AFCTN Test Report 94-048

AFCTB-ID 93-099

Technical IGES Graphics Transfer

Using:

IBM SID Boulder's Data

MIL-D-28000A (IGES)

Quick Short Test Report

15 October 1993

Prepared For:
Electronic Systems Center
DET 2 HQ ESC/AV-2
4027 Colonel Glenn Hwy, Suite 300
Dayton, Ohio 45431-1672

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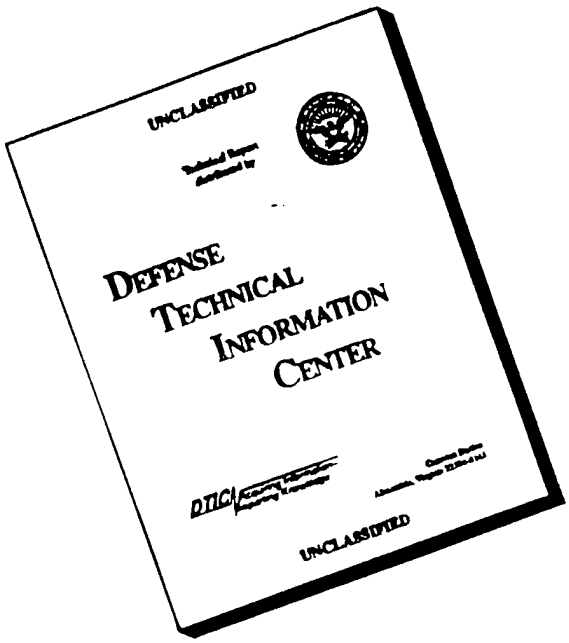

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Prepared By
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Contents

1. Introduction

1.1 Background

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

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

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

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

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze IBM SID Boulder's interpretation and use of the CALS standards, in transferring technical IGES Graphics data. IBM 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 93-099

Date of Evaluation: 15 October 1993

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

Data Originator:
Ina Dickenson
IBM
685 Citadel Drive East
Colorado Springs CO 80909

Data Description:
Technical Manual Test
1 Document Declaration file
10 Initial Graphics Exchange Specification (IGES) files

Data Source System:

1840

HARDWARE
Unknown

SOFTWARE
Unknown

IGES

HARDWARE
Unknown

SOFTWARE
CADAM MDA030 V2R1M1

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

SUN 3/280

AFCTN *Tapetool v1.2.10 UNIX*

PC 486/50

AFCTN *Tapetool v1.2.10 DOS*

MIL-D-28000 (IGES)

Sun SparcStation 2

AUTODESK *AutoCAD R12*
Carberry *CADLeaf Plus v3.1*
IGES Data Analysis (IDA) *Parser/Verifier v92*
IDA *IGESView v3.05*
Intergraph *I/EMS v02.00.01.11*
Intergraph *I/CIGES v02.00.01.03*
International TechneGroup Incorporated (ITI) *IGES/Works v1.3*
Rosetta Technologies *Prepare*
Rosetta Technologies *Preview v3.2*

PC 486/50

AUTODESK *AutoCAD 386 R12*
Cadkey *Cadkey v6.0*
IDA *IGES Parser/Verifier v92*
IDA *IGESView Windows*
Wiz Worx *IGESPeek*

Standards Tested:

MIL-STD-1840A
MIL-D-28000A

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 a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in barrier sheet material as required by MIL-STD-1840A, para. 5.3.1.2. The tape reel was missing the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Some 9-track tape units require this BPI to be set manually. A packing list showing all files recorded on the tape was not enclosed in the box.

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 v1.2.10* utility. One system I/O error and one note were encountered while evaluating the contents of the tape labels. The error was reported in the D001 file. A visual inspection of the file showed that no data was lost.

```
*** I/O ERROR - Invalid Record Control Word encountered.
    Record Control Word contained an invalid record length.
    Record Control Word string =>
*** NOTE - Remainder of file will be skipped.
```

Although one error was reported no data was lost. For this reason the tape's physical structure meets the requirements defined in CALS MIL-STD-1840A.

3.2.2 Declaration and Header Fields

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

4. IGES Analysis

The tape contained 10 IGES files. These files were evaluated using IDA's *parser/verifier* set for CALS Class I. No CALS errors were reported in any of the files.

The files were checked for the required conformance statement defined in MIL-D-28000A. The statement was found in all files.

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.

An attempt to convert the files, using a utility available within the AFCTB, resulted in an error message indicating the files were not valid ASCII IGES files.

The files were read using AUTODESK's *AutoCAD R12* with translator version 5.1. All ten files translated without a problem. The resulting files were viewed and file D001Q009 was printed as a sample.

The files were read into another software package, available within the AFCTB, without a reported error. When file D001Q009 was viewed, only half the text was displayed. The text in the blocks on the right side of the screen were displayed while the left side did not have any text.

The files were converted using Cadkey's *ig2c* utility without a reported error. The resulting files were read into Cadkey's *Cadkey* and displayed. File D001Q009 was printed as a sample.

The files were read into Carberry's *CADLeaf* software without a reported error. The images appeared to be complete and file D001Q009 was printed as a sample.

The files were read using IDA's *IGESView* and *IGESView for Windows* without a reported error. File D001Q009 was printed as a sample.

The IGES files were converted using Intergraph's *I/CIGES* utility without a reported error. The resulting files were read into *I/EMS* and displayed.

The files were read using ITI's *IGESWorks* without a reported error. All files were displayed and file D001Q009 was printed.

The IGES files were converted using Rosetta Technologies' *Prepare* without a reported error. The resulting files were read into Rosetta Technologies' *Preview*, displayed and file D001Q009 was printed.

An attempt to read the files into the Wiz Worx *ig2jet* utility was made. Because the files were structured without carriage returns and line feed this program could not read the files. It reported that it could not find the terminate section.

The IGES files on the tape meet the CALS MIL-D-28000A specification.

5. SGML Analysis

No Standard Generalized Markup Language (SGML) files were included on this tape.

6. Raster Analysis

No Raster files were included on this tape.

7. CGM Analysis

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

8. Conclusions and Recommendations

The MIL-STD-1840A tape from IBM SID Boulder was correct. The tape was read properly using the AFCTN *Tapetool* software with one reported system I/O error, which did not cause any data loss.

The tape contained ten IGES files. All files were reported without CALS errors. The files were read into most of the software tools available in the AFCTB, and meet the CALS MIL-D-28000A specification.

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

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

```
CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (C)
  Standards referenced:
    MIL-STD-1840A (1987) - Automated Interchange of Technical Information
    ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
                        for Information Interchange
    ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Wed Oct 13 07:54:53 1993
MIL-STD-1840A File Catalog
File Set Directory: /cals/u1210/Set026

Page: 1
                                                Record
                                                Format/    Block
                                                Selected/
File Name                 File Type             Length  Length/Total
Extracted
-------------------------------------------------------------------
D001                      Document Declaration  D/00260 02048/000001
Selected
D001Q001                  IGES                  F/00080 02000/000064
Extracted
D001Q002                  IGES                  F/00080 02000/000223
Extracted
D001Q003                  IGES                  F/00080 02000/000044
Extracted
D001Q004                  IGES                  F/00080 02000/000242
Extracted
D001Q005                  IGES                  F/00080 02000/000022
Extracted
D001Q006                  IGES                  F/00080 02000/000177
Extracted
D001Q007                  IGES                  F/00080 02000/000049
Extracted
D001Q008                  IGES                  F/00080 02000/000083
Extracted
D001Q009                  IGES                  F/00080 02000/000293
Extracted
D001Q010                  IGES                  F/00080 02000/000023
Extracted

Catalog Process terminated normally.
```

9.2 Tape Evaluation Log

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

Wed Oct 13 07:53:58 1993

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1CALS01                              SCBERT
4

  Label Identifier: VOL1
  Volume Identifier: CALS01
  Volume Accessibility:
  Owner Identifier: SCBERT
  Label Standard Version: 4

HDR1D001             CALS0100010001000100 93280 93280 000000

  Label Identifier: HDR1
  File Identifier: D001
  File Set Identifier: CALS01
  File Section Number: 0001
  File Sequence Number: 0001
  Generation Number: 0001
  Generation Version Number: 00
  Creation Date:  93280
  Expiration Date:  93280
  File Accessibility:
  Block Count: 000000
  Implementation Identifier:

HDR2D0204800260                                    00

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

```
************ Tape Mark ***************

  Actual Block Size Found = 2048 Bytes.

*** I/O ERROR - Invalid Record Control Word encountered.
    Record Control Word contained an invalid record length.
    Record Control Word string =>
*** NOTE - Remainder of file will be skipped.

  Number of data blocks read = 1.

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

EOF1D001             CALS0100010001000100 93280 93280 000001

  Label Identifier: EOF1
  File Identifier: D001
  File Set Identifier: CALS01
  File Section Number: 0001
  File Sequence Number: 0001
  Generation Number: 0001
  Generation Version Number: 00
  Creation Date:  93280
  Expiration Date:  93280
  File Accessibility:
  Block Count: 000001
  Implementation Identifier:

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

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

############ End of Volume CALS01 ##############

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

Deallocating /dev/rmt0...

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

9.3 Tape File Set Validation Log

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

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

Wed Oct 13 07:54:53 1993

MIL-STD-1840A File Set Evaluation Log

File Set: Set026

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

srcsys: 256
srcdocid: IENTITY
srcrelid: LGTABLE
chglvl: A, 0, 19891031
dteisu: 19891031
dstsys: ctn members
dstdocid: IENTITY
dstrelid: LGTABLE
dtetrn: 19931007
dlvacc: IGES data
filcnt: Q10
ttlcls: Unclassified
doccls: Unclassified
doctyp: CTN MIL-D-28000 Class I Reference Illustration
docttl: IENTITY Reference Illustration

Found file: D001Q001
Extracting IGES Header Records...
Evaluating IGES Header Records...

srcdocid: IENTITY
dstdocid: IENTITY
txtfilid: NONE
figid: None
srcgph: NONE
doccls: Unclassified
notes: The first line of the IGES file begins next

Saving IGES Header File: D001Q001_HDR
Saving IGES Data File: D001Q001_IGS
```

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

```
Found file: D001Q010
Extracting IGES Header Records...
Evaluating IGES Header Records...

srcdocid: IENTITY
dstdocid: IENTITY
txtfilid: NONE
figid: None
srcgph: NONE
doccls: Unclassified
notes: The first line of the IGES file begins next

Saving IGES Header File: D001Q010_HDR
Saving IGES Data File: D001Q010_IGS

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

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

No errors were encountered in Document D001.

No errors were encountered in this File Set.

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

10. Appendix B - Detailed IGES Analysis

10.1 File D001Q009

10.1.1 Parser/Verifier Log

```
 ************************************
 *****  IGES PARSER/VERIFIER   *****
 *****       MARCH 1993        *****
 *****   IGES Data Analysis    *****
 *****     (708) 344-1815      *****
 ************************************

 Input file is /mnt/u1210/Set026/D001/D001Q009_IGS
 Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)
 Today is October 13, 1993  8:35 AM

 ************************************
 *****    CHECK FILE SYNTAX    *****
 ************************************

    Section        Records

    Start             8
    Global            4
    Directory      3874  (   1937 Entities)
    Parameter      3417
    Terminate         1

NITPICK 2489: Excess precision in real constant (0.20833333) for LineWidth of
              Global Section.
NITPICK 2489: Excess precision in real constant (-52.2481842) for P1.X of D
              1.
NITPICK 2489: Messages regarding excess precision suppressed.

 ************************************
 *****  SUMMARY AND STATISTICS  ****
 ************************************

 *** File and Product Name Information ***

    File name from sender     = 'CP205C-B-##F003#####'
    File creation Date.Time   = '930903.120111'
    Model change Date.Time    = ''
    Author                    = ''
```

```
   Department                = 'IBM SID BOULDER'
   Product name from sender = 'FIG. 3 SDTL EQUIPMENT CONFIGURATION
   TRNDTC1512 '
   Destination product name = ''

 *** Parameter Delimiters ***

   Delimiter  = ','
   Terminator = ';'

 *** Originating System Data ***

   System ID              = 'IBM CADAM MDA030'
   Preprocessor version   = 'V2R1M1'
   Specification version = 6 (IGES 4.0)

 *** Precision levels ***
   Integer bits =    32
   Floating point  -  Exponent =    75  Mantissa =     6
   Double precision - Exponent =    75  Mantissa =    15

 *** Global Model Data ***

   Model scale            =  1.0000E+00
   Unit flag              =  4
   Units                  =  'FT'
   Line weights           =  208
   Maximum line thickness =  2.083333E-01
   Minimum line thickness =  1.001603E-03
   Granularity            =  1.000000E-03
   Maximum coordinate     =  0.000000E+00
CAUTION 2316: Maximum intended coordinate value of 0.000000E+00 will be
              defaulted to zero.

   Drafting standard applicable to original data is not specified.

 *** Status Flag Summary ***

  Blank status: Visible                    1937
                Blanked                       0

  Independence: Independent                1936
                Physically Subordinate        0
                Logically Subordinate         1
                Totally Subordinate           0

  Entity use:   Geometry                   1429
                Annotation                  508
```

	Definition	0
	Other	0
	Logical/Positional	0
	2D parametric	0
	Construction geometry	0
	Not Specified	0
Hierarchy:	Structure DE applies	1936
	Subordinate DE applies	1
	Hierarchy property applies	0
	Not Specified	0

*** Entity Occurrence Counts ***

Entity	Form	Level	Count	Type
100	0	0	76	Circular arc
104	1	0	46	Conic arc - ellipse
106	11	0	630	Copious data - Piecewise planar, linear string(2D linear path)
110	0	0	612	Line
112	0	0	18	Parametric spline curve
124	0	0	46	Transformation matrix
212	0	0	506	General note
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	1937

*** Labeling Information ***

0% of the entities are labeled.

Unlabeled 1937

*** Line Fonts Used in Data ***

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
76	-	46	630	-	586	18	-	Solid
-	-	-	-	-	22	-	-	Dashed
-	-	-	-	-	4	-	-	Phantom

```
 -    -    -    -    -    -    -    -   Center-line
 -    -    -    -    -    -    -    -   Dotted
 -    -    -    -    -    -    -    -   User defined

116  118  120  122  124  125  126  128

 -    -    -    -   46    -    -    -   Undefined

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

*** Line Widths Used in Data ***

    Weight       Count      Width

 Defaulted      1937       (0.0010)

*** Colors Used in Data ***

 Defaulted      1937

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

*** Entity type: 100

*** Entity type: 104

*** Entity type: 106

*** Entity type: 110

  --   612 lines averaging 2.851160E+00 units --

*** Entity type: 112

*** Entity type: 124

WARNING 2492: Undefined line font value (0) specified for D   2835.
WARNING 2492: Messages regarding undefined line font suppressed.
46 transformation matrices, 46 non-zero translations.
NOTE    2341: 46 matrices contain translation information.

*** Entity type: 212

       506 text strings in data file.
       Average text aspect ratio in file is 0.8664842.
       Minimum text aspect ratio in file is 0.6666663.
```

```
       Maximum text aspect ratio in file is 0.9926740.

       FONTS USED IN FILE

       FONT    COUNT    NAME

          1      506    Default ASCII Style

 *** Entity type: 404

Drawing at D   3871 contains 1 views.
NITPICK 2289: View (D   3873) is not logically subordinate to drawing at D
              3871.
Drawing at D   3871 contains 0 annotation entities.

 *** Entity type: 406

 *** Entity type: 410

NITPICK 2332: View referenced by drawing (D   3871) is not subordinate at D
              3873.
  Scale of view at D   3873 is 1.000000E+00.
Orthographic View entity at D   3873 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.
2038: 49 Invalid Line font values.

 *** Error Summary ***

     0 fatal errors
     0 severe errors
     0 errors 49 warnings 1 cautions 10191 nitpicks 1 notes

 *** End of Analysis of /mnt/u1210/Set026/D001/D001Q009_IGS ***
```

10.1.2 Parser Log - AutoCAD R12

```
Title: IGESIN Journal (v5.1 Nov 05 1992)
================================================================
File: C:/9399/Q009.xli
Date: Fri, Oct 15, 1993
Time: 13:22:19
================================================================

EVALUATION VERSION -- NOT FOR RESALE

Translator S/N:   117-10075750
Translating from IGES file:        C:/9399/Q009.IGS
            to AutoCAD Drawing:    C:\9399\Q009.dwg

================================================================

Options obtained from:  C:\ACAD\SUPPORT\CALS1.OPT
Options Description: Configuration file for CALS Class I
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

*** Warning (IAFP__LARGER_SGL_EXP) ***
C:/9399/Q009.IGS, line 12: IGES file contains numbers with a larger single
precision exponent than what is allowed on this system.

*** Warning (IEVM_BAD_CONTINUITY_112) ***
(DE 2537, TF 112:0) Entity's Degree of Continuity, 1, is incorrectly
specified.
Degree of Continuity calculated to be 2.

Action taken: Degree of Continuity set to 2.

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

================================================================
Start Section:

CONFORMS TO MIL SPEC. 28000 CLASS 1     CREATED:Tue Sep 21 13:38:56 1993
THIS IS A SAMPLE INPUT FILE FOR IBM IGES PROCESSOR
VERSION 2 RELEASE 3 MODIFICATION 0 (5688-047)

SEE IGES PROCESSOR PROGRAMMERS' REFERENCE AND OPERATIONS
MANUAL FOR THE DESCRIPTION OF USER OPTIONS

Global Section:

Parameter Delimiter:      ,
Record Delimiter:         ;
Sending Product ID:       FIG. 3 SDTL EQUIPMENT CONFIGURATION
  TRNDTC1512
File Name:                CP205C-B-##F003#####
System ID:                IBM CADAM MDA030
Preprocessor Version:     V2R1M1
Size of Integer:          32
Sgl. Precision Mag:       75
Sgl. Precision Sig:       6
Dbl. Precision Mag:       75
Dbl. Precision Sig:       15
Receiving Product ID:
Model Space Scale:        1.000000
Unit Flag:                4
Unit String:              FT
# of Line Weights:        208
```

Maximum Line Width: 0.208333
Creation Date: 09/03/93 12:01:11
Minimum Resolution: 0.001000
Maximum Coordinate: 0.000000
Author:
Organization: IBM SID BOULDER
IGES Version Number: 6
Drafting Standard: 0

Entity Summary:

Type	Form	Description	Count
100	0	Circular Arc	76
104	1	Ellipse	46
106	11	Planar Piecewise Linear Curve	630
110	0	Line	612
112	0	Parametric Spline Curve	18
124	0	Transformation Matrix	46
212	0	General Note (Simple)	506
404	0	Drawing (form 0)	1
406	16	Property (Drawing Size)	1
410	0	View	1
		Total	1937

Translation phase

Drawing Entity (404 Form 0) at DE 3871, with
name = ,
size = 0.000000, 44.000000,
units = FT,
was processed in the AutoCAD drawing file: C:\9399\Q009.dwg

*** Warning (ACAD_NEW_VIEW_VOLUME_GENERATED) ***
(DE: 3873 TF: 410:0)
A new view volume has been generated for the view with:
XMIN (-71.343171), XMAX (7.593171),
YMIN (-8.218171), YMAX (48.218171),
ZMIN (-7.593171), ZMAX (7.593171).

IGES Entity Summary

Type	Form	Description	Count	Processed	Errors
100	0	Circular Arc	76	76	0
104	1	Ellipse	46	46	0

106	11	Planar Piecewise Linear Curve	630	630	0
110	0	Line	612	612	0
112	0	Parametric Spline Curve	18	18	0
212	0	General Note (Simple)	506	506	0
404	0	Drawing (form 0)	1	1	0
406	16	Property (Drawing Size)	1	1	0
410	0	View	1	1	0
Totals			1891	1891	0

AutoCAD Entity Summary

Entity	Created	Errors
LINE	612	0
CIRCLE	16	0
TEXT	506	0
ARC	60	0
POLYLINE	694	0
Totals	1888	0

Error Summary:

The following message was issued 1 time(s)
IGES file contains numbers with a larger single precision exponent than what is allowed on this system.

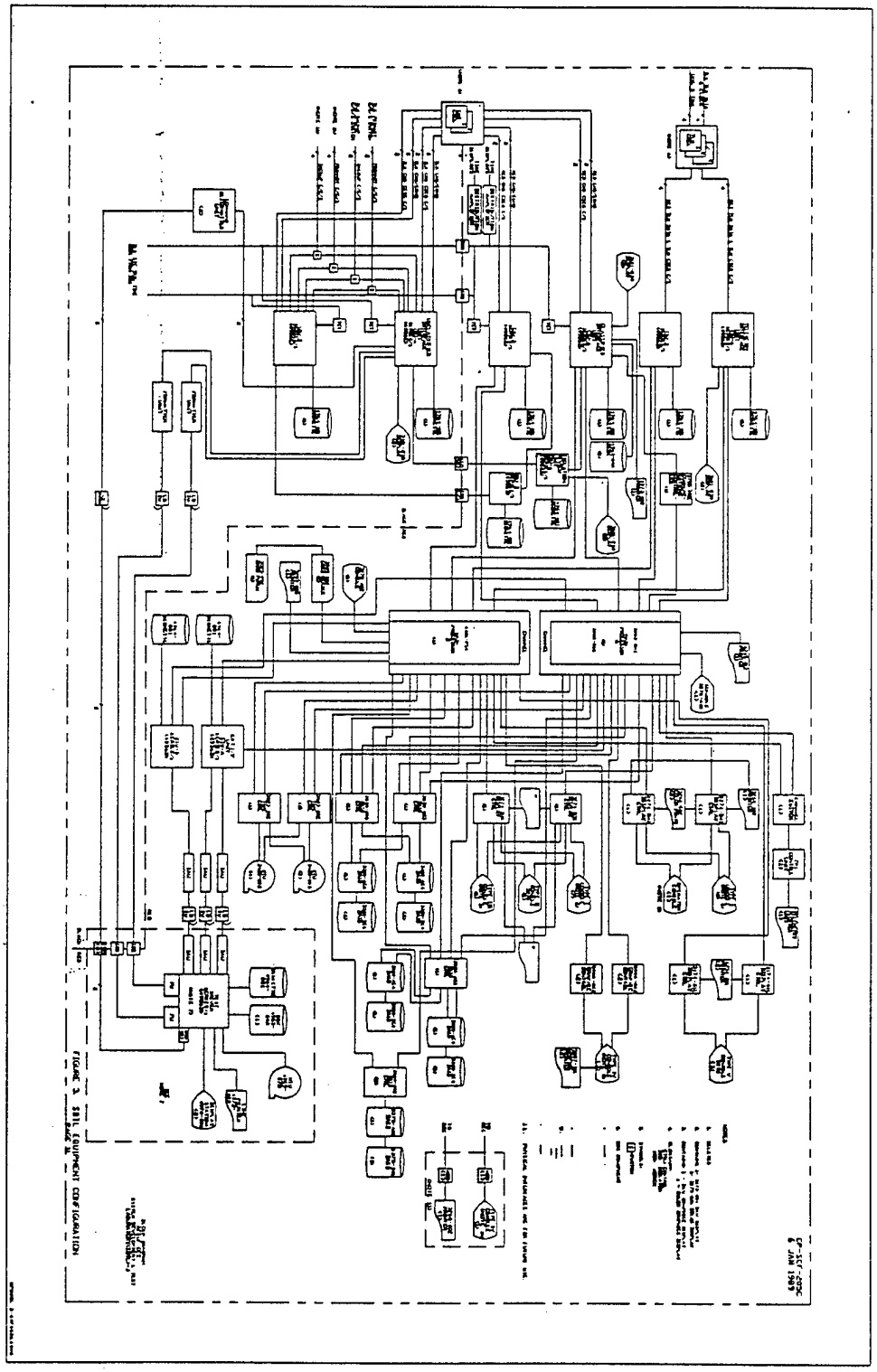
The following message was issued 5 time(s)
Entity's Degree of Continuity, %d, is incorrectly specified. Degree of Continuity calculated to be %d.

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).

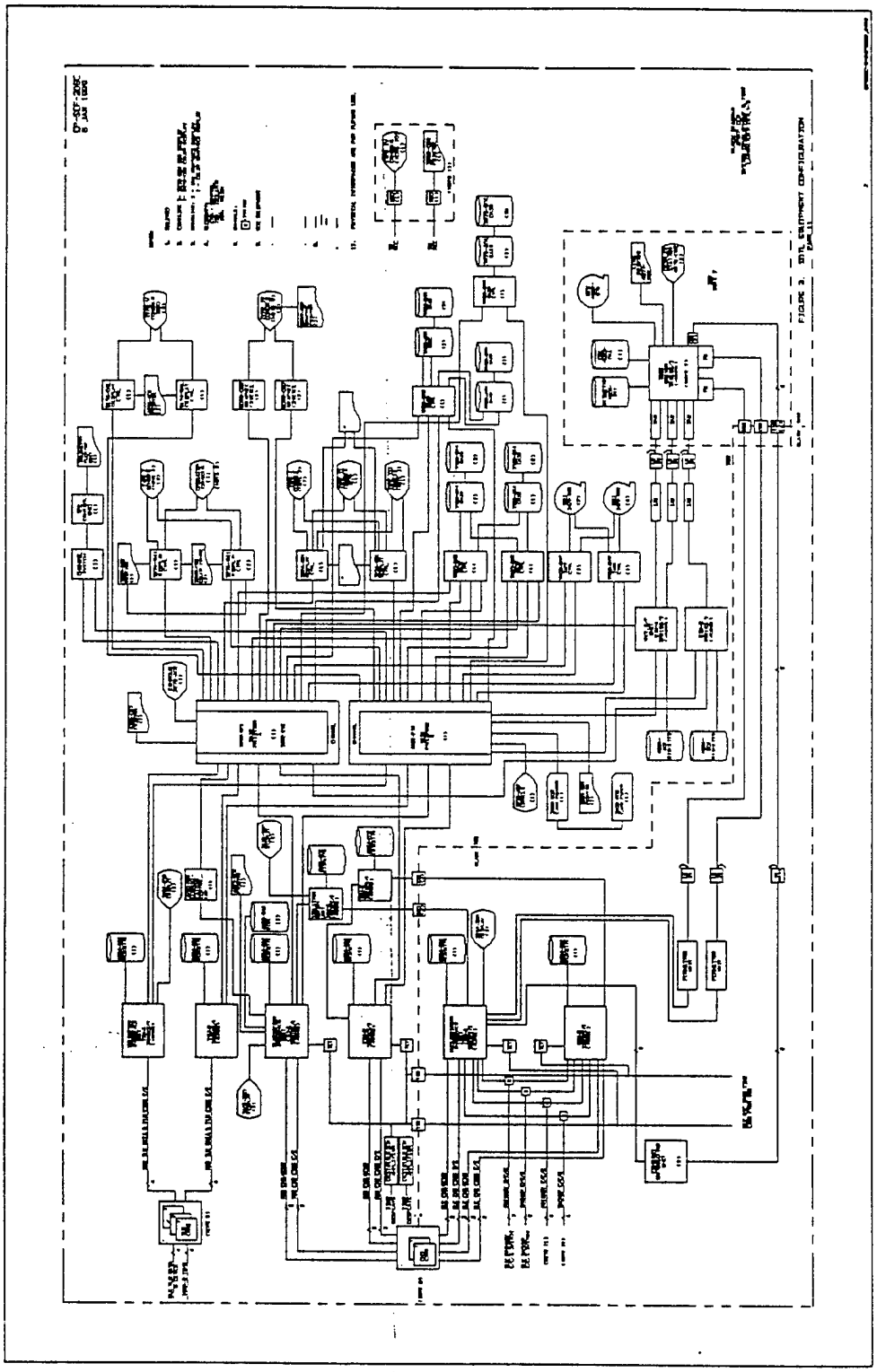
Status: 0
Warning: 7
Error: 0
Fatal: 0

Elapsed Time:
Processor: 00:01:10
Clock: 00:01:10

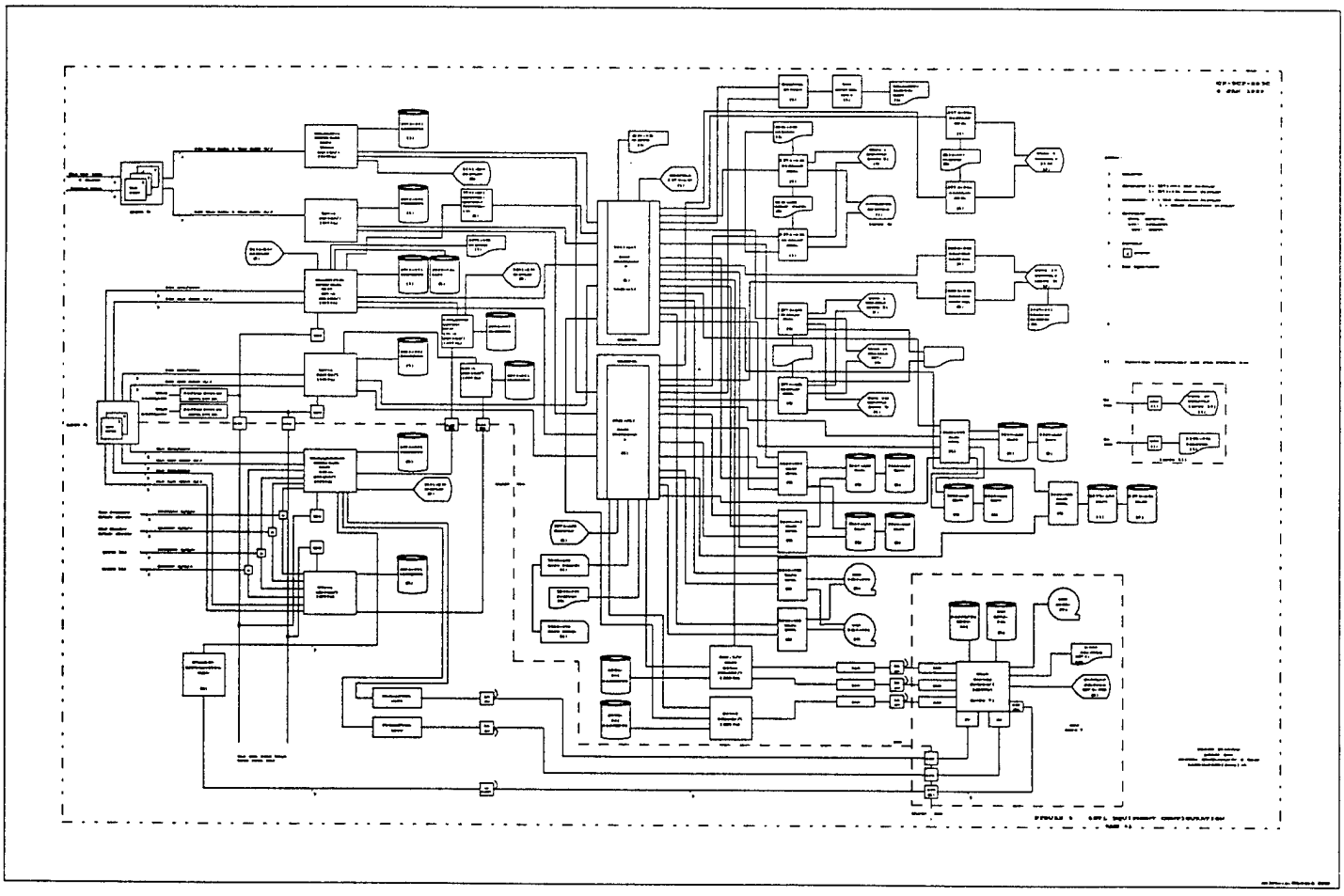
10.1.3 Output AutoCAD R12



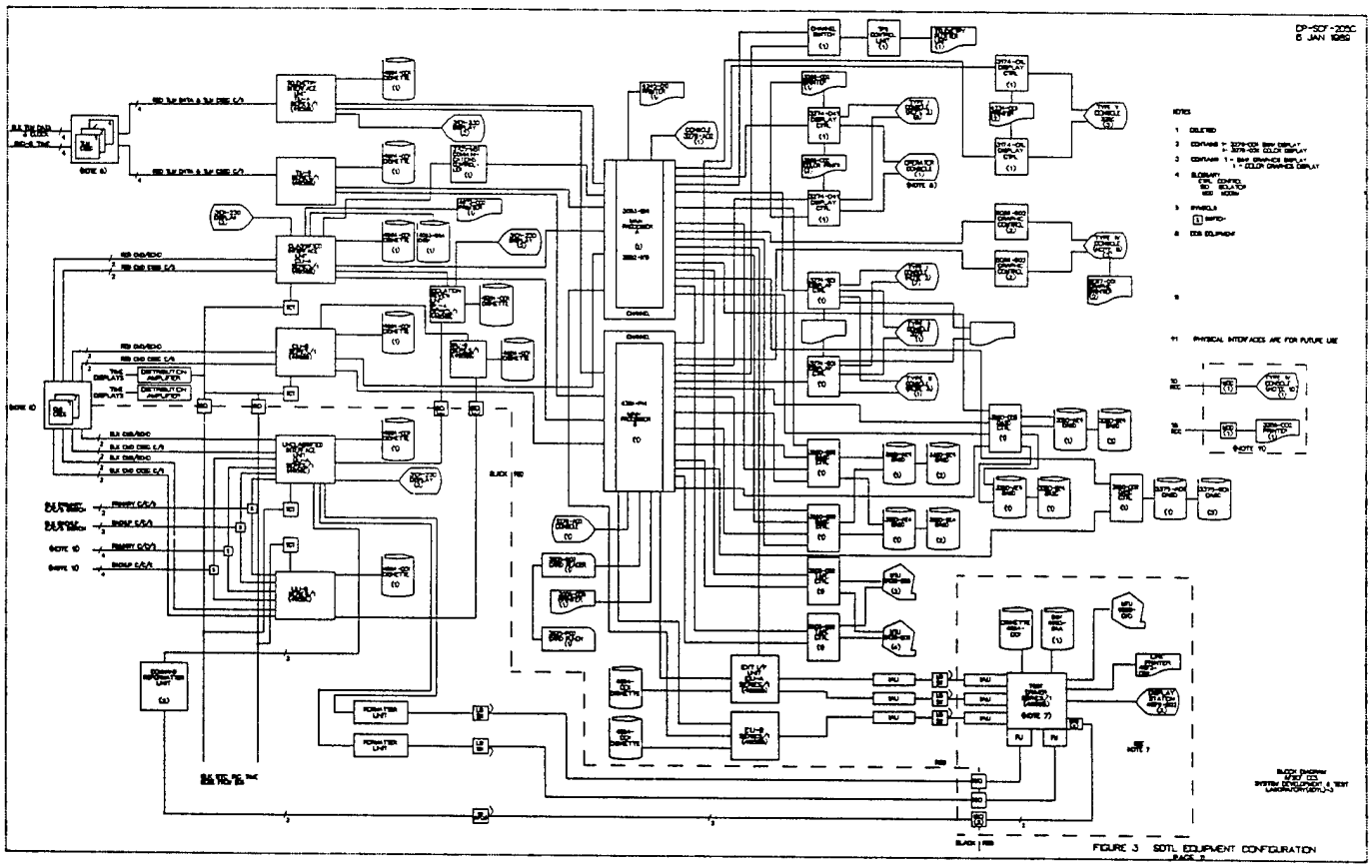
10.1.4 Output Cadkey v6.00



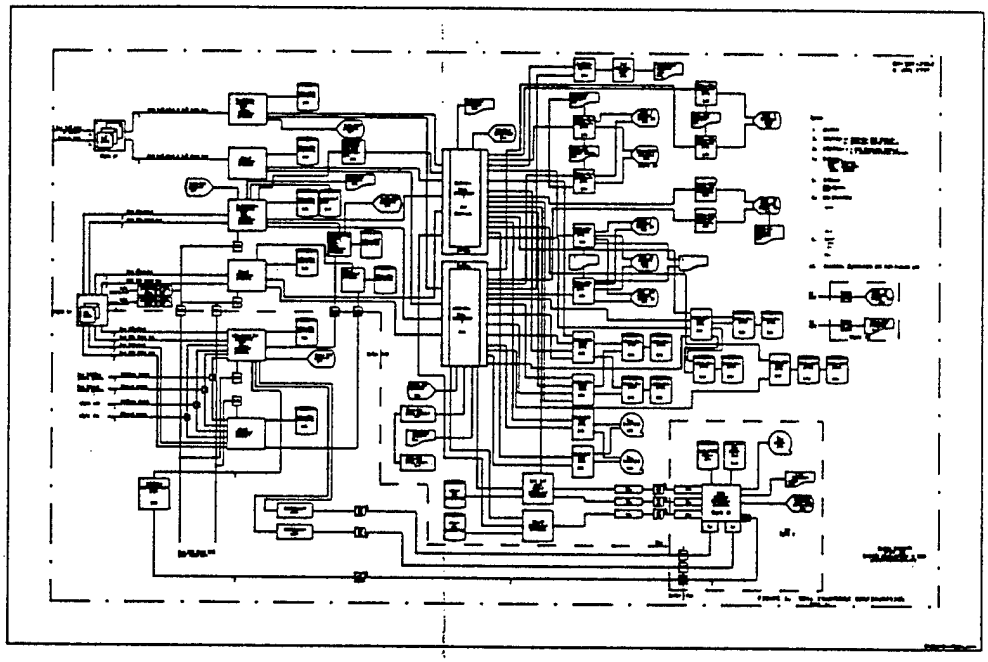
10.1.5 Output Cadleaf



10.1.6 Output IGESView



10.1.7 Output IGESWorks



10.1.8 Output Preview