

AD-A267 587



Handwritten initials in a circle

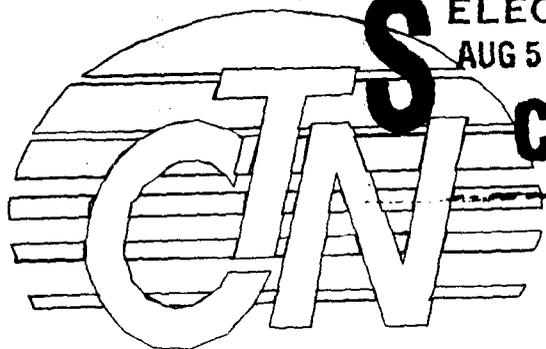
CALS Test Network Handbook

March 1993

DTIC
ELECTE
AUG 5 1993

93-17700

Handwritten number 7985



CALS TEST NETWORK



DISTRIBUTION STATEMENT A

Approved for public release

Dissemination Unlimited

93 8 3 274

CTN Handbook March 1993

Table of Contents

| | Page |
|---|-------------|
| Preface..... | 2 |
| Introduction..... | 3 |
| General Information..... | 5 |
| Membership Information..... | 9 |
| Membership List..... | 13 |
| Test Beds..... | 27 |
| Test Tools..... | 39 |
| Testing Terms & Packets..... | 45 |
| Air Force CALS Test Bed Bulletin Board Systems..... | 57 |
| CALS Standardization Effort..... | 63 |
| CALS Documents Availability & CALS Bulletin Board..... | 70 |
| Test Reports..... | 71 |
| Test Data & Tools..... | 74 |
| Acronyms..... | 75 |
| Membership Application..... | 79 |
| Memorandum of Agreement..... | 82 |

CTN Handbook March 1993

Preface

This Computer-aided Acquisition and Logistic Support (CAL S) Test Network (CTN) Handbook will have periodic updates. These will occur as the technology of CAL S standards and testing grows and matures.

CAL S Standards and Specifications require three levels of testing. The testing includes: a) Standards Validation Testing; b) Conformance Testing and; (c) User Application Testing. The management of CAL S Standards Validation Testing and User Application Testing has been assigned to the CAL S Test Network. Conformance Testing will be assigned to other agencies.

This handbook is the responsibility of the CAL S Test Network, Air Force CAL S Program Office, Headquarters Air Force Materiel Command (HQ AFMC/ENC). Any recommendations for change or comments about the content should be sent to:

**Major Ed Preston
Director
CAL S Test Network
HQ AFMC/ENC
4027 Col Glenn Hwy Suite 200
Dayton OH 45431-1601
Phone: (513) 257-3085
FAX: (513) 257-5881**

CTN Handbook March 1993

INTRODUCTION

ABOUT THIS HANDBOOK

The purpose of this handbook is twofold. First, it provides an introduction to the CTN and identifies the managers and testing analysts. Second, it lists CTN reference material such as testing platforms used by CTN, testing tools, CTN reference test packet descriptions, and how to receive some of these materials. The writing style and format of the document will be concise.

DISCLAIMER

CTN uses vendor hardware and software products in its testing platforms and during demonstrations. CTN has written software only in cases where a commercial equivalent could not be found. Products developed by CTN and vendors are listed in the handbook. The use of a particular vendor product does not imply "CALS compatibility, compliance, or certification," or an endorsement or recommendation by CTN. The intent of listing the products and tools is to provide participants with a mechanism to develop their own utilities and applications.

DTIC QUALITY INSPECTED 3

3

| | |
|---------------------|-------------------------------------|
| Accession For | |
| NTIS CRA&I | <input checked="" type="checkbox"/> |
| DTIC TAB | <input type="checkbox"/> |
| Unannounced | <input type="checkbox"/> |
| Justification _____ | |
| By _____ | |
| Distribution/ | |
| Availability Codes | |
| Dist | Avail and/or Special |
| A-1 | |

CTN Handbook March 1993

This Page Intentionally Left Blank



CALS TEST NETWORK

General Information

CTN Handbook March 1993 General Information

The CTN is a confederation of government and industry organizations who have agreed to demonstrate and test the Computer-aided Acquisition and Logistic Support standards.

The CALS Test Network was created by the Office of the Secretary of Defense (OSD) to demonstrate the CALS standards and test their effectiveness. These standards define the interchange of digital technical data. They have become increasingly important and are required for contractors, subcontractors, and vendors desiring to do business within the Defense industry.

Goal

The goal of the CTN is to test, evaluate and demonstrate the interchange and functional use of digital technical information using CALS standards. The testing is being accomplished within these initial target capabilities:

- * Technical Publications (text and graphics)
- * Product Data (engineering drawings and CAD files)
- * Support Data (on-line Logistics Support Analysis data)
- * Data Protection and Security
- * Data Configuration Management
- * Data Acceptance Procedures
- * CALS for Small Business

Standards and Specifications

The CALS Standards and Specifications currently being tested and demonstrated are:

- MIL-STD-1840B Automated Interchange of Technical Information
- MIL-D-28000A Digital Representation for Communication of Product Data: IGES Application Subsets
- MIL-M-28001B Markup Requirements and Generic Style Specification for Electronic Printed Output and Exchange of Text (SGML)
- MIL-R-28002B Raster Graphics Representation in Binary Format. Requirements for
- MIL-D-28003A Digital Representation for Communication of Illustration Data: CGM Application Profile

CTN Handbook March 1993 General Information

- MIL-M-87268 Manuals, Interactive Electronic Technical: General Content, Style, Format and User Interaction Requirements
- MIL-D-87269 Data Base, Revisable: Interactive Electronic Technical Manuals, for the Support of
- MIL-Q-87270 Quality Assurance Program: Interactive Electronic Technical Manuals and Associated Technical Information; Requirements for
- MIL-STD-CITIS Contractor Integrated Technical Information Service (CITIS), Functional Requirements for

Approach

CTN is a confederation of participants from industry, government, academia and from international partners. These participants form a network of digital data capabilities linked physically or logically. As data is transferred from one participant node to another, the CTN tests it against the CALS standards. The CTN performs a thorough analysis and publishes a report describing the transfer, the quality of data, the utility of the data after the transfer, and the overall performance of the standards. These reports are made available to CTN members and to the public. They point out progress in the functional use of the CALS standards. They also are used to influence future modifications and additions to the standards.

Benefits

Some benefits of the CTN to CALS are: (1) demonstration of the capabilities, operation, and functional use of the CALS standards over the complete range of user applications, (2) evaluation of the capability and effectiveness of the CALS standards, (3) identification of needed improvements to the standards, (4) identification of requirements for new digital data standards, (5) development of Acceptance Testing procedures for files delivered in fulfillment of contracts, (6) development of guidance on how to use the CALS standards, (7) testing the usability of the CALS standards at the corporate level in the DoD infrastructure, and (8) elimination of duplicate testing by the DoD components.

CTN Handbook March 1993

This Page Intentionally Left Blank



CALS TEST NETWORK

Membership Information

CTN Handbook March 1993

Who May Join?

CTN membership is open to industry and government organizations, both national and international. Government participants included the DoD, the Services within DoD, other government departments or agencies, and government research and development laboratories. Industry participants include defense contractors, subcontractors, and vendors of weapon systems or of weapon system related hardware, software, and research data, and non-defense contractors.

Who Are The Current Members?

There are presently 460 organizations (government, industry, academia, and international) that are members of the CTN including all of the Services, and most major defense industry contractors.

What Are The Benefits Of Membership?

Members benefit by being kept aware of CALS utilization and testing. They get a head start on using CALS standards by participating in transfer tests of actual CALS-compliant data. Preliminary reports of transfer tests are available to members on the CTN bulletin board. As individual tests are performed, all members benefit from the lessons learned. Members also become familiar with current transfer capabilities among the entire CTN community.

What Is The Cost To Join?

Membership is free. There is no cost to join nor is there an annual fee to pay.

CTN Handbook March 1993

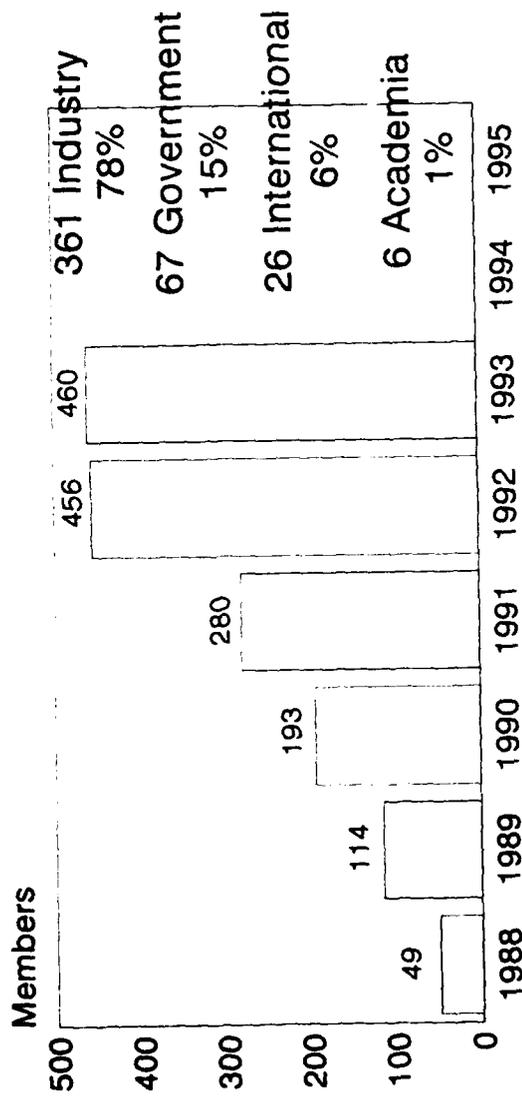
How Do You Join?

An organization or facility becomes a CTN member by filling out both the CTN Membership Application and signing the Memorandum of Agreement (MOA) which are at the back of this handbook. These documents describe the interests of the member, the capabilities that they may bring to the network, and the method of interaction expected. Mail the completed Application and the signed Memorandum of Agreement to:

**Major Ed Preston
Director
CALSTest Network
HQ AFMC/ENCS
4027 Col Glenn Hwy Suite 200
Dayton OH 45431-1601
Telephone: (513) 257-3085
FAX: (513) 257-5881**



CALSTEST NETWORK Membership



176 New Members in 1992

As Of 5 March 1993



CALS TEST NETWORK

Membership List

460 Members

5 March 1993

CTN Members Mar 93

| | |
|---|--|
| ABI Enterprises Greenbelt MD | AGFA Compugraphics Wilmington MA |
| AEL Defense Corp Dayton OH | AIL Systems, Inc. Deer Park NY |
| AF AFMC ASC/SCNO WPAFB OH | AMP Inc Harrisburg PA |
| AF AFMC ASC WPAFB OH | ARC Professional Services Grp Hanover MD |
| AF AFMC CSRC WPAFB OH | AT&T Federal Systems Greensboro NC |
| AF AFMC CSRC/COESAC Palestine TX | AT&T EasyLink Inc Bridgeton MO |
| AF AFMC EDCARS Program WPAFB OH | AVTEC Systems Inc Fairfax VA |
| AF AFMC Electronic Systems Center Bedford MA | AZTEK Irvine CA |
| AF AFMC/ENC WPAFB OH | Accent Systems Corp Arlington TX |
| AF AFMC Ogden ALC Hill AFB UT | Access Corp Cincinnati OH |
| AF AFMC Oklahoma ALC Tinker AFB OK | Advanced Sciences Inc Albuquerque NM |
| AF AFMC Rome Development Center Rome NY | Advanced Technology Inc Reston VA |
| AF AFMC Sacramento ALC McClellan AFB CA | Aerojet Electronic Sys. Div. Azusa CA |
| AF AFMC San Antonio ALC Kelly AFB TX | Aerospace Tech. Group Inc Columbus OH |
| AF AFMC Warner-Robins ALC Robins AFB GA | Air Force Department of Defence Canberra, Australia |
| AF AFMC/WL-AARF WPAFB OH | Airborne Express/ABX Air Inc Wilmington OH |
| AF SM-ALC F-22 McClellan AFB CA | Aircraft Technical Publishers Brisbane CA |
| AF HQ USAF/LE-I Washington DC | Albert Consulting Group Los Gatos CA |
| ADRA Systems Inc Lowell MA | Albuquerque Operations Office Albuquerque NM |

CTN Members Mar 93

| | |
|------------------------------------|---------------------------------|
| Alcoa | Army PM JCALS |
| Alcoa Center PA | Ft Monmouth NJ |
| Alliant Techsystems | Aspen Systems Corp |
| Hopkins MN | Rockville MD |
| Allied Signal Aerospace Company | Aspen Technical Publications |
| Kansas City MO | Union City CA |
| Allied Signal Aerospace Company | Assurance Manufacturing |
| Teterboro NJ | Coon Rapids MN |
| Alpharel | Auto-Trol Technology |
| Camarillo CA | Southfield MI |
| Analysis & Technology, Incorp. | Auto-trol Technology |
| Chesapeake VA | Denver CO |
| Apple Computer | Autodesk Inc |
| Reston VA | Sausalito CA |
| Applied Technology Center | Auxco |
| League City TX | Silver Spring MD |
| Apunix Computer Services | Avalanche Development Company |
| San Diego CA | Boulder CO |
| Aquidneck Data Corp | BOW Industries Inc |
| Middletown RI | Chantilly VA |
| ArborText Inc | Baham Corp |
| Ann Arbor MI | Columbia MD |
| Architect of the Capital | Battelle |
| Washington D.C. | Dayton OH |
| Army, AMC, AMCCOM, ARDEC | Battelle Human Affairs Res.Ctr. |
| Dover NJ | Seattle WA |
| Army AMCCOM | Bechtel Inc |
| Rock Island IL | San Francisco CA |
| Army Foreign Science & Tech Center | Bill Loye & Associates |
| Charlottesville VA | St. Paul MN |
| Army Information Systems | Boeing - TMIS Project |
| Redstone Arsenal AL | Reston VA |
| Army Material Command | Boeing Computer Services |
| Alexandria VA | Wichita KS |
| Army Material Command/S, I & M | Boeing Computer Services |
| St Louis MO | Philadelphia PA |
| Army Munitions & Chemical Cmd | Boeing Computer Services |
| Rock Island IL | Vienna VA |

CTN Members Mar 93

| | |
|---|---|
| Boeing Computer Services Reston VA | CE-Engineering Automation Alameda CA |
| Boeing Computer Services Seattle WA | CENTECH Beavercreek OH |
| Boeing Computer Services Renton WA | CERC Morgantown WV |
| Boeing Computer Services Richland WA | CIMAGE Corp Ann Arbor MI |
| Boeing Military Aircraft Div. Wichita KS | CIMLINC Inc Troy MI |
| Booz-Allen & Hamilton Inc Arlington VA | Caley Enterprises Ripley WV |
| Boston Software Works Inc Boston MA | Carberry Technology Townsend MA |
| Brigham Young University Provo UT | Casde Corp Arlington VA |
| British Aerospace Military Lancashire, England | Casterline Computer Consulting Fort Collins CO |
| British Aerospace Public Stevenage, England | Chipcom Corp Southborough MA |
| Brodan Information Services Inc Fremont CA | Chrysler Tech Airborne Sys Dayton OH |
| C-TAD Systems Inc Ann Arbor MI | Cincom Systems Inc Cincinnati OH |
| CAD/CAM Engineering Systems Eagan MN | Cisigraph Corp Pittsburgh PA |
| CADKEY Inc. Windsor CT | Cleveland Advanced Manufacturing Cleveland OH |
| CAE Electronics Ltd. St.Laurent, Quebec | Computer Associates San Diego CA |
| CALS Connectivity Center Dallas TX | Computer Sciences Corp Shrewsbury NJ |
| CALS Shared Resource Center Scranton PA | Computer Sciences Corp Moorestown NJ |
| CAS Inc Huntsville AL | Computer Sciences Corp Horsham PA |
| CBIS Federal Inc Fairfax VA | Computer Sciences Corp Houston TX |

CTN Members Mar 93

| | |
|---|---|
| Computer Sciences Corp Hampton VA | Digital Equipment Corp Melbourne FL |
| Computer Technology Management Chicago IL | Digital Equipment Corp Chelmsford MA |
| Concept Develop Technologies Inc Burlington MA | Digital Equipment Corp Landover MD |
| Concurrent Technologies Corp\CSRC Johnstown PA | Digital Equipment Corp Nashua NH |
| Control Data Corp St. Paul MN | DET Norske Veritas Industri AS Norway |
| Cubic Defense Systems San Diego CA | Douglas Aircraft Company Long Beach CA |
| Cummins Engine Company Columbus IN | Draper Laboratory Cambridge MA |
| DCMO Rochester, DoD Office Rochester, Kent, UK | EDS Unigraphics Maryland Hts MO |
| Data Conversion Laboratory Fresh Meadows NY | EG&G Dynatrend Inc Cambridge MA |
| Data Development Inc Stuart FL | Eastman Kodak Rochester NY |
| Datalogics Irvine CA | Eaton Corp Deer Park NY |
| Datalogics Chicago IL | Electronic Book Technologies Providence RI |
| Datalogics Bethpage NY | Electronic Commerce Executive Forum Washington, D.C. |
| Defense Logistics Agency Alexandria VA | Electronic Data Systems Indianapolis IN |
| Defense Printing Service Bremerton WA | Electronic Data Systems Bethesda MD |
| Department of National Defence Ottawa, Ontario | Electronic Data Systems Bloomfield Hills MI |
| Department of National Defense Hull, Quebec | Electronic Data Systems Troy MI |
| Department of Transportation Cambridge MA | Electronic Data Systems Herndon VA |
| Digit Software Inc Silver Spring MD | Electronic Data Systems Oak Creek WI |

CTN Members Mar 93

| | |
|--|--|
| Electronics & Space Corp St. Louis MO | General Dynamics Electric Boat Groton CT |
| Enginetics Corp Huber Heights OH | General Dynamics Electronics Columbus OH |
| Exoterica Corp Ottawa, Ontario | General Electric Aircraft Engines Cincinnati OH |
| FMC Santa Clara CA | General Electric Automated System Huntsville AL |
| FMC Chicago IL | General Electric Corp Engineering Bridgeport CT |
| FileNet Costa Mesa CA | Georgia Institute of Technology Alpharetta GA |
| Flight Refueling Ltd Dorset, England | Gillette Company Boston MA |
| Foreign Broadcast Information Ser. Frederick MD | Giordano Associates Inc Long Branch NJ |
| Formtek Inc Pittsburg PA | Government Printing Office Washington DC |
| Frame Technology San Jose CA | Graphics Communications Assoc. Arlington VA |
| GSC Associates Inc Redondo Beach CA | Grif S.A. St. Quentin, France |
| GTE Government Systems Corp Needham Heights MA | Grumman Data Systems Bethpage NY |
| GTX Corp Phoenix AZ | Grumman Data Systems N. Charleston SC |
| Gateway Conversion Technologies Morrisville NC | HQDA SFIS-FAV-F Washington DC |
| General Atomics San Diego CA | Harris Corp Melbourne FL |
| General Dynamics Rancho Cucamonga CA | Harris Corp Dayton OH |
| General Dynamics Ft. Worth TX | Henderson Software Boulder CO |
| General Dynamics Adv. Manuf. Pomona CA | Hercules Corp Clearwater FL |
| General Dynamics Data Systems San Diego CA | Hewlett Packard Pleasanton CA |

CTN Members Mar 93

| | |
|--------------------------------------|------------------------------|
| Hewlett Packard | I-NET Inc |
| San Jose CA | Fairborn OH |
| Hewlett Packard | IBM |
| Fort Collins CO | Los Angeles CA |
| Hewlett Packard | IBM |
| Baltimore MD | San Jose CA |
| Hewlett Packard | IBM |
| Boeblingen, Germany WE | Boulder CO |
| Hilton Systems Inc | IBM |
| Mt. Arlington NJ | Orlando FL |
| Honeywell | IBM |
| Littleton CO | Bethesda MD |
| Honeywell Air Transport System Div. | IBM |
| Phoenix AZ | Rockville MD |
| Honeywell Military Avionics Division | IBM |
| St. Louis Park MN | Owego NY |
| Honeywell Ordinance Division | IBM |
| Edina MN | Dayton OH |
| Honeywell Inc Military Avionics | IBM |
| St. Louis Park MN | Manassa VA |
| Honeywell Inc | ICM Inc |
| St. Louis Park MN | Phoenix AZ |
| Horizons Technology Inc | IDEAL Scanner Division Inc |
| Billerica MA | Rockville MD |
| Hughes Aircraft | IGES Data Analysis Corp |
| Fullerton CA | Berkeley IL |
| Hughes Aircraft Company | IOMEGA |
| Long Beach CA | Atlanta GA |
| Hughes Aircraft Company | IRPL/ENSTA |
| Canoga Park CA | Palaiseau, France |
| Hughes Aircraft/Tucson Support Sys. | ITT-A/CD |
| Tucson AZ | Fort Wayne IN |
| Hughes Ground Systems Group | Image Memory Systems Inc |
| Fullerton CA | Dayton OH |
| Hughes Missile Systems Co | Image Processing Systems |
| Pomona CA | Markahm, Ont Canada |
| Hughes Training Inc | Image Systems Technology Inc |
| Arlington TX | Troy NY |

CTN Members Mar 93

| | |
|----------------------------------|-------------------------------|
| InContext | Island Graphics |
| Toronto, Ontario | San Rafael CA |
| Industrial Technology Institute | Israeli Air Force |
| Ann Arbor MI | WPAFB OH |
| Industry West Electronics | J.D. Kiser & Associates |
| Orem UT | College Park MD |
| InfoDesign Corp | Johns Hopkins University |
| Toronto, Ontario | Laurel MD |
| Information Spectrum Inc | Joint Committee on Printing |
| Dayton OH | Washington DC |
| Ingalls Shibuilding Inc | JWK International Corp |
| Pascagoula MS | San Diego CA |
| Input Inc | Kennedy Space Center |
| Vienna VA | Kennedy SC FL |
| Inset Systems Inc | Knowledge Base International |
| Brookfield CT | Houston TX |
| InterCap Graphics Systems | Kruse Industries Inc |
| Annapolis MD | Dowington PA |
| Interconsult Inc | Llamas Plastics Inc |
| Cambridge MA | Sycmar CA |
| Intergraph | LLNL MITI Project/TIS Program |
| Huntsville AL | Livermore CA |
| Intergraph | LLNL CIM |
| Littleton CO | Livermore CA |
| Interleaf | LLNL Mechanical Engineering |
| Santa Clara CA | Livermore CA |
| Interleaf | LLNL NERSC |
| Norwalk CT | Livermore CA |
| Interleaf | LLNL Technical Info. Dept. |
| Cambridge MA | Livermore CA |
| Interlinear Technology | LTV Aerospace and Defense Co. |
| Alameda CA | Dallas TX |
| Interlinear Technology | Litton Computer Services |
| Cambridge MA | Agoura Hills CA |
| International Computer & Telecom | Litton/ITEK Optical Systems |
| Rockville MD | Lexington MA |
| International Technegroup Inc | Lockheed |
| Milford OH | Austin TX |

CTN Members Mar 93

Lockheed Aeronautical Systems
Burbank CA
Lockheed Aeronautical Systems
Kennesaw GA
Lockheed Aeronautical Systems
Marietta GA
Lockheed California
Burbank CA
Lockheed Integrated Solutions
Fairfax VA
Lockheed Missiles & Space
Sunnyvale CA
Lockheed Sanders Inc
Nashua NH
Logicon - Ultrasystems
El Segundo CA
Logistic Services Int Inc
Jacksonville FL
Logistics Systems Architects
Sacramento CA
Loral Aerospace Company
Newport Beach CA
Loral Aerospace Company
Palo Alto CA
Loral Defense System - Akron
Akron OH
Loral Western Development Lab.
San Jose CA
Los Alamos National Laboratory
Los Alamos NM
MBB Deutsche Aerospace
Munchen, Germany
MICAH Systems Inc
Fairborn OH
MITRE Corporation
Bedford MA
MITRE Corp
McLean VA

Magnavox
Torrance CA
Magnavox
Fort Wayne IN
ManTech Services Company
Alexandria VA
Martin Marietta Astronautics
Denver CO
Martin Marietta Data Sys.
Englewood CO
Martin Marietta Energy Sys.
Oak Ridge TN
Martin Marietta Missile Sys.
Orlando FL
Maxima Corp
Beavercreek OH
Maxima Corporation
Rockville MD
McDonnell Douglas
St. Louis MO
McDonnell Douglas Missile Sys.
Titusville FL
McDonnell Douglas Space Sys.
Huntington Beach CA
McDonnell Douglas Telecom Dept.
St. Louis MO
Mentor Graphics Corp
Beaverton OR
Meridian Data Inc
Reston VA
Micro-Data, Ltd.
Haifa, Israel
Micrographic Technology Corp
Mountain View CA
Microsystems Engineering Corp
Hoffman Estates IL
Micro Systems Inc
Ft Walton Beach FL

CTN Members Mar 93

Minigraph
Broomall PA
Moda Magnetics Corp
Farmingdale NY
Moore Quality Tooling Inc
Centerville OH
Motorola Inc GEG
Scottsdale AZ
MP Graphics Systems
Indianapolis IN
NIST
Gaithersburg MD
NMT Corp
Madison WI
National Library of Medicine
Bethesda MD
Navy NSWC Carderock David Taylor
Bethesda MD
Navy NavSea Sys. Command
Washington DC
Navy Naval Air Technical Ser.
Washington DC
Navy Naval Aviation Depot
San Diego CA
Navy Naval Aviation Depot
Jacksonville FL
Navy Naval Aviation Depot
Norfolk VA
Navy Naval Aviation Depot
San Diego CA
Navy Naval Ocean Systems Ctr
San Diego CA
Navy Naval Ordnance Station
Indian Head MD
Navy Naval Pubs & Printing Svcs
Washington DC
Navy Naval Research Laboratory
Washington DC
Navy Naval Sea Combat Systems
Norfolk VA
Navy Naval Sea Systems Command
Alexandria VA
Navy Naval Supply Systems Command
Arlington VA
Navy Naval Undersea Warfare Eng.
Keyport WA
Navy Naval Underwater Systems Ctr
Newport RI
Navy Naval Weapons Center
China Lake CA
Navy Naval Base
Philadelphia PA
Neutronis Inc
Phoenix AZ
Newport News Shipbuilding
Newport News VA
Northrop
Pico Rivera CA
Novell Inc
St. Louis MO
O'Neil & Associates Inc
Dayton OH
OMI Logistics
Fareham, Hampshire UK
OSD CALS Policy Office
Washington DC
Optigraphics
Sebastopol CA
Oracle Federal Group
Bethesda MD
Oracle Multimedia
Redwood Shores CA
Oster & Associates Inc
Bel Air MD
OutSource Inc
Los Angeles CA

CTN Members Mar 93

| | |
|---|--|
| Owl International Inc Bellevue WA | Rockwell International Space Trans. Downey CA |
| PRC, Incorporated Reston VA | Rockwell Space Operations Company Houston TX |
| Pratt & Whitney East Hartford CT | Rolls Royce (Canada) Limitee Lachine, Quebec |
| Pratt & Whitney Middletown CT | Rolls Royce PLC Filton Bristol, England |
| Pratt & Whitney West Palm Beach FL | Rosetta Technologies San Jose CA |
| Publishing Technology Management Arlington MA | Rosetta Technologies Portland OR |
| REDCON Bountiful UT | Royal Australian Air Force Sydney, Australia |
| RLT Associates Knoxville TN | SAIC McLean VA |
| Raytheon Company--Publication Dept. Bedford MA | SEMCO Carlsbad CA |
| Raytheon Service Company Burlington MA | SGAO Paris, France |
| Resource Strategies Inc San Diego CA | SSC Laboratory Dallas TX |
| Rockwell International Canoga Park CA | STS Information Systems Inc Alexandria VA |
| Rockwell International El Segundo CA | SYSCON Corporation San Diego CA |
| Rockwell International Seal Beach CA | SYSCON Corporation Washington DC |
| Rockwell International Los Angeles CA | Sandia National Laboratories Albuquerque NM |
| Rockwell International Anaheim CA | Scan-Graphics Inc Broomal PA |
| Rockwell International Downey CA | Schlumberger Technologies Billerica MA |
| Rockwell International Cedar Rapids IA | Scientific Software Corp Maywood IL |
| Rockwell International Dallas TX | Scilab Inc Niskayuna NY |

CTN Members Mar 93

| | |
|--|---|
| Shaw Industries Inc Franklin PA | Systems Engineering Design Lab. Blacksburg VA |
| Sikorsky Aircraft Stratford CT | Systems Integration Management Act St Louis MO |
| Simmonds Precision Vergennes VT | TAAS-HANCAL Ramat-Hasharom Israel |
| Smiths Industries Grand Rapids MI | TAMSCO Beltsville MD |
| SofTech, Inc. Fairborn OH | TAMSCO Dayton OH |
| SoftQuad Inc Toronto, Ontario | FASC Fairborn OH |
| Software Publishing Corp Dublin OH | TRW Redondo Beach CA |
| Software Publishing Corp Santa Clara CA | TRW Norton AFB CA |
| South Carolina Research Authority North Charleston SC | TRW - ACA Ananeim Hills CA |
| Southwest Research Institute San Antonio TX | TRW Federal Systems Fairfax VA |
| St. Paul Software St. Paul MN | TRW SEDD Carson CA |
| Structural Dynamics Research Corp Milford OH | Technology Management Corp San Diego CA |
| Sun Micro Systems Federal Inc Vienna VA | Teledyne Power Systems Mobile AL |
| Sun Microsystems Federal Mountain View CA | Teleprint Corp Cambridge MA |
| Sundstrand Aerospace Rockford IL | Texas Instruments Plano TX |
| Supply Tech Inc Ann Arbor MI | Texas Instruments Dallas TX |
| Swedish Defence Materiel Admin. Stockholm Sweden | Textron - Lycoming Stratford CT |
| Swedish Inst.of Prod. Eng. Res. Goteborg, Sweden | Textron Defense Systems Wilmington MA |
| Sydney Communications Ltd. Aldershot, Australia | Tiburón Systems Inc San Jose CA |

CTN Members Mar 93

| | |
|--------------------------|--------------------------------|
| Titan Applications Group | Visual Engineering |
| Vienna VA | San Jose CA |
| Tracor Inc | Vitro Corp |
| Arlington VA | Silver Spring MD |
| UNISYS | Volt Group |
| Huntsville AL | Anaheim CA |
| UNISYS | Volt Group |
| Great Neck NY | Chantilly VA |
| UNISYS | WESCO |
| WPAFB OH | Walnut Creek CA |
| UNISYS | WRDC-MTI |
| Paoli PA | Dayton OH |
| UNISYS | Wang Laboratories |
| McLean VA | Lowell MA |
| UNISYS CAD/CAM | Wang Laboratories, FSU |
| Boulder CO | Bethesda MD |
| UNISYS Corp | Williams International |
| Reston VA | Walled Lake MI |
| UNISYS Defense Group | Winchester Data Products, Inc. |
| Great Neck NY | Raleigh NC |
| US Lynx Inc | Wing Corp |
| New York NY | Johnstown PA |
| USC | Wiz Worx |
| Marina del Rey CA | Chelmsford MA |
| United States Video Corp | Woodside Summitt Group Inc |
| Vienna VA | Mountain View CA |
| University of California | Wordperfect Corp |
| Santa Barbara CA | Orem, UT |
| University of Cambridge | Xerox Corp |
| Cambridge, England | San Diego CA |
| VSE Corp | Xerox Corp |
| Alexandria VA | Pasadena CA |
| Vere Smith Inc | Xerox Corp |
| Parkersburg WV | Sunnyvale CA |
| Veritec Inc | Xerox Corp |
| Chatsworth CA | El Segundo CA |
| Viking Systems Inc | Xerox Corp |
| American Folk UT | McLean VA |

CTN Members Mar 93

Xerox Imaging Systems
Peabody MA
Yard Software Systems
Bel Air MD
Young Minds Inc
Redlands CA
Zenographics Inc
Encinitas CA



CALS TEST NETWORK

Test Beds

CTN Handbook March 1993

This Page Intentionally Left Blank

CTN Handbook March 1993

CALS Test Network Test Bed Points of Contact

Army Test Bed

Howard Chyatt
Army PM CALS
ASPES-CA
Ft Monmouth NJ 07703-5000
908/544-2180
DSN 995-2180
FAX 908/532-0403

Air Force Test Bed

Gary Lammers
HQ AFMC/ENCS
4027 Col Glenn Hwy Suite 200
Dayton OH 45431-1601
513/257-3085 DSN 787-3085
FAX 513/257-5882

CTNO Test Bed

Don Vickers/Carolyn Wimple
Lawrence Livermore National Laboratory
P O Box 808 L-542
7000 East Street
Livermore CA 94550
510/422-4231
FAX 510/294-5054

Navy Test Bed

Joe Garner
Code 1226 Bldg 17 Rm 100
NSWC Carderock Division
David Taylor Model Basin
Bethesda MD 20084
301/227-1533
DSN 287-1533
FAX 301/227-3343

CTN Handbook March 1993

CTN Test Beds

Army Test Bed

Contact: Howard Chyatt

Telephone: 908/544-2180

E-Mail: cal001@monmouth-emh3.army.mil

Hardware:

DEC VAX 4000, running VMS 5.4 with 6.4MB main memory, (2) RA90 1GB hard disk, Ethernet board, TU81 9-track magnetic tape drive (6250 BPI), TK70 Cartridge

Computervision Workstation, running UNIX bsd 4.2 with 4MB RAM, 19" (1152X900) color monitor, 300MB hard disk, Ethernet, 9-track (1600 BPI)

Sun 3/160 running SUN UNIX 4.1.1 with 8MB RAM, 19" (1152X900) color monitor, 741MB hard disk, 60MB 1/4" tape drive, Ethernet, floating point processor

Sun 386i Model 250 running Sun UNIX 4.0.1 with 16MB RAM, 19" (1152X900) color monitor, 500MB hard disk, 60MB 1/4" tape drive, math coprocessor, floating point accelerator, Ethernet, high resolution printer

IBM PS/2 Model 50Z, running PC-DOS with 2MB RAM, 40MB hard disk, 3.5" floppy, high resolution RGB monitor, MS-DOS co-processor, MODEM

Apple MacIntosh II, running MAC O/S with 2MB RAM, 40MB hard disk, 3.5" floppy, high resolution RGB monitor, Ethernet, MS-DOS co-processor

Zenith Z-248 PC running MS-DOS (4 units) with 1.5MB RAM, 20MB hard disk, 5.25" floppy, EGA monitor, Ethernet, math co-processor

Calcomp Electrostatic plotter

Optimem 2400 Optical disk drive with 12" WORM platter

Gateway 2000 486/33C PC running MS-DOS 5.0 with 8MB RAM, 20MB Hard Disk, 5.25 and 3.5 inch floppies, super VGA Monitor, Ethernet, math co-processor

CTN Handbook March 1993

CTN Test Beds

Army Test Bed (Cont'd)

Gateway 2000 386/33C PC running SCO UNIX V with 8MB RAM, 320MB hard disk, 5.25 and 3.5 inch floppies, super VGA monitor, Ethernet, math co-processor.

Sun SPARCstation 4/370 running Sun/UNIX O/S

Apple MacIntosh II, running MAC O/S with 2MB RAM, 40MB hard disk, 3.5" floppy, hi res RGB monitor, MS-DOS coprocessor, MODEM

Apple MacIntosh II C/X running MAC O/S (nine systems) with 4-8MB RAM, 8-100MB hard disk, Radius or Raster OPS displays, MAC II Ethernet, 3.5" floppy drives

Dell System 325 running MS-DOS (4 systems) with 4-8MB RAM, 100-150MB hard disk, 40MB streaming tape backup, 3.5" and 5.25" floppies, 3Com Etherlink II

Kurzweil K5100 scanning system

Kodak 6800 optical disk drive with 14" WORM platter

QMS 820 Printlink Printer

Software:

VMS: CTN Tools, Oracle DBMS

UNIX: Interleaf TPS and CALS Package; Computervision Mechanical CAD, Electrical CAD, Drafting packages; IGES Translator

MS-DOS: Datalogic Writerstation, MetaView (CGM interpreter), Drawperfect, Image-in, MetaDesign, IGES-to-CGM conversion utility, CTN Tools

MAC: Author Editor, Fasttag, MetaDesign, Checkmark

CTN Handbook March 1993

CTN Test Beds

Air Force Test Bed

Contact: Gary Lammers

Telephone: 513/257-3085

E-Mail: glammers@mmdis01.hq.afc.af.mil

Hardware:

Sun Microsystems 4/690 SPARCserver, running Sun UNIX V4.2.1 with 62 megabytes of RAM, 2-1.3 Gigabyte disk drives, CDROM.

Sun Microsystems 2/280 Server, running Sun UNIX V4.0.3 with 16 megabytes of RAM, 2-700 megabyte disk drives, 2-1600/6250 BPI 9-track tape drives

Sun Microsystems SPARCstation 2, running Sun UNIX V4.2.1 with 32 megabytes of RAM, 20 inch high resolution color monitor, 2-435 megabyte disk drives, CDROM, 90 megabyte IOMEGA Bernoulli drive, 120 megabyte 1/4 streaming tape

SUN Microsystems 3/60 Work Station, running Sun Unix 4.0.3 with 16 megabytes of RAM, 2-130 megabyte disk drives, 20 inch medium resolution color Monitor, 1/4 inch streaming tape drive

Cheetah Micro-computer, 80486 25MHz processor, running DRDOS 6.0, 8 MBytes of RAM, 2-130, 326 megabyte SCSI hard drive, 4 megabytes SCSI caching controller, 90 megabyte IOMEGA Bernoulli drive, 1.44 megabyte 3.5 inch and 1.2 megabyte 5.25 inch floppy drives, QualStar 1600/6250 BPI 9-track tape drive, 16 inch SVGA monitor, Houston Instruments DMP-29 plotter, Western Graphic plotter, Microsoft mouse.

UNISYS Micro-computer, 80386 20 MHZ processor with 80387 co-processor, running MIDOS 5.0, 16 megabytes of RAM, 20 inch SVGA monitor, 330 megabyte hard drive, 1.44 megabyte and 1.2 megabyte floppy drive, Microsoft mouse, CDROM, WORM CDROM

HP IIIsi network printer with 4 megabytes of RAM, Postscript capability

Sun Microsystems laser printer with 2 megabytes of RAM, Postscript

Novell Netware 3.11 LAN software with NFS capabilities

CTN Handbook March 1993

CTN Test Beds

Air Force Test Bed (Cont'd)

Software:

UNIX: Agfa CAPS CALS, Rosetta Technologies Prepare/Preview, IDA IGESview, IDA Parser/ Verifier, CTN TAPETOOL, CTN VALIDG4, CTN calstb.350, ITI IGESWorks, ATC's CGMView, AutoCAD R11, ArborText, Intergraph CAD

DOS: AutoCad R11, CADKEY V4.06, IDA Parser/Verifier, CTNTAPETOOL, CTN VALIDG4, Rosetta Technologies Prepare/Preview, Inset Systems HIJAAK V2.02, USLynx CALS Solution, Exoterica XGMLNormalizer, Datalogics ParserStation, Xerox Ventura Publisher, Software Publishing Harvard Graphics 3.0, Enable 4.5, Micro Engineering CheckMark, ATC MetaCheck and Metaview

CTN Handbook March 1993

CTN Test Beds

CTNO Test Bed

Contact: Dr Don Vickers

Telephone: 510/422-4231

E-Mail: vickers@lance.tis.llnl.gov

Hardware:

Sun 3/280 data server with 16MB RAM, 900MB disk storage, 9-track tape drive (6250/1600 BPI)

Sun 3/60 Diskless workstations with 4MB RAM, Televideo Alphanumeric terminals, Performance Technologies SCSI board, LMSI Optical disk drive with 12" platter, MODEM

DEC MicroVax-II running VMS Version 5.0 with 8MB RAM, 100MB disk storage

MicroVax running VMS 4.7 with 8MB RAM, 150MB hard disk, Pertek 9-track tape drive (800, 1600, 3200, 6250 BPI), TK-50 Cartridge Drive, Tektronix 4207 graphics terminal, postscript printer

Sun 3/60, running Sun/UNIX ver 4.2 (rel 3.5)

Sun 4 SPARCstation IPC running Sun/UNIX Ver 4.2 (rel 4.1.1)

Personal Computer with 80386/80387 processors running MS-DOS 5.0 and Windows 3.1, 2MB RAM, 40MB hard disk, 5.25" 1.2MB, 3.5" 1.44 MB and 3.5 720 KB floppy drives, VGA monitor, LaserJet Plus printer

MacIntosh II

ColorGraphics 100 Plus Model 65 color plotter

CTN Handbook March 1993

CTN Test Beds

CTNO Test Bed (Cont'd)

Software:

- VMS:** C and FORTRAN compilers, McAIR CGM Toolkit, CCITT Analysis from Xerox, CTN Tape Tool, CTN ValidG4
- UNIX:** ATC GRAF-PAK GKS, ATC GrafKIT, PSC GPLOT, ATC CGMView, McAIR CGM Toolkit, CTN ValidGCM, VibrantView (CGM Viewer), Carberry Technology CADLeaf Plus, CALSTB.350, TouchUP CALSTB.350, Touchup
- DOS:** Software Publishing Harvard Graphics (for DOS and for WindowsP1.00), Micrografx Charisma, Computer Support Arts & Letters Graphics Editor, Microsoft Powerpoint, CorelDRAW, VCGM, Access Softek Venue (CGM Viewer)
- MAC:** GraphPorter, MetaPICT

CTN Handbook March 1993

CTN Test Beds

Navy Test Bed

Contact: Joe Garner

Telephone: 301/227-1533

E-Mail: garner@oasys.dt.navy.mil

Hardware:

Sun Microsystems 3/80 work station, running UNIX 4.03 with 12MB RAM, 327MB disk drive, 19" high res color monitor, and .25" streaming tape drive

Zenith 248 Micro-computer, running MS-DOS 3.2 with 12 MHZ 80286 CPU, 80287 math coprocessor, 1MB RAM, two disk drives 42MB total, and 14" color monitor

Unisys Micro-computer, running MS-DOS 4.01 with 20 MHZ 80386 CPU, 80387 math coprocessor, 8MB RAM, 340MB disk drive, 14" VGA monitor, 1.44MB and 1.2MB floppy disk drives

Software:

UNIX: NIST Parser (POSIX version), Sun View Utilities

MS-DOS: NIST Parser, Avalanche FastTAG, Datalogic Parser, Software Exoterica's XGML Normalizer

DEC VAXstation 3500, running VAX/VMS 5.1, TCP/IP
DEC TK-70 Cartridge tape drive

Sun 3/160, running Unix 4.3bsd, TCP/IP
Sun 9-track tape drive (800, 1600, 6250 BPI)
Sun SPARC I WorkStation

Intergraph 340, running UNIX V version 3.0, TCP/IP

Micro-computers, running MS-DOS, TCP/IP

CTN Handbook March 1993

CTN Test Beds

Navy Test Bed (Cont'd)

Computervision Personal Designer V-X
9-track tape drive (1600, 6250 BPI)

MacIntosh, TCP/IP

Apollo 590T, running DOMAIN, UNIX, UNIX bsd 4.2, TCP/IP, Token Ring

Software:

VMS: DECwindows, BASEVIEW IGES display/Analyzer, IGES
Data Analysis PARSER/VERIFIER, IGES Data Analysis IGES
View, C, FORTRAN, CTN Tools

CTN Handbook March 1993

This Page Intentionally Left Blank



CALS TEST NETWORK

Test Tools

**CTN Handbook March 1993
Test Tools**

MIL-STD-1840A

| PRODUCT | SOURCE | FUNCTION | PLATFORM | COMMENTS |
|----------|--------|-----------------------------|---------------------|-------------------------|
| TAPETOOL | CTN | Make, read analyze 1840A | VMS, UNIX MS-DOS | Free to CTN Members* |
| DUMP | | Octal dump of tapes | VMS | VMS System Utility |

MIL-D-28000 IGES

| PRODUCT | SOURCE | FUNCTION | PLATFORM | COMMENTS |
|-------------------------|-------------------------|------------------------|-----------|--------------------------------|
| IGES Parser Verifier | IGES Data Analysis | Analyze | VMS, UNIX | MIL-D-28000 Subset checking |
| IGES View | IGES Data Analysis | View/Plot | VMS, UNIX | for full IGES |
| PrePARE | Rosetta Technologies | Prepare for Viewing | UNIX | for full IGES |
| PreVIEW | Rosetta Technologies | View/Plot | UNIX | for full IGES |

* Distribution Limited to CTN Members. TAPETOOL may be obtained from the CTN Bulletin Board System (CTN BBS).

**CTN Handbook March 1993
Test Tools**

MIL-D-28000 IGES (Cont'd)

| PRODUCT | SOURCE | FUNCTION | PLATFORM | COMMENTS |
|--------------------------------|------------------|----------------------------|---------------------|-----------------------------|
| IGES Model Testing Sys (IMTES) | Glatz Associates | Analyze | VMS, MS-DOS | MIL-D-28000 Subset checking |
| MIL-D-28000 Class I Packet | CTN | Test Data and Instructions | Any IGES CAD System | Free to CTN Members |
| MIL-D-28000 Class II Packet | CTN Instructions | Test Data and CAD System | Any IGES Members | Free to CTN |

MIL-M-28001 SGML

| PRODUCT | SOURCE | FUNCTION | PLATFORM | COMMENTS |
|-----------------|--------------------|-------------------|------------------|-----------------------|
| INPAR | Datalogics | Parse/Verify | VMS, Apollo | C Source is available |
| MARK-IT v2.2.2 | Oster & Assoc Inc | Parse/Verify/Link | VMS, UNIX MS-DOS | |
| XGML Normalizer | Software Exoterica | Parse/Verify | Mac II, MS-DOS | |

**CTN Handbook March 1993
Test Tools**

MIL-R-28002 RASTER

| PRODUCT | SOURCE | FUNCTION | PLATFORM | COMMENTS |
|-------------------|---------|----------------------------------|---------------------------|----------------------------|
| VALIDG4 | CTN | Verify Grp 4 compression | microVAX Appolo [in C] | Beta Version* available |
| calstb.350 | CTN | Compress, Decompress Grp 4 | Sun (in C) | Beta Version* available |
| CCITT Analysis | Xerox | Analyze G4 | UNIX | Beta Version |
| TOUCHUP | NY Univ | Raster Editor | UNIX | Public Domain |

* Distribution Limited to CTN Members

MIL-STD-28003 CGM

| PRODUCT | SOURCE | FUNCTION | PLATFORM | COMMENTS |
|------------------------|-------------------------------|--|----------|----------|
| MetaCHECK/ MetaCALs | CGM Technology Software | List, Verify vs ISO 8632 & MIL-D-28003 | DOS | |
| ValidCGM | CTN | List, Verify vs MIL-D-28003 | UNIX | |
| MetaView | CGM Tech Software | Display, Plot (with GSS driver) | DOS | |

**CTN Handbook March 1993
Test Tools**

MIL-D-28003 CGM (Cont'd)

| PRODUCT | SOURCE | FUNCTION | PLATFORM | COMMENTS |
|-------------------|-----------------------------------|---|--------------------------|---|
| CGMView | Advanced Technology Center | Display, Plot | UNIX | |
| CGM ToolKit | McDonnell Douglas | List, Display, Plot | VMS | Pub Domain + from MDC |
| GPLOT | Pittsburgh Supercomp Center | List, Display, Plot, Convert CGM Format | VMS, UNIX | copyright PSC avail via down- load from GODOT.PSC.EDU+ |
| ImPort | Zenographics | Display, Plot, CGM Trans to/from | DOS | |
| HiJaak | Inset Systems | Trans to/from CGM | DOS | |
| GraphPorter | GSC Assoc | Trans to CGM | MAC | |
| MetaPICT | GSC Assoc | Display, Trans from CGM | MAC | |
| VCGM | Robert M. Crawford | Display | DOS | Shareware |
| Venue | Access Softek | Display, plot | DOS with Windows | Not a commercial product |
| CADLeaf Viewer | Carberry Technology | Convert to CGM Display | UNIX Openlook & Motif | |

**CTN Handbook March 1993
Test Tools**

MIL-D-28003 CGM (Cont'd)

The following graphics programs import/export CGM as noted.

| PRODUCT | SOURCE | FUNCTION | PLATFORM |
|------------------|----------------------|--|-----------------|
| Arts & Letters | Computer Support Grp | Presentation Graphics Imports/Exports/Displays CGMs | DOS |
| Charisma | Micrografx | Presentation Graphics Imports/Exports/Displays CGMs | DOS |
| CorelDraw | Corel Sys | Presentation Graphics Imports/Exports/Displays CGMs | DOS |
| FreeLance | Lotus Development | Presentation Graphics Imports/Exports/Displays CGMs | DOS |
| Harvard Graphics | Software Publishing | Presentation Graphics Imports/Exports/Displays CGMs | DOS |
| PowerPoint | MicroSoft | Presentation Graphics Imports/Exports/Displays CGMs | DOS |
| Systat/Sygraph | Systat Inc | Statistics Exports CGMs | DOS |



CALS TEST NETWORK

Testing Terms & Packets

**CTN Handbook March 1993
Test Reference Packets**

Testing Terms and Definitions

| | |
|-----------------------------|--|
| TEST SUITE: | Consists of a TEST PACKET and EVALUATION SOFTWARE. |
| EVALUATION SOFTWARE: | Includes automated tools used to evaluate programs, interpreters, etc. and digital data delivered in a particular standard format on a specified medium. |
| TEST PACKET: | Consists of REFERENCE DATA and a SCRIPT. |
| SCRIPT: | A set of instructions on how to use a test packet. |
| REFERENCE DATA: | Consists of hardcopy REFERENCE DRAWINGS and REFERENCE FILE. |
| REFERENCE FILE: | An electronic collection of information for testing a specific standard stored as a unit-record. |
| REFERENCE FILE SET: | A collection of REFERENCE FILES. |
| REFERENCE MATERIAL: | Is synonymous with REFERENCE DATA. |
| REFERENCE DRAWINGS: | May be electronic files or hardcopy. hardcopy drawings inside CTN TEST PACKETS are used for comparison, scanning, and example. |
| REFERENCE PACKET: | Is synonymous with TEST PACKET. |

**CTN Handbook March 1993
Test Reference Packets**

**The CALS Test Network MIL-D-28000 Class I
IGES Reference Illustration Packet Summary**

The IENTITY and the LGTABLE reference illustrations contained in this packet are used by the CALS Test Network analysts during user application testing of IGES data and by CTN members during self-tests of their digital data transfer abilities. IGES is the initial Graphics Exchange Specification used for interchanging graphical data between dissimilar computer aided design (CAD) and technical publication systems. Specifically, these reference illustrations demonstrate the use of IGES entities identified in the Technical Publication Subset, Class I, of the military specification, MIL-D-28000. In addition to demonstrating the use of this military specification and subset, these illustrations also allow the CTN to demonstrate the use of MIL-D-28000's parent document, MIL-STD-1840A. MIL-STD-1840A standardizes the delivery "envelope" used by organizations to exchange the digital forms of technical information.

Content of the Reference Illustration Packet

The CTN MIL-D-28000 Class I Reference Illustration Packet contains a set of reference material and the pieces of information needed to execute a test using a vendor's IGES processors. It contains:

1. Procedures to follow to conduct a pre-processor test; pre-processing is the translation from a graphics system to an IGES file.
2. A generation script (a set of instructions) to follow to create the IENTITY illustration on any graphic system.
3. Procedures to follow to conduct a post-processor test; post-processing is the translation from an IGES file to a graphics system.
4. The IGES files on a 9-track tape in MIL-STD-1840A format of both the IENTITY and LGTABLE reference illustrations to post-process into the graphics system.
5. Evaluation scripts (sets of questions) to complete after the IENTITY and LGTABLE illustrations have appeared on the screen after post-processing.
6. Plots of the IENTITY and LGTABLE illustrations.

**CTN Handbook March 1993
Test Reference Packets**

7. A paper printout of the IGES files for both the IENTITY and LGTABLE illustrations.
8. Entity listing and counts for both the IENTITY and LGTABLE illustrations.

Content and Creation of the Reference Material

The IENTITY Illustration

The IENTITY illustration is comprised of all the geometric, annotation, and structure IGES entities identified in the MIL-D-28000 Class I subset. The illustration is organized such that the entities reside individually by entity and form number within one box of a grid. This box is then labeled to show which entity it should contain. All entities are model mode entities, two-dimensional, and are contained on layer zero as MIL-D-28000 Class I requires. The drawing, containing a single view, is B-sized.

The LGTABLE Illustration

The LGTABLE graphic is an example of an actual technical publication illustration that completely complies to MIL-D-28000 Class I. It does not contain every entity identified in MIL-D-28000 Class I, however, it does contain a good sampling of the frequently used entities such as lines, circles, splines, text and fill. Again, all entities are model mode, two-dimensional and located on layer zero. The single view is contained on an A-sized drawing.

The LGTABLE illustration included in this packet is to be used during post-processor testing only. Although very useful as a sample illustration, pre-processor testing information was not deemed appropriate for LGTABLE because of the illustration's size and complexity.

Development of the IGES Files

The IENTITY and LGTABLE illustrations were drafted on a CAD system, then pre-processed into IGES files. Because the pre-processed IGES files did not completely conform to IGES Version 4.0, and MIL-D-28000 did not include all desired Class I entities, and included unwanted volunteer entities, the files were hand edited. During this hand editing, the criteria discussed in the "Guide to Developing IGES Test Cases" written by the IGES Test Case Subcommittee of the National IGES/PDES Organization was adhered to wherever possible. This hand editing produced IGES files that incorporate all MIL-D-28000 Class I entities and pass several IGES analyzers with no accountable errors. The analyzers referred to are the

CTN Handbook March 1993 Test Reference Packets

IGES Model Testing System, the IGES Data Analysis Company Parser/Verify/View packages, and the Rosetta Technologies, Inc. PreVIEW software.

After the IGES files were thoroughly checked, MIL-STD-1840A headers were placed on the IGES files. Next, MIL-STD-1840A declaration files were written for each file. Lastly, all files were copied to a 9-track tape in MIL-STD-1840A-required formats.

The Scripts

This reference illustration packet contains two different sets of scripts. The generation script describes how to create the reference illustration on a graphics system during the pre-processor test. It is designed to be generic enough to allow illustration generation on any system. The evaluation scripts describe how to evaluate the graphical model that appears during a post-processor test. These scripts ask questions that try to address DoD's present requirements for a technical publication illustration digital transfer.

The Procedures

The CTN test procedures contained herein discuss running tests on the pre-processors and post-processors separately. These procedures follow one proposed by the National IGES/PDES Organization's Testing Subcommittee. Other procedures were derived from available hardware and software resources and past experience.

Deviations from and expansions to these procedures are encouraged as required by one's needs. An example of a deviation is to perform an end-to-end test with this reference data. These procedures do not address end-to-end testing because this type of testing is usually conducted with a user's actual illustration, not reference illustrations. An end-to-end test with this packet's reference data could easily be conducted by, first, following the pre-processor procedures and, second, sending that pre-processed IGES file through the post-processor procedures. As stated, deviations of this type are possible and should be used as experience and requirements dictate.

Conclusion

By following the procedures described in this CTN MIL-D-28000 Class I Reference Illustration Packet and by referring to the scripts, plots, and data lists also contained within, one can examine technical publication illustration digital transfers using IGES and MIL-D-28000. This

**CTN Handbook March 1993
Test Reference Packets**

packet does not validate a vendor's conformance to MIL-D-28000 Class I, but instead allows the CTN analysts and CTN members to demonstrate industry/ government's use of the MIL-D-28000 specification in accordance with the CALS initiatives.

**CALS Test Network MIL-D-28000 Class II
IGES Reference Drawing Packet Summary**

The NENTITY and L-BRACKET reference drawings described herein will be used by the CTN during structured end-to-end transfer testing of IGES data. IGES is the Initial Graphics Exchange Specification used for interchanging CAD data between dissimilar CAD Workstations. This packet will demonstrate the use of the IGES entities identified in the engineering drawing subset, Class II, of the military specification, MIL-D-28000. In addition to demonstrating the use of this military specification and subset, these drawings will also allow the CTN to demonstrate the use of MIL-D-28000's parent document, MIL-STD-1840A. MIL-STD-1840A is a CALS standard which standardizes the delivery "envelope" used by organizations exchanging digital forms of technical information.

It is important to note that many CAD systems presently support only part of the military specification/subset, MIL-D-28000 Class II, because of the large number of entities the subset identifies. This means that any system executing this reference material will not likely achieve 100 percent perfect results. There is no reason to be alarmed. The goal is to determine which entities are presently processed and to work toward the best transfers possible.

Content of the Reference Drawing Packet

The CTN MIL-D-28000 Class II Reference Drawing Packet contains a set of reference materials. This packet contains the pieces of information needed to execute a test using a CAD vendor's IGES processors. It contains:

1. Procedures to follow to conduct a pre-processor test; pre-processing is the translation from a CAD system to an IGES file.
2. Generation scripts (sets of instructions) to follow to create the NENTITY and L-BRACKET drawings on any CAD system.
3. Plots to show what the NENTITY and L-BRACKET drawings should look like upon completing the generation scripts.

CTN Handbook March 1993

Test Reference Packets

4. Procedures to follow to conduct a post-processor test; post-processing is the translation from an IGES file to a CAD system.
5. The IGES files on a 9-track tape in MIL-STD-1840A format of both the NENTITY and L-BRACKET reference drawings to post-process into the CAD system.
6. Evaluation scripts (sets of questions) to complete after the NENTITY and L-BRACKET drawings have appeared on the CAD screen after post-processing.
7. A paper printout of the IGES files for both the NENTITY and L-BRACKET drawings with every entity identified by number, form, and description; these may be useful in pinpointing processing errors.
8. Entity listing and counts for both the NENTITY and L-BRACKET drawings.
9. Hardware and software descriptions of the CTN IGES Test Platform.

Content and Creation of the Reference Material

The NENTITY Drawing

The NENTITY drawing is comprised of all the geometric and annotation IGES entities (entity numbers 100 through 230) identified in the MIL-D-28000 Class II subset. The drawing is organized such that the entities reside individually by entity and form number within one box of a grid. This grid box is labeled to show which entity it should contain. All entities are model mode entities and some are three-dimensional. The drawing is C-sized.

The L-BRACKET Drawing

The L-BRACKET drawing incorporates all of the structure entities (IGES entity numbers 304-410) specified in the MIL-D-28000 Class II subset. The L-BRACKET is stored as a three-dimensional model and is represented on a C-sized drawings with four views. Draw mode entities detail and dimension the L-BRACKET's view. The drawing is meant to resemble a workable engineering drawing.

CTN Handbook March 1993 Test Reference Packets

Development of the IGES Files

The NENTITY and L-BRACKET drawings were drafted on a CAD system, then pre-processed into IGES files. Because the pre-processed IGES files did not completely conform to IGES Version 4.0, and MIL-D-28000 did not include all desired Class II entities, the files were hand edited. During this hand editing, the criteria discussed in the "Guide to Developing IGES Test Cases" written by the IGES Test Case Subcommittee of the National IGES/PDES Organization was adhered to wherever possible. This hand editing produced IGES files that incorporate all MIL-D-28000 Class II entities and pass several IGES analyzers with no accountable errors. The two analyzers referred to are the IGES Model Testing System and IGES Data Analysis Company Parser/Verify and View software package.

The completed IGES files were then copied to a 9-track tape in accordance with MIL-STD-1840A. MIL-STD-1840A declaration files accompany the IGES files on the 9-track tape.

The Scripts

The reference drawing packet contains two different kinds of scripts. The generation scripts describe how to create the reference drawings on a CAD system during the pre-processor test and are designed to be generic enough to allow drawing generation on any CAD system. The evaluation scripts describe how to evaluate the CAD model that appears during a post-processor test, and they ask questions that try to address DoD's present requirements for an engineering drawing digital transfer.

The Procedures

The CTN's procedures for testing both the pre- and post- processors follow the testing procedures proposed by the National IGES/PDES Testing Subcommittee. Other procedures were derived from available hardware and software resources and past experience.

Conclusion

By following the procedures described in this CTN MIL-D-28000 Class II Reference Drawing Packet and by referring to the scripts, plots and data lists also contained within, one can examine engineering data digital transfers using IGES and MIL-D-28000.

**CTN Handbook March 1993
Test Reference Packets**

**The CALS Test Network MIL-M-28001
SGML Test Packet Summary**

The CTN Technical Publications Reference Test Packet is in draft form and includes the six items listed below. Please contact the CTN Air Force Test Bed for availability.

The following MIL-STD-1840A Test File Sets will be provided to CTN Participants:

1. Individual files sets without illustrations that highlight the following MIL-M-28001 SGML Elements:

- a. Front matter.
- b. Rear matter.
- c. Standard Tables, User Defined Tables, and charts.
- d. Warnings, Cautions and Notes.
- e. Special Characters and Emphasis.
- f. Lists.
- g. Sub-paragraphs.
- h. Steps.
- i. Other (i.e., Footnote, Emergency Information, Difference Data, Cross Reference, Boiler Plate, Changes, Subscript, Superscript, etc.)

2. File set containing minimized MIL-M-28001 SGML tagging and MIL-D-28000 IGES Class I Illustrations.
3. File set containing minimized MIL-M-28001 SGML tagging and MIL-R-28002 Raster Type I Illustrations.
4. File set containing minimized MIL-M-28001 SGML tagging and MIL-D-28003 CGM Illustrations.
5. File set containing a complete, delivered Technical Publication containing MIL-R-28002 Raster Illustrations.
6. File set for style and Output Specification (pursuant to the release of an Output Specification and a Formatting Output Specification Instance)

**CTN Handbook March 1993
Test Reference Packets**

**CALS Test Network MIL-R-28002
Raster Type I Test Packet Summary**

The CTN MIL-R-28002 Raster Type I Test Packet is complete and available. CTN raster testing is intended to provide both acquisition managers and vendors with a strategy and tools to evaluate system functionalities as supporting the CALS standards. Additionally, these tools will aid in the assessment of system imaging characteristics over a range of functional requirements that may be specified for various DoD acquisitions and implementations.

This capability will be provided in the form of a set of sample image, data, recommended test utilities and test procedures identified as the CTN Raster Test Packet.

Sample images both in the MIL-STD-1840A format and hard copy are available through the CTN. Other test target images are commercially available.

Computer codes such as raster display utilities and group-4 compression/decompression routines, may be identified as commercially available, in the public domain or available through the CTN.

Test procedures are contained in documentation accompanying the CTN Raster Test Packet. The CTN should be viewed as a resource, available to acquisition managers and vendors throughout the acquisition cycle.

The CTN MIL-R-28002B Raster Type II Test Packet is under development and will be available to CTN members in the near future.

**CTN Handbook March 1993
Test Reference Packets**

**The CALS Test Network MIL-D-28003
CGM Test Packet Summary**

The CALS Test Network CGM Test Packet consists of several computer graphics metafiles together with procedures for conducting a CGM interpreter test and for evaluating the resultant images.

Four Computer Graphics Metafiles are included. All represent the same image, a presentation of the eighteen graphical primitive elements that are permitted by MIL-D-28003, each in a separate labeled portion of the image. Two of the files are legal CGMs under MIL-D-28003, one a binary format CGM with integer VDC, the other a binary format CGM with real VDC. The other two files are fully documented human readable, clear text versions of the integer and real versions of the metafiles.

The test packet includes the reference CGMs on floppy disk and written procedures for conducting the test and for evaluating the results of the test. A sample image is included for comparison.

CTN Handbook March 1993

This Page Intentionally Left Blank



CALS TEST NETWORK

**Air Force CALS
Test Bed
Bulletin Board
Systems**

CTN Handbook March 1993
AFCTB Bulletin Board Systems

The Air Force CALS Test Bed (AFCTB) maintains a PC based bulletin board system and an INTERNET Unix system for FTP file transfers. The mode of access is the only difference between the two systems. The current versions of all of the CTN Tools are available on both systems for download or reference.

WARRANTY DISCLAIMER: All CTN tools are made available as is. Every effort will be made to correct bugs as they are found. No warranty is given with any of these tools.

NOTE: The Internet Unix files are case sensitive. You must enter the file names as shown in the section titled "Sub-Directories", below. The PC Bulletin Board can be entered in either upper or lower case.

A listing and description of each of the CTN Tools available on the Bulletin Board systems is provided in the section titled "CALS Tools and Products", below. The tools are located in the subdirectories as shown in the section title "Sub-Directories", below. We have also included a file called README which contains a list of tests reported with date, company, and type of test.

Phone numbers and set-ups for the two AFCTB BBS's are shown below:

PC BASED BULLETIN BOARD

Phone Number - Commercial: (513) 476-1273

These files are in a ZIPed compressed format. You will need PKUNZIP to decompress these files. Note: There will be a README file installed for help in using these files.

INTERNET UNIX FILE TRANSFER SYSTEM

The INTERNET Unix system may be reached via an FTP query. The ftp address for the system is 137.245.100.18. The logon is "anonymous" with "guest" as the password. The files will be compressed using the UNIX compress utility and will be denoted with the "Z" extension. You may download any files but you may only leave files in the "pub" sub-directory shown in the section titled "Sub-Directories", below.

**CTN Handbook March 1993
AFCTB Bulletin Board Systems**

SUB-DIRECTORIES

ctntools

tapetool (v1.3)
source_code
sun3
msdos
vax (v1.2.8)
ada (v1.2.8)

raster

validg4 (group IV validator)
sun3
sun 4 (SPARC)
msdos
source_code
calstb (raster viewer)
source_code
calstb.350 (sun3)
calstb.475 (sun4)

cgm

validcgm
validcgm (SPARC only)

iges (28000A)

Class I Test set (2 files)
Class II Test set (2 files)

sgml (28001A)

All Current DTDs
Stripper tool

pub

File space for uploading test packets to the Test Bed

**CTN Handbook March 1993
AFCTB Bulletin Board Systems**

CALS TOOLS AND PRODUCTS

The following tools and products are available from the AFCTB:

TOOLS

1840 TAPE

Tapetool Ver 1.3

The purpose of this tool is to allow the user to write and read an 1840 tape. This tool is available in SUN3, MSDOS, VAX (v1.2.8), and ADA (v1.2.8) formats. Source code is also available.

RASTER

validg4

This tool verifies Group 4 Compressions and is available in SUN3, SUN4 (SPARC), MSDOS formats. Source code is also available.

calstb

This tool provides the ability to view raster. It is available only for the SUN3 and SUN4 as calstb.350 and calstb.475 respectively. Source code is also available.

CGM

validcgm

This tool parses and validates the CGM files. It is only available in a SPARC format.

SGML

Stripper Tool
ver 1.0

This tool is a generic software tool used to strip SGML tags from an instance (SGML tagged document). Its intended use is to make a document more readable without the SGML tags. After an instance is processed, it may be viewed on the screen or printed.

**CTN Handbook March 1993
AFCTB Bulletin Board Systems**

PRODUCTS

IGES
MIL-D-28000A
Class I & Class II
Test Packets

Sample test data and instructions. This data can be used on any IGES CAD system.

SGML
MIL-M-28001A
Tech Pubs Test Packets

This test packet contains individual file packets without illustrations that highlight MIL-M-28001 SGML elements.

RASTER
MIL-R-28002A
Test Packet

There are two packets available, identified as Type I and Type II. This is a packet of sample image, data, recommended test utilities and test procedures.

CGM
MIL-D-28003A
Test Packet

This packet contains "typical" technical illustrations in MIL-D-28003 format. Also contains two illustrations utilizing all graphical primitive elements permitted.

TEST REPORTS

All tests conducted by the DoD CALS Test Network (CTN) are available upon request through the AFCTB

CTN Handbook March 1993

This Page Intentionally Left Blank



CALS TEST NETWORK

CALS Standardization Effort

**CTN Handbook March 1993
CALs Standardization Effort**

**MIL-STD-1840
AUTOMATED INTERCHANGE OF TECHNICAL INFORMATION**

CURRENT VERSION: Revision B (January 1993)

PURPOSE: This standard addresses technical information which is part of the traditional technical data package used in item/system acquisition; technical information used in design, manufacture, fielding and disposal of an item/system; and that technical documentation used in item/system support. MIL-STD-1840 standardizes the formats for automated transfer and exchange of digital information between organizations or systems exchanging technical information in digital form throughout the life cycle of an item/system. It identifies the Standards, Specifications, and technologies, under the CALs concept, for the automated exchange of technical information.

CHANGES:

- Revise and smooth criteria for information exchange
 - Reduce media dependent instructions
 - Review, revise and simplify declaration and data file header information
- Review packaging requirements
- Improve tailoring instructions
- Address backward compatibility issues
- Address emerging information exchange technologies and standards for automated information exchange

**CTN Handbook March 1993
CALs Standardization Effort**

**MIL-D-28000
DIGITAL REPRESENTATION FOR COMMUNICATION OF
PRODUCT DATA:
IGES APPLICATION SUBSETS AND IGES APPLICATION
PROTOCOLS**

CURRENT VERSION: Revision A, Amendment 1 (January 1993)

PURPOSE: Identifies the requirements to be met when product definition data is delivered in digital format of the Initial Graphics Exchange Specification (IGES) as specified by ASME Y14.26M standard.

**MIL-M-28001
MARKUP REQUIREMENTS AND GENERIC STYLE
SPECIFICATION**

CURRENT VERSION: Revision A (July 1990)

NEXT REVISION: Revision B (July 1993)

PURPOSE: Defines digital data form for the structure layout and text of technical publications. Applies the international SGML standard, ISO 8879, a meta language for describing the logical content and structure of a document in a machine processable syntax. Deals with DTDs, FOSIs, PDLs and Raster/Vector illustrations.

STATUS: Incorporating final changes with estimated publish date of 16 July 1993.

**CTN Handbook March 1993
CAL S Standardization Effort**

**MIL-R-28002
RASTER GRAPHICS REPRESENTATION IN BINARY FORMAT**

CURRENT VERSION: Revision B (January 1993)

PURPOSE: Identifies the requirements to be met when raster graphics data are represented in digital, binary format delivered to the Government.

PLANNED CHANGES: Amendment 1 is being planned to align it with international usage of Header fields.

**MIL-D-28003
DIGITAL REPRESENTATION FOR COMMUNICATION OF
ILLUSTRATION DATA: CGM APPLICATION PROFILE**

CURRENT VERSION: A (May 1992), Amend 1 (August 1992)

NEXT REVISION: N/A

PURPOSE: Defines an application profile for delivery of two-dimensional picture description or illustration data that is vector or mixed vector and raster and is delivered in the digital format of the Computer Graphics Metafile (CGM) as specified by the Federal Information Processing Standard, FIPS PUB 128.

STATUS: Amendment 1 has been distributed.

PLANNED CHANGES: An Amendment 2 is being planned and will be discussed at the 30 March 1993 Drawing and Graphics Committee meeting. Possible changes include the Metafile Descriptions, Clarifying Restricted Text, Order of Precedence and Rules for Profiles.

**CTN Handbook March 1993
CALs Standardization Effort**

**MIL-M-87268
MANUALS, INTERACTIVE ELECTRONIC TECHNICAL:
GENERAL CONTENT, STYLE, FORMAT, AND USER-
INTERACTION REQUIREMENTS**

CURRENT VERSION: January 1993

PURPOSE: This specification contains common requirements for the general content, style, format, and user-interaction features which are required for Interactive Electronic Technical Manuals (IETM). These IETMs are to be in digital form and are designed for interactive display to the maintenance-technical or system-operator end-user by means of a computer-controlled Electronic Display System (EDS). This specification provides requirements governing the creation of IETMs and the development of IETM presentation software.

CTN - Air Force Test Bed will perform testing.

**MIL-D-87269
DATA BASE, REVISABLE: INTERACTIVE ELECTRONIC
TECHNICAL MANUALS, FOR THE SUPPORT OF**

CURRENT VERSION: January 1993

PURPOSE: This specification prescribes the requirements for an Interactive Electronic Technical Manual Data Base (IETMDB) to be constructed by a weapon-system Contractor for the purpose of creating Interactive Electronic Technical Manuals (IETM). The requirements cover the Specification for the IETMDB and are intended to apply to one or both of two modes as specified in a contract: (1) the interchange format for the Data Base to be delivered to the Government; or (2) the structure and the naming of the elements of the Data Base created and maintained by the Contractor for purposes of creating IETMs which are in turn delivered to the Government.

CTN - Air Force Test Bed will perform testing.

**CTN Handbook March 1993
CALs Standardization Effort**

**MIL-Q-87270
QUALITY ASSURANCE PROGRAM:
INTERACTIVE ELECTRONIC TECHNICAL MANUALS
AND ASSOCIATED TECHNICAL INFORMATION;
REQUIREMENTS FOR**

CURRENT VERSION: January 1993

PURPOSE: Prescribes the requirements for a Contractor's Quality Assurance (QA) program for Interactive Electronic Technical Manuals (IETMs) and, where procured, the associated IETM Data Base. The requirements cover the QA process from planning through final submission of the delivered product for acceptance; and apply as well to changes and revisions thereto.

CTN - Air Force Test Bed will perform testing.

**MIL-HDBK-59
COMPUTER-AIDED ACQUISITION AND LOGISTIC SUPPORT
(CALs) PROGRAM
IMPLEMENTATION GUIDE**

CURRENT VERSION: Revision A (September 1990)

NEXT REVISION: Revision B (November 1993)

PURPOSE: Assist acquisition managers in transitioning from paper-intensive processes to digital data delivery and access. This handbook provides guidelines for applying a disciplined data management approach for all defense system and equipment acquisition programs, major modification programs, and related research and development projects throughout their life cycle phases in accordance with DoD Instruction (DoDI) 5000.2.

STATUS: Under limited review prior to CDSO receipt. For coordination review estimated 28 April 1993. Estimated publish 30 November 1993.

**CTN Handbook March 1993
CALs Standardization Effort**

**MIL-STD-CITIS
CONTRACTOR INTEGRATED TECHNICAL INFORMATION
SERVICE (CITIS), FUNCTIONAL REQUIREMENTS FOR**

CURRENT VERSION: None

PURPOSE: Defines services that a contractor provides the Government with authorized access to contractor data bases and applications (both business and technical). CITIS encompasses all activities and functions that are necessary for the Government to achieve practical use of digital data.

STATUS: Comment reconciliation meeting 23-26 March 1993. Estimated publish date late 1993.

MIL-HDBK-SGML

CURRENT VERSION: Draft

PURPOSE: To provide SGML guidance to the community.

STATUS: Pre-draft October 1993

**THE ADMINISTRATIVE AGENT FOR THE ABOVE STANDARDS
AND SPECIFICATIONS IS:**

Attn: CDSO
HQ AFMC/ENCS
4027 Col Glenn Hwy Suite 200
Dayton OH 45431-1601
513/257-3085 DSN 787-3085

CTN Handbook March 1993

CALS Standards and Specifications and other CALS documents may be obtained from:

**U.S. Department of Commerce
National Technical Information Service (NTIS)
Springfield VA 22161
703/487-4650
FAX: 703/321-8547**

The NTIS Bulletin Board has a CALS Subboard. Dial into the NTIS Bulletin Board using:

**703/321-8020 for 300/1200/2400 baud
or
703/321-8970 for 9600 baud.**

Log on to the NTIS Bulletin Board, process through welcome and advisory material and sign on, or register on the board if not already a known user, then process through welcome and announcements to the Main Menu. Select Open CALS from the Main Menu, process through the CALS welcome and informational material to the CALS BBS main menu.



CALS TEST NETWORK

Test Reports

CTN Handbook March 1993
CTN Test Reports

- 91-001 Tech. Pub. Transfer Test with U.S. Army Info Sys
- 91-002 Tech. Pubs. Transfer Test with Texas Instruments
- 91-004 SEAWOLF Digital Data Transfer Program: IGES
- 91-006 Tech. Pub. Raster Transfer Test with UNISYS
- 91-007 Tech. Pub. Transfer Test with Litton Data Systems
- 91-008 Raster Image Transfer Test with CIMAGE Corp
- 91-013 Tech. Pub. SGML Transfer Test Using Zander's Tagwrite
- 91-015 Tech. Pub. Raster Transfer Test Using Formtek's Convert.
View for Sun Workstation
- 91-019 Eng. Data Transfer into DSREDS MICOM Using Raster.
Laboratory Acceptance Test
- 91-020 Raster-I Engr Drwg Test Using Data Dev. Inc.
- 91-021 Digital Data Acceptance/Quality Assurance Procedures
- 91-022 CTN Tool Test
- 91-023 Field Testing of Phase I DA Procedures
- 91-024 U.S. Army CALS Test Bed MIL-STD-1840A Data Delivery Using Non-Magnetic
Tape Media
- 91-025 Demo Report Computer-Assisted Techniques for Digital Data Acceptance
- 91-026 Model--Engineering Data
- 91-027 Computer Assisted Data Acceptance Procedures
- 91-028 Model--Technical Manual Data
- 91-040 A Path to Tri-Service Use of SGML
- 91-045 How to Validate Document Type Definitions (DTDs)
- 91-046 MIL-D-28003 CGM Test Packet
- 92-001 EDCARS Raster Engineering Data Test
- 92-003 Tech. Pub. Transfer Test Using Lockheed Missiles and Space Data
- 92-004 Tech. Pub. Transfer Using Lockheed, General Electric and Rockwell Data
- 92-005 Tech. Pub. Transfer Test Using Hughes Aircraft
- 92-006 Tech. Pub. Test Using Bow Industries Tape to Optical Disk to Tape Transfer System
- 92-007 CALS/EDI Sacramento ALC Transfer Test
- 92-008 EDMICS Raster Engineering Data Test
- 92-009 Computer-Assisted Data Acceptance Vendor Selection Report
- 92-010 Computer-Assisted Data Acceptance Phase III Test
- 92-011 CTN Summary of DSREDS, EDCARS, EDMICS CALS Readiness Testing
- 92-012 Technical Analysis Report Tools for Test Bed Procedure Automation
- 92-013 Engineering Drawing Transfer Using Sunstrand Aerospace
- 92-014 Technical Publication Transfer Test Using Hughes Tucson Support System
- 92-015 Technical Publication Transfer Test Using VSE Corp

CTN Handbook March 1993
CTN Test Reports

- 92-016 Raster Transfer Test Using Image Memory Systems Inc
- 92-017 Technical Publications Transfer Test Using Resource Data Consultants
- 92-018 Engineering Drawing Transfer Test Using Magnavox
- 92-019 I-DEAS Drafting Level VI Using Structural Dynamics Research Corp IGES
- 92-020 Technical Publications Transfer Test Using Litton Canada
- 93-001 Draft Report on Evaluation of IGES, PDES/STEP and JCALS Relationships
- 93-002 Computer-Assisted Data Acceptance (CADA) Performance Test Report
- 93-003 Report on Prototype Design IETM
- 93-004 Recommendations for PDES/STEP Modifications and Enhancements Report
- 93-005 Computer-Assisted Data Acceptance (CADA) Contractor Test Report
- 93-006 Report on Document Instance Development
- 93-007 Transfer Test Using Raster Type II NIST Data
- 93-008 Tech Pub Transfer Using Xerox SGML Raster
- 93-009 Tec Illust Transfer Using Texas Instrument IGES, Raster, CGM
- 93-010 Tech Pub Transfer Using Arbortext
- 93-011 Tape Transfer Test Using Sikorsky Aircraft
- 93-012 CGM Transfer Using Texas Instruments Data
- 93-013 CGM Transfer Using Texas Instruments Data
- 93-015 Technical Publication Transfer Using Xerox Corporation Data
- 93-016 Evaluation of Computer-Aided systems for MIL-D-28000 Compliance with Additional
User Requirements
- 93-017 Test Case Development and Verification Guide for MIL-D-28000
- 93-018 MIL-D-28000 Test Case Index and Abstracts

To receive copies of any CTN reports or documents, please contact

Pamela Brown
AFMC/ENCS
4027 Col Glenn Hwy Suite 200
Dayton OH 45431-1601
Phone: (513) 427-2295
Fax: (513) 257-5881

**CTN Handbook March 1993
CTN Test Reports**

TEST DATA AND TOOLS

X Media (F=Floppy; T=9-Track Tape)
For Floppy: _ 3.5" LD/HD _ 5.25" LD/HD

F I

- - CTN Group 4 Compression/Decompression Software
- - CTN MIL-D-28000 Class I Reference Illustrations (2)
- - CTN MIL-D-28000 Class II Reference Eng. Drwg (2)
- - CTN MIL-M-28001 Ref. Tech. Pub. Set (10) Preliminary
- - CTN MIL-M-28001 w/CGM Reference Tech. Pubs. (2)
- - CTN MIL-M-28001 w/IGES Reference Tech. Pub.
- - CTN MIL-M-28001 w/Raster Ref Tech. Pub. (Expo '89)
- - CTN MIL-R-28002 Type I Reference Data (18)
- - CTN MIL-D-28003 Reference Illustrations (2)
- - CTN Raster Tool Box (CTNTB.350)
- - CTN TAPETOOL (VAX/VMS, SUN/UNIX, PC/DOS)
- - CTN Tech. Pubs. Ref. Docs-11 Files (Preliminary)
- - CTN Tools Tape

To receive copies of test data and/or tools, please contact

Cathy Murphy
AFMC/ENCS
4027 Col Glenn Hwy Suite 200
Dayton OH 45431-1601
Phone: (513) 257-3085
Fax: (513) 257-5881



CALS TEST NETWORK

Acronyms

CTN Handbook March 1993

Acronyms

| | |
|---------|--|
| AF | Air Force |
| AFB | Air Force Base |
| AFMC | Air Force Materiel Command |
| AFTB | Air Force Test Bed |
| AITI | Automated Interchange of Technical Information |
| ALC | Air Logistics Center |
| ANSI | American National Standards Institute |
| AP | Application Profile |
| ASCII | American Standard Code for Information Interchange |
| BBS | Bulletin Board System |
| BPI | Bits per inch |
| CAD | Computer-Aided Design |
| CALS | Computer-aided Acquisition and Logistic Support |
| CCITT | International Consultative Committee on Telegraphy and Telephony |
| CGM | Computer Graphics Metafile |
| CITIS | Contractor Integrated Technical Information Service |
| CDSO | CALS Digital Standards Office |
| CTN | CALS Test Network |
| CTN BBS | CALS Test Network Bulletin Board System |
| CTNO | CALS Test Network Office |
| CTNRB | CALS Test Network Review Board |
| DA | Data Acceptance |
| DSN | Defense System Network |
| DLA | Defense Logistics Agency |
| DoD | Department of Defense |
| DOE | Department of Energy |
| DSREDS | Digital Storage and Retrieval Engineering Data System |
| DTD | Document Type Definition |
| EDCARS | Engineering Data Computer-Assisted Retrieval System |
| EDI | Electronic Data Interchange |
| EDMICS | Engineering Data Management Information and Control System |
| FOSI | Format Output Specification Instance |
| FTP | File Transfer Protocol |
| GKS | Graphical Kernel System |

CTN Handbook March 1993

Acronyms (Cont'd)

| | |
|---------|--|
| HQ | Headquarters |
| IETM | Interactive Electronic Technical Manual |
| IGES | Initial Graphics Exchange Specification |
| ISO | International Organization for Standardization |
| LLNL | Lawrence Livermore National Laboratory |
| MIL-STD | Military Standard |
| MOA | Memorandum of Agreement |
| MS-DOS | Microsoft Disk Operating System |
| N/A | Not Available |
| NAVSEA | Naval Sea Systems Command |
| NIST | National Institute of Standards and Technology (formerly National Bureau of Standards) |
| NTIS | National Technical Information Service |
| OASD | Office of the Assistant Secretary of Defense |
| OS | Output Specification |
| OSD | Office of the Secretary of Defense |
| P&I | Production and Logistics Systems CALS |
| PDES | Product Data Exchange Specification |
| SGML | Standard Generalized Markup Language |
| TCP/IP | Transmission Control Protocol Internet Protocol |
| WPAFB | Wright-Patterson Air Force Base |

CTN Handbook March 1993

This Page Intentionally Left Blank



CALS TEST NETWORK

Membership Application

CTN Handbook March 1993
Membership Application & Memorandum of Agreement

Please provide the following information and mail the

Completed Application and the Signed Memorandum of Agreement
to

Major Ed Preston, Director
CALs Test Network
HQ AFMC/ENC
4027 Col Glenn Hwy Suite 200
Dayton OH 45431-1601
(513) 257-3085 FAX: (513) 257-5881

When your application is received, you will be sent a letter of acceptance that will provide you with further details.

Company Name: _____

Point of Contact, Title: _____

Address: _____

City: _____

Phone: _____

FAX: _____

Following is a listing of technical information file types that will be accepted by the CTN to test MIL-STD-1840A or MIL-STD-1840B and their associated military specifications. Test files may be on 9-track tape or on other media as may be agreed upon and in the format as specified in MIL-STD-1840A.

Do you anticipate providing test files to the CTN before the end of CY93? Yes ___ No ___

If you check "yes", please indicate the test files that you are interested in providing to the CTN and the approximate time period in which you expect to provide them. Please schedule with CTN before submitting any test files.

**CTN Handbook March 1993
Membership Application & Memorandum of Agreement**

| | CY 93 month | CY 94 month |
|---|----------------|----------------|
| TECHNICAL MANUALS | | |
| (Tech Manual Test Files should contain complete tech manuals) | ----- | ----- |
| Text Only: | | |
| SGML [tagged in accordance with (iaw) MIL-M-28001] | ----- | ----- |
| Text with Illustrations: | | |
| IGES (iaw MIL-D-28000 Class I) | ----- | ----- |
| Raster (iaw MIL-R-28002 Type I) | ----- | ----- |
| CGM (iaw MIL-D-28003) | ----- | ----- |
| ENGINEERING DRAWINGS | | |
| IGES (iaw MIL-D-28000 Class II) | | |
| Drawing Size (Circle) | A B C D E | ----- |
| Raster (iaw MIL-R-28002 Type I) | | |
| Drawing Size (Circle) | A B C D E | ----- |
| Raster (iaw MIL-R-28002 Type II) | | |
| Drawing Size (Circle) | A B C D E | ----- |

In addition to test files, you will be asked to submit a listing of the equipment and software, including version numbers, used to produce the test files.

Please describe any plans for internal testing of the CALS standards that may not involve CTN:

 Please add any additional comments or questions:

CTN Handbook March 1993
Membership Application & Memorandum of Agreement

MEMORANDUM OF AGREEMENT
between
CALS TEST NETWORK OFFICE
and
CTN MEMBERS

Regarding:

**PARTICIPATION IN THE TESTING PROGRAM
OF THE CALS TEST NETWORK (CTN)**

BACKGROUND

Headquarters Air Force Materiel Command, Air Force CALS Program Office (AFMC/ENC), acting for the CALS Policy Office, will test and recommend revision to the MIL-STD-1840A with Change Notice 1, dated 20 December 1988, and MIL-STD-1840B, and their referenced military specifications. This testing will be directed by the CTN Office (CTNO) within ENC and conducted by the CTN Test Beds and volunteer companies. The CTN Test Beds include the CTNO/LLNL, Army, Navy, and Air Force acting under the authority and direction of the CTNO, shall be part of this agreement.

PURPOSE

This agreement defines the approach by which the members of the CTN will participate in this test program and the tests which each participant will conduct.

RESPONSIBILITIES

The CTNO will be responsible for the preparation and execution of the appropriate documents. In conjunction with CTNO and the Lead Service Test Beds, the CTNO will negotiate with each individual test participant by the test contractors in the testing and attendance at pre- and post-test planning meetings. It will also include the participant's and the CTNO evaluation of test results to be published by the CTN and placed in the public domain.

ATTACHMENTS

Attached to this MEMORANDUM will be plans for the specific tests which have been negotiated as described in the responsibilities paragraph above.

CTN Handbook March 1993
Membership Application & Memorandum of Agreement

RESTRICTIONS

This agreement does not represent a contract with the Department of Defense, the Air Force Materiel Command or the CTN Test Bed organizations. This agreement does not imply that any software programs used by the test participants in the performance of any testing will be considered to be the property of, or a deliverable product to CTNO. This agreement does not imply that any software or test data used by the participants is in the public domain. The agencies conducting the testing and the test participants agree not to disclose, nor to share, any participant's test data with other participants unless given specific written permission by the originating participant.

CTN membership receiving public domain information and participation in test activities is a matter of public record which may be published by the CTN.

SIGNATURES AND EFFECTIVE DATE

This MEMORANDUM of AGREEMENT becomes effective on the date of signatures as listed below:

..... Date:

(Signature of test participant)

..... Date:

(Participant's Organization)

..... Date:

CTN Director
Air Force Materiel Command

CTN Handbook March 1993

This Page Intentionally Left Blank