
<para>SWR</para></entry>
<entry valign="top"><para>EA</para></entry>
<entry valign="top"><para>1</para></entry>
</row>
<row rowsep="0">
<entry valign="top"><para>5</para></entry>
<entry valign="top"><para>5120-01-054-7141</para></entry>
<entry valign="top"><para>WRENCH, BOX AND OPEN END, COMBINATION: 24
MM</para>
<para>BI07.9M/(05043)</para></entry>
<entry valign="top"><para>VRP</para>
<para>SWR</para></entry>
<entry valign="top"><para>EA</para></entry>
<entry valign="top"><para>1</para></entry>
</row>
<row rowsep="0">
<entry valign="top"><para>6</para></entry>
<entry valign="top"><para>N/A</para></entry>
<entry valign="top"><para>
<externalPubRef><externalPubRefIdent>
<externalPubCode>TM 5-3895-379-10</externalPubCode>
</externalPubRefIdent></externalPubRef>
</para></entry>
<entry valign="top"><para>VRP</para>
<para>SWR</para></entry>
<entry valign="top"><para>EA</para></entry>
<entry valign="top"><para>1</para></entry>
</row>
<row rowsep="0">
<entry valign="top"><para>7</para></entry>
<entry valign="top"><para>5120-01-355-1902</para></entry>
<entry valign="top"><para>HANDLE, SOCKET WRENCH: 1/2 IN. DRIVE, 15 IN.
LONG</para>
<para>SL936/(55719)</para></entry>
<entry valign="top"><para>VRP</para>
<para>SWR</para></entry>
<entry valign="top"><para>EA</para></entry>
<entry valign="top"><para>1</para></entry>
</row>
<row rowsep="0">
<entry valign="top"><para>8</para></entry>
<entry valign="top"><para>5120-00-227-8107</para></entry>
<entry valign="top"><para>EXTENSION, SOCKET WRENCH: 3/8 IN. DRIVE, 6
IN. LONG</para>
<para>FX6/(55719)</para></entry>
<entry valign="top"><para>VRP</para>
<para>SWR</para></entry>
<entry valign="top"><para>EA</para></entry>
<entry valign="top"><para>1</para></entry>
</row>
```

Figure 71. Basic Issue Items (BII) (Method A) markup example – Continued.

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```
<row rowsep="0">
<entry valign="top"><para>9</para></entry>
<entry valign="top"><para>5120-00-240-8702</para></entry>
<entry valign="top"><para>ADAPTER, SOCKET WRENCH: 1/2 IN. TO 3/8 IN.
DRIVE</para>
<para>5523A54/(39428)</para></entry>
<entry valign="top"><para>VRP</para>
<para>SWR</para></entry>
<entry valign="top"><para>EA</para></entry>
<entry valign="top"><para>1</para></entry>
</row>
<row rowsep="0">
<entry valign="top"><para>10</para></entry>
<entry valign="top"><para>5120-01-367-3477</para></entry>
<entry valign="top"><para>SCREWDRIVER ATTACHMENT, SOCKET WRENCH: 5/16
IN, 3/8 IN. DRIVE</para>
<para>FA10E/(55719)</para></entry>
<entry valign="top"><para>VRP</para>
<para>SWR</para></entry>
<entry valign="top"><para>EA</para></entry>
<entry valign="top"><para>1</para></entry>
</row>
<row rowsep="0">
<entry valign="top"><para>11</para></entry>
<entry valign="top"><para>5120-01-045-4889</para></entry>
<entry valign="top"><para>KEY, SOCKET HEAD SCREW: 4 MM</para>
<para>57124/(74445)</para></entry>
<entry valign="top"><para>VRP</para>
<para>SWR</para></entry>
<entry valign="top"><para>EA</para></entry>
<entry valign="top"><para>2</para></entry>
</row>
<row rowsep="0">
<entry valign="top"><para>12</para></entry>
<entry valign="top"><para>5120-00-224-2504</para></entry>
<entry valign="top"><para>KEY, SOCKET HEAD SCREW: 5/64 IN.</para>
<para>ARX132-20/(88379)</para></entry>
<entry valign="top"><para>VRP</para>
<para>SWR</para></entry>
<entry valign="top"><para>EA</para></entry>
<entry valign="top"><para>1</para></entry>
</row>
</tbody>
</tgroup>
</table>
</levelledPara>
</levelledPara>
</description>
```

Figure 71. Basic Issue Items (BII) (Method A) markup example – Continued.

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5.2.9.4 Output.

1 INTRODUCTION

1.1 Scope

The BII for the Roller, helps inventory items for safe and efficient operation of the equipment.

1.2 General

Basic Issue Items (BII). These essential items are required to place the Roller in operation, operate it, and to do emergency repairs. Although shipped separately packaged, BII shall be with the (enter name of end item) during operation and when it is transferred between property accounts. Listing these items is your authority to request/requisition them for replacement based on authorization of the end item by the TOE/MTOE. Illustrations are furnished to help you find and identify the items.

1.3 Explanation Of Columns In The BII List

1 Column (1) Item Number. Gives you the reference number of the item listed.

2 Column (2) National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

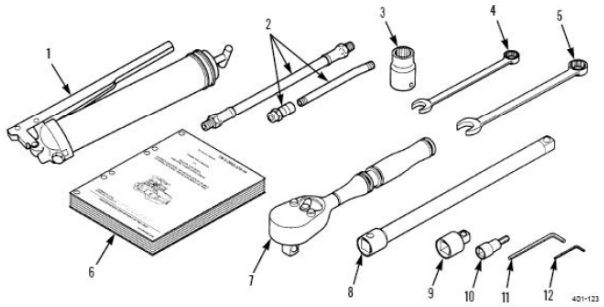
3 Column (3) Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of BII is also included in this column. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

4 Column (4) Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment. These codes are identified below:

Code	Used on
VRP	CB534B Roller
SWR	CB534C Roller

5 Column (5) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (2).

6 Column (6) Qty Rqr. Indicates the quantity required.



ICN-07GB6-BII01-001-01

Figure 1. Basic Issue Items.

Table 2. Basic Issue Items List

Item Number	National Stock Number (NSN)	Description, Part Number/(CAGEC)	Usable On Code	U/I	Qty Rqr
1	4930-00-253-2478	LUBRICATING GUN, HAND 110838F9866	VRP SWR	EA	1
2	4930-00-497-5926	COUPLING, GREASE GUN 9F2636 (Part of 8F9866)/(11083)	VRP SWR	EA	1
3	5120-00-189-7985	SOCKET, SOCKET WRENCH: TWELVE POINT, 1/2 IN. DRIVE, 3/4 IN. ST1224/(05506)	VRP SWR	EA	1
4	5120-01-054-7131	WRENCH, BOX AND OPEN END, COMBINATION: 13 MM 600-13MMX13MM/(15526)	VRP SWR	EA	1
5	5120-01-054-7141	WRENCH, BOX AND OPEN END, COMBINATION: 24 MM BI07.9M/(05043)	VRP SWR	EA	1
6	N/A	TM 5-3895-379-10	VRP SWR	EA	1
7	5120-01-355-1902	HANDLE, SOCKET WRENCH: 1/2 IN. DRIVE, 15 IN. LONG SL936/(55719)	VRP SWR	EA	1
8	5120-00-227-8107	EXTENSION, SOCKET WRENCH: 3/8 IN. DRIVE, 6 IN. LONG FX6/(55719)	VRP SWR	EA	1

FIGURE 72. Sample output of Basic Issue Items (BII), method A.

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5.2.10 Destruction of equipment to prevent enemy use.

5.2.10.1 General.

Destruction information consists of three data module types. This publication module defines the content requirements for this chapter. The descriptive data module combines several content requirements. The remaining data module type is procedural.

These data modules are defined in a single publication module. The population of the attribute **pmNumber** is dependent upon the location of the chapter within the publication (refer to 5.1.9.1.1.1), in accordance with MIL-STD-3031.

TABLE XVIII. Destruction information, content requirements.

Content Requirements	DM Type	Individual DM	Notes
Destruction Information	PM		Parent publication module inclusion: If destruction information will be included directly into the parent publication module, all of the content should be contained within a **<pmEntry>** within the content section (element **<content>**). The element **<pmEntry>** should include the attribute **pmEntryType** with a value of "**pmt52**" (Chapter). After **<pmEntry>**, the element **<pmEntryTitle>** should include "Destruction of Army Materiel to Prevent Enemy Use" followed by the applicable content requirements populated as separate data module references (element **<dmRef>**). Each data module reference is included within the same publication module entry (element **<pmEntry>**). Refer to 5.1.9.2.2 for an example. Separate publication module inclusion: A separate "destruction information" publication module identification and status section should reflect the content. For example, **<pmTitle>** should contain "Destruction of Army Materiel to Prevent Enemy Use" and the publication module code (element **<pmCode>**) attribute **pmNumber** could contain the value of "**C0005**" (Chapter 5). (Refer to 5.1.9.1.1.3 for more information on populating the attribute **pmNumber**.)

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TABLE XVIII. Destruction information, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			The content section (element **<content>**) population would be the same as the parent publication module (listed above). Content requirements include, as applicable: Destruction general information, specific destruction procedures (likely within a nested **<pmEntry>**), and classified equipment and documents.
Destruction General Information	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, figures, and tables as needed. For more information on the descriptive data module type, refer to 5.1.2.
Scope		N	Authored within a subparagraph (element **<levelledPara>**) with lists, tables, and so on as needed.
Authorization		N	Authored within a subparagraph (element **<levelledPara>**) with lists, tables, and so on as needed.
Reporting Destruction		N	Authored within a subparagraph (element **<levelledPara>**) with lists, tables, and so on as needed.
General Destruction Information		N	Authored within a subparagraph (element **<levelledPara>**) with lists, tables, and so on as needed.
Degree of Damage		N	Authored within a subparagraph (element **<levelledPara>**) with lists, tables, and so on as needed.
Essential Components and Spare Parts		N	Authored within a subparagraph (element **<levelledPara>**) with lists, tables, and so on as needed.
Specific Destruction Procedures	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**). For more information on the procedural data module type, refer to 5.1.3.
Classified Equipment and Documents	Procedural	Y	Procedural information may include common information (element

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TABLE XVIII. Destruction information, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			<commonInfo>) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).

5.2.11 Battle Damage Assessment and Repair (BDAR).

5.2.11.1 General.

BDAR information uses three different types of data modules. Refer to MIL-STD-3031 for requirements.

TABLE XIX. Battle Damage and Repair (BDAR) information, content requirements.

Content Requirements	DM Type	Individual DM	Notes
Battle Damage Assessment and Repair	PM		Parent publication module inclusion: If BDAR will be included directly into the parent publication module, all of the content should be contained within a **<pmEntry>** within the content section (element **<content>**). The element **<pmEntry>** should include the attribute **pmEntryType** with a value of "**pmt52**" (Chapter). After **<pmEntry>**, the element **<pmEntryTitle>** should include "Battle Damage Assessment and Repair" followed by the applicable content requirements populated as separate data module references (element **<dmRef>**). Each data module reference is included within the same publication module entry (element **<pmEntry>**). Refer to 5.1.9.2.2 for an example. Separate publication module inclusion: A separate "BDAR" publication module identification and status section should reflect the content. For example, **<pmTitle>** should contain "Battle Damage Assessment and Repair" and the publication

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TABLE XIX. Battle Damage and Repair (BDAR) information, content requirements.

Content Requirements	DM Type	Individual DM	Notes
			module code (element **<pmCode>**) attribute **pmNumber** could contain the value of "**C0005**" (Chapter 5). (Refer to 5.1.9.1.1.3 for more information on populating the attribute **pmNumber**.) The content section (element **<content>**) population would be the same as the parent publication module (listed above). Content requirements include, as applicable:
General Information	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Assessing Battlefield Damage - General Fault Assessment Tables	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Repair Procedure	Procedural	Y	Procedural information may include common information (element **<commonInfo>**) prior to the preliminary requirements (element **<preliminaryRqmts>**). This is followed by the main procedure (element **<mainProcedure>**) and close requirements (element **<closeRqmts>**).
Special or Fabricated Tools	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.
Substitute Materials/Parts	Descriptive	Y	All information should be nested within a primary paragraph (element **<levelledPara>**) and subparagraphs, lists, and tables as needed.

5.3 Miscellaneous publication types.

Additional publication types not specifically addressed in this handbook use the same data module types described herein. Refer to the applicable section for information regarding the target data module type.

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5.4 Specialized content.

5.4.1 General.

Several other examples are also included to provide guidance for different options to populate content such as NSNs or guidance for specific attribute use, such as **`keepWithNext`**.

5.4.2 National Stock Number (NSN) authoring.

In accordance with MIL-STD-3031, reference to NSNs should not be used on illustrations or legends. Reference to part numbers should not be used in descriptive text, procedural steps, illustrations, or legends, except when essential for identification. Reference to both NSNs and part numbers may be included in tables, tabular data, and lists.

NOTE

In accordance with MIL-STD-3031, Army-wide population of the NSN will use only the NSN attributes. These attributes (**`natoSupplyClass`**, **`natoCodificationBureau`**, and **`natoItemIdentNumberCore`**) do not allow for hyphen inclusion, which eliminates the need to strip any hyphens from the NSN.

Military Standard Requisitioning and Issue Procedures (MILSTRIP) requires that hyphens are stripped for parts ordering. MILSTRIP uses the four-position Federal Supply Classification (FSC) and the nine-position National Item Identification Number (NIIN) which map as follows:

FSC maps to attribute **`natoSupplyClass`** (4 digits).

NIIN maps to attribute **`natoCodificationBureauCode`** (2 digits) and attribute **`natoItemIdentNumberCore`** (7 digits).

In accordance with MIL-STD-3031, the only method for NSN population is via the attributes on the element **`<natoStockNumber>`**. The attributes are used to separate the NSN into three distinct pieces. The attribute **`natoSupplyClass`** contains the supply class codification which is the first four characters of the NSN. The bureau code is contained in the attribute **`natoCodificationBureau`** and is comprised of 5th and 6th characters of the NSN. The core number is comprised of the last 7 characters of the NSN and is contained in the attribute **`natoItemIdentNumberCore.`**

NOTE

In accordance with MIL-STD-3031 (Change 1), the use of the element **`<fullNatoStockNumber>`** is prohibited.

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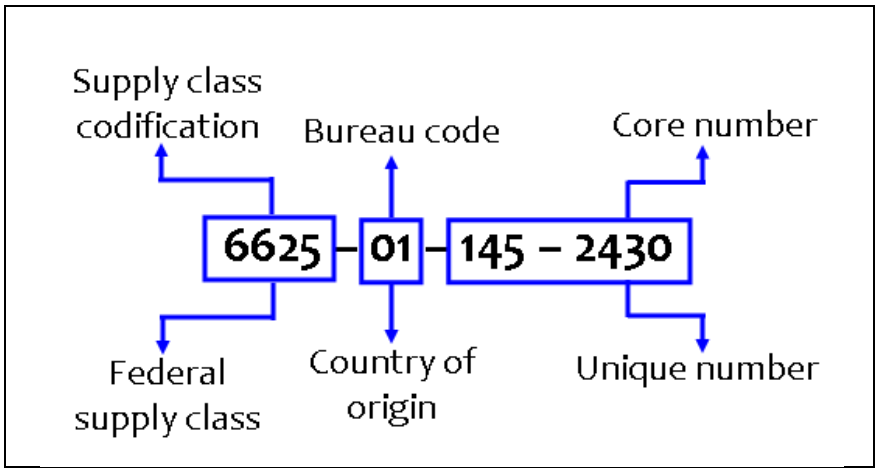

FIGURE 73. National Stock Number (NSN) breakdown.

5.4.2.1 Markup example.

5.4.2.1.1 National Stock Number (NSN) population via attributes.

```
<natoStockNumber natoSupplyClass="6625" natoCodificationBureau="01"
natoItemIdentNumberCore="1452430"/>
```

5.4.3 Index flags.

An index flag (element **`<indexFlag>`**) is used to mark an item for inclusion in a generated index. Four index levels are allowed. Each level is determined by the attributes **`indexLevelOne`**, **`indexLevelTwo`**, **`indexLevelThree`**, and **`indexLevelFour`**. The value of the attribute is displayed in the auto-generated index.

Location identification display should be consistent. The location identification could be more detailed for index levels under level one. For example, the level one location identification could be the data module code, level two could be the step number or page number, and so on. IETPs could simply link rather than display the location identification information.

Use of this element and its attributes is dependent upon the authoring tool and the publishing process.

NOTE

If each index level is repeated, care should be taken to ensure the exact same syntax is used each time. If not, the presented output may be inconsistent and incorrect.

5.4.3.1 Markup example.

```
<levelledPara id="par-001">
<title><indexFlag indexLevelOne="Gears"
indexLevelTwo="Derailleur"/>Derailleur</title>
<para>There are two different types of derailleur, the front and the
rear.</para>

<levelledPara id="par-001a">
<title><indexFlag indexLevelOne="Gears" indexLevelTwo="Derailleur"
indexLevelThree="Front"/>Front derailleur</title>
```

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```
<para>The front derailleur contains two types of screws to keep the
movement of the derailleur to a minimum. These screws are:
<randomList listItemPrefix="pf01">
<listItem>
<para>the stop screw low-gear</para>
</listItem>
<listItem>
<para>the stop screw high-gear</para>
</listItem>
</randomList>
</para>
</levelledPara>
...
<levelledPara id="par-001b">
<title><indexFlag indexLevelOne="Gears" indexLevelTwo="Derailleur"
indexLevelThree="Rear"/>Rear derailleur</title>
<para>The rear derailleur section contains the sprockets for the
different gear changes. When the cable clamp bolt is tight, it holds
the shift cable in its position. A screwed bolt holds the tension
wheel.</para>
</levelledPara>
...
</levelledPara>
```

5.4.3.2 Output.

The example provided below is not produced from style sheets.

G

Gears DMC-S1000DBIKE-AAA-DA5-10-00-00AA-041A-A

Derailleur 2

Front 2

Rear 3

FIGURE 74. Example output of index flag.

5.4.4 Attribute **keepWithNext**.

The attribute **keepWithNext** indicates a need to present information together (same frame or page). The attribute's use applies to all children of the target element. For example, if a procedural step contains the attribute [**keepWithNext="1"**] this will indicate that it and the following **<proceduralStep>** should be displayed together. This is useful when scrolling or page turning is not practical.

NOTE

It is recommended that this attribute be used only when absolutely necessary.

Cases exist where scrolling is not practical for the user (for example, removing gloves in order to continue or scroll the task) or the viewing device does not allow scrolling. In these cases, the viewer application only sends the amount of data which will fit on the display device. For

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example, Maintenance Support Devices (MSDs) do not have mice and scrolling is difficult if the user is wearing gloves. Some embedded systems do not have the capability to scroll.

Another example, in the procedures for adjusting an alternator drive belt, three steps require two hands (the maintainer will have both hands occupied and cannot let go to move to the next step):

Step 1: Tighten the adjusting bolt using a torque wrench to pre-load the belt to the specified torque setting.

Step 2: Keeping the torque wrench held on the adjuster to prevent it from slackening, tighten the top retaining nut and the bolt to the specified torque setting.

Step 3: Tighten the adjuster bolt nut to the specified torque setting.

In the following markup example, the second procedural step indicates that it should be displayed with the third procedural step.

5.4.4.1 Markup example.

```
<proceduralStep id="stp-001">
<para>Locate the valve stem of tire.</para>
</proceduralStep>

<proceduralStep id="stp-001a" keepWithNext="1">
<para>Use the tire pressure gauge (<internalRef internalRefId="sup-
0003" internalRefTargetType="supequip" xlink:actuate="onRequest"
xlink:show="replace" xlink:href="sup-0003"/>) to check the tire
pressure.</para>
</proceduralStep>

<proceduralStep id="stp-001b">
<para>Tire pressure should between 2000 hPa to 2700 hPa.</para>
</proceduralStep>
```

5.4.5 Item characteristic.

The attribute **itemCharacteristic** indicates whether a step is related to hardness critical process (value "**ic01**"), electrostatic discharge (value "**ic02**"), quality assurance (value "**ic03**") or a combination of these or other project-defined (values "**ic56-ic99**") characteristics.

When multiple values are needed, values are separated by a space, not a comma. For example:

```
<proceduralStep itemCharacteristic="ic03 ic57 ic60">
```

A style sheet generates the applicable text defined by the value(s) (refer to 4.7).

5.4.6 Preliminary requirements.

Preliminary requirements (element **<preliminaryRqmts>**) are allowed, in accordance with S1000D and its schemas, in checklist, fault, procedural, process, and maintenance planning data module types. Preliminary requirements contain all of the information necessary before the start of a maintenance procedure. These requirements are similar to the initial setup used within MIL-STD-40051-1/2.

When preliminary requirements information differs for specific maintenance tasks, additional data modules should be developed.

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The preliminary requirements provide the maintenance technician with general information; links to equipment, parts, and material information; and authorized personnel required to perform and complete the procedure described in the data module. Preliminary requirements are used to provide the technician with a quick reference of the items needed. Additionally, more detailed data (for example, a part number) are provided through a link to the specific information either in a table (pointing to the referenced information) or a dialog box (containing only the referenced information).

Preliminary requirements consist of the following types of allowed information: production maintenance data (element **<productionMaintData>**), conditions (element **<reqConditionsGroup>**), persons (element **<reqPersons>**), technical information (element **<reqTechInfoGroup>**), support equipment (element **<reqSupportEquips>**), supplies (also referred to as consumables, materials, and expendables) (element **<reqSupplies>**), spares (element **<reqSpares>**), and safety conditions (element **<reqSafety>**).

Of these information types, only the following are optional: production maintenance data, persons, and technical information. Therefore, although nothing may apply for the other information types, in accordance with S1000D, the element should still exist. Fortunately, each type of required information also has a comparable child element to include should no pertinent information fall under it; for example, **<noConds>** when no conditions are required and **<noSupportEquips>** when no support equipment is required. This will ensure consistency in all preliminary requirement views and allow a user to verify that each type information was addressed and not overlooked.

Refer to S1000D for more information on the following information types: conditions, technical information, support equipment, supplies, spares, and safety conditions.

5.4.6.1 Production maintenance data.

The only known use for production maintenance data (element **<productionMaintData>**), regarding current Army requirements, is the use of the child element **<taskDuration>**. When required, the equivalent of "estimated time to complete the task" is populated among three other attributes belonging to the element **<taskDuration>**. The three attributes are: **startupDuration**, **procedureDuration**, and **closeupDuration**.. If, for example, a procedure did not require any time involved for preliminary requirements (contained in attribute **startupDuration**) or any time involved for close-up requirements (contained in attribute **closeupDuration**), but a total of 8 hours for the main procedure, it would be coded as follows:

```
<productionMaintData>
<taskDuration startupDuration="00.0" procedureDuration="08.0"
closeupDuration="00.0" unitOfMeasure="hours"/>
</productionMaintData>
```

In accordance with S1000D, the values for the three "duration" attributes should not exceed four digits including a decimal separator (if used).

NOTE

Projects should define the values for the attribute **unitsOfMeasure** if its use is anticipated.

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5.4.6.2 Persons.

In accordance with MIL-STD-3031, the element **<reqPersons>** is included, but not populated when specifying a skill is not necessary. When the number of a specific skill is necessary, only the personnel branch (element **<personnel>**) is used.

NOTE

When the need to identify personnel for different configurations, applicability should be used. The element **<reqPersons>** is repeatable for this reason and should only be included when applicability applies.

When required persons should only include, "As required" the following should be used:

```
<reqPersons>
<personnel/>
</reqPersons>
```

When the need to provide only a number of personnel (no skill or category) is required, use the following:

```
<reqPersons>
<personnel numRequired="2"/>
</reqPersons>
```

The following example defines three persons, two with the same Military Occupational Specialty (MOS):

```
<reqPersons>
<personnel numRequired="2">
<personCategory personCategoryCode="Radar Repairer"/>
<trade>94M</trade>
</personnel>
<personnel>
<personCategory personCategoryCode="Assistant"/>
</personnel>
</reqPersons>
```

5.4.6.3 Markup example.

```
<preliminaryRqmts>
<reqCondGroup>
<reqCondNoRef>
<reqCond>Dry bicycle</reqCond>
</reqCondNoRef>
</reqCondGroup>
<reqPersons>
<personnel>
<personCategory personCategoryCode="Maintainer"/>
<estimatedTime unitOfMeasure="hr">0.2</estimatedTime>
</personnel>
</reqPersons>
<reqSupportEquips>
<supportEquipDescrGroup>
<supportEquipDescr id="seq-0001">
<name>Specialist toolset</name>
```

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```
<identNumber>
<manufacturerCode>KZ666</manufacturerCode>
</identNumber>
<reqQuantity unitOfMeasure="EA">1</reqQuantity>
</supportEquipDescr>
<supportEquipDescr id="seq-0002">
<name>Hook (large, rubber-coated, ceiling)</name>
<identNumber>
<manufacturerCode>0AAA0</manufacturerCode>
</identNumber>
<reqQuantity unitOfMeasure="EA">1</reqQuantity>
</supportEquipDescr>
</supportEquipDescrGroup>
</reqSupportEquips>
<reqSupplies>
<supplyDescrGroup>
<supplyDescr id="sup-0001">
<name>General lubricant</name>
<identNumber>
<manufacturerCode>KZ222</manufacturerCode>
</identNumber>
<reqQuantity>As required</reqQuantity>
</supplyDescr>
<supplyDescr id="sup-0002">
<name>Cleaning rag</name>
<identNumber>
<manufacturerCode>00000</manufacturerCode>
</identNumber>
<reqQuantity unitOfMeasure="EA">3</reqQuantity>
</supplyDescr>
<supplyDescr id="sup-0003">
<name>Plastic sheet</name>
<identNumber>
<manufacturerCode>00AAA</manufacturerCode>
</identNumber>
<reqQuantity unitOfMeasure="EA">1</reqQuantity>
</supplyDescr>
<supplyDescr id="sup-0004">
<name>Duct tape</name>
<identNumber>
<manufacturerCode>0AAA0</manufacturerCode>
</identNumber>
<reqQuantity unitOfMeasure="EA">1</reqQuantity>
</supplyDescr>
<supplyDescr id="sup-0005">
<name>Mesh bag</name>
<identNumber>
<manufacturerCode>00AAA</manufacturerCode>
</identNumber>
<reqQuantity unitOfMeasure="EA">1</reqQuantity>
</supplyDescr>
</supplyDescrGroup>
```

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```
</reqSupplies>
<reqSpares>
<noSpares/>
</reqSpares>
<reqSafety>
<safetyRqmts>
<warning>
<warningAndCautionPara>Do not get <internalRef internalRefId="sup-
0001" internalRefTargetType="supequip" xlink:actuate="onRequest"
xlink:show="replace" xlink:href="sup-0001"/> into your eyes. If it
gets into your eyes, wash them immediately in clean, warm
water.</warningAndCautionPara>
</warning>
</safetyRqmts>
</reqSafety>
</preliminaryRqmts>
```

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5.4.6.4 Output.

Preliminary requirements

Required conditions

Table 2 Required conditions

Action/Condition	Data module/Technical publication
Dry bicycle	

Required persons

Table 3 Required persons

Quantity	Category	Skill level	Trade/Trade code	Estimated time
As required	Maintainer			0.2 hr

Support equipment

Table 4 Support equipment

Name	CAGE/Reference	Quantity	Remark
Specialist toolset	KZ666	1 EA	
Hook (large, rubber-coated, ceiling)	0AAA0	1 EA	

Consumables, materials, and expendables

Table 5 Consumables, materials, and expendables

Name	CAGE/Reference	Quantity	Remark
General lubricant	KZ222	As required	
Cleaning rag	00000	3 EA	
Plastic sheet	00AAA	1 EA	
Duct tape	0AAA0	1 EA	
Mesh bag	00AAA	1 EA	

Spares

Table 6 Spares

Name	CAGE/Reference	Quantity	Remark
None			

Safety conditions

WARNING

Do not get General lubricant into your eyes. If it gets into your eyes, wash them immediately in clean, warm water.

FIGURE 75. Sample output of preliminary requirements.

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6. COMPREHENSIBILITY WITH READING GRADE LEVEL

6.1 Comprehensibility.

IETPs and page-based technical manuals are written to the capability of the target audience for which they are intended. The method employed to determine comprehensibility and readability is the Reading Grade Level (RGL). The RGL also provides useful quantitative measures for three characteristics contributing to comprehensibility of text, namely: number of syllables, words, and sentences. Calculating RGL may be performed using computer technology, whenever possible. The following paragraphs provide a uniform sampling plan, which may be used for surveying for RGL or comprehensibility for in-process reviews, validation, and similar tasks. Sampling is not to be used for conduct of verifications.

6.2 Sampling plan for inspection.

Sampling inspection in quality conformance is an acceptable practice to ascertain conformance to requirements. A sampling plan is appropriate when automated tools are not available and the number of characteristics to be checked makes 100 percent evaluation excessively time consuming and costly for the TM being inspected. Simple random sampling of pages is not an adequate method as a TM is not a homogeneous mass, and different tests require different types and amounts of sample material. The plan presented here uses a mixture of random sampling by type of material and scanning by the reviewer to detect instances of nonconformance.

6.2.1 Derivation of samples.

Samples to be tested are obtained as a result of the processes of 6.2.1.1 and 6.2.1.2.

6.2.1.1 Critical scanning.

The purpose of critical scanning by the reviewer is to locate instances of suspected nonconformance for specific testing. The entire IETP/TM should be scanned for obvious nonconformance with the comprehensibility guidance in this handbook; and appropriate tests should then be applied to that material.

6.2.1.2 Systematic sampling.

The purpose of systematic sampling is to provide semi-random samples of different types of material throughout the manual for detailed examination and testing. Different tests require different types and amounts of sample material. In general, a number of data modules will be selected from each TM division (refer to 6.2.6).

6.2.2 Applicable tests.

Sample material is to be examined or tested in detail for conformance with the guidance in this handbook. In most instances, the nature of the tests is implicit in the statement of the requirements. This is not the case for RGL requirements. Additional detail is provided in 6.2.6.

6.2.3 Extended local samples.

Under the assumption that the material surrounding an instance of nonconformance has a higher probability of containing more such instances, extended local sampling provides additional sample material for examination (refer to 6.2.6.5).

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6.2.4 Validation of readability.

Narrative text is to be validated for conformance to the RGL as specified by the acquiring activity. If the Overall Grade Level (OGL) (including tolerance) is exceeded, the manual needs to be rewritten as required to meet the specified RGL. If a sample GL is exceeded, the entire text surrounding each sample is to be rewritten as required.

6.2.5 Critical scanning.

The reviewer should scan the entire manual. Grounds for suspected nonconformance include, but are not limited to, the criteria of 6.2.5.1 through 6.2.5.3.

6.2.5.1 Scanning criteria for procedures.

Scanning criteria for procedures are as follows:

a. Procedural step does not begin with a verb.
b. Procedural step is in negative form (that is, do not ...).
c. Procedural steps are prefaced by an unnecessary lead-in, which merely duplicates the title.
d. Procedure is not prefaced by relevant introductory information (that is, preliminary requirements) such as personnel required, special tools, test equipment, and so on.

6.2.5.2 Scanning criteria for nonprocedural text.

Scanning criteria for nonprocedural text are as follows:

a. Sentence(s) seem excessively long.
b. No topic sentence is found.
c. Procedures are found in nonprocedural text.

6.2.5.3 Scanning criteria for illustrations and tables.

Scanning criteria for illustrations and tables are as follows:

a. Portions of image area appear cluttered in the following circumstances:

    (1) Too many symbols on a functional or schematic diagram.
    (2) Too many line intersections on a functional, wiring, or piping diagram.
    (3) Too many lines on a graph.

b. Print seems too small.
c. Callouts are hard to distinguish; arrangement or placement of callouts appears unacceptable.
d. Inputs are not at the left or top or outputs are not at the right or bottom on a functional or schematic diagram.
e. Signal flow does not read from left to right or feedback/return flow from right to left on a functional or schematic diagram.
f. Arrows on a functional or schematic diagram do not indicate signal flow direction.
g. Locator view is required.
h. Table appears crowded – no aids for staying in correct row or column.
i. Illustration/table is not located close to the text where referenced.
j. Referenced table has no title.
k. Exploded view has no axis lines.

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6.2.6 Systematic sampling of Technical Manuals (TMs).

6.2.6.1 Number of samples.

Count the number of data modules in the TM/IETP. The basic number of samples is determined in Table XX.

TABLE XX. Determining basic number of samples

No. of Data Modules	Divided by "N"	Basic No. of Samples	
		Min	Max
90 and above	10	9	30
54 to 89	9	6	9
32 to 53	8	4	6
1 to 31	6	2	4

a. Divide the number of data modules by the appropriate divisor, "N." Round off the quotient to the next lowest whole number. For example, quotients of 17.3 and 17.7 are both rounded off to 17. This quotient will equal the basic number of samples to be analyzed.
b. For TMs of less than 12 data modules, randomly select two samples and mark them for analysis.
c. For TMs of 12 or more data modules, randomly select a number between one and "N." The number selected is to be marked as the first data module to be analyzed. Starting at the selected data module, mark every "Nth" data module to the end of the TM. The marked data modules will identify approximate starting points for the basic samples to be analyzed.
d. Check marked data modules to verify that at least one sample has been selected for each information module of the TM. If any information module has been missed, randomly select one data module from that information module and add it to the basic samples to be analyzed. Ensure that the portion sampled represents the type of text (or whatever) that makes up the majority of the information module (that is, a procedure versus descriptive text).

6.2.6.2 Samples of procedural text.

Beginning with the starting point in each sample data module, the first complete procedure and subsequent complete procedures, as needed, are to be selected until the total number of procedural steps exceeds 20. For suspected nonconformance identified by critical scanning, the above sampling process is to be applied beginning with the suspected procedure.

6.2.6.3 Samples of nonprocedural text.

6.2.6.3.1 Sample size.

Beginning with the starting point in each sample data module, at least two hundred words should be sampled. For suspected nonconformance identified by critical scanning, material is selected as above, but begins with the suspected paragraph.

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6.2.6.3.2 Other tests on nonprocedural text.

Several types of data modules will contain more nonprocedural text than other types of data modules (for example, a general information data module, a theory of operation data module, a PMCS introduction data module, and various supporting information data modules) Select a sample from one of these types of data modules if there is an insufficient amount of nonprocedural text in a sample data module. Skip any boilerplate text since it cannot be altered.

6.2.6.4 Samples of illustrations and tables.

A sample of each different type of illustration and a sample of each table needs to be obtained.

6.2.6.4.1 Sampling method for illustrations.

Beginning with the starting point in each sample data module, the first example encountered of each illustration type is to be selected (ignoring those already selected when text was sampled), no matter where it occurs. The intent of this procedure is to generate a sample for each illustration type no larger than the number of data modules and to sample each illustration type adequately, whether they are spread out or are clustered together.

6.2.6.4.2 Tables.

A sample of tables is to be selected by the same method.

6.2.6.5 Extended local samples.

6.2.6.5.1 Procedural text.

Material in the vicinity of a confirmed instance of nonconformance is to be checked for similar nonconformance, using the two procedures immediately before the nonconforming procedure and the two procedures immediately following. If three or more of the five procedures are nonconforming, the entire information module may be suspected of nonconformance and measures to correct it should be implemented.

6.3 Reading grade level measures.

6.3.1 Counts for narrative text.

For each sample, marked, raw data should be collected. Data collection will consist of counts of the numbers of words, sentences, and syllables in each sample. The size of the sample is based on the number of words to be analyzed. Samples will start at the beginning of the first full paragraph on each marked sample. If a sample starts on a page containing procedural instructions, start the sample at the beginning of the first full sentence.

6.3.1.1 Words.

Count all words up to the end of the sentence containing the 200th word. If the marked sample is less than 200 words, the sample can be extended to the next section of text; but do not extend the sample into a new information module or text pertaining to a completely new subject. Record the number of words in each sample.

6.3.1.2 Sentences.

Count all sentences in the sample including the sentence that contains the 200th word. Record the number of sentences in each sample.

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6.3.1.3 Syllables.

Count syllables the way the word is normally pronounced aloud. Count all numbers as one syllable. For example, 5.1, 65, and 300 each counts as one syllable. However, if a numeric expression contains several numbers separated by hyphens, count each number as a syllable. For example, the expression 9-1025-240-10 is counted as four syllables. Acronyms and abbreviations are counted as one syllable unless they actually spell out a word of more than one syllable. For example, Hz and DVM each count as one syllable, but TRADOC and ATCOM each count as two syllables. Record the number of syllables in each sample.

6.3.2 Automatic counting equipment.

Devices for automatically obtaining keystroke, word, and sentence counts as text is input may be used. Keystroke counts will then substitute for syllable counts.

6.3.3 Manual counting technique.

Obtaining accurate word and syllable counts rapidly can be aided by using a push-button operated counting device while reciting the text aloud. Certain hand-held electronic calculators can be used in this way.

6.4 Calculation of Reading Grade Level (RGL).

Automated equipment and software may be used to calculate RGL provided the computation meets the guidance in this document.

6.4.1 Overall Grade Level (OGL).

The OGL (refer to Table XXI for a sample) of a TM is calculated as follows:

a. Add the total number of words (W) from all samples combined. Record total.
b. Add the total number of sentences (S) from all samples combined. Record total.
c. Add the total number of syllables (P) from all samples combined. Record total.
d. Calculate the average sentence length (A). Divide the total number of words (W) by total number of sentences (S): (A = W/S). Round off quotient to the nearest one hundredth. Record quotient.
e. Calculate the average number of syllables per word (B). Divide total number of syllables (P) by total number of words (W): (B = P/W). Round off quotient to the nearest one hundredth. Record quotient.
f. Calculate the OGL of the TM by the following formula. Round off the OGL to the nearest integer.

$$OGL = 0.39(A) + 11.8(B) - 15.59$$

TABLE XXI. Sample computations to demonstrate use of formulas.

Sample	Total No. Words	Total No. Sentences	Total No. Syllables
1	250	30	500
2	220	35	475
3	245	28	420
4	223	22	400

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TABLE XXI. Sample computations to demonstrate use of formulas.

Sample	Total No. Words	Total No. Sentences	Total No. Syllables
5	256	32	510
6	215	27	398
7	219	26	395
8	230	30	400
9	225	29	380
10	226	28	370
10	W=2309	S=287	P=4248

A = W/S A = 2309/287 A = 8.05
B = P/W B = 4248/2309 B = 1.84

OGL = 0.39(A) + 11.8(B) - 15.59
OGL = 0.39(8.05) + 11.8(1.84) - 15.59
OGL = 3.14 + 21.71 - 15.59
OGL = 9

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7. **NOTES**

7.1 Intended use.

TMs prepared in accordance with the information and guidance contained in this handbook are used to support operation and maintenance of various types of equipment and weapons systems within the Department of the Army.

7.2 Subject term (key word) listing.

The following terms are to be used to identify the MIL-HDBK-523 document during retrieval searches:

a. Data module.
b. Digitized artwork.
c. Equipment publications.
d. Extensible Markup Language (XML).
e. Graphics.
f. Hazardous materials warnings.
g. Icons.
h. Illustrations.
i. Information reuse.
j. Introductory material.
k. Maintenance instructions.
l. Operator instructions.
m. Parts information.
n. Reading grade level.
o. Revisions.
p. Schema.
q. Style sheets.
r. Supporting information.
s. Theory of operation.
t. Troubleshooting procedures.

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APPENDIX A
INFORMATION SETS GROUPED BY DATA MODULE TYPE

A.1 SCOPE

The appendix provides information sets, grouped according to data module type and do not follow any specific. Data modules should be organized in accordance with MIL-STD-3031.

A.2 INFORMATION SETS BY DATA MODULE TYPE.

This grouping should assist projects when they assign authors to a particular data module, information set, or publication. For example, the process data module is more complex than the descriptive data module and author/editor experience should be taken into consideration before assignment.

Table A-I provides a comparison of the data module complexity for the types of data modules included in the tables below. This is not a complete list of available data module types.

TABLE A-I. Data module complexity.

Complexity	Data module type
Low	Procedural (Table A-II)
Low	Descriptive (Table A-III)
High	Fault (Table A-IV)
Low	Crew (Table A-V)
Medium	Technical Repository (Table A-VI)
High	Process (Table A-VI)
Medium	Maintenance Planning (Table A-VI)
Medium	Checklist (Table A-VI)
Medium	IPD (Table A-VI)

TABLE A-II. Procedural information sets.

General Information	
	Instructions for the Use, Transportation, Handling, Storage, or Disposal
Operator Instructions	
	Siting Requirements
	Shelter Requirements
	Assembly and Preparation for Use
	Initial Adjustments, Before Use and Self-Test
	Operating Procedures
	Operating Auxiliary Equipment
	Preparation for Movement
	Unusual Environment/Weather
	Fording and Swimming
	Interim Chemical, Biological, Radiation, and Nuclear (CBRN) Decontamination Procedures
	Jamming and Electronic Countermeasures (ECM) Procedures
	Degraded Operation Procedures
	Emergency

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TABLE A-II. Procedural information sets.

Troubleshooting Procedures	
	Preshop Analysis
	Operational Checkout
	Operational Checkout Test Procedure
	Post-Operational Checkout Shutdown Procedures
	Pretest Setup Procedures
	Post-Troubleshooting Shutdown Procedures
Maintenance Instructions	
	Siting
	Shelter
	Unpacking
	Processing Unpacked Equipment
	Installation Instructions
	Assembly of Equipment
	Installation of the Equipment
	Special Application Installation Instructions
	Van and Shelter Procedure
	Preliminary Servicing of Equipment
	Preliminary Checks and Adjustment of Equipment
	Preliminary Calibration of Equipment
	Circuit Alignment
	Ammunition Marking
	Classification of Defects
	Ammunition Handling
	Procedures to Activate Ammunition
	Other Service Upon Receipt Task
	Follow-On Maintenance
	Equipment/User Fitting Instructions (Personal Use Equipment)
	Test and Inspection (Inspect)
	Inspection of conventional and chemical ammunition or components containing radioactive materials (Inspect)
	Pre-embarkation Inspection (Inspect)
	Inspection of Installed Items (Inspect)
	Inspection – Acceptance and Rejection Criteria (Inspect)
	Testing
	Servicing
	Adjust
	Alignment
	Calibration
	Removal procedure
	Install procedure
	Replace
	Repair
	Painting
	Overhaul procedure
	Rebuild
	Lubrication
	Mark
	Pack procedure
	Unpacking

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TABLE A-II. Procedural information sets.

	Preservation procedure
	Assembly and Preparation for Use
	Assembly procedure
	Disassembly procedure
	Clean
	Non-Destructive Testing Inspection (NDTI)
	Radio Interference Suppression
	Placing in Service
	Towing (Ground handling)
	Jacking (Ground handling)
	Parking (Ground handling)
	Mooring (Ground handling)
	Covering (Ground handling)
	Hoisting (Ground handling)
	Sling loading (Ground handling)
	External power (Ground handling)
	Preservation, Packaging, and Marking
	Preparation for Storage or Shipment
	Arm
	Load
	Unload
	Software maintenance
	Additional Maintenance Task
	General Maintenance
	Lubrication Instructions
	Overhaul Inspection Procedures (OIP)
	Torque Limits
	Flyable Storage of Aircraft (Storage of Aircraft)
	Short Storage of Aircraft (Storage of Aircraft)
	Intermediate Storage of Aircraft (Storage of Aircraft)
	Weighing and Loading (Aircraft only)
	Auxiliary Equipment Maintenance
	Ammunition Maintenance
	Ammunition Marking Information
	Foreign Ammunition (NATO)
Destruction Information	
	Specific Destruction Procedures
	Classified Equipment and Documents
BDAR Information	
	Repair Procedure

TABLE A-III. Descriptive information sets.

Front Matter	
	(MC) Promulgation Letter
	Warning Summary
	Revision Summary
	List of Effective Data Modules
	Title Block Page

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TABLE A-III. Descriptive information sets.

	Table of Contents
	Glossary
	How To Use This IETP/Manual
	DA Form 2028
Rear Matter	
	Alphabetical Index
	DA Form 2028
	Authentication Page
	Foldout Pages
	Back Cover
General Information	
	General Data
	General Information
	Equipment Description and Data
	Theory of Operation
Operator Instructions	
	Description and Use of Operator Controls and Indicators
	Security Measures for Electronic Data
	Decals and Instruction Plates
	Stowage and Decal/Data Plate Guide
	On-Vehicle Equipment Loading Plan
Troubleshooting Procedures	
	Introduction
	Malfunction Index
	Symptom Index
	System/Subsystem index
	Operational Checkout Introduction
	Message Index
	Fault Code Reference Index
	Technical Description
	Component Checklist
	Location Diagrams
Maintenance Instructions	
	PMCS Introduction
	Facilities
	Depot Mobilization Requirements
	Quality Assurance
	Illustrated List of Manufactured Items
	Aircraft Inventory Master Guide (Aircraft only)
	Wiring Diagrams
Parts Information	
	Introduction
	NSN Index
	Part Number Index
	Reference Designator Index
Supporting Information	
	References
	Introduction for MAC
	Components of End Item (COEI) List
	Basic Issue Items (BII) List

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TABLE A-III. Descriptive information sets.

	Additional Authorization List (AAL)
	Expendable and Durable Items List
	Tool Identification List
	Mandatory Replacement Parts
	Critical Safety Items (CSI)
	Support Items
	Additional Supporting Information
Destruction Information	
	Destruction General Information
BDAR Information	
	General Information
	Assessing Battlefield Damage - General Fault Assessment Tables
	Special or Fabricated Tools
	Substitute Materials/Parts

TABLE A-IV. Fault information sets.

Troubleshooting Procedures	
	Troubleshooting Procedure
BDAR Information	
	General Fault Assessment Tables

NOTE

Three manual types use the Crew data module extensively. In five other manual types, it is used a single time. The table numbers listed in Table A-V refer to MIL-STD-3031, Appendix A tables.

TABLE A-V. Crew information sets.

Operator Instructions (Information Group)	
	MIL-STD-3031, Table A-VI. Operator Interactive Electronic Technical Publication (IETP)
	MIL-STD-3031, Table A-VII. Operator & Field and Operator, Field, & Sustainment Maintenance Interactive Electronic Technical Publication (IETP)
	MIL-STD-3031, Table A-X. Operator's Manuals (Excluding Conventional and Chemical Ammunition)
	MIL-STD-3031, Table A-XX. Conventional and Chemical Ammunition Operator's Manuals
Table A-XXVIII. Preparation for Shipment of Army Aircraft Manuals	
	Chapter 8. Section I - Operator Instructions (Information Set)
Majority of the following manuals	
	MIL-STD-3031, Table A-XXXI. Aircraft Operator Manual
	MIL-STD-3031, Table A-XXXII. Aircraft Operator Checklist
	MIL-STD-3031, Table A-XXXIII. Maintenance Test Flight Manual

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TABLE A-VI. Technical repository, process, checklist, Illustrated Parts Data (IPD), & maintenance planning information sets.

Operator Instructions	
Tech Rep	Description and Use of Operator Controls and Indicators
Troubleshooting Procedures	
Process	Diagnostics Procedure
Maintenance Instructions	
Checklist	PMCS, Including Lubrication Instructions
Checklist	Checking Unpacked Equipment
Checklist	Preventive Maintenance Inspection (Aircraft only)
Checklist	Phased Maintenance (PM) Inspection
Checklist	Preventive Maintenance Services (PMS) Inspection
Checklist	Criteria for Special Inspections
Parts Information	
IPD	Repair Parts List
IPD	Repair Parts for Special Tools
IPD	Kit Parts List
IPD	Bulk Items
IPD	Special Tools List
Supporting Information	
Maintenance Planning	Maintenance Allocation Chart

Downloaded from http://www.everyspec.com

CONCLUDING MATERIAL

Custodian:
Army – TM
Review Activities:
Army – AC, AR, AT, AV, CR, EA, MI, PT

Preparing Activity:
Army – TM
Project Number:
TMSS 2008-011

NOTE: 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 https://assist.daps.dla.mil/.