CALS TEST NETWORK

AFCTN Test Report 93-076

AFCTB-ID 93-094

Technical Publication Transfer

using:

Picatinny Arsenal's Data

MIL-M-28001A (SGML)
MIL-R-28002A (Raster)
MIL-D-28003 (CGM)

Quick Short Test Report

04 October 1993

Prepared for

Electronic Systems Center

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04 October 1993

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Contents

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 the 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 data delivered to the Army's Picatinny Arsenal for interpretation and use of the CALS standards, in transferring technical publication data. The data was delivered by Alliant Techsystems Inc using its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered to Picatinny Arsenal technical staff on a 9-track magnetic tape. The Picatinny Arsenal staff transmitted the data via internet to the AFCTB for evaluation. Two separate documents were included in this test.

2. Test Parameters

Test Plan: AFCTB 93-094

Date of Evaluation: 4 October 1993

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

Data Originator:
Joe Cannataro
U.S. Army, ARDEC
Picatinny Arsenal NJ 07806-5000
DSN 880-4146

Data Description: Technical Manual Test

- 2 Document Declaration files
- 2 Document Type Definitions (DTD)
- 2 Text files
- 66 Raster files
- 1 Computer Graphics Metafile (CGM) file

Data Source System:

1840

HARDWARE

Unknown

SOFTWARE

Unknown

Text/Standard Generalized Markup Language (SGML)

HARDWARE

Unknown

SOFTWARE

Unknown

Raster

HARDWARE

Unknown

SOFTWARE

Unknown

CGM

HARDWARE

Unknown

SOFTWARE

Unknown

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

SUN 3/280

AFCTN *Tapetool v1.2.10 UNIX*

MIL-M-28001 (SGML)

PC 486/50

Exoterica *XGMLNormalizer v1.2e3.2*
Exoterica *Validator v2.0 ex1*
McAfee & McAdam *Sema Mark-it v2.3*
Public Domain *sgmls*

MIL-R-28002 (Raster)

SUN SparcStation 2

AFCTN *validg4*
AFCTN *xrastb.sun4*

PC 486/50

AFCTN *validg4*

MIL-D-28003 (CGM)

SUN SparcStation 2

Carberry *CADLeaf Plus 3.1*

PC 486/50

Advance Technology Center
(ATC) *MetaVIEW R 1.12*
ATC *MetaCHECK R 2.10*
Software Publishing Corporation
(SPC) *Harvard Graphics v3.05*

Standards Tested:

MIL-STD-1840A
MIL-M-28001A
MIL-R-28002A
MIL-D-28003

3. 1840A Analysis

3.1 External Packaging

The files for this evaluation were delivered via Internet, an electronic transfer media.

3.2 Transmission Envelope

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

3.2.1 Tape Formats

The files for this evaluation were received via internet, an electronic transfer media. There was no tape to evaluate.

3.2.2 Declaration and Header Fields

The two file sets were evaluated using the AFCTN *Tapetool* utility set to evaluate from a directory. All files for each file set were placed in a separate directory.

No errors were found in either of the Document Declaration files.

All data files reported errors in the fixed length CALS header files. In every file, starting with the second CALS record, the information was spaced to the right one character position. When the files were evaluated closer, it was noted that a "nl" character was added to each of the CALS records, which was carried throughout the header records. As seen on the next page:

```
srcdocid: DEP 9-1375-218-12

dstdocid: DEP 9-1375-218-12
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid CGM header
    field name dstdocid:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after CGM
    header field.
*** NOTE - Correction made in new CGM Header File.
```

Shown below is the screen dump of the start of the CGM file in file set one. Note the "nl" character being added starting on line 120.

```
wpaftb2% od -a d001c001 |more
0000000    s   r   c   d   o   c   i   d   :  sp   D   E   P  sp   9   -
0000020    1   3   7   5   -   2   1   8   -   1   2  sp  sp  sp  sp  sp
0000040   sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp
*
0000120   nl   d   s   t   d   o   c   i   d   :  sp   D   E   P  sp   9
0000140    -   1   3   7   5   -   2   1   8   -   1   2  sp  sp  sp  sp
0000160   sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp
*
0000240   sp  nl   t   x   t   f   i   l   i   d   :  sp   W  sp  sp  sp
0000260   sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp
*
0000360   sp  sp  nl   f   i   g   i   d   :  sp   s   l   a   m   x  sp
0000400   sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp
*
0000500   sp  sp  sp  nl   s   r   c   g   p   h   :  sp   s   l   a   m
0000520    x  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp
0000540   sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp
```

Because of these added characters, the physical structure of the files do not meet the CALS requirements defined in MIL-STD-1840A.

4. IGES Analysis

The file sets contained no Initial Graphics Exchange Specification (IGES) files.

5. SGML Analysis

The Air Force CALS Test Bed (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 both documents were evaluated using the Exoterica *Validator exl* parser. No errors were reported; however, two warnings were issued.

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

The Text and DTD files from both documents were evaluated using McAfee & McAdam's *Sema Mark-it* parser with no reported errors.

The SGML files meet the CALS MIL-M-28001A specification.

6. Raster Analysis

The tape contained 66 Raster files. All files were evaluated using the AFCTN *validg4* utility. This program reported that all files failed to meet the CALS MIL-R-28002A specification. The error was traced to the added "nl" character in the files. This character caused the CALS header information to be offset by one position with each succeeding record.

It was also noted that required information in the header records was not inserted. Note in the sample below, that zeros are inserted as the value for rpelcnt and rdensty. These require values per MIL-R-28002A. Many programs that use CALS Raster data use the information in these records for correct decoding.

```
0000600   sp  sp  nl   f   i   g   i   d   :  sp   N   O   N   E  sp  sp
0000620   sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp
0001600   sp  sp  sp  sp  sp  sp  nl   r   o   r   i   e   n   t   :  sp
0001620    0   0   0   ,   0   0   0  sp  sp  sp  sp  sp  sp  sp  sp  sp
0001640   sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp
*
0002000   sp  sp  sp  sp  sp  sp  sp  nl   r   p   e   l   c   n   t   :
0002020   sp   0   0   0   0   0   0   ,   0   0   0   0   0   0  sp  sp
0002040   sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp
*
0002200   sp  sp  sp  sp  sp  sp  sp  sp  nl   r   d   e   n   s   t   y
0002220    :  sp   0   0   0   0  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp
0002240   sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp
0003200   sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  nl  sp  sp  sp
0003220   sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp  sp
```

The Raster files did not meet the specification defined in MIL-R-28002A.

7. CGM Analysis

The tape contained one CGM file. It was noted that the CALS header contained a "nl" character which caused the entire header to be offset by at least one position. The file was evaluated using ATC's *MetaCHECK* with CALS options which reported the file was not valid.

The AFCTB has several tools for viewing CGM files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of 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 and indication of CALS capability. All operations were performed using the default settings.

An attempt to view the file using ATC's *MetaVIEW* software resulted in many reported errors and nothing displayed.

The file was read into Carberry's *CADLeaf* software which reported the file was not valid.

An attempt to read the file into SPC's *Harvard Graphics 3.05* resulted in an error and indicated the file was not valid.

The file may have had the "nl" character added throughout, which made it a non valid file. The CGM file does not meet the CALS MIL-D-28003 specification.

8. Conclusions and Recommendations

The files provided by Picatinny Arsenal do not meet the CALS standards. All fixed length files had an additional "nl" character, which caused the data to be unusable. The variable length files were correct.

The SGML files did not have any reported errors and meet the CALS MIL-M-28001A specification.

The errors with the Raster images are serious. The construction of the Raster files appears to be flawed, the errors in the headers appear to be carried throughout the files, and the data required in the CALS header was missing, making the files unusable. The Raster files do not meet the specification defined in MIL-R-28002A.

The CGM file was reported as being in error. None of the tools, available in the AFCTB, could read the file. The errors appear to be caused by the additional "nl" character noted in the CALS header. The CGM file does not meet the specification defined in MIL-D-28003.

The data provided by Picatinny Arsenal does not meet the CALS MIL-STD-1840A requirements.

9. Appendix A - Tapetool Report Logs

9.1 File Set One

9.1.1 Tape Catalog

```
CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (C)

  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

Wed Sep 29 08:18:31 1993

MIL-STD-1840A File Catalog

File Set Directory: /cals/u1210/Set023

                                                                      Page:
                                                                      1

                                                 Record
                                                 Format/    Block
                                                 Selected/
File Name                File Type               Length  Length/Total
Extracted
-------------------------------------------------------------------------
---
D001                     Document Declaration    D/00256 02048/000000
Extracted
D001C001                 CGM                     F/00080 00800/000000
Extracted
D001G002                 DTD                     D/00256 02048/000000
Extracted
D001T003                 Text                    D/00256 02048/000000
Extracted

Catalog Process terminated normally.
```

9.1.2 Tape File Set Validation Log

```
CALS Test Network File Set Evaluation - Version 1.2; Release 10 (C)

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

Wed Sep 29 08:18:31 1993

MIL-STD-1840A File Set Evaluation Log

File Set: Set023

Found file: D001
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...

srcsys: Alliant Techsystems Inc., 5901 Lincoln Drive, Edina, MN  55436
srcdocid: DEP 9-1375-218-12
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19930826
dstsys: Picatinny Arsenal
dstdocid: DEP 9-1375-218-12
dstrelid: NONE
dtetrn: 19930826
dlvacc: NONE
filcnt: C1,G1,T1
ttlcls: UNCLASSIFIED
doccls: UNCLASSIFIED
doctyp: Technical Publication
docttl: NONE


Found file: D001C001
Extracting CGM Header Records...
Evaluating CGM Header Records...

srcdocid: DEP 9-1375-218-12

dstdocid: DEP 9-1375-218-12
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid CGM header
    field name dstdocid:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after CGM
    header field.
```

```
*** NOTE - Correction made in new CGM Header File.

txtfilid: W
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid CGM header
    field name txtfilid:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after CGM
    header field.
*** ERROR (MIL-STD-1840A; 5.1.4) - Value missing after CGM
    header field.
*** NOTE - The header record will be given the value NONE.
*** NOTE - Correction made in new CGM Header File.

figid: slamx
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid CGM header
    field name figid:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after CGM
    header field.
*** NOTE - Correction made in new CGM Header File.

srcgph: slamx
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid CGM header
    field name srcgph:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after CGM
    header field.
*** NOTE - Correction made in new CGM Header File.

doccls: UNCLASSIFIED
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid CGM header
    field name doccls:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after CGM
    header field.
*** NOTE - Correction made in new CGM Header File.

notes: NONE
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid CGM header
    field name notes:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** NOTE - Correction made in new CGM Header File.

12 error(s), 0 warning(s), and 13 note(s) were encountered
 in CGM File D001C001.
Saving CGM Header File: D001C001_HDR
Saving CGM Data File: D001C001_CGM
```

```
*** I/O ERROR (read_rec) - Invalid fixed record length.
    Fixed bytes read => 21, Expected => 80;
*** NOTE - The file is probably not an ANSI Type F file
    or the last record may not be complete.


Found file: D001G002
Extracting DTD Header Records...
Evaluating DTD Header Records...

srcdocid: DEP 9-1375-218-12
dstdocid: DEP 9-1375-218-12
notes: NONE

Saving DTD Header File: D001G002_HDR
Saving DTD Data File: D001G002_DTD

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

srcdocid: DEP 9-1375-218-12
dstdocid: DEP 9-1375-218-12
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.

A total of 13 error(s), 0 warning(s), and 14 note(s) were
encountered in Document D001.

A grand total of 13 error(s), 0 warning(s), and 14 note(s) were
encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.
```

9.2 File Set Two

9.2.1 Tape Catalog

```
CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (C)

  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

Wed Sep 29 08:21:02 1993

MIL-STD-1840A File Catalog

File Set Directory: /cals/u1210/Set024

                                                                    Page:
                                                                    1

                                                Record
                                                Format/    Block
                                                Selected/
File Name                File Type              Length  Length/Total
Extracted
-------------------------------------------------------------------------
--
D001                     Document Declaration   D/00256 02048/000000
Extracted
D001G001                 DTD                    D/00256 02048/000000
Extracted
D001H002                 Output Specification   D/00256 02048/000000
Extracted
D001R003                 Raster                 F/00128 02048/000000
Extracted
D001R004                 Raster                 F/00128 02048/000000
Extracted

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

D001R066                 Raster                 F/00128 02048/000000
Extracted
D001R067                 Raster                 F/00128 02048/000000
Extracted
```

```
D001R068                Raster          F/00128 02048/000000
Extracted
D001T069                Text            D/00256 02048/000000
Extracted

Catalog Process terminated normally.
```

9.2.2 Tape File Set Validation Log

```
CALS Test Network File Set Evaluation - Version 1.2; Release 10 (C)

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

Wed Sep 29 08:21:02 1993

MIL-STD-1840A File Set Evaluation Log

File Set: Set024

Found file: D001
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...

srcsys: Alliant Techsystems Inc., 5901 Lincoln Drive, Edina, MN  55436
srcdocid: DEP 9-1375-218-12
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19930924
dstsys: Picatinny Arsenal
dstdocid: DEP 9-1375-218-12
dstrelid: NONE
dtetrn: 19930924
dlvacc: NONE
filcnt: G1,H1,R66,T1
ttlcls: UNCLASSIFIED
doccls: UNCLASSIFIED
doctyp: Technical Publication
docttl: NONE

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

srcdocid: DEP 9-1375-218-12
dstdocid: DEP 9-1375-218-12
notes: NONE

Saving DTD Header File: D001G001_HDR
Saving DTD Data File: D001G001_DTD

Found file: D001H002
Extracting Output Specification Header Records...
```

```
Evaluating Output Specification Header Records...

srcdocid: DEP 9-1375-218-12
dstdocid: DEP 9-1375-218-12
notes: NONE

Saving Output Specification Header File: D001H002_HDR
Saving Output Specification Data File: D001H002_OS

Found file: D001R003
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: DEP 9-1375-218-12

dstdocid: DEP 9-1375-218-12
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name dstdocid:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after Raster
    header field.
*** NOTE - Correction made in new Raster Header File.

txtfilid: W
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name txtfilid:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after Raster
    header field.
*** ERROR (MIL-STD-1840A; 5.1.4) - Value missing after Raster
    header field.
*** NOTE - The header record will be given the value NONE.
*** NOTE - Correction made in new Raster Header File.

figid: NONE
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name figid:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after Raster
    header field.
*** NOTE - Correction made in new Raster Header File.

srcgph: NONE
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name srcgph:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after Raster
```

```
    header field.
*** NOTE - Correction made in new Raster Header File.

doccls: UNCLASSIFIED
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name doccls:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after Raster
    header field.
*** NOTE - Correction made in new Raster Header File.

rtype: 1
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name rtype:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** NOTE - Correction made in new Raster Header File.

rorient: 000,000
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name rorient:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after Raster
    header field.
*** NOTE - Correction made in new Raster Header File.

rpelcnt: 000000,000000
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name rpelcnt:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after Raster
    header field.
*** NOTE - Correction made in new Raster Header File.

rdensty: 0000
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name rdensty:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** NOTE - Correction made in new Raster Header File.

notes: NONE
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name notes:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** NOTE - Correction made in new Raster Header File.

18 error(s), 0 warning(s), and 21 note(s) were encountered
 in Raster File D001R003.
```

```
Saving Raster Header File: D001R003_HDR
Saving Raster Data File: D001R003_GR4
*** ERROR (MIL-STD-1840A; 5.2.1.6) - Stray characters were found in the
    padding area of the Raster Header Block.
*** NOTE - Padding area will be considered to be data.

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

Found file: D001R068
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: DEP 9-1375-218-12

dstdocid: DEP 9-1375-218-12
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name dstdocid:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after Raster
    header field.
*** NOTE - Correction made in new Raster Header File.

txtfilid: W
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name txtfilid:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after Raster
    header field.
*** ERROR (MIL-STD-1840A; 5.1.4) - Value missing after Raster
    header field.
*** NOTE - The header record will be given the value NONE.
*** NOTE - Correction made in new Raster Header File.

figid: NONE
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name figid:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after Raster
    header field.
*** NOTE - Correction made in new Raster Header File.

srcgph: NONE
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name srcgph:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after Raster
    header field.
```

```
*** NOTE - Correction made in new Raster Header File.

doccls: UNCLASSIFIED
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name doccls:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after Raster
    header field.
*** NOTE - Correction made in new Raster Header File.

rtype: 1
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name rtype:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** NOTE - Correction made in new Raster Header File.

rorient: 000,000
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name rorient:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after Raster
    header field.
*** NOTE - Correction made in new Raster Header File.

rpelcnt: 000000,000000
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name rpelcnt:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** ERROR (MIL-STD-1840A; 5.1.4) - Space missing after Raster
    header field.
*** NOTE - Correction made in new Raster Header File.

rdensty: 0000
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name rdensty:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** NOTE - Correction made in new Raster Header File.

notes: NONE
*** ERROR (MIL-STD-1840A; 5.1.4) - Invalid Raster header
    field name notes:  not found in column 1.
*** NOTE - It will be shifted into column 1.
*** NOTE - Correction made in new Raster Header File.

18 error(s), 0 warning(s), and 21 note(s) were encountered
 in Raster File D001R068.
Saving Raster Header File: D001R068_HDR
```

```
Saving Raster Data File: D001R068_GR4
*** ERROR (MIL-STD-1840A; 5.2.1.6) - Stray characters were found in the
    padding area of the Raster Header Block.
*** NOTE - Padding area will be considered to be data.

*** I/O ERROR (read_rec) - Invalid fixed record length.
    Fixed bytes read => 33, Expected => 128;
*** NOTE - The file is probably not an ANSI Type F file
    or the last record may not be complete.

Found file: D001T069
Extracting Text Header Records...
Evaluating Text Header Records...

srcdocid: DEP 9-1375-218-12
dstdocid: DEP 9-1375-218-12
txtfilid: W
doccls: UNCLASSIFIED
notes: NONE

Saving Text Header File: D001T069_HDR
Saving Text Data File: D001T069_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.

A total of 1318 error(s), 0 warning(s), and 1516 note(s) were
encountered in Document D001.

A grand total of 1318 error(s), 0 warning(s), and 1516 note(s) were
encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.
```

10. Appendix B - Detailed SGML Analysis

10.1 Exoterica Validator Parser

```
<!-- **Warning** in "iso-amso.ent" (entity "%ISOamso"), line 21,
     used in "9394-1.sgm", line 484:
   A general entity name has been declared more than once.
   The entity is "inodot".
   <!ENTITY inodot SDATA "[inodot]"--/imath =small i, no dot-->
             ^^^^^^

-->
<!-- **Warning** in "9394-1.sgm", line 1571:
   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 "SHORTTITLE".
-->
```

11. Appendix C - Detailed CGM Analysis

11.1 File D001C001

11.1.1 Parser Log MetaCheck

```
MetaCheck Version 2.10 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-93 CGM Technology Software
Execution Date: 10/04/93     Time:  16:29:56

Metafile Examined    : \9394-1\d001c001.

Pictures Examined    : All
Elements Examined    : All
Bytes    Examined    : All

======================== Trace Report ========================

Tracing not selected.

============= CGM Conformance Violation Report ==============

Error 2001: Element Class/ID: 2/1   Offset: 0 octets Element No. 1
Insufficient parameter data for this element.

Error 3301: Element Class/ID: 2/1   Offset: 0 octets Element No. 1
Only the BEGIN METAFILE element is allowed when the metafile is closed.

Error 2001: Element Class/ID: 2/1   Offset: 2 octets Element No. 2
Insufficient parameter data for this element.

Error 3301: Element Class/ID: 2/1   Offset: 2 octets Element No. 2
Only the BEGIN METAFILE element is allowed when the metafile is closed.

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

Error 3301: Element Class/ID: 1/4   Offset: 102 octets Element No. 15
Only the BEGIN METAFILE element is allowed when the metafile is closed.

Error 3301: Element Class/ID: 1/5   Offset: 106 octets Element No. 16
Only the BEGIN METAFILE element is allowed when the metafile is closed.

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

Error 3002: Element Class/ID: 0/1 Offset: 210 octets Element No. 28 This element is allowed in the Metafile Descriptor.

Error 1002: Element Class/ID: 6/16 Offset: 212 octets Element No. 29 Unrecognized el encountered; these opcodes are reserved for use in future versions of the standard.

Error 2004: Element Class/ID: 0/1 Offset: 214 octets Element No. 30 Required string parameter missing from this element.

<<<<< *PART OF LOG FILE REMOVED HERE* >>>>>

Error 1002: Element Class/ID: 12/64 Offset: 224 octets Element No. 35
Unrecognized element encountered; these opcodes are reserved for use in future versions of the standard.

Error 4011: Element Class/ID: 0/2 Offset: 228 octets Element No. 37
The following elements appear in this CGM and should be indicated in the METAFILE ELEMENT LIST:

INTEGER PRECISION
REAL PRECISION
INDEX PRECISION
COLOUR PRECISION
COLOUR INDEX PRECISION
MAXIMUM COLOUR INDEX
COLOUR VALUE EXTENT
METAFILE DEFAULT REPLACEMENT
FONT LIST
SCALING MODE
LINE WIDTH SPECIFICATION MODE
VDC EXTENT
VDC INTEGER PRECISION
CIRCULAR ARC CENTRE CLOSE
TEXT PRECISION

Error 4001: Element Class/ID: 0/2 Offset: 228 octets Element No. 37
Required element, METAFILE VERSION, is missing.

Error 4002: Element Class/ID: 0/2 Offset: 228 octets Element No. 37
Required element, METAFILE ELEMENT LIST, is missing.

========== CALS CGM Profile (MIL-D-28003) Report ============

Error 6509: Element Class/ID: 1/13 Offset: 162 octets Element No. 25
Invalid list parameters; each of the Font Names in the FONT LIST element must be among the Font Names allowed by the Profile.

================ Conformance Summary Report =================

```
MetaCheck Version 2.10 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-93 CGM Technology Software
Execution Date: 10/04/93     Time:  16:29:59

Name of CGM under test: \9394-1\d001c001.
Encoding              : Binary

Pictures Examined     : All
Elements Examined     : All
Bytes    Examined     : All

Conformance Summary   :  This file is not a conforming CGM.

                         Consequently, it does not meet the
                         CALS CGM Profile (MIL-D-28003).

Summary of Testing Performed and Errors Found:

          0 Pictures Tested
         37 Elements Tested
        250 Octets Tested

       13 Illegal CGM Elements                          1000 -   1999
       15 Incorrect CGM Element Lengths                 2000 -   2999
       21 CGM State Errors                              3000 -   3499
        3 Required CGM Elements Missing or Wrong        4000 -   4499
        1 CGM Parameter Values Out of Range             6000 -   6499
        0 CGM Structure Errors                          7000 -   7499
       53     ***     CGM Errors Found (total)     ***

        0 Profile State Errors                          3500 -   3999
        0 Illegal Profile Elements                      4500 -   4999
        1 Profile Parameter Values Out of Range         6500 -   6999
        0 Profile Data Limits Exceeded                  8500 -   8999
        0 Other Profile Constraints Violated            9500 -   9999
        1     *** Profile Violations Found (total) ***

       12 distinct error(s) and warning(s) reported.

================ End of Conformance Report ==================
```