



GALS TEST NETWORK

# CTN Test Report 91-022



## CTN TOOL TEST

## Quick Short Test Report

31 March 1992

Prepared for  
*Air Force Materiel Command*

19960826 098

DTIC QUALITY INSPECTED 4

DISTRIBUTION STATEMENT A  
Approved for public release;  
Distribution Unlimited

**CTN TOOL TEST**

**QUICK SHORT TEST REPORT (QSTR)**

**25 MAY 1990**

---

Prepared By  
Army CALS Test Bed  
PM CALS  
Myer Center  
Fort Monmouth, NJ 07723

Army TB Contact  
Alton K. Fairweather  
(908) 532-0414

CTN Contact  
Mel Lammers  
(513) 257-3085

Prepared for  
Air Force Materiel Command  
CALS Test Network (AFMC/ENCT)  
Wright-Patterson AFB, OH 45433-5000

DISCLAIMER

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

Contents

1.	Introduction . . . . .	1
1.1	Background . . . . .	1
1.2	Purpose . . . . .	1
2.	Test Parameters . . . . .	2
3.	Analysis of Software Tools . . . . .	3
3.1	Analysis of TAPEVAL . . . . .	3
3.1.1	Version . . . . .	3
3.1.2	Ease of Installation . . . . .	3
3.1.3	Operating System Issues . . . . .	3
3.1.4	Ease of Use . . . . .	3
3.1.5	Execution . . . . .	3
3.1.6	Summary . . . . .	4
3.2	Analysis of MAKETAPE . . . . .	4
3.2.1	Version . . . . .	4
3.2.2	Ease of Installation . . . . .	4
3.2.3	Operating System Issues . . . . .	4
3.2.4	Ease of Use . . . . .	4
3.2.5	Execution . . . . .	5
3.2.6	Summary . . . . .	5
3.3	Analysis of STRIPIGES . . . . .	5

3.3.1	Version . . . . .	5
3.3.2	Ease of Installation . . . . .	5
3.3.3	Operating System Issues . . . . .	5
3.3.4	Ease of Use . . . . .	5
3.3.5	Execution . . . . .	5
3.3.6	Summary . . . . .	5
3.4	Analysis of STRIPRASTER . . . . .	6
3.4.1	Version . . . . .	6
3.4.2	Ease of Installation . . . . .	6
3.4.3	Operating System Issues . . . . .	6
3.4.4	Ease of Use . . . . .	6
3.4.5	Execution . . . . .	6
3.4.6	Summary . . . . .	6
3.5	Analysis of STRIPTEXT . . . . .	6
3.5.1	Version . . . . .	6
3.5.2	Ease of Installation . . . . .	6
3.5.3	Operating System Issues . . . . .	6
3.5.4	Ease of Use . . . . .	6
3.5.5	Execution . . . . .	7
3.5.6	Summary . . . . .	7

3.6	Analysis of VALIDG4 . . . . .	7
3.6.1	Version . . . . .	7
3.6.2	Ease of Installation . . . . .	7
3.6.3	Operating System Issues . . . . .	7
3.6.4	Ease of Use . . . . .	7
3.6.5	Execution . . . . .	7
3.6.6	Summary . . . . .	8
4.	Conclusions and Recommendations . . . . .	9

## 1. Introduction

### 1.1 Background

The DOD Computer-aided Acquisition and Logistic Support (CALs) Test Network (CTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The CTN is a DOD-sponsored confederation of voluntary participants from industry and government managed by the Air Force Logistics Command.

The primary objective of the CTN is to evaluate the effectiveness of the CALs standards (Standards) for technical data interchange and to demonstrate the technical capabilities and operational suitability of those Standards. Two general categories of tests are performed to evaluate the Standards, formal and informal. Formal tests are large, comprehensive tests that follow a written test plan, require specific authorization from DOD, and may take months to prepare, execute, and report.

Informal tests are quick and short, taking only a few hours to set up and execute. They are used by the CTN technical staff to broaden the testing base by including representative samples of the many systems and applications used by CTN participants. They also allow the CTN staff to gain feedback from many industry and government interpretations of the Standards, to increase the base of participation in the CALs initiative, and to respond, in a timely manner, to the many requests for help that come from participants. Participants take part voluntarily and are benefited by receiving an evaluation of their latest implementation (interpretation) of the Standards, interacting with the CTN technical staff, gaining experience in use of the Standards, and developing increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

### 1.2 Purpose

The purpose of the informal test reported in this QSTR is to analyze six software tools: TAPEVAL, MAKETAPE, STRIPIGES, STRIPRASTER, STRIPTEXT, and VALIDG4. The test is to verify that these tools meet CALs requirements by running them with CTN data.

## 2. Test Parameters

Test

Date: 2 January through 30 April 1990

Evaluator:

Army CALS TEST BED  
PM CALS  
Myer Center  
Fort Monmouth, NJ 07723

Software

Tools Originator:

CALS Test Network  
Lawrence Livermore National Laboratory  
P.O. Box 808, L-542  
Livermore, CA 94550

Software

Tools Description:

TAPEVAL	-	Validates tape compliance with MIL-STD-1840A
MAKETAPE	-	Creates declaration files and header records, appends associated data files and writes them to magnetic tape in MIL-STD-1840A format.
STRIPIGES	-	Removes IGES file header
STRIPRASTER	-	Removes raster file header
STRIPTEXT	-	Removes text file header
VALIDG4	-	Validates CCITT Group 4 raster file format

Test Data:

The CTN test data used to test each tool are identified by tool in Section 2 of this report.

Test Platform:

Hardware: Digital Equipment Corporation VAX 11/780 computer system  
Cipher M990 magnetic tape drive  
Software: VMS version 5.3 operating system

Evaluation Criteria:

- a. Ability to perform its intended function
- b. Ease of installation
- c. Operating system issues
- d. Ease of use

### 3. Analysis of Software Tools

#### 3.1 Analysis of TAPEVAL

##### 3.1.1 Version

The Tool Set Version exercised was received on 9-track magnetic tape from the CTN and was labeled as follows:

Tools Revision .9 , label = tool01

The comments in the ptapeval.com source code contained the following version information:

- 'TAPEVAL Version 0.8 - Beta Version - 26 July 1989'
- Modified 12/23/86 by Mark Steele requires Operator Privileges
- Modified 11/88
- 9/4/89- Joe Greco, Jeff Howells

The documentation supplied was "Preliminary User's Manual for TAPEVAL Tool," dated 16 May 1989.

##### 3.1.2 Ease of Installation

In our first attempts to run ptapeval.com, we ran into some problems concerning setting up the program to execute on our VAX. We first tried using the command line "\$run @ptapeval" which is similar to what was suggested on page 4 of the user's manual. This resulted in a VMS error message "too many parameters." We then entered the command in the correct format as noted on page 6 (i.e. "@ptapeval") and received another error message "invalid device name." We looked at the code for the ptapeval.com file and replaced the "d\$u:[aiti.software.pgms]" portion of the path name in the calls to run tpimport and docdecval with the path name being used on our VAX. This still did not work until we set our process privileges to included phy-io and log-io (as directed by comments in the ptapeval.com file but not mentioned in the user's manual).

As noted above, there were a few problems encountered in the installation of TAPEVAL. These problems were solved fairly quickly by personnel with a limited knowledge of VMS. It is recommended that the user's manual be revised to reflect the comments in the source code that address the initial set up of user account privileges.

##### 3.1.3 Operating System Issues.

This tool was designed to run under a VMS operating system version 5.1 or later. We ran it under version 5.3 and encountered no problems pertaining to the operating system.

##### 3.1.4 Ease of Use

The use of this routine was straight-forward.

##### 3.1.5 Execution

The TAPEVAL Tool was first tested using the MIL-STD-1840A Tape from the CTN containing MIL-D-28000 Class II Reference Drawings - Revision C. Further testing was conducted using the CTN Raster Test Suite MIL-STD-1840A tape and the Technical Publications for CALS EXPO'89 MIL-STD-1840A tape. The findings are as follows:

- a. In the val-tape log for both the IGES and Raster tapes, there was an error message which stated that srcdocid in the data file did not match srcdocid in the declaration file. This data appears to have been entered that way intentionally as indicated by the text in the srcdocid field.
- b. When processing the Tech Pubs tape an error message in the val-tape log file indicated that the date in record 9 of the declaration file was invalid. The CTN has indicated that this is a known bug relating to the software identifying dates with years greater than 1989 as being errors.
- c. When running the routine, we had to specify to ptapeval to put the data files in the same directory in which the tool was located. Otherwise, ptapeval reads the tape and brings the files into the VAX but the subroutine docdecval cannot locate them.

### 3.1.6 Summary

The TAPEVAL routine worked properly when tested with the CTN data. The only error discovered was in the flagging of the date in record 9 of the declaration file for the Tech Pubs data as being in error. Otherwise, the routine performed as intended and was easy to use.

## 3.2 Analysis of MAKETAPE

### 3.2.1 Version

The comments in the maketape.c source contained the following version information:

```
Program name: maketape
Source code:  maketape.c
Date written: 12 OCT 1988
Author:      SYSCON Corporation
              attn: Joe Greco
Date:        31 July 1989
Version:     Beta version 0.9
```

The documentation supplied was the "Preliminary User's Guide for MAKETAPE," dated 3 April 1989.

### 3.2.2 Ease of Installation

Installation was accomplished without problems by following the procedures in the user's guide.

### 3.2.3 Operating System Issues

This tool was designed to run under a VMS operating system version 5.1 or later. We ran it under version 5.3 and encountered no significant problems pertaining to the operating system.

### 3.2.4 Ease of Use

The key to using this tool is to construct the MAKETAPE directory in accordance with the user's guide. Once the software is installed, the menu-driven program is easy to use.

### 3.2.5 Execution

We attempted to make a tape from the Class II IGES drawing files received from CTN. These files were imported from 9-track magnetic using the TAPEVAL tool and were stored on the VAX. Next, the file headers were removed from the data files. The MAKETAPE tool was invoked to reconstruct these files into MIL-STD-1840A format. The tool appeared to work. However, the tape it created only contained the declaration file. An analysis of the tool revealed that the data and data header files were not being appended and stored in a .temp file as described in the documentation. This file is supposed to have been created when the append data file header routine was executed.

### 3.2.6 Summary

This tool appears to have a bug that prevents it from creating the file consisting of the header data appended to the document data.

## 3.3 Analysis of STRIPIGES

### 3.3.1 Version

There was no version number associated with this tool in its source code comments. This tool was received on the same tape as TAPEVAL and MAKETAPE (Tools Revision .9 , label = tool01).

### 3.3.2 Ease of Installation

STRIPIGES was imported to the VAX without incident.

### 3.3.3 Operating System Issues

This tool was designed to run under a VMS operating system version 5.1 or later. We ran it under version 5.3 and encountered no problems pertaining to the operating system.

### 3.3.4 Ease of Use

This tool is invoked with the one word command STRIPIGES and proceeds to separate the 1840 IGES files into its header and data components.

### 3.3.5 Execution

This tool was tested using the IGES Class I and Class II Reference Drawings from the CTN. When tool was run, it seemed to execute properly. Upon examining the resulting header and data files, it was found that only five of the seven header records were removed. An analysis of the source revealed that a loop variable had the initial value of five when it should have had seven.

### 3.3.6 Summary

This tool appears to have a minor bug that prevents total separation of the header record from the IGES files.

### **3.4 Analysis of STRIPRASTER**

#### **3.4.1 Version**

There was no version number associated with this tool in its source code comments. This tool was received on the same tape as TAPEVAL and MAKETAPE (Tools Revision .9 , label = tool01).

#### **3.4.2 Ease of Installation**

STRIPRASTER was imported to the VAX without incident.

#### **3.4.3 Operating System Issues**

This tool was designed to run under a VMS operating system (version 5.1 or later). We ran it under version 5.3 and encountered no problems pertaining to the operating system.

#### **3.4.4 Ease of Use**

This tool is invoked with the one word command STRIPRASTER and proceeds to separate the 1840 RASTER files into its header and data components.

#### **3.4.5 Execution**

This tool was tested using the RASTER Type I and Type II Reference Drawings from the CTN. When tool was run, it executed properly.

#### **3.4.6 Summary**

This tool performs its intended function.

### **3.5 Analysis of STRIPTEXT**

#### **3.5.1 Version**

There was no version number associated with this tool in its source code comments. This tool was received on the same tape as TAPEVAL and MAKETAPE (Tools Revision .9 , label = tool01).

#### **3.5.2 Ease of Installation**

STRIPTEXT was imported to the VAX without incident.

#### **3.5.3 Operating System Issues**

This tool was designed to run under a VMS operating system version 5.1 or later. We ran it under version 5.3 and encountered no problems pertaining to the operating system.

#### **3.5.4 Ease of Use**

This tool is invoked with the one word command STRIPTEXT and proceeds to separate the 1840 SGML files into its header and data components.

### 3.5.5 Execution

This tool was tested using the SGML Reference Data from the CTN. When tool was run, it executed properly.

### 3.5.6 Summary

This tool performs its intended function.

## 3.6 Analysis of VALIDG4

### 3.6.1 Version

VALIDG4 1.0  
SYSCON Corporation 5/18/88

### 3.6.2 Ease of Installation

The VALIDG4 tool was used to verify the CCITT group 4 raster image data file. This tool was loaded on our VAX 11-780 and operated under VMS 5.3.

### 3.6.3 Operating System Issues

VALIDG4.C is written in C. It runs fine under VMS 5.3.

### 3.6.4 Ease of Use

Because there was no user's manual for VALIDG4 tool, we looked into the help routine in the source code to find out input commands. After assigning the command line in a validg4.com file, we were able to run the validg4.exe program. According to the on-line help menu, we set the input command qualifiers as "\$ validg4 filename.g4 -den xxxx -width xxxxxx -msb."

### 3.6.5 Execution

For the test, the following CTN reference test data files were used:

PD CTN RAS DWG 01	density = 200, width = 1728
PD CTN RAS DWG 02	density = 200, width = 2720
PD CTN RAS DWG 03	density = 200, width = 2240

These raster data files were loaded and validated by using TAPEVAL tools before the test. The strip raster program was also used to remove the header files and the data files D001R00X.RAS were renamed as D001R00X.g4.

When the program was executed, the routine attempted to validate the data file, D001R001.G4(PD CTN RAS DWG 01), then an error message was received stating "ERROR GETCODE, NO MATCH IN 12 BITS, S=19, W=2B0." Further testing was conducted using different raster data files and command qualifiers, we still received the similar error messages, ie. "ERROR GET CODE, NO MATCH IN 12 BITS, S= 157, W = 140." The program exited at this point.

### 3.6.6 Summary

The routine did not validate the CTN raster test data files even though they appeared to be correct. Several combinations of input command qualifiers were entered but to no avail. A user's guide is therefore necessary. We recommend that a user's guide consisting of an initial set up of the command file for the VMS/VAX, an example to execute the program, and explanations of error messages be provided in the next release of the CTN tools.

#### 4. Conclusions and Recommendations

These tools represent a good start. We have used them extensively and will continue to do so. The documentation does need improvement. In some cases it was nonexistent while in other cases it was obsolete or erroneous. Also these tools should be more portable. In particular, it would be nice to port them to the Unix and DOS environments where many CALS applications are running. Also these tools should be more integrated. It is our understanding the CTN is already working on making many of the above improvements. We look forward to using the next revision of these tools as soon as they become available.