Interface Control Document for the Scandinavian Data Centre

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3. Issue	4. Revision	5. Date	6. Reason for Change
Draft	1	92 Apr 3	
1	1	92 Dec 21	Changes related to moving CSDS EFW DB production from CNES to SDC. Figures A1 and A2 combined to one figure
1	2	93 Jan 28	Specified data storage duration. Corrected misprinted ISO code number.
1	3	93 Nov 29	Added restriction on software distribution RFA No CSDS-RR-103. New layout of the document.
2	0	94 Apr 6	Numerous changes following the architectural design review. Removed the architectural design diagrams (former Appendix A). Moved the schedule to Appendix C
2	1	94 May 3	Section 3.1 FGM calibrations from the FGM PI, not from the UKCDC.
2	2	94 June 13	Section 4: Refer to CSDS UI ICD for CDF version to be used. Section 6: Clarified that the CSDS UI only does access control for the PPDB and SPDB, not the Summary Plots.
2	3	94 Oct 10	SDC EFW planning services removed. Summary plots produced by the GCDC. EFW Calibration files distributed via CNES. Interface to ASPOC updated. This revision goes directly into the Super-ICD.

Contents

1 Scope of the Document

This document defines the interfaces between the Scandinavian Data Centre (SDC) and the rest of the Cluster Science Data System (CSDS) in terms of information interchanges, connectivity and the standards to be adopted for data and software interchange.

2 Data Products, Development phase

2.1 Input

During the development phase the SDC will require:

- User interface software from the CSDS Project.
- Simulated RDM data from OCC/ESOC
- Simulated DDS data from OCC/ESOC
- FGM software and calibration files from FGM PI
- WHISPER, PEACE, ASPOC, CIS, EDI data from other DC:s for inter-calibration with EFW during initial data taking phase
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- Simulated non-EFW SPDB, PPDB data from other DC:s
- Splots from the GCDC

2.2 Output

During the development phase the SDC will provide:

- EFW calibration files to the WEC calibration file ftp server at CNES after PI agreement.
- EFW software to other DC:s after PI agreement.
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- EFW data for intercalibrations with other instruments during initial data taking phase
- Simulated EFW PPDB, SPDB data to other DC:s

3 Data Products, Operational Phase

3.1 Input

During the operational phase the SDC will require:

- CIS, STAFF, and WHISPER SPDB from the CFC
- ASPOC SPDB from the ACDC
- FGM, PEACE, and DWP SPDB from the UKCDC
- EDI and RAPID SPDB from the GCDC
- CIS, STAFF, and WHISPER PPDB from the CFC
- ASPOC PPDB from the ACDC

- FGM, PEACE, and DWP PPDB from the UKCDC
- EDI and RAPID PPDB from the GCDC
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- Splots from the GCDC
- FGM calibrations and software updates from the FGM PI
- RDM from ESOC
- EFW part of DDS file from ESOC, selected periods
- -
- EFW command log from OCC/ESOC
- -
- FGM DDS data from the FGM PI.
- ASPOC DDS data from the ASPOC PI
- Auxiliary parameters from the HDC
- -

3.2 Output

During the operational phase the SDC will provide:

- EFW SPDB data to CSDS DC:s
- EFW PPDB data to CSDS DC:s
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- EFW calibration files to the WEC calibration file ftp server at CNES after PI agreement.
- Full SPDB data to the Scandinavian[1] scientific community
- Full PPDB data to the Scandinavian Cluster community for up to four months of data on line
- Full SPlots to the Scandinavian scientific community
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- EFW software to other DC:s. Distribution of software and calibration functions for EFW is subject to formal PI agreement on a case by case basis.
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- EFW DDS data for health check and quick look scientific analysis for selected periods to EFW Co:Is

4 Data Formats

The SPDB and PPDB data will be in CDF format, in CDF version specified in the CSDS User Interface, Interface Control Document, CL-ESR-ID-0001. Splots will be in PostScript format.

[1] Scandinavian should be understood as Sweden, Norway, Finland, and Denmark

5 Transport Medium

Raw data will be supplied by ESOC on CD-ROM. The data transport from the SDC to the users and other DC:s is to take place over the networks. The inter-DC network capacity is to be provided by the CSDS project.

6 Access Rights

Access to the PPDB and SPDB data bases will be controlled by CSDS User Interface. The intention is to make the SPDB copies, residing at the SDC, available to the general Scandinavian scientific community, and the PPDB and SPlots available to the Scandinavian Cluster community. In addition, EFW PI representatives will have access to certain EFW instrument related functions such as instrument health check tools, and calibration updating tools.

7 Software and Documentation Interchange Standards

Documents will be exchanged in ISO 8859-1 (ASCII with 8 bit extension) or PostScript formats. zip and ship will be supported. Open-VMS operating systems will be used at the SDC. Software will be written in ANSI C and FORTRAN languages. All relevant documents will be written in the English language.

8 Network Connectivity

The SDC has good connections to networks as described in Appendix A. The network to be used is CSDSnet.

A Network Connections to the Scandinavian Data Centre

The Scandinavian Data Centre is to be physically located at the Department of Plasma Physics at the Royal Institute of Technology (KTH), Stockholm. At present, the Department has good computer network connections to the outside world, both via the TCP/IP protocol (Internet) and the DECnet protocol (European SPAN).

Within Scandinavia, a well established, multi-protocol network, NORDUnet, exists and connects the countries Denmark, Finland, Iceland, Norway and Sweden. The hub of this network is at KTH, just 200 m from the Department of Plasma Physics. From NORDUnet the connections are:

- 1.5 Mbits/s TCP/IP connection to Amsterdam.
- 2 Mbits/s TCP/IP connection to Cornell University, Ithaca, New York, USA.
- 64 kbits/s DECnet connection to Amsterdam.

The Department computers are connected both to European SPAN (DECnet) and to Internet (TCP/IP). Electronic mail connections also exist for EARN/Bitnet.

B List of Acronyms and Abbrieviations

ACDC	Austrian Cluster Data Centre
ANSI	American National Standards Institute
ASCII	American Standard Code for Information Interchange
ASPOC	Active Spacecraft Potential Control
C	Programming language
CFC	Centre Fran cais Cluster
CDF	Common Data Format
CIS	Cluster Ion Spectrometry
CNES	Centre National d'Etudes Spatiales
Co:I	Co-Investigator
CSDS	Cluster Science Data System
DAT	Digital Audio Tape
DC	Data Centre
DDS	Data Disposition System
DECnet	Digital Equipment Corporation's communications products
EARN	European Academic Research Network
EDI	Electron Drift Instrument
EFW	Electric Fields and Waves
ESANET	ESA Network
ESOC	European Space Operations Centre
FGM	Flux-Gate Magnetometer
GCDC	German Cluster data Centre
HDC	Hungarian Data Centre
IRF-U	Institutet för Rymdfysik, Uppsalaavdelningen, Swedish Institute of Space Physics, Uppsala Division
ISO	International Standards Organisation
IXI	International X.25 Infrastructure
KTH	Kungliga Tekniska Högskolan, Royal Institute of Technology, Stockholm
OCC	Operations and Control Centre
PEACE	Plasma Electron And Current Experiment
PI	Principal Investigator
PPDB	Prime Parameter Data Base
RAPID	Research with Adaptive Particle Imaging Detectors
RDM	Raw Data Medium
SDC	Scandinavian Data Centre
SFDU	Standard Formatted Data Unit
SPAN	Space Physics Analysis Network
SPDB	Summary Parameter Data Base
SPlots	Summary Plots
TBD	To Be Defined
TCP/IP	Transmission Control Protocol / Internet Protocol
UK	United Kingdom
UNIX	Operating system
VMS	Operating system
WHISPER	Waves of HIgh frequency and Sounder for Probing of Electron density by Relaxation