



# AFCTN Test Report 93-069

AFCTB-ID  
93-041

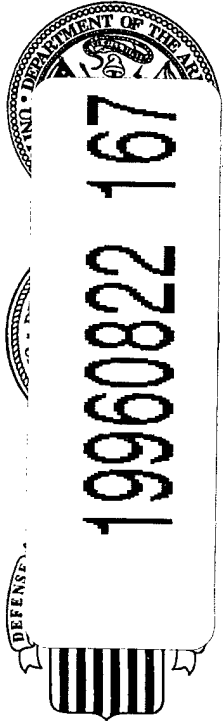


## Technical Publication Transfer



Using:

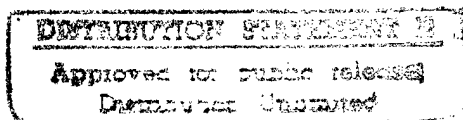
## Northrop Corporation's Data



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

## Quick Short Test Report

22 April 1993



Prepared for

[DTIC QUALITY INSPECTED 3



Electronic Systems Center

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**Technical Publication Transfer  
Using:  
Northrop Corporation's Data**

**MIL-D-28000A (IGES)**

**MIL-M-28001A (SGML)**

**MIL-R-28002A (Raster)**

**MIL-D-28003 (CGM)**

**Quick Short Test Report**

**22 April 1993**

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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 Northrop Corporation's interpretation and use of the CALS standards in transferring technical publication data. Northrop used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

## 2. Test Parameters

Test Plan: AFCTB 93-041

Date of Evaluation: 22 April 1993

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

Data Originator: John P. Kent  
Northrop Corporation  
B-2 Division  
L591/GK  
8900 E. Washington Blvd  
Pico Rivera CA 90660  
(310) 948-0624

Data Description: Technical Manual Test  
2 Document Declaration file  
2 Document Type Definitions (DTD)  
1 Initial Graphics Exchange Specification (IGES) file  
1 Text file  
1 Raster file  
1 Computer Graphics Metafile (CGM) file

Data Source System:

IGES

HARDWARE

Unknown

SOFTWARE

Unknown

---

---

TEXT/Standard Generalized Markup Language (SGML)

HARDWARE  
Unknown  
SOFTWARE  
Unknown

Raster

HARDWARE  
Unknown  
SOFTWARE  
Unknown

CGM

HARDWARE  
Unknown  
SOFTWARE  
Unknown

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

SUN 3/280

AFCTN Tapetool v1.2.8 UNIX  
XSoft Compugraphics CAPS/CALS v40.4  
Texas Instruments (TI) Tapetool v1.0.1

PC 486/50

AFCTN Tapetools v1.2.9 DOS

MIL-D-28000 (IGES)

Sun SparcStation 2

ArborText iges2draw  
IGES Data Analysis  
(IDA) Parser/Verifier v92

IDA IGESView v3.05

PC 486/50

AUTODESK AutoCAD 386 R12  
Cadkey Cadkey v5.02

MIL-M-28001 (SGML)

Cheetah Gold 486

Datalogics ParserStation v3.36  
Exoterica XGMLNormalizer v1.2e3.2  
Exoterica Validator v2.0 EXL.

McAfee & McAdam Sema Mark-it v2.3

MIL-R-28002 (Raster)

SUN SparcStation 2

ArborText g42tiff

AFCTN validg4

AFCTN calstb.475

IDA IGESView v3.0

Island Graphics IslandPaint v3.0

Cheetah

Inset Systems HiJaak v2.1

Inset Systems HiJaak Window v1.0

Software Publishing Corporation

(SPC) Harvard Graphics v3.0

Corel Ventura Publisher

MIL-D-28003 (CGM)

SUN SparcStation 2

ArborText cgm2draw

Island Graphics IslandDraw v3.0

Cheetah Gold 486

Advance Technology Center

(ATC) MetaView R 1.12

ATC MetaCheck R 2.05

SPC Harvard Graphics v3.05

Inset Systems HiJaak v2.1

Inset Systems HiJaak v1.0 Windows

Micrografx Designer v3.1

Micrografx Charisma v2.1

Corel Ventura Publisher

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

#### 3.2 Transmission Envelope

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

##### 3.2.1 Tape Formats

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

The tape was read using TI's version of *Tapetool v1.0.1* with no reported errors.

The tape was read using XSoft's *CAPS read1840A* without a reported error.

The tape was read using the AFCTN *Tapetool v1.2.9 (0) DOS* without a reported error.

### 3.2.2 Declaration and Header Fields

No errors were found in the Document Declaration file or data file headers.

The physical structure of the tape meets the CALS MIL-STD-1840A requirements.

## 4. IGES Analysis

The tape was evaluated using IDA's *Parser/Verifier* sets for CALS Class I standard. No errors were reported during this procedure.

The AFCTB has several tools for viewing IGES files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The file was converted using Arbortext's *iges2draw* utility. Because of a negative value for the X-axis, the "-bound data" switch had to be set. The resulting file was read into Island Graphics' *IslandDraw*. The image displayed and printed correctly.

The file was imported into AUTODESK's *AutoCAD R12* with the v5.1 IGES translator. The image displayed correctly on the screen.

The file was converted using Cadkey's *ig2c* utility with no reported errors. The file was read into Cadkey's *Cadkey* and displayed without a reported problem.

The file was converted using Rosetta Technologies' *Prepare* with an error reported on the maximum power of ten. The resulting file displayed correctly when read into *Preview*.

The file was read into IDA's *IGESView*, displayed and printed without a problem.

The IGES file meets the Cals MIL-D-28000A specification.

## 5. SGML Analysis

The tape contained two DTD and two Text files.

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

Because of problems defined below in the first document, the DTD had an error which prevented it from being parsed.

### 5.1 Document One

The first document contained a complete DTD and capacity statement. When this DTD was parsed, using the Exoterica *XGMLNormalizer* parser, several errors were reported. Discussions with Exoterica pointed to several critical errors in the DTD. The first error was the partial statement on line 7. No starting quote marks were shown. The next errors were on line 22-24 where an unknown reference was used. When the Exoterica reference file was used the values on lines 31 and 32 had to be added. The reference to FSIDREF on line 43 is believed to be a typo. This was changed to IDREF.

```
1      <!SGML "ISO 8879-1986"
2      CHARSET
3      BASESET "ISO 646-1983//CHARSET International Reference Version
4      (IRV)//ESC 2/5 4/0"
5      DESCSET      0      9      UNUSED
6      9      2      9
7      Right Part of Latin Alphabet Nr. 3//ESC 2/13 4/3"
8      DESCSET      128      32      UNUSED
9      160      5      32
```

---

---

10		165	1	UNUSED
11		166	88	38
12		254	1	127
13		255	1	UNUSED
14	CAPACITY	SGMLREF		
15	TOTALCAP	175000		
16	GRPCAP	70000		
17	ATTCAP	50000		
18	SCOPE	DOCUMENT		
19	SYNTAX			
20	SHUNCHAR CONTROLS	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17		
21		18 19 20 21 22 23 24 25 26 27 28 29 30 31 127 255		
22	BASESET	"ANSI X3.4-1986//CHARSET		
23		American Standard Code for		
24		Information Interchange (ASCII)//ESC 2/8 4/2"		
25	DESCSET	0	128	0
26	FUNCTION	RE		13
27		RS		10
28		SPACE		32

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

29	QUANTITY	SGMLREF	LITLEN	2048
30			NAMELEN	32
31			ATTCNT	80
32			GRPCNT	100

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

```
33 <!ELEMENT doc - - (front,body,closing) +(viewdef)>
34 <!ATTLIST doc
35   branch CDATA #IMPLIED
36   docid  NMTOKEN #IMPLIED
37   fosicite CDATA #REQUIRED>
38
39 <!ELEMENT viewdef - o (viewport+)>
40 <!ELEMENT viewport - o EMPTY >
41 <!ATTLIST viewport
42   name ID #IMPLIED
43   viewstyleid FSIDREF #IMPLIED
44   coord CDATA #IMPLIED
45   vpflood (black|white|red|orange|yellow|green|
46            blue|violet|brown|gray) #IMPLIED >
```

<<<<< REMOVED OF DTD REMOVED HERE >>>>>

When the above changes were made, the DTD and Text file parsed without reported errors using Exoterica's *XGML-Normalizer*, Exoterica's *Validator*, Datalogics' *ParseStation*, McAfee & McAdam's *Sema Mark-it*, and Public Domain's *sgmls*.

The DTD does not meet the CALS MIL-M-28001A specification.

## 5.2 Document Two

No errors were reported from any of the parsers on the DTD or Text files.

## 6. Raster Analysis

The tape contained one Raster file. This file was evaluated using the AFCTN *validg4* utility which reported the file as meeting the CALS MIL-R-28002A specification.

The file was read into the AFCTN *calstb.475* viewer without a problem. The image appeared to have a slight angle.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The file was read, displayed, and printed using Inset Systems' *HiJaak for Windows* with no reported errors.

The file was read, displayed, and printed using IDA's *IGES-View* with no reported errors.

The file was converted using ArborText's *g42tiff* utility with no reported errors. The resulting file was read into Island Graphics' *IslandPaint*, displayed and printed without a problem.

The Raster file meets the CALS MIL-R-28002A specification.

---

## 7. CGM Analysis

The tape contained one CGM file. This file was evaluated using ATC's *MetaCheck* with CALS options.

The AFCTB has several tools for viewing CGM files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The file was read into ATC's *MetaView*. The display showed major errors in the fonts and text. This program also reported an error during this procedure.

The file was converted without reported error using Arbor-Text's *cgm2draw* utility. The resulting file was read into Island Graphics' *IslandDraw*, displayed and printed. Some text appeared to overflow the defined area. No color was displayed.

The file was converted using Island Graphics' *IslandDraw* software without a reported error. The resulting image displayed in color. Errors were noted in the elliptical arcs, both open and closed.

The file was read into ATC's *forreview* without a reported error. Some text overflow was noted. The graphical entities appeared to be correct.

When an attempt to read the file using the Micrografx *Designer* and *Charisma*, nothing displayed. No error messages were displayed. According to Michael Harrison of Micrografx, "Micrografx is aware of the problems associated with reading these files and is working on a solution to be implemented in a future release of our products."

Inset Systems' *HiJaak for Windows* reported a C Runtime error when the file was read.

The CGM file was reported as meeting the CALS MIL-D-28003 specification.

---

## 8. Conclusions and Recommendations

The physical tape structure on the tape from Northrop Corporation was correct. There were no reported errors from any of the four different tape reading utilities.

The IGES file meets the CALS MIL-D-28000A specification.

The DTD in document one had a reference which prevented it from being parsed. The SGML part of this tape did not meet the CALS MIL-M-28001A specification.

The Raster file meets the CALS MIL-R-28002A specification.

The CGM file was reported as meeting the CALS MIL-D-28003 specification.

The tape does not meet the CALS MIL-STD-1840A requirements, because of the DTD file error in Document One.

---

## 9. Appendix A - Tapetool Report Logs

### 9.1 Tape Catalog

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

Standards referenced:

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

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

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

Thu Apr 22 10:22:05 1993

MIL-STD-1840A File Catalog

File Set Directory: /cals/tapetool8/Set093

Page: 1

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001	Document Declaration	D/00260	02048/000001	Extracted
D002	Document Declaration	D/00260	02048/000001	Extracted
D001T001	Text	D/00260	02048/000001	Extracted
D001G002	DTD	D/00260	02048/000003	Extracted
D001H003	Output Specification	D/00260	02048/000016	Extracted
D002T001	Text	D/00260	02048/000002	Extracted
D002C002	CGM	F/00080	00800/000006	Extracted
D002R003	Raster	F/00128	02048/000017	Extracted
D002Q004	IGES	F/00080	02000/000012	Extracted
D002G005	DTD	D/00260	02048/000010	Extracted
D002H006	Output Specification	D/00260	02048/000061	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

Thu Apr 22 10:21:50 1993

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1ITDS01                      CONTROLLER

4

Label Identifier: VOL1  
Volume Identifier: ITDS01  
Volume Accessibility:  
Owner Identifier:  
Label Standard Version: 4

HDR1D001                      ITDS0100010001000100 93104 93104 000000 CONTROLLER

Label Identifier: HDR1  
File Identifier: D001  
File Set Identifier: ITDS01  
File Section Number: 0001  
File Sequence Number: 0001  
Generation Number: 0001  
Generation Version Number: 00  
Creation Date: 93104  
Expiration Date: 93104  
File Accessibility:  
Block Count: 000000  
Implementation Identifier: CONTROLLER

HDR2D0204800260

00

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



---

Implementation Identifier: CONTROLLER

HDR2D0204800260 00

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

\*\*\*\*\* Tape Mark \*\*\*\*\*

Actual Block Size Found = 2048 Bytes.

Number of data blocks read = 61.

\*\*\*\*\* Tape Mark \*\*\*\*\*

EOF1D002H006 ITDS0100010011000100 93104 93104 000061 CONTROLLER

Label Identifier: EOF1  
File Identifier: D002H006  
File Set Identifier: ITDS01  
File Section Number: 0001  
File Sequence Number: 0011  
Generation Number: 0001  
Generation Version Number: 00  
Creation Date: 93104  
Expiration Date: 93104  
File Accessibility:  
Block Count: 000061  
Implementation Identifier: CONTROLLER

EOF2D0204800260 00

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

\*\*\*\*\* Tape Mark \*\*\*\*\*

\*\*\*\*\* Tape Mark \*\*\*\*\*

##### End of Volume ITDS01 #####

AFCTN Test Report  
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---

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

Tape Import Process terminated with 0 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

Thu Apr 22 10:22:05 1993

MIL-STD-1840A File Set Evaluation Log

File Set: Set093

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: John P. Kent, ITDS Chief Engineer, Northrop Corporation, B-2 Division, L591/GK  
E. Washington Blvd., Pico Rivera, CA 90660-3765 (310) 948-0624

srcdocid: STPRO25.2.4

srcrelid: NONE

chglvl: ORIGINAL

dteisu: 19930414

dstsys: Jeff Fisher, Integration Manager, USAF CALS Test Bed, HQ AFMC (I)/ENCT,  
TechneCenter, 4027 Col. Glenn Highway, Dayton, OH 45431-1601

dstdocid: STPRO25.2.4

dstrelid: NONE

dtetrm: 19930414

dlvacc: NONE

filcnt: T1, H1, G1

ttlcls: UNCLASSIFIED

doccls: UNCLASSIFIED

doctyp: DIRECTIVE

docttl: Test of error reports

Found file: D001T001

Extracting Text Header Records...

Evaluating Text Header Records...

srcdocid: STPRO25.2.4

dstdocid: STPRO25.2.4

txtfilid: W

doccls: UNCLASSIFIED

notes: NONE

Saving Text Header File: D001T001\_HDR

---

Saving Text Data File: D001T001\_TXT

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

srcdocid: STPRO25.2.4  
dstdocid: STPRO25.2.4  
notes: NONE

Saving DTD Header File: D001G002\_HDR  
Saving DTD Data File: D001G002\_DTD

Found file: D001H003  
Extracting Output Specification Header Records...  
Evaluating Output Specification Header Records...

srcdocid: STPRO25.2.4  
dstdocid: STPRO25.2.4  
notes: NONE

Saving Output Specification Header File: D001H003\_HDR  
Saving Output Specification Data File: D001H003\_OS

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  
Extracting Document Declaration Header Records...  
Evaluating Document Declaration Header Records...

srcsys: John P. Kent, ITDS Chief Engineer, Northrop Corporation, B-2 Division, L591/GK  
E. Washington Blvd., Pico Rivera, CA 90660-3765 (310) 948-0624  
srcdocid: STPRO25.2.5  
srcrelid: NONE  
chglvl: ORIGINAL  
dteis: 19930414  
dstsys: Jeff Fisher, Integration Manager, USAF CALS Test Bed, HQ AFMC (I)/ENCT,  
TechneCenter, 4027 Col. Glenn Highway, Dayton, OH 45431-1601  
dstdocid: STPRO25.2.5

---

dstrelid: NONE  
dtetrm: 19930414  
dlvacc: NONE  
filcnt: T1, H1, G1, C1, Q1, R1  
ttlcls: UNCLASSIFIED  
doccls: UNCLASSIFIED  
doctyp: DIRECTIVE  
docttl: Test of local directives

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

Found file: D002H006  
Extracting Output Specification Header Records...  
Evaluating Output Specification Header Records...

srcdocid: STPRO25.2.5  
dstdocid: STPRO25.2.5  
notes: NONE

Saving Output Specification Header File: D002H006\_HDR  
Saving Output Specification Data File: D002H006\_OS

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.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

---

## 10. Appendix B - Detailed IGES Analysis

### 10.1 File D002Q004

#### 10.1.1 Parser/Verifier Log

```
*** IGES DATA FILE ANALYSIS ***  
***      MARCH 1992      ***  
***   IGES Data Analysis   ***  
***      (708) 449-3430      ***
```

Input file is /mnt/Set093/D002/D002Q004\_IGS

Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)

Today is April 22, 1993 11:23 AM

#### \*\*\* File and Product Name Information \*\*\*

```
File name from sender      = 'Q004.iges'  
File creation Date.Time   = '930414.144200'  
Model change Date.Time    = ''  
Author                    = 'tom'  
Department                = 'GRAPHICS'  
Product name from sender  = 'Q004.iges'  
Destination product name  = 'Q004.iges'
```

#### \*\*\* Parameter Delimiters \*\*\*

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

#### \*\*\* Originating System Data \*\*\*

```
System ID          = 'ITDS CONVERTER: GEF_IGES'  
Preprocessor version = '1.0'  
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+00  
 Unit flag = 1  
 Units = 'IN'  
 Line weights = 4  
 Maximum line thickness = 1.536842E-02  
 Minimum line thickness = 3.842105E-03  
 Granularity = 1.000000E-03  
 Maximum coordinate = 2.954101E+00

Drafting standard applicable to original data is not specified.

\*\*\* Status Flag Summary \*\*\*

Blank status:	Visible	41
	Blanked	0
Independence:	Independent	39
	Physically Subordinate	0
	Logically Subordinate	2
	Totally Subordinate	0
Entity use:	Geometry	39
	Annotation	2
	Definition	0
	Other	0
	Logical/Positional	0
	2D parametric	0
	Not Specified	0
Hierarchy:	Structure DE applies	0
	Subordinate DE applies	41
	Hierarchy property applies	0
	Not Specified	0

\*\*\* Entity Occurrence Counts \*\*\*

Entity	Form	Level	Count	Type
-----	----	-----	-----	-----
106	11	0	24	Copious data - Piecewise planar, linear string(2D path)
106	63	0	8	Simple closed planar curve
110	0	0	6	Line
404	0	0	1	Drawing
406	16	0	1	Property - Drawing size
410	0	0	1	View - Orthographic parallel

\*\*\* Entity Count by Level \*\*\*

Level	Count
0	41

\*\*\* Labeling Information \*\*\*

0% of the entities are labeled.

Unlabeled	41
-----------	----

\*\*\* Line Fonts Used in Data \*\*\*

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
-	-	-	32	-	6	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted
-	-	-	-	-	-	-	-	User defined

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

\*\*\* Line Widths Used in Data \*\*\*

Weight	Count	Width
Defaulted	3	(0.0038)
3	10	(0.0115)
1	28	(0.0038)

\*\*\* Colors Used in Data \*\*\*

Defaulted	3
Red	8
Green	30

\*\*\*\*\*  
\*\*\*\*\* ENTITY ANALYSIS \*\*\*\*\*  
\*\*\*\*\*

\*\*\* Entity type: 106

\*\*\* Entity type: 110

-- 6 lines averaging 1.362447E-01 units --

\*\*\* Entity type: 404

Drawing at D 5 contains 1 views.  
Drawing at D 5 contains 0 annotation entities.

\*\*\* Entity type: 406

\*\*\* Entity type: 410

Scale of view at D 1 is 1.000000E+00.  
Orthographic View entity at D 1 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 \*\*\*

\*\*\* Error Summary \*\*\*

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

\*\*\* End of Analysis of /mnt/Set093/D002/D002Q004\_IGS \*\*\*

## 10.1.2 Parser Log - AutoCAD R12

Title: IGESIN Journal (v5.1 Nov 05 1992)

=====  
File: I:/9341/Q204.xli  
Date: Thu, Apr 22, 1993  
Time: 10:44:27  
=====

EVALUATION VERSION -- NOT FOR RESALE

Translator S/N: 117-10075750  
Translating from IGES file: I:/9341/Q204.IGS

---

---

to AutoCAD Drawing: I:\9341\Q204.dwg

---

Options obtained from: default settings  
Curves Approximated to Tolerance of 0.01  
Surfaces Approximated to Tolerance of 0.01

Text Font/Style mapping:

IGES Text font	Style Name	ACAD Font
0	SYMBOL0	iges0
1	STANDARD	txt
2	LEROY	txt
3	FUTURA	txt
6	COMP80	txt
12	GOTHICE	gothice
13	GOTHICI	gothici
14	ROMANS	romans
17	ROMANT	romant
18	ROMAND	romand
19	OCR	txt
1001	SYMBOL1	iges1001
1002	SYMBOL2	iges1002
1003	SYMBOL3	iges1003
2001	KANJI	bigfont

IGES Linefont/AutoCAD Linetype mapping

IGES Line Font	AutoCAD linetype	Shape file
0	BYLAYER	
1	CONTINUOUS	
2	DASHED	acad.lin
3	PHANTOM	acad.lin
4	CENTER	acad.lin
5	DOT	acad.lin

---

Parse phase

---

Start Section:

CONFORMANCE:

MIL-D-28000 Amendment1, 20 December 1988  
Technical Illustration Class I Subset

ILLUSTRATION IDENTIFIER:

---

Q004.iges

Global Section:

Parameter Delimiter: ,  
Record Delimiter: ;  
Sending Product ID: Q004.iges  
File Name: Q004.iges  
System ID: ITDS CONVERTER: GEF\_IGES  
Preprocessor Version: 1.0  
Size of Integer: 32  
Sgl. Precision Mag: 38  
Sgl. Precision Sig: 6  
Dbl. Precision Mag: 308  
Dbl. Precision Sig: 15  
Receiving Product ID: Q004.iges  
Model Space Scale: 1.000000  
Unit Flag: 1  
Unit String: IN  
# of Line Weights: 4  
Maximum Line Width: 0.015368  
Creation Date: 04/14/93 14:42:00  
Minimum Resolution: 0.001000  
Maximum Coordinate: 2.954101  
Author: tom  
Organization: GRAPHICS  
IGES Version Number: 6  
Drafting Standard: 0

Entity Summary:

Type	Form	Description	Count
106	11	Planar Piecewise Linear Curve	24
106	63	Simple Closed Planar Curve	8
110	0	Line	6
404	0	Drawing (form 0)	1
406	16	Property (Drawing Size)	1
410	0	View	1
Total			41

Translation phase

Drawing Entity (404 Form 0) at DE 5, with  
name = ,

---

size = 3.579889, 3.842107,  
units = IN,  
was processed in the AutoCAD drawing file: I:\9341\Q204.dwg

\*\*\* Warning (ACAD\_NEW\_VIEW\_VOLUME\_GENERATED) \*\*\*  
( DE: 1 TF: 410:0 )  
A new view volume has been generated for the view with:  
XMIN (-3.565349), XMAX (0.844311),  
YMIN (-1.296656), YMAX (3.362281),  
ZMIN (-0.500106), ZMAX (0.500106).

IGES Entity Summary

Type	Form	Description	Count	Processed	Errors
106	11	Planar Piecewise Linear Curve	24	24	0
106	63	Simple Closed Planar Curve	8	8	0
110	0	Line	6	6	0
404	0	Drawing (form 0)	1	1	0
406	16	Property (Drawing Size)	1	1	0
410	0	View	1	1	0
Totals			41	41	0

AutoCAD Entity Summary

Entity	Created	Errors
LINE	6	0
POLYLINE	32	0
Totals	38	0

---

Error Summary:

The following message was issued 1 time(s)  
A new view volume has been generated for the view with:  
XMIN (%lf), XMAX (%lf),  
YMIN (%lf), YMAX (%lf),  
ZMIN (%lf), ZMAX (%lf).

Status: 0  
Warning: 1  
Error: 0  
Fatal: 0

AFCTN Test Report  
93-069

AFCTB Test Report  
93-041

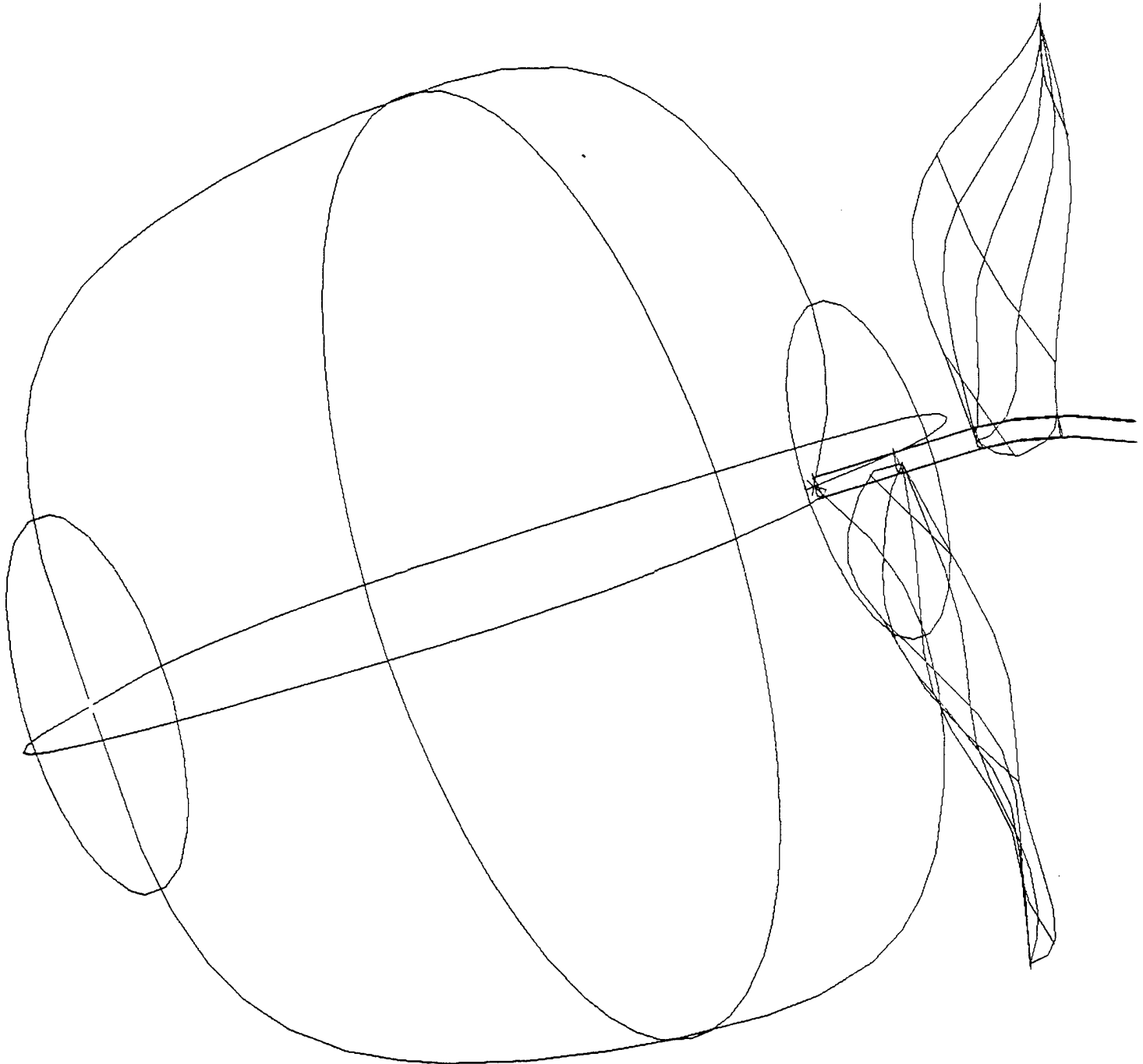
---

Elapsed Time:

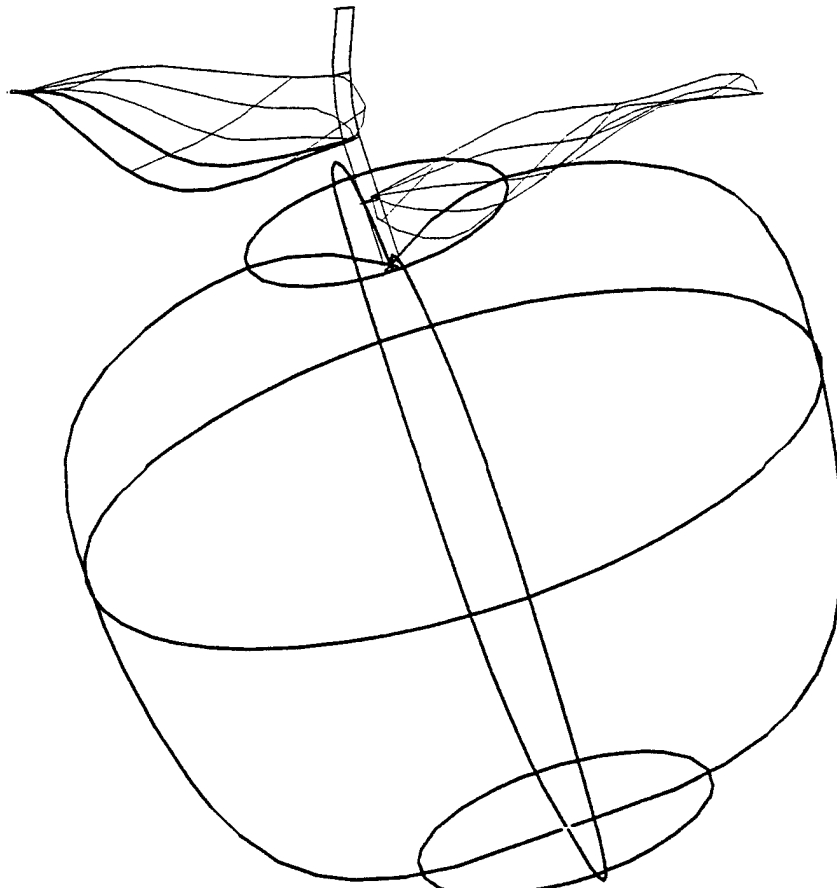
Processor: 00:00:11

Clock: 00:00:12

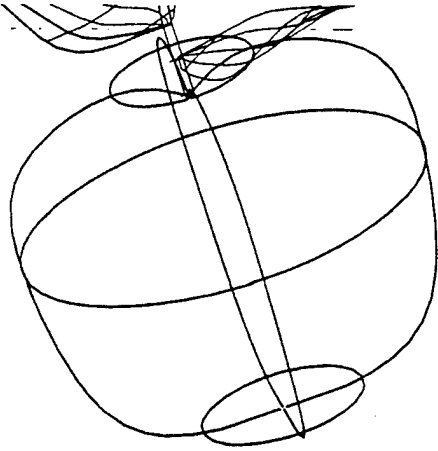
### 10.1.3 Output Cadkey v5.02



### 10.1.4 Output IGESView



### 10.1.5 Output iges2draw/IslandDraw



---

## 11. Appendix C - Detailed SGML Analysis

### 11.1 Datalogics Parser Log

SGML Document Type Definition Parser  
Version 3.36  
Copyright (c) Datalogics 1988, 1989, 1990, 1991  
An SGML System Conforming to  
International Standard ISO 8879  
Standard Generalized Markup Language

Log file: '9341-1.LOG'  
SDO File: 'north.sdo'  
Namecase General is yes.  
Namecase Entity is no.  
Parsing DTD file: '9341-1.dtd'

```
<!ATTLIST      viewport
              name          ID          #IMPLIED
              viewstyleid
FSIDREF DTD0137: Incorrect token 'FSIDREF'.
Parser Ignoring Input Up To Next MDO.
  In declaration: '<!ATTLIST'.
  In declaration: '<!DOCTYPE'.
  in line 33 in file '9341-1.dtd'
```

DTD does not conform to ISO 8879 standard due to these errors:  
Uncorrectable syntax error count: 1  
.DTO file not created due to parsing errors.

Program status code: 5.

### 11.2 Exoterica XGMLNormalizer Parser

```
C:\XGML\XGMLNORM.EXE --
Error on line 3 in file i:\9341\d001t001:
Unknown element name in start tag.
There is no such element as 'A82AA'.
The current element is 'A82A'.
End tags for the following elements are allowed: 'A82A', 'FRONT'.
Start tags for the following elements are allowed: 'A11', 'A12', 'A21',
'A22', 'A23', 'A24', 'A25', 'A26', 'A27', 'A28', 'A31', 'A32', 'A33',
'A34', 'A35', 'A41', 'A42', 'A43', 'A44', 'A45', 'A51', 'A52', 'A53',
```

---

'A54', 'A55', 'A61', 'A71', 'A72', 'A73', 'A81', 'A82', 'A82A', 'A82B',  
'A83', 'A84', 'A91', 'A92', 'A93', 'A94', 'A95', 'A96', 'A97', 'A98',  
'A99', 'AA1', 'AA2', 'AA3', 'AA4', 'AA5', 'AA6', 'AA7', 'AA8', 'AA9',  
'AAA', 'AAB', 'AB1', 'AB2', 'AB3', 'AB4', 'AB5', 'AB6', 'AC1', 'AC2',  
'AC3', 'AC4', 'AC5', 'AC6', 'AC7', 'AC8', 'AC9', 'AD1', 'AD2', 'AD3',  
'AE1', 'AF1', 'AF2', 'AF3', 'BODY'.

Start tags for the following inclusions are allowed: 'VIEWDEF'.  
Text is allowed.

C:\XGML\XGMLNORM.EXE --

Error on line 3 in file i:\9341\d001t001:

Unknown element name in start tag.

There is no such element as 'A82BB'.

The current element is 'A82B'.

End tags for the following elements are allowed: 'A82B', 'FRONT'.

Start tags for the following elements are allowed: 'A11', 'A12', 'A21',

'A22', 'A23', 'A24', 'A25', 'A26', 'A27', 'A28', 'A31', 'A32', 'A33',  
'A34', 'A35', 'A41', 'A42', 'A43', 'A44', 'A45', 'A51', 'A52', 'A53',  
'A54', 'A55', 'A61', 'A71', 'A72', 'A73', 'A81', 'A82', 'A82A', 'A82B',  
'A83', 'A84', 'A91', 'A92', 'A93', 'A94', 'A95', 'A96', 'A97', 'A98',  
'A99', 'AA1', 'AA2', 'AA3', 'AA4', 'AA5', 'AA6', 'AA7', 'AA8', 'AA9',  
'AAA', 'AAB', 'AB1', 'AB2', 'AB3', 'AB4', 'AB5', 'AB6', 'AC1', 'AC2',  
'AC3', 'AC4', 'AC5', 'AC6', 'AC7', 'AC8', 'AC9', 'AD1', 'AD2', 'AD3',  
'AE1', 'AF1', 'AF2', 'AF3', 'BODY'.

Start tags for the following inclusions are allowed: 'VIEWDEF'.  
Text is allowed.

C:\XGML\XGMLNORM.EXE --

Error on line 3 in file i:\9341\d001t001:

Unknown element name in start tag.

There is no such element as 'A91A'.

The current element is 'A91'.

End tags for the following elements are allowed: 'A91', 'FRONT'.

Start tags for the following elements are allowed: 'A11', 'A12', 'A21',

'A22', 'A23', 'A24', 'A25', 'A26', 'A27', 'A28', 'A31', 'A32', 'A33',  
'A34', 'A35', 'A41', 'A42', 'A43', 'A44', 'A45', 'A51', 'A52', 'A53',  
'A54', 'A55', 'A61', 'A71', 'A72', 'A73', 'A81', 'A82', 'A82A', 'A82B',  
'A83', 'A84', 'A91', 'A92', 'A93', 'A94', 'A95', 'A96', 'A97', 'A98',  
'A99', 'AA1', 'AA2', 'AA3', 'AA4', 'AA5', 'AA6', 'AA7', 'AA8', 'AA9',  
'AAA', 'AAB', 'AB1', 'AB2', 'AB3', 'AB4', 'AB5', 'AB6', 'AC1', 'AC2',  
'AC3', 'AC4', 'AC5', 'AC6', 'AC7', 'AC8', 'AC9', 'AD1', 'AD2', 'AD3',  
'AE1', 'AF1', 'AF2', 'AF3', 'BODY'.

Start tags for the following inclusions are allowed: 'VIEWDEF'.  
Text is allowed.

C:\XGML\XGMLNORM.EXE --

Error on line 3 in file i:\9341\d001t001:

---

Unknown element name in start tag.  
There is no such element as 'A'.  
The current element is 'AA1'.  
End tags for the following elements are allowed: 'AA1', 'FRONT'.  
Start tags for the following elements are allowed: 'A11', 'A12', 'A21',  
'A22', 'A23', 'A24', 'A25', 'A26', 'A27', 'A28', 'A31', 'A32', 'A33',  
'A34', 'A35', 'A41', 'A42', 'A43', 'A44', 'A45', 'A51', 'A52', 'A53',  
'A54', 'A55', 'A61', 'A71', 'A72', 'A73', 'A81', 'A82', 'A82A', 'A82B',  
'A83', 'A84', 'A91', 'A92', 'A93', 'A94', 'A95', 'A96', 'A97', 'A98',  
'A99', 'AA1', 'AA2', 'AA3', 'AA4', 'AA5', 'AA6', 'AA7', 'AA8', 'AA9',  
'AAA', 'AAB', 'AB1', 'AB2', 'AB3', 'AB4', 'AB5', 'AB6', 'AC1', 'AC2',  
'AC3', 'AC4', 'AC5', 'AC6', 'AC7', 'AC8', 'AC9', 'AD1', 'AD2', 'AD3',  
'AE1', 'AF1', 'AF2', 'AF3', 'BODY'.  
Start tags for the following inclusions are allowed: 'VIEWDEF'.  
Text is allowed.

C:\XGML\XGMLNORM.EXE --  
Error on line 4 in file i:\9341\d001t001:  
Unknown element name in start tag.  
There is no such element as 'AB1A'.  
The current element is 'AB1'.  
End tags for the following elements are allowed: 'AB1', 'FRONT'.  
Start tags for the following elements are allowed: 'A11', 'A12', 'A21',  
'A22', 'A23', 'A24', 'A25', 'A26', 'A27', 'A28', 'A31', 'A32', 'A33',  
'A34', 'A35', 'A41', 'A42', 'A43', 'A44', 'A45', 'A51', 'A52', 'A53',  
'A54', 'A55', 'A61', 'A71', 'A72', 'A73', 'A81', 'A82', 'A82A', 'A82B',  
'A83', 'A84', 'A91', 'A92', 'A93', 'A94', 'A95', 'A96', 'A97', 'A98',  
'A99', 'AA1', 'AA2', 'AA3', 'AA4', 'AA5', 'AA6', 'AA7', 'AA8', 'AA9',  
'AAA', 'AAB', 'AB1', 'AB2', 'AB3', 'AB4', 'AB5', 'AB6', 'AC1', 'AC2',  
'AC3', 'AC4', 'AC5', 'AC6', 'AC7', 'AC8', 'AC9', 'AD1', 'AD2', 'AD3',  
'AE1', 'AF1', 'AF2', 'AF3', 'BODY'.  
Start tags for the following inclusions are allowed: 'VIEWDEF'.  
Text is allowed.

### 11.3 Exoterica Validator log

```
<!-- **Error** in "9341.sgm", line 1:  
The minimum literal following the SGML keyword in the SGML Declaration must  
be "ISO 8879:1986".  
The minimum literal is "ISO 8879-1986".  
  <!SGML "ISO 8879-1986"  
    /\n-->  
<!-- Entity has no name, system id or public id in formal file -->  
<!-- **Error** in "9341.sgm", line 110:
```

---

Recognized a delimiter or data not allowed in the current context.  
The unrecognized text is "FSIDREF".

viewstyleid FSIDREF #IMPLIED  
^^^^^^

-->

<!-- \*\*Error\*\* in "9341.sgm", line 149:

A name specified in a start tag must be declared as an element in the DTD.  
The name is "a8".

The open elements are "DOC", "FRONT", and "A81".

The following elements can end: "A81" or "FRONT".

The following elements can start: "A11", "A12", "A21", "A22", "A23", "A24",  
"A25", "A26", "A27", "A28", "A31", "A32", "A33", "A34", "A35", "A41", "A42",  
"A43", "A44", "A45", "A51", "A52", "A53", "A54", "A55", "A61", "A71", "A72",  
"A73", "A81", "A82", "A82A", "A82AA", "A82B", "A82BB", "A83", "A84", "A91",  
"A91A", "A92", "A93", "A94", "A95", "A96", "A97", "A98", "A99", "AA1",  
"AA2", "AA3", "AA4", "AA5", "AA6", "AA7", "AA8", "AA9", "AAA", "AAB", "AB1",  
"AB1A", "AB2", "AB3", "AB4", "AB5", "AB6", "AC1", "AC2", "AC3", "AC4",  
"AC5", "AC6", "AC7", "AC8", "AC9", "AD1", "AD2", "AD3", "AE1", "AF1", "AF2",  
"AF3", "BODY", or "VIEWDEF".

Text is allowed.

1><a42><a43><a44><a45><a51><a52><a53><a54><a55><a61><a71><a72><a73><a81><a8

-->

<!-- \*\*Error\*\* in "9341.sgm", line 150:

A name specified in a start tag must be declared as an element in the DTD.  
The name is "a".

The open elements are "DOC", "FRONT", and "AA1".

The following elements can end: "AA1" or "FRONT".

The following elements can start: "A11", "A12", "A21", "A22", "A23", "A24",  
"A25", "A26", "A27", "A28", "A31", "A32", "A33", "A34", "A35", "A41", "A42",  
"A43", "A44", "A45", "A51", "A52", "A53", "A54", "A55", "A61", "A71", "A72",  
"A73", "A81", "A82", "A82A", "A82AA", "A82B", "A82BB", "A83", "A84", "A91",  
"A91A", "A92", "A93", "A94", "A95", "A96", "A97", "A98", "A99", "AA1",  
"AA2", "AA3", "AA4", "AA5", "AA6", "AA7", "AA8", "AA9", "AAA", "AAB", "AB1",  
"AB1A", "AB2", "AB3", "AB4", "AB5", "AB6", "AC1", "AC2", "AC3", "AC4",  
"AC5", "AC6", "AC7", "AC8", "AC9", "AD1", "AD2", "AD3", "AE1", "AF1", "AF2",  
"AF3", "BODY", or "VIEWDEF".

Text is allowed.

<a82bb><a83><a84><a91><a91a><a92><a93><a94><a95><a96><a97><a98><a99><aa1><a

-->

<!-- 4 errors reported. -->

## 12. Appendix D - Detailed Raster Analysis

### 12.1 File D002R003

#### 12.1.1 Output HiJaak for Windows

U.S. ARMY MATERIEL COMMAND										PARTS	
U.S. ARMY MISSILE COMMAND										LIST	
REDSTONE ARSENAL, ALABAMA										P1 10677287	
TITLE OSCILLATOR, VOLTAGE CONTROLLED-COHO-A3A13										CODE IDENTIFICATION NO.	
										18876	
										SHEET 3 OF	
										DATE 16 NOV 70	
										REV	
										PL	
										QUANTITY	
										MATERIAL	
										NOMENCLATURE	
										DRAWING OR SPECIFICATION NO.	
										PART OR IDENTIFICATION NO.	
										FINO	
1	10181751-207	10181751	RESISTOR		1						
2	10181751-208	10181751	RESISTOR		1						
3	10181751-209	10181751	RESISTOR		1						
4	10181751-210	10181751	RESISTOR		1						
5	10181751-211	10181751	RESISTOR		1						
6	10181751-212	10181751	RESISTOR		1						
7	10181751-213	10181751	RESISTOR		1						
8	10181751-214	10181751	RESISTOR		1						
9	10181751-215	10181751	RESISTOR		1						
10	10181752-261	10181752	RESISTOR		1						
11	10181752-357	10181752	RESISTOR		1						
12	10181751-147	10181751	RESISTOR		1						
13	10180306-239	10180306	RESISTOR		1						
14	10181751-133	10181751	RESISTOR		1						
15	10181751-166	10181751	RESISTOR		1						
16	10180328-418	10180328	RESISTOR		1						
17	10181752-283	10181752	RESISTOR		1						
18	10181752-298	10181752	RESISTOR		1						
19	10181752-306	10181752	RESISTOR		1						
20	10181752-297	10181752	RESISTOR		1						
21	10181752-289	10181752	RESISTOR		1						
22	10181752-271	10181752	RESISTOR		1						
23	10181752-310	10181752	RESISTOR		1						
24	10181751-55	10181751	RESISTOR		1						
25	10181751-1	10181751	RESISTOR		1						
26	10181751-2	10181751	RESISTOR		1						
27	10181751-3	10181751	RESISTOR		1						
28	10181751-4	10181751	RESISTOR		1						
29	10181751-5	10181751	RESISTOR		1						
30	10181751-6	10181751	RESISTOR		1						

## 12.1.2 Output g42tiff/IslandPaint

U.S. ARMY MATERIEL COMMAND U.S. ARMY MISSILE COMMAND REDSTONE ARSENAL, ALABAMA			PARTS LIST		PL 10677267 CODE IDENTIFICATION NO. 18876				
TITLE OSCILLATOR, VOLTAGE CONTROLLED-COMO-A3A13			USAMHCDA ECP	63343	DATE 16 NOV 70	REV -	SHEET 3 OF		
FIG. NO.	PART OR IDENTIFICATION NO.	DRAWING OR SPECIFICATION NO.	NOMENCLATURE	QUANTITY	PL	MI	EFFECTIVITY FROM TO	ZONE	NOTES OR REMARKS
	10181751-207	10181751	RESISTOR						
	10181751-208	10181751	RESISTOR						
	10181751-209	10181751	RESISTOR						
	10181751-210	10181751	RESISTOR						
	10181751-211	10181751	RESISTOR						
	10181751-212	10181751	RESISTOR						
	10181751-213	10181751	RESISTOR						
	10181751-214	10181751	RESISTOR						
	10181751-215	10181751	RESISTOR						
2	10181752-261	10181752	RESISTOR	1					
3	10181752-357	10181752	RESISTOR	1					
4	10181751-147	10181751	RESISTOR	2					
5	10180306-239	10180306	RESISTOR	2					
6	10181751-133	10181751	RESISTOR	1					
7	10181751-166	10181751	RESISTOR	1					
8	10180328-418	10180328	RESISTOR	1					
9	10181752-285	10181752	RESISTOR	1					
10	10181752-298	10181752	RESISTOR	1					
11	10181752-306	10181752	RESISTOR	1					
12	10181752-297	10181752	RESISTOR	1					
13	10181752-289	10181752	RESISTOR	1					
14	10181752-271	10181752	RESISTOR	1					
15	10181752-310	10181752	RESISTOR	1					
16	10181751-55	10181751	RESISTOR	1					
	10181751-1	10181751	RESISTOR						1
	10181751-2	10181751	RESISTOR						
	10181751-3	10181751	RESISTOR						
	10181751-4	10181751	RESISTOR						
	10181751-5	10181751	RESISTOR						
	10181751-6	10181751	RESISTOR						

### 12.1.3 Output IGESView

U.S. ARMY MATERIEL COMMAND U.S. ARMY MISSILE COMMAND REDSTONE ARSENAL, ALABAMA			PARTS LIST		PL 10677287 CODE IDENTIFICATION NO. 18876				
TITLE OSCILLATOR,VOLTAGE CONTROLLED-COMO-A3A13			USAMC/COM ECP 63343	DATE 16 NOV 70	REV	SHEET 3 of 3			
FIG NO.	PART OR IDENTIFICATION NO.	DRAWING OR SPECIFICATION NO.	NOMENCLATURE	QUANTITY	PL	MI	EFFECTIVITY FROM TO	DATE	NOTES OR REMARKS
	10181751-207	10181751	RESISTOR						
	10181751-208	10181751	RESISTOR						
	10181751-209	10181751	RESISTOR						
	10181751-210	10181751	RESISTOR						
	10181751-211	10181751	RESISTOR						
	10181751-212	10181751	RESISTOR						
	10181751-213	10181751	RESISTOR						
	10181751-214	10181751	RESISTOR						
	10181751-215	10181751	RESISTOR						
2	10181752-261	10181752	RESISTOR	1					
3	10181752-337	10181752	RESISTOR	1					
4	10181751-147	10181751	RESISTOR	2					
5	10180306-239	10180306	RESISTOR	2					
6	10181751-133	10181751	RESISTOR	1					
7	10181751-166	10181751	RESISTOR	1					
8	10180328-418	10180328	RESISTOR	1					
9	10181752-263	10181752	RESISTOR	1					
10	10181752-298	10181752	RESISTOR	1					
11	10181752-306	10181752	RESISTOR	1					
12	10181752-297	10181752	RESISTOR	1					
13	10181752-289	10181752	RESISTOR	1					
14	10181752-271	10181752	RESISTOR	1					
15	10181752-310	10181752	RESISTOR	1					
16	10181751-55	10181751	RESISTOR	1					
	10181751-1	10181751	RESISTOR						
	10181751-2	10181751	RESISTOR						
	10181751-3	10181751	RESISTOR						
	10181751-4	10181751	RESISTOR						
	10181751-5	10181751	RESISTOR						
	10181751-6	10181751	RESISTOR						

## 13. Appendix E - Detailed CGM Analysis

### 13.1 File D002C002

#### 13.1.1 Parser Log MetaCheck

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 04/22/93 Time: 11:13:35

Metafile Examined : i:\9341\c202.cgm

Pictures Examined : All

Elements Examined : All

Bytes Examined : All

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

Tracing not selected.

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

No Errors Detected

=====  
CAL S CGM Profile (MIL-D-28003) Report  
=====

No profile discrepancies detected.

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

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 04/22/93 Time: 11:13:37

Name of CGM under test: i:\9341\c202.cgm

Encoding : Binary

Pictures Examined : All

Elements Examined : All

Bytes Examined : All

BEGIN METAFILE string : "C002.cgm"

METAFILE DESCRIPTION : "NORTHROP B2 ITDS GEF, MIL-D-28003/BASIC-1"

---

Picture 1 starts at octet offset 200; string contains: "Picture 1"

Conformance Summary : This file conforms to the CGM specification.  
This file meets the CALS CGM Profile (MIL-D-28003).

Summary of Testing Performed and Errors Found:

1 Pictures Tested  
272 Elements Tested  
3978 Octets Tested

```
=====
|   No Errors Were Detected   |
=====
```

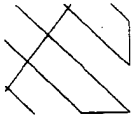
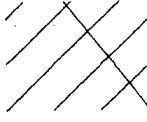

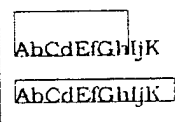
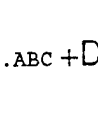

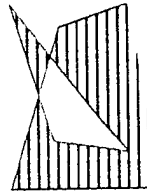

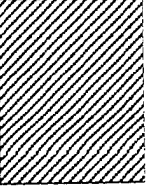
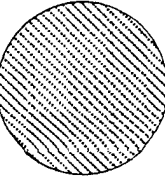
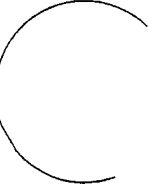
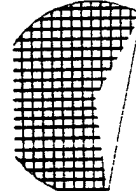
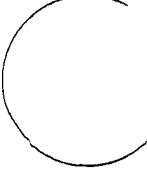
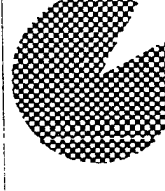
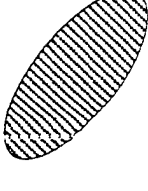

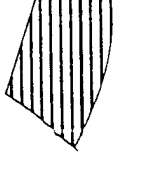
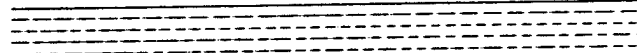
===== End of Conformance Report =====

### 13.1.2 validcgm Log

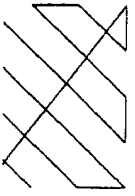
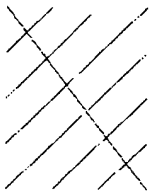
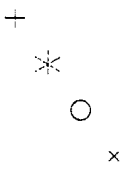
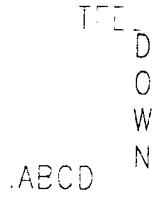
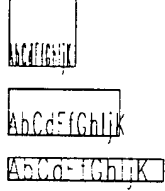
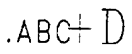
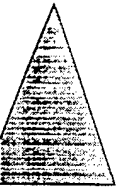
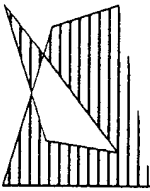

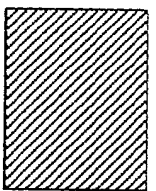
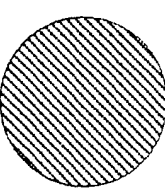
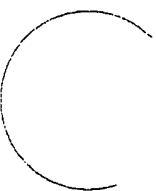
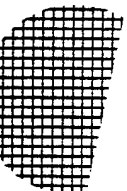
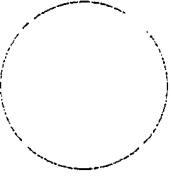
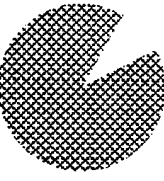
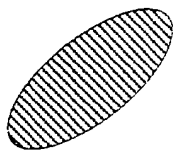

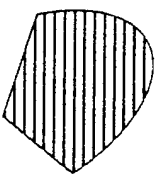
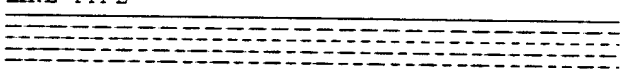
Analysis for file c202.cgm using table table  
ERROR: illegal in this state (2), std B  
ERROR: required precursor (0, 4) not yet seen  
(14.1, 0) (3, 6, 2) Clip Indicator OFF  
MILSPEC 28003 error: illegal hatch index  
(173, 2352) (5, 24, 2) Hatch Index 6  
(0, 1) occurred 1 time  
(0, 2) occurred 1 time  
(0, 3) occurred 1 time  
(0, 4) occurred 1 time  
(0, 5) occurred 1 time  
(1, 1) occurred 1 time  
(1, 2) occurred 1 time  
(1, 3) occurred 1 time  
(1, 4) occurred 1 time  
(1, 5) occurred 1 time  
(1, 6) occurred 1 time  
(1, 7) occurred 1 time  
(1, 8) occurred 1 time  
(1, 9) occurred 1 time  
(1, 10) occurred 1 time  
(1, 11) occurred 1 time  
(1, 12) occurred 1 time  
(1, 13) occurred 1 time  
(2, 2) occurred 1 time  
(2, 6) occurred 1 time

(2, 7) occurred 1 time  
(3, 2) occurred 1 time  
(3, 6) occurred 1 time  
(3, 6) occurred illegally 1 time  
(4, 1) occurred 32 times  
(4, 3) occurred 5 times  
(4, 4) occurred 50 times  
(4, 7) occurred 3 times  
(4, 9) occurred 1 time  
(4, 12) occurred 2 times  
(4, 15) occurred 3 times  
(4, 16) occurred 2 times  
(4, 17) occurred 2 times  
(4, 18) occurred 2 times  
(4, 19) occurred 1 time  
(5, 2) occurred 17 times  
(5, 3) occurred 17 times  
(5, 4) occurred 17 times  
(5, 6) occurred 5 times  
(5, 7) occurred 5 times  
(5, 8) occurred 5 times  
(5, 10) occurred 3 times  
(5, 12) occurred 5 times  
(5, 13) occurred 1 time  
(5, 14) occurred 7 times  
(5, 15) occurred 5 times  
(5, 16) occurred 7 times  
(5, 17) occurred 4 times  
(5, 18) occurred 1 time  
(5, 22) occurred 10 times  
(5, 23) occurred 8 times  
(5, 24) occurred 7 times  
(5, 27) occurred 2 times  
(5, 28) occurred 2 times  
(5, 29) occurred 2 times  
(5, 30) occurred 10 times  
(5, 31) occurred 7 times  
(5, 34) occurred 1 time

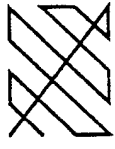
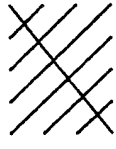
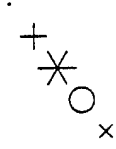

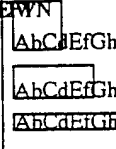
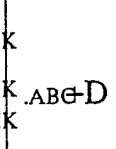

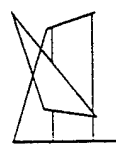


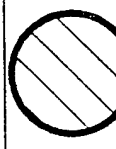

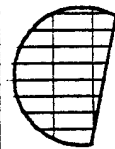


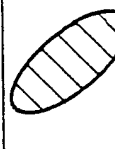


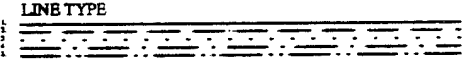
### 13.1.3 Output IslandDraw

					
POLYLINE	(2) DISJOINT POLYLINE	(3) POLYMARKER	(4) TEXT	(5) RESTRICTED TEXT	(6) APPEND TEXT
					
POLYGON	(8) POLYGON SET	(9) CELL ARRAY	(11) RECTANGLE	(12) CIRCLE	(13) CIRCULAR ARC 3 POINT
					
CIRCULAR ARC 3 POINT LOSE	(15) CIRCULAR ARC CENTRE	(16) CIRCULAR ARC CENTRE CLOSE	(17) ELLIPSE	(18) ELLIPTICAL ARC	(19) ELLIPTICAL ARC CLOSE
LINE TYPE 				CALS TEST NETWORK MIL-D-28003 Computer Graphics Metafile File: CTN-01Pd, 91-10-03	

### 13.1.4 Output cgm2draw/IslandDraw

					
POLYLINE	(2) DISJOINT POLYLINE	(3) POLYMARKER	(4) TEXT	(5) RESTRICTED TEXT	(6) APPEND TEXT
					
POLYGON	(8) POLYGON SET	(9) CELL ARRAY	(11) RECTANGLE	(12) CIRCLE	(13) CIRCULAR ARC 3 POINT
					
(14) CIRCULAR ARC 3 POINT CLOSE	(15) CIRCULAR ARC CENTRE	(16) CIRCULAR ARC CENTRE CLOSE	(17) ELLIPSE	(18) ELLIPTICAL ARC	(19) ELLIPTICAL ARC CLOSE
LINE TYPE 				CALS TEST NETWORK MIL-D-28003 Computer Graphics Metafile File: CTN-01Rd, 91-10-03	

### 13.1.5 Output for review

					
(1) POLYLINE	(2) DISJOINT POLYLINE	(3) POLYMARKER	(4) TEXT	(5) RESTRICTED TEXT	(6) APPEND TEXT
					
(7) POLYGON	(8) POLYGON SET	(9) CELL ARRAY	(11) RECTANGLE	(12) CIRCLE	(13) CIRCULAR ARC 3 POINT
					
(14) CIRCULAR ARC 3 POINT CLOSE	(15) CIRCULAR ARC CENTRE	(16) CIRCULAR ARC CENTRE CLOSE	(17) ELLIPSE	(18) ELLIPTICAL ARC	(19) ELLIPTICAL ARC CLOSE
<b>LINE TYPE</b> 			CALS TEST NETWORK MIL-D-28003 Computer Graphics Metafile File: CTN-01Rd. 91-10-03		