The VLT Data Flow System

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ESO aims to:

• maximise the scientific return of the VLT
• ensure quality and long-term usefulness of data
• ensure the performance of instruments

Therefore ESO must:

• make it possible to use the resources of the VLT flexibly, responsively, intelligently and easily
• calibrate, monitor and simulate the VLT instruments
To achieve these goals the VLT must have:

- a unified, simple interface to telescope and instruments
- processing on-the-fly
- flexible scheduling
- calibration plans for all instruments
- automatic monitoring of instrument performance
- detailed instrument models
The **Data Flow System** is composed of a collection of software components for preparation and scheduling of observations, archiving of data, pipeline data reduction and quality control.

**Our customers are:**
- Visiting Astronomers Section
- User Support Department
- Data Flow Operations Department
- Paranal-La Silla Science Operations
- ESO Community
DFS Front-End Tools - ETC

Calibration Workshop, January 2007 - 5
DFS Front-End Tools -P2PP
The main missions of the instrument pipelines are:

- Process raw calibration frames into master calibration
- Produce QC parameters for monitoring telescope, instrument and detector performance
- Process raw science frames into science data products

The quality of the products is limited by:

- Quality of input data (raw +calibration)
- Set of standard parameters (on-line)
- Quality of the algorithms
An instrument pipeline is:

- Set of data processing executables called Pipeline Recipes built on top of the Common Pipeline Library.

An instrument pipeline runs in the following environments:

- On-line (Paranal), in an automatic manner with default settings.
- Off-line (Data Flow Operations), in an automatic manner.
- On the Desktop, interactively.
On-Line-DFO Environment

Data organization (OCA)

Raw files
Calib products
rules

Assoc blocks

Data processing (Condor + CPL)
EsoRex supports the execution of pipeline recipes from the command line.

Recipe name, input files and parameters must be provided on the command line.

Pipelines and tools can be downloaded: www.eso.org/pipelines
- VLT interactive data organisation tool
- FITS file browsing
- Grouping
- Classification

- Interactive front-end
  - Interface to CPL plugins
  - Interface to visualization tools

- Next Generation tool: Reflex (next presentation)
Observation Preparation Tools
- Support for surveys

• Surveys will involve many OBs per run (~1,000 per semester?)
• They will require observations of large fields (many pointings)
• They will require repeated observations over a time span, with a given frequency
• They will require sets of observations to be performed over a short interval (near-simultaneity)
• They will require a sequencing of the observations so as to maximize the scientific value of intermediate release products
• Groups contain internal scores driving the scheduling of their components
• Time links and concatenations are defined in a straightforward way
• Grouping in containers facilitates the overall view and organization of the survey
• The implementation of containers will also be valuable for operations at VLT, VLTI, La Silla
Read the Call for Proposals

Submit an observing proposal

Find out the status of the OPC review

Prepare and submit OBs (SM only)

Specify where the resulting data are to be sent (SM only)

Request (supporting) data from the Archive

USD-based applications, OPC-related applications, ESO-internal applications
Download the ESOFORM package.

Find web page, and download.

Upload the finished proposal.

Find WASP web page and upload.

Review the weblet letter report.

Find another web page, and login (ID?).

(If successful) use P2PP to prepare OBs, Finding Charts, and README file.

Download P2PP (where?), login (ID?), and receive notice of submission.

(If OBs are executed) receive the SM data.

But I’m on sabbatical, …
User Portal - Current Situation

Archive Data Request

Look through the Archive for the data

Use the new Archive web search interface

Login (authenticate).

Username?  Password?  Not the P2PP …

Receive the data.

But I’m on sabbatical!
Wouldn’t it be better if…

links for the whole flow were in one place

each person had control over their username and password

usernames and passwords were used for both Phase 1/2 and Archive access

each person could manage where their data is sent, just like they do when they order things online?
User Portal - Account Manager