



# European Organisation for Astronomical Research in the Southern Hemisphere

Organisation Européenne pour des Recherches Astronomiques dans l'Hémisphère Austral  
Europäische Organisation für astronomische Forschung in der südlichen Hemisphäre

## **Data Management and Operations Division**

### **Archive Department**

# **Archive Users Manual**

## **Retrieval of data with the Download Manager and Data Access Delegation**

Doc. No.: GEN-MAN-ESO-32000-5164

Issue 1.0

Date: 14 March 2011

## Change Record

Issue	Date	Affected parts	Remarks
1		All	New document.

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# 1 Introduction

## 1.1 Scope

Up until the beginning of 2011 electronic delivery of data from the ESO Science Archive was conducted through the use of ftp from a user dedicated staging area. The user would have access to publicly available data as well as their own proprietary data. This manual describes new services put into place – the ESO Archive Requests facility – to improve the electronic data access and also provide PIs with the option to delegate data access to their collaborators – the Data Access Control, also called Data Delegation. The manual describes how to use the new features in the context of the existing User Portal and Data Query forms.

The new services are at first deployed in parallel to the old ones that are rapidly approaching retirement due to the aging of the underlying hardware components and obsolete technologies in use.

The following diagrams provide an overview of the new features available in the ESO User Portal and Archive services. Details of how to fully use the applications are provided in Sections 4 through 6.

## 1.2 New download capability

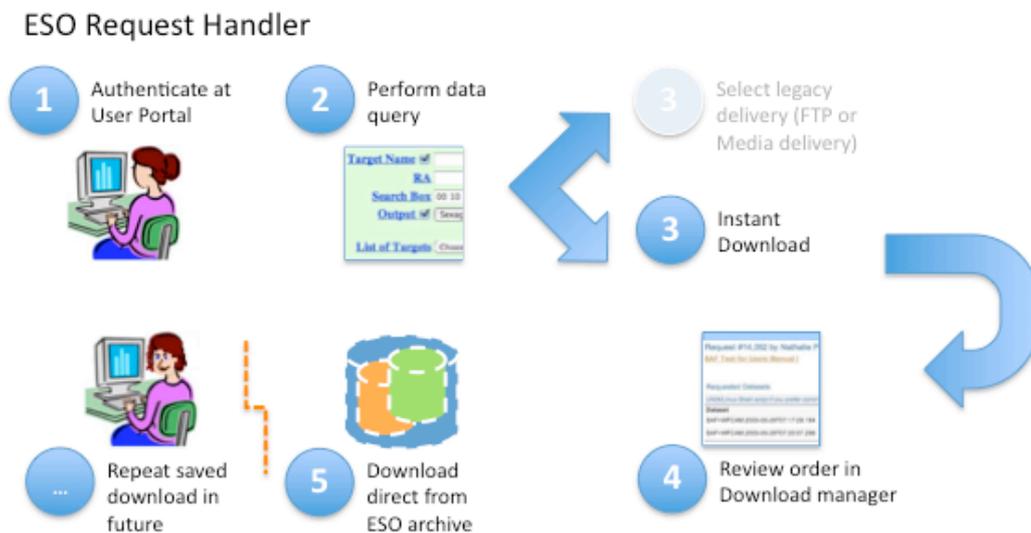


Figure 1 Schematic illustrating use of the new download capability.

### 1.3 Data access delegation

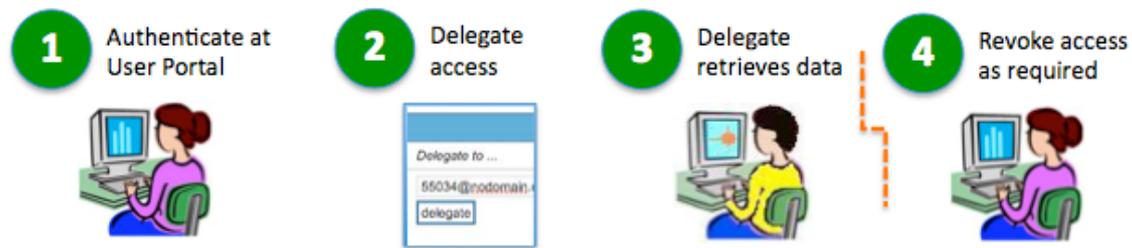


Figure 2 Schematic illustration of data access delegation

## 2 List of OS, java licences and browsers needed to use the new ESO Archive Requests facility.

The OS, Java and Browsers fully supported for the use of the application are the following:

- o Java 1.6.0 patch level 18 and above
- o Scientific Linux 5.3: Firefox 3.6
- o MacOSX 10.6 (Snow Leopard): Safari 4, Firefox 3.6 and Google Chrome
- o MacOSX 10.5 (Leopard): Safari 5, Firefox 3.6
- o Windows (XP, Vista and 7): Internet Explorer 8, Firefox 3.6 and Google Chrome 9
- o Solaris 10: Firefox 3.6

Older versions are not recommended since unexpected behaviour may occur.

## 3 ESO Policies

All data obtained with ESO telescopes are property of ESO. This also applies to all data taken during ESO time on other facilities (e.g. APEX, GRANTECAN).

ESO grants PIs sole access to the data for a predefined "proprietary period" (usually one year from the moment the data were made available to the user). PIs may delegate access to data to one or more collaborators.

After the proprietary period has expired, the data are released to all users worldwide (current default), but ESO reserves the right to restrict access to some or all data to users from selected countries (for example users from ESO Member States, the default before 2004).

After the expiration of the proprietary period, the PIs, their delegates and Co-Is are considered to be regular users (more information to be found at the following link: <http://archive.eso.org/cms/eso-data-access-policy>).

The factor determining the user's country is their affiliation (and not, for example, the user's citizenship).

## 4 User Guide

### 4.1 Search Definition

There are several ways to submit a request of data depending on which query forms have been used.

From the entry point <http://www.eso.org/sci> the user can access the <http://archive.eso.org/> web page as can be seen from Figure 3 and 4.

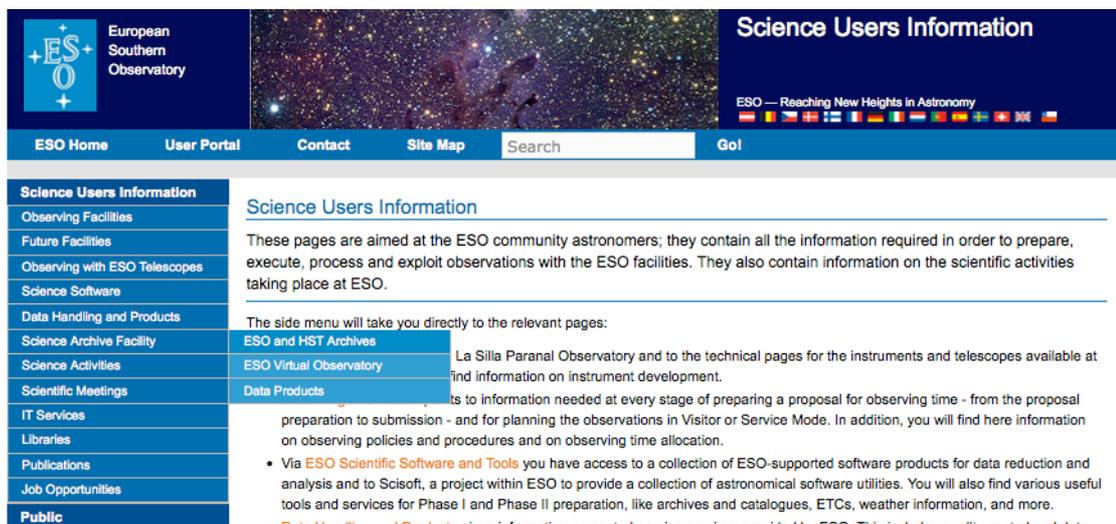


Figure 3 Access to the ESO/HST Archive pages

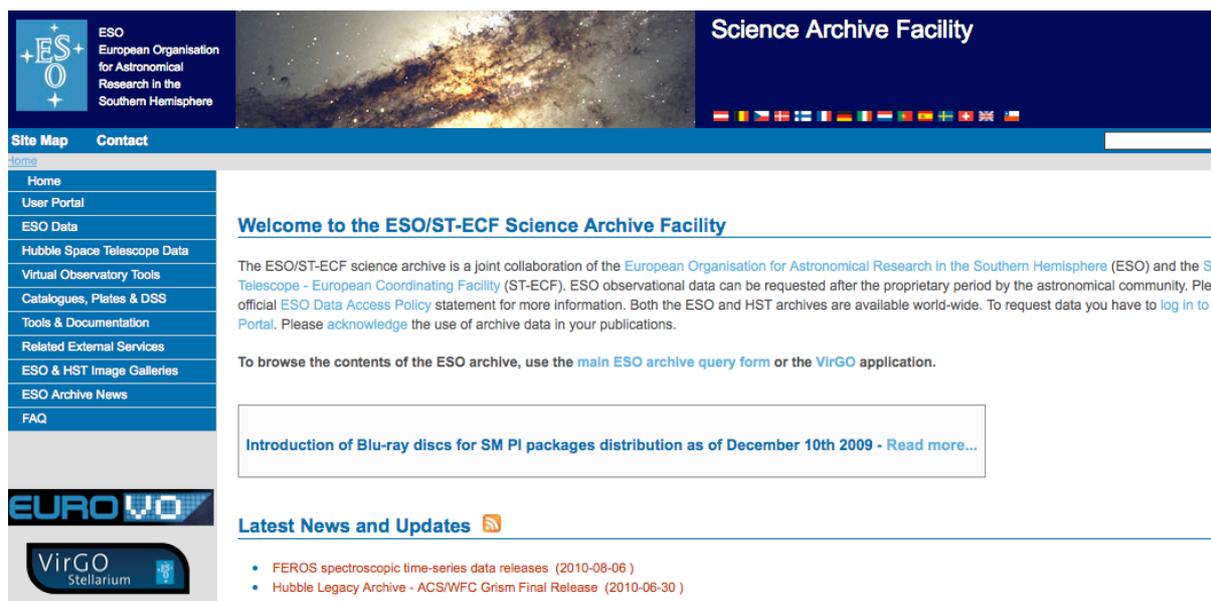


Figure 4 ESO Archive

Once on the Archive page (<http://archive.eso.org/cms/eso-data>) several query forms are accessible:

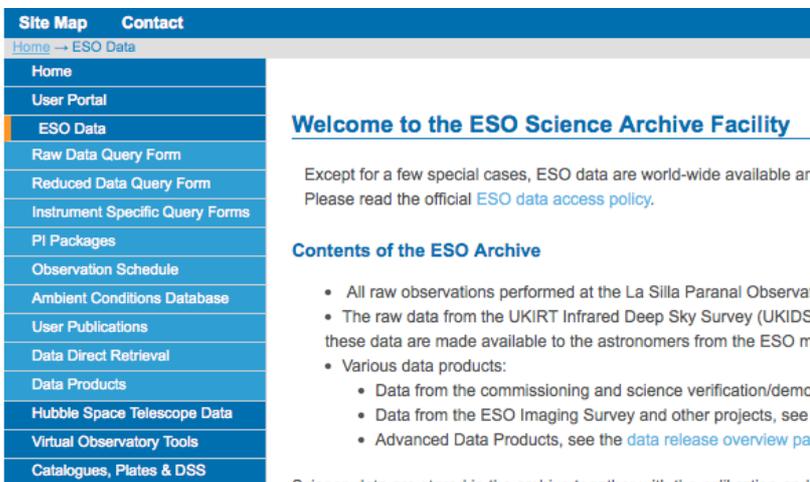


Figure 5 Available query forms

Specifically the ESO generic query form for example (at [http://archive.eso.org/eso/eso\\_archive\\_main.html](http://archive.eso.org/eso/eso_archive_main.html)):

If you would like to query the Archive for instrument specific parameters, please use the [dedicated query](#). To search for **reduced Data Products**, please have a look at the [ESO Data Products](#) page and the [Advanced](#)

*The checkboxes on the right of the parameters define whether or not they will be displayed on the query results.*

SEARCH ShowAll ShowNone Reset

### Target, Program and Scheduling Information

<p><b>Target Name</b> <input checked="" type="checkbox"/> <input type="text"/> Resolved by SIMBAD <input type="text"/></p> <p><b>RA</b> <input type="text"/> <b>DEC</b> <input type="text"/> <b>J2000</b></p> <p><b>Search Box</b> <input type="text" value="00 10 00"/> <b>Input</b> RA(h) DEC(deg) <input type="text"/></p> <p><b>Output</b> <input checked="" type="checkbox"/> Sexagesimal (h, deg) <input type="text"/></p> <p><b>List of Targets</b> <input type="button" value="Choose File"/> no file selected</p>	<p><b>Night</b> <input type="checkbox"/> <input type="text"/></p> <p><i>OR give a query range</i></p> <p><b>Start</b> <input type="text"/> 12 hrs [U]</p> <p><b>Program ID</b> <input checked="" type="checkbox"/> <input type="text"/></p> <p><b>PI CoI</b> <input type="checkbox"/> <input type="text"/></p> <p><b>Title</b> <input type="checkbox"/> <input type="text"/></p>
--	--

### Observing Information

<p><b>Imaging</b></p> <p><input type="button" value="ALL"/> <input type="button" value="NONE"/></p> <p><input type="checkbox"/> VLT/FORS1</p> <p><input type="checkbox"/> VLT/FORS2</p>	<p><b>Spectroscopy</b></p> <p><input type="button" value="ALL"/> <input type="button" value="NONE"/></p> <p><input type="checkbox"/> VLT/CRIRES</p> <p><input type="checkbox"/> VLT/FORS1</p>	<p><b>Interferometry</b></p> <p><input type="button" value="ALL"/> <input type="button" value="NONE"/></p> <p><input type="checkbox"/> VLT/MIDI</p> <p><input type="checkbox"/> VLT/MIDI</p>	<p><b>Other</b></p> <p><input type="button" value="ALL"/> <input type="button" value="NONE"/></p> <p><input type="checkbox"/> APEX/HET</p> <p><input type="checkbox"/> APEX/BOL</p>
---	---	--	---

Figure 6 ESO generic query form

## 4.2 Selecting retrieval options

Once the “Search button” is clicked an ESO Archive Query Results page is presented ([http://archive.eso.org/wdb/wdb/eso/eso\\_archive\\_main/query](http://archive.eso.org/wdb/wdb/eso/eso_archive_main/query)). After marking the data/files to be requested, the user has now the choice between two buttons to retrieve the data: the “Instant Download” button and the “FTP or Media delivery” button.

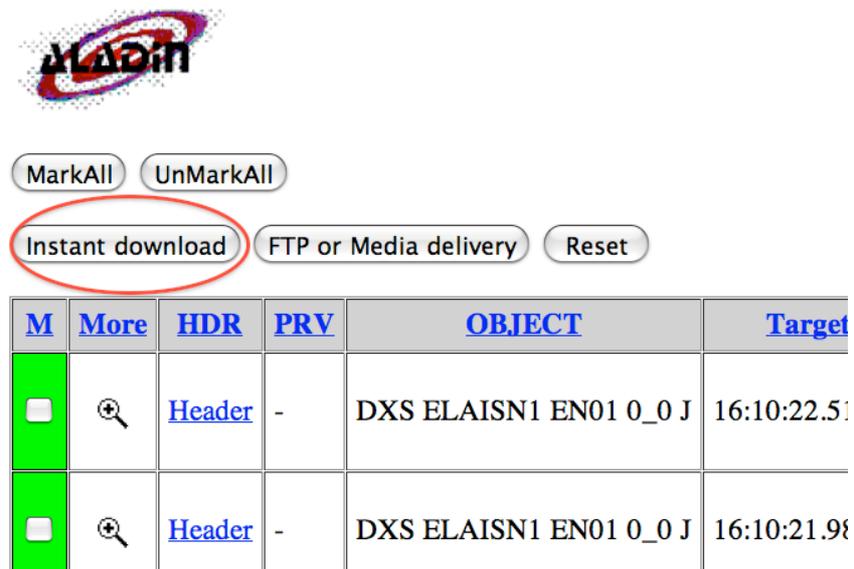


Figure 7 "Instant download" new button

If not yet authenticated via the User Portal you will be asked to do so when clicking either on "Instant download" or on "FTP or Media delivery" buttons.

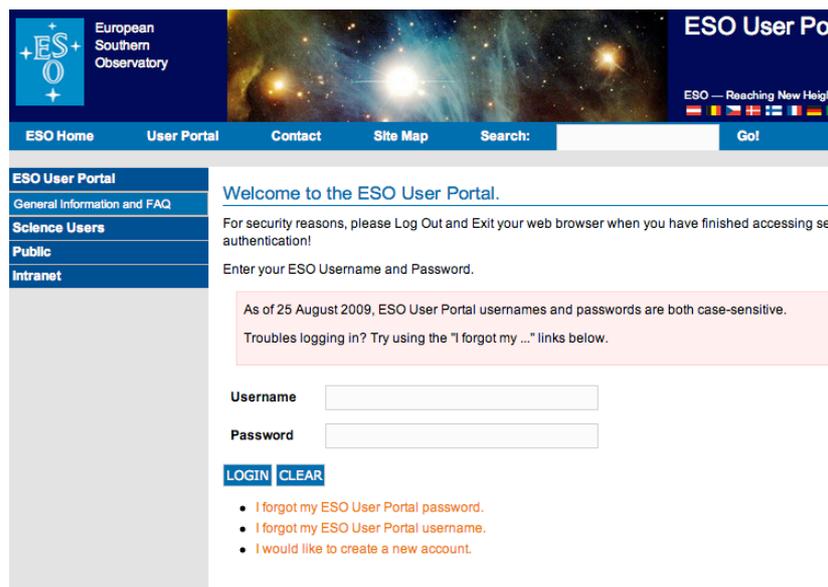


Figure 8 User Portal log-in screen

Then, depending on which button was chosen (see Figure 7), the user is redirected to one of two different pages:

### FTP or Media delivery

- The “FTP or Media delivery” button gives access to the old delivery facility via LAN/FTP or on a medium (currently CDs, DVDs and USB disks). The “Request Submission Setup” page is presented then with all the options to choose the medium and opt for correction of the Headers:

**REQUEST SUBMISSION SETUP**

Please select your data product(s)

Raw data file  
 Updates will be applied to the FITS header

Please select your output media

**Warning:** [Blu-ray discs for data distribution will be introduced soon in the Science Archive Facility.](#)

Local Area Network. Only for users with account within ESO-Garching (Files will NOT be automatically copied to your unix account)  
 Transfer files yourself with ftp (limited to 30GB)  
 CD-ROM, 700MB (Limited to requests between 300 and 1200 MB)  
 DVD-R, 4 GB (Limited to requests between 1 and 60 GB)  
 USB/FireWire Magnetic disk - has to be returned! (Limited to requests > 60 GB)

You have marked the following datasets:

- AMBER.2009-03-11T22:01:02.949
- AMBER.2009-03-11T22:00:31.668

ESO HOME ST-EXT BROWS Help Search

Figure 9 Old request submission page

### Instant download

- The “Instant Download” button gives access to the new ESO Archive Requests facility.

European Southern Observatory

ESO Archive Requests

ESO — Reaching New Heights in Astronomy.

ESO Home User Portal Contact Site Map Search: Go!

Science User Information > ESO User Portal > ESO Archive Requests Nathalie Fourniol | Logout

**Submit Request**

Request Description

Options  Header on the fly correction  Add Iraf keyword

Requested Datasets

- AMBER.2009-03-11T22:01:02.949
- AMBER.2009-03-11T22:00:31.668

NGRH-1\_Obeta8@ ESO Data Flow Infrastructure Send us your comments! | Subscribe to Newsletter | Privacy Statement

Figure 10 ESO Archive Requests submission page

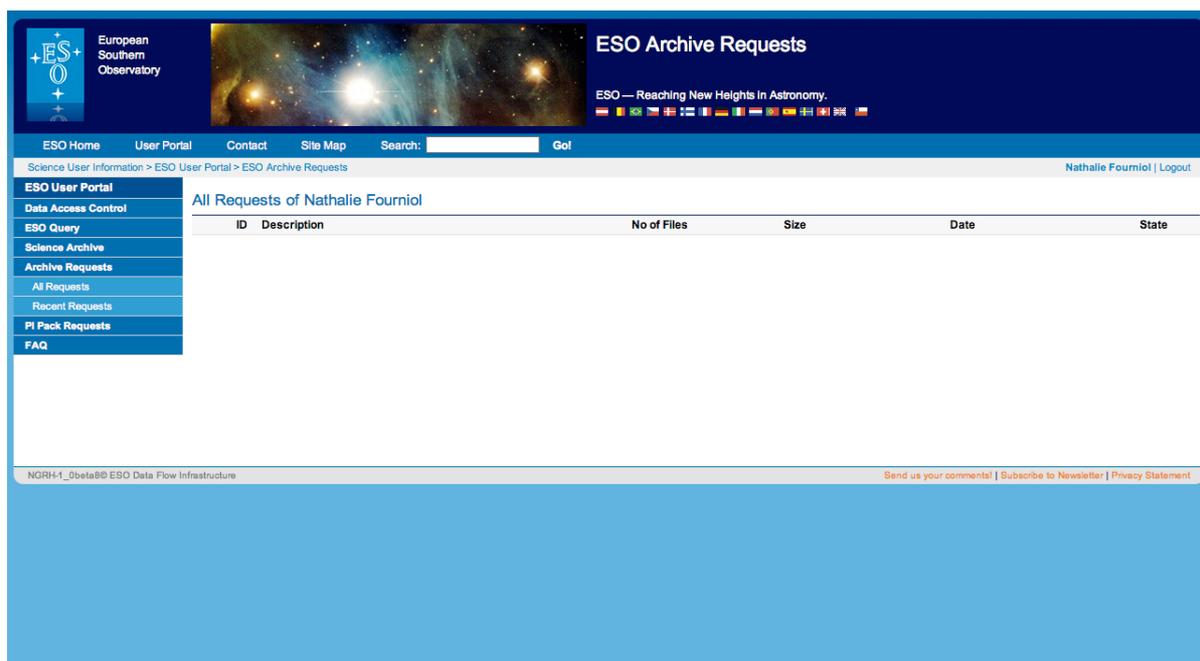
### 4.3 How to submit a request

It is recommended to specify an informative Description before submitting a request. The Request Description provides a label for the request in addition to the request number, which should facilitate identification of the requests in a later return visit to the archive pages, or to ease any enquiry to the archive helpdesk on a particular request.

The user can select the options “Header on the fly correction” and “Add IRAF keywords”<sup>1</sup>. Note that the addition of IRAF keywords is currently only possible to select if the “Header-on-the-fly correction” is also selected.

*Note: WFCAM files can currently not be processed using the “Header on the fly correction” option. In this case, files must be requested without checking this feature. The system will be soon able to identify files that cannot be processed in this service and skip this feature while processing.*

When accessing the new ESO Archive Requests interface for the first time the user is presented with the following page:



The screenshot shows the ESO Archive Requests web interface. At the top, there is a navigation bar with the ESO logo and the text 'European Southern Observatory'. Below this is a search bar and a 'Go!' button. The main content area displays 'All Requests of Nathalie Fourniol' and a table with columns for ID, Description, No of Files, Size, Date, and State. The table is currently empty. On the left side, there is a sidebar menu with options like 'Data Access Control', 'Science Archive', and 'Archive Requests'. At the bottom, there is a footer with the text 'NGRH-1\_beta@ ESO Data Flow Infrastructure' and links for 'Send us your comment!', 'Subscribe to Newsletter', and 'Privacy Statement'.

Figure 11 First Access to the ESO Archive Requests interface

1

**A note on IRAF Keywords:** ESO FITS frames store information about instrument setup and observing conditions in hierarchical keywords. As part of the request process, it is possible for some instruments to add some of this information to the frame header in standard, eight character keywords, such as AIRMASS, FILTERn, SLIT, GRISM, GRAT, UT, ST. These keywords are sometimes referred to as "IRAF keywords", since they present the information in a way understandable to popular IRAF tasks. The original hierarchical keywords remain in the header. This procedure works only for a subset of instruments. Users can convert any hierarchical keyword to the eight-character convention using the "hierarch28" tool, available from <http://archive.eso.org/saft/hierarch28/>.

Note that more queries can be posted from the Request Handler page following the “ESO Query” and the “Science Archive” links on the left hand menu.

- with the “ESO query” link that gives access to the ESO main query form
- with the “Science Archive” link that gives access to archive.eso.org web page

as can be seen from the figure below:

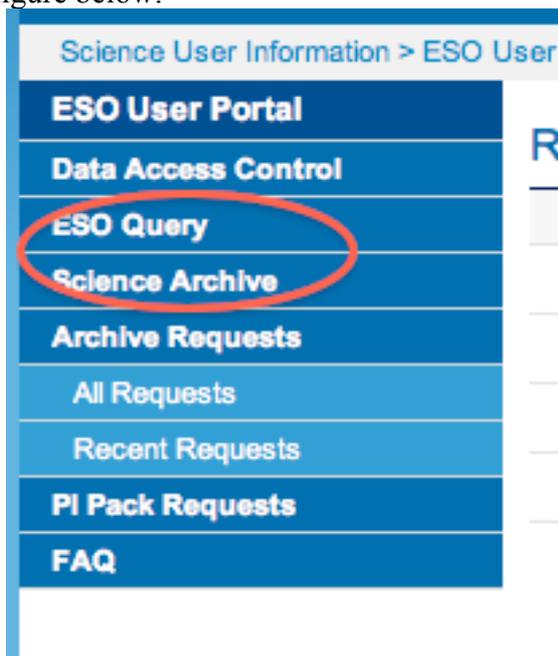


Figure 12 Accesses from the ESO Archive Requests application to ESO Archive

### 4.4 How to retrieve data

Once the request is submitted the following result page is presented

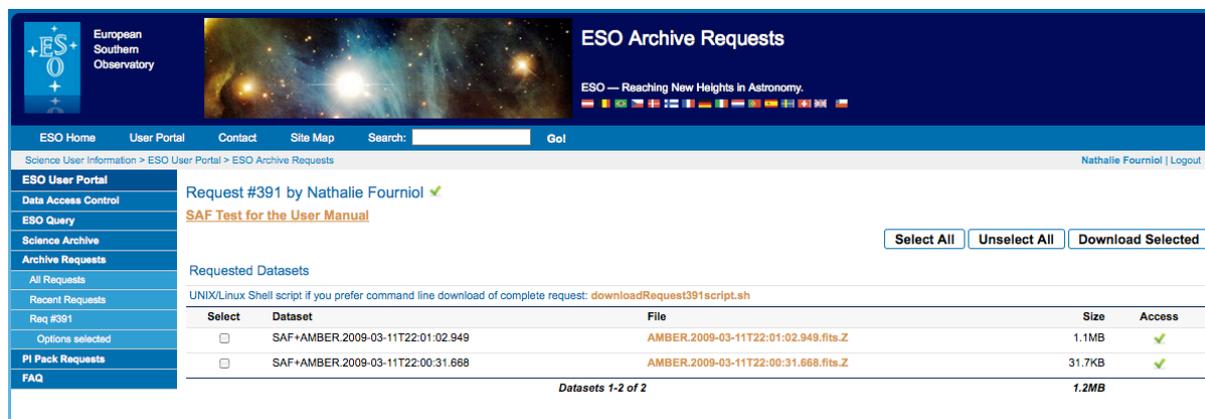


Figure 13 Request submitted

As illustrated the user can select one, several, or all the files as well as de-select all items to be downloaded. In the example, access to these files is granted to Archive User Nathalie Fourniol. A programmatic access is also available via the script `downloadRequestxxxscript.sh`, a shell script consisting of a series of WGET command lines (i.e. the WGET utility is required on the User's machine to use the script directly. This package is usually installed by default in Linux, but not in MacOS X or Windows). Note also that on the interface the user can see the total size of the request and the number of files before performing the download. In case the number of files exceeds 1000 pagination is carried out and a "Download Request" button appears in addition as visible below.



Figure 14 Download Request button

Depending on the request, especially if it requires processing, a message will appear during the processing as depicted in Figure 15. In addition the processing part can take a few minutes to be performed, depending on the size of the request and the process requested.



Figure 15 Request being processed message

After clicking on "Download Selected" or "Download Request", a java applet windows pops-up to enter the directory where the data are to be downloaded.

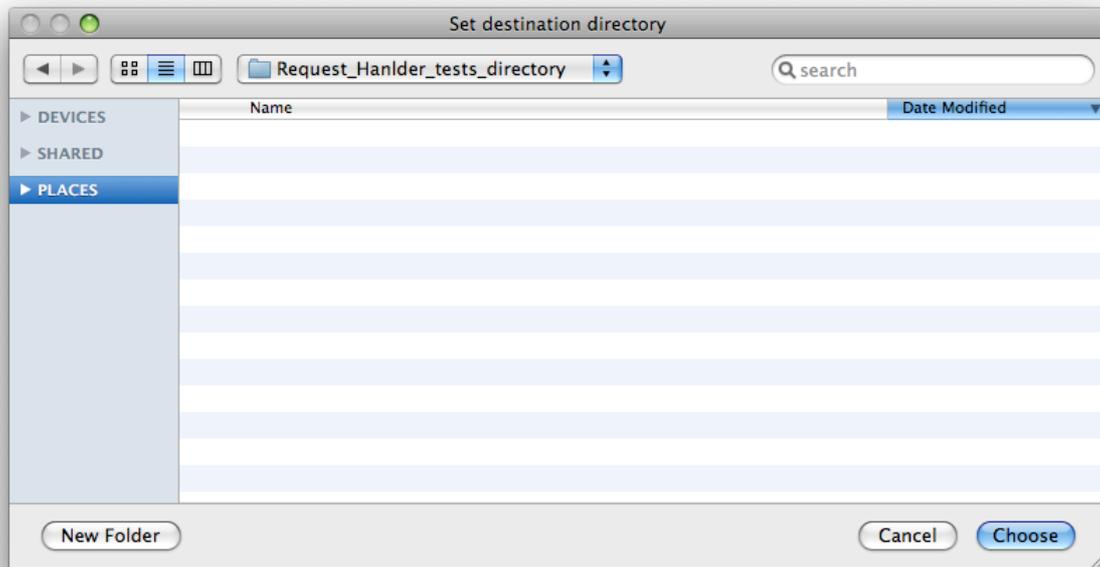


Figure 16 Destination directory selection

Once the directory destination is selected the download manager window will display the status and progress of the files being downloaded.

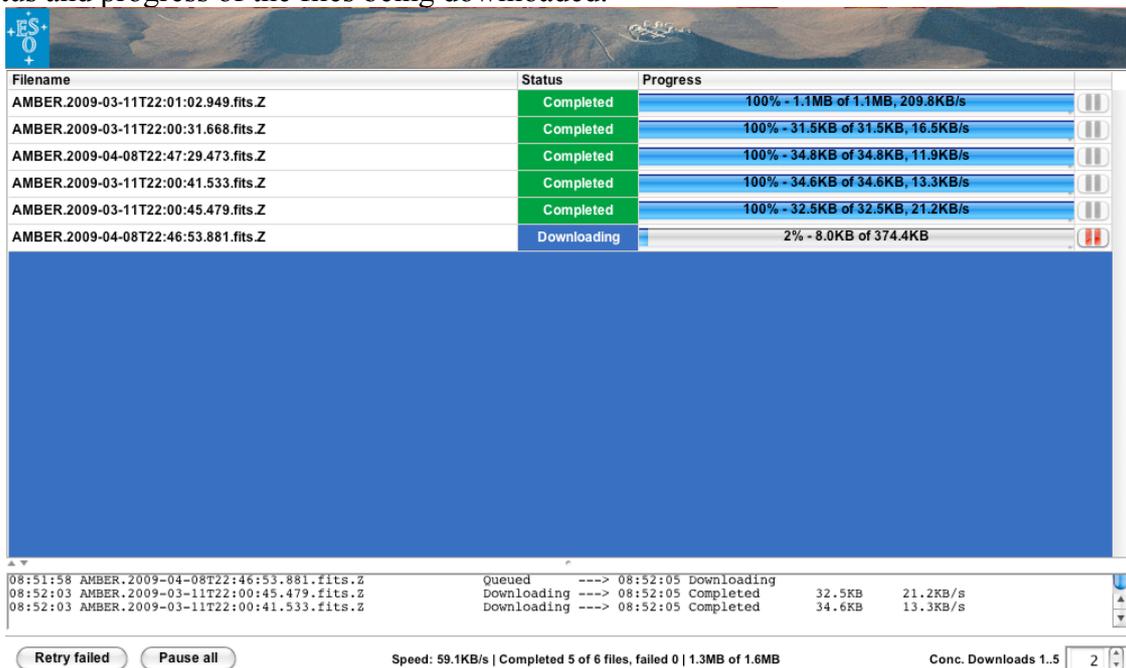
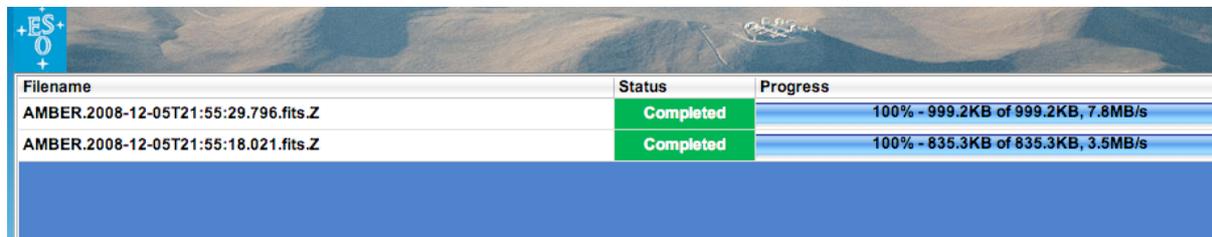


Figure 17 Download Manager

It is possible to pause the download or retry a failed download by clicking on the corresponding buttons on the bottom left-hand side of the window. In addition, the number of

concurrent downloads can be increased up to 5 simultaneous downloads as visible on the bottom right-hand side of the window.

When the files have been downloaded to the User's directory the "Completed" status is visible on the download manager.



Filename	Status	Progress
AMBER.2008-12-05T21:55:29.796.fits.Z	Completed	100% - 999.2KB of 999.2KB, 7.8MB/s
AMBER.2008-12-05T21:55:18.021.fits.Z	Completed	100% - 835.3KB of 835.3KB, 3.5MB/s

**Figure 18 Download Manager completed request**

*It is to be noted that repeating a download of the same file in the same directory will not imply the overwriting of the file: the Download Manager will recognize the file and will not copy it again.*

The User receives an email at the completion time of the request of the following form:

Dear Dr. Nathalie Fourniol,

Thank you for using our Archive services!

The archive files (21.4MB) that you have requested are ready for you to download at the following link <http://dataportal.eso.org/rh/requests/HSTCD/393>.

Summary:

- a) 4 Files (18.1MB) available for download,
- b) 1 Files (3.3MB) under proprietary period,
- c) 0 Files (-) not available.

Please note the following detailed listing:

- a) files available for download:
  - AMBER.2011-01-01T02:41:04.851 : AUTHORIZED
  - AMBER.2011-01-01T02:43:39.093 : AUTHORIZED
  - AMBER.2011-01-01T02:45:05.637 : AUTHORIZED
  - AMBER.2011-01-01T02:46:33.530 : AUTHORIZED

- b) files under proprietary status:
  - AMBER.2011-01-01T02:32:57.945 : DENIED

c) files not available:  
NONE

If it does not correspond to your expectations, please send a mail to [archive@eso.org](mailto:archive@eso.org).

All publications based on ESO archive data should carry the following acknowledgement:

"Based on data obtained from the ESO Science Archive Facility under request number <name><number>."

where <name> is the archive user name of the requester. Alternatively users can also cite the ESO programme ID given to all successful proposals in the form:

"Based on observations made with ESO Telescopes at the La Silla Paranal Observatory under programme ID <ppp>.<c-nnnn>."

where the <ppp>.<c-nnnn> (period.category-number) is the ID of the ESO observing programme."

Please notify ESO Library at [esolib@eso.org](mailto:esolib@eso.org) upon acceptance or publication of a paper based on ESO data, including the bibliographic reference (article title, authors, journal title, volume, year, pages).

All the best for a successful completion of your scientific program and best regards,

ESO Archive

## 4.5 Request and Retrieval of PI Packs

An additional option, or process, available to the PIs (and/or their delegates, see section 5) is accessible via the "PI Packs Requests" menu item, as visible on the Figure 19 below, which gives access to the former service known as "PI Packages", allowing PIs to access the raw and reduced data of their programmes.

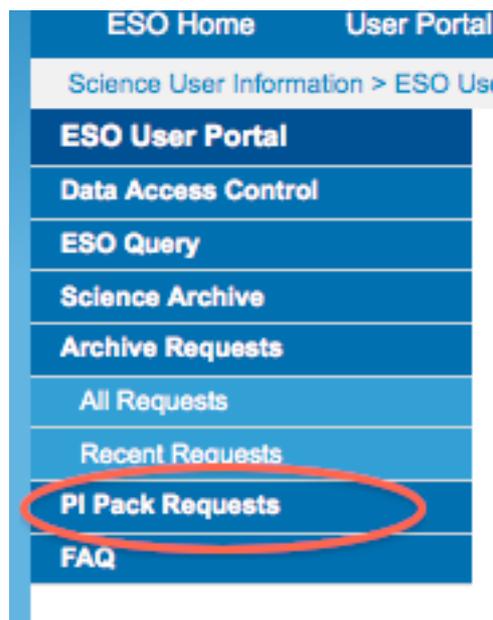


Figure 19 PI Pack Requests

When requesting PI Packs one must choose among the Run\_Id in the pull-down menu and one has the choice to either enter no dates, in that case the PI will be able to retrieve all the raw and reduced data accumulated in the archive for the whole program so far, or enter a start and end dates in the fields "acquired between" and "and (not included)". The format of the dates must be **yyyy-mm-dd**.

Incremental Delivery of PI Packages [\(What is this?\)](#)

**Define PI Pack**  
Select one of your own runs or one for which you have been delegated Data Access Rights, and search to see if files were added to the PI Pack for the specified acquisition time interval.

Run ID:

acquired between:

and (not included):

Figure 20 PI Pack Run and dates selection

Clicking on the “Search” button will have the effect of displaying the list of raw files available for the run and dates chosen:

The screenshot shows the ESO Archive Requests web interface. At the top, there is a navigation bar with 'ESO Home', 'User Portal', 'Contact', 'Site Map', and a search box. Below this is a sidebar menu with options like 'Data Access Control', 'ESO Query', 'Science Archive', and 'Archive Requests'. The main content area displays the 'Define PI Pack' search form from Figure 20. Below the form, a message states: 'Package contains 75 files, until 2010-12-25 of which 4 are raw science data, shown below. The size of the selected package slice is 93.1 MB.' A table lists the raw science files with their acquisition dates. A 'Request Files' button is visible in the top right of the table area.

Raw Science File	Acquisition Night
520926/sci_raw/FORS2.2010-12-10T08:56:43.088.fits	Thursday, December 9, 2010
520926/sci_raw/FORS2.2010-12-10T08:56:43.088.fits	Thursday, December 9, 2010
504393/sci_raw/FORS2.2010-10-23T23:38:41.912.fits	Saturday, October 23, 2010
504393/sci_raw/FORS2.2010-10-23T23:38:41.913.fits	Saturday, October 23, 2010

Figure 21 List of raw files available for a given PI Pack request

Clicking on the “Request Files” button will lead you to the page listing the files to get downloaded as depicted in Figure 15.

### 4.6 Displaying Information on Requests

To display information on Requests submitted or carried out the user has to access the ESO Archive Requests interface and choose the “All Requests” or “Recent Requests” buttons (“Recent Requests” means the last 5 requests):

The screenshot shows a sidebar menu on the left with buttons for 'Request Handler', 'All Requests', and 'Recent Requests'. On the right, a table displays a list of requests with columns for 'ID' and 'Description'. The first two rows are visible, showing IDs 27 and 26.

ID	Description
27	SAF TE
26	SAF Te

Figure 22 Requests to be displayed

The general information for each requests are the following: the ID, the Description entered at submission time, the total number of files, the size, the date of submission, and the state of the request. If no information is submitted at request time the Description displayed defaults to “SAF”.

All Requests of Nathalie Fourniol

ID	Description	No of Files	Size	Date	State
27	SAF TEST as HSTCD 2 non-proprietary	2	67.64KB	Dec 1, 2010 at 13:03 UTC	✓
26	SAF Test as HSTCD	2	1.16MB	Dec 1, 2010 at 13:01 UTC	✓

Figure 23 Displayed information on requests

On the detailed page of a request (see Figure 13) the user can click on the “Options selected” attached to a request, which are currently as already mentioned “Header on-the-fly correction”, together or not with “Add IRAF Keyword”, or “PI Pack Requests”:



Figure 24 Link to the Options attached to a request

And the next window will show the state of the process:

Processes of Request #26 SAF Test as HSTCD by Nathalie Fourniol

Process ID	Command	State
9	HOTFLY	✓

Figure 25 State of a process

### 4.7 Possible state of a request and/or a process

The possible states of a request and/or a process are the following:

- Submitted: this should only shortly be visible since the request submission time is very small



- completed



- error



## 5 The Use of Data Access Control

From the ESO Archive Requests interface one can access the “Data Access Control” facility, which allows “Data Delegation” from a PI to whoever s/he wants assuming the latter is registered in the ESO User Portal:

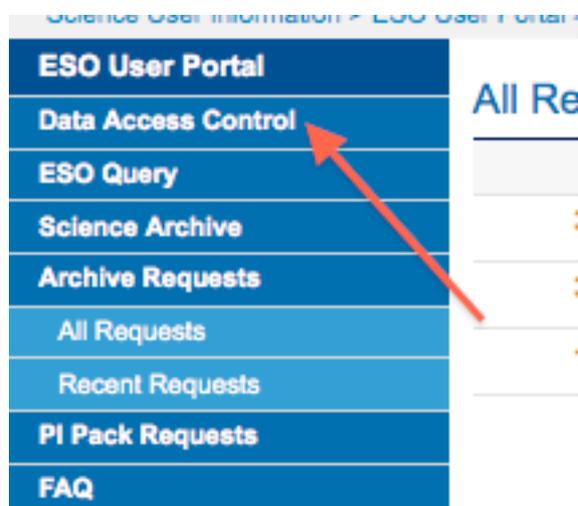


Figure 26 Data Access Delegation

Runs can be delegated as long as they contain proprietary data, or have the potential to acquire proprietary data (that is, the run is still viable). These are visible on the first page corresponding to the menu item “Admin Data Access” (<http://www.eso.org/ace>):

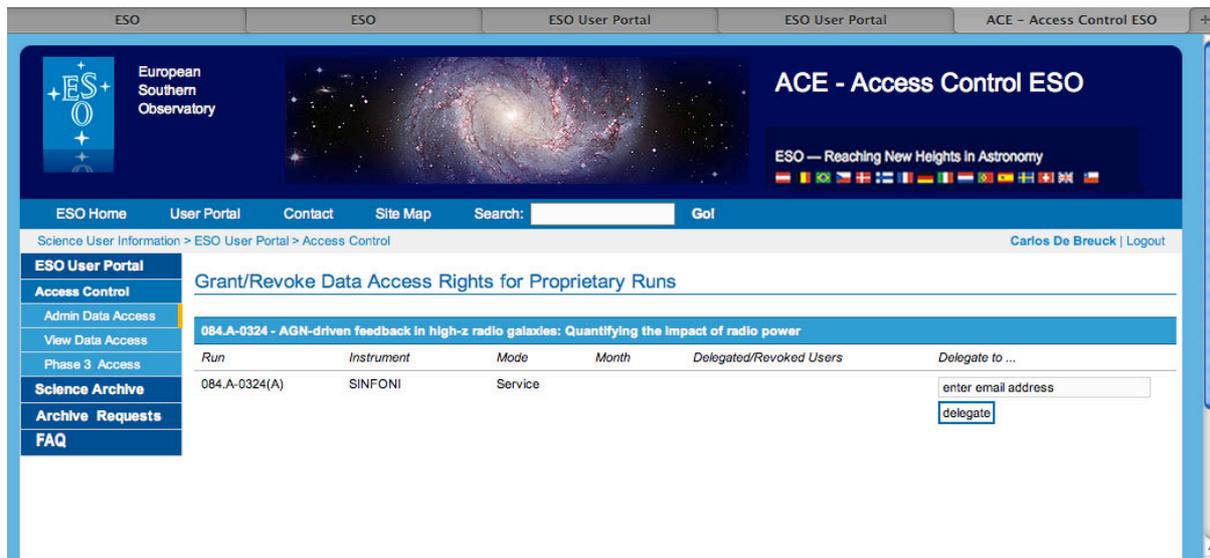


Figure 27 1st page of Data Access Delegation facility

To delegate access enter the email address of the delegate and then press the  button. The user to whom the data has been delegated (in this case Nathalie Fourniol) is then clearly indicated in the display:

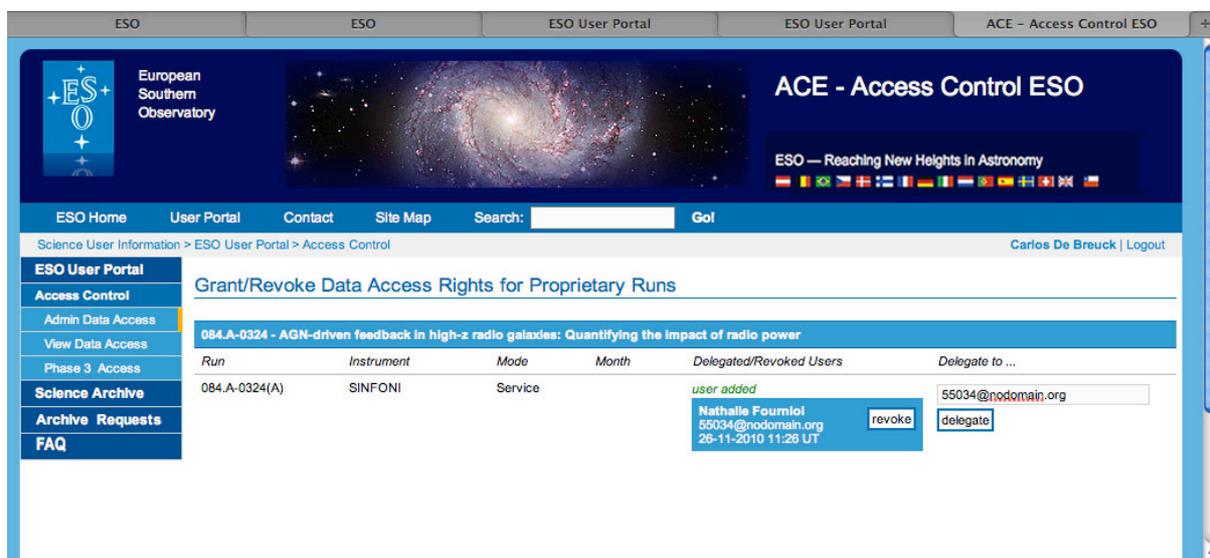


Figure 28 Entering the email of the delegated user

The User Nathalie Fourniol can immediately log into the User Portal to access the ESO Archive Requests application and via the "Data Access Control" menu, under "View Data Access", see which run\_id has been delegated to her and submit a request to download the corresponding data.



Figure 29 Private runs delegated to a user

It is also possible at any time to revoke the access granted by clicking the **revoke** button. The corresponding user from whom the access has been revoked will be highlighted in gray.

Grant/Revoke Data Access Rights for Proprietary Runs

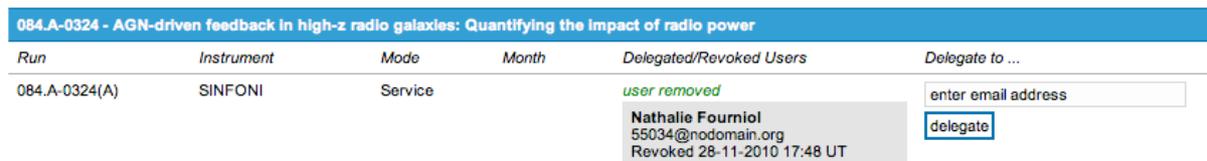


Figure 30 Revoking access to the data

Note: the Data Access Control service is only available together with the Instant Download facility.

## 6 In case of a failure in retrieving the data

### 6.1 Failed download

In the case of a failed download, that may occur if the user does not have write access to the specified download directory for instance, a “Failed” status message is displayed on the Download Manager:

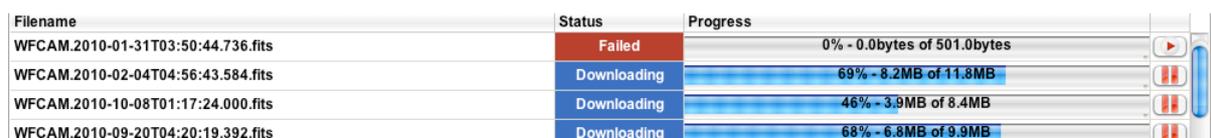


Figure 31 Failed download



The “Resubmit” button allows the user to re-start the failed process, which could have been due to a temporary hiccup in the system.

At the same time and according to the type of error an automatic e-mail will be sent to the archive operators, who will fix the problem. During this process the file/request should remain in an “error” state (see section 4.7) so that the user does not try to download the file, up to the point where it is fixed and its flag is turned back to “OK”.