



Atacama Large Millimeter Array

User Test 1 Report for the ALMA Observation Preparation Subsystem

ALMA-00.00.00.00-000-A-TTT

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ALMA Project

ALMA ObsPrep UserTest1

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Change Record

Version	Date	Affected Section(s)	Change Request #	Reason/Initiation/Remarks
A	2004-02-06	All		LT: First Draft
B	2004-02-10	1.3, 2.0, 4.2, 5, 6		LT: comments from DSS, FM, JSG, MTB, added overall bugs and enhancements lists



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1 ALMA ObsPrep UserTest 1

This document describes the ALMA Observation Preparation subsystem UserTest1: the purpose of the Test session, the testers involved and their testing framework, an executive summary of the test results, the detailed test reports are appended to this document. All the testing material, the files produced by each tester and a copy of this document are available on the ObsPrep Twiki pages in the UT1 section (<http://almasw.hq.eso.org/almasw/bin/view/OBSPREP/UserTest1>).

1.1 Purpose of the tests

The goals of this first round of user tests for the Observation Preparation subsystem was mainly to get feedback on the Observing Tool design, in particular the main GUI structure and the “Tree” presentation and how easy the testers felt that their favorite projects could be set up for observations (the so-called Phase II).

Additional items tested were: a possible installation technology based on the Java Web Start, the interaction with the local Project Repository, the Import/Export facility foreseen for project exchange between different Co-Is, and the Exposure Time Calculator module (not yet integrated within the OT). A demonstrative version of the “mapper” was also available.

1.2 Testing conditions

Each tester was given a package consisting of the SSR requirements for the ObsPrep subsystem, a questionnaire to guide the tests, an XML file for an example project to import in the OT, a detailed explanation on how the example programme was constructed and pointers to the User Guide on the ObsPrep Twiki web pages. The User Guide and the example also explained how to obtain and run the Observing Tool version released for the tests. The version released for the tests was tagged at UT1-1, no updates of this version were necessary during the testing period. The time frame given for the testers to complete the test and return the reports was two and half weeks, but it was expected that no more than two full days had to be spent by each tester on the actual testing.

1.3 Testers

The group of testers selected for UT1 was composed by two members of ALMA Computing/Science IPT the ObsPrep subsystem scientist and the SSR member responsible for computing user tests, and three external testers:

Leonardo Testi – Arcetri – Subsystem Scientist for ObsPrep



Debra Shepherd – NRAO – SSR member, responsible for computing user tests
Maite Beltran – Arcetri – External tester
Jane Greaves – St. Andrews – External tester
Fabrizio Massi – Arcetri – External tester

The testers provided a variety of test platforms: various flavours of Linux, Sun Solaris, and Windows on workstations and laptops. Various different browsers were used for the installation procedure (Mozilla, Netscape, Internet Explorer).

2 Test results

There was consensus among the testers that the subsystem passed UT1. The actual testing time devoted to UT1 by each tester ranged from one to two and a half days, in agreement with expectations. In this section we summarize the main results and recommendations from the test, the detailed answers and notes from each tester are reported in the next sections.

2.1 OT Appearance and general structure

To receive feedback in this area was the main goal of these tests.

In general the testers liked the framework and, with one exception, no critical problems were found in this area. Several minor bugs and suggestions are given by each tester, here we mention only the more important comments.

1. The GUI presentation is too much “compartmentalized”. The relevant information for the observation of each single target is spread over many different panels, there is no possibility to have a clear and intuitive overview of the entire setup for a given observation. A presentation that allow an easier, quick look view of the observation for each target should be offered.
2. Playing with the configuration options of the GUI may cause the system to crash. To recover, the .almaot directory has to be re-initialized.
3. All configuration options should be in a separate menu from the “advanced” options.
4. All configuration options should be saved on exit and restored when the OT is started again.
5. The “Tree structure” is nice and flexible, but an easy, no-vice-user option to “add a target” which does not require the manual definition of TargetSpace, TargetArea and SpectralSetup should be provided



2.2 OT Installation

The OT retrieval and installation procedures provided for these tests were not what it is foreseen for the final distribution to the ALMA users. In particular, it was still necessary to install, start and stop the ACS components separately and in the correct order. The proposed technology based on the Java Web Start is however a possible option. Once the Java Web Start software was installed in the testers systems, there has been no problems in downloading and using the OT and the associated ACS components. The ACS and OT download and installation went very smoothly, except for a few minor points. The key problem identified in this area is:

1. Availability and installation procedures of Java Web Start are still not mature enough. It is recommended to monitor the future developments and general availability of these technology in the coming years.

2.3 Save/Open and Import/Export

All these function worked properly, except for a few minor bugs that are listed in the reports. The two main problems encountered were:

1. The interaction with the LocalRepository is too much rudimental at the moment. Other search options and more info on the stored projects should be provided. The desired enhancements are detailed in the reports below.
2. The current format of the XML file is too cryptic for the user. It is necessary to expand the first parts of the file with some comment lines on the project, creation date and author.

2.4 Exposure Time Calculator and Mapper

No major problems were found in these areas, although it is recognized that a lot of work is still needed on the one side to integrate the ETC within the OT and on the other to provide a realistic mapping of the project to SBs. A few bugs were noted and can be found in the detailed notes below.

2.5 Documentation

The documentation was generally found adequate for the purpose of the test. A single-file printable version of the User Guide would have been appreciated. The Java Web Start documentation provided by Sun is clearly not adequate, if this technology will continue to be used, the ObsPrep team will have to supplement this documentation.



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3 ObsPrep UT1 Tester Report Files.

This appendix contains the collated answers of all testers to the questionnaire that was presented to guide their tests. The text of the questionnaire presented to the testers is shown in boldface, the answers of the various testers are reported in italics. The answers of each tester are identified by his/her initials.

3.1 Tested system

DSS Tester: *Debra Shepherd*

System: *Linux Redhat 9.0, Mozilla 1.4*

Windows, laptop (Dell), RedHat 9.0, Netscape

Webstart Version: *1.4.2*

Logfile: *log.output (linux log)*

and: log.output.windows (windows log)

NOTE: See also my personal testing.notes and bug.report.txt for details. I mention specific items below if they are particularly important.

FMa Tester: *Fabrizio Massi*

System: *Solaris 8*

Webstart Version: *1.4.2_03(build b02)*

Logfile: *FMa_jws.log*

JSG Tester: *Jane Greaves*

System: *enterprise linux 3*

Webstart Version: *j2re-1_4_2_03-linux-i586.bin*

Logfile: *JSG_javaws_log*

LTe Tester: *Leonardo Testi*

System: *Linux RedHat 9.0, Mozilla 1.2.1 (Some on Win XP with IE 6.0)*

Webstart Version: *java version "1.4.2" Java(TM) 2 Runtime Environment,
Standard Edition (build 1.4.2-b28)*

Java HotSpot(TM) Client VM (build 1.4.2-b28, mixed mode)

Logfile: *LTe_jws_logfile*

MTB Tester: *Maite Beltran*

System: *Linux, RedHat 7.3, Netscape 4.79*

Webstart Version: *1.4.2_03*

Logfile: *MTB_webstart.log*



3.2 Obtaining and running the Observing Tool.

For this test it is necessary to download/start the ALMA Common Software (ACS) components in the correct order before downloading/running the OT. It is also important that the OT and ACS components are shut down in reverse order at the end of the test. This is not going to be the final way of running the OT. Our goal is to have a one-click download/start of all components in the correct order (including all ACS stuff and the OT) and have everything killed in the proper order when the "Exit" button is pressed in the OT gui. However, apart from this 4-click startup and shutdown what we are testing is a possible OT delivery technology.

Do you think that the WebStart technology as you have tested it fulfils the ALMA-OT requirements?

DSS Yes.

FMa *It surely meets them. On my W/S, it is a little bit slow to run all ACS components and start the OT.*

JSG *yes - it runs the gui and isn't huge to install*

LTa *Generally yes, but some effort is needed to support the installation of the Java Web Start software (see below).*

A problem is how to start the OT independently from the web page. One has to start the JWS manager (one has to find it in the labyrinth of his/her laptop first!), then go to the downloaded applications and start them.

Another problem is the installation directory and the ancillary directories and files. For the time being, the default is to have a plethora of directories and files in my home directory.

Note: if I start jws from a different directory and then start the applications from there, at least some of the directories/files are recreated here (cachedir/, CDB_Recovery.txt, and Manager_Recovery/) this is a potential source of confusion and unwanted proliferation of files.

MTB - *I think so, in the sense that it offers an easy to use interface, and a good way to visualize the main aspects of the observation (targets,*



spectral parameters,...).

Did you encounter problems during the download/installation?

DSS *yes - I did not have java 1.4.2 on linux - this was required and it took a bit of testing to get everything working correctly. Presumably, this will get easier? Also, blackdown JAVA did not work, I had to use Sun JAVA.*

FMa *My workstation has java 1.4 installed, but a Solaris OS earlier than solaris 7 which is at least needed to run JRE. This is stated in the JRE download web page. Hence, JWS did not run. It is maybe advisable to provide the ALMA OT - Web Start page with a test to check the SOLaris OS version.*

JSG *yes, many! you can see my attached notes if you like...*

LTe *yes: the linked sun sites did not worked properly. The "Java Web Start" link points to the Windows version, I tried to use the "Linux" link in that page but did not worked. I then moved to the "Sun's Java download page" link. The first link (J2EE 1.4 SDK for Windows/Linux/Solaris SPARC) gives a timeout, as the last one (Download J2SE v 1.4.2_03). I did managed to download the "Download NetBeans IDE v 3.5.1 with J2SE v 1.4.2 COBUNDLE" for Linux and installed it.*

MTB *- I have downloaded the WebStart version for LINUX, and once you find where to find it, and which you should download, the installation is straight forward. However, it's not trivial to find the correct downloading link. I have downloaded and .exe file, .rpm, until I have found the .bin file easy to install file. I think more information should be given. In addition, I found a BUG in "<http://almasw.hq.eso.org/almasw/bin/view/OBSPREP/RunningTheObservingTool>". When to try to go to the link Java Web Start in section Preparation for Installation it says that is unable to find the server.*

Did you find the installation instructions appropriate?

DSS *yes, except that instructions said that java 4.1.0 or higher was all that was necessary but J2RE 1.4.2_02 was*



required.

FMa *Yes, although the Sun's Java download page is a mess. It is maybe worth advising to search the page for J2SE v 1.4.2_03, where the link to JREs lies.*

JSG *yes, but did not cover all possibilities - I downloaded the wrong linux version, went down wrong part of java web site tree, got a bit lost flicking between the instructions and the java site web pages*

LTe *The only problem I had (except with the problems in downloading the J2SE) was with the browser configuration. It took me a while to find the "...javaws executable file in your Java Web Start directory"*

MTB - *As I said before, once you download the correct version, the installation is very easy.*

What other information would have been useful?

DSS *As stated above, more specific JAVA version info is needed. Also, instructions about how to start up the second time (e.g. how to start JAVA Web Start and select downloaded applications).*

FMa *Configuring the JWS for netscape 6.x/7.x must be explained slightly better.*

JSG *very complete instructions, e.g. how to look for the file area jre might be in, how to install a standalone version just in my directory*

LTe *The exact location of the javaws in the installation tree of the webstart software. This is probably installation dependent, we need to fix this problem.*

MTB - *The pages with the SUN downloads for the different platform is a little bit messy, so I think that in the ALMA Observing Tool page you could give a little bit more info, such as "Downloads and Instructions are under Download J2SE v 1.4.2_03 - JRE".*



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What kind of improvements in this procedure you think will be necessary to meet the ALMA-OT requirements (excluding the 4-click start/stop business)?

DSS *As you mention - a one-click process.*

FMa *At the moment, I do not see any major improvement.*

JSG *Could NOT have done this without system manager help and he was struggling quite a bit too - and this is a Starlink site that is used to dealing with astronomy software setup. Java is a mystery to me and to many people - on my own I would have needed a setup wizard.*

LTe *The problems that I had show that we cannot rely on an outside distribution of the Java Web Start software. An appropriate version of this should be made available to the OT users (together with the appropriate documentation). Unless this technology becomes a standard feature of most common web browsers in the near future.*

It should be possible to have a default installation directory different from the home directory.

It should be possible to define once for all the location of cache and recovery directories. To avoid uncontrolled proliferation.

We should make it easy for the user to locate the starting script/command for the OT (and document it).

MTB *- I think that once you can download all packages as only one package, the installation should not present any problem.*

3.3 The OT appearance

Test various look&feels, perspective, fonts and other options (the connection to the repository is not active for UT1).

FMa *The OT windows look still too much anonymous.*

Did you have problems with any of these tests?



DSS *Yes, see my list of bugs and enhancement requests.*

FMa *Playing around with the "Look&Feel" and "Options --> appearance" menus sometime causes the OT window to mess up and needs to restart it. The arrows to collapse and expand subwindows are too small in some selected appearances.*

JSG *Have I broken something? I clicked on something in Appearance, and now all the screen areas have disappeared and stuff like `alma.obsprep.editors...` is written all over it. (May have just lost connection, you did say it should be disconnected from network which I haven't done. Now it won't load, it's stuck on reading preferences model)*

LTe *yes: - the Look&Feel is not saved when I stop and restart the OT (it is always back to "Skin")
- subwindow modifications are not saved either
- some Look&Feel have subwindow commands that are too small*

MTB - *Yes indeed. As already reported on Jan 21 by Leonardo. The problem happened to me the first time that I have installed the program and before importing any file or before typing anything, I have played with the Look & Feels, changed the fonts size and Perspective, and I have quit the program (to have the new fonts working). Next time I have tried to run the OT locally, it has got stuck when reading the preferences model. Removing all the packages and downloading them again has not solved the problem. The problem has only been solved when deleting the whole `./almaot` directory and startin OT again. I have noticed that if you first type something (as the name of the project) and you save the program, or you import a previous created file, then the problem does not occur.*

- *Some BUGS: without changing the fonts size, only changing Perspective, Tab placement, Look & Feels, for a while, I have had to quit the program again because the subwindows have disappeared, remaining only letters. Try this: import a program, then go through all Look & Feels, trying all them, then go and change Perspective, you get a mess and have to quit. What is more, next time you try to start OT get stuck again when reading preferences model. Again I had to removed the whole `./almaot` directory to get OT started.*



- *If you work with Perspective 1, and import or open a project that has been saved with Perspective 2, Perspective 1 remains instead of changing to Perspective 2. Have to do it manually again.*
- *I had a program exported with a "metal" Look & Feels. However, when imported it was back to "skin".*
- *One thing I do not like is the fact that you have to quit the program to get the new fonts working.*

Do you like the concept of "Perspectives"?

DSS *I can't tell. I did try changing the windows sizes, layout options, minimizing parts of the screen. Always, the bright yellow message box says:
You are now in perspective 'I'.
This text never changed through out testing. Was it suppose to change?*

FMa *yes, it is interesting.*

JSG *what is it?*

LTe *yes: Would it be possible/easy for the user to create his/her own perspective? If not it will be useful to develop a pool of perspectives based on program types and user experience.*

MTB *I do not see too much usefulness to the possibility of choosing. I would leave only one of them, having one or the other does not change considerably the program. Although, I personally prefer Perspective 2.*

Note that subwindows are "resizable" and "collapsable", have you tested this feature?

DSS *Yes, nice feature (except the collapse arrows got *really* tiny after I changed the windows so I could barely see them).*

FMa *Yes, this seems to work nicely.*



JSG *resizable was ok; collapsable didn't work, couldn't get hold of the arrows*

LTe *yes. No problems here, except that in some Look&Feels (notably the "Skin" and "GTK" ones on my Linux) the collapsable bars are so thin that it is hard to catch the arrows with the mouse. If one collapses everything is also difficult to know what to click to bring up one particular subwindow.*

MTB - *I have tested both features and they work, although the "collapsable" arrows are so small that sometimes it is not easy to click on them.*

What would be your favourite perspective for different classes of projects (such as simple 1-src projects, surveys, spectral scans, total power, mosaics...)?

(This should not necessarily be one of the two proposed here.

Note that you may want to answer this and the other questions in this section at the end of your test session when you will be more familiar with the OT).

DSS *This is difficult to say, I used the Layout option 1 with the 'Feedback' window minimized to give me more room to see the 'Spatial' and 'Spectral' windows. I also re-sized the whole window to increase relative size of the 'Spectral' window. This seemed to work fine. If you also increase the amount of information displayed in the 'Spatial' window, (e.g. combine target & region info), then this would be even better.*

FMa *This will be better evaluated when the visual capability of the spatial editor is implemented. The proposed perspectives seem good.*

MTB - *Some suggestions for improvements are made throughout this report. However, I should say that in general I like Perspective 2 (with the tab placement in the top). However, as mentioned later, I think that the way it is now is too hierarchic. There are too many sub-sub fields, and I would remove "Region of Interest", joining the branch with Region+Spectral Elements to Target Space. Also, I would differentiate between single fields and mosaics, or multi-fields. I suggest to put the coordinates of the target under Target Space. Then, for single field you would not need to give additional coordinates, just the size of the region. On the other hand,*



under mosaicing mode you could give the offsets from the central position in the Region section.

- *By the way, something missing now is the possibility of selecting the configuration. This option should probably be under Edit, or maybe some steps further in the tree.*

**What kind of improvements in this GUI framework you think will be appropriate/necessary to meet the ALMA-OT requirements?
(This refers to the framework, perspectives, options, menus,
NOT on what is displayed in each subwindow which will be addressed below).**

DSS *See my list of enhancements that address this point.*

The most important one is (please consider this!):

- Things are way too compartmentalized - looks like the modular programming structure is being imposed on the user (this is a major problem with the current user interface of the aips++ software). With so much of the critical program information spread over many layers, it is difficult to tell at a glance what is going on. This is one thing I hate about JOBSERVE, and AIPS++ tool organization. I shouldn't have to click on 10 to 20 links just to get an overview of a project. This just invites user error.

FMa *A help on the upper command bar should open its own window when invoked.*

JSG *It's pretty nice compared to others I've seen (less cluttered). I'm not that bothered about the exact visual appearance, so long as a readable font size is available.*

LTe *Perspectives: It should either be possible to edit (and save) your own perspective, or a pool of perspectives should be available.*

It would be more appropriate to restructure the Options and Look&Feel menus to separate the Appearance functions (now Look&Feel plus Appearance plus Advanced) from the Functionalities options (the connection submenu).

It would be useful to save the status of the subwindows when exiting (now the size of the entire window is saved, but the relative



sizes of the subwindows is brought back to the perspective default at startup).

The same is true for the content of the subwindows: if I select the view "Overview" in "Structure" then exit and restart, I would like to restart with the "Overview" view rather than the "Tree" one.

It would be very useful to have the "title" of the subwindow displayed when is collapsed, either always or when the mouse is put on the "uncollapse" arrow.

MTB - *I was thinking that at the menu level, maybe it would be useful to have a Catalog option, which would allow you to link to all different kinds of catalogs, and even to a kind of ALMA archive, where you could find info about the regions or objects you want to observe.*

3.4 The program Tree Structure

The idea is to review whether the programme tree structure fulfills the ALMA SSR requirements. Whether the hierarchical structure used to capture the scientific inputs is appropriate and easy to use and at the same time it allows the creation of complex programmes.

It should be noted that this version of the OT does not allow to delete items from the project Tree and copy/move items is only supported with "click and drag" using the mouse (no such functions appear in the edit menu). These functions will be available in future versions.

Was it easy and intuitive to set up an observing programme using the Tree structure? (if not why, and what kind of potential problems for which type of programmes you see)

DSS *I had difficulty figuring out that I had to be in an active project before I could create regions and spectral information. But, Every target needs a region and spectral setup. Why not just attach region and spectral setup specs to each TargetOfInterest block? This would be easier.*

FMa *Yes, setting up an observing programme was quite easy.*



JSG *No. Once the tree structure is in place it makes sense, but I did not know where to start to do it. I think this is a general problem (e.g. like the Gemini OT, the JAC OT...). This could be very easy to fix, e.g. a window could suggest 'specify target area on sky', 'add frequencies' etc. Without that the user will start at random undesirable places - e.g. mapper, I would go there to pick an area of sky because I know the co-ordinates I want!*

MTB *- I like the tree idea, and once you get used it is easy to handle. Although I get lost with too many sub-spaces. For example, why do you have "Region Of Interest" and then "Region" ? Could not be both under the same line? You are not able to do anything under Region of Interest except typing a Name. Name that you have to type again in Region.*

- Regarding the Point Source Exposure Time Calculator, I think it would be more useful if you have it inside the Spectral Editor window. This way when you are filling this section with sensitivity, BW, ... you would immediately know how much time you are going to need.

- Something that is not mention in the manual is the possibility of adding Target Spaces, Regions and Spectral Elements using the right button of the mouse directly on the tree elements. You do not have to go to the Edit menu.

Did you test the "click & drag" functions to move or copy items?

DSS *No, sorry, forgot about this function.*

FMa *Yes. Moving stuff from one ROI to another should be made possible not only by releasing the click on the targeted ROI label, but also by releasing the click on anyone of its elements in the tree structure. A trash symbol could be useful in order to allow removing elements by simply clicking and dragging them on it.*

JSG *no*

LTe *yes. I had the following problems:*



- *I cannot duplicate ROIs within a given TS using the Click&Drag (This may be useful to create a few TAs with same spec setup(s) within a given ROI, then one can simply change the coords of each ROI.*
- *I cannot duplicate TSs within the same project*
- *I could not drag and drop from another programme (I opened two OT windows with different programmes to try this, no error message was issued, but nothing was copied/moved either).*

MTB - *Yes, I tested. However, it is not obvious that in order to make it to work you have to drag on "Region of Interest". If you try to drag it on "Spectral Element", it does not work.*

Do you think that the proposed structure fulfils all ALMA needs?

DSS *Mostly - see the list of enhancements for details.*

FMa *So far, it seems so to me.*

JSG *If it will all be clearly laid out under Spatial and Spectral, then it will probably all make sense. (How about polarization? I think of that as another dimension...)*

LTe *yes, but it is not yet simple enough for the novice user. You need to enter too much within the underline logic before being able to set up something. Too many clicks to get to the end and it is not clear where the end is (am I finished? Can I map to SBs now?)*

MTB - *In general I think so. The way it is now is easy to use and visualize.*

What kind of improvements to this framework do you think will be appropriate/necessary to meet the ALMA-OT requirements?

DSS *Being able to see the region chosen against a fits image supplied from local disk. Will this be in the 'View' option? Will another window popup showing this overlay or will the user just increase the relative size of the 'Spatial' window?*

FMa *An on-line help would be a major improvement.*



JSG *It's hard to tell at the moment. I would like to see a few nice clear tree branches: e.g. in spatial I enter the area I want to image and am then offered single field or mosaic, and a choice of angular resolutions. Then I go to spectral, pick my line frequency and spectral resolution and get shown the integration time to a particular sensitivity. I add polarization if I want it. Then I'm done and happy...*

At the moment it seems no user knowledge will be assumed and this could be a mistake. I'm more likely to think ALMA's field of view is such-and-such, I want to map a few arcmin, the blank sky measurements will need to be taken over there... this is much more intuitive than drawing a shape on an image - if we even have all-sky submillimetre images to start from!

LTe *It is essential to provide a simple wizard interface to be activated with a "add one target" button click. This should automatically create a TS+TA+SS structure and will ask the basic questions on target, resolution, spec setup and sensitivity.*

This should be enough to map to SBs the observation.

The user shall be able to add or modify elements if needed.

For example, the user should be able to click on the TA and modify it from circle to rectangle to something else if needed, maintaining the basic parameters and SS(s) (without having to recreate another TA, new Spec setups, and erase the old one).

MTB - *I have already mentioned some of them above. As a general suggestion, it would improve the OT to get some little help on the different parameters all over the tree and framework. I mean, you should be able to click on a parameter such as Bandwidth, or Accuracy, or Sensitivity, or Name, or Pitch for the rectangle, and get some info about what does it mean, or allowed values, or units ...*

Some aspects of the Tree presentation are still being discussed, have a look at the web page

<http://almasw.hq.eso.org/almasw/bin/view/OBSPREP/PresentationIssues> and express your view.

DSS *I like the Tree structure but I would like to see the region*



and spectral setup information attached to the RegionOfInterest branch when it is created. It is still necessary to be able to add more regions or spectral setups for a given target but at least the most common selection (one target, one region, one spectral setup) will be covered automatically.

FMa *The ROI appears redundant when there is only one ROI with more TargetAreas. But probably it is useful to have it on the tree structure when there are more than one ROI.*

LTe *I agree to merge the ROI and TA.*

More: the "Project" root is not really needed unless it is allowed to open more than one programme within the same window.

I think that if a single window is allowed to open a single

programme, then PhI and PhII could be two separate "tabs" in the structure subwindow (so that not even the "Program" root is needed).

MTB - *As I already mentioned, I would more agree with the last structure proposed:*

"The user would see a TargetSpace consisting of the logical combination of a TargetArea and a number of SpectralSetupElements."

3.5 The Spatial and Spectral Editor Form(s)

When preparing the programme you will notice that when you click on different items on the tree the forms in the editors change to reflect what input are required at that level. Note that RA and DEC can only be entered as decimal hours and degrees in this version. Please note what kind of coordinates may be useful in your view.

DSS *0.0*

00:00:00.000

00 00 00.000

FMa *Other formats should be also supported, like 00:00:00.00 and*

00 00 00.00 -

JSG *Traditional ones, i.e RA 00 00 00.0 Dec 00 00 00.0 or galactic*



000.00 00.0.

LTe *Eq, Galactic, Ecliptic. 0.0, 00 00 00.00, 00:00:00.00
Plus offsets with respect to TS center (in arcsec, arcmin, deg, rad)*

MTB - *It would be nice to be able to input the coordinates in hh:mm:ss
dd:mm:ss.*

Experiment with the various parameters (also going out of the reasonable range) and note any problems that you find.

FMa *No problem noticed*

JSG *Entered my traditional RA and it lit up in red.*

MTB - *BUG: I have put names to the Targets, Region of Interest, and Region, but they disappear when you open or import the file again. Also, if you choose a polygon as Region, the coordinates of the region do not get saved when you save or export the file. Regarding this polygon, I guess in the future it will be possible to define it (with the mouse?). The way it is now you have no idea what this region is.*

- *BUG: I have selected a Region with a declination of 58 degrees, and I have got no warning saying that this region is not visible for ALMA. This warning only appears when you use the Point Source Exposure Time Calculator.*

- *BUG: When you go with the mouse from one Spectral Element in one Region to another one in another region, the Spatial Editor does not change to the second. In order to get the Spatial Editor with the coordinates of the second region you have to go with the mouse and click on there. I think it would be a good idea that both, Spectral and Spatial Editors, change automatically when the mouse moves.*

- *BUG: If you type on Spectral Editor "Sensitivity = 10 mJy" (for example) and press return, and then you go to another Spectral Element, already created, to check something, when you return to the first Spectral Element the Sensitivity is on default again "-1". The value only remains if after giving the value to the Sensitivity you go to Name Correlator and press return there.*

Are the parameters requested at the appropriate level?



DSS *See bug/enhancement list for details.*

FMa *The Opacity should be requested at each SpectralSetUp, not at the highest level.*

Also, at least an "on-source integration time" field should be added at the SpectralSetUp form, allowing for an automatic computation of the total time which is requested at the target space level.

Then, consider that different SpectralSetUps may require different preconditions within the same project. Now, all preconditions have to be entered at the highest level, but maybe some should be specified at the SpectralSetUp level.

JSG *They weren't really what I was expecting - if you compare my entries to the example supplied, you'll see I put words instead of numbers etc.*

MTB - *Regarding Target Space, I do not think that this is the best place to put the Observation Time. Observation time should be some steps further. Maybe inside every Spectral Element or inside Region.*

- *Already mentioned, but I think it would be more useful to have the time estimate for a particular correlator configuration and source here that in the File menu (Exposure Time Calculator).*

What kind of parameters and at which level are missing for which type of project?

DSS *Being able to change the relative spacing between pointings in a mosaic.*

FMa *See above.*

JSG *Details are missing in the specification of the area I want? For my program I had in mind to do a deep frame to look for a disk around a brown dwarf, then image the area if one is found to see if the line is just background gas. So I would be picking offsets and stuff like that. Maybe the approach of drawing a shape on an image will work, but it isn't what I'm used to.*



I was going to give more comments here but the OT is just hanging in startup now so I've lost the window.

LTe Project Level

- *Is the "version" parameter useful (are different versions saved/exported separately, does not seem to be the case)?*
- *These required parameters should be filled in automatically, or should be asked to the user when a "new project" is created.*

Program Level

- *The meaning of these parameters is unclear. Most (all) of them are relevant at the Spectrometer Setup level. A user can choose general goals, but in most cases, the goals will have to be modified/refined for every single observation (spatial resolution, freq setting, spec setup, source, observing mode...).*
- *Modifying the ImagingScript also ControlScript changed*

TargetSpace Level

- *Need coordinates and size, plus menu option for what image (if any) to show (DSS, 2MASS, other surveys?, own image)*
- *No integration time here*

TargetArea Level (considered as merging of ROI and TA)

- *Coordinates (absolute or relative to TS center, should start with default to TS center)*
- *velocity or redshift*
- *required angular resolution (or should this be at spec setup level?)*
- *Mosaic options if any (or should this be at spec setup level?)*
- *Special observing modes options (or should these be at spec setup level?)*
- *I have chosen Polygon as a Target area. I "Add" ra and dec pairs but nothing happens in the window on the left side above the Add/Delete buttons.*

SpecSetup

- *Integration time / sensitivity*
- *the form need to change based on the correlator constraints (number of bands, resolution bandwidths, central freqs)*
- *Line lists and "FAS" (frequently asked setups)*



- *Based on setup & velocity needs to return feedback on whether the observations are feasible (within ALMA bands) or not.*

MTB - *As a suggestion, and thinking about an easy way to create mosaics, I would put the coordinates RA and Dec of the Region in Target Space. I would remove the sub-area Region of Interest, keeping only Region with the associated Spectral elements. In Region I would give the coordinates of the different regions to study as offsets from the central position (whose coordinates are under Target Space). I think this way creating the observing file for a mosaic would be easier.*

- *In the Spectral Editor will be needed more parameters, such as the Vlsr, or number of spectral channels.*
- *Also it will be useful the possibility of importing files with sources coordinates, for big surveys. In such a case you would not need to type the coordinates by hand.*
- *It would be useful to have default correlator configurations for the Spectral Editor, such as continuum at different frequencies. It will also be useful to get the frequency for the spectral lines directly or by searching in a catalog. I think this has already been planned for the future.*
- *Maybe the number of channels needed is missing in the Spectral Editor?*
- *It would be nice to be able to give the spectral resolution in km/s as well.*

What kind of improvements to this parameters presentation you think will be appropriate/necessary to meet the ALMA-OT requirements?

DSS *See bug/enhancement list for details.*

FMa *In the SpectralSetUp, the transitions should be ALSO made selectable through a list of allowed molecular transitions. Once chosen the transition, the other fields should show menus where to select the allowed values for that transition. The same should be made to allow an easy selection of calibrators.*

JSG *I think observers will expect quite a lot more detail. Is this going to expand a lot? An example based on JCMT observing might be tweaking the frequency centre of the bandpass to get more*



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lines in, defining the source velocity in a different frame, altering the sideband to get better atmospheric transparency.... It's nice if this can be done invisibly for the total-novice-in-a-hurry but these issues actually matter a lot of the time!

LTe *See above*

3.6 The Save/Open functions in the File menu

These are used to save projects to the local (somewhere on your hard disk) Project Repository. In future versions the Submit/Retrieve functions will send to (or obtain from) the ALMA database observing projects.

At any time you should be able to save your programme, the top level project info are required to save (PI, Name of Project, and Proj version).

Try to use the save function to save a few programmes in your repository (you will need to set up different projects with various titles or PIs)

MTB - *I have tested it and it works.*

Now you can try the open function. Try to find the project that you want to load back and experiment a few times with the various options.

MTB - *I have tested it and it works.*

What problems did you have with Save/Open (if any)?

DSS *File => save produces message:*

*Project UT1_example 1.0 stored to repository with
id =uid://X6bd88e532590ba00/X000000000
I can't cut and paste this huge id, if they are going to be
so complicated, at least allow the user to copy the id so
they can be cut and pasted into a window. This is supposed
to be saved to a local ProjectRepository but I'm not sure
where this is...*

FMa *The Open menu allows to retrieve a project by PI or Project Name only if the whole string is entered. This should be possible also entering a*



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substring.

JSG *The example opened ok and my attempt seemed to save but since the OT has utterly crashed I can't try re-opening.*

LTe - *Successive versions overwrite old one without warning (or previous versions are not displayed when re-opening).*

MTB - *When you save the project you are working on does not ask you if you want overwrite the previously saved project. Taking into that the search can only be made by PI name or Project name it is not possible to save different versions of the same project. You can only export them with different names.*

What kind of searches you would like to do on the saved projects?

DSS *I'd like to search on spectral setups and names (project/program).*

FMa *By coordinates (indicating a matching radius). By date.*

JSG *Target lists probably (object names).*

LTe - *PI/CoI (partial matching)*
- *Name (partial matching)*
- *listall (range of dates?)*

MTB - *Certainly by Source or Target is missing*

- *And the possible of visualizing all the projects saved locally.*

What kind of additional info would you like to have (if any)?

DSS *All xml ==> difficult to read. Is there anyway that some basic project information can be written to a comment block at the top of this file that is easier to read? Also put in a blank statement that this file can be imported to the ALMA-ObsTool.*



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LTe - *PI, Name of proj, Version, Date saved, Status (draft prop, prop subm, prop accepted, PhII draft, PhII submitted, PhII accepted for exec, terminated)*

MTB - *Maybe the sources observed. It would be nice to get a basic list with the Targets observed in a project without having to open that project.*

What kind of improvements of the interaction with the local repository do you think are necessary (if any)?

DSS *See problem listed above.*

FMa *The list of the content should be shown on demand.*

LTe - *Possibility to delete projects, or old versions of them*
- *Possibility to export projects (directly)*
- *see above for others*
- *The window with the ID information (when saving) is more scary than useful (one may think that it is needed to save the ID somewhere)*

3.7 The Import/Export functions in the File menu

The Import/Export functions are used to write out (or read in) programmes in a format that can be easily used to share programmes among Co-Is (e.g. via e-mail). The format chosen is XML.

At any time you can click on the Project root in the Tree and the Export function will be activated in the File menu. Try to export your programme and Import the example.

MTB - *I have tested and it works.*

Together with the report you should make your exported project available at the end of the test session.

What problems did you have with Import/Export (if any)?



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DSS *None.*

FMa *No problems noticed.*

LTe *None*

MTB - *The only problem is maybe a BUG: when you export a program under an already existing name (file), it does not ask you if you can to overwrite the file.*

- *Also, when you want to export a project, you can only get the export option in the File menu if you position the mouse on Project. It should be available from every position in the Tree.*

What kind of improvements of these functions do you think are necessary (if any)?

DSS *Again: All xml ==> difficult to read. Is there anyway that some basic project information can be written to a comment block at the top of this file that is easier to read? Also put in a blank statement that this file can be imported to the ALMA-ObsTool.*

JSG *seems to be fine*

LTe *It would be nice to have the possibility of exporting and importing subsets of a project. e.g. I could have a collaboration with somebody, I take care of the continuum mosai obs of something, he does the spectral survey of something else. I could export my target space (with associated TA, spec setup and constraints) and he could load it in the project.*

If such thing is not possible, then the export function should work at all levels of the hierarchy (not only when project is clicked).

Definitely, PhI and PhII should be exportable separately.

MTB - *I would resolve the just mentioned problems. The rest is fine.*



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3.8 The Exposure Time Calculator

With this version of the OT it is distributed also a preliminary (but based on a sensible formulation) exposure time calculator for point source detection in single field interferometric mode (similar to what is available on the ALMA web pages at ESO:

<http://www.eso.org/projects/alma/science/bin/sensitivity.html>)

Note that the atmospheric conditions assumed in this version of the ETC are only those for the best 25% of the time (pwv<0.05mm), and that the instrumental parameters (receiver temperatures, efficiencies etc) are very rough numbers. Nevertheless, all other aspects should be realistic and correct (the range of ALMA bands, effects of resolution, elevation, number of antennas...). In future versions the ETC will be integrated in the OT allowing internal calculation of integration times based on spectral setup and vice versa.

Did you have problems running the ETC?

DSS *Yes, see bug report for details.*

FMa *No.*

JSG *no, it was fine*

LTe *No; it would be nice to have parameters updated when return is hit after typing in values. There should be a control on the number of digits. Bandwidth is confusing (it actually is "resolution" for spectral observations)*

MTB - *BUG: When you change the parameters such as BW, and press return the Exposure Time does not get actualized unless you move to a different window such as Frequency for example, and click the mouse there.*

What kind of improvements do you think will be necessary to the ETC?

DSS *I would like to have a button on the target page or such that says, ExpTimeCalc - click on it and all the relevant parameters for that target are uploaded to the ExpTimeCalc*



and the calculation is made.

For a target, I specify the observation time, why isn't this linked to the sensitivity? As it is, I have to run the ExpTimeCalc find out reasonable combinations of sensitivity and bandwidth, then input both these numbers manually (and hope I got them right). The obs time should produce a sensitivity or vice versa.

FMa *Atmospheric conditions should be selectable (at least on a good-mean-low basis).*

JSG *polarization data, bandpass as well as channel width, noise at specified elevation, continuum versus line mode, list of lines in bandpass, noise for different spatial resolution...*

LTe *Needs to be integrated with the rest of the system*

MTB *- Already talked about this. I would probably move it inside the Spectral Elements.*

3.9 The mapper

The mapper function (in the file menu) allows to map your programme into scheduling blocks. This is at a demonstrative level only in this version. You can use the mapper for your satisfaction and see what happens in the SB Editor view.

DSS *Nope, I could never get the Mapper to work in either Windows or Linux versions. I tried repeatedly (see testing log for details). Thus, I could never write SBs.*

JSG *it worked*

LTe *It worked...*

I am wondering whether it will be possible to produce and submit subsets of a program.

I think that the mapper function should be available in an advanced menu.



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In fact I think that the SB view should be activated only on demand from an advanced menu and by default it should be a read only thing.

In the same advanced menu there could be an option to activate the SB editor mode for expert users.

The file menu could contain a "verify" button and a submit button.

MTB - *I have tried and it worked (at this basic level). It puts all the targets as empty but I guess this is the way it should be at this stage.*



4 Bug lists and notes

Detailed testing notes and bug lists were produced by some of the testers and are appended below.

4.1 DSS – Testing notes

ALMA-OT Testing log
Debra Shepherd
2 Feb 04

Required java installation to get ALMA OT to work on linux:
setenv PATH /home/sola/j2rel.4.2_03/bin:\${PATH}
mozilla &

I would like to have a single postscript file of the User Guide so I can just print it out and go through everything.

Starting up on Linux:
 RedHat 9.0, Mozilla 1.4

My computer was pointing to java version 1.3.2
Got sys admin to change the the path to point to version 1.4

When starting Java Web Start, I get the error messages:

```
Warning: Cannot convert string "<Key>Escape,_Key_Cancel" to type
VirtualBinding
Warning: Cannot convert string "<Key>Home,_Key_Begin" to type
VirtualBinding
Warning: Cannot convert string "<Key>F1,_Key_Help" to type
VirtualBinding
Warning: Cannot convert string "Shift<Key>F10,_Key_Menu" to type
VirtualBinding
Warning: Cannot convert string "<Key>F10,Shift_Key_Menu" to type
VirtualBinding
Warning: Cannot convert string "<Key>KP_Enter,_Key_Execute" to type
VirtualBinding
Warning: Cannot convert string "Alt<Key>Return,Alt_Key_KP_Enter" to
type VirtualBinding
```

Assume I can ignore these messages for now.



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Error log is: /home/sola3/dss3/alma/tsts/obsprep/log.output

Configuration DB:

JAVA Web start window comes up but it is only 1cm x 1cm in size.
When I click on the window then it becomes larger so I can see the
progress of the CDB, ACS install.

Error: Unable to launch J2RE 1.4.2_02 Installer
looks like a problem with different versions of java we have on our
system.

log.output says:

```
Java Web Start Console, started Mon Feb 02 13:23:44 MST 2004
Java 2 Runtime Environment: Version 1.3.1_02 by Sun Microsystems Inc.
Logging to file: /home/sola3/dss3/alma/tsts/obsprep/log.output
```

So perhaps Mozilla is still pointing to the wrong version?

Tried to download the stand-alone Java Web Start to avoid the JRE
problem.
The download install.sh said that the JRE was not included.

REQUEST: The documentation should say that the java code requires
JRE1.4.2 Our installation of JRE1.4.1 was not sufficient.

Sys admin installed JAVA 4.1.2 on my system only (Blackdown JAVA) with
proper JRE version.

Configuration DB:

Got the small window saying "close window to exit CDB"
but then got messages

```
    JAVA Web Start : Unable to launch CDB.
    Unable to create int from strung >>null<<.
    Please check property
```

```
'jacorb.security.ssl.client.required_options'
```

log.output says:

```
    - Error -
    java.io.StreamCorruptedException: invalid stream header
```

One possibility: the blackdown-JAVA is causing problems?
Try installing a Sun version of JAVA.

Configuration DB: OK

Manager: OK

Containter: OK

ALMA Observing Tool: OK

Everything worked, got the expected error messages about security.



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Starting up on Windows, laptop (Dell), RedHat 9.0, Netscape

Configuration DB: OK
Manager: OK
Containter: OK
ALMA Observing Tool: OK

Everything worked, got the expected error messages about security.

After installation, the download manager window said
that the ALMA-OT was installed in
C:/DOCUME~1/DSHEPHER/LOCALS~1/TEMP

Using ALMA-OT on windows laptop:

In main window, clicking on 'Overview' tab shows
text in grey - very difficult to see in 'skin' look&feel
selection, other look&feel selections (metal,motif,windows)
are impossible to see grey text.

When the main OT window comes up, the 'Feedback' window reports:
Warning: Too many target areas
clicking on >>> shows that the self-destruction sequence
initiated. OH NO!!!!
Error: Parameter warp is out of range.
But hey, you don't tell me how to change the parameter
warp to avoid warp core implosion! OH NO!!!!
Now is this anyway to treat your users?

No idea what it means to say:
You are now in perspective '1'.
Its in bright yellow so it draws the eye. Why?
This text never changed through out testing.

Using ALMA-OT on my Linux box:

Switching between Application Layout option 1 => 2 => 1
makes the tabs on the 'structure' block move from the
top => bottom => bottom
Tabs stay on the bottom, why don't they go back to the
top when moving back to application layout 1?



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The little arrows which can minimize the different areas get *really little* (nearly impossible to see) after switching between Application Layouts.

After importing the example xml file:

File => save produces message:

Project UT1_example 1.0 stored to repository with id =uid://X6bd88e532590ba00/X000000000
I can't cut and paste this huge id, if they are going to be so complicated, at least allow the user to copy the id so they can be cut and pasted into a window. This is supposed to be saved to a local ProjectRepository but I'm not sure where this is...

The same message is produced whether I click the 'root' of the tree in the Structure window or whether I have clicked on a specific Target space. Not sure what is going on. Can't figure out where it is saved.

Export to local disk worked OK. All xml ==> difficult to read. Is there anyway that some basic project information can be written to a comment block at the top of this file that is easier to read? Also put in a blank statement that this file can be imported to the ALMA-ObsTool.

There is no spectral information that I see associated with the example xml file.
The xml file says this is a C01-0 and 2-1 observing program so where is this information? How do I access it? Was it not loaded?

Playing with Exposure Time Calculator:

As suggested in the User Guide, I changed the sensitivity to a negative number, then back again to the positive number it had 0.04800000041723251 Now there are too many digits and the left side of the number is not visible unless I knock off some of the digits on the right.

It would be nice to have the error messages or change in color and exposure time be modified when I hit return. As it is, you have to click the mouse outside of the window you just modified to see the results.

If I choose an invalid frequency band, shouldn't the exposure time show null or something? As it is, it remains static from last calculation - this is confusing.



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Creating my own project:

When I change the name of the project or program, I have to click on the folder in the Structure block and open and close the folder for the new name to be shown in the Structure tree. Again, it would be nice if a mouse click outside of the field or hitting return would update the entire project views.

In Program spatial editor,
I modified the imaging script to read "mosaic" then I clicked on the TargetSpace and then back to the program window, now the Flow Control Script says "mosaic" too. Why is flow control and imaging scripts forced to be the same?

How do I figure out what control and preconditions are necessary?
Could the documentation give at least some idea of what might be useful?

Isn't 'seeing' and 'phase stability' essentially the same thing?

It was not obvious to me how to create a 'region of interest' for a target space. I would have preferred it to be in the same window as the TargetSpace. Things are way too compartmentalized - looks like the modular programming structure is being imposed on the user (this is a major problem with the current user interface of the aips++ software). With so much of the critical program information spread over many layers, it is difficult to tell at a glance what is going on. This is one thing I hate about JOBSERVE, and AIPS++ tool organization. I shouldn't have to click on 10 to 20 links just to get an overview of a project. This just invites user error.

It wasn't clear when I would get the spectral editor setup - I just kept clicking until I figured out that I had to click on a target region

Having to assign a name to each part of a program and then manually pull up region and spectral information is confusing. When I create a target I want templates for the spatial region and spectral setup to be generated automatically - also call them something reasonable. At first I changed the name of some level or other then I couldn't figure out what was the project, program, target, region, spec setup...

Specifying a 'circle' - I want the option to just have a single field.

Why is the ExpTimeCalc RA & Dec format different from the region spec? RA Dec should have the same options (e.g. single number, 00:00:00.000 etc...). Multiple input formats are good.

I would like to have a button on the target page or such that



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says, ExpTimeCalc - click on it and all the relevant parameters for that target are uploaded to the ExpTimeCalc and the calculation is made.

ExpTimeCalc has bandwidth input, but this should be resolution. E.g. for a spectral line, the bandwidth might be 30 MHz but the resolution is only 0.1 MHz so you want to calculate the exposure time necessary for the chosen resolution. Terminology should be the same.

For a target, I specify the observation time, why isn't this linked to the sensitivity? As it is, I have to run the ExpTimeCalc find out reasonable combinations of sensitivity and bandwidth, then input both these numbers manually (and hope I got them right). The obs time should produce a sensitivity or vice versa.

Once when I tried to run file => export, the export option wasn't available. I clicked on the project, and both the target regions and the export option suddenly appeared.

I exported the file once, then made some modifications, then exported the file again. But: There was no dialog box warning me that I was about to re-write the xml export file. I think there should be.

OK, I just saved the program I created and quit the OT, manager, container, and CDB are all still active. Now how do I restart? Try going back to the web site and clicking on the 'ALMA Observing Tool' link. My xload window shows that something happened but then there is no action otherwise. Perhaps I have to exit everything and then restart from scratch?

Whoops, I canceled the manager, container, and CDB but apparently, I just had to wait for 5 minutes before the ALMA OT was ready to start, now I have the popup window that the OT is starting (says 'creating controller) but I just canceled things... Who knows what is happening. I can't seem to quit out of this load.

Do I just have to wait for a time out?

I quit mozilla. ALMA Obs Tool is still trying to start...

Frustrating.

Try logging out and logging back in.

OK, I don't see the process any more.

There should be an easy way to abort the startup procedure.

Start over:

Configuration DB: OK - odd, the little 'Exit CDB' window went to the tool bar



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but did not pop up on my screen.

Manager: OK

Containter: OK

ALMA Observing Tool: OK (previous size settings are saved)

I now have cachedir/ and Manager_Recovery/ directories and a CDB_Recovery.txt file in the directory I started Mozilla.

Imported g192.xml project

The TargetSpace and RegionOfInterest names did not get saved.

Project, program, and spectral information names are all there.

Changed a few thing (names, version number)

Exported the file to g192-2.xml

Tried to select File->Mapper

message: ERROR: Zero SBs specified...

But UserGuide says that choosing the Mapper will create the ObsUnitSets and SBs.

Tried to save the file (not just export it).

Mapper gives the same error.

Enter Structure-SB Editor

Spectral Editor window remains frozen with last view

I don't think it should have a display unless it is active?

The SB Editor says the program G192 is (empty)

I clicked on every part of the project in the Structure window and tried to activate the Mapper. I get the same error message.

Apparently I can't write SBs at all.

See if windows laptop can read the project created by linux OT:

Using ALMA-OT on windows laptop:

Imported the g192-2.xml file

(lost TargetSpace, RegionOfInterest,Region names again)

Tried to select the Mapper, same error as on linux:

Zero SBs specified.

Cannot write SBs in Windows laptop either.

Exported the file to local directory, called it g192-3.xml

Since I can't map the project to SBs, I guess I'm finished



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with network testing.

Quit the OT

Shut down the Manager, container, and CDB

Shut down the web start application manager.

Disconnect from the network.

I found Java in C:/Program Files/Java/j2re1.4.2 (and j2re1.4.1_02)

click on javaws/javaws.exe

OK, started the JAVA web start application.

View->Downloaded Applications.

CDB start - OK

Manger start - OK

Container start - Manager panel now reports 2 exceptions:

- NoPermissionException

- CoreException (AbeansDataExchangeException).

Not sure what this means, container started.

ALMA OT - OK

Imported the g192-3.xml project - OK

Still can't use the mapper but everything started OK...

Shut down OT, container, manager, cdb, Java Web Start.

End non-network testing.

End testing.



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4.2 DSS – Bugs list

Bug report and Enhancement Requests for ObsPrep UT1

Debra Shepherd

2 Feb 04

Bugs found:

1. In main window, clicking on 'Overview' tab shows text in grey - very difficult to see in 'skin' look&feel selection, other look&feel selections (metal,motif,windows) are impossible to see grey text.
2. Switching between Application Layout option 1=> 2 => 1 makes the tabs on the 'structure' block move from the top => bottom => bottom
Tabs stay on the bottom, why don't they go back to the top when moving back to application layout 1?
3. The little arrows which can minimize the different areas get *really little* (nearly impossible to see) after switching between Application Layouts.
4. File => save produces message:
Project UT1_example 1.0 stored to repository with
id =uid://X6bd88e532590ba00/X000000000
I can't cut and paste this huge id, if they are going to be so complicated, at least allow the user to copy the id so they can be cut
and pasted into a window. This is supposed to be saved to a local ProjectRepository but I'm not sure where this is...
5. Exposure Time Calculator: As suggested in the User Guide, I changed the sensitivity to a negative number, then back again to the positive number it had 0.04800000041723251 Now there are too many digits and the left side of the number is not visible unless I knock off some of the digits on the right.
6. ExpTimeCalc: It would be nice to have the error messages or change in color and exposure time be modified when I hit return. As it is, you have to click the mouse outside of the window you just modified to see the results.
7. ExpTimeCalc: If I choose an invalid frequency band, shouldn't the exposure time show null or something? As it is, it remains static from last calculation - this is confusing.
8. In Program spatial editor, I modified the imaging script to read "mosaic" then I clicked on the TargetSpace and then back to the



program window, now the Flow Control Script says "mosaic" too. Why is flow control and imaging scripts forced to be the same?

9. Why is the ExpTimeCalc RA & Dec format different from the region spec? RA Dec should have the same options (e.g. single number, 00:00:00.000 etc...). Multiple input formats are good.
10. ExpTimeCalc has bandwidth input, but this should be resolution. E.g. for a spectral line, the bandwidth might be 30 MHz but the resolution is only 0.1 MHz so you want to calculate the exposure time necessary for the chosen resolution. Terminology should be the same.
11. Several times when I tried to run file => export, the export option wasn't available. I clicked on the project, and both the target regions and the export option eventually appears.
12. When importing an exported file: The TargetSpace and RegionOfInterest names did not get saved. Project, program, and spectral information names are all there.
13. Mapper function did not work.
Tried to select File->Mapper
message: ERROR: Zero SBs specified...
But UserGuide says that choosing the Mapper will create the ObsUnitSets and SBs.
I tried this in windows (on and off the network) and linux.
Perhaps I just did not get the procedure right? If so, documentation needs improvement.

Enhancement requests:

-
1. It was not obvious to me how to create a 'region of interest' for a target space. I would have preferred it to be in the same window as the TargetSpace. Things are way too compartmentalized - looks like the modular programming structure is being imposed on the user (this is a major problem with the current user interface of the aips++ software). With so much of the critical program information spread over many layers, it is difficult to tell at a glance what is going on. This is one thing I hate about JOBSERVE, and AIPS++ tool organization. I shouldn't have to click on 10 to 20 links just to get an overview of a project. This just invites user error.
 2. Having to assign a name to each part of a program and then manually pull up region and spectral information is confusing. When I create a target I want templates for the spatial region and spectral setup to be generated automatically - also call them something reasonable. At first I changed the name of some level or other then I couldn't figure out what was the project, program, target, region, spec setup...



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3. Region selection: I want the option to just have a single field.
4. I would like to have a button on the target page or such that says, ExpTimeCalc - click on it and all the relevant parameters for that target are uploaded to the ExpTimeCalc and the calculation is made.
5. For a target, I specify the observation time, why isn't this linked to the sensitivity? As it is, I have to run the ExpTimeCalc find out reasonable combinations of sensitivity and bandwidth, then input both these numbers manually (and hope I got them right). The obs time should produce a sensitivity or vice versa.
6. I exported the file once, then made some modifications, then exported the file again. But: There was no dialog box warning me that I was about to re-write the xml export file. I think there should be.
7. Spectral Editor window remains frozen with last view
I don't think it should have a display unless it is active?
8. I would like to have a single postscript file of the User Guide so I can just print it out and go through everything.
9. Will users be able to change the relative spacing between beams?
Or will Nyquist spacing always be required.
10. Probably isn't necessary to mention this but I assume the OT will be expanded to include spectral line selection GUIs (e.g. graphical view of the Lovas Catalog) and overlaying the chosen region onto a fits file? Hey, wouldn't it be nice to have the region displayed and then be able to click and drag/rotate the corners until it looks right? This would be very impressive!
11. All xml ==> difficult to read. Is there anyway that some basic project information can be written to a comment block at the top of this file that is easier to read? Also put in a blank statement that this file can be imported to the ALMA-ObsTool.
12. After the test, I finally figured out that the OT and ACS had created 4 or 5 directories in my home directory. This is not a good plan. If the OT needs some space, then put everything in a single directory called ALMAObsTool or something obvious like this. Also, please provide an estimate of the disk space required in the documentation (so people know how much of their home directory will be taken up).



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4.3 FMa - Bugs

1) OT

Playing around with the "Look&Feel" and the "Options --> Appearance" menus sometimes causes the OT window to mess up. Quitting the OT and then starting it again causes it to remain frozen.



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4.4 JSG – testing notes

the installation process
=====

went to <http://www.eso.org/~mschilli/webstart-ot/> to get the download instructions

a bit confusing about whether I need to download anything - we have java 1.4 (and I'm on enterprise linux 3)

I got lost on the java web start download page (using Mozilla) because the link to linux download doesn't do anything... downloaded the linux version just in case

(then found a note saying if we have 1.4 then I should already have the web start thing)

click on the web start manager link to enable the log output but just get an 'unknown error'... have set up the javaws preference thing but I think it can't find it

now it is time for coffee and track down the system guy...

it took nearly an hour for him to install javaws - the Starlink version set itself up completely wrong, could not even find the config file in its own directory when explicitly pointed there! lots of problems with the APPHOME definition

we ignored the starlink version, deleted my download, and got the proper one which is jre not the top link which was jse - now it is set up ok (thanks Tim!!!)

now startup the OT parts - system guy is not happy about the blank certificate but we trust you guys.... ;)

am I supposed to exit the manager before doing the next thing? it has some entries in the exception panel with cross symbols like things have failed (called core exception)... oops, I think I completely misunderstood this, it says 'wait for window that says 'close window'...', not to actually close it! hope I have closed them in the right order - start again leaving the windows up, now the exceptions have gone away

(I object to being offered something called militarygame!!)

looking good....

using the ALMA OT
=====



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like the not-many-things-at-once appearance of the OT screen

the little arrows to collapse the feedback box dont seem to work, maybe they are so small I cant get the cursor on them?

ok, I have named my program, how to set it up?
as usual with OT's **it is not clear where to start!!!!**

click about a bit, only the forms tab really has stuff in... (tabs are always a bit offputting, they neve seem to start with the obvious one, or even leap to the eye at all - maybe big descriptive buttons are better?)

can I be working on more than one program at a time? I downloaded the example but want to try my own, and seem to have overwritten the example

good, hints appear if you put the cursor in a box :)

entered some random things in the spatial editor... with prompts from the webpage have added a target space and a region of interest - by now if this was for real it would be very baffling. The target space is a region ALMA will look at, and the region is interest is a shape like a circle? Huh? I want to cover a circular bit I've found in the digital sky survey or something? I was expecting something like a field of view and options to mosaic, am I not expected to know anything about the capabilities of the interferometer?

it's nice there only 4 top menus each with only a few options, so the randomly clicking about method we all use works reasonably well... ;)

why's it asking if I want to overwrite my program now I've clicked mapper? I just want to look at imaging tools or whatever!

hmm, icon time... there's a square clock face, and a pile of clocks. Maybe they aren't clocks. They could be maps with folds in and a line pointing somewhere. Or sundials. Most like sundials, come to think of it. Anyway, we have the scheduling blocks there.

the exposure time calculator is nice and simple. Bandwidth is a bit confusing, is that the whole passband or my desired spectral channel width? Later on I will want a polarization sensitivity too.

soddit... tried changing the appearance and garbage came up on the screen and after running it all down (in the right order) the OT won't run up again. Eeek! 5 versions are now lurking not prperly run up and I can't stop them!

Will log out from machine and see if this fixes something.



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Nope, still won't start up. Sorry, out of time to try this. But it was interesting to do and has lots of good features! :)



5 Overall bugs list

This is the compilation of all the bug reports from all testers. It has been compiled from the reports in Sect 3 and 4 for the purpose of offering a homogeneous reference list for the developers.

1. In main window, clicking on 'Overview' tab shows text in grey - very difficult to see in 'skin' look&feel selection, other look&feel selections (metal,motif,windows) are impossible to see grey text.
2. Switching between Application Layout option 1 => 2 => 1 makes the tabs on the 'structure' block move from the "top => bottom => bottom" Tabs stay on the bottom, why don't they go back to the top when moving back to application layout 1?
3. The little arrows which can minimize the different areas get *really little* (nearly impossible to see) after switching between Application Layouts.
4. the Look&Feel is not saved when I stop and restart the OT (it is always back to "Skin")
5. subwindow modifications are not saved either (they are always back to the fraction defined for that perspective). Not clear whether this is a bug or it is intentional.
6. The problem happened to me the first time that I have installed the program and before importing any file or before typing anything, I have played with the Look & Feels, changed the fonts size and Perspective, and I have quit the program (to have the new fonts working). Next time I have tried to run the OT locally, it has got stuck when reading the preferences model. Removing all the packages and downloading them again has not solved the problem. The problem has only been solved when deleting the whole .almaot directory and startin OT again. I have noticed that if you first type something (as the name of the project) and you save the program, or you import a previous created file, then the problem does not occur.
7. Without changing the fonts size, only changing Perspective, Tab placement, Look & Feels, for a while, I have had to quit the program again because the subwindows have disappeared, remaining only letters. Try this: import a program, then go through all Look & Feels, trying all them, then go and change Perspective, you get a mess and have to quit. What is more, next time you try to



start OT get stuck again when reading preferences model. Again I had to removed the whole ./almaot directory to get OT started.

8. I have put names to the Targets, Region of Interest, and Region, but they disappear when you open or import the file again.
9. If you choose a polygon as Region, the coordinates of the region do not get saved when you save or export the file. Regarding this polygon, I guess in the future it will be possible to define it (with the mouse?). The way it is now you have no idea what this region is.
10. I have selected a Region with a declination of 58 degrees, and I have got no warning saying that this region is not visible for ALMA. This warning only appears when you use the Point Source Exposure Time Calculator.
11. When you go with the mouse from one Spectral Element in one Region to another one in another region, the Spatial Editor does not change to the second. In order to get the Spatial Editor with the coordinates of the second region you have to go with the mouse and click on there. I think it would be a good idea that both, Spectral and Spatial Editors, change automatically when the mouse moves.
12. If you type on Spectral Editor "Sensitivity = 10 mJy" (for example) and press return, and then you go to another Spectral Element, already created, to check something, when you return to the first Spectral Element the Sensitivity is on default again "-1". The value only remains if after giving the value to the Sensitivity you go to Name Correlator and press return there.
13. I modified the ImagingScript also ControlScript changed as a result
14. I have chosen Polygon as a Target area. I "Add" ra and dec pairs but nothing happens in the window on the left side above the Add/Delete buttons.
15. File => save produces message: Project UT1_example 1.0 stored to repository with id =uid://X6bd88e532590ba00/X000000000 I can't cut and paste this huge id, if they are going to be so complicated, at least allow the user to copy the id so they can be cut and pasted into a window. This is supposed to be saved to a local ProjectRepository but I'm not sure where this is...
16. Successive versions overwrite old one without warning (or previous versions are not displayed when re-opening).



17. When you export a program under an already existing name (file), it does not ask you if you can to overwrite the file.
18. When you want to export a project, you can only get the export option in the File menu if you position the mouse on Project. It should be available from every position in the Tree
19. Exposure Time Calculator: As suggested in the User Guide, I changed the sensitivity to a negative number, then back again to the positive number it had 0.04800000041723251 Now there are too many digits and the left side of the number is not visible unless I knock off some of the digits on the right.
20. ExpTimeCalc: It would be nice to have the error messages or change in color and exposure time be modified when I hit return. As it is, you have to click the mouse outside of the window you just modified to see the results.
21. ExpTimeCalc: If I choose an invalid frequency band, shouldn't the exposure time show null or something? As it is, it remains static from last calculation - this is confusing.
22. In Program spatial editor, I modified the imaging script to read "mosaic" then I clicked on the TargetSpace and then back to the program window, now the Flow Control Script says "mosaic" too. Why is flow control and imaging scripts forced to be the same?
23. Why is the ExpTimeCalc RA & Dec format different from the region spec? RA Dec should have the same options (e.g. single number, 00:00:00.000 etc...). Multiple input formats are good.
24. ExpTimeCalc has bandwidth input, but this should be resolution. E.g. for a spectral line, the bandwidth might be 30 MHz but the resolution is only 0.1 MHz so you want to calculate the exposure time necessary for the chosen resolution. Terminology should be the same.
25. Several times when I tried to run file => export, the export option wasn't available. I clicked on the project, and both the target regions and the export option eventually appears.
26. When importing an exported file: The TargetSpace and RegionOfInterest names did not get saved. Project, program, and spectral information names are all there.
27. Mapper has to work also for short integration times



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28. Mapper function did not work. Tried to select File->Mapper message: ERROR: Zero SBs specified... But UserGuide says that choosing the Mapper will create the ObsUnitSets and SBs. I tried this in windows (on and off the network) and linux. Perhaps I just did not get the procedure right? If so, documentation needs improvement.
29. All unit changes should be reflected in the actual number entered by the user (e.g. if the user had entered 1 in the integration time field and then changes the units to seconds the number should automatically change to 3600.



6 Overall Enhancements Request list

This is the compilation of all the enhancements requests from all testers. It has been compiled from the reports in Sect 3 and 4 for the purpose of offering a homogeneous reference list for the developers

1. Have a one-click download/startup
2. Have an easy way to start the OT offline (without having to go to the webpage and/or start JavaWebStart Manager and find the appropriate downloaded application)
3. Have a robust, easy and reliable way of installing JWS (if this is going to be the final technology used)
4. After the test, I finally figured out that the OT and ACS had created 4 or 5 directories in my home directory. This is not a good plan. If the OT needs some space, then put everything in a single directory called ALMAObsTool or something obvious like this. Also, please provide an estimate of the disk space required in the documentation (so people know how much of their home directory will be taken up).
5. The OT windows look still too much anonymous
6. It would be nice to save/export Perspective, Look&Feel and general preferences with the project
7. One thing I do not like is the fact that you have to quit the program to get the new fonts working
8. Would it be possible/easy for the user to create his/her own perspective?
9. It was not obvious to me how to create a 'region of interest' for a target space. I would have preferred it to be in the same window as the TargetSpace. Things are way too compartmentalized - looks like the modular programming structure is being imposed on the user (this is a major problem with the current user interface of the aips++ software). With so much of the critical program information spread over many layers, it is difficult to tell at a glance what is going on. This is one thing I hate about JOBSERVE, and AIPS++ tool organization. I shouldn't have to click on 10 to 20 links just to get an overview of a project. This just invites user error.



10. Something missing now is the possibility of selecting the configuration. This option should probably be under Edit, or maybe some steps further in the tree. The required angular resolution is also missing.
11. Region selection: I want the option to just have a single field
12. ...Detailed suggestions on the parameters and the level at which these should be requested...
13. Moving stuff from one ROI to another should be made possible not only by releasing the click on the targeted ROI label, but also by releasing the click on anyone of its elements in the tree structure. A trash symbol could be useful in order to allow removing elements by simply clicking and dragging them on it.
14. I cannot duplicate ROIs within a given TS using the Click&Drag (This may be useful to create a few TAs with same spec setup(s) within a given ROI, then one can simply change the coords of each ROI.
15. I cannot duplicate TSs within the same project
16. I could not drag and drop from another programme (I opened two OT windows with different programmes to try this, no error message was issued, but nothing was copied/moved either).
17. Having to assign a name to each part of a program and then manually pull up region and spectral information is confusing. When I create a target I want templates for the spatial region and spectral setup to be generated automatically - also call them something reasonable. At first I changed the name of some level or other then I couldn't figure out what was the project, program, target, region, spec setup...
18. I like the Tree structure but I would like to see the region and spectral setup information attached to the RegionOfInterest branch when it is created. It is still necessary to be able to add more regions or spectral setups for a given target but at least the most common selection (one target, one region, one spectral setup) will be covered automatically.
19. ROI and TA should be merged in the Tree presentation
20. More on the Tree: the "Project" root is not really needed unless it is allowed to open more than one programme within the same window. I think that if a single window is allowed to open a single programme, then PhI and PhII could be two



separate "tabs" in the structure subwindow (so that not even the "Program" root is needed).

21. I would like to have a button on the target page or such that says, ExpTimeCalc - click on it and all the relevant parameters for that target are uploaded to the ExpTimeCalc and the calculation is made.
22. Coordinates: Eq, Galactic, Ecliptic. 0.0, 00 00 00.00, 00:00:00.00, Plus offsets with respect to TS center (in arcsec, arcmin, deg, rad) Also it will be useful the possibility of
23. importing files with sources coordinates, for big surveys. In such a case you would not need to type the coordinates by hand.
24. It would be useful to have default correlator configurations for the Spectral Editor, such as continuum at different frequencies. It will also be useful to get the frequency for the spectral lines directly or by searching in a catalog. I think this has already been planned for the future
25. For a target, I specify the observation time, why isn't this linked to the sensitivity? As it is, I have to run the ExpTimeCalc find out reasonable combinations of sensitivity and bandwidth, then input both these numbers manually (and hope I got them right). The obs time should produce a sensitivity or vice versa.
26. The Open menu allows to retrieve a project by PI or Project Name only if the whole string is entered. This should be possible also entering a substring.
27. Save: successive versions overwrite old one without warning (or previous versions are not displayed when re-opening).
28. Open: I'd like to search on spectral setups and names (project/program).
29. Open: Search by coordinates (indicating a matching radius).
30. Open: Search by date.
31. Open: Search target lists (object names).
32. Open: it should be possible to visualize all the projects saved locally.



33. Open: it would be nice to have displayed: PI, Name of proj, Version, Date saved, Status (draft prop, prop subm, prop accepted, PhII draft, PhII submitted, PhII accepted for exec, terminated)
34. Open: It would be nice to get a basic list with the Targets observed in a project without having to open that project.
35. Save/Open: it would be nice to be able to delete projects from the local repository
36. I exported the file once, then made some modifications, then exported the file again. But: There was no dialog box warning me that I was about to re-write the xml export file. I think there should be.
37. It would be nice to have the possibility of exporting and importing subsets of a project. e.g. I could have a collaboration with somebody, I take care of the continuum mosai obs of something, he does the spectral survey of something else. I could export my target space (with associated TA, spec setup and constraints) and he could load it in the project. If such thing is not possible, then the export function should work at all levels of the hierarchy (not only when project is clicked).
38. Definitely, PhI and PhII should be exportable separately.
39. Spectral Editor window remains frozen with last view I don't think it should have a display unless it is active?
40. I would like to have a single postscript file of the User Guide so I can just print it out and go through everything.
41. Will users be able to change the relative spacing between beams? Or will Nyquist spacing always be required.
42. Probably isn't necessary to mention this but I assume the OT will be expanded to include spectral line selection GUIs (e.g. graphical view of the Lovas Catalog) and overlaying the chosen region onto a fits file? Hey, wouldn't it be nice to have the region displayed and then be able to click and drag/rotate the corners until it looks right? This would be very impressive!
43. All xml ==> difficult to read. Is there anyway that some basic project information can be written to a comment block at the top of this file that is easier to read? Also put in a blank statement that this file can be imported to the ALMA-ObsTool.



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44. ETC. has to consider: polarization data, bandpass as well as channel width, noise at specified elevation, continuum versus line mode, list of lines in bandpass, noise for different spatial resolution
45. I am wondering whether it will be possible to produce and submit SBs for a subsets of a program.
46. I think that the mapper function should be available in an advanced menu (note that the word "mapper" can be very confusing).
47. I think that the SB view should be activated only on demand from an advanced menu and by default it should be a read only thing. In the same advanced menu there could be an option to activate the SB editor mode for expert users. The file menu could contain a "verify" button and a "submit" button.