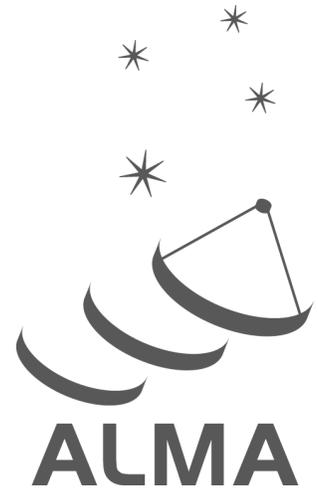


ALMA Snooping Project Interface (SnooPI) User Manual

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www.almascience.org

User Support:

For further information or to comment on this document, please contact your regional Helpdesk through the ALMA User Portal at www.almascience.org. Helpdesk tickets will be directed to the appropriate ALMA Regional Centre at ESO, NAOJ or NRAO.

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1. The ALMA Snooping Project Interface (SnooPI)

The ALMA Snooping Project Interface (SnooPI) is a read-only web application that runs on Mozilla Firefox, Google Chrome, and Safari.

SnooPI allows Principal Investigators (PIs) and Co-Is to follow their ALMA projects from the moment of proposal submission all the way to data delivery. SnooPI also allows Contact Scientists to track all the ALMA projects supported by their node, by accessing exactly the same information that is made available to the PIs.

2. The interface

SnooPI can be accessed via the ALMA Science Portal by selecting the tool from the drop-down menu under the 'Observing' tab. The landing page of the application is a Dashboard-like page (Fig. 1) with direct access to the user's projects and Scheduling Blocks (SBs) as PI (including Co-PI), Co-I and Delegee if applicable. The details of the various views and functionalities will be described in the following sections.

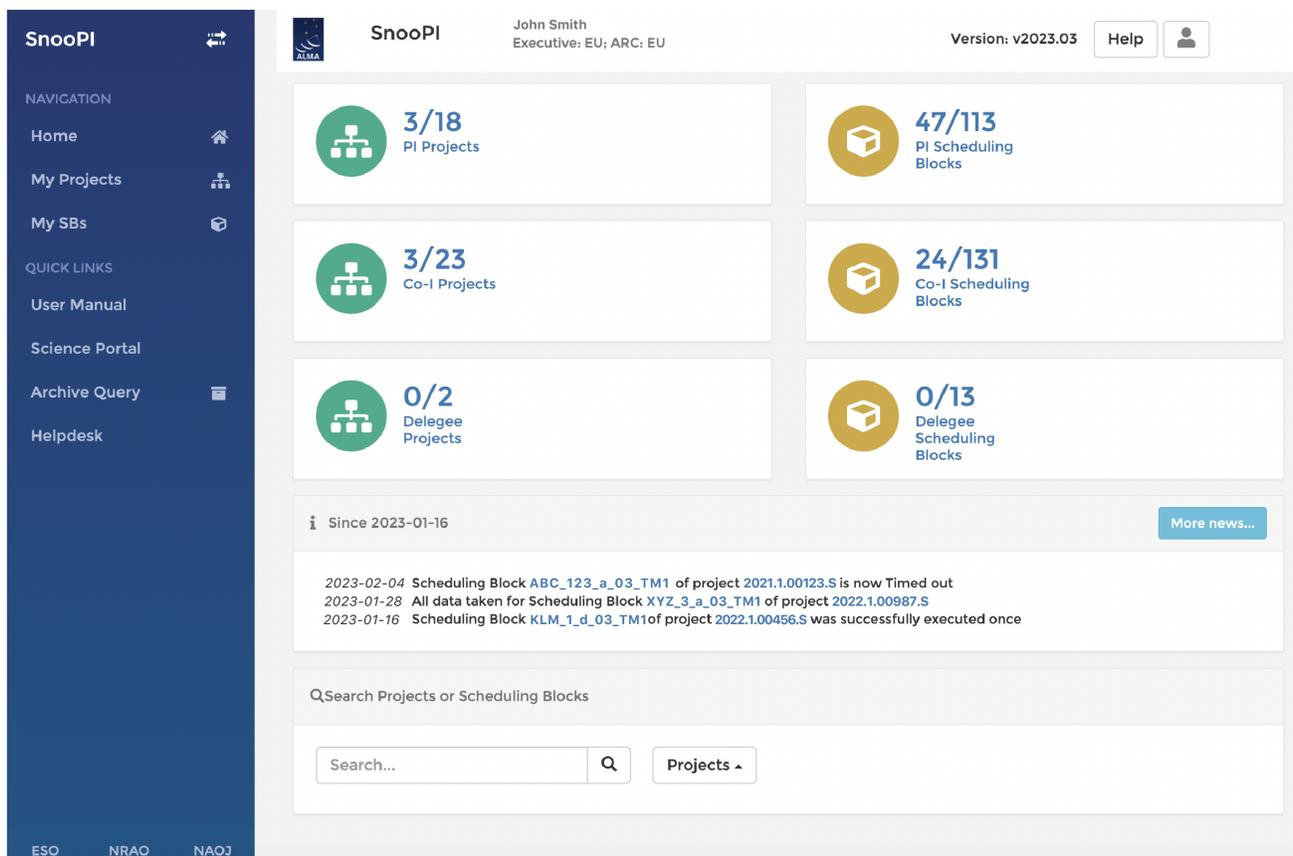


Fig. 1: SnooPI's home page, showing the dashboard of projects and scheduling blocks as well as the news feed and the search feature.

The 'Help' button in the top right corner provides a list of all the symbols used to describe the states of Projects, SBs, Member Observing Unit Sets (MOUSs) and Execution Blocks (EBs). Clicking on the avatar icon next to the 'Help' button, the user can either access their User Profile in the Science Portal, where the data, Phase 2 submission and Target of Opportunity delegations can be handled, or has the option to log out of SnooPI.

The dashboard on the home page displays the number of currently active as well as the total number of projects, subdivided into the PI, Co-I and Delegee (if applicable) categories. The total number of projects also includes rejected proposals.

An expandable newsfeed below the dashboard informs the user about the latest news for their projects. At the bottom of the page, a Search feature permits to look for a specific project or SB, which can be selected from the pull-down menu.

The left-hand side menu is retractable and provides direct links to the *Home* page (dashboard view), *Projects* and *SBs*, the *User Manual*, the *Science Portal*, the *Archive Query* Interface and the *Helpdesk*. In the bottom left corner, the user can find direct links to the pages of the three ALMA Executives (ESO, NRAO and NAOJ).

3. “My Projects” view

The Projects view displays by default a table of the active projects (Fig. 2), listing the project code, title of the project, project status and priority grade. The table is sortable by any of these columns by clicking the arrow next to the column name. Different tabs on the top subdivide the projects into the PI (including Co-PI), Co-I, and Delegee (if applicable) categories.

Project code ^	Project Title ^	Status ^	Grade ^
2022.1.00987.S	Having so much fun with ALMA	A	A
2021.1.00123.S	Having fun with ALMA	B	B
2022.1.00456.S	An amazing observing program	A	A
	KLM_1_a_03_TM1	✓	
	KLM_2_a_03_TM1	✓	
	KLM_3_a_03_TM1	✓	
	KLM_4_a_03_TM1	✓	
	KLM_5_a_03_TM1	✓	
	KLM_6_a_03_TM1	✓	

Fig 2. “My Projects” list with the SB list of the last project deployed, after clicking on the cube next to the project code.

Active projects are all approved projects of the current cycle with a priority grade A, B (i.e. high priority projects) or C (i.e. filler projects), A-ranked carry-over projects from the previous cycle, as well as projects from the previous cycle that have not yet been fully delivered. Before the result of

the proposal review is made public¹, projects submitted to the next cycle are also listed by default among the active projects.

By selecting “All projects”, inactive projects (e.g. fully or partially completed projects from previous cycles, rejected projects etc) are also included in the table, in reverse Project Code order. Rejected projects are removed from the displayed list by selecting “Accepted projects”.

The status of each project is indicated by an icon. The meaning of the icon is explained in a text box that appears when hovering over the icon. The intent of each icon is listed in SnooPI when clicking the “Help” button in the upper right corner as well as in Section 6 of this document.

A cube to the left of the project name indicates that SBs have been generated for this project. Clicking on the cube will open a list of the available SBs and their statuses. The status icons for the SBs are the same as for the projects and are explained by hovering over the symbol or by clicking the “Help” button.

The Search function at the top of the list allows the user to look for specific projects by project code or SBs by SB name.

Clicking on a project code, project title or SB name opens the project tree view which is described in more detail in Section 5.

4. “My SBs” view

The Scheduling Block or SB view lists in a table the project code, the SB name, the SB unique identifier (UID), the status of the SB and the progress of the observations (Fig. 3). The SB table can be sorted by any of these columns via the arrow next to the column title as well as by band, array, first execution and last execution by clicking on the “Sort by...” button.

Project^	SB Name^	SB UID^	Progress^
2022.1.00456.S	KLM_1_a_03_TM1	uid://A001/X1234/Xabc	100%
2022.1.00456.S	KLM_2_a_03_TM1	uid://A001/X1234/Xdef	100%
2022.1.00456.S	KLM_3_a_03_TM1	uid://A001/X1234/Xghi	100%
2022.1.00456.S	KLM_4_a_03_TM1	uid://A001/X1234/Xjkl	100%
2022.1.00456.S	KLM_5_a_03_TM1	uid://A001/X1234/Xmno	150%

Fig. 3. My SB view with the Sort by... drop-down menu deployed.

By selecting “All SBs”, SBs from non-active projects will also be listed, when available. The status of the SB is indicated by one of the icons also used to show the status of the project (see Sec. 6). Additionally,

¹The proposal review is either concluded as a consensus report of the ALMA Proposal Review Committee (APRC), or as the reviewers feedback, if the proposal was evaluated through a Distributed Peer Review (DPR) process.

- 🕒 a dark blue clock icon indicates that an action or an information is expected from the PI, including the triggering of the SB.

The progress column displays the execution percentage (EP, i.e. the execution count divided by the expected number of executions, expressed in %). The EP can exceed 100% and one SB can be considered completed if the EP is larger than 90%: the calculation of the EP is not exclusively based on the observing time, but also on the atmospheric conditions and the number of usable antennas, taking into account phase rms and shadowing.

5. The project tree view

Clicking on a project code in the “My Projects” view will open its project tree whose structure mirrors the project tree of the ALMA Observing Tool (AOT). The Execution Percentage (EP, i.e., the execution count divided by the expected number of executions, expressed in %) is shown next to each SB under the Progress column. The EP can exceed 100% and one SB can be considered completed if the EP is larger than 90%.

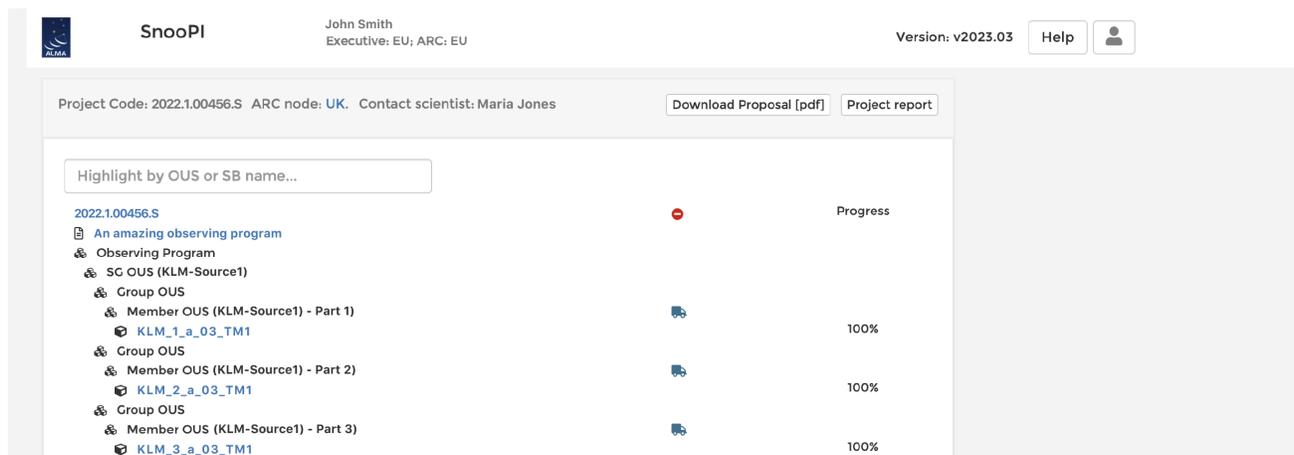


Fig 3. The project tree view.

Once the SB is successfully completed and the SB moves to the processing stage, the status is no longer shown next to the SB but next to the corresponding MOUS, with one of the following symbols:

- ⚙️ Three gears indicate that the MOUS is being processed;
- 🚚 A truck marks a delivered MOUS;
- 🚑 An ambulance marks an MOUS for which QA3 is in progress.

The Search function at the top of the project tree allows the user to look for specific SBs by typing the SB's name or status (one string can be typed at any given time). All SBs matching the string are highlighted in yellow in the project tree while the parent Science Goals (SGs) and Observing Unit Sets (OUSs) are highlighted in shaded yellow. At the top of the project panel, there are links to the web page of the corresponding ARC node, the project report and the pdf file of the proposal. The name of the Contact Scientist is also shown, when available.

Fig. 4. Detailed SB/EB view next to the project tree view.

Clicking on any linked object in the project tree opens a window on the right-hand side with detailed information. Clicking on the project title reveals the list of Co-PIs/Co-Is/Delegees if applicable, the proposal priority grade, the abstract of the proposal and the APRC consensus report, or the reviewer feedback if the proposal was evaluated through a DPR process. Each SB links to its individual detailed view panel, described in Section 5.1.

5.1. The Scheduling Blocks detailed view

Clicking on an SB name will open a new panel with the project tree on the left-hand side and the details of the SB on the right-hand side (see Fig. 4), namely:

- the name of the SB, its status and a status history button (“History”);
- the name of the original Science Goal;
- the uid of the MOUS, a status history button and the possibility to launch an ALMA archive query (“Archive query” button) for this uid as soon as there is a QA0 Pass execution block (see Fig. 4 for an example). The results of the query will be displayed in a new tab. A button “Weblog” can be clicked by PIs/Co-PIs or Co-Is to download the Weblog of the delivered MOUS;
- the coordinates of the target and pointing information (i.e. single or multiple sources, custom mosaic or rectangular field). In case of mosaics, the coordinates are the ones that the PI had entered in the Field setup in the AOT. The coordinates of Ephemeris objects are also shown;

- the Array (12-m, 7-m or total power (TP)), band, representative frequency in GHz, nominal array configuration with a link to the configuration schedule and minimum/maximum angular resolution requested by the PI
- progress circle which displays the execution percentage (EP);
- the time constrains and visit constrains for time-critical projects; hovering over the underlined text, the list of requested time-slots appears, and/or links to other SBs that need to be executed in sequence, when applicable;
- the QA2 status (if set in the database) and a link to the QA2 report for QA2 Pass or QA2 Semi-pass statuses;
- a list of all the corresponding Execution Block (EB) IDs, with their execution end times, execution duration, QA0 status and links to the corresponding QA0 reports. The QA0 and QA2 status is indicated by:
 - ✓ a green check-mark to signify Pass;
 - ✓⚠ a green check-mark with an adjacent danger symbol to signify Semi-pass;
 - a red circle to signify Fail.
 - 🎯 a red target to signify QA0 Semi-pass specifically because the science target was not observed.

QA0 and QA2 reports are not generated by SnooPI. The application simply displays them, when available. QA0+ results, that can be used to access the data quality and shall not be used for scientific use, are also included in the QA0 report.

5.2. The Execution Blocks detailed view

Clicking on an EB will expand the bottom of the SB panel to list EB details on:

- the system temperature (average T_{sys} , sigma, minimum and maximum T_{sys});
- the array (number of antennas, shortest and longest baselines, angular resolution and maximum recoverable scale);
- the observed sources divided into science target(s) and calibrators with their respective names, coordinates and on-source observing times (see Fig. 4).

The EB detailed view can be viewed as a printable version by clicking on the “Print” button, or exported in machine readable format by clicking on the “Table” button.

6. Status symbol descriptions

Project icons:

-  A white “thumbs up” marks a project that has been submitted (Phase 1);
-  A red cross marks a project which was rejected at the proposal review stage (after the results of the proposal review become public). Such projects only appear in the list if “All projects” is selected;
-  An asterisk marks an approved project (priority grades A, B or C) for which the Phase 2 material has not yet been submitted;
-  A light blue “thumbs up” indicates that Phase 2 material for the project has been submitted, but the SBs have not been generated yet;
-  A blue “thumbs up” indicates that the Phase 2 material has been submitted, the SBs have been generated, but the project is not yet set to “Ready”, in other words it has not yet been placed in the observing queue;
-  An orange circle indicates that the project has been set to “Ready” but no data have been taken yet;
-  An orange triangle with a white exclamation mark indicates that some data have been taken;
-  A green check-mark indicates that all the data have been taken;
-  A check-mark inside a square indicates that the project has been completed and all data have been delivered; such projects only appear in the list if “All projects” is selected;
-  A check-mark inside a blue square marks a project that has been partially completed and all data taken have been delivered;
-  A stop sign indicates that the project has timed out; this can happen for time-critical projects or projects that require configurations that are no longer coming back in the current cycle;
-  A blue cross marks a project that has been cancelled or not been observed;
-  An “undo” arrow marks a project that is not to be observed;
-  A question mark indicates an unknown project status, i.e. not properly set in the data base.

ObsUnitSet icons:

-  Three gears indicate that the MOUS is being processed;
-  A truck marks a delivered MOUS;
-  An ambulance marks an MOUS for which QA3 is in progress.

Scheduling Block (SB) icons:

-  A blue “thumbs up” indicates that the SBs have been generated but they have not been set to “Ready” yet;
-  An orange circle indicates that the SB has been set to “Ready” but no data have been taken yet;
-  An orange triangle with a white exclamation mark indicates that some data have been taken;
-  A green check-mark indicates that all the data have been taken and successfully passed a level 0 quality assurance (QA0) checked against the required number of executions;
-  A stop sign indicates that the SB has timed out;
-  A blue cross marks an SB that has been cancelled;
-  A dark blue clock indicates that the SB is waiting for input from the PI, including the triggering of the SB.
-  A bright blue clock indicates that the SB is waiting for input from the Phase 2 Group or for a calibrator search, without any required action from the PI.

Execution Block (EB) icons:

-  A green check-mark indicates that the execution block has passed quality insurance (Pass);
-  A green check-mark with an adjacent danger symbol indicates that the execution block has semi-passed quality insurance (Semi-pass);
-  A red target marks an execution block in which no science target was observed (QA0 Semi-pass);
-  A red circle marks a failed execution block (FAIL).



The Atacama Large Millimeter/submillimeter Array (ALMA), an international astronomy facility, is a partnership of the European Organisation for Astronomical Research in the Southern Hemisphere (ESO), the U.S. National Science Foundation (NSF) and the National Institutes of Natural Sciences (NINS) of Japan in cooperation with the Republic of Chile.

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ALMA construction and operations are led by ESO on behalf of its Member States; by the National Radio Astronomy Observatory (NRAO), managed by Associated Universities, Inc. (AUI), on behalf of North America; and by the National Astronomical Observatory of Japan (NAOJ) on behalf of East Asia. The Joint ALMA Observatory (JAO) provides the unified leadership and management of the construction, commissioning and operation of ALMA.

