



CALS TEST NETWORK

AFCTN Test Report 94-010

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92-034



Technical Publication Transfer

Using:



Texas Instruments' Data



19960822 085

MIL-D-28000A (IGES)
MIL-M-28001A (SGML)
MIL-R-28002A (Raster)
MIL-D-28003 (CGM)



Quick Short Test Report

15 June 1992



Prepared for
Electronic Systems Center

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Quick Short Test Report

15 June 1992

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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 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 Texas Instruments' interpretation and use of the CALS standards in transferring technical publication data. Texas Instruments' used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on two 9-track magnetic tapes.

2. Test Parameters

Test Plan: AFCTB 92-034

Date of
Evaluation: 15 June 1992

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

Data
Originator: Joe Bிக
Texas Instruments
Defense Systems & Electronic Group
MS 8420
2501 W. University
McKinney TX 75070

Data Description: Technical Manual Test
6 Document Declaration files
6 Document Type Definitions (DTD)
6 Initial Graphics Exchange Specification
(IGES) files
4 Text files
20 Raster files
18 Computer Graphics Metafile (CGM) files

Data Source System:

Hardware

4/60 SUN Microsystems Workstation
3/280 SUN Microsystems Server
Texas Instruments 955
SHARP Scanner Model JX-450
4/80 SUN Microsystems Workstation
Texas Instruments System 386SX

Software

Interleaf v5.3
Interleaf *CALS Workbench*
TI *Tapetool v1.0*
ArborText
Micrographx *CHARISMA v2.1*
ZeeSoft Publisher's *Paintbrush v2.0*
Inset Systems *HiJaak v2.1*
Adobe *CPSI Postscript to Raster Conversion*

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

SUN 3/280
AFCTN *Tapetool v1.2.8 UNIX*
Cheetah Gold 486
USLynx *1840A Tape Handler*
AFCTN *Tapetool v1.2.8 DOS*

MIL-D-28000 (IGES)

SUN 3/60
Rosetta Technology *Preview v3.1*
IGES Data Analysis (IDA) *IgesView v2.0*
Sun SparcStation 2
International TechneGroup Incorporated
(ITI) *IGES/Works*
Cheetah Gold 486
AUTODESK *AutoCAD 386 R11*
Cadkey *Cadkey v4.06*
IDA *IGES Parser/Verifier*

MIL-M-28001 (SGML)

Cheetah Gold 486
Exoterica *XGMLNormalizer v1.2e3.2*

MIL-R-28002 (Raster)

SUN 3/60
AFCTN *Raster Tools*
Rosetta Technology *Preview v3.1*
Cheetah
Inset Systems *HiJaak v2.02*
Software Publishing Corporation
(SPC) *Harvard Graphics v3.0*
Corel Ventura Publisher

MIL-D-28003 (CGM)

Sun 3/60

Advanced Technology Center
(ATC) CGM-View R2.0

Cheetah Gold 486

ATC MetaView R 1.12

ATC MetaCheck R 1.15

SPC Harvard Graphics v3.0

Inset Systems HiJaak v2.02

Standards Tested:

MIL-STD-1840A

MIL-D-28000A

MIL-M-28001A

MIL-R-28002A

MIL-D-28003

3. 1840A Analysis

3.1 External Packaging

The tapes arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was marked with the magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tapes were enclosed in a barrier bag as required by MIL-STD-1840A, para. 5.3. .2. Inspection of the tape reels 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 tapes.

3.2 Transmission Envelope

The 9-track tapes received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions. Two tapes were delivered to the AFCTB. The tapes contained the same files but were written using different computer systems. Tape one was written using a UNIX based system while tape two was written using a VAX based system.

3.2.1 Tape Formats

The tapes were run through the AFCTB *Tapetool v1.2.8* utility. One error was encountered while evaluating the contents of the tape labels. *Tapetool* reported use of reserved spaces in the header. When the header was checked, no printed values were noted.

*** ERROR (ANSI X3.27; 8.3.1.1) - Columns 12-24 are reserved
for future standardization and must be spaces.

Both tapes contained the same error. When further investigation was conducted, it was discovered that the AFCTN *Tapetool v1.2.8* had three minor errors. One of these errors generated this error message. The tape was in fact written correctly. The AFCTN *Tapetool* will be corrected.

3.2.2 Declaration and Header Fields

No errors were reported during the evaluation of Document Declaration file header and data header files on either tape.

4. IGES Analysis

4.1 Tape One Document One

Tape one contained six IGES files in two documents. The first document contained four IGES files and the second document contained two files. The files were evaluated using IDA's *Parser/Verifier* with CALS options set for Class I files. The reported errors were the same for all files. The required CALS header information in the Start Section was included as required by MIL-D-28000A.

The first reported error was a basic IGES caution. The verifier found zero length lines in all of the files.

*** Entity type: 110
CAUTION 2336: Zero length line at D 1273.

The next reported error relates to entity type 212. The verifier reported that the text box width is negative or zero.

*** Entity type: 212
ERROR 2279: Text box width is negative or zero at D 3847.

212	3938	1	1	0	0	0	0	10100D	3847
212	0	6	2	0				D	3848
		Box width							
vvvvv									
212,1,1,0.0D0,0.2D0,1,0.0D0,0.0D0,0,0,30.830238095238D0,-0.33D0,								3847P	3938
0.0D0,1H1;								3847P	3939

The next reported error is a CALS error in defining a subfigure entity. MIL-D-28000A Table I, Note 4 indicated that index values shall point only to other entity types within this subset. AUTODESK's AutoCAD uses this feature to create numbers and letters by using a set of lines and other entity types. While this is permitted by the ANSI IGES Standards, it is not allowed in CALS.

*** Entity type: 308

ERROR 4049: Illegal subordinate flag for CALS Class I specified at D 3781.
Subfigure name at D 3781: 'DTI2'.
Number of included entities = 252.

308	3875	1	0	0	0	0	0	201D	3781
308	0	0	22	0			DTI2	D	3782

308,0,4HDTI2,252,3783,3785,3787,3789,3791,3793,3795,3797,3799, 3781P 3875
3801,3803,3805,3807,3809,3811,3813,3815,3817,3819,3821,3823, 3781P 3876

The next reported error is with entity type 406. The parser flagged this as an error. This value was defined as 16 in MIL-D-28000 but was changed in MIL-D-28000A to 15, 16, 17, or 18. This is not an error and was reported due to an older version of IDA's parser/verifier in the AFCTB.

*** Entity type: 406

ERROR 4042: Illegal form for CALS Class I specified at D 4883.

406	4939	1	1	0	0	0	0	20000D	4883
406	0	5	1	15				D	4884

File D001Q008 contained the following reported error. A property pointer of 1, 2, or 3 is now permitted in MIL-D-28000A and therefore is not an error.

*** Entity type: 404

Drawing at D 3205 contains 1 views.

Drawing at D 3205 contains 0 annotation entities.

ERROR 4019: CALS Class I requires exactly one property pointer at D 3205.

404	3177	0	0	0	0	0	0	300D	3205
404	0	0	1	0				D	3206

404,1,3207,0.0,0.0,0,0,3,3209,3211,3213; 3205P 3177

Below are listed additional errors found in file D001Q009.

ERROR 4045: Illegal level for CALS Class I specified at D 7.

				└───┐ This must be zero					
				vvv					
100	7	1	1	4	0	0	0	0D	7
100	0	5	2	0				D	8

ERROR 4008: CALS Class I requires Z depth to be zero at D 465.

100	465	1	1	2	0	0	0	0D	465
100	0	0	3	0				D	466

	Z depth must by zero		
~~~~~			
100,-6.7016409741605D-06,17.099227608059D0,16.022815937036D0,		465P	465
17.151122351611D0,16.05935437901D0,17.092252315174D0,		465P	466
16.08589895725D0;		465P	467

ERROR 4046: Illegal line font for CALS Class I specified in D 1831.

```

                This must be 1, 2, 3, 4, or 5.
              vvvvvv 100    1887`      1   -1829`      3         0
0          0        OD 1831
100       0         7     2         0                      D   1832

```

ERROR 4046: Illegal line font for CALS Class I specified in D 4261.

```

      This must be 1, 2, 3, 4, or 5.
      vvvvv 102    4447    1    -3989    6    0
0      0      1D  4261
102      0      5      1      0      D  4262

```

*** Entity type: 124

```

ERROR 4007: CALS Class I does not allow transformation out of the Z=0 plane at
D 7431.

```

110	7523	1	1	9	0	0	0	10200D	7331
110	0	5	2	0				D	7332

110,22.590995227505D0,0.40496484969541D0,0.0D0,  
22.637793325626D0,0.40496484969541D0,0.0D0;

7331P 7523  
7331P 7524

When Rosetta Technologies' *Prepare* was used to convert the files, an error message was generated and the process stopped. The error message on all of the files was a missing terminate section. When the files were checked with a word processor, it appeared that the characters rapped at the end of a line resulting in the termination section being off four characters. All four IGES files were successfully converted, displayed and printed using AUTODESK's *AutoCAD*, Cadkey's *Cadkey*, and IDA's *IGESView*.

During the conversion using AUTODESK's *AutoCAD*, many invalid slants in the general note errors were displayed. This occurred on all files. The files all displayed and printed correctly. If the text was slanted, it was converted to a normal text mode.

No errors were generated during the conversion of the files using Cadkey's *Cadkey*. The text displayed and printed showing a slant. It was noted on the display and printed copy of file D001Q008 and D001Q010 that straight lines were present. The other CAD systems did not display these lines which were hidden. *Cadkey* does not support hidden lines.

The files were converted, displayed, and printed with no reported errors using IDA's *IGESView*.

## 4.2 Tape One Document Two

Tape one, document two contained two IGES files. The document and files are the same as AFCTB QSTR 91-067 from *ArborText*. When the files were read off the tape, the IGES files were reported as being invalid. When checking the files visually, it was noted that they contained two CALS header records. *Tapetool* removed the first header and left the second. This problem was generated during the tape generation procedure. When these files were evaluated during QSTR 91-067, no CALS MIL-D-28000 errors were reported.

srcdocid: TI test using ArborText  
dstdocid: TI to AFCTN test using ArborText  
txtfilid: W  
figid: sh60

||  
||  
|| CALS Header

srcgph: sh60.sideview

doccls: UNCLASSIFIED

notes: NONE

srcdocid: ati_cals_demodstdocid: ati_cals_demotxtfilid: Wfigid: NONEsrcgph:

sh60.sideviewdoccls: UNCLASSIFIEDnotes: NONE

11H, 1H, 27Hati_cals_demo/sh60.sideview, 25H./1840_test/d001q006.data, G 1

27HArborText Inc. - IslandDraw, 22Hdraw2iges Version 2.01, 16, 308, 15, 308, G 2

## 5. SGML Analysis

### 5.1 Tape One Document One

The Text file from tape one, document one was evaluated using Exoterica's *XGMLNormalizer*. The DTD and Text files were parsed without a reported error.

### 5.2 Tape One Document Two

Tape one, document two contained two DTDs and a Text file. These files were evaluated in QSTR 91-067. The comments from that report are included here.

The Text files from this document were evaluated using Exoterica's *XGMLNormalizer* parser. The tape had a DTD based on MIL-M-63038. Also included on the tape was the math entity subset developed by ArborText. The DTD had to be modified slightly to parse successfully using the Exoterica software. The references to the CGM, IGES and Raster content notation declarations had to be added to the basic DTD. After these notation references were added, several errors were reported in the DTD. The first of these errors was the use of NDATA IGS instead of NDATA IGES as defined in MIL-M-28001A, para. 40.1. This was changed in the DTD to reflect IGES. The second error noted was the use of TIFF. TIFF is a Raster format that does not meet MIL-R-28002A specification. Even though the files were defined as TIFF, they are in fact valid MIL-R-28002A images. No notation was included for this type of file and these lines were commented out. After completing these modifications, the DTD parsed without any reported errors.

```
<!ENTITY testligns SYSTEM "test_iges_1.drw" NDATA IGS>
```

```
<!ENTITY testlg4 SYSTEM "test_g4_1.tif" NDATA TIF>
```

```
<!ENTITY seal.dod SYSTEM "dod.tif" NDATA TIF>
```

---

```
<!ENTITY sh60.sideview SYSTEM "sh60.sideview" NDATA IGS>
<!ENTITY entities SYSTEM "entities.sub">
```

The successfully parsed DTD was then used as the baseline for the Text file D001T001. Only one error was reported with this file. The use of "entities" was flagged as an error. This external reference was included in the DTD.

```
C:\XGML\XGMLNORM.EXE --
Error on line 401 in file \9167\d001t001:
Invalid file specification (external identifier).
For the entity 'entities':
The system id is "entities.sub".
The public id is "".
```

When the DTD line addressing this external file was changed to identify the file and its path, the parser did not report any errors.

## 5.3 Tape Two

The SGML files from tape one and tape two were compared with a DOS utility. The files were found to be the same with the exception of header information.

## 6. Raster Analysis

### 6.1 Tape One Document One

Tape one, document one contained five Raster files. These files were evaluated using the AFCTN *validg4* utility. Files D001R011 and D001R012 were reported as being invalid CALS files. The error was reported on the first line of the file. The remaining files were reported as correct. From the CALS note record, it was determined that these files had been converted using Inset Systems *HiJaak*.

When the files were converted using Rosetta Technologies' *Pre-prepare*, file D001R011 converted and displayed with scan line 0 code error noted. The error was very noticeable in the resulting hard

copy. File D001R012 would not convert with a bad file error message generated. The remaining files converted, displayed, and printed without a problem.

The files were converted using Inset Systems' *HiJaak* to a PCX format and viewed on the screen. File D001R011 and 12 displayed the misplaced pixels. The files were imported into Corel's *Ventura Publisher* and printed. This print is included in the Appendix to this test report.

## 6.2 Tape One Document Two

Tape one, document two contained three Raster images. All three images were reported as invalid CALS Raster files by the AFCTN *validg4* utility. The reported errors are at the end of the files and relate to the EOF coding. Even with this problem, the files were successfully read into Rosetta Technologies' *Preview*, displayed and printed. The files were also converted to IMG format using Inset Systems' *HiJaak* and imported into Corel's *Ventura Publisher*. The resulting images are included in the Appendix to this report.

Below is the EOF coding for file D002R002. The correct EOF coding should be 000040 001000.

```
0032220 005545 107131 014213 054414 100156 145153 145455 040620
0032240 050371 001700 117017 000245 120200 147043 176650 177777
0032260 177777 177760 000000 000000 000000 000000 000000 000000
0032300 000000 000000 000000 000000 000000 000000 000000 000000
*
0032400
```

## 6.3 Tape One Document Three

Tape one document three contained two Raster images. These images were the same ones reported on in QSTR 91-067. A file compare was made of the files and they were verified as the same. The comments from that report are included below with changes made to indicate the correct file names.

Both Raster images were checked using the AFCTN *validg4* utility. The first file, BD001R006, was reported as not being a valid MIL-R-28002A file. Even though file D001R006 was reported as having an error, it was successfully converted using Rosetta Technologies' *Preview*. The image displayed on the screen and a

---

hard copy was made. It was noted on the screen and hard copy that the image appeared to be clipped. Part of the left and right side of the image appear to be missing. When the image was viewed using the AFCTN *calstb.350* Raster utility, the defined pixel and line count appeared to be present. It was noted that one of the arrow lines on the right side of the file had a slight bend in it. This was not noted in any of the other displays. This bend appears to be on line 469. The file was also converted to a IMG format using Inset Systems' *HiJaak*. The file converted without a problem. The resulting IMG file was imported into Corel's *Ventura Publisher* and a hard copy was made.

density = 200  
path length = 1120  
scan lines = 849  
bit format = MSB

error, scan length exceeds pel count  
s=469 a0=0 bstop=1121 pos=3945

file = d001r006

The second Raster file, D001R007, was reported as being a valid file by the AFCTN *validg4*. The image was displayed and printed using Rosetta Technologies' *Preview*. The image displayed without a problem using the AFCTN *calstb.350*.

The conversion using Inset Systems' *HiJaak* to a IMG format was without a reported error. Corel's *Ventura Publisher* imported and generated a hard copy without a problem.

## 6.4 Tape Two

The files on both tapes were compared using a DOS utility. The files were reported as exact duplicates with the exception of some header information. All files were run against the AFCTN *validg4* with the same results on both tapes.

---

## 7. CGM Analysis

### 7.1 Tape One Document One

Tape one, document one contained six CGM files. File D001C001, a file created using the Micrografx *Charisma* v2.1, was reported as being a valid CGM file by ATC's *MetaCheck* software with CALS extensions but not a valid MIL-D-28003 CALS CGM file. The first error was the missing metafile description string which is required in MIL-D-28003. The second error was an invalid transparency indicator. The complete error log is in the Appendix to this report. The file was read and displayed correctly using ATC's *CGMView* when a monochrome option was selected. The image is shown as black lines on a black background. A hard copy is included in the Appendix to this report. The file was imported into SPC's *Harvard Graphics* 3.0. The black lines on black background did not display. When the background color was changed the image displayed correctly.

Files D001C002 and D001C006, were created using *GEM Draw* v2.01, were reported as not meeting basic CGM requirements by ATC's *MetaCheck*. A color index which differs from the background color defined was found. Incomplete parameter data for some elements were reported. Four elements were used in the file that were not defined in the metafile element list. The file was also missing the MIL-D-28003 description statement and more than four fonts were used in the file. The file was imported and displayed using ATC's *CGMView*. A hard copy is included in the Appendix to this report. The file was imported into SPC's *Harvard Graphics* and displayed correctly. File D001C006 printed as an outline in SPC's *Harvard Graphics* and a solid black image in ATC's *CGMView*.

File D001C003, a file created using *Interleaf* v5.2, does not meet basic CGM requirements. A foreground and background color reference problem was reported along with an incomplete metafile element list. The MIL-D-28003 description statement was missing along with more than four fonts being defined and used in the file. The file was displayed and printed using ATC's *CGMView* without a reported problem. When the file was displayed in SPC's *Harvard Graphics*, the image was black with no lines.

Files D001C004 and D001C005 created using the Micrografx *Charisma* v2.1, were reported as not meeting MIL-D-28003 specification. The CALS description statement was missing along with an invalid transparency indicator. File D001C004 was displayed and printed using ATC's *CGMView* and SPC's *Harvard Graphics* without a problem. SPC's *Harvard Graphics* was unable to handle the transparency issue and generated a black image.

## 7.2 Tape One Document Two

Tape one, document two contained one CGM file. This file was Bcreated using Interleaf's software. The file was reported as not meeting basic CGM requirements due to missing elements in the metafile list. The file also did not meet MIL-D-28003 specification because of the missing CALS statement and more than four fonts were used. When the file was read into ATC's *CGMView* no errors were reported and the image displayed and printed without a problem. No Text was noted on the image. The file was also read into SPC's *Harvard Graphics* with reported errors. A clipping error was reported. The image displayed and printed without any other problems.

## 7.3 Tape One Document Three

The comments below are from QSTR 91-067 with changes made to reflect the correct file names.

The tape contained two CGM files. These files were parsed using ATC's *MetaCheck*. Both files were reported containing errors which made them invalid CGM files. Even though the parser reported both files as being valid MIL-D-28003 CGM files, the basic error in the files resulted in both files not meeting the specification.

File D001C002 was reported with one error and is shown below.

Error 4011: Element Class/ID: 0/2    Offset: 4096 octets Element No. 157  
The following elements appear in this CGM and should be indicated in the  
METAFILE ELEMENT LIST:  
    VDC INTEGER PRECISION

File D001C002 was successfully read and displayed using ATC's *CGMView* on the Sun 3/60. No error message was generated during this process. A hard copy was also made from this software package. The file was successfully imported into SPC's *Harvard Graphics 3.0* and displayed. One problem did occur during the import process. The lines on the drawing were black which required a change of background to view.

---

File D001C003 was also reported as not meeting basic CGM specification. Three errors were reported by ATC's *MetaCheck* during the parsing operation.

Bulletin 20009: Element Class/ID: 4/1    Offset: 22914 octets Element No. 1785

Warning; POLYLINE with only one distinct vertex.

Bulletin 20009: Element Class/ID: 4/1    Offset: 25396 octets Element No. 1835

Warning; POLYLINE with only one distinct vertex.

Error 4011: Element Class/ID: 0/2    Offset: 73514 octets Element No. 2720

The following elements appear in this CGM and should be indicated in the METAFILE ELEMENT LIST:

VDC INTEGER PRECISION

Even though ATC's *MetaCheck* reported the files as not meeting the basic CGM profile, ATC's *CGMView* was able to display the file without a problem. A hard copy was made and is in the Appendix section of this report. The file is part of Air Force CALS Expo '91 demonstration. The file was also successfully imported into SPC's *Harvard Graphics* without a problem.

Even though ATC's *MetaCheck* reported the CGM files as not meeting the basic CGM profile, all softwares available within the AFCTB were able to display and generate hard copies without a problem.

When the two CGM files were evaluated using XSoft's *CAPS/CALS* software, error messages were displayed. File *test1cgm* (D001C002) generated the following error message.

Herderson Software CGM to Postscript converter, version 1.04

ERROR in CGM: Invalid opcode encountered  
class/id: 0/8, offset: 123, element sequence number: 5

ERROR in CGM: Premature end of file  
class/id: 11/125, offset: 4293, element sequence number: 56

The second CGM file, *test2cgm* (D001C003) generated the following error message:

Herderson Software CGM to Postscript converter, version 1.04

ERROR in CGM: Invalid opcode encountered  
class/id: 0/8, offset: 123, element sequence number: 5

ERROR in CGM: Premature end of file  
class/id: 12/0, offset: 74763, element sequence number: 116

---

## 8. Conclusions and Recommendations

In summary, the two tapes from Texas Instruments were basically correct. The tapes could be read properly using the AFCTN Tape-tool software with only one reported error. The reported error was traced to a bug in the AFCTN Tapetool. The tapes were correct. The tapes contained the same data but were written using different hardware platforms. Tape one was written on a SUN UNIX platform while tape two was written on a VAX. Both tapes appeared to have been written using the AFCTN Tapetool utility or Texas Instruments version of this product.

The IGES files contained on the tapes had many minor errors. With the exception of the files in document two which had an additional header file, all files were converted, displayed, and printed from three CAD software packages. Rosetta Technologies' Preview had problems with the line length and an apparent wrap on the last line of the files.

The SGML documents and associated DTD parsed using two different software packages in the AFCTB. No problems were reported during these procedures. Document two parsing information was taken from QSTR 91-067 as the files were the same including the reported errors.

Several of the Raster files had errors reported by the AFCTN *validg4*. The errors reported at the start of the files were noted when the files were displayed and printed. Many of the files were incorrect coding at the end of the file.

The CGM files had many errors. Several of the files were reported as not meeting MIL-D-28003 specification. All CGM files could be displayed and printed using different software packages available in the AFCTB. The issue of transparency did cause the output to look different on the different systems.

Because the number of errors in all file types, the tapes do not meet CALS MIL-STD-1840A requirements.

## 9. Appendix A - Tapetool Report Logs

### 9.1 Tape Catalog - Tape One

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

Standards referenced:

- MIL-STD-1840A (1987) - Automated Interchange of Technical Information
- MIL-R-28003 (1988) - Digital Representation For Communication Of  
Illustration Data; CGM Application Profile
- ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes  
for Information Interchange
- ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Fri Jun 12 16:03:21 1992

MIL-STD-1840A File Catalog

File Set Directory: C:\Tapetool\SET005

Page:

1

File Name Extracted	File Type	Record Format/ Selected/ Length	Block Length/Total
--			
D001 Extracted	Document Declaration	D/00260	02048/000001
D002 Extracted	Document Declaration	D/00260	02048/000001
D003 Extracted	Document Declaration	D/00260	02048/000001
D001C001 Extracted	CGM	F/00080	00800/000006
D001C002 Extracted	CGM	F/00080	00800/000010
D001C003 Extracted	CGM	F/00080	00800/000006
D001C004 Extracted	CGM	F/00080	00800/000009
D001C005 Extracted	CGM	F/00080	00800/000016
D001C006 Extracted	CGM	F/00080	00800/000003

---

D001Q007	IGES	F/00080 02000/000394
Extracted		
D001Q008	IGES	F/00080 02000/000257
Extracted		
D001Q009	IGES	F/00080 02000/000606
Extracted		
D001Q010	IGES	F/00080 02000/000258
Extracted		
D001R011	Raster	F/00128 02048/000017
Extracted		
D001R012	Raster	F/00128 02048/000020
Extracted		
D001R013	Raster	F/00128 02048/000017
Extracted		
D001R014	Raster	F/00128 02048/000022
Extracted		
D001R015	Raster	F/00128 02048/000022
Extracted		
D002T001	Text	D/00260 02048/000019
Extracted		
D002R002	Raster	F/00128 02048/000007
Extracted		
D002C003	CGM	F/00080 00800/000003
Extracted		
D002R004	Raster	F/00128 02048/000023
Extracted		
D002R005	Raster	F/00128 02048/000018
Extracted		
D002G006	DTD	D/00260 02048/000022
Extracted		
D003T001	Text	D/00260 02048/000010
Extracted		
D003C002	CGM	F/00080 00800/000006
Extracted		
D003C003	CGM	F/00080 00800/000093
Extracted		
D003Q004	IGES	F/00080 02000/000155
Extracted		
D003Q005	IGES	F/00080 02000/000443
Extracted		
D003R006	Raster	F/00128 02048/000004
Extracted		
D003R007	Raster	F/00128 02048/000006
Extracted		
D003G008	DTD	D/00260 02048/000019
Extracted		
D003G009	DTD	D/00260 02048/000003
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

Fri Jun 12 15:59:31 1992

ANSI Tape Import Log

Rewinding tape to load point...

VOL1TEST01                      TI-Tapetool

4

Label Identifier: VOL1  
Volume Identifier: TEST01  
Volume Accessibility:  
Owner Identifier:  
Label Standard Version: 4

*** ERROR (ANSI X3.27; 8.3.1.1) - Columns 12-24 are reserved  
for future standardization and must be spaces.

HDR1D001                      TEST0100010001000000 92150 00000 000000TI-Tapetool

Label Identifier: HDR1  
File Identifier: D001  
File Set Identifier: TEST01  
File Section Number: 0001  
File Sequence Number: 0001  
Generation Number: 0000  
Generation Version Number: 00  
Creation Date: 92150  
Expiration Date: 00000  
File Accessibility:  
Block Count: 000000  
Implementation Identifier: TI-Tapetool

HDR2D0204800260

00

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

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

<<<<< REMANDER OF LOG REMOVED HERE >>>>>

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

Rewinding tape to load point...

Tape Import Process terminated with 1 error(s), 0 warning(s),  
and 0 note(s).

---

## 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  
MIL-R-28002 (1989) - Raster Graphics Representation In Binary  
Format, Requirements For

Fri Jun 12 16:03:22 1992

MIL-STD-1840A File Set Evaluation Log

File Set: SET005

Found file: D001

srcsys: Texas Instruments P.O.Box 869305 Plano, TX 75086  
srcdocid: Test data from TI SUN  
srcrelid: NONE  
chglvl: ORIGINAL  
dteisu: 19920520  
dstsys: Air Force CALS Test Network HQ AFLC LMSC/SJT Wright-Patterson AFB, OH  
45433-5001  
dstdocid: Test data from TI SUN to AFCTN  
dstrelid: NONE  
dtetrn: 19920529  
dlvacc: NONE  
filcnt: C6,Q4,R5  
ttlcls: UNCLASSIFIED  
doccls: UNCLASSIFIED  
doctyp: Product Data  
docttl: NONE

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

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.

Found file: D002

srcsys: Texas Instruments P.O.Box 869305 Plano, TX 75086

---

srcdocid: TI test using Interleaf  
srcrelid: NONE  
chglvl: ORIGINAL  
dteis: 19920528  
dstsys: Air Force CALS Test Network HQ AFLC LMSC/SJT Wright-Patterson AFB, OH  
45433-5001  
dstdocid: TI test to AFCTN using Interleaf  
dstrelid: NONE  
dtetrm: 19920529  
dlvacc: NONE  
filcnt: C1,G1,R3,T1  
ttlcls: UNCLASSIFIED  
doccls: UNCLASSIFIED  
doctyp: Technical Publication  
docttl: NONE

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

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 D002.

Found file: D003

srcsys: Texas Instruments P.O.Box 869305 Plano, TX 75086  
srcdocid: TI test using ArborText  
srcrelid: NONE  
chglvl: ORIGINAL  
dteis: 19920528  
dstsys: Air Force CALS Test Network HQ AFLC LMSC/SJT Wright-Patterson AFB, OH  
45433-5001  
dstdocid: TI to AFCTN test using ArborText  
dstrelid: NONE  
dtetrm: 19920529  
dlvacc: AFCTN TEST OF ArborText  
filcnt: C2,G2,Q2,R2,T1  
ttlcls: UNCLASSIFIED  
doccls: UNCLASSIFIED  
doctyp: Technical Publication  
docttl: NONE

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

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 D003.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

---

## 10. Appendix B - IGES Evaluation Logs

### 10.1 D001Q007

#### 10.1.1 Parser Log

```
*** IGES DATA FILE PARSING ***
***      AUGUST 1991      ***
***   IGES Data Analysis   ***
***   (708) 449-3430      ***
```

Input file is \Tapetool\set005\d001\d001q007.igs

Checking conformance to CALS Class I

Today is June 15, 1992 11:09 AM

*** Count of Records Per Section in Data File ***

Section	Records
Start	8
Global	3
Directory	4888 ( 2444 Entities)
Parameter	4941
Terminate	1

*** Start Section From Input File:

```
CONFORMANCE: This IGES file conforms to the MIL-D-28000A Class I      S
1
      subset (Technical Illustrations) dated December 19, 1990.      S
2
                                                                    S
                                                                    3
Illustration number or identifier:      S
4
                                                                    S
                                                                    5
IGES/Works Version 1.20 Subset Generator      S
6
IGES file generated from an AutoCAD drawing by the IGES      S
7
translator from AUTODESK, Inc., translator version IGESOUT-3.04.      S
8
```

*** Global Section From Input File:

---

,,3HSH5,13Hsh5_cals1.igs,14HAutoCAD-R11 c2,12HIGESOUT-3.04,32,38,6,308, G  
1  
15,3HSH5,1.0D0,1,4HINCH,32767,32.767D0,13H920401.160858,0.000001D0, G  
2  
32.94D0,10HPeter Nies,18H Texas Instruments,6,, G  
3

*** File and Product Name Information ***

File name from sender = 'sh5_cals1.igs'  
File creation Date.Time = '920401.160858'  
* Model change Date.Time = ''  
Author = 'Peter Nies'  
Department = ' Texas Instruments'  
Product name from sender = 'SH5'  
Destination product name = 'SH5'

*** Parameter Delimiters ***

* Delimiter = ','  
* Terminator = ';'

*** Originating System Data ***

System ID = 'AutoCAD-R11 c2'  
Preprocessor version = 'IGESOUT-3.04'  
Specification version = 6 (IGES 4.0)

*** Precision Levels ***

Integer bits = 32  
Floating point - Exponent = 38 Mantissa = 6  
Double precision - Exponent = 308 Mantissa = 15

*** Global Model Data ***

Model scale = 1.0000E+000  
Unit flag = 1  
Units = 'INCH'  
Line weights = 32767  
Maximum line thickness = 3.276700E+001  
Minimum line thickness = 1.000000E-003  
Granularity = 1.000000E-006  
Maximum coordinate = 3.294000E+001

* Drafting standard applicable to original data is not specified.

** 4 defaulted Global values.  
(*) Indicates a defaulted value.

*****  
*** Entity Parsing Messages ***  
*****

** 4886 defaulted Parameter data values.

*** Message Summary ***

*** Error Summary ***

0 fatal errors  
0 severe errors  
0 errors  
0 warnings  
0 cautions  
0 nitpicks  
0 notes

*** Completed Parsing of \Tapetool\set005\d001\d001q007.igs ***

---

## 10.1.2 Parser/Verifier Log

*** IGES DATA FILE ANALYSIS ***  
*** AUGUST 1991 ***  
*** IGES Data Analysis ***  
*** (708) 449-3430 ***

Input file is \Tapetool\set005\d001\d001q007.igs

Checking for conformance to CALS Class I

Today is June 15, 1992 11:20 AM

*** File and Product Name Information ***

File name from sender = 'sh5_cals1.igs'  
File creation Date.Time = '920401.160858'  
Model change Date.Time = ''  
Author = 'Peter Nies'  
Department = 'Texas Instruments'  
Product name from sender = 'SH5'  
Destination product name = 'SH5'

*** Parameter Delimiters ***

Delimiter = ','  
Terminator = ';'

*** Originating System Data ***

System ID = 'AutoCAD-R11 c2'  
Preprocessor version = 'IGESOUT-3.04'  
Specification version = 6 (IGES 4.0)

*** Precision levels ***

Integer bits = 32  
Floating point - Exponent = 38 Mantissa = 6  
Double precision - Exponent = 308 Mantissa = 15

*** Global Model Data ***

Model scale = 1.0000E+000  
Unit flag = 1  
Units = 'INCH'  
Line weights = 32767  
Maximum line thickness = 3.276700E+001  
Minimum line thickness = 1.000000E-003  
Granularity = 1.000000E-006  
Maximum coordinate = 3.294000E+001

Drafting standard applicable to original data is not specified.

*** Status Flag Summary ***

Blank status:	Visible	2347
	Blanked	97
Independence:	Independent	889
	Physically Subordinate	1552
	Logically Subordinate	3
	Totally Subordinate	0
Entity use:	Geometry	1707
	Annotation	287
	Definition	449
	Other	1
	Logical/Positional	0
	2D parametric	0
	Not Specified	0
Hierarchy:	Structure DE applies	2372
	Subordinate DE applies	72
	Hierarchy property applies	0
	Not Specified	0

*** Entity Occurrence Counts ***

Entity	Form	Level	Count	Type
-----	-----	-----	-----	-----
100	0	0	367	Circular arc
102	0	0	38	Composite curve
106	11	0	29	Copious data - Piecewise planar, linear string(2D linear path)
106	63	0	12	Simple closed planar curve
110	0	0	1694	Line
124	0	0	3	Transformation matrix
212	0	0	286	General note
308	0	0	5	Subfigure definition
404	0	0	1	Drawing
406	15	0	1	Property - Name
406	16	0	1	Property - Drawing size
406	17	0	1	Property - Drawing units
408	0	0	5	Single subfigure instance
410	0	0	1	View - Orthographic parallel

*** Entity Count by Level ***

Level Count  
0 2444

*** Labeling Information ***

0% of the entities are labeled.

Unlabeled 2439

Label	Count	Label	Count	Label	Count
DTI2	1	MARK	1	ARROW	1
TID2	1	PL	1		

*** Line Fonts Used in Data ***

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
367	38	-	41	-	1662	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	8	-	-	Phantom
-	-	-	-	-	24	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined
116	118	120	122	124	125	126	128	
-	-	-	-	3	-	-	-	Undefined
-	-	-	-	-	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined
130	132	134	136	138	140	142	144	
-	-	-	-	-	-	-	-	Undefined
-	-	-	-	-	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

*** Line Widths Used in Data ***

Weight	Count	Width
--------	-------	-------

---

Defaulted	2421	(0.0010)
29	15	(0.0290)
24	8	(0.0240)

*** Colors Used in Data ***

Defaulted	1399
Red	185
Green	12
Blue	23
Yellow	777
Magenta	47
Cyan	1

*****  
***** ENTITY ANALYSIS *****  
*****

*** Entity type: 100

*** Entity type: 102

*** Entity type: 106

*** Entity type: 110

CAUTION 2336: Zero length line at D 1273.  
CAUTION 2336: Zero length line at D 1275.  
CAUTION 2336: Zero length line at D 1277.  
CAUTION 2336: Zero length line at D 1279.  
CAUTION 2336: Zero length line at D 3981.  
CAUTION 2336: Zero length line at D 4511.

-- 1694 lines averaging 5.441392E-001 units --

*** Entity type: 124

3 transformation matrices, 3 non-zero translations.

NOTE 2341: 3 matrices contain translation information.

*** Entity type: 212

ERROR 2279: Text box width is negative or zero at D 3847.  
ERROR 2279: Text box width is negative or zero at D 3867.  
ERROR 2279: Text box width is negative or zero at D 4377.

---

ERROR 2279: Text box width is negative or zero at D 4397.  
286 Text strings in data file.  
Average Text aspect ratio in file is 0.8231902.  
Minimum Text aspect ratio in file is 0.0000000.  
Maximum Text aspect ratio in file is 1.4615385.

FONTS USED IN FILE

FONT	COUNT	NAME
1	286	Default ASCII Style

*** Entity type: 308

ERROR 4049: Illegal subordinate flag for CALS Class I specified at D 3781.  
Subfigure name at D 3781: 'DTI2'.  
Number of included entities = 252.

ERROR 4049: Illegal subordinate flag for CALS Class I specified at D 4289.  
Subfigure name at D 4289: 'MARK'.  
Number of included entities = 8.

ERROR 4049: Illegal subordinate flag for CALS Class I specified at D 4307.  
Subfigure name at D 4307: 'ARROW'.  
Number of included entities = 1.

ERROR 4049: Illegal subordinate flag for CALS Class I specified at D 4311.  
Subfigure name at D 4311: 'TID2'.  
Number of included entities = 252.

ERROR 4049: Illegal subordinate flag for CALS Class I specified at D 4819.  
Subfigure name at D 4819: 'PL'.  
Number of included entities = 21.

*** Entity type: 404

Drawing at D 4879 contains 1 views.  
NITPICK 2289: View at D 4881 referenced by drawing at D 4879 is not  
Logically subordinate.  
Drawing at D 4879 contains 0 annotation entities.  
ERROR 4019: CALS Class I requires exactly one property pointer at D 4879.

*** Entity type: 406

ERROR 4042: Illegal form for CALS Class I specified at D 4883.  
ERROR 4042: Illegal form for CALS Class I specified at D 4885.

*** Entity type: 408

Subfigure instance at D 4863 references subfigure at D 4289.  
Subfigure instance at D 4867 references subfigure at D 4307.  
Subfigure instance at D 4871 references subfigure at D 4307.  
Subfigure instance at D 4875 references subfigure at D 4307.  
Subfigure instance at D 4877 references subfigure at D 4311.

*** Entity type: 410

Scale of view at D 4881 is 1.000000E+000.  
Orthographic View entity at D 4881 has 0 clipping planes specified.  
XMIN = Not Set XMAX = Not Set  
YMIN = Not Set YMAX = Not Set  
ZMIN = Not Set ZMAX = Not Set

*** Message Summary ***

2011: 1 Invalid subordinate relationships.  
2012: 4 Inconsistent data for entity definition.  
2015: 6 Mathematically incorrect definitions.  
4000: 6 Miscellaneous CALS messages  
4019: 2 Entities with illegal form

*** Error Summary ***

0 fatal errors  
0 severe errors  
12 errors  
0 warnings  
6 cautions  
1 nitpicks  
1 notes

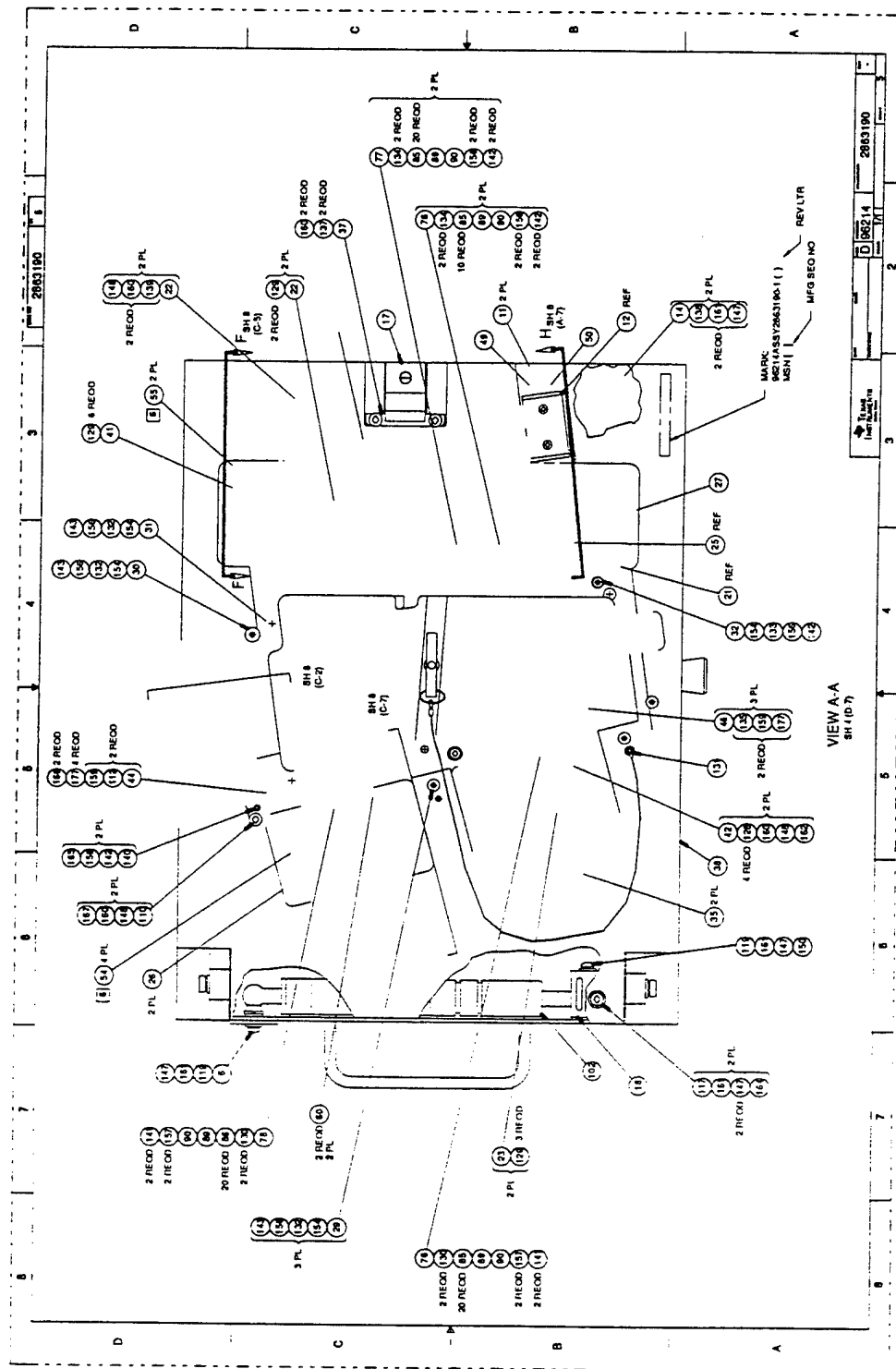
*** End of Analysis of \Tapetool\set005\d001\d001q007.igs ***

**VIEW A-A**  
**SH 4 (B-7)**

Part No.	Qty	Description
1	1	SEAT
2	1	SEAT
3	1	SEAT
4	1	SEAT
5	1	SEAT
6	1	SEAT
7	1	SEAT
8	1	SEAT
9	1	SEAT
10	1	SEAT
11	1	SEAT
12	1	SEAT
13	1	SEAT
14	1	SEAT
15	1	SEAT
16	1	SEAT
17	1	SEAT
18	1	SEAT
19	1	SEAT
20	1	SEAT
21	1	SEAT
22	1	SEAT
23	1	SEAT
24	1	SEAT
25	1	SEAT
26	1	SEAT
27	1	SEAT
28	1	SEAT
29	1	SEAT
30	1	SEAT
31	1	SEAT
32	1	SEAT
33	1	SEAT
34	1	SEAT
35	1	SEAT
36	1	SEAT
37	1	SEAT
38	1	SEAT
39	1	SEAT
40	1	SEAT
41	1	SEAT
42	1	SEAT
43	1	SEAT
44	1	SEAT
45	1	SEAT
46	1	SEAT
47	1	SEAT
48	1	SEAT
49	1	SEAT
50	1	SEAT
51	1	SEAT
52	1	SEAT
53	1	SEAT
54	1	SEAT
55	1	SEAT
56	1	SEAT
57	1	SEAT
58	1	SEAT
59	1	SEAT
60	1	SEAT
61	1	SEAT
62	1	SEAT
63	1	SEAT
64	1	SEAT
65	1	SEAT
66	1	SEAT
67	1	SEAT
68	1	SEAT
69	1	SEAT
70	1	SEAT
71	1	SEAT
72	1	SEAT
73	1	SEAT
74	1	SEAT
75	1	SEAT
76	1	SEAT
77	1	SEAT
78	1	SEAT
79	1	SEAT
80	1	SEAT
81	1	SEAT
82	1	SEAT
83	1	SEAT
84	1	SEAT
85	1	SEAT
86	1	SEAT
87	1	SEAT
88	1	SEAT
89	1	SEAT
90	1	SEAT
91	1	SEAT
92	1	SEAT
93	1	SEAT
94	1	SEAT
95	1	SEAT
96	1	SEAT
97	1	SEAT
98	1	SEAT
99	1	SEAT
100	1	SEAT

Technical drawing of a mechanical assembly, labeled "VIEW A-A" and "DWG 100-100". The drawing shows a cross-section of a complex machine with various components labeled with numbers and letters. The drawing is oriented vertically on the page.

## 10.1.5 IGESView Hard Copy



---

## 10.2 D001Q008

### 10.2.1 Parser Log

*** IGES DATA FILE PARSING ***  
*** AUGUST 1991 ***  
*** IGES Data Analysis ***  
*** (708) 449-3430 ***

Input file is \Tapetool\set005\d001\d001q008.igs

Checking conformance to CALS Class I

Today is June 15, 1992 11:02 AM

*** Count of Records Per Section in Data File ***

Section	Records
Start	8
Global	3
Directory	3214 ( 1607 Entities)
Parameter	3181
Terminate	1

*** Start Section From Input File:

CONFORMANCE: This IGES file conforms to the MIL-D-28000A Class I S  
1  
subset (Technical Illustrations) dated December 19, 1990. S  
2  
S  
3  
Illustration number or identifier: S  
4  
S  
5  
IGES/Works Version 1.20 Subset Generator S  
6  
IGES file generated from an AutoCAD drawing by the IGES S  
7  
translator from AUTODESK, Inc., translator version IGESOUT-3.04. S  
8

*** Global Section From Input File:

---

,,3HSH6,13Hsh6_calsl.igs,14HAutoCAD-R11 c2,12HIGESOUT-3.04,32,38,6,308, G  
1  
15,3HSH6,1.0D0,1,4HINCH,32767,32.767D0,13H920401.161150,0.000001D0, G  
2  
32.94D0,10HPeter Nies,18H Texas Instruments,6,, G  
3

*** File and Product Name Information ***

File name from sender = 'sh6_calsl.igs'  
File creation Date.Time = '920401.161150'  
* Model change Date.Time = ''  
Author = 'Peter Nies'  
Department = ' Texas Instruments'  
Product name from sender = 'SH6'  
Destination product name = 'SH6'

*** Parameter Delimiters ***

* Delimiter = ','  
* Terminator = ';'

*** Originating System Data ***

System ID = 'AutoCAD-R11 c2'  
Preprocessor version = 'IGESOUT-3.04'  
Specification version = 6 (IGES 4.0)

*** Precision Levels ***

Integer bits = 32  
Floating point - Exponent = 38 Mantissa = 6  
Double precision - Exponent = 308 Mantissa = 15

*** Global Model Data ***

Model scale = 1.0000E+000  
Unit flag = 1  
Units = 'INCH'  
Line weights = 32767  
Maximum line thickness = 3.276700E+001  
Minimum line thickness = 1.000000E-003  
Granularity = 1.000000E-006  
Maximum coordinate = 3.294000E+001

- * Drafting standard applicable to original data is not specified.  
** 4 defaulted Global values.  
(*) Indicates a defaulted value.

*****  
*** Entity Parsing Messages ***  
*****

** 3212 defaulted Parameter data values.

*** Message Summary ***

*** Error Summary ***

0 fatal errors  
0 severe errors  
0 errors  
0 warnings  
0 cautions  
0 nitpicks  
0 notes

*** Completed Parsing of \Tapetool\set005\d001\d001q008.igs ***

---

## 10.2.2 Parser/Verifier Log

```
*** IGES DATA FILE ANALYSIS ***
***      AUGUST 1991      ***
***   IGES Data Analysis   ***
***   (708) 449-3430      ***
```

Input file is \Tapetool\set005\d001\d001q008.igs

Checking for conformance to CALS Class I

Today is June 15, 1992 11:04 AM

*** File and Product Name Information ***

```
File name from sender    = 'sh6_cals1.igs'
File creation Date.Time  = '920401.161150'
Model change Date.Time   = ''
Author                   = 'Peter Nies'
Department               = ' Texas Instruments'
Product name from sender = 'SH6'
Destination product name = 'SH6'
```

*** Parameter Delimiters ***

```
Delimiter = ','
Terminator = ';' 
```

*** Originating System Data ***

```
System ID          = 'AutoCAD-R11 c2'
Preprocessor version = 'IGESOUT-3.04'
Specification version = 6 (IGES 4.0)
```

*** Precision levels ***

```
Integer bits = 32
Floating point - Exponent = 38  Mantissa = 6
Double precision - Exponent = 308  Mantissa = 15
```

*** Global Model Data ***

```
Model scale          = 1.0000E+000
Unit flag            = 1
Units                = 'INCH'
Line weights         = 32767
Maximum line thickness = 3.276700E+001
Minimum line thickness = 1.000000E-003
Granularity          = 1.000000E-006
Maximum coordinate    = 3.294000E+001
```

Drafting standard applicable to original data is not specified.

*** Status Flag Summary ***

Blank status:	Visible	1568
	Blanked	39
Independence:	Independent	822
	Physically Subordinate	782
	Logically Subordinate	3
	Totally Subordinate	0
Entity use:	Geometry	1241
	Annotation	150
	Definition	215
	Other	1
	Logical/Positional	0
	2D parametric	0
	Not Specified	0
Hierarchy:	Structure DE applies	1559
	Subordinate DE applies	48
	Hierarchy property applies	0
	Not Specified	0

*** Entity Occurrence Counts ***

Entity	Form	Level	Count	Type
-----	----	-----	-----	----
100	0	0	305	Circular arc
102	0	0	46	Composite curve
106	63	0	5	Simple closed planar curve
110	0	0	1090	Line
124	0	0	2	Transformation matrix
212	0	0	149	General note
308	0	0	2	Subfigure definition
404	0	0	1	Drawing
406	15	0	1	Property - Name
406	16	0	1	Property - Drawing size
406	17	0	1	Property - Drawing units
408	0	0	3	Single subfigure instance
410	0	0	1	View - Orthographic parallel

*** Entity Count by Level ***

Level	Count
0	1607

*** Labeling Information ***

0% of the entities are labeled.

Unlabeled 1605

Label	Count	Label	Count
TID2	1	ARROW	1

*** Line Fonts Used in Data ***

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
305	46	-	5	-	1086	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	4	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

116	118	120	122	124	125	126	128	
-	-	-	-	2	-	-	-	Undefined
-	-	-	-	-	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

130	132	134	136	138	140	142	144	
-	-	-	-	-	-	-	-	Undefined
-	-	-	-	-	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

*** Line Widths Used in Data ***

Weight	Count	Width
Defaulted	1591	(0.0010)
29	16	(0.0290)

---

*** Colors Used in Data ***

Defaulted	1112
Green	12
Blue	8
Yellow	475

*****  
***** ENTITY ANALYSIS *****  
*****

*** Entity type: 100

*** Entity type: 102

*** Entity type: 106

*** Entity type: 110

CAUTION 2336: Zero length line at D 2883.  
-- 1090 lines averaging 7.495628E-001 units --

*** Entity type: 124

2 transformation matrices, 2 non-zero translations.  
NOTE 2341: 2 matrices contain translation information.

*** Entity type: 212

149 Text strings in data file.  
Average Text aspect ratio in file is 0.8427873.  
Minimum Text aspect ratio in file is 0.2976190.  
Maximum Text aspect ratio in file is 1.4358974.

FONTS USED IN FILE

FONT	COUNT	NAME
1	149	Default ASCII Style

*** Entity type: 308

ERROR 4049: Illegal subordinate flag for CALS Class I specified at D 2683.  
Subfigure name at D 2683: 'TID2'.  
Number of included entities = 252.  
ERROR 4049: Illegal subordinate flag for CALS Class I specified at D 3191.  
Subfigure name at D 3191: 'ARROW'.  
Number of included entities = 1.

---

*** Entity type: 404

Drawing at D 3205 contains 1 views.

NITPICK 2289: View at D 3207 referenced by drawing at D 3205 is not Logically subordinate.

Drawing at D 3205 contains 0 annotation entities.

ERROR 4019: CALS Class I requires exactly one property pointer at D 3205.

*** Entity type: 406

ERROR 4042: Illegal form for CALS Class I specified at D 3209.

ERROR 4042: Illegal form for CALS Class I specified at D 3211.

*** Entity type: 408

Subfigure instance at D 3195 references subfigure at D 2683.

Subfigure instance at D 3199 references subfigure at D 3191.

Subfigure instance at D 3203 references subfigure at D 3191.

*** Entity type: 410

Scale of view at D 3207 is 1.000000E+000.

Orthographic View entity at D 3207 has 0 clipping planes specified.

XMIN = Not Set XMAX = Not Set

YMIN = Not Set YMAX = Not Set

ZMIN = Not Set ZMAX = Not Set

*** Message Summary ***

2011: 1 Invalid subordinate relationships.

2015: 1 Mathematically incorrect definitions.

4000: 3 Miscellaneous CALS messages

4019: 2 Entities with illegal form

*** Error Summary ***

0 fatal errors

0 severe errors

5 errors

0 warnings

1 cautions

1 nitpicks

1 notes

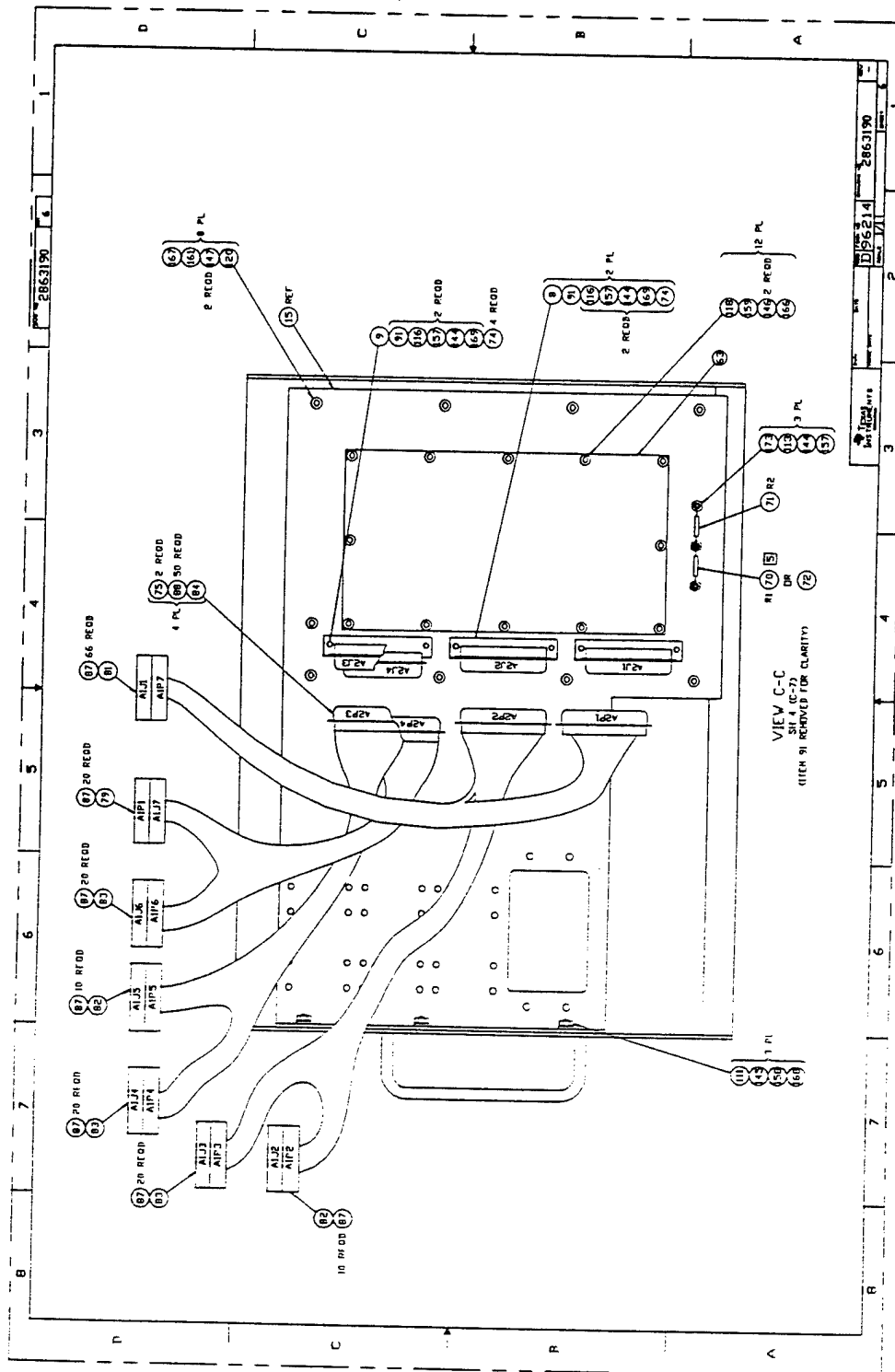
*** End of Analysis of \Tapetool\set005\d001\d001q008.igs ***

### 10.2.3 Prepare Error Log

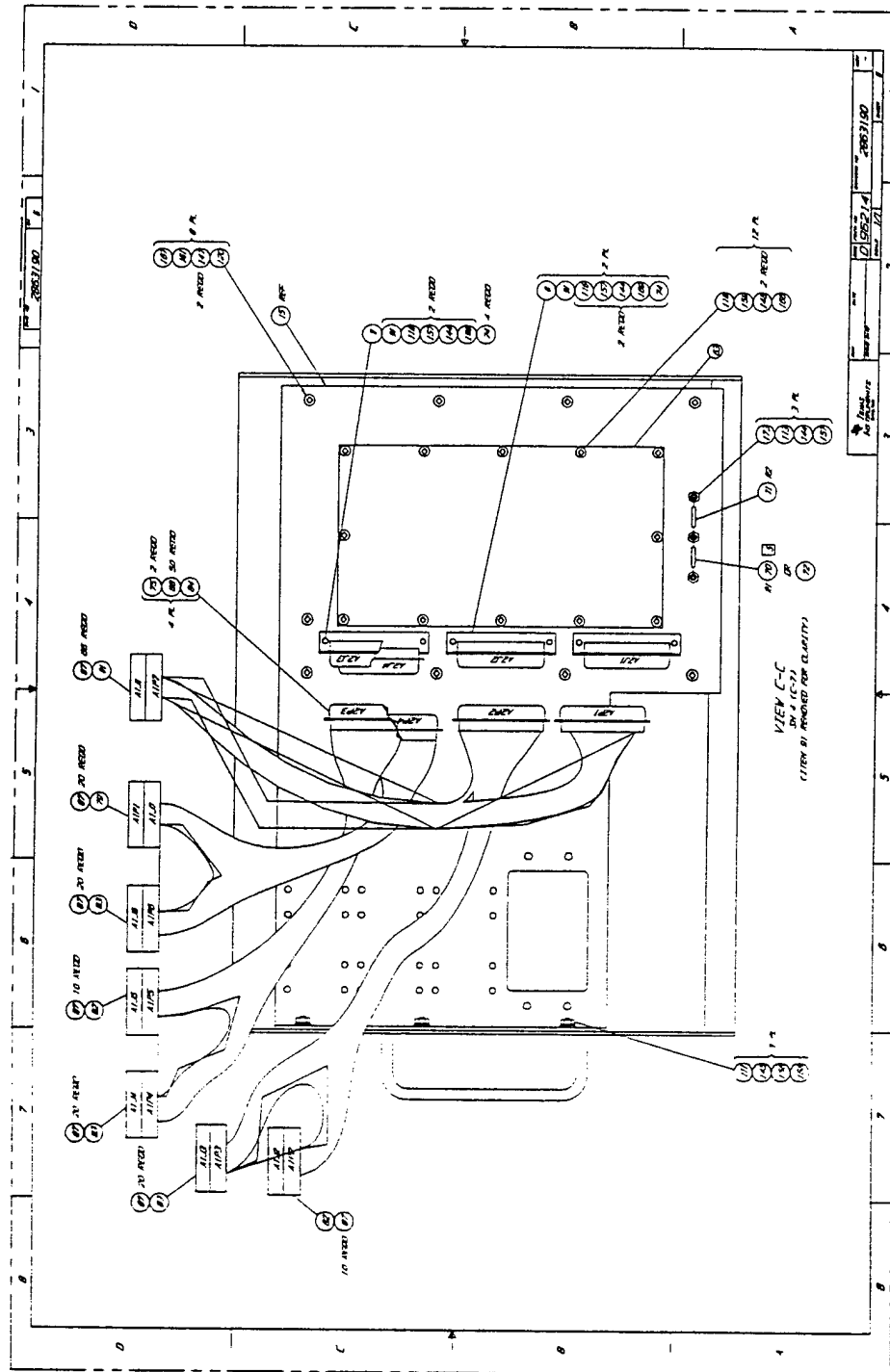
ERROR REPORT FOR FILE D001Q008_IGS

>> CRITICAL ERROR: Cannot locate terminate section in file D001Q008_IGS  
: Terminate processing.  
-----

## 10.2.4 AutoCAD R11 Hard Copy



## 10.2.5 Cadkey V4.06 Hard Copy





## 10.3 D001Q009

### 10.3.1 Parser Log

*** IGES DATA FILE PARSING ***  
*** AUGUST 1991 ***  
*** IGES Data Analysis ***  
*** (708) 449-3430 ***

Input file is \Tapetool\set005\d001\d001q009.igs

Checking conformance to CALS Class I

Today is June 15, 1992 11:02 AM

*** Count of Records Per Section in Data File ***

Section	Records
Start	22
Global	3
Directory	7466 ( 3733 Entities)
Parameter	7642
Terminate	1

*** Start Section From Input File:

CONFORMANCE: This IGES file conforms to the MIL-D-28000A Class II	S
1	
subset (Engineering Drawings) dated December 19, 1990.	S
2	
	S
	3
DOD-STD-100 and MIL-T-31000 part and drawing identification:	S
4	
	S
	5
Revision letters:	S
6	
	S
	7
Performing organization:	S
8	
	S
	9
Date of the ASME Y14.26M file pre-processing:	S
10	

---

	S	
	11	
Contract Number:	S	
12		
	S	
	13	
Intended drawing size letter:	S	
14		
	S	
	15	
Number of drawing sheets in the file:	S	
16		
	S	
	17	
Data organization method with contents of each level:	S	
18		
	S	
	19	
IGES/Works Version 1.20 Subset Generator	S	
20		
IGES file generated from an AutoCAD drawing by the IGES	S	
21		
translator from AUTODESK, Inc., translator version IGESOUT-3.04.	S	
22		
*** Global Section From Input File:		
,,3HSH5,13Hsh5_cals2.igs,14HAutoCAD-R11 c2,12HIGESOUT-3.04,32,38,6,308, G		
1		
15,3HSH5,1.0D0,1,4HINCH,32767,32.767D0,13H920401.160858,0.000001D0,	G	
2		
32.94D0,10HPeter Nies,18H Texas Instruments,6,;	G	
3		
*** File and Product Name Information ***		
File name from sender	= 'sh5_cals2.igs'	
File creation Date.Time	= '920401.160858'	
* Model change Date.Time	= ''	
Author	= 'Peter Nies'	
Department	= ' Texas Instruments'	
Product name from sender	= 'SH5'	
Destination product name	= 'SH5'	
*** Parameter Delimiters ***		
* Delimiter	= ','	
* Terminator	= ';'	
*** Originating System Data ***		

---

---

System ID = 'AutoCAD-R11 c2'  
Preprocessor version = 'IGESOUT-3.04'  
Specification version = 6 (IGES 4.0)

*** Precision Levels ***

Integer bits = 32  
Floating point - Exponent = 38 Mantissa = 6  
Double precision - Exponent = 308 Mantissa = 15

*** Global Model Data ***

Model scale = 1.0000E+000  
Unit flag = 1  
Units = 'INCH'  
Line weights = 32767  
Maximum line thickness = 3.276700E+001  
Minimum line thickness = 1.000000E-003  
Granularity = 1.000000E-006  
Maximum coordinate = 3.294000E+001

* Drafting standard applicable to original data is not specified.

** 4 defaulted Global values.  
(* ) Indicates a defaulted value.

*****  
*** Entity Parsing Messages ***  
*****

** 7464 defaulted Parameter data values.

*** Message Summary ***

*** Error Summary ***

0 fatal errors  
0 severe errors  
0 errors  
0 warnings  
0 cautions  
0 nitpicks  
0 notes

*** Completed Parsing of \Tapetool\set005\d001\d001q009.igs ***

---

## 10.3.2 Parser/Verifier Log

*** IGES DATA FILE ANALYSIS ***  
*** AUGUST 1991 ***  
*** IGES Data Analysis ***  
*** (708) 449-3430 ***

Input file is \Tapetool\set005\d001\d001q009.igs

Checking for conformance to CALS Class I

Today is June 15, 1992 11:05 AM

*** File and Product Name Information ***

File name from sender = 'sh5_cals2.igs'  
File creation Date.Time = '920401.160858'  
Model change Date.Time = ''  
Author = 'Peter Nies'  
Department = 'Texas Instruments'  
Product name from sender = 'SH5'  
Destination product name = 'SH5'

*** Parameter Delimiters ***

Delimiter = ','  
Terminator = ';'

*** Originating System Data ***

System ID = 'AutoCAD-R11 c2'  
Preprocessor version = 'IGESOUT-3.04'  
Specification version = 6 (IGES 4.0)

*** Precision levels ***

Integer bits = 32  
Floating point - Exponent = 38 Mantissa = 6  
Double precision - Exponent = 308 Mantissa = 15

*** Global Model Data ***

Model scale = 1.0000E+000  
Unit flag = 1  
Units = 'INCH'  
Line weights = 32767  
Maximum line thickness = 3.276700E+001  
Minimum line thickness = 1.000000E-003  
Granularity = 1.000000E-006  
Maximum coordinate = 3.294000E+001

Drafting standard applicable to original data is not specified.

*** Status Flag Summary ***

Blank status:	Visible	3636
	Blanked	97
Independence:	Independent	2084
	Physically Subordinate	1646
	Logically Subordinate	3
	Totally Subordinate	0
Entity use:	Geometry	2988
	Annotation	293
	Definition	451
	Other	1
	Logical/Positional	0
	2D parametric	0
	Not Specified	0
Hierarchy:	Structure DE applies	3661
	Subordinate DE applies	72
	Hierarchy property applies	0
	Not Specified	0

*** Entity Occurrence Counts ***

Entity	Form	Level	Count	Type
-----	----	-----	-----	-----
100	0	2	339	Circular arc
100	0	3	1	
100	0	4	117	
100	0	6	64	
100	0	8	25	
100	0	9	25	Composite curve
102	0	2	19	
102	0	4	40	
102	0	6	6	
102	0	8	1	
102	0	9	1	Simple closed planar curve
106	63	0	1	
106	63	4	3	
106	63	8	8	Line
110	0	2	2218	
110	0	4	94	
110	0	5	24	
110	0	6	56	
110	0	8	238	

---

110	0	9	131	
124	0	0	8	Transformation matrix
212	0	6	204	General note
212	0	7	6	
212	0	8	64	
212	0	9	18	
304	2	0	2	Line font definition - repeating pattern
308	0	0	5	Subfigure definition
404	0	0	1	Drawing
406	15	0	1	Property - Name
406	16	0	1	Property - Drawing size
406	17	0	1	Property - Drawing units
408	0	2	1	Single subfigure instance
408	0	6	9	
410	0	0	1	View - Orthographic parallel

*** Entity Count by Level ***

Level	Count
0	21
2	2577
3	1
4	254
5	24
6	339
7	6
8	336
9	175

*** Labeling Information ***

0% of the entities are labeled.

Unlabeled 3726

Label	Count	Label	Count	Label	Count
HIDDEN	1	SECTION	1	DTI2	1
MARK	1	ARROW	1	TID2	1
PL	1				

*** Line Fonts Used in Data ***

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
570	63	-	12	-	2713	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	8	-	-	Phantom
-	-	-	-	-	24	-	-	Center-line

---

---

-	-	-	-	-	-	-	-	Dotted
1	4	-	-	-	16	-	-	User defined

116	118	120	122	124	125	126	128
-----	-----	-----	-----	-----	-----	-----	-----

-	-	-	-	8	-	-	-	Undefined
-	-	-	-	-	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

130	132	134	136	138	140	142	144
-----	-----	-----	-----	-----	-----	-----	-----

-	-	-	-	-	-	-	-	Undefined
-	-	-	-	-	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

*** Line Widths Used in Data ***

Weight	Count	Width
Defaulted	3677	(0.0010)
29	40	(0.0290)
24	16	(0.0240)

*** Colors Used in Data ***

Defaulted	2622
Red	185
Green	13
Blue	23
Yellow	842
Magenta	47
Cyan	1

*****  
***** ENTITY ANALYSIS *****  
*****

*** Entity type: 100

ERROR	4045: Illegal level for CALS Class I specified at D	7.
ERROR	4045: Illegal level for CALS Class I specified at D	13.
ERROR	4045: Illegal level for CALS Class I specified at D	27.

---

---

ERROR 4045: Illegal level for CALS Class I specified at D 31.  
 ERROR 4045: Illegal level for CALS Class I specified at D 33.  
 ERROR 4045: Illegal level for CALS Class I specified at D 37.  
 ERROR 4045: Illegal level for CALS Class I specified at D 41.  
 ERROR 4045: Illegal level for CALS Class I specified at D 45.  
 ERROR 4045: Illegal level for CALS Class I specified at D 47.  
 ERROR 4045: Illegal level for CALS Class I specified at D 51.  
 ERROR 4045: Messages regarding illegal levels suppressed.  
 ERROR 4008: CALS Class I requires Z depth to be zero at D 465.  
 ERROR 4008: CALS Class I requires Z depth to be zero at D 471.  
 ERROR 4008: CALS Class I requires Z depth to be zero at D 473.  
 ERROR 4008: CALS Class I requires Z depth to be zero at D 475.  
 ERROR 4008: CALS Class I requires Z depth to be zero at D 477.  
 ERROR 4008: CALS Class I requires Z depth to be zero at D 1193.  
 ERROR 4008: CALS Class I requires Z depth to be zero at D 1199.  
 ERROR 4008: CALS Class I requires Z depth to be zero at D 1201.  
 ERROR 4008: CALS Class I requires Z depth to be zero at D 1203.  
 ERROR 4008: CALS Class I requires Z depth to be zero at D 1205.  
 ERROR 4008: Messages regarding non-zero Z depth suppressed.  
 ERROR 4046: Illegal line font for CALS Class I specified in D 1831.

*** Entity type: 102

ERROR 4046: Illegal line font for CALS Class I specified in D 4261.  
 ERROR 4046: Illegal line font for CALS Class I specified in D 4271.  
 ERROR 4046: Illegal line font for CALS Class I specified in D 4281.  
 ERROR 4046: Illegal line font for CALS Class I specified in D 4291.

*** Entity type: 106

*** Entity type: 110

CAUTION 2336: Zero length line at D 1711.  
 CAUTION 2336: Zero length line at D 1713.  
 CAUTION 2336: Zero length line at D 1733.  
 CAUTION 2336: Zero length line at D 1963.  
 CAUTION 2336: Zero length line at D 1965.  
 CAUTION 2336: Zero length line at D 1967.  
 CAUTION 2336: Zero length line at D 1969.  
 ERROR 4046: Illegal line font for CALS Class I specified in D 4263.  
 ERROR 4046: Illegal line font for CALS Class I specified in D 4265.  
 ERROR 4046: Illegal line font for CALS Class I specified in D 4267.  
 ERROR 4046: Illegal line font for CALS Class I specified in D 4269.  
 ERROR 4046: Illegal line font for CALS Class I specified in D 4273.  
 ERROR 4046: Messages regarding illegal line fonts suppressed.  
 CAUTION 2336: Zero length line at D 6539.  
 CAUTION 2336: Zero length line at D 7069.  
 -- 2761 lines averaging 5.004271E-001 units --

*** Entity type: 124

---

ERROR 4007: CALS Class I does not allow transformation out of the Z=0 plane  
at D 7431.  
ERROR 4007: CALS Class I does not allow transformation out of the Z=0 plane  
at D 7435.  
ERROR 4007: CALS Class I does not allow transformation out of the Z=0 plane  
at D 7447.  
ERROR 4007: CALS Class I does not allow transformation out of the Z=0 plane  
at D 7451.  
8 transformation matrices, 8 non-zero translations.  
NOTE 2341: 8 matrices contain translation information.

*** Entity type: 212

ERROR 2279: Text box width is negative or zero at D 6405.  
ERROR 2279: Text box width is negative or zero at D 6425.  
ERROR 2279: Text box width is negative or zero at D 6935.  
ERROR 2279: Text box width is negative or zero at D 6955.  
292 Text strings in data file.  
Average Text aspect ratio in file is 0.8204632.  
Minimum Text aspect ratio in file is 0.0000000.  
Maximum Text aspect ratio in file is 1.4615385.

FONTS USED IN FILE

FONT	COUNT	NAME
1	292	Default ASCII Style

*** Entity type: 304

ERROR 4038: Entity type is not allowed in CALS Class I.  
Default line font substitute at D 1829 is Dashed.  
Default line font substitute at D 3989 is Dashed.

*** Entity type: 308

ERROR 4049: Illegal subordinate flag for CALS Class I specified at D 6339.  
Subfigure name at D 6339: 'DTI2'.  
Number of included entities = 252.  
ERROR 4049: Illegal subordinate flag for CALS Class I specified at D 6847.  
Subfigure name at D 6847: 'MARK'.  
Number of included entities = 8.  
ERROR 4049: Illegal subordinate flag for CALS Class I specified at D 6865.  
Subfigure name at D 6865: 'ARROW'.  
Number of included entities = 1.  
ERROR 4049: Illegal subordinate flag for CALS Class I specified at D 6869.  
Subfigure name at D 6869: 'TID2'.  
Number of included entities = 252.  
ERROR 4049: Illegal subordinate flag for CALS Class I specified at D 7377.

---

---

Subfigure name at D 7377: 'PL'.  
Number of included entities = 21.

*** Entity type: 404

Drawing at D 7457 contains 1 views.  
NITPICK 2289: View at D 7459 referenced by drawing at D 7457 is not  
Logically subordinate.  
Drawing at D 7457 contains 0 annotation entities.  
ERROR 4019: CALS Class I requires exactly one property pointer at D 7457.

*** Entity type: 406

ERROR 4042: Illegal form for CALS Class I specified at D 7461.  
ERROR 4042: Illegal form for CALS Class I specified at D 7463.

*** Entity type: 408

Subfigure instance at D 7421 references subfigure at D 6847.  
Subfigure instance at D 7425 references subfigure at D 6865.  
Subfigure instance at D 7429 references subfigure at D 6865.  
Subfigure instance at D 7433 references subfigure at D 6865.  
Subfigure instance at D 7437 references subfigure at D 6865.  
Subfigure instance at D 7441 references subfigure at D 6865.  
Subfigure instance at D 7445 references subfigure at D 6865.  
Subfigure instance at D 7449 references subfigure at D 6865.  
Subfigure instance at D 7453 references subfigure at D 6865.  
Subfigure instance at D 7455 references subfigure at D 6869.

*** Entity type: 410

Scale of view at D 7459 is 1.000000E+000.  
Orthographic View entity at D 7459 has 0 clipping planes specified.  
XMIN = Not Set XMAX = Not Set  
YMIN = Not Set YMAX = Not Set  
ZMIN = Not Set ZMAX = Not Set

*** Message Summary ***

2011: 1 Invalid subordinate relationships.  
2012: 4 Inconsistent data for entity definition.  
2015: 9 Mathematically incorrect definitions.  
4000: 6 Miscellaneous CALS messages  
4006: 4 Transformations out of the Z=0 plane  
4007: 559 Non-zero Z depths  
4016: 21 Illegal line fonts  
4018: 1 Illegal entity types  
4019: 2 Entities with illegal form  
4020: 3712 Illegal levels

*** Error Summary ***

0 fatal errors  
0 severe errors  
4309 errors  
0 warnings  
9 cautions  
1 nitpicks  
1 notes

*** End of Analysis of \Tapetool\set005\d001\d001q009.igs ***

[illegible]

[illegible]



## 10.4 D001Q009

### 10.4.1 Parser Log

```
*** IGES DATA FILE PARSING ***  
***      AUGUST 1991      ***  
***   IGES Data Analysis   ***  
***   (708) 449-3430      ***
```

Input file is \Tapetool\set005\d001\d001q009.igs

Checking conformance to CALS Class I

Today is June 15, 1992 11:04 AM

*** Count of Records Per Section in Data File ***

Section	Records
Start	22
Global	3
Directory	3214 ( 1607 Entities)
Parameter	3181
Terminate	1

*** Start Section From Input File:

CONFORMANCE: This IGES file conforms to the MIL-D-28000A Class II	S	1
subset (Engineering Drawings) dated December 19, 1990.	S	2
	S	3
DOD-STD-100 and MIL-T-31000 part and drawing identification:	S	4
	S	5
Revision letters:	S	6
	S	7
Performing organization:	S	8
	S	9
Date of the ASME Y14.26M file pre-processing:	S	10
	S	11
Contract Number:	S	12
	S	13
Intended drawing size letter:	S	14
	S	15
Number of drawing sheets in the file:	S	16
	S	17
Data organization method with contents of each level:	S	18
	S	19
IGES/Works Version 1.20 Subset Generator	S	20

---

IGES file generated from an AutoCAD drawing by the IGES translator from AUTODESK, Inc., translator version IGESOUT-3.04. S 21  
S 22

*** Global Section From Input File:

,,3HSH6,9Hsh6_cals2,14HAutoCAD-R11 c2,12HIGESOUT-3.04,32,38,6,308,15,3HSG 1  
H6,1.0D0,1,4HINCH,32767,32.767D0,13H920401.161150,0.000001D0,32.94D0,10HG 2  
Peter Nies,18H Texas Instruments,6,; G 3

*** File and Product Name Information ***

File name from sender = 'sh6_cals2'  
File creation Date.Time = '920401.161150'  
* Model change Date.Time = ''  
Author = 'Peter Nies'  
Department = ' Texas Instruments'  
Product name from sender = 'SH6'  
Destination product name = 'SH6'

*** Parameter Delimiters ***

* Delimiter = ','  
* Terminator = ';'

*** Originating System Data ***

System ID = 'AutoCAD-R11 c2'  
Preprocessor version = 'IGESOUT-3.04'  
Specification version = 6 (IGES 4.0)

*** Precision Levels ***

Integer bits = 32  
Floating point - Exponent = 38 Mantissa = 6  
Double precision - Exponent = 308 Mantissa = 15

*** Global Model Data ***

Model scale = 1.0000E+000  
Unit flag = 1  
Units = 'INCH'  
Line weights = 32767  
Maximum line thickness = 3.276700E+001  
Minimum line thickness = 1.000000E-003  
Granularity = 1.000000E-006  
Maximum coordinate = 3.294000E+001

* Drafting standard applicable to original data is not specified.

** 4 defaulted Global values.

(*) Indicates a defaulted value.

*****  
*** Entity Parsing Messages ***  
*****

** 3212 defaulted Parameter data values.

*** Message Summary ***

*** Error Summary ***

0 fatal errors  
0 severe errors  
0 errors  
0 warnings  
0 cautions  
0 nitpicks  
0 notes

*** Completed Parsing of \Tapetool\set005\d001\d001q010.igs ***

---

## 10.4.2 Parser/Verifier Error Log

```
*** IGES DATA FILE ANALYSIS ***
***      AUGUST 1991      ***
***   IGES Data Analysis   ***
***   (708) 449-3430      ***
```

Input file is \Tapetool\set005\d001\d001q010.igs

Checking for conformance to CALS Class I

Today is June 15, 1992 11:05 AM

*** File and Product Name Information ***

```
File name from sender      = 'sh6_cals2'
File creation Date.Time    = '920401.161150'
Model change Date.Time     = ''
Author                     = 'Peter Nies'
Department                  = ' Texas Instruments'
Product name from sender   = 'SH6'
Destination product name   = 'SH6'
```

*** Parameter Delimiters ***

```
Delimiter = ','
Terminator = ';'

```

*** Originating System Data ***

```
System ID              = 'AutoCAD-R11 c2'
Preprocessor version    = 'IGESOUT-3.04'
Specification version   = 6 (IGES 4.0)
```

*** Precision levels ***

```
Integer bits = 32
Floating point - Exponent = 38  Mantissa = 6
Double precision - Exponent = 308  Mantissa = 15
```

*** Global Model Data ***

```
Model scale              = 1.0000E+000
Unit flag                 = 1
Units                    = 'INCH'
Line weights             = 32767
Maximum line thickness    = 3.276700E+001
Minimum line thickness    = 1.000000E-003
Granularity               = 1.000000E-006
Maximum coordinate        = 3.294000E+001
```

Drafting standard applicable to original data is not specified.

*** Status Flag Summary ***

Blank status:	Visible	1568
	Blanked	39
Independence:	Independent	822
	Physically Subordinate	782
	Logically Subordinate	3
	Totally Subordinate	0
Entity use:	Geometry	1241
	Annotation	150
	Definition	215
	Other	1
	Logical/Positional	0
	2D parametric	0
	Not Specified	0
Hierarchy:	Structure DE applies	1559
	Subordinate DE applies	48
	Hierarchy property applies	0
	Not Specified	0

*** Entity Occurrence Counts ***

Entity	Form	Level	Count	Type
-----	-----	-----	-----	-----
100	0	2	196	Circular arc
100	0	3	56	
100	0	4	28	
100	0	7	25	
102	0	2	27	Composite curve
102	0	3	18	
102	0	7	1	
106	63	0	1	Simple closed planar curve
106	63	6	4	
110	0	2	854	Line
110	0	3	40	
110	0	4	14	
110	0	6	51	
110	0	7	131	
124	0	0	2	Transformation matrix
212	0	4	102	General note
212	0	5	6	
212	0	6	23	
212	0	7	18	

---

308	0	0	2	Subfigure definition
404	0	0	1	Drawing
406	15	0	1	Property - Name
406	16	0	1	Property - Drawing size
406	17	0	1	Property - Drawing units
408	0	3	3	Single subfigure instance
410	0	0	1	View - Orthographic parallel

*** Entity Count by Level ***

Level	Count
0	10
2	1077
3	117
4	144
5	6
6	78
7	175

*** Labeling Information ***

0% of the entities are labeled.

Unlabeled 1605

Label	Count	Label	Count
TID2	1	ARROW	1

*** Line Fonts Used in Data ***

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
305	46	-	5	-	1086	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	4	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined
116	118	120	122	124	125	126	128	
-	-	-	-	2	-	-	-	Undefined
-	-	-	-	-	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

---

130 132 134 136 138 140 142 144

-	-	-	-	-	-	-	-	Undefined
-	-	-	-	-	-	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

*** Line Widths Used in Data ***

Weight	Count	Width
Defaulted	1591	(0.0010)
29	16	(0.0290)

*** Colors Used in Data ***

Defaulted	1112
Green	12
Blue	8
Yellow	475

*****  
***** ENTITY ANALYSIS *****  
*****

*** Entity type: 100

ERROR	4045: Illegal level for CALS Class I specified at D	3.
ERROR	4045: Illegal level for CALS Class I specified at D	21.
ERROR	4045: Illegal level for CALS Class I specified at D	23.
ERROR	4045: Illegal level for CALS Class I specified at D	83.
ERROR	4045: Illegal level for CALS Class I specified at D	91.
ERROR	4045: Illegal level for CALS Class I specified at D	97.
ERROR	4045: Illegal level for CALS Class I specified at D	101.
ERROR	4045: Illegal level for CALS Class I specified at D	111.
ERROR	4045: Illegal level for CALS Class I specified at D	115.
ERROR	4045: Illegal level for CALS Class I specified at D	117.
ERROR	4045: Messages regarding illegal levels suppressed.	

*** Entity type: 102

*** Entity type: 106

*** Entity type: 110

CAUTION 2336: Zero length line at D 2883.

---

-- 1090 lines averaging 7.495628E-001 units --

*** Entity type: 124

2 transformation matrices, 2 non-zero translations.

NOTE 2341: 2 matrices contain translation information.

*** Entity type: 212

149 Text strings in data file.

Average Text aspect ratio in file is 0.8427873.

Minimum Text aspect ratio in file is 0.2976190.

Maximum Text aspect ratio in file is 1.4358974.

FONTS USED IN FILE

FONT	COUNT	NAME
1	149	Default ASCII Style

*** Entity type: 308

ERROR 4049: Illegal subordinate flag for CALS Class I specified at D 2683.

Subfigure name at D 2683: 'TID2'.

Number of included entities = 252.

ERROR 4049: Illegal subordinate flag for CALS Class I specified at D 3191.

Subfigure name at D 3191: 'ARROW'.

Number of included entities = 1.

*** Entity type: 404

Drawing at D 3205 contains 1 views.

NITPICK 2289: View at D 3207 referenced by drawing at D 3205 is not Logically subordinate.

Drawing at D 3205 contains 0 annotation entities.

ERROR 4019: CALS Class I requires exactly one property pointer at D 3205.

*** Entity type: 406

ERROR 4042: Illegal form for CALS Class I specified at D 3209.

ERROR 4042: Illegal form for CALS Class I specified at D 3211.

*** Entity type: 408

Subfigure instance at D 3195 references subfigure at D 2683.

Subfigure instance at D 3199 references subfigure at D 3191.

Subfigure instance at D 3203 references subfigure at D 3191.

*** Entity type: 410

---

Scale of view at D 3207 is 1.000000E+000.  
Orthographic View entity at D 3207 has 0 clipping planes specified.  
XMIN = Not Set XMAX = Not Set  
YMIN = Not Set YMAX = Not Set  
ZMIN = Not Set ZMAX = Not Set

*** Message Summary ***

2011: 1 Invalid subordinate relationships.  
2015: 1 Mathematically incorrect definitions.  
4000: 3 Miscellaneous CALS messages  
4019: 2 Entities with illegal form  
4020: 1597 Illegal levels

*** Error Summary ***

0 fatal errors  
0 severe errors  
1602 errors  
0 warnings  
1 cautions  
1 nitpicks  
1 notes

*** End of Analysis of \Tapetool\set005\d001\d001q010.igs ***

### 10.4.3 Prepare Error Log

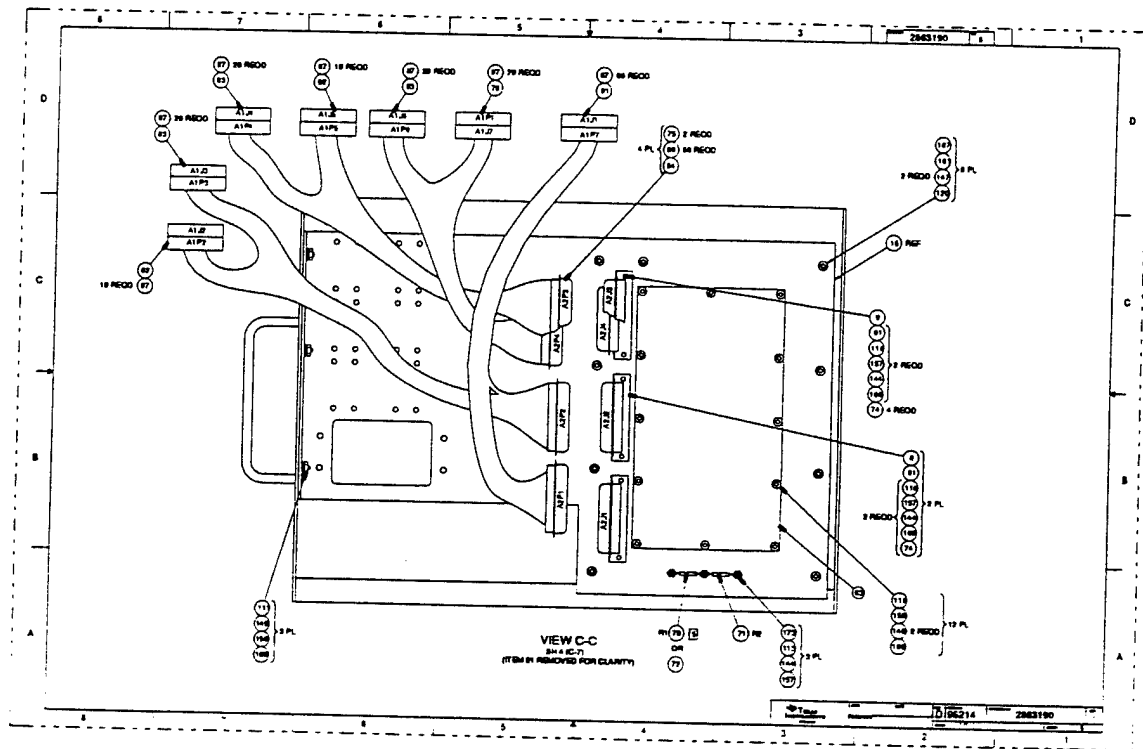
ERROR REPORT FOR FILE D001Q010_IGS

>> CRITICAL ERROR: Cannot locate terminate section in file D001Q010_IGS  
: Terminate processing.  
-----





## 10.4.6 IGESView Hard Copy



## **11. Appendix C - SGML Parser Logs**

### **11.1 XGMLNormalizer Parser Log**

No reported errors.

## **12. Appendix D - Raster Files**

### **12.1 Validg4 Error Logs**

#### **12.1.1 D001R011**

density = 300  
path length = 2399  
scan lines = 1403  
bit format = MSB

error, scan length exceeds pel count  
s=1 a0=0 bstop=2400 pos=0

file = r011.cal

#### **12.1.2 D001R012**

density = 300  
path length = 2135  
scan lines = 1355  
bit format = MSB

error, scan length exceeds pel count  
s=6 a0=0 bstop=2136 pos=3

file = r012.cal

#### **12.1.3 D002R002**

density = 300  
path length = 1175  
scan lines = 1089  
bit format = MSB

error getcode, no match in 12 bits  
s=1089 word=0 pos=11444

file = d002r002

### 12.1.4 D002R004

density = 300  
path length = 4137  
scan lines = 4926  
bit format = MSB

error getcode, no match in 12 bits  
s=4926 word=0 pos=21410

file = d002r004

### 12.1.5 D002R005

density = 300  
path length = 4137  
scan lines = 4926  
bit format = MSB

error getcode, no match in 12 bits  
s=4926 word=0 pos=21410

file = d002r004

### 12.1.6 D003R006

density = 300  
path length = 1120  
scan lines = 849  
bit format = MSB

error, scan length exceeds pel count  
s=469 a0=0 bstop=1121 pos=3945

file = d003r006

### 12.1.7 D003R007

density = 300  
path length = 720  
scan lines = 713  
bit format = MSB  
lines read = 713

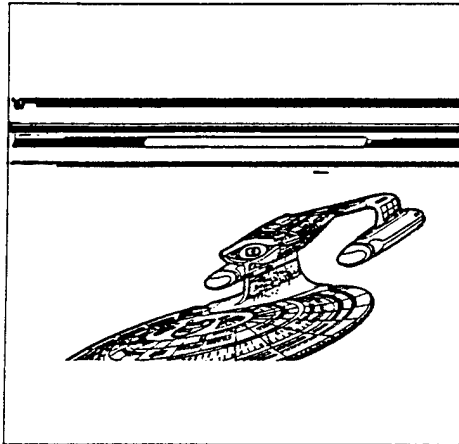
AFCTN Test Report  
94-010

AFCTB Test Report  
92-034

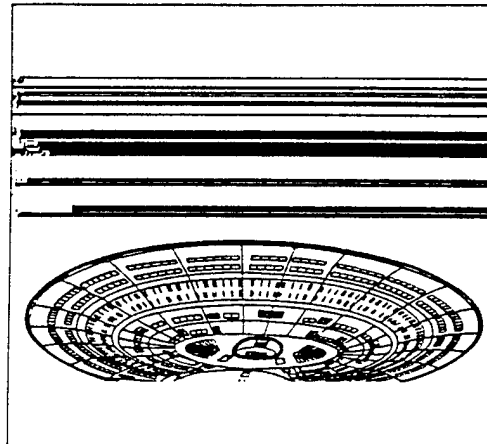
---

total bytes = 8210  
decode time = 1 secs

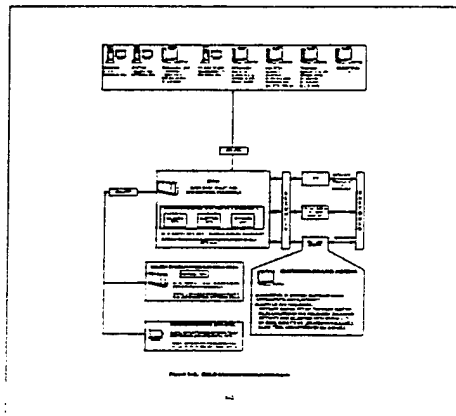
## 12.2 Ventura Publisher Hard Copy



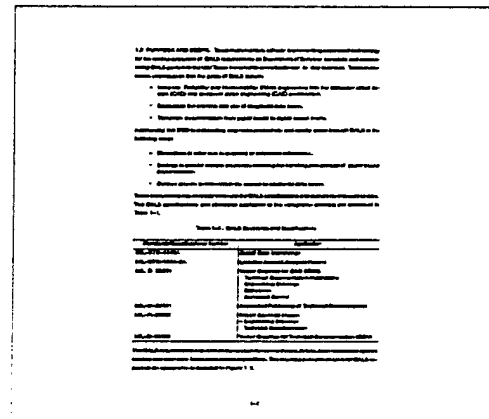
D001R011



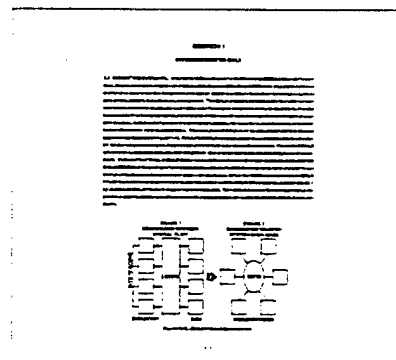
D001R012



D001R013

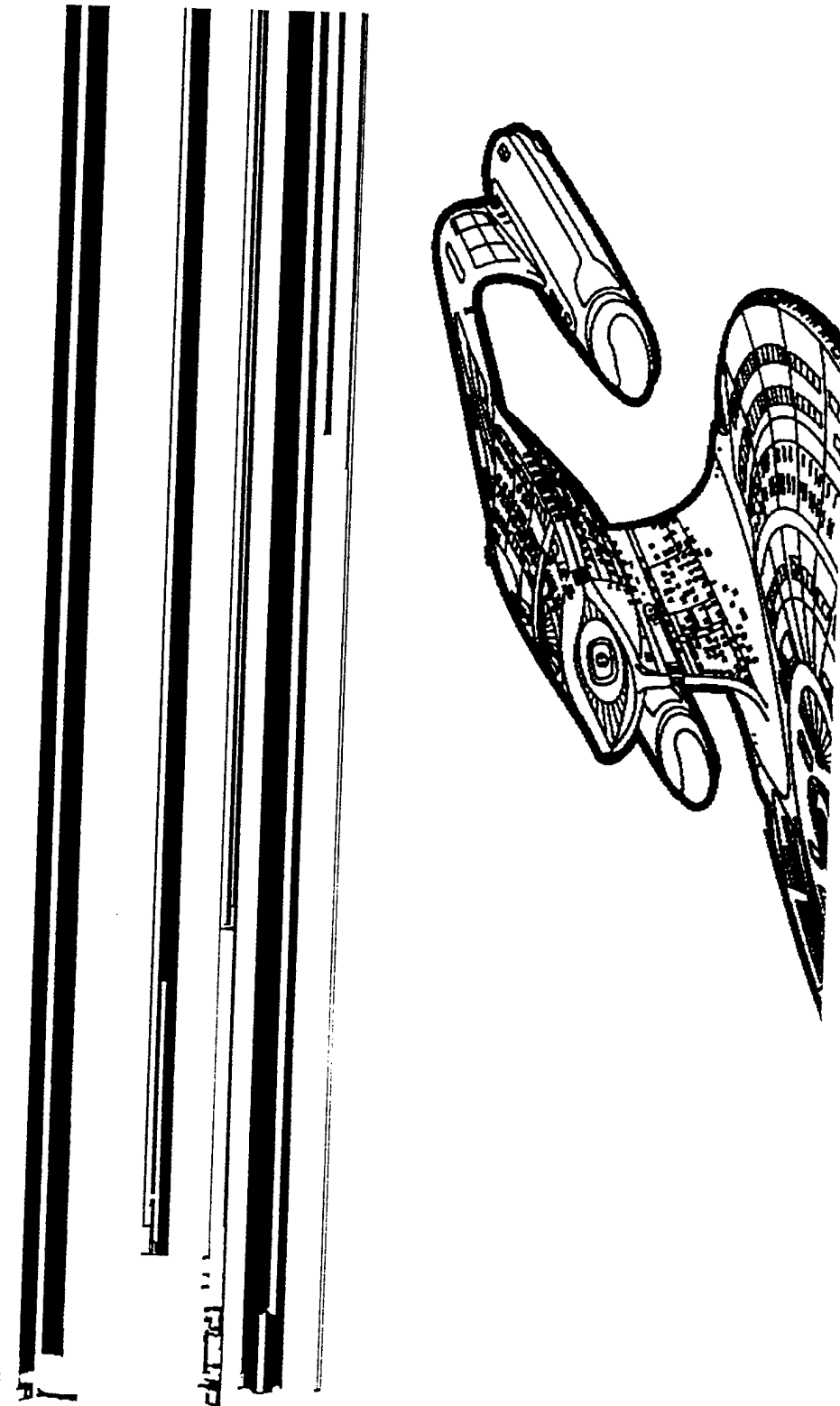


D001R014



D001R015

### 12.3 D001R011 - Preview



## 12.4 D001R013 - Preview

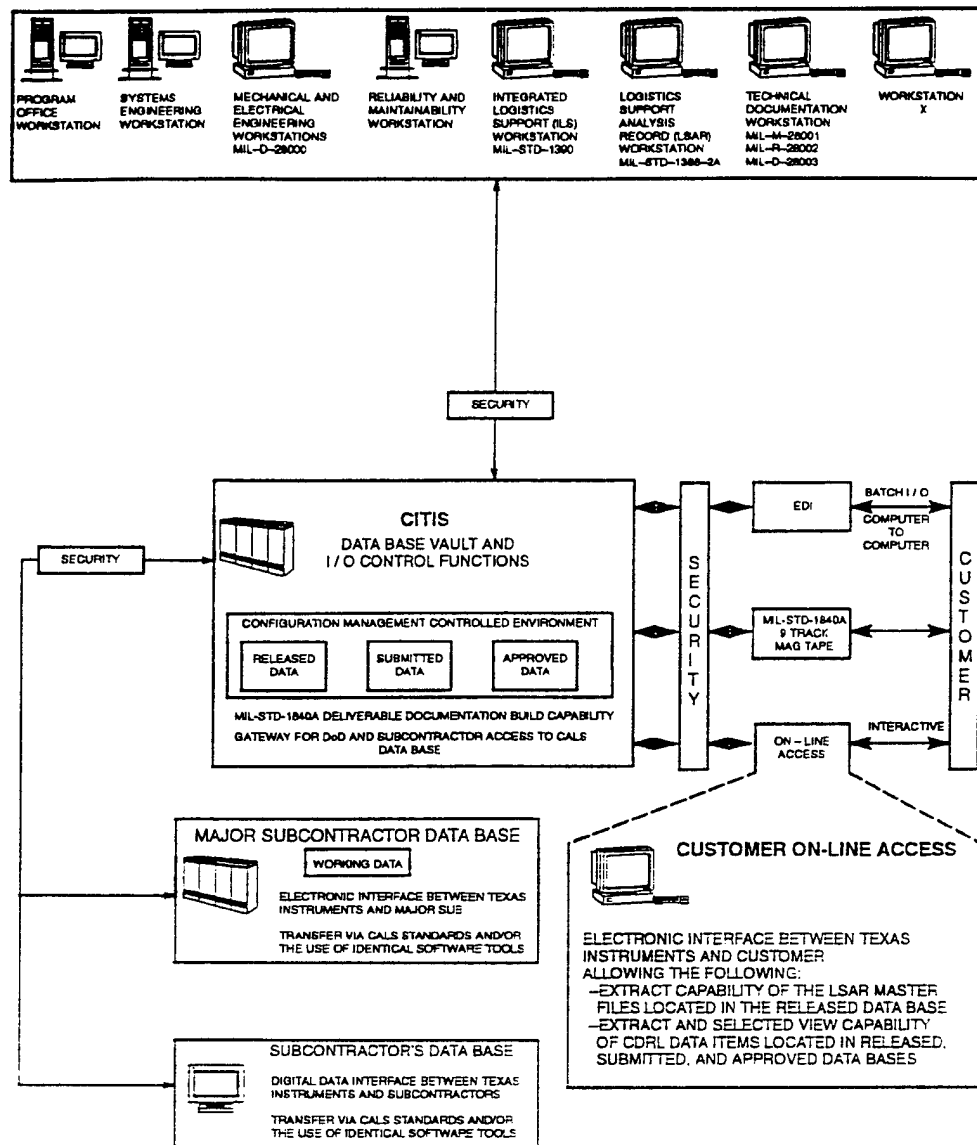


Figure 1-2. CALS Implementation Architecture

## 12.5 D001R014 - Preview

**1.2 PURPOSE AND SCOPE.** Texas Instruments is actively implementing a standard methodology for the routine execution of CALS requirements on Department of Defense contracts and incorporating CALS goals into the way Texas Instruments executes its day-to-day business. Texas Instruments understands that the goals of CALS include:

- Integrate Reliability and Maintainability (R&M) engineering into the computer aided design (CAD) and computer aided engineering (CAE) environment.
- Encourage the creation and use of integrated data bases.
- Transition documentation from paper based to digital based media.

Additionally, the DOD is anticipating long-term productivity and quality gains through CALS in the following areas:

- Elimination of error due to outdated or redundant information.
- Savings in cost for manual processes involving the handling and storage of paper based documentation.
- Quicker access to information via access to electronic data bases.

Texas Instruments has carefully reviewed the CALS specifications and standards released to date. The CALS specifications and standards applicable to the <program> contract are contained in Table 1-1.

Table 1-1. CALS Standards and Specifications

Standards/Specifications Number	Application
MIL-STD-1840A	Digital Data Interchange
MIL-STD-1388-2A	Logistics Support Analysis Record
MIL-D-28000	Vector Graphics for CAD (IGES)      - Technical Documentation Illustrations     - Engineering Drawings     - Electronics     - Numerical Control
MIL-M-28001	Automated Publishing of Technical Documentation
MIL-R-28002	Raster Scanned Images      - Engineering Drawings     - Technical Documentation
MIL-D-28003	Vector Graphics for Technical Documentation (CGM)

The CALS requirements imposed on the <program> contract have, in turn, been compared against existing and near term Texas Instruments capabilities. The resulting scenario chosen for CALS execution on <program> is depicted in Figure 1-2.

## 12.6 D001R015 - Preview

### SECTION 1

#### INTRODUCTION TO CALS

**1.1 EXECUTIVE SUMMARY.** Initiated in 1985 by Department of Defense (DOD) policy memorandum, Computer-aided Acquisition and Logistics Support (CALS) is a DOD and industry initiative to enable and accelerate the integration and use of digital technical information for weapon system acquisition, design, manufacture, and support. The CALS program facilitates the transition of current paper-intensive processes to a highly automated and integrated mode of operation, thereby substantially improving productivity and quality of the weapon system acquisition and logistics support process. CALS encompasses the generation, access, management, maintenance, and distribution of technical data in digital form. The evolution of CALS is to be accomplished in a phased approach as depicted in Figure 1-1. Phase 1 of CALS replaces paper document transfers with digital file exchanges and begins the software tool and data base integration process. Phase 2 of CALS will involve substantial software tool integration and a more complete shared data base environment. In December 1988, a CALS Office was created within the Defense Systems & Electronics Group (DSEG) of Texas Instruments to formally address the CALS issues relating to the way Texas Instruments conducts its business on a day-to-day basis. Since the DOD has only released CALS Phase 1 standards and specifications, the Texas Instruments CALS Office has focused on the ability to execute CALS Phase 1 requirements on contract. This plan describes Texas Instruments capabilities to conduct the <program> contract in accordance with currently identified CALS requirements.

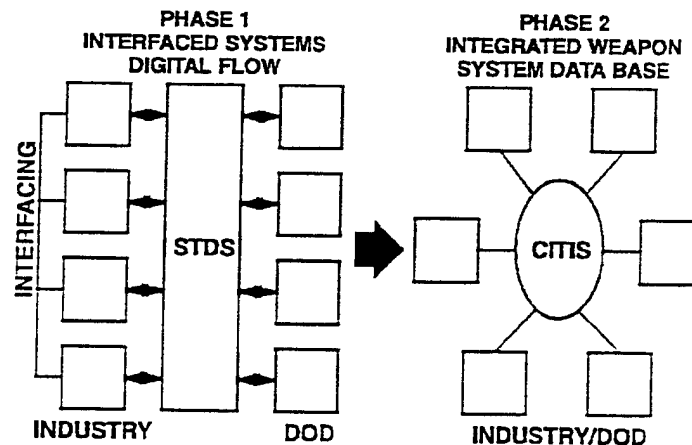
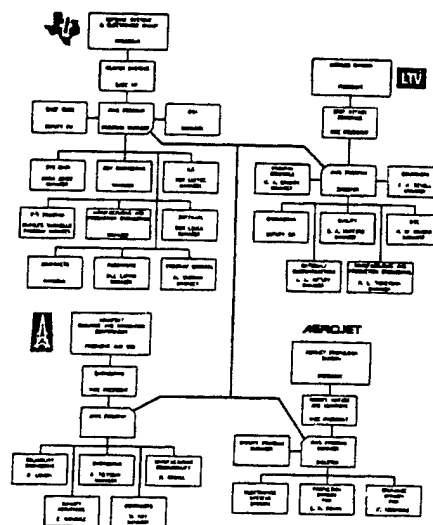


Figure 1-1. CALS Phased Development

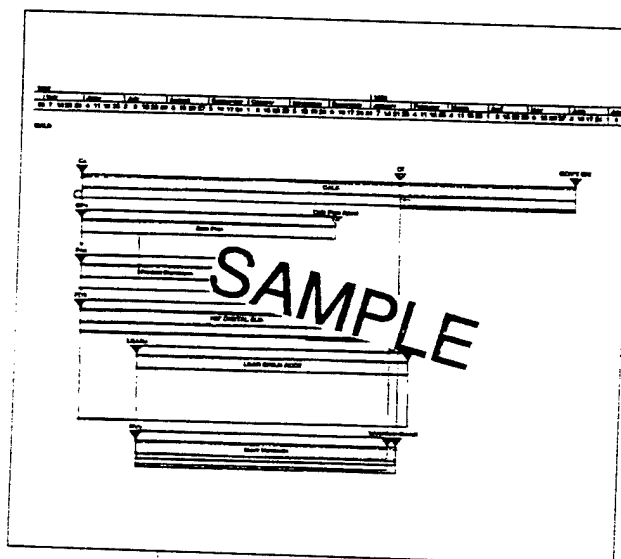
## 12.7 D002R* Ventura Publisher



D002R002



D002R004



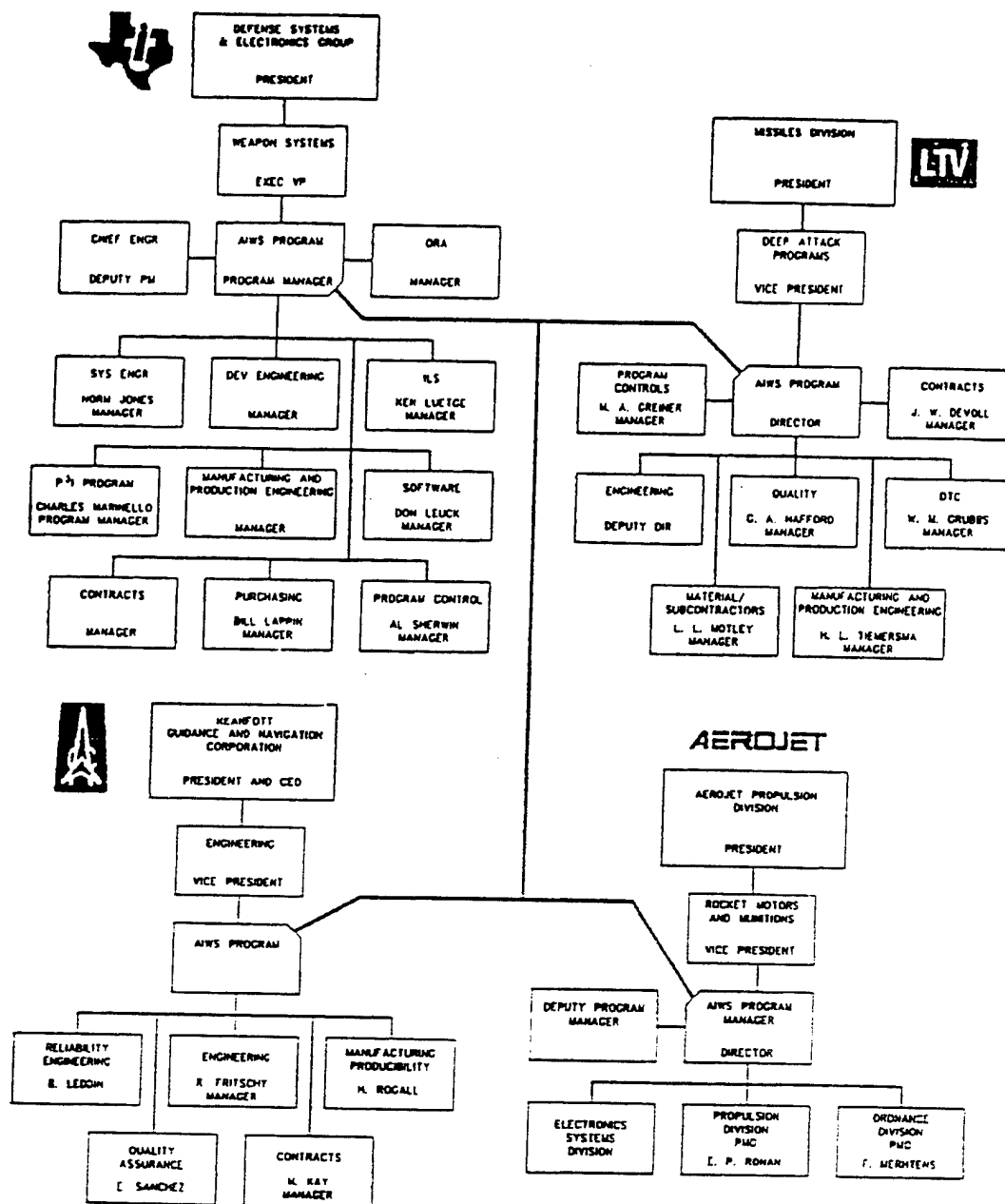
D002R005

---

## 12.8 D002R002 - Preview



## 12.9 D002R004 - Preview



1992 1993

May	June	July	August	September	October	November	December	January	February	March	April	May	June	July
30	7	14	21	28	4	11	18	25	2	9	16	23	30	6
31	1	8	15	22	29	5	12	19	26	3	10	17	24	31

1993

January	February	March	April	May	June	July
31	7	14	21	28	4	11
1	8	15	22	29	5	12
2	9	16	23	30	6	13
3	10	17	24	31	7	14
4	11	18	25	1	8	15
5	12	19	26	2	9	16
6	13	20	27	3	10	17
7	14	21	28	4	11	18
8	15	22	29	5	12	19
9	16	23	30	6	13	20
10	17	24	31	7	14	21
11	18	25	1	8	15	22
12	19	26	2	9	16	23
13	20	27	3	10	17	24
14	21	28	4	11	18	25
15	22	29	5	12	19	26
16	23	30	6	13	20	27
17	24	31	7	14	21	28
18	25	1	8	15	22	29
19	26	2	9	16	23	30
20	27	3	10	17	24	31
21	28	4	11	18	25	1
22	29	5	12	19	26	2
23	30	6	13	20	27	3
24	31	7	14	21	28	4
25	1	8	15	22	29	5
26	2	9	16	23	30	6
27	3	10	17	24	31	7
28	4	11	18	25	1	8
29	5	12	19	26	2	9
30	6	13	20	27	3	10
31	7	14	21	28	4	11

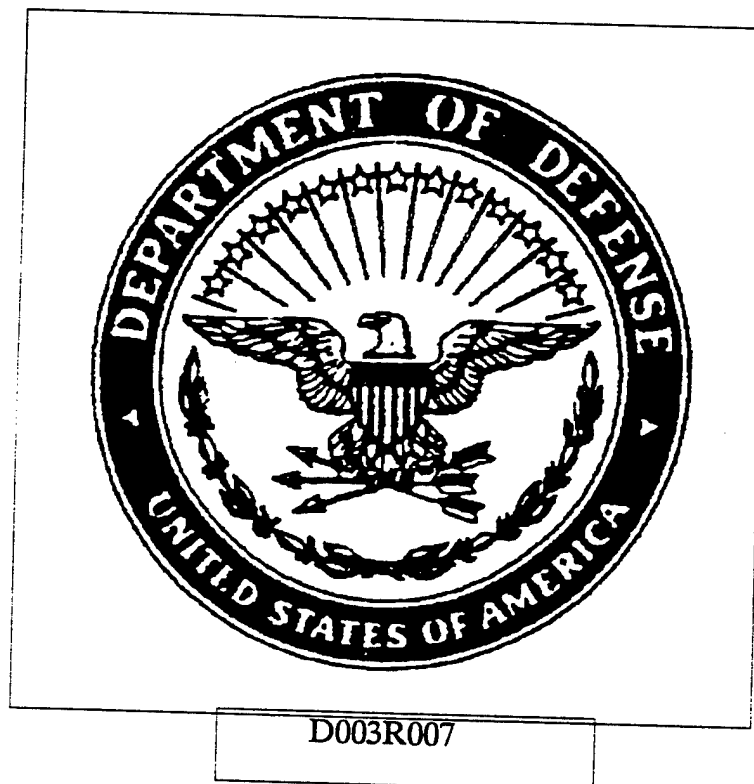
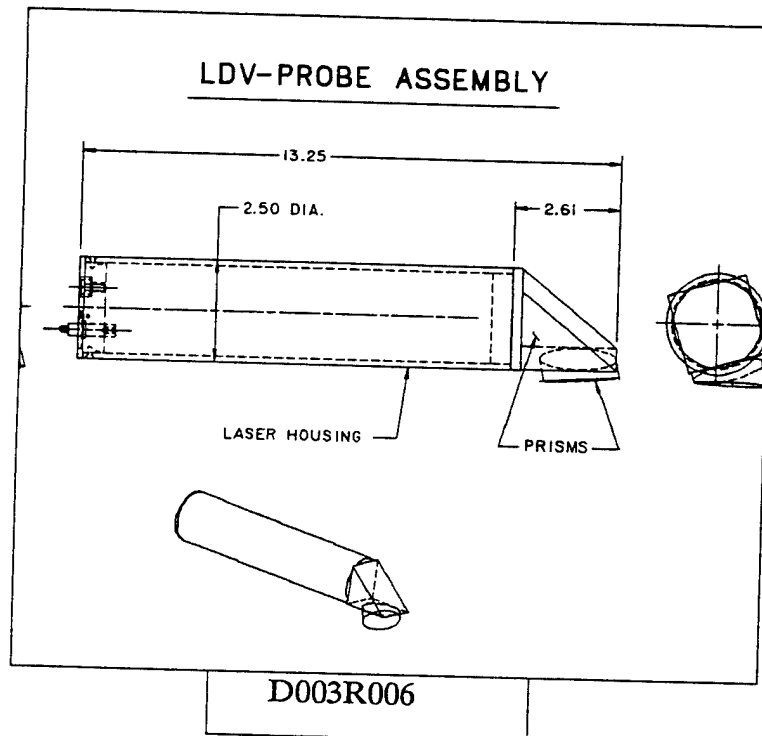
1993

January	February	March	April	May	June	July
31	7	14	21	28	4	11
1	8	15	22	29	5	12
2	9	16	23	30	6	13
3	10	17	24	31	7	14
4	11	18	25	1	8	15
5	12	19	26	2	9	16
6	13	20	27	3	10	17
7	14	21	28	4	11	18
8	15	22	29	5	12	19
9	16	23	30	6	13	20
10	17	24	31	7	14	21
11	18	25	1	8	15	22
12	19	26	2	9	16	23
13	20	27	3	10	17	24
14	21	28	4	11	18	25
15	22	29	5	12	19	26
16	23	30	6	13	20	27
17	24	31	7	14	21	28
18	25	1	8	15	22	29
19	26	2	9	16	23	30
20	27	3	10	17	24	31
21	28	4	11	18	25	1
22	29	5	12	19	26	2
23	30	6	13	20	27	3
24	31	7	14	21	28	4
25	1	8	15	22	29	5
26	2	9	16	23	30	6
27	3	10	17	24	31	7
28	4	11	18	25	1	8
29	5	12	19	26	2	9
30	6	13	20	27	3	10
31	7	14	21	28	4	11

1993

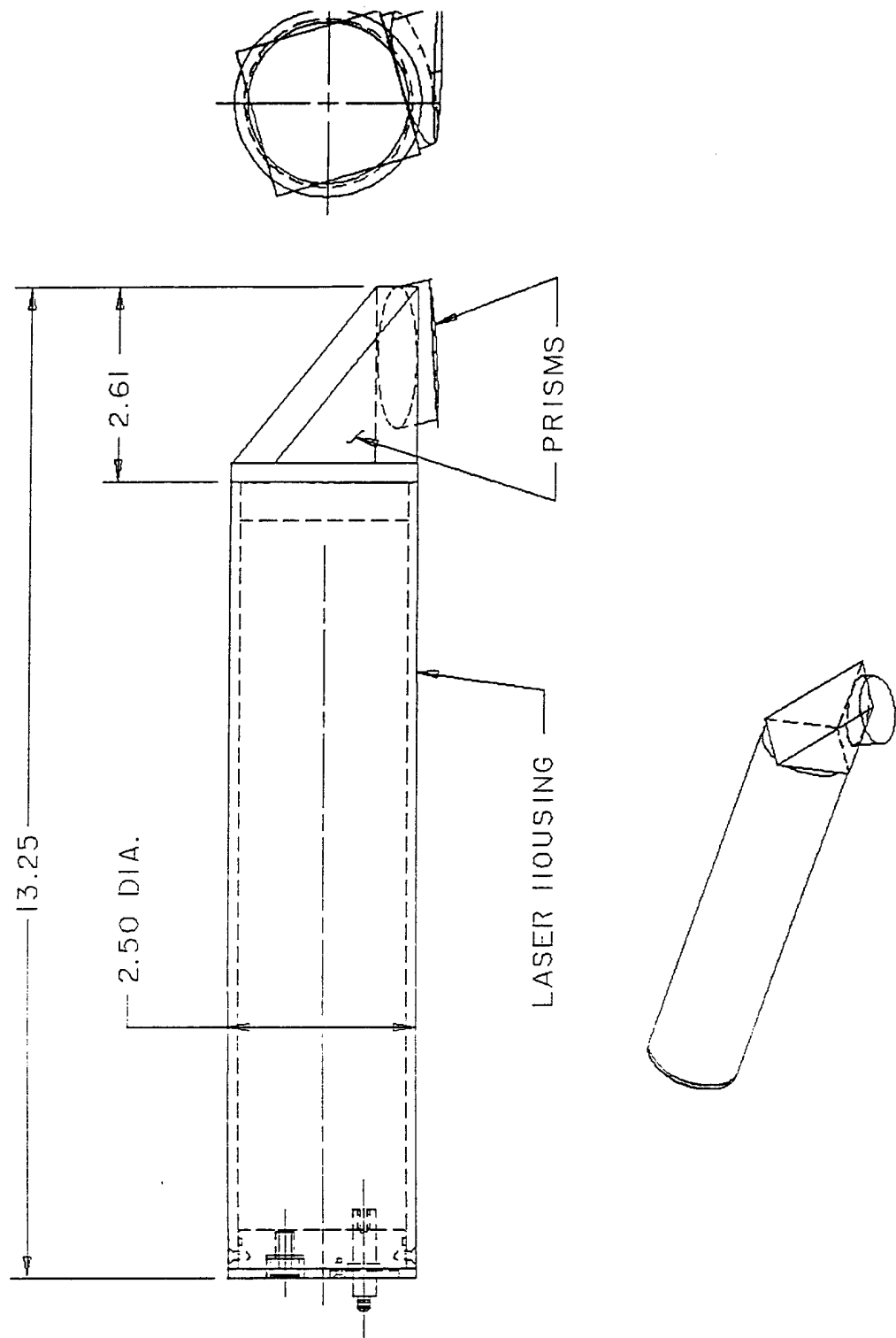
January	February	March	April	May	June	July
31	7	14	21	28	4	11
1	8	15	22	29	5	12
2	9	16	23	30	6	13
3	10	17	24	31	7	14
4	11	18	25	1	8	15
5	12	19	26	2	9	1

## 12.11 D003R* Ventura Publisher



## 12.12 D003R006 - Preview

### LDV-PROBE ASSEMBLY



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12.13 D003R007 - Preview



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## 13. Appendix E - CGM Evaluation

### 13.1 D001C001

#### 13.1.1 Parser Log

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/15/92 Time: 07:41:58

Metafile Examined : \Tapetool\set005\d001\d001c001.cgm

Pictures Examined : All

Elements Examined : All

Bytes Examined : All

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

Tracing not selected.

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

No Errors Detected

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

Error 6501: Element Class/ID: 1/2 Offset: 44 octets Element No. 2  
The METAFILE DESCRIPTION string is invalid; it lacks the phrase  
"MIL-D-28003/BASIC-1" required by the Profile.

Error 6515: Element Class/ID: 3/4 Offset: 808 octets Element No. 77  
The Transparency Indicator is invalid; it must be 1 (on).

Error 6515: Element Class/ID: 3/4 Offset: 1798 octets Element No. 140  
The Transparency Indicator is invalid; it must be 1 (on).

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

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/15/92 Time: 07:42:01

Name of CGM under test: \Tapetool\set005\d001\d001c001.cgm  
Encoding : Binary

Pictures Examined : All

Elements Examined : All

---

Bytes Examined : All

BEGIN METAFILE string : "Micrografx CGM Translator, version 3.2"  
METAFILE DESCRIPTION : ""

Picture 1 starts at octet offset 98; string contains: "1"

Conformance Summary : This file conforms to the CGM specification.

However, this file does not satisfy  
the CALS CGM Profile (MIL-D-28003).

Summary of Testing Performed and Errors Found:

1 Pictures Tested		
315 Elements Tested		
4138 Octets Tested		
0 Illegal CGM Elements	1000 -	1999
0 Incorrect CGM Element Lengths	2000 -	2999
0 CGM State Errors	3000 -	3499
0 Required CGM Elements Missing or Wrong	4000 -	4499
0 CGM Parameter Values Out of Range	6000 -	6499
0 CGM Structure Errors	7000 -	7499
0 *** CGM Errors Found (total)	***	
0 Profile State Errors	3500 -	3999
0 Illegal Profile Elements	4500 -	4999
3 Profile Parameter Values Out of Range	6500 -	6999
0 Profile Data Limits Exceeded	8500 -	8999
0 Other Profile Constraints Violated	9500 -	9999
3 *** Profile Violations Found (total)	***	
0 Warnings (Advisory Remarks)	20000 -	20999

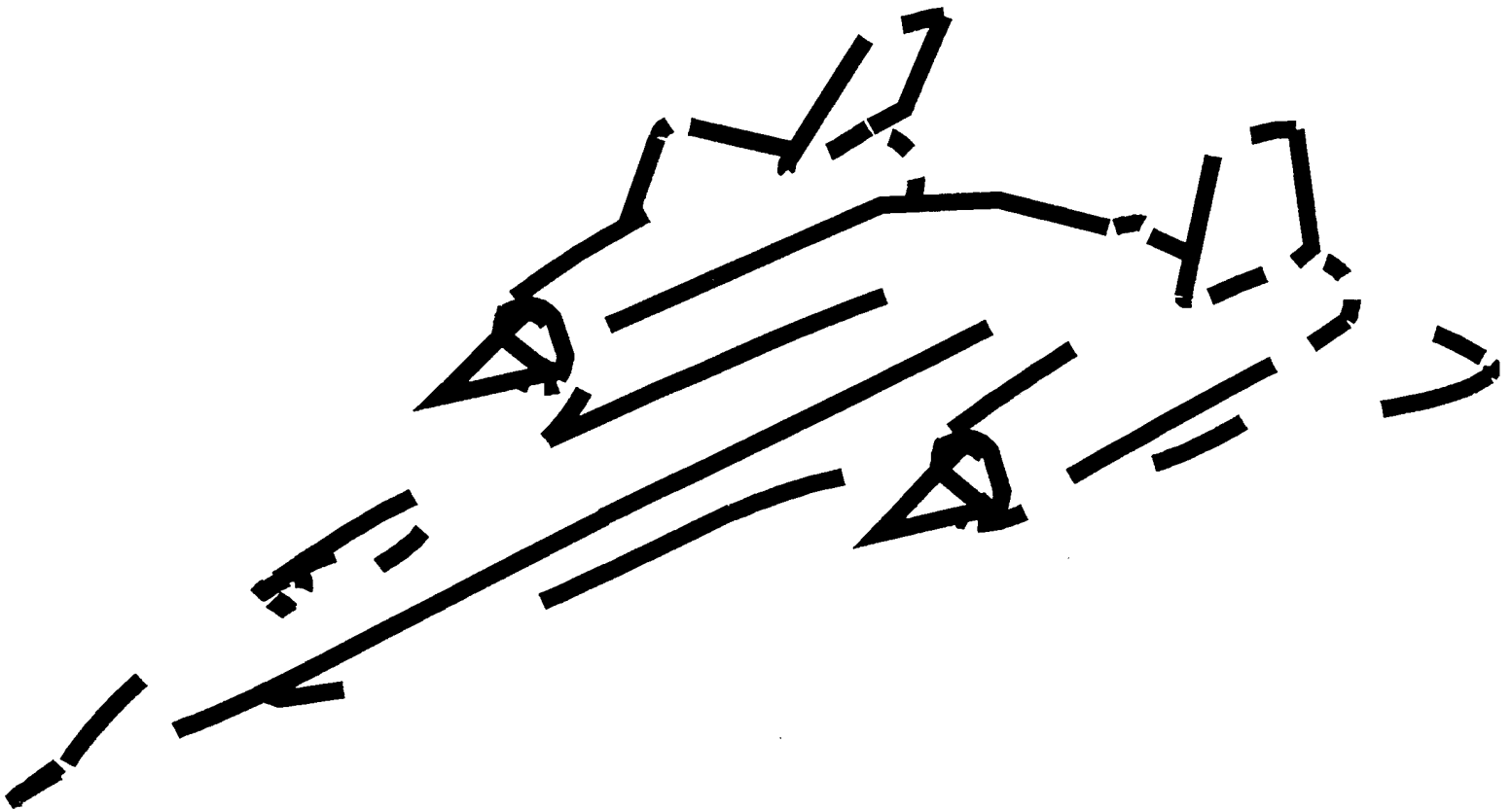
2 distinct errors and warnings were reported.

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

---

### 13.1.2 CGMView Hard Copy

CHARISMA VERSION 2.1  
release 1



---

## 13.2 D001C002

### 13.2.1 Parser Log

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/15/92 Time: 07:42:39

Metafile Examined : \Tapetool\set005\d001\d001c002.cgm

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

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

Tracing not selected.

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

Bulletin 20024: Element Class/ID: 5/34 Offset: 418 octets Element No. 24  
Warning; the definition of color index 0 differs from the  
explicitly defined Background Color.

Bulletin 2001: Element Class/ID: 5/28 Offset: 520 octets Element No. 25  
Insufficient parameter data for this element.

Error 2003: Element Class/ID: 5/28 Offset: 520 octets Element No. 25  
Element parameter data ends with an incomplete operand.

Error 4011: Element Class/ID: 0/2 Offset: 7350 octets Element No. 256  
The following elements appear in this CGM and should be indicated in the  
METAFILE ELEMENT LIST:

EDGE TYPE  
EDGE WIDTH  
EDGE COLOUR  
EDGE VISIBILITY

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

Error 6501: Element Class/ID: 1/2 Offset: 20 octets Element No. 3  
The METAFILE DESCRIPTION string is invalid; it lacks the phrase  
"MIL-D-28003/BASIC-1" required by the Profile.

Error 6521: Element Class/ID: 5/10 Offset: 1524 octets Element No. 68  
The Text Font Index value is invalid; it must not exceed 4.

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

---

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/15/92 Time: 07:42:42

Name of CGM under test: \Tapetool\set005\d001\d001c002.cgm  
Encoding : Binary

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

BEGIN METAFILE string : "METAFILE.DAT"  
METAFILE DESCRIPTION : "Digital Research GEM2CGM filter R1.0"

Picture 1 starts at octet offset 354; string contains: "PICTURE 1"

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:

1 Pictures Tested  
256 Elements Tested  
7352 Octets Tested

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

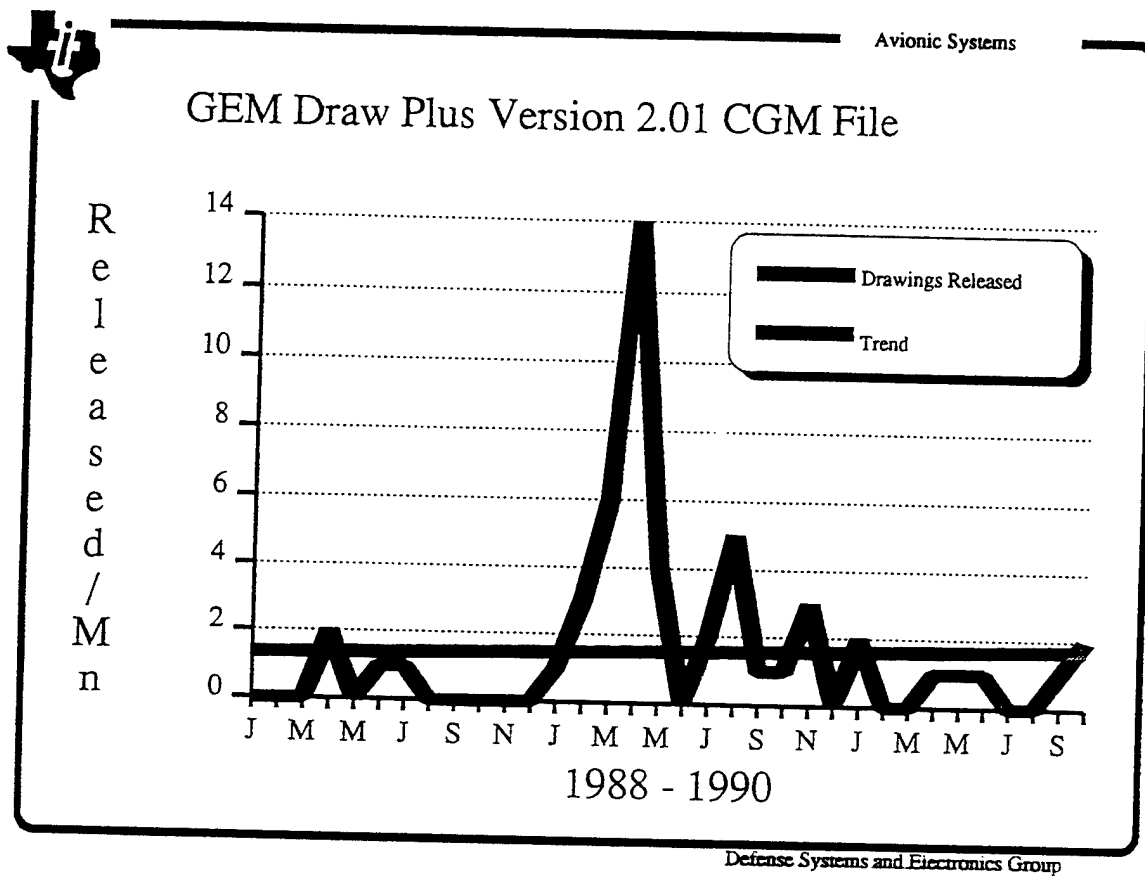
0 Profile State Errors	3500 -	3999
0 Illegal Profile Elements	4500 -	4999
2 Profile Parameter Values Out of Range	6500 -	6999
0 Profile Data Limits Exceeded	8500 -	8999
0 Other Profile Constraints Violated	9500 -	9999
2 *** Profile Violations Found (total)	***	

1 Warnings (Advisory Remarks)	20000 -	20999
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6 distinct errors and warnings were reported.

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

### 13.2.2 CGMView Hard Copy



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### 13.2.3 Harvard Graphics Hard Copy



Defense Systems and Electronics Group

Harvard Graphics 3.0  
D001C002

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## 13.3 D001C003

### 13.3.1 Parser Log

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/15/92 Time: 07:42:50

Metafile Examined : \Tapetool\set005\d001\d001c003.cgm

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

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

Tracing not selected.

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

Bulletin 20028: Element Class/ID: 4/1 Offset: 902 octets Element No. 31  
Warning; an undefined foreground color is being referenced by a primitive,  
while the background color has been defined.

Error 4011: Element Class/ID: 0/2 Offset: 3610 octets Element No. 272  
The following elements appear in this CGM and should be indicated in the  
METAFILE ELEMENT LIST:

VDC INTEGER PRECISION

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

Error 6501: Element Class/ID: 1/2 Offset: 42 octets Element No. 3  
The METAFILE DESCRIPTION string is invalid; it lacks the phrase  
"MIL-D-28003/BASIC-1" required by the Profile.

Error 6508: Element Class/ID: 1/13 Offset: 206 octets Element No. 15  
The FONT LIST element is invalid; it may not contain  
more than 4 font names.

Error 6509: Element Class/ID: 1/13 Offset: 206 octets Element No. 15  
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 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/15/92 Time: 07:42:52

---

Name of CGM under test: \Tapetool\set005\d001\d001c003.cgm  
Encoding : Binary

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

BEGIN METAFILE string : "INTERLEAF.cgm from INTERLEAF.doc"  
METAFILE DESCRIPTION : "Interleaf Inc. MDL/G CGM 1990"

Picture 1 starts at octet offset 630; string contains: "Start"

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:

1 Pictures Tested  
272 Elements Tested  
3612 Octets Tested

0 Illegal CGM Elements	1000 -	1999
0 Incorrect CGM Element Lengths	2000 -	2999
0 CGM State Errors	3000 -	3499
1 Required CGM Elements Missing or Wrong	4000 -	4499
0 CGM Parameter Values Out of Range	6000 -	6499
0 CGM Structure Errors	7000 -	7499
1 *** CGM Errors Found (total)	***	
0 Profile State Errors	3500 -	3999
0 Illegal Profile Elements	4500 -	4999
3 Profile Parameter Values Out of Range	6500 -	6999
0 Profile Data Limits Exceeded	8500 -	8999
0 Other Profile Constraints Violated	9500 -	9999
3 *** Profile Violations Found (total)	***	
1 Warnings (Advisory Remarks)	20000 -	20999

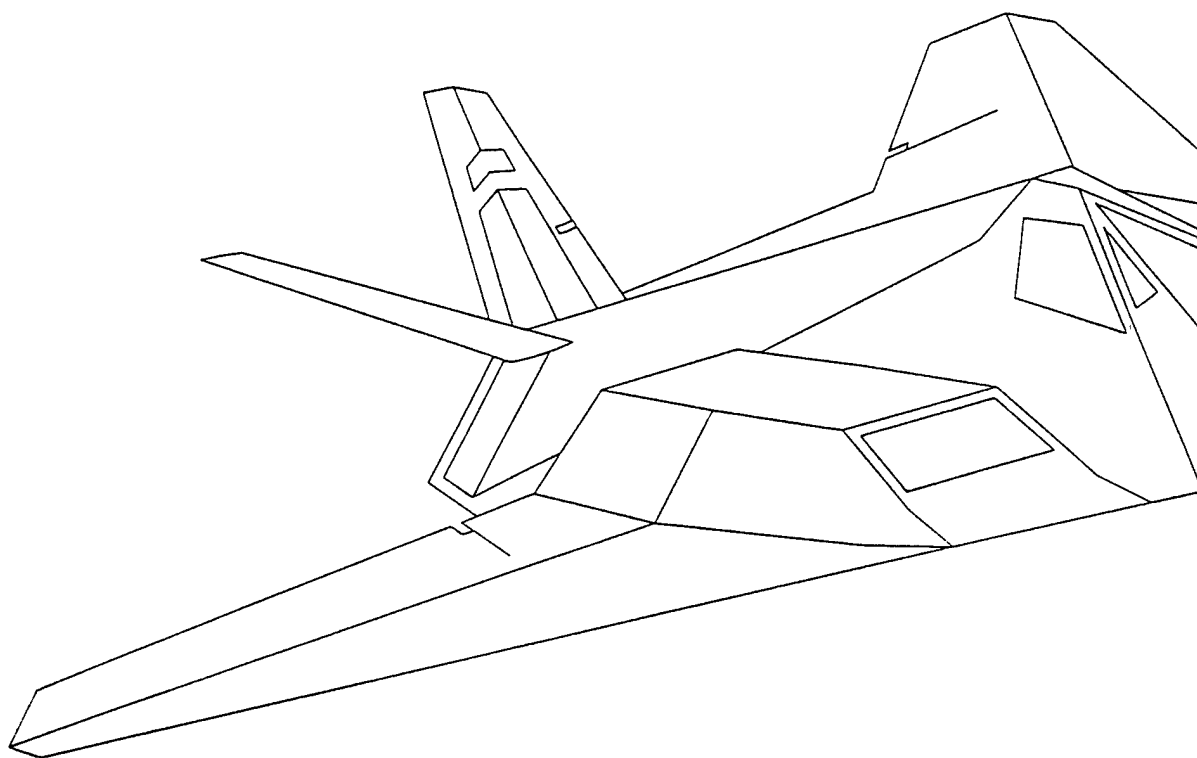
5 distinct errors and warnings were reported.

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

---

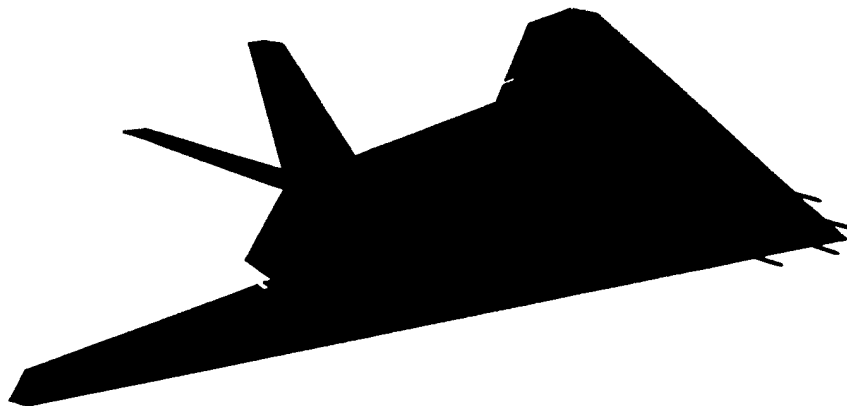
### 13.3.2 CGMView Hard Copy

## INTERLEAF VERSION 5.2



### **13.3.3 Harvard Graphics Hard Copy**

*INTERLEAF VERSION 5.2*



**Harvard Graphics 3.0  
D001C003**

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## 13.4 D001C004

### 13.4.1 Parser Log

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/15/92 Time: 07:43:00

Metafile Examined : \Tapetool\set005\d001\d001c004.cgm

Pictures Examined : All

Elements Examined : All

Bytes Examined : All

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

Tracing not selected.

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

No Errors Detected

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

Error 6501: Element Class/ID: 1/2 Offset: 44 octets Element No. 2  
The METAFILE DESCRIPTION string is invalid; it lacks the phrase  
"MIL-D-28003/BASIC-1" required by the Profile.

Error 6515: Element Class/ID: 3/4 Offset: 2902 octets Element No. 341  
The Transparency Indicator is invalid; it must be 1 (on).

Error 6515: Element Class/ID: 3/4 Offset: 5762 octets Element No. 674  
The Transparency Indicator is invalid; it must be 1 (on).

Error 6515: Element Class/ID: 3/4 Offset: 6194 octets Element No. 723  
The Transparency Indicator is invalid; it must be 1 (on).

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

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/15/92 Time: 07:43:02

Name of CGM under test: \Tapetool\set005\d001\d001c004.cgm  
Encoding : Binary

Pictures Examined : All

Elements Examined : All

Bytes Examined : All

BEGIN METAFILE string : "Micrografx CGM Translator, version 3.2"  
METAFILE DESCRIPTION : ""

Picture 1 starts at octet offset 98; string contains: "1"

Conformance Summary : This file conforms to the CGM specification.

However, this file does not satisfy  
the CALS CGM Profile (MIL-D-28003).

Summary of Testing Performed and Errors Found:

1 Pictures Tested  
756 Elements Tested  
6422 Octets Tested

0 Illegal CGM Elements	1000 -	1999
0 Incorrect CGM Element Lengths	2000 -	2999
0 CGM State Errors	3000 -	3499
0 Required CGM Elements Missing or Wrong	4000 -	4499
0 CGM Parameter Values Out of Range	6000 -	6499
0 CGM Structure Errors	7000 -	7499
0 *** CGM Errors Found (total) ***		
0 Profile State Errors	3500 -	3999
0 Illegal Profile Elements	4500 -	4999
4 Profile Parameter Values Out of Range	6500 -	6999
0 Profile Data Limits Exceeded	8500 -	8999
0 Other Profile Constraints Violated	9500 -	9999
4 *** Profile Violations Found (total) ***		
0 Warnings (Advisory Remarks)	20000 -	20999

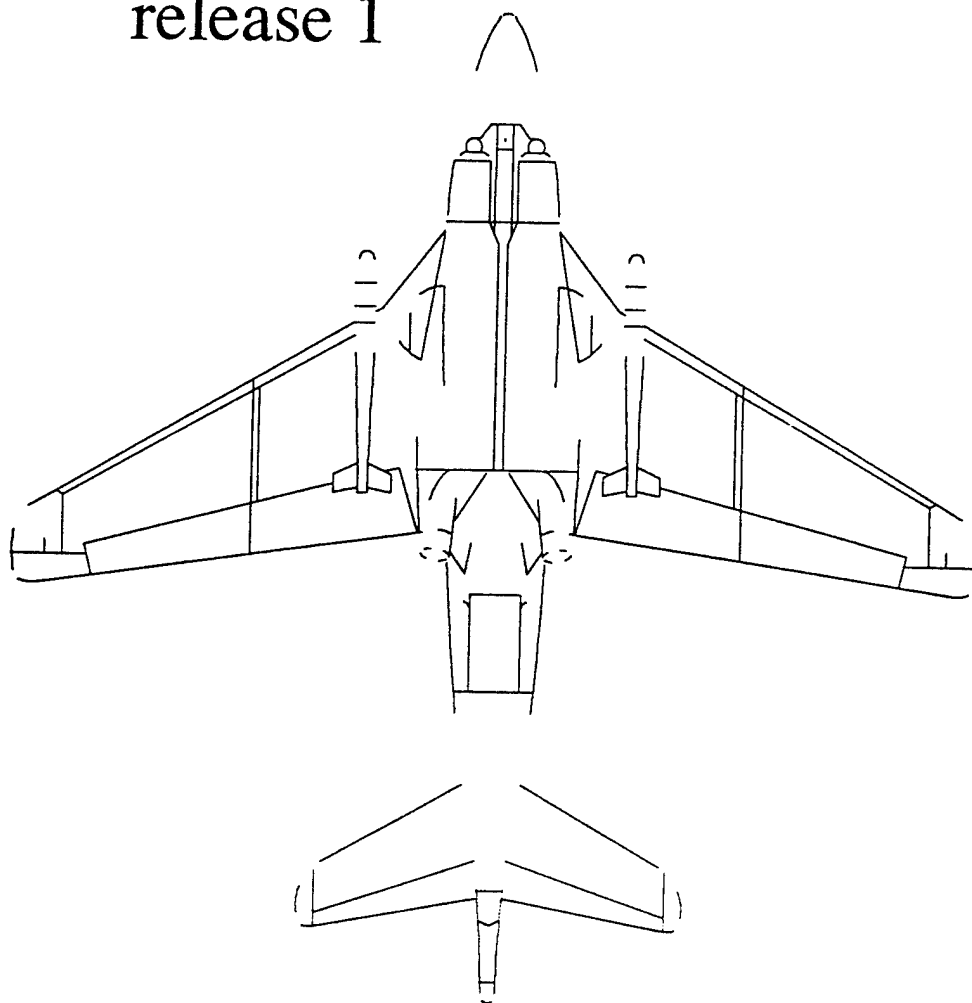
2 distinct errors and warnings were reported.

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

---

### 13.4.2 CGMView Hard Copy

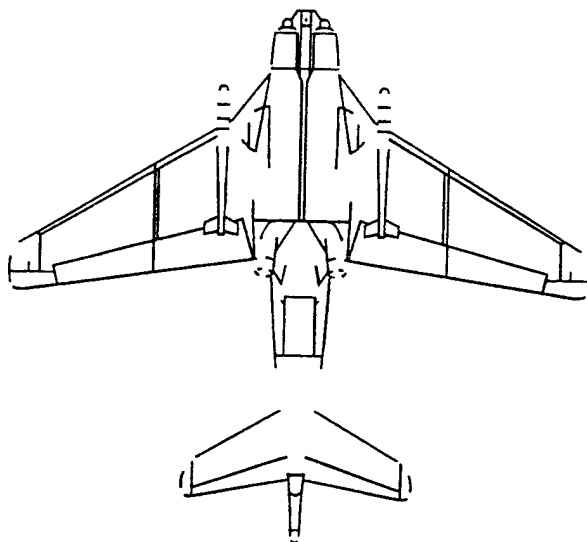
## CHARISMA VERSION 2.1 release 1



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### 13.4.3 Harvard Graphics Hard Copy

*CHARISMA VERSION 2.1*  
*release 1* ^



**Harvard Graphics 3.0**  
**D001C004**

---

## 13.5 D001C005

### 13.5.1 Parser Log

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/15/92 Time: 07:43:09

Metafile Examined : \Tapetool\set005\d001\d001c005.cgm

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

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

Tracing not selected.

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

Bulletin 20014: Element Class/ID: 5/25 Offset: 5574 octets Element No. 480  
Warning; a pattern index is being used without the corresponding pattern  
table entry's having been previously specified.

Bulletin 20014: Element Class/ID: 5/25 Offset: 5736 octets Element No. 496  
Warning; a pattern index is being used without the corresponding pattern  
table entry's having been previously specified.

Bulletin 20014: Element Class/ID: 5/25 Offset: 6332 octets Element No. 538  
Warning; a pattern index is being used without the corresponding pattern  
table entry's having been previously specified.

Bulletin 20014: Element Class/ID: 5/25 Offset: 7200 octets Element No. 614  
Warning; a pattern index is being used without the corresponding pattern  
table entry's having been previously specified.

Bulletin 20014: Element Class/ID: 5/25 Offset: 8460 octets Element No. 772  
Warning; a pattern index is being used without the corresponding pattern  
table entry's having been previously specified.

Error Summary Message 20016.

Warning; the following pattern indices were used without being set: 6,  
10, 12, 13

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

Error 6501: Element Class/ID: 1/2 Offset: 44 octets Element No. 2  
The METAFILE DESCRIPTION string is invalid; it lacks the phrase  
"MIL-D-28003/BASIC-1" required by the Profile.

Error 6515: Element Class/ID: 3/4 Offset: 276 octets Element No. 35  
The Transparency Indicator is invalid; it must be 1 (on).

Error 6515: Element Class/ID: 3/4 Offset: 640 octets Element No. 40  
The Transparency Indicator is invalid; it must be 1 (on).

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

Error 6515: Element Class/ID: 3/4 Offset: 11544 octets Element No. 1069  
The Transparency Indicator is invalid; it must be 1 (on).

Error 6515: Element Class/ID: 3/4 Offset: 11616 octets Element No. 1081  
The Transparency Indicator is invalid; it must be 1 (on).

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

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/15/92 Time: 07:43:15

Name of CGM under test: \Tapetool\set005\d001\d001c005.cgm  
Encoding : Binary

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

BEGIN METAFILE string : "Micrografx CGM Translator, version 3.2"  
METAFILE DESCRIPTION : ""

Picture 1 starts at octet offset 98; string contains: "1"

Conformance Summary : This file conforms to the CGM specification.

However, this file does not satisfy  
the CALS CGM Profile (MIL-D-28003).

Summary of Testing Performed and Errors Found:

1 Pictures Tested  
1090 Elements Tested  
11754 Octets Tested

0 Illegal CGM Elements	1000 -	1999
0 Incorrect CGM Element Lengths	2000 -	2999
0 CGM State Errors	3000 -	3499
0 Required CGM Elements Missing or Wrong	4000 -	4499
0 CGM Parameter Values Out of Range	6000 -	6499
0 CGM Structure Errors	7000 -	7499

---

0	***	CGM Errors Found (total)	***
0		Profile State Errors	3500 - 3999
0		Illegal Profile Elements	4500 - 4999
116		Profile Parameter Values Out of Range	6500 - 6999
0		Profile Data Limits Exceeded	8500 - 8999
0		Other Profile Constraints Violated	9500 - 9999
116	***	Profile Violations Found (total)	***
5		Warnings (Advisory Remarks)	20000 - 20999

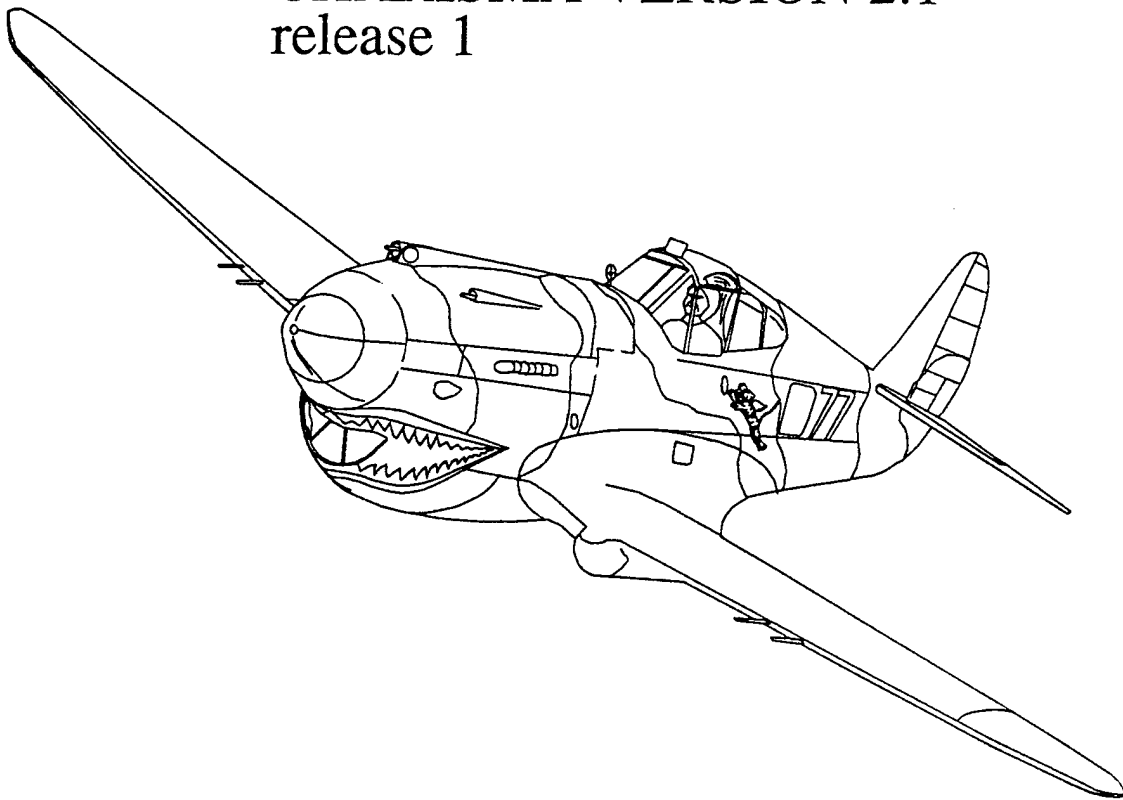
3 distinct errors and warnings were reported.

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

---

### 13.5.2 CGMView Hard Copy

CHARISMA VERSION 2.1  
release 1



### 13.5.3 Harvard Graphics Hard Copy

*CHARISMA VERSION 2.1  
release 1*



**Harvard Graphics 3.0  
D001C005**

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## 13.6 D001C006

### 13.6.1 Parser Log

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/15/92 Time: 07:43:21

Metafile Examined : \Tapetool\set005\d001\d001c006.cgm

Pictures Examined : All

Elements Examined : All

Bytes Examined : All

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

Tracing not selected.

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

Error 4011: Element Class/ID: 0/2 Offset: 1154 octets Element No. 74  
The following elements appear in this CGM and should be indicated in the  
METAFILE ELEMENT LIST:  
COLOUR PRECISION  
Text ALIGNMENT

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

Error 6501: Element Class/ID: 1/2 Offset: 20 octets Element No. 3  
The METAFILE DESCRIPTION string is invalid; it lacks the phrase  
"MIL-D-28003/BASIC-1" required by the Profile.

Error 6508: Element Class/ID: 1/13 Offset: 242 octets Element No. 6  
The FONT LIST element is invalid; it may not contain  
more than 4 font names.

Error 6509: Element Class/ID: 1/13 Offset: 242 octets Element No. 6  
Invalid list parameters; each of the Font Names in the FONT LIST element  
must be among the Font Names allowed by the Profile.

Error 6521: Element Class/ID: 5/10 Offset: 1108 octets Element No. 70  
The Text Font Index value is invalid; it must not exceed 4.

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

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/15/92 Time: 07:43:24

---

Name of CGM under test: \Tapetool\set005\d001\d001c006.cgm  
Encoding : Binary

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

BEGIN METAFILE string : "DRFIGHTR.CGM"  
METAFILE DESCRIPTION : "WPCORP CGM Output Version 1.0"

Picture 1 starts at octet offset 376; string contains: "DRFIGHTR.CGM"

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:

1 Pictures Tested  
74 Elements Tested  
1156 Octets Tested

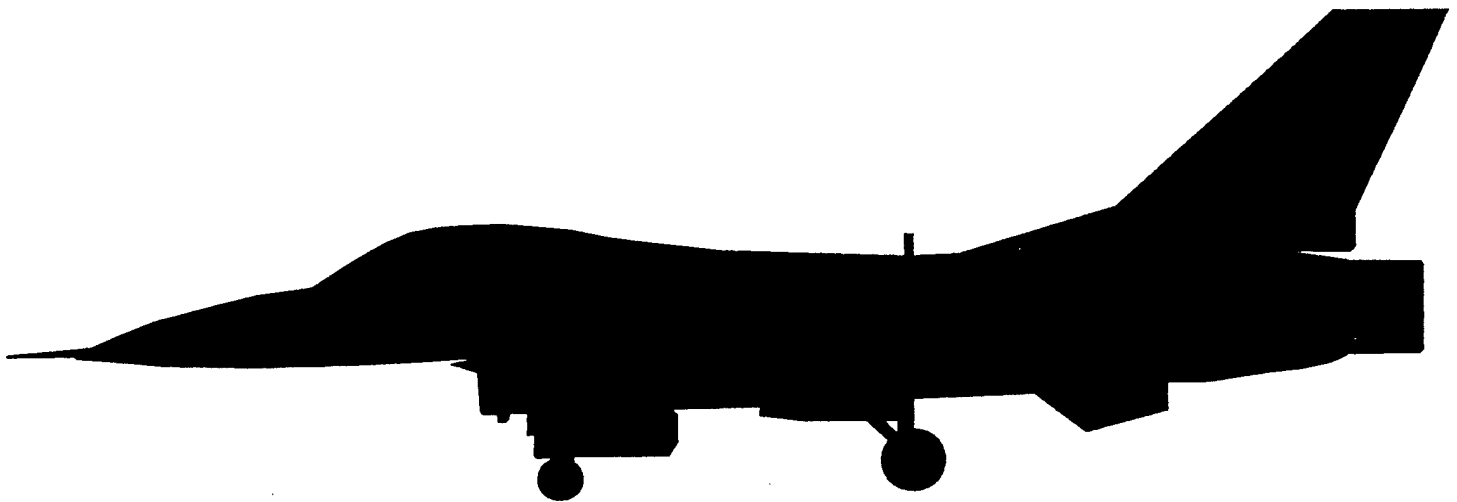
0 Illegal CGM Elements	1000 -	1999
0 Incorrect CGM Element Lengths	2000 -	2999
0 CGM State Errors	3000 -	3499
1 Required CGM Elements Missing or Wrong	4000 -	4499
0 CGM Parameter Values Out of Range	6000 -	6499
0 CGM Structure Errors	7000 -	7499
1 *** CGM Errors Found (total)	***	
0 Profile State Errors	3500 -	3999
0 Illegal Profile Elements	4500 -	4999
4 Profile Parameter Values Out of Range	6500 -	6999
0 Profile Data Limits Exceeded	8500 -	8999
0 Other Profile Constraints Violated	9500 -	9999
4 *** Profile Violations Found (total)	***	
0 Warnings (Advisory Remarks)	20000 -	20999

5 distinct errors and warnings were reported.

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

### 13.6.2 CGMView Hard Copy

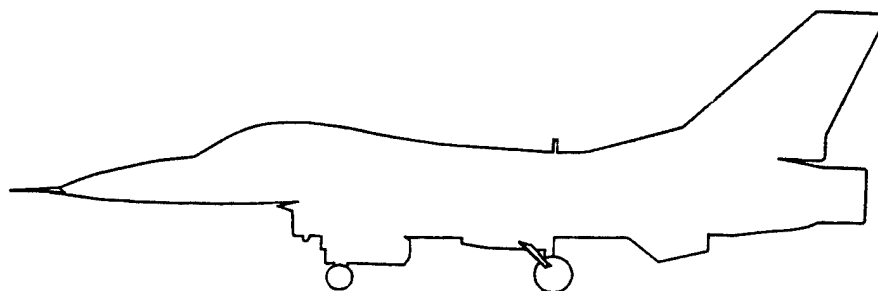
DrawPerfect Version 1.1



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### 13.6.3 Harvard Graphics Hard Copy

DrawPerfect Version 1.1



**Harvard Graphics 3.0**  
**D001C006**

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## 13.7 D002C003

### 13.7.1 Parser Log

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/16/92 Time: 10:01:45

Metafile Examined : \Tapetool\set005\d002\d002c003.cgm

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

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

Tracing not selected.

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

Error 4011: Element Class/ID: 0/2 Offset: 1520 octets Element No. 81  
The following elements appear in this CGM and should be indicated in the  
METAFILE ELEMENT LIST:  
VDC INTEGER PRECISION

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

Error 6501: Element Class/ID: 1/2 Offset: 40 octets Element No. 3  
The METAFILE DESCRIPTION string is invalid; it lacks the phrase  
"MIL-D-28003/BASIC-1" required by the Profile.

Error 6508: Element Class/ID: 1/13 Offset: 204 octets Element No. 15  
The FONT LIST element is invalid; it may not contain  
more than 4 font names.

Error 6509: Element Class/ID: 1/13 Offset: 204 octets Element No. 15  
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 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/16/92 Time: 10:01:48

Name of CGM under test: \Tapetool\set005\d002\d002c003.cgm  
Encoding : Binary

---

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

BEGIN METAFILE string : "fig1_cgm.cgm from fig1_cgm.sty"  
METAFILE DESCRIPTION : "Interleaf Inc. MDL/G CGM 1990"

Picture 1 starts at octet offset 628; string contains: "fig1"

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:

1 Pictures Tested  
81 Elements Tested  
1522 Octets Tested

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

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

0 Warnings (Advisory Remarks)	20000 -	20999
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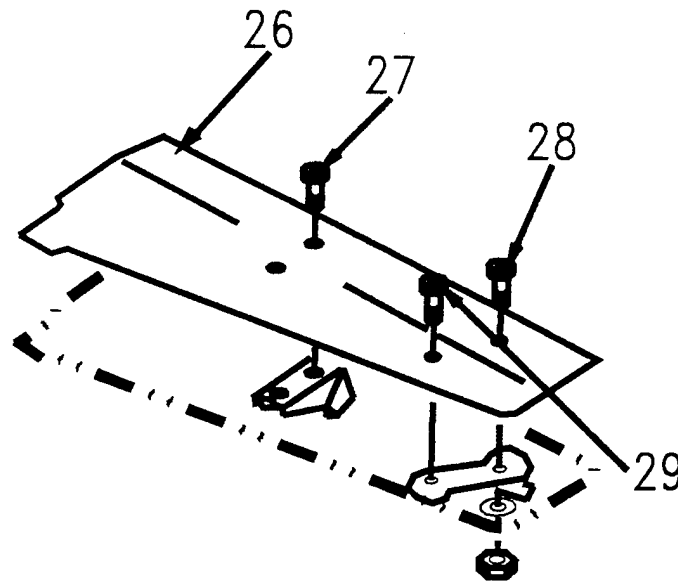
4 distinct errors and warnings were reported.

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

---

### 13.7.2 CGMView Hard Copy

### 13.7.3 Harvard Graphics Hard Copy



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## 13.8 D003C002

### 13.8.1 Parser Log

MetaCheck Version 2.05 -- CGM Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/16/92 Time: 11:44:59

Metafile Examined : \Tapetool\set005\d003\d003c002.cgm

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

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

Tracing not selected.

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

Error 4011: Element Class/ID: 0/2 Offset: 4096 octets Element No. 157  
The following elements appear in this CGM and should be indicated in the  
METAFILE ELEMENT LIST:  
VDC INTEGER PRECISION

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

MetaCheck Version 2.05 -- CGM Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/16/92 Time: 11:45:02

Name of CGM under test: \Tapetool\set005\d003\d003c002.cgm  
Encoding : Binary

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

BEGIN METAFILE string : "ati_cals_demo/test_cgm_1.drw"  
METAFILE DESCRIPTION : "Arbor Text draw2cgm version 1.03 ***  
MIL-D-28003/BASIC-1"

Picture 1 starts at octet offset 246; string contains: ""

Conformance Summary : This file is not a conforming CGM.

Summary of Testing Performed and Errors Found:

---

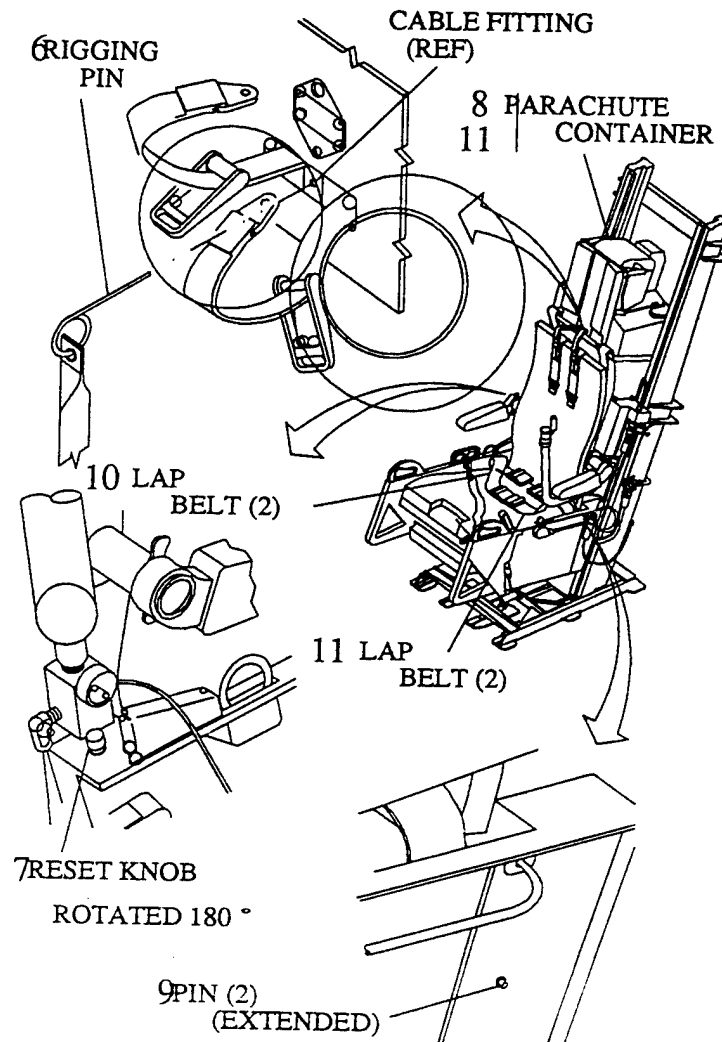
1 Pictures Tested  
157 Elements Tested  
4098 Octets Tested

0 Illegal CGM Elements	1000 -	1999
0 Incorrect CGM Element Lengths	2000 -	2999
0 CGM State Errors	3000 -	3499
1 Required CGM Elements Missing or Wrong	4000 -	4499
0 CGM Parameter Values Out of Range	6000 -	6499
0 CGM Structure Errors	7000 -	7499
1 *** CGM Errors Found (total)	***	
0 Warnings (Advisory Remarks)	20000 -	20999

1 distinct errors and warnings were reported.

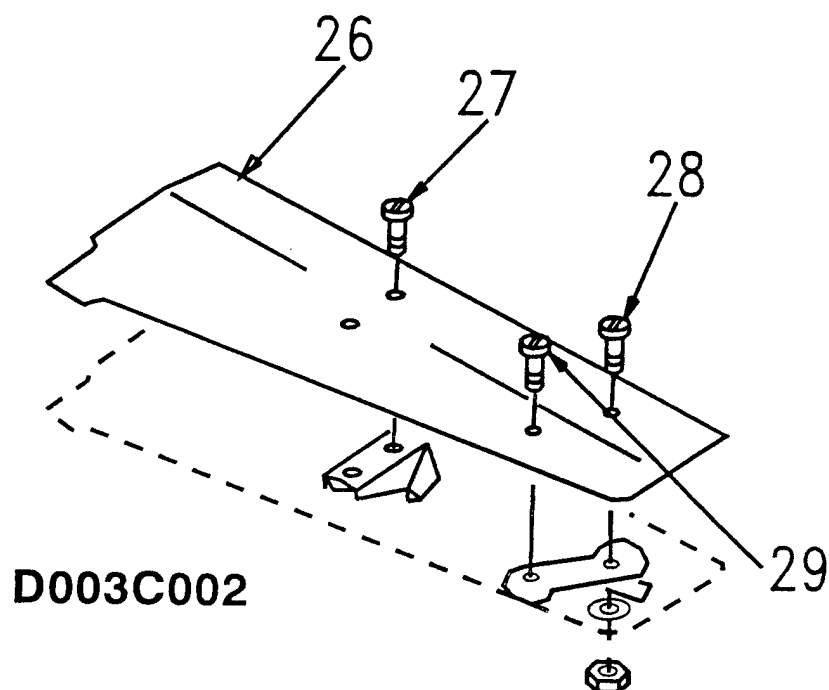
===== End of Conformance Report =====

### 13.8.2 CGMView Hard Copy (D003C002 - D003C003)

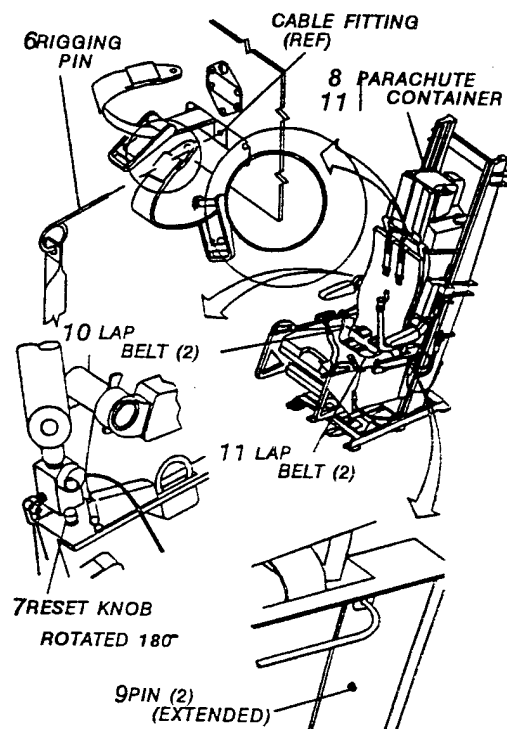


(TYPICAL)

### 13.8.3 Harvard Graphics (D003C002 - D003C003)



**D003C002**



**D003C003**

(TYPICAL)

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## 13.9 D003C003

### 13.9.1 Parser Log

MetaCheck Version 2.05 -- CGM Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/16/92 Time: 11:45:09

Metafile Examined : \Tapetool\set005\d003\d003c003.cgm

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

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

Tracing not selected.

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

Bulletin 20009: Element Class/ID: 4/1 Offset: 22914 octets Element No. 1785  
Warning; POLYLINE with only one distinct vertex.

Bulletin 20009: Element Class/ID: 4/1 Offset: 25396 octets Element No. 1835  
Warning; POLYLINE with only one distinct vertex.

Error 4011: Element Class/ID: 0/2 Offset: 73514 octets Element No. 2720  
The following elements appear in this CGM and should be indicated in the  
METAFILE ELEMENT LIST:  
VDC INTEGER PRECISION

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

MetaCheck Version 2.05 -- CGM Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 06/16/92 Time: 11:45:20

Name of CGM under test: \Tapetool\set005\d003\d003c003.cgm  
Encoding : Binary

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

BEGIN METAFILE string : "ati_cals_demo/test_cgm_2.drw"  
METAFILE DESCRIPTION : "Arbor Text draw2cgm version 1.03 ***  
MIL-D-28003/BASIC-1"

---

Picture 1 starts at octet offset 272; string contains: ""

Conformance Summary : This file is not a conforming CGM.

Summary of Testing Performed and Errors Found:

1 Pictures Tested		
2720 Elements Tested		
73516 Octets Tested		
0 Illegal CGM Elements	1000 -	1999
0 Incorrect CGM Element Lengths	2000 -	2999
0 CGM State Errors	3000 -	3499
1 Required CGM Elements Missing or Wrong	4000 -	4499
0 CGM Parameter Values Out of Range	6000 -	6499
0 CGM Structure Errors	7000 -	7499
1 *** CGM Errors Found (total)	***	
2 Warnings (Advisory Remarks)	20000 -	20999

2 distinct errors and warnings were reported.

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