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**From:** Ana Heras[SMTP:AHERAS@ESTSA2.ESTEC.ESA.NL]  
**Sent:** 31 August 2000 09:53:45  
**To:** FIRST use cases; G. Pilbratt; Timo Prusti  
**Subject:** PST comments on FCSS Actors and Use Cases V1.0

Hi all,

Here are the comments by Timo Prusti and myself on the FCSS Actors and Use Cases V1.0, specifically focused on PST related actors.

Regards,

Ana

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# **PST comments on FCSS actors and use cases V1.0**

## **Comments by T. Prusti, 25 August 2000**

I have some difficulties to place use cases and actors in the concept of software development. I feel it is close to URD, but not quite as it already tries to identify common structures. So it is a funny mixture of user requirements with some knowledge of how to develop software. Most of the use cases look OK to me. However, many of the one line descriptions contain a lot in it and the real issue is how this is coded. I don't think there is need to go too much deeper in detail in the use cases, but rather have a daily interaction between the developers and representatives of users.

### ***General comment***

The timing information should be reviewed against a definition of the terms. E.g. I found something defined to last till end of mission which I thought to be OK as long as "end of mission" is understood to be end of project. However, later I saw that end of post operations was used, which implies that end of mission means end of operations, thus the earlier end time should be modified to end of post operations.

For many of the open issues and comments I have my opinions, but they are not listed here. The reason is that making a decision in these points requires a little bit of discussion between the involved parties. That is difficult to do in an Email so rather than having a long list of (possibly wrong) assumptions on which I would base my opinions, I prefer to leave the open issues open till a method is found how to resolve them.

### ***FCSS Actor Definitions***

There are many roles in the FIRST mission which are not presented as actors: FIRST science team, ESA PR office, visitors to FIRST operations centre, Director of science/Head of Space science department. Maybe their interactions with the system are such that they don't spawn any new s/w requirements, but I wanted to mention them here so that they are not forgotten.

### ***A2 Astronomer***

FOTAC decision has to be somewhere between Phase 1 and Phase 2 in the "Goal hierarchy". Maybe as simple as "Receive notification of data in the archive (performed by FCSS)". Another possibility is to split the current goal "Obtain FIRST observing time" to "Apply for FIRST observing time" and "Prepare FIRST observing details" with the FOTAC decision being like a dividing line.

## **A8 FOTAC**

The responsibility “To ensure that geographic returns are satisfied as a result of the proposal grading” is dangerous. To my knowledge this is NOT a written requirement, but a fact of life done behind closed curtains. It is brave to put the fact in the documentation and it reflects the reality, but I don’t think it is wise to write this down. In any case, FOTAC as a whole should not be involved in this. In ISO this was done mainly by the overall chair of OTAC (Woltjer) and only with the panel chairs present. In the FOTAC goals “Provide recommended changes” is not clear. If it means the additional constraints or recommendations FOTAC needs to give to proposer, then it should be said that way. I don’t think FOTAC will do any actual changes.

## **A10 General Public**

Maybe not in this document, but somewhere one should define what general public means. If you look the ISO PR pages at our Web in Vilspa, then “General Public” is a very selected educated part of the global general public and mainly the material is of interest to astronomers so that the general public term means more like non-FIRST astronomers. The relation to ESA PR services should be clarified as PR can cost lot of manpower.

## **A11 Helpdesk**

The helpdesk role has embedded in it the Web-master. It is difficult to see to what kind of sub-goals the goal “Maintain information/web pages” will split into in couple of years when Web pages will be more and more managed in a database and Helpdesk are coupled to Web-based knowledge systems. Thus it may be appropriate to couple Web and helpdesk into one actor. For ISO we have had till now a separate Web master who has been involved in tasks of network security, network speed and load monitoring, but maybe these are covered in tasks and goals of other actors in the FIRST system.

## **A16 Mission Planner**

In goals the Notification of scheduled observations is done after exporting the schedule to MOC. Maybe there should be a mentioning of MOC acceptance of the schedule before observer is told of the scheduling (and this notification should be done with some sort of standard caveat statement of possible re-planning). The reason for this remark is that with ISO it was not uncommon to have MOC rejecting schedules where we tried to get “for visibility almost lost observations” done.

## **A21 Project Scientist Team**

In Use-case summary I wonder if “approve schedule for export” can be verbal or via Email. In ISO it was done with a paper and signature, but it was a bit silly to have the mission planners running around the building seeking for signatures and this being a daily task some electronic confirmation mechanism which is kept in database would be better.

## ***A24 Scientific Product Analyst***

In goals add to “control access to on-demand processing by individuals or groups” also by “instrument or observing mode”.

## ***FCSS Use Case Definitions***

### ***UCF-061 Scientifically evaluate proposals***

Here we come again to the issue of geographic return. In the documentation it all should be fudged in such a way that there is a PS monitoring of FOTAC recommendations in conjunction with MP. In reality this phase comprises the political aspects AND the MP aspects (I think ESO does similar fudging without too many people being involved in the process). Then you just don't write about the political aspects.

### ***UCF-605 Handle helpdesk request for support***

I'm not sure if ICC manager wants to see these, but maybe they have requested it so let them have it! It looks in the main success scenario that the reason for a question is inadequate information. My feeling is that most of the questions are simply questions to be answered and no documentation is to be changed. So I would put the “update information” also as an extension rather than main thing.

## **Comments by A.M. Heras, 29 August 2000**

### ***General comments***

- Actors/Use cases capture accurately FCSS URD.
- Actor descriptions are at a good level of completeness.
- There are enough Summary use cases.
- Most Open issues cannot be solved now, but must be identified to start discussing them.

### ***FCSS Actor Definitions***

#### ***A1 Archive User***

No further comments.

#### ***A2 Astronomer***

*Responsibilities:*

The second bullet is not relevant and should be deleted. The last responsibility is not agreed yet.

*Open issues:*

- Phase-1 proposals are at high level, but they must also include the list of targets, the observing and pointing mode selected and the observation time requested.
- With respect to referenced archives see comments on UCF-482.

#### ***A8 FOTAC***

No further comments.

#### ***A9 FSCOT***

*Responsibilities:*

It is not clear that FSCOT will be responsible to maintain the MOC + satellite simulator.

#### ***A10 General Public***

*Goal hierarchy and Use Case summary:*

I do not think that to order FIRST Public relation items is under FSC responsibility. Add this point to Open issues.

## **A11 Helpdesk**

### *Goal hierarchy:*

Another goal under “Provide User Support” is to maintain different mailing lists, like “all FIRST proposers”, “FIRST archive registered user”, “Participants in Workshop XX”. Therefore the goal “Distribute information to the mailing list” should be “Distribute information to the corresponding mailing list”.

An additional goal, under “Provide User support” is to organize on-site support for visiting astronomers.

## **A16 Mission Planner**

### *Open issues*

The feedback from MOC to update the state of executed observations should in principle be automatic following the quality control report generated by QCP and the subsequent inspection (and analysis, when required) by the Scientific Product Analyst. The Mission Planner will be informed via the FCSS and will supervise those observations that need rescheduling.

## **A20 Proposal Handler**

### *Goal hierarchy*

Add the goal “Control modification of proposals”. It is important that the PH has the capability to freeze the proposals during certain periods, like FOTAC reviews.

### *Use-case summary*

UCF-008 and UCF-009, where PH is the primary actor, should be added to the list.

## **A21 Project Scientist Team (PST)**

### *Goal hierarchy:*

Under “Support quality control”, the PST will also support “expert assessment of problematic observations”. The current assumption is that in the PST there will also be instrument experts, although to what extent they will be involved in quality control of the observations is an open issue.

Under Recommend ToOs for scheduling, it is to be decided whether the PST will submit proposals for ToOs, or only will assist the proposer in doing so.

### *Open issues:*

First bullet:: The warning when the number of available source is too low should originate as a result of the long-range simulations and of the related meetings to discuss them between the PS and the MP.

## ***A24 Scientific Product Analyst***

A draft technical note on Observation Quality Control has been produced. It will be distributed for comments after internal review.

### *Description:*

In the second paragraph, replace “He produces observation quality reports when necessary” by “He supplies information to be included the quality report when necessary”, since the report will be generated automatically by the QCP.

## ***FCSS Use Case Definitions***

### ***UCF-001 Obtain FIRST observing time***

No further comments.

### ***UCF-007 Analyse FIRST observation data***

No further comments.

### ***UCF-008 AOT release***

No further comments.

### ***UCF-009 AOT blocked***

#### *Main success scenario:*

3 Replace by “PH: Set observations state to blocked”

### ***UCF-061 Scientifically evaluate proposals***

No further comments.

### ***UCF-062 Generate proposal summaries***

No further comments.

### ***UCF-063 Evaluate proposal***

No further comments.

### ***UCF-064 Grade proposal***

No further comments.

**UCF-065 Generate statistics**

No further comments.

**UCF-091 Search PR material**

*Main success scenario:*

Points 3 and 4 are most probably out of the scope of PST activities.

**UCF-092 Browse and retrieve from the public PR WWW pages**

*Triggers:*

A trigger does not need to be a big discovery, but just interest in knowing about the FIRST mission.

**UCF-093 Submit an order**

See comments on A10 and UCF-091.

**UCF-121 Provide User support**

*Preconditions:*

The PST does not provide the initial mailing lists. They should be made by the FCSS from the proposal information or by users registrations to workshops, FCSS archive or other mailing lists.

*Frequency:*

In ISO, 15-20 messages were received at helpdesk per day, with peaks of 30-40 messages per day.

**UCF-122 Register a query**

*Main success scenario and extensions:*

- 2 This should be done automatically by FCSS.
- 3 This should be done automatically by FCSS.

**UCF-123 Investigate user query**

*Main success scenario:*

- 2 The actor here should be helpdesk, this search cannot be done automatically.
- 3 The actor should be helpdesk.



*Extensions:*

Add as an extension to point 3, in which helpdesk checks the visitors “agenda” in the FCSS to organize help on-site.

### ***UCF-124 Close a query***

*Triggers:*

The update of the FAQ is not a trigger to close the query, only the conclusion of the investigation.

*Main success scenario:*

In step 2, add that the FCSS inserts the query and its response in the database.

### ***UCF-125 Generate helpdesk statistics about helpdesk queries***

No further comments

### ***UCF-126 Maintain information pages and mailing lists***

*Main success scenario:*

The FCSS should not only display a form to add a new entry to the mailing list. The FCSS should provide an automatic system to maintain mailing lists, although the possibility of updating them manually should exist. The idea is that the FCSS generates mailing lists from the proposal database, for example, or from a set of e-mail messages in a specific folder. A standard capability to unregister should also be provided to the users, and should be handled automatically by the FCSS.

### ***UCF-127 Distribute information to the mailing list***

*Open issues:*

The nature of helpdesk activities requires the existence of several mailing lists.

### ***UCF-181 Generate a schedule***

No further comments.

### ***UCF-182 Create draft schedule for planning period***

*Comments*

Third bullet: My preference would be that there is an automatic mechanism that combines draft schedules.

### **UCF-183 Submit schedule**

*Main success scenario:*

2 The fact that MP selects the draft schedule to be exported, while the PS has already approved it, makes me feel a bit worried about configuration control. The FCSS must ensure that the draft schedule selected to be exported is the same as the one approved by the PS.

### **UCF-184 Decommit a submitted schedule**

*Open issues:*

First two bullets will probably be solved via procedures.

### **UCF-185 Run a long-range simulation**

*Open issues:*

For information, in the ISO operational procedures it is specified that a long-range simulation should exist for the whole duration of the operation mission, and should be updated when resources allow it. In parallel, the long-range simulations covering 2 - 3 months into the future should be updated regularly (every month), and the results discussed between the PS and the MP. The PS should be able to access the long-range simulations electronically and shall be notified by the FCSS when it is available. A regular interaction through meetings between the MP and the PS is expected for the production and refinement of the long-range simulations.

*Comment:*

A comment should be added that the long-range simulation should take into account the scheduling constraints with the exclusion of fixed time observations and SSO related constraints.

### **UCF-241 Evaluate proposal**

Change the title of the use case to “Technically evaluate proposal” to avoid duplication with UCF-063.

*Main success scenario:*

4 The FCSS must retrieve also the proposal, not only the technical evaluation summary.

*Open issues and comments:*

The assumption should be that the technical feasibility is done before FOTAC review.

The technical evaluation of phase-2 proposals is an open issue.

### **UCF-242 Modify a proposal**

No further comments.

**UCF-243 *Generate statistics***

No further comments.

**UCF-244 *View observation requests***

No further comments.

**UCF-245 *Apply global updates to observation requests***

The application of global updates to observation requests is not a simple issue, since the updates may be of rather different nature. A frequent one is to recalculate the observing time after an update of a specific AOT. This implies that some proposals may need more time than the one awarded by FOTAC, a fact that the FCSS must flag to the PH. Another global update is to modify an observation parameter, like a filter that does not work properly, which can be done by applying the modification in a proposal and propagating this change to a selected set of proposals.

**UCF-246 *Perform version control***

No further comments.

**UCF-247 *View modification history***

No further comments.

**UCF-248 *Modify observation request status***

No further comments.

**UCF-331 *Perform observation quality control***

*Comments:*

Seventh bullet: To clarify, the FCSS will not mark automatically observations as “to be rescheduled”. It may flag them as affected by a fatal or severe error. The status “failed”, that is, “to be rescheduled” will be assigned/confirmed by the Scientific Product analyst, and the FCSS will inform the Mission Planner of such observations.

**UCF-332 *Maintain quality control processing environment***

No further comments.

**UCF-333 *Maintain on-demand processing environment***

No further comments.

## **UCF-481: Search FIRST archive**

### *Triggers:*

It should be more general, not only for an astronomer.

### *Main success scenario:*

The steps where the user requests guidance for the archive data contents, and when the FCSS provides that information should be added (or maybe in extensions?).

### *Comments:*

Although it is not currently in the FCSS URD, I think that to include the possibility for general users to query the archive via SQL should be discussed (taking into account access rights and privileges, of course).

## **UCF-482: Search referenced archives**

### *Open issues:*

We should aim for a system in which for each accessed observation a list of archives where to find more data is given. By clicking on the name of the archive the data available for the requested source is displayed. This is the way is done in HST and NED. Also a list of links to archives should be provided in case the user wants to perform more detailed searches by connecting to a particular archive directly.

An initial list of the most important archives for the FCSS user are: SIMBAD, NED, IRAS, ISO, SOFIA(\*), SIRTF(\*), CSO(\*), JCMT, ALMA(\*), SWAS(\*), ASTRO-F(\*), ODIN(\*), HST. The missions indicated with an asterisk do not have an archive yet.

Note that there are already prototypes of systems that wrap up astronomical archives and allow the user to search in several astronomical archives simultaneously. See for example the Astro-browse prototypes, MAST or AMASE. Probably these systems are going to develop very quickly and it will be relatively simple to search most astronomical archives at once through a single query.

## **UCF-483 Register with FCSS**

### *Brief description:*

The use case should also indicate what it means for external users to be registered in the FCSS. Taking into account Appendix A of the FCSS URD, the functionalities available for the external FCSS users will be:

- Generation, submission and update of proposals (active during AO's)
- Update of an accepted proposal observations (restricted to observers)
- On-demand generation of products
- FCSS Archive access and retrieval
- Submitting scientific results to FIRST (not in Appendix A)
- FCSS state change notification

*Main success scenario:*

2. Replace AST by USR

*Extensions:*

I think that the option to delete a registration should be given, in order to avoid receiving notifications or helpdesk messages as archive user. Or should this be the subject of another use case?

### ***UCF-484 Perform proposal planning***

*Brief description:*

Not all the tools can be applied together. Basic checks like duplication, or sky visibility may be applied automatically, but not the time estimators, which require more detailed input.

*Open issues:*

In order for the candidate target list to be useful, it should contain not only the name of the target and its coordinates, but also the information from the suitability/availability check and the data that has been provided to the time estimator for the calculation of the observing time or the signal-to-noise ratio, a sort of log.

### ***UCF-485 Get support/information***

No further comments.

### ***UCF-486 Create/update/delete a phase-1 science proposal***

*References and comments:*

It is important to include in this use case FSC-UR-3.1-0270, that is, the system should prevent any update to submitted proposals during certain periods of time, like, for example FOTAC reviews. The rejection of any update may be an extension to step 4.

### ***UCF-487 Check proposal/observation status***

*Open issues:*

In terms of FOTAC acceptance, the astronomer should have access only to his/her own data. An astronomer should not see submitted or rejected data from other proposers. That is, only the status and state of accepted proposals/observations should be made public.

I favour that in addition to the notification, the astronomer logs onto the FCSS to check observations status.

*Comments:*

Although this is procedural, it should be made sure that the astronomer receives formal notification of a rejected proposal before he/she can access this information in the FCSS.

## **UCF-488 Create/update/delete a phase-2 science proposal**

### *Open issues:*

The PI/Co-I/proposal information/scientific justification should be standard for calibration observations, the exact contents to be decided with the ICCs such that calibration observations are properly identified.

### *Comments:*

The capability to create directly a phase-2 science proposal should not be provided to the general astronomer, only to PST, CS and IE.

The point “Proposal verification for science proposals” should be extended for the validation of phase-2 proposals. A preliminary list of what should be validated in addition:

- Pointing correctly specified
- Required detailed observation parameters all entered and within limits
- The derived observation parameters are within limits (e.g. observing time)
- Comparison between FOTAC awarded time and actual proposal time
- Visibility check
- Target duplication check

In the first three cases the error in the validation should prevent the submission of the proposal. In the other cases, a warning must be issued (e.g. duplication check, proposal exceeds FOTAC time) to AST and PH, so that the conflict is resolved.

## **UCF-489 Retrieve archive artifact**

### *Main success scenario:*

- 4 The options where to put the data should be (TBC):
  - FSC computer to be retrieved through ftp by USR. In this case the FCSS must create a directory and inform the user where to find the data.
  - USR computer, therefore the node name, directory, user name and password to be provided.
  - Download the data on-line, that is, download through the Web browser.

The user should be given the option to choose among different compression formats.

In order to select data, the user should have information on them. Somewhere in the use case the provision of information on archive contents and caveats should be mentioned.

## **UCF-490 Submit scientific results to FIRST archive**

### *Triggers:*

Add in first trigger “See open issues”.

Another trigger may be that the astronomer has a particular survey data reduced to be made public.

*Extensions:*

3c In some cases (Key programs) with maps or long target lists, to select observations with which results are associated could be very tedious. Therefore the selection of the observations should be done through the archive, that is, first AST should provide search criteria, then the FCSS archive provides a list of observations that can be input automatically when submitting the paper or data.

### ***UCF-491 Request on-demand processing***

*Brief-description:*

Add to last sentence, “with the latest available versions of calibration files and processing software”.

*Triggers:*

Add “The astronomer is notified that a new processing software version or new calibration files are available.”

*Main success scenario:*

Before step 1, the AST/USR should select on which observation data to apply on-demand processing.

*Comments:*

Point 3 is repeated in point 6.

Last point: The choice of format for the scientific products will be rather restricted. Only in the case of the quick-look product all these formats may be available.

### ***UCF-492 Update or create an archive artifact***

No further comments.

### ***UCF-493 Perform remote interactive analysis session***

*Main success scenario and open issues:*

Indeed UCF-746 should be expanded to include USR, since the interaction with the system is the same, although the modules used may be different.

### ***UCF-494 Perform local interactive analysis session***

*Brief description:*

Replace “...performs interactive analysis using the FCSS”, by “performs interactive analysis by using the processing software packages downloaded from the FCSS”.

See also comment on UCF-493.

***UCF-511 Trigger TM data automatic import from MOC***

*Stakeholders and interests:*

Replace Scientific Product Quality Assurance by Scientific Product Analyst.

***UCF-512 Trigger MOC data automatic import***

No further comments.

***UCF-513 Monitor TM and data automatic import from MOC***

No further comments.

***UCF-514 Abort TM or MOC data automatic import***

No further comments.

***UCF-515 One-off import of MOC data***

No further comments.

***UCF-516 Interface ICC with MOC***

No further comments.



## **Presentation at Use Cases meeting #4**

The viewgraphs of the presentation made by AMH at the Use Cases meeting #4 (ESTEC, 29 August 2000) can be found attached to the meeting minutes and in:

[ftp://astro.estec.esa.nl/pub/aheras/doc/use\\_case4.pdf](ftp://astro.estec.esa.nl/pub/aheras/doc/use_case4.pdf)