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INTEGRATED INFORMATION SUPPORT SYSTEM (IISS)  
Volume V - Common Data Model Subsystem  
Part 44 - CDM Compare Utility Unit Test Plan

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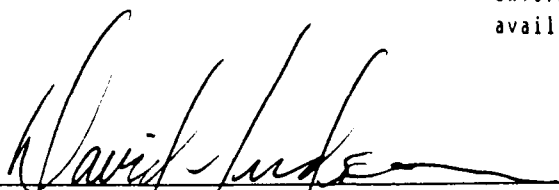
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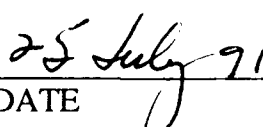
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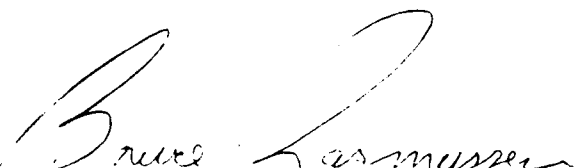
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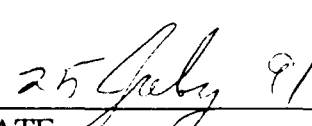
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<p>This document establishes the performance, design, test, and qualification requirements for the Common Data Model (CDM) Compare Utility. This utility is used to compare two versions of a CDM and report differences within the internal conceptual, and external schemas, as well as the schema mappings.</p> <p><b>BLOCK 11:</b></p> <p><b>INTEGRATED INFORMATION SUPPORT SYSTEM</b> Vol V - Common Data Model Subsystem</p> <p>Part 44 - CDM Compare Utility Unit Test Plan</p>			
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FOREWORD

This technical report covers work performed under Air Force Contract F33600-87-C-0464, DAPro Project. This contract is sponsored by the Manufacturing Technology Directorate, Air Force Systems Command, Wright-Patterson Air Force Base, Ohio. It was administered under the technical direction of Mr. Bruce A. Rasmussen, Branch Chief, Integration Technology Division, Manufacturing Technology Directorate, through Mr. David L. Judson, Project Manager. The Prime Contractor was Integration Technology Services, Software Programs Division, of the Control Data Corporation, Dayton, Ohio, under the direction of Mr. W. A. Osborne. The DAPro Project Manager for Control Data Corporation was Mr. Jimmy P. Maxwell.

The DAPro project was created to continue the development, test, and demonstration of the Integrated Information Support System (IISS). The IISS technology work comprises enhancements to IISS software and the establishment and operation of IISS test bed hardware and communications for developers and users.

The following list names the Control Data Corporation subcontractors and their contributing activities:

<u>SUBCONTRACTOR</u>	<u>ROLE</u>
Control Data Corporation	Responsible for the overall Common Data Model design development and implementation, IISS integration and test, and technology transfer of IISS.
D. Appleton Company	Responsible for providing software information services for the Common Data Model and IDEF1X integration methodology.
ONTEK	Responsible for defining and testing a representative integrated system base in Artificial Intelligence techniques to establish fitness for use.
Simpact Corporation	Responsible for Communication development.



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Structural Dynamics  
Research Corporation

Responsible for User Interfaces,  
Virtual Terminal Interface, and Network  
Transaction Manager design,  
development, implementation, and  
support.

Arizona State University

Responsible for test bed operations  
and support.

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IISS UNIT TEST PLAN

Subsystem: CDM

Release 2.3

Test Name and Number: CDM Compare Utility Tests

Objective:

This test case will test the three programs which make up the CDM Compare Utility. The three programs are: Extract, Compare and Report. The test will be done in two phases.

Phase 1 will execute the CDM Compare Extract Program. The output of this phase will be a file(s) containing the data extracted from a CDM. Phase 2 will execute the Compare and Report programs. The output of this phase will be a file containing a report of the differences in the supplied test data files. Phases 1 and 2 of this test are designed to be independent of each other for testing purposes. Phase 2 of this test may be done prior to Phase 1 if the tester is so inclined.

Resource Requirements

Number of Terminals: 2

Software requirements:

ORACLE, CDM database, NTM and User Interface software. A new table should be added to the ORACLE CDM database. The table name is COMPARE\_RESULTS.

Estimated Time for Test:

Two days.

Special Resource  
Considerations:

The Phase 1 test includes six data files to be used during test validation:

- cdmiskm.scp - internal schema
- cdmcskm.scp - conceptual schema
- cdmeskm.scp - external schema
- cdmcism.scp - conceptual-internal schema mapping
- cdmcesm.scp - conceptual-external schema mapping
- cdmcmapp.scp - complex mappings

The Phase 2 test is supplied with 3 data files. These files can be found in IISS Configuration Management. The files are:

- cdmltst.scp - CDM test data used as input to the Compare program.
- cdm2tst.scp - CDM test data used as input to the Compare program.
- cdmrprt.dat - file used to validate the Phase 2 test results.

This test also requires the manual creation of the output file cdmrtest.dat. This will be explained in the instructions that follow.

### Test Definitions

#### Method of Performing Tests:

In order to run the unit test plan, one must first insure the NTM is active. It is important that the logical, ORACLE\$SID, points to the copy of ORACLE containing the release 2.3 version of the CDM database.

After logging on to an IISS account insure the following logicals are assigned properly:

IISSFLIB - directory containing IISS form definitions  
IISSULIB - directory containing CDM Compare form definitions  
IISSMLIB - directory containing IISS error messages

#### Phase 1 Test Inputs:

STEP 1: Set directory to the directory containing the NTM environment.

\$ SET DEF <directory name>

STEP 2: Start the User Interface system. If the User Interface system has been installed at your site with a different device driver, then this step should be amended appropriately.

\$ VT100

STEP 3: Fill in the fields on the IISS Logon Screen.

USERNAME: CDM  
PASSWORD: CDM  
ROLE: CDM

press <ENTER>

STEP 4: Enter the name of the CDM Compare Extract program on the IISS Function Screen.

FUNCTION: CDMXTRCT

press <ENTER>

STEP 5: Fill in the fields of the Extract input screen.



CDM VERSION IDENTIFIER: CDM1DATA  
OUTPUT DATA FILE NAME: <output file name>  
CMPEXTRACT.OUT - Internal  
Place an "X" in the box to the left of  
INTERNAL SCHEMA, for this test.

press <ENTER>

STEP 6: When the program finishes, the IISS function screen will appear. Return to the operating system.

press <QUIT>

NOTE: Due to the amount of time required to extract all the data from the CDM, it is strongly recommended that each schema/mapping be extracted in a separate execution of this test. To obtain the data for the other schema/mappings use different file names in the output data file name field and place the "X" in the appropriate box for each execution.

#### Phase 1 Expected Test Results:

The results of this test will be an output file with the same name as was entered in step 5 above. Using the DIFFILE command under IISS Configuration Management, compare the created file with the appropriate validation file to check for differences. Review the special resource considerations for Phase 1 testing to determine the correct validation file to use.

NOTE: It should be understood that the data extracted from the CDM during this test may differ from the data in the supplied results files since the CDM may have been modified over time.

#### Define Successful Completion Criteria for Phase 1 Test:

Successful completion for this test will be normal termination of the program and a reasonably equal comparison of the output data files and the supplied results files.

#### Phase 2 Test Inputs:

STEP 1: Set directory to the directory containing the NTM environment.

```
$ SET DEF <directory name>
```

STEP 2: Create the file cdmrtest.dat.

```
$ CREATE CDMRTEST.DAT  
^Z (cntl/Z)
```

STEP 3: Start the User Interface system. If the User Interface system has been installed at your site with a different device driver, then this step should be amended appropriately.

\$ VT100

STEP 4: Fill in the fields on the IISS Logon Screen.

USERNAME: CDM  
PASSWORD: CDM  
ROLE: CDM

press <ENTER>

STEP 5: Enter the name of the Compare program on the IISS Function Screen.

FUNCTION: CDMCMPAR

press <ENTER>

STEP 6: Fill in the fields of the Compare input screen.

EXTRACT FILE 1: CDM1TST.SCP  
EXTRACT FILE 2: CDM2TST.SCP

press <ENTER>

When the Compare program finishes, the IISS Function Screen will appear.

STEP 7: Run the CDM Compare Report program by entering the name of the program in the IISS Function Screen.

FUNCTION: CDMREPRT  
DRIVER: SDPRINTERZ  
DEVICE: CDMRTEST.DAT

press <ENTER>

STEP 8: There will be a message at the bottom of the IISS Function Screen when the program finishes. Return to the operating system.

press <QUIT>

STEP 9: Compare the contents of the supplied results file, cdmreprt.dat, with the contents of the cdmrtest.dat file using DIFFILE.COM located in IISS Configuration Management.

\$ DIFF CDMRPRT.DAT CDMRTEST.DAT

Phase 2 Expected Test Results:

The results of this test will be the report being sent to the file cdmrtest.dat.

Define Successful Completion  
Criteria for Phase 2 Test:

Except for the dates and times, the results of the comparison of the two files in step 8 should be identical.

IISS UNIT TEST REPORT

CDM Compare Utility - Extract Program Test

Test Completed By:

RELEASE NO.:

Date:

TEST EVALUATION:    \_\_\_ PASSED           \_\_\_ FAILED

Test Description:

Input:

Expected Results:

Actual Results:

IISS UNIT TEST REPORT

CDM Compare Utility - Compare and Report Program Test

Test Completed By:

RELEASE NO.:

Date:

TEST EVALUATION: \_\_\_\_\_ PASSED \_\_\_\_\_ FAILED

Test Description:

Input:

Expected Results:

Actual Results: