Automated Data Management of SLR Data and Products at the EUROLAS Data Centre (EDC)

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Overview

- Past, present, future developments at the EDC
- System architecture
- Data flow within the ILRS and at the EDC
- ILRS - Mailing lists
- EDC - Website
Past, Present, Future

Since the beginning of the EDC, only few changes in the software for the management of SLR data and products were made.

- An upgrade from the old software to a new hardware respectively new operating system is hard to manage.
- The old system was operated semi-automatic.
- Increasing amount of data.
- Requirement of hourly data exchange with CDDIS/ITT.

**Objective:** Develop of a new software for the management of SLR-data and products.
Past, Present, Future

- Software development started at the beginning of 2010
- Changeover to the new system in Fall 2010
- Further software development has to be done with a view to the construction of a high-availability cluster
- At the beginning of 2012
  - Shut down of the old server
  - Software development completed
System Architecture (past)

Internet

dghi3.dgfi.badw-muenchen.de
129.187.165.3

- Manual backup on internal server.
- No backup server available for the operational system
System Architecture (present, future)

Internet

- Minimisation of down time through port forwarding and changing IP addresses
- Backup for the operational system and data

edc.dgfi.badw.de

Internal synchronisation (data, WWW, database)

edc1.dgfi.badw.de 129.187.165.11
edc2.dgfi.badw.de 129.187.165.12
System Architecture (present, future)

Very Important!

EDC-Access:

http://edc.dgfi.badw.de

Don't use !!!:

http://129.187.165.3
http://129.187.165.11
http://129.187.165.12
http://dgfi3.dgfi.badw-muenchen.de
http://edc1.dgfi.badw.de
http://edc2.dgfi.badw.de

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Data Flow within the ILRS

ITT

CDDIS

EDC

Data Exchange

Daily (10:30 UTC)
NP, NPT
Hourly (xx:30 UTC)
NP, NPT

Hourly:
NP, NPT

Daily (00:30 UTC):
NPT, FRD

Daily:
NP, FR
NPT, FRD

NP, FR
NPT, FRD

Daily:
EOP, POS
Weekly:
EOP, POS, Orbits

CPF

SLR-Stations

Analysis/Combinations-Centres

Prediction Providers

C.Schwatke, Data Formats & Procedures Working Group
Data Flow at EDC

Past, Present:
- FR, FRD, NP, NPT and CPF via FTP
- NP, NPT and CPF via Mail

Future plan:
- Reduction of data transfer via mail
  - Problems with junk mail
  - Problems with encoding and attachments of mails (e.g. SLR-Mail)
- Own FTP Account for each station and provider
  - Improvement of the security
Data Flow at EDC

- Identification of data type (NP, NPT,...)
- Save original file/mail in archive
- Split multi-pass files
- Save every pass as new data set in DB
- Unique key consists of `station, satellite, start date, end date` and `version` for NP, NPT, FR, FRD data
- Unique key consists of `provider, satellite, start date, end date` and `version` for CPF data
Data Flow at EDC

- Smaller format errors will be corrected automatically
- Original data set will be kept untouched in DB with incoming data and file name
- Unix commands such as `diff` and `patch` are used for the correction
- Only the patch will be saved additionally in DB
  - If errors can't be corrected the station manager will be informed manually (at present)
  - In future the notification will be send automatically shortly after submission via mail

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C. Schwatke, Automated Data Management of SLR Data and Products at the EDC
Data Flow at EDC

ftp
(Incoming)

Fetch Data

Mailbox

Incoming Data

Identify, Split and Check Data

Archive

All valid data sets will be copied on FTP

CPF will be send via mail

Hourly and daily data exchange with CDDIS and ITT

Distribute Data

FTP (Public)

Predictions (Mail)

CDDIS/ITT

Database

Automatic Error Correction

C.Schwatke, Automated Data Management of SLR Data and Products at the EDC
The EDC maintains the **SLRMail, SLReport** and **Urgent** mailing list

Currently every mailing list is handled by own scripts

Problems:
- Semi-automatic
- Encoding of mails and attachments
- Special tags for author and subject are needed

Solution:
- Transition to open source software Mailman
- Automatic, no problems with encoding and special tags
- Mailman is currently in testing phase at EDC
- SLRMail will follow when transition is completed
EDC - Website

- New website of the EDC is under construction
- Features:
  - Near real time access
  - Current status of data sets (NP, NPT, FR, FRD and CPF) are available
  - Statistics about data holding
  - Direct access to operational database
  - Search function
- The launch will be announced via SLR-Mail in the next months

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