



CALS TEST NETWORK

AFCTN Test Report
94-016

AFCTB-ID
93-032



Technical Publication Transfer

Using:

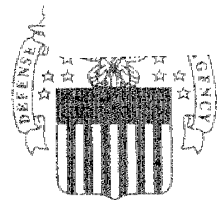


Cubic Defense Systems' Data

19960822 086
19960822 086
19960822 086

MIL-M-28001A (SGML)

Quick Short Test Report



13 April 1993



Prepared for
Electronic Systems Center

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1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-Cycle Support (CALs) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALs standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALs initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Cubic Defense System's interpretation and use of the CALS standards in transferring technical publication data. Cubic Defense Systems used its CALS Technical Data Interchange System to produce data in accordance with the standards and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

2. Test Parameters

Test Plan: AFCTB 93-032

Date of Evaluation: 13 April 1993

Evaluator: George Elwood
Air Force CALS Test Bed
DET 2 HQ ESC/AV-2P
4027 Colonel Glenn Hwy
Suite 300
Dayton OH 45431-1672

Data Originator: Cathy Kothawala
Cubic Defense Systems
9233 Balboa Avenue
San Diego CA 92123
(619) 277-6780 x2883

Data Description: Technical Manual Test
1 Document Declaration file
1 Document Type Definitions (DTD)
1 Text/Standard Generalized Markup Language (SGML) file

Data Source System:

Text/SGML

HARDWARE

Unknown

SOFTWARE

Unknown

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

SUN 3/280

AFCTN Tapetool v1.2.8 UNIX

XSoft CAPS/CALS v40.4

Texas Instrument (TI) Tapetool v1.0.1

MIL-M-28001 (SGML)

Cheetah Gold 486

Exoterica *XGMLNormalizer* v1.2e3.2

Exoterica *Validator* v2.0 EXL

McAfee & McAdam *Sema Mark-it* v2.3

Public Domain *sgmls*

Standards

Tested:

MIL-STD-1840A

MIL-M-28001A

3. 1840A Analysis

3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a commercial overnight shipping bag. The exterior of the bag was marked with the magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3. The tape was protected against physical damage.

The tape was enclosed in a barrier bag as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Enclosed in the box was a packing list showing all files recorded on the tape.

3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape Formats

The tape was run through the AFCTN *Tapetool* v1.2.8 utility. No errors were encountered while evaluating the contents of the tape labels.

The tape was also read using TI's version of *Tapetool* with no reported errors.

3.2.2 Declaration and Header Fields

No errors were found in the Document Declaration file or data file headers. The physical structure of the tape meets the CALS MIL-STD-1840A requirements.

4. IGES Analysis

No Initial Graphics Exchange Specification (IGES) files were included on the tape.

5. SGML Analysis

The AFCTB has several parsers available for evaluating submitted DTD and Text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report. Changes to DTD or Text files required by each system are not documented in the report.

The Text and DTD files from the tape were evaluated using another parser available within the AFCTB, with one reported error. The entity "shorttitle was defined twice.

```
<!ENTITY % shorttitle DTD0144: Attempt to declare Parameter Entity Name  
'shorttitle' more than once denied.
```

The Text and DTD files from this document were evaluated using the Exoterica Validator parser with three noted errors. The first error is the dual reference to shorttitle. The other two errors are shown below.

```
<!-- **Warning** in "9332.sgm", line 1269:  
An element is not allowed in the document instance because it does not  
appear in any accessible content model or it is completely excluded.  
The element is "ENTRYTBL".  
-->  
<!-- **Warning** in "9332.sgm", line 4366:  
There is no element with an IDREF or IDREFS attribute value equal to a  
specified ID value.  
The unreferenced ID attribute value is "FIG7-6".  
-->
```

The Text and DTD files from this document were tested using the Exoterica *XGMLNormalizer* parser with no reported errors.

The Text and DTD files from the tape were evaluated using McAfee & McAdam's *Sema Mark-it* parser with one reported error, on the use of a character not permitted by SGML.

The Text and DTD files from the tape were evaluated using the Public Domain *sgmls* parser with no reported errors.

The DTD and Text files meet the CALS MIL-M-28001A specification.

6. Raster Analysis

No Raster files were included on this tape.

7. CGM Analysis

No Computer Graphics Metafile (CGM) files were included on this tape.

8. Conclusions and Recommendations

In summary, the physical tape structure from Cubic Defense Systems was correct. The tape could be read properly using the AFCTN *Tapetool* software without a reported error.

The DTD and Text files were parsed using several different products. Two products reported warnings which are defined in the error logs in the Appendix to this report. The SGML and DTD files meet the CALS MIL-M-28001A specification.

The tape and data files from Cubic Defense Systems meet the CALS MIL-STD-1840A requirements.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

Air Force CALS Test Network Catalog Evaluation - Version 1.2; Release Number 8

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Tue Apr 13 07:36:16 1993

MIL-STD-1840A File Catalog

File Set Directory: /cals/tapetool8/Set081

Page: 1

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001	Document Declaration	D/00260	02048/000001	Extracted
D001G001	DTD	D/00260	02048/000025	Extracted
D001T002	Text	D/00260	02048/000064	Extracted

Catalog Process terminated normally.

9.2 Tape Evaluation Log

Air Force CALS Test Network Tape Evaluation - Version 1.2; Release Number 8
Standards referenced:

ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Tue Apr 13 07:36:07 1993

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1CAL501

4

Label Identifier: VOL1
Volume Identifier: CAL501
Volume Accessibility:
Owner Identifier:
Label Standard Version: 4

HDR1D001 CAL50100010001000000 93096 00000 000000

Label Identifier: HDR1
File Identifier: D001
File Set Identifier: CAL501
File Section Number: 0001
File Sequence Number: 0001
Generation Number: 0000
Generation Version Number: 00
Creation Date: 93096
Expiration Date: 00000
File Accessibility:
Block Count: 000000
Implementation Identifier:

HDR2D0204800260

00

Label Identifier: HDR2
Recording Format: D
Block Length: 02048
Record Length: 00260
Offset Length: 00

***** Tape Mark *****

Actual Block Size Found = 2048 Bytes.

Number of data blocks read = 1.

***** Tape Mark *****

EOF1D001 CALS0100010001000000 93096 00000 000001

Label Identifier: EOF1
File Identifier: D001
File Set Identifier: CALS01
File Section Number: 0001
File Sequence Number: 0001
Generation Number: 0000
Generation Version Number: 00
Creation Date: 93096
Expiration Date: 00000
File Accessibility:
Block Count: 000001
Implementation Identifier:

EOF2D0204800260

00

Label Identifier: EOF2
Recording Format: D
Block Length: 02048
Record Length: 00260
Offset Length: 00

***** Tape Mark *****

<<<<< PART OF LOG REMOVED HERE >>>>>

***** Tape Mark *****

***** Tape Mark *****

End of Volume CALS01

End Of Tape File Set

Deallocating /dev/rmt0...

Tape Import Process terminated normally.

9.3 Tape File Set Validation Log

Air Force CALS Test Network File Set Evaluation - Version 1.2; Release Number 8
Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Tue Apr 13 07:36:16 1993

MIL-STD-1840A File Set Evaluation Log

File Set: Set081

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: CUBIC DEFENSE SYSTEMS INC 9333 BALBOA AVE SAN DIEGO CA 92123 CAGE 94987
srcdocid: TO-01
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19930406
dstsys: OO-ALC
dstdocid: TO-01
dstrelid: NONE
dtetrn: 19930406
dlvacc: NONE
filcnt: G1,T1
ttlcls: UNCLASSIFIED
doccls: UNCLASSIFIED
doctyp: Technical Publication
docttl: NONE

Found file: D001G001

Extracting DTD Header Records...

Evaluating DTD Header Records...

srcdocid: TO-01

dstdocid: TO-01

notes: NONE

Saving DTD Header File: D001G001_HDR

Saving DTD Data File: D001G001_DTD

Found file: D001T002

Extracting Text Header Records...

Evaluating Text Header Records...

srcdocid: TO-01
dstdocid: TO-01
txtfilid: W
doccls: UNCLASSIFIED
notes: NONE

Saving Text Header File: D001T002_HDR
Saving Text Data File: D001T002_TXT

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

No errors were encountered in Document D001.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

10. Appendix B - Detailed SGML Analysis

10.1 Parser

10.1.1 DTD Log

SGML Document Type Definition Parser
An SGML System Conforming to
International Standard ISO 8879
Standard Generalized Markup Language

Log file: '9332.LOG'
SDO File: 'ctndocl.sdo'
Namecase General is yes.
Namecase Entity is no.
Parsing DTD file: '9332.dtd'

```
<![ %shortitleuse; [
```

```
<!ENTITY % shortitle ", shortttile?" >]]>
```

```
<!ENTITY % shortitle DTD0144: Attempt to declare Parameter Entity Name 'shortitle  
more than once denied.  
In declaration: '<!ENTITY'.  
In declaration: '<!['.  
In declaration: '<!['.  
In declaration: '<!['.  
In declaration: '<!['.  
In declaration: '<!DOCTYPE'.  
in entity 'shortitleuse'  
in line 212 in file '9332.dtd'
```

```
"" >
```

DTO file '9332.DTO' created

closing statistics:

Capacity points:	61352
Bytes of DTO file string space:	12640
SGML descriptor blocks:	6408

Document Type Definition is compliant and parsed normally.

Program status code: 0.

10.1.2 Text Log

IPA0108: *** SGML Instance Parser Log File ***
Source Document File: '\xgml\9332.txt'.
Job File: '9332.jbf'.
DTD File: ''.
SGML Declaration File: ''.

Reading File '9332.jbf', File Type 'JOB FILE'.

Concrete Syntax Settings In Effect For This Parse:

NAMECASE GENERAL: YES.
NAMECASE ENTITY: NO.
NAMELEN: 32.
SHORTTAG: YES.

Closed '9332.jbf', File Type 'JOB FILE'.

Reading File '\xgml\9332.txt', File Type 'DIRECT INPUT FILE'.

--> Scanned Up To Line 100 In \xgml\9332.txt.

--> Scanned Up To Line 200 In \xgml\9332.txt.

<<<< PART OF LOG REMOVED HERE >>>>

--> Scanned Up To Line 2900 In \xgml\9332.txt.

--> Scanned Up To Line 3000 In \xgml\9332.txt.

Closed '\xgml\9332.txt', File Type 'DIRECT INPUT FILE'.

Document Parsed Successfully, No Errors or Warnings.

10.2 Exoterica XGMLNormalizer Parser Log

No reported errors.

10.3 Exoterica Validator Parser Log

```
<!-- Entity has no name, system id or public id in formal file -->.
<!-- **Warning** in "9332.sgm", line 287:
  A parameter entity name has been declared more than once.
  The entity is "%shorttitle".
    <!ENTITY % shorttitle "" >
      ^^^^^^^^^^^
-->
<!-- **Warning** in "9332.sgm", line 1269:
  An element is not allowed in the document instance because it does not
  appear in any accessible content model or it is completely excluded.
  The element is "ENTRYTBL".
-->
<!-- **Warning** in "9332.sgm", line 4366:
  There is no element with an IDREF or IDREFS attribute value equal to a
  specified ID value.
  The unreferenced ID attribute value is "FIG7-6".
-->
<!-- 3 warnings reported. -->
```

10.4 Sema Mark-it Log

No reported errors.

10.5 Public Domain sgmls Log

```
TOTALCAP 124732/200000
  ENTCAP 12320/200000
ENTCHCAP 7681/200000
  ELEMCAP 4768/200000
  GRPCAP 42176/200000
EXGRPCAP 416/200000
  EXNMCAP 832/200000
  ATTCAP 37536/200000
ATTCHCAP 516/200000
AVGRPCAP 17344/200000
  NOTCAP 64/200000
NOTCHCAP 87/200000
  IDCAP 992/200000
```