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Cluster Science Data System
SDC Acceptance Data Package

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1 Introduction

1.1 Scope of this document

This document describes the Cluster Science Data System, Scandinavian Data Centre sub-system Acceptance Data Package. Issue 1 described the state at the preliminary acceptance test 19 May 1995. Issue 2.0 describes the state at the CSDS Readiness Review in September 1995.

1.2 Acronyms and abbreviations

Acronyms and abbreviations are explained in Table 1.

Acronym	Meaning
AT	Acceptance Test
CDF	Common Data Format
CMS	Code Management Systems
CPU	Central Processing Unit
CSDS	Cluster Science data System
ESRIN	European Space Research Institute
GUI	Graphical User Interface
IRF-U	Institutet för Rymdfysik, Uppsalaavdelningen Swedish Inst. of Space Phys., Uppsala Division
ISDAT	Interactive Science Data Analysis Tool
NDC	National Data Centre
SDC	Scandinavian Data Centre
SPR	Software Problem Report
SVVP	Software Verification and Validation Plan
WEC	Wave Experiment Consortium

Table 1: Acronyms and abbreviations

1.3 Reference Documents

- [1] Cluster Science Data System, Architectural Design for the Scandinavian Data Centre. Technical Report DS-SDC-AD-0001, KTH, October 1994. Issue 1.4.
- [2] CSDS Software test plan for the Scandinavian Data Centre. Technical Report DS-SDC-TP-0001, KTH, May 1995. Issue 1.0.
- [3] CSDS Operator's Manual for the Scandinavian Data Centre. Technical Report DS-SDC-UM-0001, KTH, September 1995. Issue 1.1.
- [4] CSDS User's Manual for the Scandinavian Data Centre. Technical Report DS-SDC-UM-0002, KTH, September 1995.

- [5] G. Holmgren and A. Lundgren. WEC detailed data analysis software. architectural design. Technical Report CWD-ADD-001, IRF-U, February 1994.

2 Configuration Status of the SDC sub-system

This section describes the SDC subsystem configuration status at the time of the CSDS Readiness Review in September 1995.

2.1 Hardware

The SDC sub-system has the following hardware configuration:

CPU DECstation 3000 Model 400

Memory 160 MByte

Disk space 9.3 GByte

2.2 Software

The SDC sub-system has the following software configuration:

CDF library 2.4.12

CDF Skeleton 1.7

ISDAT 2.1 (applies to non-CSDS-User-Interface modules)

CSDS User Interface Release 3.

OpenVMS 6.1-1H2

Motif DECwindows Motif 1.2-3 (based on X11R5 and OSF/Motif 1.2.3)

UCX 3.2 ECO 6

Posix 2.0

FTP MadGoat FTP 2.1-2

3 Change Control Procedures

In general, the *CMS* system is used for the change control. For ISDAT components, a special WEC/ISDAT procedure is followed [Ref. 5].

4 SDC sub-system; Open SPR:s and Work Packages

This section adheres to the modules described in the architectural design document, [Ref. 1].

A number of open SPR:s and open work packages are listed in this section. However, none of them prevents the SDC from entering into the commissioning phase. The open work packages are either related to the fine tuning of the science data and is best done during the commissioning or they are work packages that are coordinated with the software development within the Cluster Wave Experiment Consortium (WEC) and are therefore delayed until the end of the year. In all cases there are backup solutions pending the final software.

4.1 Software module: Reception

4.1.1 Open SPR:s

There are no open SPR:s in this module.

4.1.2 Open work packages

This module is complete.

4.2 Software module: Interactive Processing

4.2.1 Open SPR:s

There are no open SPR:s associated with this module.

4.2.2 Open work packages

The following work packages are still open:

1. EFW de-spinning. (depends on WEC work package - ready in October)
2. Satellite velocity derivation (depends on WEC work package - ready in Oct.)
3. EFW special high-level tools for science and health check. (Integrated with WEC schedule - ready in December)
4. EFW health check manual (depends on above work packages)

4.3 Software module: DB Server

4.3.1 Open SPR:s

The following SPR:s are still open:

1. A VMS related problem to generate ISDAT map files for multiple files is under investigation. The problem does not hinder the SDC activities.

4.3.2 Open work packages

The following work packages are still open:

1. FGM data access design, coding, integration and testing
2. ASPOC data access coding, integration and testing.
3. EFW calibration update procedure and manual.

4.4 Software module: EFW DB Production

4.4.1 Open SPR:s

There are no open SPR:s associated with this module.

4.4.2 Open work packages

The following work packages are still open:

1. The EFW power computations are not finalized.
2. The $\mathbf{v} \times \mathbf{B}$ computation is not implemented (Depends on FGM data access).

4.5 Software module: SDC User Interface

4.5.1 Open SPR:s

There are no open SPR:s in the *SDC User Interface* software.

4.5.2 Open work packages

This module is complete.

4.6 Software module: CSDS User Interface

4.6.1 Open SPR:s

User Interface related SPR:s DS-SDC-SPR-001 - DS-SDC-SPR-052 have been submitted to ESRIN.

4.6.2 Open work packages

Installation and testing of CSDS User Interface Release 4 remains to be done.

5 SDC sub-system test procedures and reports

5.1 Unit and integration tests

ISDAT system components are tested within the scope of the CSDS User Interface. Other software components tests are not formally reported. This is in accordance with the plan outlined in [Ref. 2].

5.2 SDC acceptance test

The SDC sub-system acceptance test procedure and reports are given in [Ref. 2]. The test has been performed with ESTEC witnessing and approving the result.

5.3 CSDS User Interface Acceptance Test Report

All anomalies have been formally reported as SPR:s. The report below represents the situation immediately after the test (15 August 1995).

```
From: PLAFYB::LINDQVIST "Per-Arne Lindqvist, KTH Stockholm" 15-AUG-1995 16:30:10.14
To: MX%"sskogvol@estec.esa.nl",MX%"csdsuihelp@mail.esrin.esa.it"
CC: MX%"gh@irfu.se",MX%"al@irfu.se",NILSSON,OLSSON,MX%MEHRA,LINDQVIST
Subj: CSDS-UI problems at SDC, Certificate of AcceptanceCURRENT/EDIT
```

Dear Stein,

Below follows a summary of the problems we have encountered sofar with CSDS-UI Release 3. They have resulted in 50 SPR's, of which 6 have been sent, and 44 will be sent to you as separate e-mails. We will fax the CSDS-UI Release Certificate of Acceptance to you today (cc: ESRIN).

In addition to the SPR's, which address problems with the CSDS-UI, the text below contains a description of a number of problems we had during

performance of the Acceptance Test. We trust that ESRIN will take these comments into account for the next release.

I hope your mailbox doesn't overflow. Contact me if you do not receive all 50 SPR's.

Best regards,
Per-Arne

Comments on DC-DC transfer tests (SPR's have already been sent to ESTEC for these):

SPR-001 on UKCDC

Their file np contains 184 files, but only 181 different file names. (The file names C1_PP_FGM_19950510_V01, C2_PP_FGM_19950510_V01, C3_PP_FGM_19950510_V01 occur twice.)

SPR-002 on GCDC

Their np file contains a number of files not originating from GCDC.

SPR-003 on ACDC

The file not transferred is C1_PP_ASP_19950106_V01.CDF
I have looked into the directory FIWF04\$DKB100:[CSDSFTP.PP.ASP.C1] on fiwf04.iwfgraz.csds.esa.de, and this file is actually missing, even though there exists a file C1_PP_ASP_19950106_V01.SFDU.

SPR-004 on ACDC

The file C2_PP_ASP_19950106_V01.CDF gave an error "access violation", even though it seems to have been ingested.

SPR-005 on CFC

In addition, we had problems when ingesting some of the files. For example, the CFC file CL_SP_STA_19950324_V03.CDF gave an error "floating/decimal divide by zero", and failed to be ingested.

SPR-006 on UKCDC

The 181 transferred files were not possible to ingest at one time. The error message from dataingest is "argument list too long".

Comments on AT tests

The order of listing below follows page 7 of DS-ESR-AT-0100, CSDS-UI Release 3 SVVP/AT

CB test performed by G Olsson/checked by P-A Lindqvist

cb_01.10 The test was successful, but our opinion is that it is not very meaningful, since the time interval specified is zero.

cb_01.11 There was no result to check, since the time interval specified is zero. Cf case cb_01.10.

cb_06.1 There are no matches, so there are no data to check for consistency. This is not unexpected, since the query is for the time period 06-sep-1996 to 07-sep-1996, and the catalogue only contains information from 31-dec-1995 to 01-may-1996.

ISDAT test performed by G Olsson/B H Nilsson/P-A Lindqvist

isdat_01_5 It is not possible to send output to a printer queue. Only the device "lp" works, in which case the postscript output is sent to the system line printer as a text file, which is nonsense. Subsequently, it was found that the text above the window is misleading: "Printer name" should be replaced by "Print command". It turns out that the command "lp -d <queue name>" works. There should also be help implemented to explain this.
SPR007

isdat_4_3 The created file was not identical to the reference file, but there were 11 differences.
SPR008

isdat_4_3 Apart from the test being unsuccessful, another problem in cuigr was discovered here. If a CDF file is saved with the same name as a file which already exists, the new file is not saved, and there is no error message to say that the file name is already in use.
SPR009

isdat_4_5 cuigr exits when OK is pressed to create the CDF file. A CDF file is created, but with no data in it.
SPR010

isdat_7.1 There are several problems comparing the two plots. a) the reference plot is portrait mode, and the test plot is landscape mode. b) The test plot does not contain different line types, but only solid lines. This is probably an error in the test description, which fails to specify that Orientation: portrait must be selected, and that B&W or Color: b&w.diff.1 must be selected.

isdat_8_1 In cuigr, the top panel is entirely black when this test is run after test isdat_7.1. If cuigr is restarted, the test is OK.

isdat_8_10 The 3rd instruction should be "from cuigr", not "from cuitm"

(the test result is OK).

isdat_8_11 The 4th instruction should be "from cuitm", not "from cuigr"
(the test result is OK).

isdat_9_3 The instruction to change "<" to ">" is not necessary, since
the search expression already contains ">".

isdat_9_4,5,6,8,9,10,11 The resulting plot contains not "one sinusoidal
curve", but two curves, on a logarithmic scale.

isdat_10_1 The manipulation of dbh must be done from the account csdsadm
in another window, which is not specified in the test description. The
file cuiexx.res is not possible to view until after cuitm has been
terminated, which is not the order in the test description. The file
cuiexx.res contains 4 lines (one for when the client cuiexx was started
+ one for each time the forward arrow was pressed).
SPR049

isdat_13_1 When comparing the AT13.flat files, there are also other
differences than the creation date. It seems that these are
machine-dependent truncation differences.

isdat_15_1 The test was not possible to perform since the ISDAT-IDL
interface is not available for OpenVMS.
SPR011

isdat_17 Test result OK, but dbhstart is not available, the command dbh
was used instead.
SPR012

isdat_18 Test result: "not satisfactory". The response time is sometimes
more than several seconds, An example is when starting clients from
cuitm. There should be some indication that the system has accepted a
mouse button down command, for example, that the cursor changes to a
watch symbol.

isdat_20 The manipulation of dbh must be done from the account csdsadm
in another window, which is not specified in the test description. Test
result OK, but dbhstart was replaced by dbh, and dbhstop was replaced by
entering posix and using kill after determining which process to kill
with ps. The filename to be edited is isdat.server (typo in
description).

isdat_21_3 Result of test is OK. But if an even larger time interval is
selected (1995-03-23 to 1996-01-11), cuigr crashes.
SPR045

isdat_21_5 The manipulation of dbh must be done from the account csdsadm

in another window, which is not specified in the test description. Test result OK, but the last line "Run dbhstart" should be removed if the correct behaviour is to be seen in test isdat_21_6. The command dbhstop not available, was replaced by posix kill.

isdat_21_6 The manipulation of dbh must be done from the account csdsadm in another window, which is not specified in the test description. Test result OK, but only if run directly after test isdat_21_5, and the last line "Run dbhstart" of isdat_21_5 was removed. The command dbhstart not available, was replaced by dbh.

isdat_21_9 The instructions should read "clients->general->cuigr", "clients->csds->cuistat" and "clients->csds->cuimeta" (the test result is OK).

isdat_24_1 The test result is OK, but the operation of the cursor is tricky to obtain the resizing. The cursor should change to the resize cursor when it is in the right position, even before the mouse button is pressed.

SPR013

General remarks on Isdat by G Olsson:

a) cuigr calculator: Error messages accumulate and cause the window to grow vertically. They can not be deleted without exiting cuigr (it is not sufficient to exit the calculator).

SPR014

b) cuitm, etc: The configuration file in use is not reported anywhere. In cuitm by selecting file->config->load it is possible to see the last selected file. In cuigr not even this is possible, and the file menu is always started from the top. A suggestion is to put the name of the last loaded or saved configuration file in the window title.

SPR015

c) cuigr: Sometimes the behaviour is dependent on earlier configurations after a new configuration is loaded (notably colours). Conditions not specified in the .igr file should return to defaults.

SPR016

d) cuigr: Menu shortcuts (ctrl-E etc.) should be included.

SPR017

FH test performed by G Olsson/checked by P-A Lindqvist

fh_01.1 The test did not perform at all in the beginning. There was a cryptic error message

ERROR in FILE TRANSFER:

FhcrpaInit : 3 - Network error
in the log generated, and no files were transferred. After help from Esrin, it was found that the server process FHSM had crashed. After restart of FHSM (not described in the NDC System Manager UM DS-ESR-SM-0001), things worked better. (The process FHSM is started automatically at system bootup, and it is not clear under which circumstances it crashes. Apparently it does sometimes, and sometimes not.)
SPR018

fh_01.1 The mail informing about the success of the transfer was received, but no files were actually transferred. After comparing with subsequent tests, it was found that uncompressed files could be transferred, but not compressed files. Two problems: a) There is no adequate error message generated, b) It is not possible to transfer compressed files.
Subsequently, when testing the Fetch mechanism again, it was possible to fetch also compressed files. We have no idea what made it possible. But we maintain that the error message handling is not adequate.
SPR019

The rest of the tests FH were performed substituting "non compressed" for "compressed" file transfer.

fh_02.5 Test not possible to perform, since the job completes execution too fast.

fh_03.1 Inspection of the CDF files with CDFedit is OK. Attempting to plot the data with Simple Display generates a message "Error reading variable values from CDF file".
SPR020

fh_03.2 Inspection of the CDF files with CDFedit is OK. Attempting to plot the data with Simple Display generates a message "Error reading variable values from CDF file".
SPR020

fh_03.3 Inspection of the CDF files with CDFedit is OK. The test description is not clear enough to describe what files to compare with Simple Display.

fh_03.6 Inspection of the CDF files with CDFedit is OK. Attempting to plot the data with Simple Display generates a message "Error reading variable values from CDF file".
SPR020

fh_03.7 Inspection of the CDF files with CDFedit is OK. The test description is not clear enough to describe what files to compare with Simple Display.

FH, general comments:

a) The backwards reference in the test case descriptions are not a good way of specifying a test case. The step should be explicit for each case, as different errors may arise for each case, and these should be noted in the appropriate place.

b) The test was very tedious to perform in the suggested sequential manner (DS-ESR-AT-0100, section 4.4.1), since the tester had to switch between the accounts csds01a (PI/CoI) and csds02a (Scientist). The cases should have been grouped according to account to allow more efficient testing.

c) In the CDF file subsetting form, it is not possible to "cancel" the operation. The user must clear the start and stop date fields, and the press "close". There should be a "cancel" button.

SPR021

SD test performed by P-A Lindqvist and G Olsson

sd_02.2 Test failed with a message window: "Error reading variable values from CDF file".

SPR022

sd_05.4 The upper scale of Y on the plot is $2.0e-7$, but $1.0e-7$ in the CDF file.

SPR023

sd_07.3 There is no error message displayed when the empty CDF file is selected. There is a message if we try to plot data from the file, but this is not as specified in the test procedure.

SD, general comment: In the Fields selection dialog, there is no indication that the Plottable Parameters list actually belongs to the Selected Dataset. If the Dataset has been selected with a double-click it does, on a single-click it does not.

SPR024

VAL test performed by B H Nilsson

All OK.

DC tests not performed according to test design.

Instead the more realistic DC-DC transfers were used as test.

SPR001 - SPR006 have been submitted earlier.

DI test performed by B H Nilsson

All OK. (But note error ingesting 181 files noted during DC-DC tests,
raised as DS-SDC-SPR-006.)

MCM test performed by B H Nilsson

All OK.

UM test performed by B H Nilsson

um_01 The test results are OK, but there are some confusions: The
instruction "Log in as System Manager" should be more explicit to say
"log in as csdsadm". In this test (UM) the user csds01a is the Science
User, and csds02a is the PI/CoI user. This is true also for some of the
other tests (CB, EU, ??). Other tests have the reverse definition
(ISDAT, FH, ??). We have consistently used csds01a as the PI/CoI and
csds02a as general science user.

UL test performed by B H Nilsson/checked by P-A Lindqvist

ul, general This test must be performed after the UM test, which is in
contradiction to the statement in DS-ESR-AT-0100, section 4.4.1 that the
Test Designs are independent.

ul_01.1 The test generates a message "sqlcode 0", and it is not clear
from the description whether this is a success or failure message.

ul_01.2 The test was OK as far as it was possible to perform. The
command "oerr" is not available, so it was not possible to test.
SPR025

ul_01.3 When cuism is exited, this does not exit the Isdat client
application (cuitm).
SPR026

Other topics (mostly by P-A Lindqvist):

cuism, when starting the CSDS-UI Session manager, the glossy picture of
the 4 cluster satellites takes time to draw. It should be possible to
deselect.

SPR050

Session manager: Help not implemented for "on Screen", "CSDS doc", "ORACLE doc", "About".

SPR027

The above applies to all windows under the Catalogue browser.

=SPR027

Session manager: "Close" has no function.

=SPR028

In general, the use of "Close" and "Exit" is confusing in all windows under the Catalogue browser.

SPR028

The catalogue browser: "Exit" exits the Session manager, not only the catalogue browser.

=SPR028

The catalogue browser: There is no indication for which catalogue information will be returned when pressing "Info". (It appears to be the one last touched.)

SPR029

The orbit geometry catalogue: It is not possible to resize the window.

SPR030

The orbit geometry catalogue: "Close" has no function.

=SPR028

The orbit geometry result: No vertical scrollbar available.

SPR031

The orbit geometry result: "Load query from..." gives an error "Error getting the list of Result filenames" if CUI_USR_ROOT:[queries] does not contain any queries. It should give a file selection window instead.

SPR032

The orbit geometry result: "Save query" only gives the possibility to specify a filename. It should also be possible to specify a full file pathname, including device/directory (through a file selection window).

SPR033

The orbit geometry result: "Exit" exits the Orbit geometry catalogue, not only the Orbit geometry result.

=SPR028

The above applies to all the following catalogues/results:

Orbit Geometry

JSOC predicted solar cycle trends
JSOC predicted geometry positions
JSOC predicted scientific positions
JSOC predicted scientific events
JSOC scientific events
=other SPRs

In the Catalogue browser, it is not possible to select more than 4 catalogues simultaneously. An error message "Error in connecting" appears.

SPR034

PP/SP D.B. Catalogues, catalogue selection: Restricting by DATA TYPE = PP, the instrument "AUXILIARY" should not appear.

PP/SP D.B. Catalogues, catalogue selection: Restricting by DATA TYPE = PP, the keywords "Satellites ephemerides", "Satellite attitude", "Tetrahedron quality parameters", "Dipole tilt", "GSE to GSM rotation" should not appear.

PP/SP D.B. Catalogues, catalogue selection: There is no indication for which instrument/keyword information will be returned when pressing "Info". (It appears to be the one last touched.)

=SPR029

PP/SP D.B. Catalogues: It is not possible to resize the window.

SPR035

PP/SP D.B. Catalogues, Query formulation, File attributes, Satellite list window, there is no resize button, even though the window can be resized.

SPR036

PP/SP D.B. Catalogues, Query formulation, Interval attributes, Instrument mode window, there is no resize button at the upper right, even though the window can be resized.

=SPR036

PP/SP D.B. Catalogues Result, if the result is saved using "File", "Save", "query and result", the 3rd line of the resulting file does not indicate the field "Status".

SPR037

Simple Display is randomly started in one of two setups regarding fonts and colours. One is with a thin-line font for text, and the colours are OK. The other, which is started most often, is a thick-line font, and the colours are unacceptable. For example, the push-buttons in the File selection dialog are black, and the text in the buttons is also black.

To see the text, one must push the button, in which case the button turns white and the text remains black. The message dialog windows which appear sometimes are black, and the message text is not visible.

*** This was fixed by copying the file cuisd.dat from
*** DISK\$SDC:[CSDSPRD.CSDS3_0.CFG.APP-DEFAULTS] to
*** DISK\$AVMS:[VMS\$COMMON.DECW\$DEFAULTS.USER], i.e. from
*** DECW\$USER_DEFAULTS to DECW\$SYSTEM_DEFAULTS
*** Should this really be necessary?

This was subsequently found to be due to an error in the file protection of the file cuisd.dat under [.app-defaults]

SPR038

Simple Display: Help is not implemented, and there is not even an error message saying this.

SPR039

ISDAT, cuigr client: The shortcuts to the menus are not unique, P means both Param and Plots. If P is used, Param is chosen.

SPR040

ISDAT, search client: The menu names and button names are incorrect, like "fileCascadeButtonW" instead of "File", and "widget22" instead of "Start". See e-mail to AL 9/8.

*** This was fixed by copying the file search.dat from
*** DISK\$SDC:[CSDSPRD.CSDS3_0.CFG.APP-DEFAULTS] to
*** DISK\$AVMS:[VMS\$COMMON.DECW\$DEFAULTS.USER], i.e. from
*** DECW\$USER_DEFAULTS to DECW\$SYSTEM_DEFAULTS
*** Should this really be necessary?

This was subsequently found to be due to an error in the file protection of the file search.dat under [.app-defaults]

=SPR038

ISDAT, general: Sometimes the "Help" buttons have no effect.

This was subsequently found to be due to an error in the file protection of the files in the directory [csdsprd.csds3_0.hlp].

=SPR038

ISDAT, cuigr client: The Help windows should contain scroll bars when they are resized.

SPR041

ISDAT, cuigr client: Using Help->DebugLevel->SetDebug to set the debug level to 18 (to "show the printer command when hardcopy directly to printer") does not work? Where is the output from debug written? This would have been useful since we have problems printing directly to a printer queue in OpenVMS.

SPR042

CSDS-UI, general: The cuism is started from a normal Decterm window. If

output to this window is suspended, for example, by entering an editor, cuism and its applications may hang. This is because every once in a while an empty line is written to the window where cuism is started. The output of these empty lines should be removed.

SPR043

ISDAT, cuigr client: The colours were sometimes unavailable, and completely black plots were produced by some test configurations. This was found to be due to wrong protection on the files in [csdsprd.csds3_0.cfg.fonts]. The same file protection problem was present in [csdsprd.csds3_0.cfg.app-defaults], which created problems in various applications, and in [csdsprd.csds3_0.hlp], which created problems in Isdat help. The reason for the wrong protection is that the VMS BACKUP facility restores each individual file's protection regardless of the default file protection, which means that the instructions in the CSDS-UI Installation guide (DS-ESR-IM-0004), section 4.2.1, are not adequate.

=SPR038

ISDAT, cuigr client: A cancel button for interrupting time-consuming plots would be very useful.

SPR044

AT, general: How do we clean up all the directories after the Acceptance Test? There are a lot of files lying around, and it not clear which files may be removed. Even if it were, the task seems very tedious to do manually.

ISDAT, cuigr: It is necessary to be able to plot data as disconnected points, without any other symbol than a point.

SPR046

Simple Display: It is necessary to be able to plot data as disconnected points, without any other symbol than a point.

SPR047

Reference to Scientific User UM (DS-ESR-SM-0002) is wrong in the Installation guide for scientific user for Solaris (DS-ESR-IM-0002, page 4) and OpenVMS (DS-ESR-IM-0004, page 4).

SPR048

5.4 CSDS Integration test

All anomalies have been formally reported as SPR:s. The report below represents the situation immediately after the test (4 August 1995).

Date: 4 Aug 1995

From: Per-Arne Lindqvist
To: Mark Nesbit
Cc: Herve Poussin, Klaus Torkar (problems with CFC and ACDC files)
Subj: Results of DC-DC file transfer to SDC

Dear Mark,

Following is a description of the results of the DC-DC transfers of the available CSDS CDF files to SDC.

1. UKCDC

Their file np contains 184 files, but only 181 different file names. (The file names C1_PP_FGM_19950510_V01, C2_PP_FGM_19950510_V01, C3_PP_FGM_19950510_V01 occur twice.)
The 181 files occupy 35944 kbytes, and were transferred in 3 h 18 min.

2. GCDC

Their np file contains a number of files not originating from GCDC. There are 38 files originating from GCDC.
The 38 files occupy 9344 kbytes, and were transferred in 1 h 37 min.

3. HDC

The np file contains 10 files.
The 10 files occupy 2320 kbytes, and were transferred in 0 h 10 min.

4. ACDC

The np file contains 66 files, but only 33 different file names (each file occurs twice).
We were only able to transfer 32 of the files, which together occupy 5040 kbytes, in 2 h 34 min.
The file not transferred is C1_PP_ASP_19950106_V01.CDF
I have looked into the directory FIWF04\$DKB100:[CSDSFTP.PP.ASP.C1] on fiwf04.iwfgraz.csds.esa.de, and this file is actually missing, even though there exists a file C1_PP_ASP_19950106_V01.SFDU.
I believe this should be an action on ACDC to reinstate the missing file.

5. CFC

The np file contains 28 files. When we first tried to transfer the files using the dctodc command, we only obtained 10 files, namely
CL_SP_CIS_19950324_V03.cdf
CL_SP_STA_19950323_V01.cdf
CL_SP_STA_19950324_V03.cdf
CL_SP_WHI_19950323_V01.cdf
CL_SP_WHI_19950324_V01.cdf
C1_PP_CIS_19950324_V04.cdf

C2_PP_CIS_19950324_V01.cdf
C3_PP_CIS_19950324_V01.cdf
C4_PP_CIS_19950324_V01.cdf
CL_SP_WHI_19950609_V01.cdf

We investigated the possible reason further, and finally found the error in the file [csdsadm.cui.cfg]source.inst, where the entries for STA and WHI for some reason was not PP:SP. After fixing this, the file transfer went without problem.

The 28 files occupy 9328 kbytes, and were transferred in 0 h 50 min. Possibly there should be an action on ESRIN to explain why the file source.inst looks as it does. Or is it only meant as an example?

In addition, we had problems when ingesting some of the files. For example, the CFC file CL_SP_STA_19950324_V03.CDF gave an error "floating/decimal divide by zero", and failed to be ingested. I believe this should be an action on CFC to investigate. And the file C2_PP_ASP_19950106_V01.CDF gave an error "access violation", even though it seems to have been ingested (action on ACDC?).

Summary, as requested in e-mail from M Nesbit 10 July 1995:

NDC	Number of files	Data Volume (kbytes)	Execution time
UKCDC	181	35944	3 h 18 min
GCDC	38	9344	1 h 37 min
HDC	10	2320	0 h 10 min
ACDC	32	5040	2 h 34 min
CFC	28	9328	0 h 50 min

For the time being, this completes the testing of DC-DC transfers to the SDC (test group S-I-02.1), and we hand over to the UKDC to test on Monday 7 August. It seems that also the generation of the catalogues (test group S-I-02.2) is mostly ok, with the exceptions noted above.

Best regards,
Per-Arne

5.5 System Functional Test (SFT)

The SFT was carried out without major problems. The report below contains the day-by-day reporting from the SDC during the tests. Formal SPR's on the problems which were encountered have not yet been submitted.

>From lindqvist@plasma.kth.se Mon Aug 28 12:34 MET 1995
Subject: SDC ready with 28 Aug am SFT activities

Dear Colleagues,

The SDC has completed SFT test cases S-S-01.1 and S-S-03.1, and the catalogue is now in the "cat-1p" state.

The processing time for each of the steps was as follows:

Pipeline processing of 1995-03-23 (28 Aug 1995 09:02-10:42 CET):

Satellite	Elapsed time (mm:ss)	
	Flat file generation	CDF file generation
C1+CL	27:45	0:48
C2	24:49	0:39
C3	15:34	0:08
C4	24:22	0:39

Data ingestion (28 Aug 1995 12:01-12:04 CET):

dataingest took about 30 seconds for each of the 5 files.

PROBLEM:

The file C3_PP_EFW_19950323_V01.CDF contains no records. This is a problem we have reading the raw data, which we have not yet solved. However, there should be no problem during dataingest. The other 4 files are ok.

>From lindqvist@plasma.kth.se Mon Aug 28 16:26 MET 1995
Subject: SDC status SFT Day 1 pm

The SDC has completed SFT test cases S-S-02.1 and S-S-03.2, and the catalogue is now in the "cat-2a" state.

The processing time was as follows:

DCtoDC from GCDC (28 Aug 1995 14:15-14:59 and 15:33-15:43 CET):
7.5 files, 3834 kbytes transferred in 2631 seconds, transfer rate 14.6
kbits/s.

3 files, 787 kbytes transferred in 565 seconds, transfer rate 13.9
kbits/s.

(See also PROBLEMS below.)

Data ingestion (28 Aug 1995 16:03-16:09 CET):

dataingest took about 35 seconds for each of the 8 PP and 25 seconds
for each of the 2 SP files.

PROBLEMS:

The first attempt to transfer the 10 files crashed at 14:49 CET in the middle of the 7th file, with the error message (in GCDC_19950828.LOG):

```
150 Opening data connection for C4_PP_RAP_19950323_V01.cdf (192.171.4.97,1262)
550 Failed to send data on socket.
```

After this, the file product_file.gcdc was modified manually, and the transfer of the remaining 3 files was started at 15:33 CET, and completed successfully.

GCDC encountered a problem when fetching files from SDC in that the file protection of the EFW CDF files was incorrect. This was fixed, and GCDC then apparently retrieved the PP files successfully (the SP file appears not to have been fetched yet). Our apologies for this mistake.

>From lindqvist@plasma.kth.se Tue Aug 29 13:16 MET 1995
Subject: SFT day 2 am - SDC status

The SDC has completed SFT Day 2 am (29 August) test cases S-S-01.2, S-S-02.2 and S-S-03.3, and the catalogue is now in the "cat-2p" state.

The processing time for each of the steps was as follows:

S-S-01.2

Pipeline processing of 1995-03-24 (29 Aug 1995 09:27-12:05 CET):

Satellite	Elapsed time (mm:ss)	
	Flat file generation	CDF file generation
C1+CL	22:06	0:41
C2	25:35	0:43
C3	22:31	0:37
C4	21:45	0:38

S-S-02.2

DCToDC from all NDC's (29 Aug 1995 10:27-11:04):

NDC	Elapsed time	Number of	Volume	Speed
	mm:ss	files	kbytes	kbits/s
ACDC	37:20	5	1008	4.5
CFC	33:53	8	5259	25.9
HDC	05:53	1	231	6.6
UKDC	35:38	15	5059	23.7

The transfers were done simultaneously, all starting at 10:27 CET.

We note that the access from the other DC's to SDC was not simultaneous, but as follows:

ACDC	10:47-11:38 CET
CFC	12:08-12:17 CET
HDC	10:22-10:50 CET
UKDC	10:01-10:16 CET

S-S-03.3

Data ingestion (29 Aug 1995 12:34-12:59 CET):

The data ingestion took 24:43 minutes total for all files.

PROBLEMS:

We had internal problems generating PP C3 for 950324, but these were solved during the morning.

The file C1_PP_WHI_19950323_V01 from CFC was not fetched during the dctodc transfer, since it was still in the system since the tests done last Friday 25 Aug. The file C4_PP_STA_19950323_V01 was not fetched since it was not available at 10:27 when the dctodc was started. These two files will be fetched later (tomorrow?) There is also an extra

file CL_SP_STA_19950323_V02 made available recently.

As expected (see mail from Herve) there was an error in dataingest for the file CL_SP_STA_19950323_V01.

>From lindqvist@plasma.kth.se Tue Aug 29 16:18 MET 1995
Subject: SFT Day 2 pm - SDC status

The SDC has completed SFT Day 2 pm (29 August) test cases S-S-02.3 and S-S-03.4, and the catalogue is now in the "cat-3a" state.

The processing time was as follows:

DCtoDC from UKDC (29 Aug 1995 14:33-15:05 CET):

15 files, 4392 kbytes transferred in 1893 seconds, transfer rate 23.2 kbits/s.

Data ingestion (29 Aug 1995 16:03-16:13 CET):

dataingest took 10:08 minutes to ingest all 15 files.

PROBLEMS:

none.

>From lindqvist@plasma.kth.se Wed Aug 30 12:42 MET 1995
Subject: SFT day 3 am - SDC status

Dear Colleagues,

The SDC has completed SFT Day 3 am (30 August) test cases S-S-01.3, S-S-02.4 and S-S-03.5, and the catalogue is now in the "cat-3p" state.

The report on test group S-S-04 activities will be sent separately.

The processing time for each of the steps was as follows:

S-S-01.3

Pipeline processing of 1995-06-09 (30 Aug 1995 09:18-10:56 CET):

Satellite	Elapsed time (mm:ss)	
	Flat file generation	CDF file generation
C1	no raw data	
C2	no raw data	
C3	33:07	0:28
CL (from C3)	20:22	0:10
C4	35:51	0:13

Pipeline processing of 1995-07-07 (30 Aug 1995 11:28-11:39 CET):

Satellite	Elapsed time (mm:ss)	
	Flat file generation	CDF file generation
C1	no raw data	
C2	no raw data	
C3+CL	10:25	0:18
C4	no raw data	

S-S-02.4

DCtoDC from all NDC's (30 Aug 1995 9:00-10:55 CET):

NDC	Transfer started	Elapsed time mm:ss	Number of files	Volume kbytes	Speed kbits/s
ACDC	9:12 CET	17:00+8:10	5	910	6.0
CFC	9:00 CET	49:07	18	7774	26.4
GCDC	9:00 CET	46:16	10	3712	13.37
HDC	10:48 CET	8:09	1	231	20.4

The HDC file was actually transferred in 1:53, the rest of the elapsed time was due to the batch job having lower priority than the pipeline processing, which ran in parallel.

The transfer from CFC includes 3 files with data from 950323.

The time for access from the other DC's to SDC was as follows:

ACDC	10:28-10:56 CET
CFC	9:27-9:44 CET
GCDC	9:00-9:25 CET

HDC 10:54-11:14 CET

S-S-03.5

Data ingestion (30 Aug 1995 11:59-12:30 CET):

The data ingestion took 30:43 minutes total for all files.

PROBLEMS:

The files C3_PP_EFW_19950707_V01.CDF and CL_SP_EFW_19950707_V01.CDF contain no records. In this particular case we are not sure if this is due to the nature of the raw data for 1995-07-07, or if it is due to a known problem we have in the pipeline processing.

The DCtoDC to ACDC was delayed due to host crash at ACDC. The first transfer crashed during transfer of the last file. This file was fetched successfully on the second try.

The Internet connection to HDC was unavailable until around 10:30 CET.

As before (see mail from Herve 29 Aug 12:49) there was an error in dataingest also for the new version of the file CL_SP_STA_19950323_V02.

>From lindqvist@plasma.kth.se Wed Aug 30 20:56 MET 1995
Subject: SFT day 3 pm - SDC status

The SDC has completed SFT Day 3 pm (30 August) test cases S-S-02.5 and S-S-03.6, and the catalogue is now in the "cat-4a" state.

The processing time was as follows:

DCtoDC from CFC (30 Aug 1995 14:30-14:33 CET):

4 files, 480 kbytes transferred in 219 seconds, transfer rate 21.9 kbits/s.

Data ingestion (30 Aug 1995 16:00-16:04 CET):

dataingest took 04:31 minutes to ingest the 4 files.

PROBLEMS:

none.

I promised a report on the S-S-04 test case. I have not had time to write this yet. But to summarize, and as a comment on Gunter's experience, we have had no problems with response time. But a MAJOR problem is that Isdat keeps crashing, and also causing the dbh to crash, in particular when looking at the files from EDI, RAPID, STAFF and WHISPER. So doing the end user tests is very tedious, we have to keep restarting the dbh all the time. More details are to come.

>From lindqvist@plasma.kth.se Thu Aug 31 12:20 MET 1995
Subject: SFT Day 4 am - SDC Status

The SDC has completed SFT Day 4 am (31 August) test cases S-S-01.4, S-S-02.6 and S-S-03.7, and the catalogue is now in the "cat-4p" (or "cat-5a") state.

The processing time for each of the steps was as follows:

S-S-01.4

Pipeline re-processing of 1995-03-23 (31 Aug 1995 09:08-11:11 CET):

Satellite	Elapsed time (mm:ss)	
	Flat file generation	CDF file generation
C1+CL	26:17	0:49
C2	24:40	0:46
C3	27:58	0:42
C4	30:23	0:44

S-S-02.6

DCtoDC from all NDC's (31 Aug 1995 9:00-9:27 CET):

NDC	Transfer started	Elapsed time mm:ss	Number of files	Volume kbytes	Speed kbits/s
ACDC	9:00 CET	27:44	5	459	2.8
GCDC	9:00 CET	16:24	5	1164	11.8
HDC	9:00 CET	7:33	2	461	10.2
UKDC	9:00 CET	20:02	12	1517	12.6

The time for access from the other DC's to SDC was as follows:

ACDC	9:03-9:24 CET
GCDC	9:01-9:06 CET
HDC	9:02-9:12 CET
UKDC	9:00-9:05 CET

It seems that today the dctodc timing was close to perfect. From the SDC horizon, we see also that the bit rates were in general lower than on previous days.

S-S-03.7

Data ingestion (31 Aug 1995 11:31-11:49 CET):

The data ingestion took 17:41 minutes total for the 29 files.

OLD PROBLEM SOLVED:

The re-processing of 1995-03-23 is now ok also for satellite C3 (we had problems on SFT Day 1 with this). So the re-processing in our case actually generated more data.

PROBLEMS:

We find no SP files for EDI and RAPID from the GCDC.

We file no PP C4 files for DWP, FGM, PEACE from the UKDC.

Concerning test case S-S-04, the user access continues, with problems.

Due to the high workload of the other activities this week (and the low number of people (<2) involved in the SFT :-), we have not had the possibility to perform the various user access load cases as specified (reference case, low load, high load etc) but the tests have been somewhat random. We will continue to gather information on this aspect also after tomorrow, and we believe that the absence of pipeline processing and network transfers will not make much difference to the results.

Some of the problems are:

It is not possible to access the CUI server from several clients (on different platforms) using the same CSDSUI username. If this is done, Isdat is possible to run only from the client which logged in last.

Isdat frequently crashes, both the clients (cuistat, cuimeta, cuigr), and (which is more frustrating), the dbh. Sometimes there is a pattern to when the crashes occur, sometimes they appear quite random.

When trying to run several Catalogue browsers simultaneously, the Oracle message "Error in connecting" appears, which prevents any further use of the Catalogues for that user.

>From lindqvist@plasma.kth.se Fri Sep 1 00:00 MET 1995
Subject: SDC results from User load tests, part 1

Dear Colleagues,

Below is some information on the SDC activities within test group
S-S-04: End user performance.

Tests have been performed to check how long it takes for the system to
react to various requests. The requests below are to start up certain
clients, and a comparison of a few different Catalogue queries.

Four machines are used for the tests:

PLAFYA (Alpha/OpenVMS, the SDC host at KTH, also used to run clients)
PLAFYB (Alpha/OpenVMS, in same VAXcluster as PLAFYA, used for clients)
PLAFYC (Alpha/OpenVMS, in same VAXcluster as PLAFYA, used for clients)
milak (Sun/Solaris, remotely located at IRF Uppsala, used for clients)

Cases studied:

1. One user on local machine, PLAFYA
2. One user on other machine in house, PLAFYB
3. One user on remote Solaris machine, milak
4. Two users (both on PLAFYA)
5. Two users (both on PLAFYB)
6. Two users (both on milak)
7. Three users (all on PLAFYA)
8. Three users (on PLAFYB, PLAFYC, milak)

Table of the time it takes to (all times are in seconds):

(Case:)	1	2	3	4	5	6
Start CSDS UI SM	20	20	29	20	30	30
Start Cat Browser	20	28	33	30	31-37	31-35
Start Isdat	22-41	25-36	6	30-33	37-41	6
Start Simple Display	6	6	6	6-8	10	6
Execute a small query	27	23-32	26	44-48	46	49
Execute a medium query	36	36	33	65	61	69
Execute a large query	93	324	156	173	392	237
(Case:)	7	8				
Start CSDS UI SM	23-31	33-43				
Start Cat Browser	23-50	38-60				
Start Isdat	40-45	6-58				
Start Simple Display	8-12	6-19				
Execute a small query	70-73	65-70				
Execute a medium query	97-110	100				

Execute a large query 256-265 320-485

The activities were initiated simultaneously on all platforms (within 1-2 seconds). These tests were performed in the afternoon and evening of 31 August.

The time to start CSDS UI SM is the sum of the time before and after entering the username/password in the "Logon" window.

The "small query" was for ASPOC PP and SP, for one day 23-MAR-1995 00:00:00 to 24-MAR-1995 00:00:00. The "medium query" was for ALL data, for the whole available time period. The "large query" was for ALL data, for the whole time period, with the request to show all 6 "Interval attributes" in the Result.

In general, the execution time increases with the number of users and the "remoteness" from the host. A clear exception is starting Isdat on the Sun/Solaris, which always takes about 6 seconds.

The times to execute a query above about 30-60 seconds are not acceptable, in particular since there is no indication of whether the user actually managed to press the "Query" button. There is a message "Working..." appearing at the lower left corner of the "PP/SP D.B. Catalogues" window, but it does not appear until a second or so before the Result window appears, which is not very useful.

It would be interesting to compare the numbers above with those for other installations, in particular Solaris host/Solaris client and Solaris host/OpenVMS client configurations. Anybody volunteering?

Large file transfers initiated from the Catalogue browser have been difficult to perform due to disk quota limitations on the user account. It would be advantageous to be able to redirect the transferred files from sys\$login_device:[username.cui.cdfdb] to another disk. I have not yet been able to do this by fiddling with the logical names. Report on file transfers will follow later.

Isdat operations have also suffered problems. Several of the CDF files (notably EDI, RAPID, WHISPER, STAFF), cause the Isdat clients (cuistat, cuimeta, cuigr) to crash, and in many cases also cause the dbh to crash. The latter is very annoying, since the dbh then has to re-started (from the csdsadm account) which makes the testing very tedious. Details of the problems encountered, and hopefully also of performance measurements, will follow later.

Subject: SFT Day 5 am - SDC Status

The SDC has completed SFT Day 5 am (1 September) test cases S-S-05.2, S-S-02.7, S-S-03.8, and the CDDS access test, and the catalogue is now in the "cat-5p" state.

The processing time for each of the steps was as follows:

S-S-05.2

Fetching Summary plots from GCDC (1 Sep 1995 10:00-10:05 CET):
1 file, 315172 bytes, was transferred in 04:00, rate 13 kbits/s.
We have also unzipped and printed the Postscript file without problems.

S-S-02.7

DCtoDC from all NDC's (1 Sep 1995 10:00-12:32 CET):

NDC	Transfer started	Elapsed time mm:ss	Number of files	Volume kbytes	Speed kbits/s
ACDC	11:09 CET	31:37	5	1008	5.3
CFC	10:00 CET	43:01	10	6828	26.5
GCDC	11:42 CET	50:27	10	4212	13.9
HDC	10:00 CET	6:41	1	231	5.7
UKDC	10:00 CET	39:37	15	5059	21.3

The time for (successful) access from the other DC's to SDC was as follows:

ACDC	11:31-13:04
CFC	9:57-10:14
GCDC	10:00-10:25
HDC	10:03-10:43
UKDC	10:00-10:26

S-S-03.8

Data ingestion (1 Sep 1995 13:06-13:36 CET):
The data ingestion took 30:15 minutes total for the 41 files.

CDDS access tests (1 Sep 1995 11:07-12:03 CET):
12 files, 9243 kbytes were transferred in 55:43, rate 27.6 kbits/s.

PROBLEMS:

ACDC dctodc was started late due to host crash at ACDC.

GCDC dctodc was started late due to initial unavailability of data at GCDC.

Dataingest was late because we waited for the other tasks to finish first (including ACDC running dctodc). As expected the ingestion failed

for the file CL_SP_STA_19950323_V03.

CDDS file transfer from CDDSP to SDC was started late due to hanging ftp process at CDDSP/ESOC. The requests were actually submitted earlier. The problem started when I submitted a request.dds file, and the ftp transfer of this file to CDDSP hanged. I then aborted the transfer from the SDC end, but the ftp process at the CDDSP end still hanged. There was no problem submitting new requests, but the CDDS system treats the requests on a FIFO basis, and the first request file REQUEST.DDS;1 was still held open by the hanging ftp server process. Killing the hanging ftp on CDDSP solved the problem. I regard the hanging ftp as a serious problem. There should be a time-out in the ftp server. Should an SPR be submitted? (This is not a CSDS-UI matter.)

5.6 CDDS tests

Major tests of the Cluster Data Disposition System (CDDS) were carried out on 9 June 1995 (remote test from SDC), 19 June 1995 (local test at ESOC), and 26 July 1995 (coordinated CDDS load test). Results from these tests are summarized in the three reports below.

From: PLAFYB::LINDQVIST "Per-Arne Lindqvist, KTH Stockholm" 11-JUN-1995
17:42:48.45
To: MX%"gg@irfu.se",MX%"al@irfu.se",MX%"gh@irfu.se",NILSSON,FALTHAMMAR,
MX%MARKLUND,BLOMBERG
CC: MX%"mwarhaut@esoc.esa.de",MX%"msweeney@esoc.esa.de",
MX%"chadow@esoc.esa.de",MX%"mmerri@esoc.esa.de",
MX%"dnastasz@esoc.esa.de",MX%"rhunter@esoc.esa.de",
MX%"rschmidt@estec.esa.nl",MX%"mthomsen@estec.bitnet",
MX%"p.n.h.davies@sussex.ac.uk",
MX%"apederse@estcs1.DNET.ESTEC.ESA.NL",LINDQVIST
Subj: Real-time CDDS tests from KTH, summary

Dear Colleagues,

Here is a summary of the realtime tests I did on the CDDS from KTH on Friday 9 June 1995.

I did 4 separate runs, with the following sequence:

- a. I submit a request for the most recent data.
- b. I receive the data at KTH.
- c. I look into the SFDU to determine the time of the latest packet received.
- d. I submit a new request using this time as the first packet requested.
- e. Go to b.

In each run, the loop was gone through 10 times, thus receiving 10

files. The runs were as follows:

UT	Data
05:27-05:33	WEC HKD /SC=3
10:31-10:39	WEC NSD /SC=4
12:20-12:30	WEC NSD /SC=3
12:31-12:43	WEC NSD /SC=4

Summary of results:

- (1) The time to put a request (step a or d) is about 2 seconds.
- (2) The time for the CDDS to pick up the request and start transferring the file to KTH (the time between step a and b) is about 25 seconds, ranging from 11 to 49 seconds.
- (3) The time to transfer the data to KTH (step b) is dependent on the amount of data, but is about 15 kbits/s, ranging from 10 to 18 kbits/s. In the case of WEC NSD, the amount of data is about 50 kbytes per request, so the time for step b is about 35 seconds.
- (4) The time to handle the data a KTH and prepare a new request (step c) is about 1 second.
- (5) The total turnaround time for one request is the sum of the above:
 $2+25+35+1 =$ about 63 seconds.
- (6) The data received in one request are between about 65 and 120 seconds old.

My comments:

1. Is it not possible to bring down the time in (2) to below 25 seconds?
2. The effective network speed (4) between ESOC and KTH is about 15 kbits/s. Why do I not get closer to 64 kbits/s, which is the specified CSDSnet speed?
3. When I submit my requests to CDDS, I establish an ftp connection only once, and use this connection for subsequent requests. When ESOC returns the data to KTH, a new ftp connection is established for each data transfer. One way to save some time would be to use one connection for multiple data transfers also. Is this possible?

I plan to visit ESOC on 19 June to do some tests "in house" in PISA. The time to transfer data (4) should then be significantly faster than 15 kbits/s. But we will still be stuck with the 25 seconds pick-up time of the CDDS (2).

If anybody is interested in more details on the tests performed, please contact me.

Best regards,
Per-Arne

From: PLAFYS::LINDQVIST "Per-Arne Lindqvist, KTH Stockholm" 20-JUN-1995
01:15:11.98
To: MX%"gg@irfu.se",MX%"al@irfu.se",MX%"gh@irfu.se",NILSSON,FALTHAMMAR,
MX%MARKLUND,BLOMBERG
CC: MX%"mwarhaut@esoc.esa.de",MX%"msweeney@esoc.esa.de",
MX%"chaddow@esoc.esa.de",MX%"mmerri@esoc.esa.de",
MX%"dnastasz@esoc.esa.de",MX%"rhunter@esoc.esa.de",
MX%"rschmidt@estec.esa.nl",MX%"mthomsen@estec.bitnet",
MX%"p.n.h.davies@sussex.ac.uk",
MX%"apederse@estcs1.DNET.ESTEC.ESA.NL",LINDQVIST
Subj: CDDS tests in ESOC/PISA on 19 June 1995, summary

Dear Colleagues,

Yesterday morning, 19 June, I visited ESOC with the purpose of testing the CDDS system in house. The tests were performed using a Macintosh PowerBook 540c running System 7.5, with a twisted pair Ethernet connection. The software used for the ftp transfers was Fetch 2.1.2 from Dartmouth College and FTPd 2.1.0 by Peter Lewis.

Initially there were some problems, but they were soon sorted out. The Ethernet connections in PISA were not yet in place, so I had to use a socket in the Project Scientist office (the PS PC-2 connection). It was not possible to access CDDSP using the CSDSnet address 192.171.4.113, so I used the Internet address 131.176.60.10. I was later told that this was anyway the preferred address from the CLUSPILAN, since the traffic then only passes one single router (which I should have known, since this is documented).

I requested 2 files of 1 Mbyte each and 2 files of 9 Mbytes each, and the transfer speed to my Macintosh ranged between about 150 kbits/s and 170 kbits/s. Since the speed may be reduced by the FTPd server software allocating disk space, I also tried initiating (manually) ftp transfer from CDDSP and "put"ting and "get"ting files between 1 and 9 Mbytes large. The speed of "put" was 95 kbits/s and "get" 200-240 kbits/s.

This speed would reduce the time for step b in my message of 11 June from about 35 seconds (at 15 kbits/s) to 3 seconds (at 200 kbits/s), and the total turnaround time for one request would be about 30 seconds. It is difficult to tell what the age of the data received would be, but it should be between 30 and 60 seconds (between 1 and 2 turnaround times).

I had some discussions with Colin Haddow on the possibility of shortening the response time of the CDDS to below 25 seconds (time between steps a and b in my e-mail of 11 June). This appears very difficult to do with the present setup of the CDDS system.

I would like to thank the people who helped me sort out various problems in connection with the CDDS testing so far, in particular Colin Haddow

and Dave Nastaszczuk, who have been very supportive.

Best regards,
Per-Arne

From: PLAFYS::LINDQVIST "Per-Arne Lindqvist, KTH Stockholm" 26-JUL-1995
12:11:24.42
To: MX%"chaddow@esoc.esa.de"
CC: MX%"rhunter@esoc.esa.ce",MX%"mmerri@esoc.esa.de",
MX%"mdn@cluster.estec.esa.nl",MX%"gg@irfu.se",MX%"gh@irfu.se",
MX%"al@irfu.se",NILSSON,LINDQVIST
Subj: EFW results from CDDS load test 26/7

Dear Colin,

The time is now past 10:00 UT, and it is time to summarize today's CDDS load test from an EFW point of view.

I started by requesting a number of MASTER.CAT files, to assess what data were available. No errors there, except that I made a few mistakes myself in the qualifiers, which generated a few CDDS_DEFAULT.DAT files. The CDDS response time to the request was small.

Data are available from s/c 2, 3 and 4, but no data from s/c 1, which is contrary to Mario Merri's mail of 21 June 1995.

At 07:55 UT, I requested WEC NSD, 1 Mbyte each from s/c 2, 3 and 4. The CDDS response time to the request was small. The data were transferred successfully, with a data rate of about 1 Mbyte/6 minutes, or 28 kbits/s.

At 08:15 UT, I requested WEC HKD, also 1 Mbyte each from s/c 2, 3 and 4. Now the CDDS took longer time in responding, maybe because the other users had started working more actively (time was around 08:15 UT). There were problems in receiving the data: For s/c 3 there were 2 unsuccessful attempts before the file was transferred. For s/c 4 the ftp transfer was successful. For s/c 2 the data were transferred later, at 09:07 UT (after the CDDS reboot). The data rates were as before, about 28 kbits/s.

At 08:46 UT, I requested WEC BSD, also 1 Mbyte each from s/c 2, 3 and 4.

Now CDDSP was apparently overloaded, since there was a standalone reboot at 08:50 UT. I was logged in on CDDSP as well during the tests, so I got the shutdown message. But you do have a fast reboot (5-6 minutes only)!

Of the 3 request files for WEC BSD, only the first was picked up by CDDS before the reboot. The other two (s/c 3 and 4) were picked up later, around 09:08-09:15 UT. The data were transferred 09:16-09:30 UT, and the transfer rates were as before.

At 09:21-09:27, I submitted requests for the auxiliary files for all s/c. Here I was a bit too quick, and exceeded the maximum number of outstanding requests, so I had to resubmit my requests. But all

available files were received without problems.

In summary, from my point of view, the tests went well, even if you had a reboot of CDDSP in the middle. Congratulations!

Best regards,
Per-Arne

6 SDC user documentation

The SDC specific user documentation consists of a *user manual* intended for the science user [Ref. 3], and a *SDC operator's manual* intended for internal SDC use [Ref. 3]. In addition there are user's manuals provided by the CSDS User Interface.

6.1 SDC User Manual

The *SDC user's manual* [Ref. 4] is up to date.

6.2 SDC Operator's manual

The operator's manual [Ref. 3] is up to date.