Technical Publication
Transfer Test Using
Litton Systems Canada Limited

MIL-M-28001A (SGML)
MIL-R-28002A (Raster)

31 December 1992

Prepared for
Air Force Materiel Command
Technical Publication Transfer Test
Using Litton Systems Canada Limited

MIL-M-28001A (SGML)
MIL-R-28002 (Raster)

Quick Short Test Report

31 December 1992

Prepared By
Air Force CALS Test Bed
Wright-Patterson AFB, OH 45433

AFTB Contact
Gary Lammers
(513) 257-3085

CTN Contact
Mel Lammers
(513) 257-3085
DISCLAIMER

This document was prepared as an account of work sponsored by the Air Force. Neither the United States Government nor the Air Force nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately own rights. Reference herein to any specific commercial products, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or the Air Force. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or the Air Force, and shall not be used for advertising or product endorsement purposes.

Available to the public from the
National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Rd.,
Springfield, VA 22161

This report and those involved in its preparation do not endorse any product, process, or company stated herein. Use of these means by anyone does not imply certification by the CALS Test Network (CTN).
Contents

1. Introduction .................................................. 1
   1.1. Background ............................................. 1
   1.2. Purpose ................................................ 1
2. Test Parameters ............................................... 2
3. 1840A Analysis .............................................. 4
   3.1. External Packaging ..................................... 4
   3.2. Transmission Envelope ................................ 4
       3.2.1. Tape Formats ..................................... 4
       3.2.2. Declaration and Header Fields .................... 4
4. IGES Analysis ............................................... 5
5. SGML Analysis ............................................... 5
6. Raster Analysis ............................................. 5
7. CGM Analysis ............................................... 5
8. Conclusions and Recommendations ........................... 6
   9.1. Tape Catalog .......................................... 7
   9.2. Tape Evaluation Log .................................. 8
   9.3. Tape File Set Validation Log ......................... 14
10. Appendix B - SGML Parser Logs ............................ 16
    10.1. XGML Parser Log .................................... 16
    10.2. DataLogics Parser Log ............................... 16
11. Raster Hard Copy .......................................... 17
    11.1. Preview - Entire Image .............................. 17
11.2.     Preview - Detail View......................19
11.3.     Harvard Graphics 3.0 - Entire Image........21
1. Introduction

1.1 Background

The DoD Computer-aided Acquisition and Logistics Support (CALS) Test Network (CTN) 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 CTN is a DoD-sponsored confederation of voluntary participants from industry and government managed by the Air Force Materiel Command (AFMC).

The primary objective of the CTN 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, comprehensive tests that follow a written test plan, require specific authorization from DoD, and may take months to prepare, execute, and report.

Informal tests are used by the CTN technical staff to broaden the testing base by including representative samples of the many systems and applications used by CTN participants. They also allow the CTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and to respond, in a timely manner, to the many requests for help that come from participants. Participants take part voluntarily and are benefited by receiving an evaluation of their latest implementation (interpretation) of the standards, interacting with the CTN technical staff, gaining experience in use of the standards, and developing 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 Litton Systems Canada Limited’s interpretation and use of the CALS standards in transferring technical publications data. Litton used its CALS Technical Data Interchange System to produce data in accordance with the standards and delivered it to the CTN technical staff on a 9-track magnetic tape.
2. Test Parameters

Test Plan: AFTB 92-04

Date of Evaluation: 20 January 1992

Evaluator: George Elwood
Air Force CALS Test Bed
AFMC/ENCT
4027 Colonel Glenn Hwy
Suite 200
Dayton, OH 45431-1601

Data Originator: Mark James
Litton Systems Canada Limited
5490 Canoga Avenue
P.O. Box 4241
Woodland Hills, CA 91365-4241

Data Description: Technical Manual Test
1 document declaration file
1 DTD
1 TEXT file
1 Raster file

Data Source Systems:

Text/SGML

HARDWARE
Xerox 6085

SOFTWARE

Raster

HARDWARE
Kurzweil 5200 Scanner

SOFTWARE
Xerox Viewpoint
Evaluation
Tools Used:

**MIL-STD-1840A (TAPE)**
SUN 3/280
CTN Tapetools (v1.2.8) UNIX
Agfa Compugraphics CALS v40.4
Cheetah Gold 486
CTN Tapetools (v1.2.8) DOS

**MIL-M-28001 (SGML)**
Cheetah Gold 486
Exoterica XGML V1.2e3.2
Datalogics ParseStation v3.36

**MIL-R-28002 (Raster)**
SUN 3/60
CTN Raster Tools
Rosetta Technology Preview V3.1
Cheetah
Inset Systems HiJaak V2.02
SPC Harvard Graphics V3.0

Standards Tested:
MIL-STD-1840A
MIL-M-28001A
MIL-R-28002
3. 1840A Analysis

3.1 External Packaging

The tape arrived at the Air Force Test Bed enclosed in a box IAW ASTM D 3951. The exterior of the box was not marked with the required magnetic tape warning label, MIL-STD-1840A, para. 5.3.1.3. although it was marked indicating it contained a magnetic tape.

The tape was not enclosed in a barrier bag or barrier sheet material as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed a lack of the required label indicating the recording density as required by MIL-STD-1840A, para. 5.3.1. No packing list showing all files that were recorded on the tape was included in the box.

3.2 Transmission Envelope

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

3.2.1 Tape Formats

The 1840A Tape was run through the AFTB Tapetool utility version 1.2.8. One note was generated during the evaluation of the tape contents of the tape labels.

A note was reported on the tape label version. MIL-STD-1840A permits the use of both versions three and four. The use of the most current standard should be used and noted.

3.2.2 Declaration and Header Fields

No errors were reported during the evaluation of the Declaration file and the file header records.
4. IGES Analysis

No IGES files were included on the tape.

5. SGML Analysis

The text file parsed without reported error using the Exoterica XGML Normalizer parser. The file appeared to have been parsed using the Exoterica parser before being written to the tape.

The text file was parsed using the DataLogics ParseStation software and no errors were reported.

6. Raster Analysis

One raster image was included on the tape. The file was checked using the CTN validg4 and no errors were reported. The file was converted using Rosetta Technologies Prepare without error. The resulting file was viewed and printed using Rosetta Technologies Preview. The image appeared to be complete and matched the sample file included with the tape. Hard copies of the image are included in the appendix to this report.

The file was converted on the PC using Inset Systems HiJaak to a PCX format. The resulting file was viewed on the screen using Viewer and Software Publishers Harvard Graphics 3.0. The Harvard Graphics 3.0 image was printed and is included in the appendix to this report.

7. CGM Analysis

No CGM files were included on the tape.
8. Conclusions and Recommendations

In summary, the MIL-STD-1840A tape from Litton Systems Canada Limited was basically correct. The tape could be read properly using the CTN Tapetool Software and only one note was generated during this procedure.

The text file was parsed without reported error using Exoterica's XGML Parser.

The raster file was reported as being a valid file using the CTN validg4 software. The image was successfully converted, displayed, and hard copies made using two different software packages.
9. Appendix A - Tape Tool Report Logs

9.1 Tape Catalog

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

Standards referenced:
MIL-R-28003 (1988) - Digital Representation For Communication Of
Illustration Data; CGM Application Profile
ANSI X3.27 (1987) - File Structure and Labelling of Magnetic Tapes
for Information Interchange
ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Mon Jan 20 08:42:57 1992

MIL-STD-1840A File Catalog

File Set Directory: /cals/tapetool8/Set050

<table>
<thead>
<tr>
<th>File Name</th>
<th>File Type</th>
<th>Record Format/ Length</th>
<th>Block Length/Total</th>
<th>Selected/ Extracted</th>
</tr>
</thead>
<tbody>
<tr>
<td>D001</td>
<td>Document Declaration</td>
<td>D/00260 02048/000001</td>
<td>Extracted</td>
<td></td>
</tr>
<tr>
<td>D001G001</td>
<td>DTD</td>
<td>D/00260 02048/000002</td>
<td>Extracted</td>
<td></td>
</tr>
<tr>
<td>D001R002</td>
<td>Raster</td>
<td>F/00128 02048/000008</td>
<td>Extracted</td>
<td></td>
</tr>
<tr>
<td>D001T003</td>
<td>Text</td>
<td>D/00260 02048/000003</td>
<td>Extracted</td>
<td></td>
</tr>
</tbody>
</table>

Catalog Process terminated normally.
9.2 Tape Evaluation Log

CALS Test Network Tape Evaluation - Version 1.2; Release Number 8
Standards referenced:
   ANSI X3.27 (1987) - File Structure and Labelling of Magnetic Tapes
                   for Information Interchange
   ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Mon Jan 20 08:42:54 1992

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1LCH801

   Label Identifier: VOL1
   Volume Identifier: LCH801
   Volume Accessibility:
   Owner Identifier:
   Label Standard Version: 3

*** NOTE (ANSI X3.27; 8.3.1.8) - The Label Standard Version
   should be 4 to represent the current level of ANSI X3.27.

HDR1D001

   LCH80100010001000100 91312 91312 000000DECFILE11A

   Label Identifier: HDR1
   File Identifier: D001
   File Set Identifier: LCH801
   File Section Number: 0001
   File Sequence Number: 0001
   Generation Number: 0001
   Generation Version Number: 00
   Creation Date: 91312
   Expiration Date: 91312
   File Accessibility:
   Block Count: 000000
   Implementation Identifier: DECFILE11A

HDR2D02048000260

   M
   00

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

HDR300000002000000000001000000000000000010000000000000000000000000000

HDR4
00

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

Actual Block Size Found = 2048 Bytes.
Number of data blocks read = 1.

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

EOF1D001 LCH80100010001000100 91312 91312 000001DECFIIE11A

Label Identifier: EOF1
File Identifier: D001
File Set Identifier: LCH801
File Section Number: 0001
File Sequence Number: 0001
Generation Number: 0001
Generation Version Number: 00
Creation Date: 91312
Expiry Date: 91312
File Accessibility:
Block Count: 000001
Implementation Identifier: DECFIIE11A

EOF2D0204800260 M 00

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

EOF300000002000000000001000000000000000010000000000000000000000000000

EOF4
00

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

HDR1D001G001 LCH80100010002000100 91312 91312 000000DECFIIE11A

Label Identifier: HDR1
File Identifier: D001G001
File Set Identifier: LCH801
File Section Number: 0001
File Sequence Number: 0002
Generation Number: 0001
Generation Version Number: 00
Creation Date: 91312
Expiration Date: 91312
File Accessibility:
Block Count: 000000
Implementation Identifier: DECFILE11A

HDR2D0204800260

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

HDR300000002000000000000000100000000000010000000000000000000000000000

HDR4

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

Actual Block Size Found = 2048 Bytes.

Number of data blocks read = 2.

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

EOF1D001G001

Label Identifier: EOF1
File Identifier: D001G001
File Set Identifier: LCH801
File Section Number: 0001
File Sequence Number: 0002
Generation Number: 0001
Generation Version Number: 00
Creation Date: 91312
Expiration Date: 91312
File Accessibility:
Block Count: 000002
Implementation Identifier: DECFILE11A

EOF2D0204800260

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

EOF30000000000200000000000000100000000000000000000000000000000
EOF4

************ Tape Mark ************
HDR1D001R002 LCH80100010003000100 91312 91312 000000DECF1E11A
Label Identifier: HDR1
File Identifier: D001R002
File Set Identifier: LCH801
File Section Number: 0001
File Sequence Number: 0003
Generation Number: 0001
Generation Version Number: 00
Creation Date: 91312
Expiry Date: 91312
File Accessibility:
Block Count: 000000
Implementation Identifier: DECF1E11A

HDR2F0204800128 M 00

Label Identifier: HDR2
Recording Format: F
Block Length: 02048
Record Length: 00128
Offset Length: 00

HDR3008000010000000000010000000000000000000800000000000000000000000000
HDR4

************ Tape Mark ************
Actual Block Size Found = 2048 Bytes.
Number of data blocks read = 8.

************ Tape Mark ************
EOF1D001R002 LCH80100010003000100 91312 91312 000008DECF1E11A
Label Identifier: EOF1
File Identifier: D001R002
File Set Identifier: LCH801
File Section Number: 0001
************ Tape Mark ************

Actual Block Size Found = 2048 Bytes.

Number of data blocks read = 3.

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

EOF1D001T003 LCH80100010004000100 91312 91312 000003DECFILE11A

Label Identifier: EOF1
File Identifier: D001T003
File Set Identifier: LCH801
File Section Number: 0001
File Sequence Number: 0004
Generation Number: 0001
Generation Version Number: 00
Creation Date: 91312
Expiration Date: 91312
File Accessibility:
Block Count: 000003
Implementation Identifier: DECFILE11A

EOF2D0204800260 M 00

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

EOF300000000200000000000000010000000000000000000000000000000000

EOF4 00

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

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

################# End of Volume LCH801 #################

################# End Of Tape File Set #################

Deallocating /dev/rmt0...

Tape Import Process terminated with 1 error(s), 0 warning(s),
and 0 note(s).
9.3 Tape File Set Validation Log

CALS Test Network File Set Evaluation - Version 1.2; Release Number 8
Standards referenced:
  MIL-R-28002 (1989) - Raster Graphics Representation In Binary Format, Requirements For

Mon Jan 20 08:42:57 1992

MIL-STD-1840A File Set Evaluation Log

File Set: Set050

Found file: D001
Creating directory => /cals/tapetool8/Set050/D001
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...

srcsys: LSL TECHDATA
srcdocid: LCH89-081
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19911108
dstsys: NONE
dstdocid: LCH89-081
dstrelid: NONE
dtetrn: 19911108
dlacc: NONE
filcnt: G1, R1, T1
ttlcls: UNCLASSIFIED
doccls: UNCLASSIFIED
doctyp: TECHNICAL MANUAL
doctl: SPECIAL CONTROL PANEL

Found file: D001G001
Extracting DTD Header Records...
Evaluating DTD Header Records...

srcdocid: LCH89-081
dstdocid: LCH89-081
notes: NONE

Saving DTD Header File: D001G001_HDR
Saving DTD Data File: D001G001/DTD

Found file: D001R002
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: LCH89-081
dstdocid: LCH89-081
txtfilid: W
figid: 1
srcgph: SCP
doccls: UNCLASSIFIED
rtype: 1
rorient: 000,270
rpselcnt: 002139,001521
rdensity: 0300
notes: SPECIAL CONTROL PANEL

Saving Raster Header File: D001R002_HDR
Saving Raster Data File: D001R002_GR4

Found file: D001T003
Extracting Text Header Records...
Evaluating Text Header Records...

srcdocid: LCH89-081
dstdocid: LCH89-081
txtfilid: W
doccls: UNCLASSIFIED
notes: NONE

Saving Text Header File: D001T003_HDR
Saving Text Data File: D001T003.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 - SGML Parser Logs

10.1 XGML Parser Log
No errors were reported.

10.2 DataLogics Parser Log
No errors were reported.
11. **Raster Hard Copy**
11.1 **Preview - Entire Image**
11.2 Preview - Detail View
11.3 Harvard Graphics 3.0 - Entire Image