ESO Phase 3: Submission for Ingestion and Publication of Data Products via the ESO Science Archive Facility

Magda Arnaboldi

ESO, External Data Product Group
ESO Survey Team (EST) leader

Outline

- Phase 3 – definition and high-level goals
- Phase 3 for Public Surveys : data products types and delivery timeline
- Conclusions

Phase 3

- Phase 3 represents the final step in the execution of ESO Large Programs and Public Surveys; it closes the loop with the user community, and is a joint effort of the PIs/CoIs with ESO/EST/EDP.

- Phase 3 deliveries –

  - for Large Programs, these are the presentation web page and the data products which are consistent with Phase 1 specifications.

  - for Public Surveys, these are the survey data products and the QC report as stated and agreed upon in the Survey Management Plans. Timeline for delivery is described in the contracts signed by ESO DG and PIs.

Phase 3

External Data Product (EDP) group within the Data Product Department – members of EDP are: M. Arnaboldi (Head), Joerg Retzlaff, Remco Slijkhuis.

Phase 3 - The whole process to be carried out by the PI dealing with the publication of his/her data products in the ESO science archive facility (SAF). It consists of:

- Delivery of the data package(s)
- Their validation
  - Tool - Data formats
  - EDP – metadata, consistency of data products with Phase 1/ SMP
  - EST – guideline for the validation of the data products.
- The ingestion of the data products in the SAF.
- Publication and access of data products from the ESO SAF.

This requires a set of policies/guidelines and tools dealing with the above.

Phase 3 - ESO PS data products

As for the Phase 1 & 2, the PI is fully responsible for:

1) the preparation and delivery (technical) of the data products,
2) ensuring the scientific standard; and
3) the versioning of the data products from the public survey project.

The EDP group will support and guide the PIs to the successful completion of their program's Phase 3.

The EDP group is in charge of the collection of data products from the PIs, their validation and their ingestion into the ESO archive.

To this end a set of inter-operating software tools is being developed.

Phase 3 Tools for ESO Public Surveys

- Submission of data products to the ESO archive will be done via a Phase 3 infrastructure currently being developed by ESO.

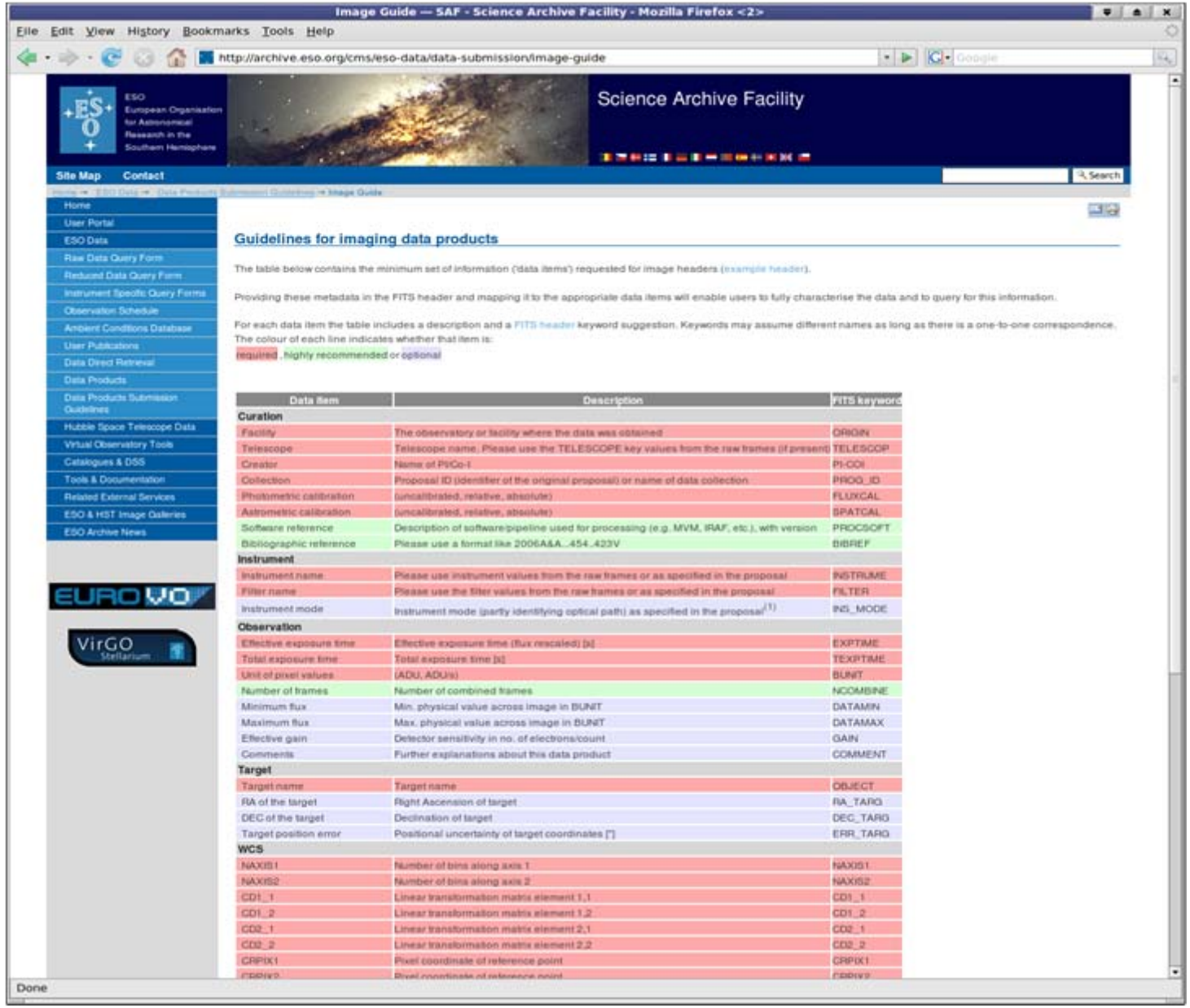
- A "Phase 3" workshop for the Survey PI will be organised at ESO in the second half of 2010

Phase 3 Tools for ESO Public Surveys

- The structure and format of data products have to comply with ESO standards.

- The data standards applicable to ESO survey data products will be compiled and advertised by ESO/EDP in the first half of 2010.

Examples of guidelines for the submission of data products (images) resulting from ESO Large Programs



ESO Public Surveys : data product types and delivery timelines

Summary table of deliverables at t_0+ 6 months and their frequency

Survey	Deliverable#1 Tiles and confidence maps	Deliverable#2 Single band catalogues for each tile	Deliverable#3 Aperture Matched multi band catalogues	Deliverable#4 Source variability catalogues and light curves	When? 1st delivery: after 6 months	Frequency Every six months
ULTRAVISTA deep	Y, J, H, Ks , NB118	x	x		x	x
ULTRAVISTA ultra-deep	Y, J, H, Ks , NB118 (stripes)	x	x		x	x
VHS	Y, J, H , Ks	x	x		x	x
VIDEO	Z, Y, J, H, Ks	x	x		x	x
VVV	Z, Y, J, H, Ks	x	x[1]	x	x	x
VIKING	Z, Y, J, H, Ks	x	x		x	x
VMC	Z,Y,J, H, Ks	x	x[1]	x	x	x

[1]: variable stars should be flagged in these catalogues

Calibrations: Deliverables #1, #2, and #3 have single-night based calibrations.

ESO PS data products delivery – cont.

Summary table of Advanced Data Products survey releases at t_0+18 months and their frequency

Survey	ADP: Stacked tiles[2]	ADP: Catalogues	ADP: Multi-epoch catalogues and light curves	When? T0+18 months	Frequency yearly	Survey final release (after 5th year)
ULTRA-VISTA	Stacked image of all data up to that date (tile for deep part, and stripes for the ultra-deep one)	Aperture-matched multi-band catalogue from deep stack	no	x	x	yes
VHS[3]	no	Source catalogue on the whole survey area available at the delivery date	no	x	x	yes
VIDEO	Stacked images of the fields up to the delivery date	Aperture-matched multi-band catalogue from deep stack of the fields	yes	x	x	yes
VVV	x	Source catalogue on the whole survey area available at the delivery date	yes Multi epoch catalogue in Ks band for the survey area available at delivery date	x	x	yes
VIKING[3]	x	x	yes	x	x	yes
VMC	x	x	yes Multi epoch catalogue for the survey area available at delivery date	x	x	yes

Summary table of advanced data products – cont.

2: for the bands of the ADPs stacked tiles see Table 1.

3: For VHS and VIKING, the Deliverable#1, i.e. the image tile, has already the depth and S/N targeted for that pointing position on the sky. The Survey release would then provide the revised astrometry and photometry globally calibrated. It may imply an update of the metadata associated with the deliverable#1, rather then a resubmission of the fits files for these tiles.

Calibrations: delivered ADPs must have uniform photometric and astrometric calibrations that are checked globally.

ESO PS data products delivery - cont.

Important: timelines for deliveries of data products are agreed between the ESO DG and the survey PIs.

They are also associated with, and in preparation to, the survey progress reviews by the Public Survey Panel and the reports to the OPC.

Conclusions

The submission of data products from public surveys for publication from the ESO archive fulfills the requirements set by the ESO policies for public surveys.

- The benefits of the publication of data products and simple access by the community at large are numerous:
  - Enhance the legacy value of ESO data, facilitating further scientific exploitation
  - Uniform distribution of data products through the ESO Science Archive facility (search interfaces, complex queries etc.)
  - High visibility of data products and scientific results
  - Global broadcast to VO resource registries
- Contact usd-help@eso.org, subject: EDP - ADP Submission to get help for the submission of your data products!