ALMA Users' Policies

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 Center at ESO, NAOJ or NRAO.

Revision History:

Version	Date	Editors
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1   Purpose and Scope

This document defines the long-term core policies for use of the Atacama Large Millimeter/submillimeter Array (ALMA) and ALMA data by the science community. Cycle-dependent implementation parameters and procedures are detailed in the Call for Proposals documents for each cycle: the cycle announcement, the Proposer's Guide, and the Technical Handbook. In case of conflict between the Call documents and the Users' Policies, the latter takes precedence, unless explicitly indicated otherwise. All ALMA users are subject to the Users' Policies described here and in the Call documents. Violation of these policies by a user may result in sanctions against scientific project(s) under evaluation or execution in which he/she is involved.

2   ALMA Users

Unauthenticated users (unregistered users, or users who are registered but have not logged in) have access to ALMA non-proprietary data, documentation, tools, or the Helpdesk Knowledgebase articles listing solutions to common questions and problems.

Registering with ALMA confers all authenticated users additional privileges such as participating in ALMA proposals or accessing their proprietary data. In addition, ALMA may assign specific roles to selected registered users that provide additional privileges. For instance, ALMA Proposal Review Committee (APRC) and ALMA Review Panel (ARP) members are assigned the role of Science Assessor, which allows them, for the ALMA cycles in which they serve, to run the Proposal Handling Tool to access and review proposals and submit their proposal assessments.

2.1   Registering with ALMA

Anyone can register for an ALMA user account. Each user may only have a single ALMA account, which is identified by a unique, user-selected username. This username is permanent: a user may not change his/her username after he/she has completed the registration process. To prevent the accidental creation of two accounts with a different username by a single user, the Science Portal issues a warning if it detects such an attempt. To register, a user must provide his/her full name, a valid email address, and the country of his/her affiliation or the country of residence (for users not affiliated with a scientific institution). The Observatory has experienced that often ALMA official notifications end up in the spam folder of users' emails whose addresses belong to commercial servers, such as Gmail or Yahoo. The Observatory reserves the right to refuse any complaint from users entering such email addresses in the user profile.

Users are required to update their ALMA user profile whenever there is a change in their personal details, such as a new email address or a change of affiliation. Users are responsible for ensuring that their profile is correct and are requested to contact ALMA staff through the Helpdesk if they encounter problems or to de-activate unnecessary, duplicated, profiles.

3   User Support

User support is provided by the ALMA Regional Centers (ARCs) and ARC nodes.

The country specified in the user's profile constrains which ARC will provide his/her support. Users from a country within the three Executives (EA, EU or NA) are automatically and compulsorily assigned the ARC of

their Executive for support. Users from Taiwan may elect either the EA ARC or the NA ARC as their support ARC. Users outside the three ALMA Executives, including Chilean users, may choose any Executive ARC as their support ARC. The supporting ARC for Large Programs may be changed from the one assigned to the PI to the one assigned to one of the co-PIs under especial circumstances.

The assigned ARC will assist users during Phase 2, data quality assurance process and data delivery. Face-to-face support may be provided by the assigned ARC or one of its ARC nodes.

Questions should be submitted to the supporting ARC through the ALMA Helpdesk. Any potentially sensitive information communicated to ARC staff or submitted to the Helpdesk regarding the user or proprietary project details are held in the strictest confidence. Information submitted through the Helpdesk can only be accessed through a secured database by ARC-affiliated and the Joint ALMA Observatory (JAO) staff.

ARC-affiliated staff are the interface between ALMA users and the Observatory for all communications. Users should always contact the supporting ARC for issues related to any project, including project execution, proposal submissions or change requests.

Only in case of urgent questions regarding the execution of Target of Opportunity (ToO, see Principles of the Proposal Review Process for a definition of proposal types) projects or special observing campaigns (e.g. VLBI) may the PI be in contact with the Astronomer on Duty (AoD). In this case the communication proceeds via the Helpdesk at a dedicated department continuously staffed.

4 ALMA Proposal Preparation and Submission

This section details policies that govern proposal preparation and submission and time assignment.

4.1 Eligibility and responsibility

Any registered user may submit ALMA proposals. All registered users agree to act according to the ALMA policies and procedures, as defined in this document and in Proposal Call documentation. In particular, all users accept the limitations of the observing capabilities and operational restrictions applicable for the cycle for which he/she submits a proposal.

Each proposal must identify a single individual[1] who will serve as Principal Investigator (PI). The PI will act as the official contact between ALMA and the proposing team for all proposal correspondence. Proposals may include any number of Co-Investigators (Co-Is) and, for Large Programs and VLBI Proposals, Co-Principal Investigators (Co-PIs). Additional rules, described at *http://www.das.uchile.cl/das_alma_crc.html*, apply for qualification to use the Chilean share of the time. Proposals which are submitted through Chilean time and, based on reasons related to the Chilean rules above, are found not to be compliant will not be eligible for the Open Skies Time.

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[1] Single individual is understood as a single person, i.e. proposals submitted by a consortium are not valid. Instead, a person within the consortium should submit the proposal and act as PI and any other consortium members will act as co-Is or co-PIs (if the proposal type allows them).

By submitting a proposal, the PI takes full responsibility of its contents. In particular, PIs must ensure that all Co-Is and Co-PIs have agreed to be included on a proposal. Including an ALMA user as Co-I or Co-PI in a proposal without his/her consent may lead to the proposal being canceled. Co-I and/or Co-PI names cannot be added to or be withdrawn from the proposal after the proposal deadline.

PI responsibilities include proposal submission and, for approved projects, submission of Phase 2 products (see Sect. 6.1) and proposal change requests (see Sect. 7). PI responsibilities may only be transferred to Co-PIs or Co-Is in the case of emergencies (e.g. sickness), status change (e.g. retirement) and approved leave (e.g. parental, military, see Section 8.4.4). These responsibilities may not be transferred for non-urgent circumstances (e.g., sabbatical or science leave, vacations). Requests to transfer PI responsibility should be sent to the ALMA Helpdesk.

The project PI may grant the following PI privileges on a project basis to one or more ALMA registered users:
- Access to proprietary data (see Section 8.4);
- Email notification of state changes to an approved project.

These privileges are granted through the Science Portal (SP) user profile "Project Delegation" interface. The same interface can be used by the PI of an approved proposal to allow another ALMA registered user to submit the Phase 2 products for his/her proposal.

PIs, Co-PIs, and Co-Is may all track the progress of their proposals via the Snooping Project Interface (SnooPI) and are entitled to receive help from or discuss project details with ARC staff.

4.2   Proposal Time Assignment

Proposal types and the policies related to the time allocation are described in the Principles of the Proposal Review Process document, available at the Science Portal. There may be cycle-dependent limits on the time allocated for proposals of different types (e.g. using non-standard modes, Large Programs, stand-alone ACA). These will be described in the Proposer's Guide for each cycle.

4.3   Proposal submission: Phase 1

Proposals are generated and submitted using the ALMA Observing Tool (OT). This is known as the "Phase 1" process. The capabilities and most of the observing mode restrictions in the proposal call documentation are designed into the OT. If inconsistencies exist, the Proposer's Guide takes precedence. If a user finds such an inconsistency, it should be reported though the ALMA Helpdesk. ARC and JAO staff will take the appropriate actions to resolve the inconsistency.

Only proposals that conform to the prescribed format, that are submitted through the proper OT version, that comply with the advertised technical constraints and restrictions, and that are received before the submission deadline will be considered.

The final proposal submission deadline is firm – proposals submitted after this deadline will not be accepted (except for Director's Discretionary Time, DDT, proposals, see below). A proposal can be submitted any number of times to the ALMA Archive until the submission deadline. When a proposal is submitted multiple times, previous versions are overwritten. Multiple submissions of the same proposal using different regional affiliations (see Sect. 6.4) are not allowed. If such proposals are detected, the first submitted version will be considered, and the remaining proposals will be ignored.

DDT Proposals do not have a specific submission deadline and can be submitted at any time until the end of an observing Cycle for execution during that Cycle. Unlike all other proposals, DDT proposals can only be submitted once and that submission will be considered final.

Proposals accepted in the previous cycle for which observations have not been completed by the proposal deadline can be resubmitted for consideration in the current cycle call for proposals. If the resubmitted proposal is accepted and one or more Science Goals (SGs) were successfully completed in the previous cycle, the relevant SGs of the resubmitted proposal will be cancelled.

5 ALMA Proposal Selection

ALMA proposals other than DDT are subject to international peer review by the ARPs and the APRC. Panel members are appointed by the ALMA Director and are selected to ensure appropriate representation of the ALMA regions and Chile.

5.1 *Duplications*

In order to ensure the most efficient use of ALMA, duplicate observations of the same location on the sky with similar observing parameters (frequency, angular resolution, coverage, and sensitivity) are not permitted unless scientifically justified. Archival data should be used whenever possible to accomplish the science goals of a proposed investigation. Detailed criteria of what constitutes a duplicated observation are specified in Appendix A of this document.

It is the responsibility of the proposers to check the proposed observations against the previously executed programs in the Archive and accepted grade A programs to avoid duplicate observations. Proposers cannot be penalized for proposing duplications of previous Cycle observations if they had no way to know about them by the proposal deadline. Any proposed duplicate observation must be justified in the proposal. The ALMA Review Panels will determine if the justification for the requested duplicate observation is sufficient.

Duplicate observations may result among proposals submitted within the same Cycle. In general, the higher ranked proposal will be given priority, but regional shares may be considered for closely ranked proposals. The final decision of which proposal is awarded time will be determined when the observing queue is formed, which factors in the share of time available to each region.

The JAO may consider the amount of time duplicated between the two proposals when determining whether or not a proposal is descoped. The proposal that stands to lose the proposed duplicate observation will not have access to the data from the other proposal until the proprietary period has expired.

There may be cases where more than one DDT or ToO programs are triggered on the same object nearly simultaneously. Should such a situation arise, the Observatory Scientist will take the decision on which program will be observed according to the following guidelines:

- If the programs do not fulfil the criteria for being considered duplicates, all programs will be executed

- If two or more programs are identified as duplicates and have a different grade (see Section 5.3), the project with the highest grade will be executed

- If two or more programs are identified as duplicates and have the same grade, the project that was triggered first (identified via the timestamp of the submitted Helpdesk ticket) will be executed

5.2 Descoping

Projects may be descoped only for compelling scientific or technical reasons. This includes duplications with existing data or with a higher-ranked project from the same cycle. If any part of a project should be descoped because of duplication, this must be clearly stated in the consensus report sent to PIs. Project descoping must be done without adding SGs to a proposal. Parameters will not be changed for a subset of targets within a SG (e.g. remove one spectral window or change the correlator setup or requested resolution and sensitivity for a subset of targets in a SG).

5.3 Proposal Assessment

Each proposal is assigned a letter grade as a result of the proposal review process as described in the *Principles of Proposal Review Process* document. Grades A, B and C will be assigned based on scientific rank, Executive balance, and scheduling feasibility. Proposal grades affect scheduling priority, with proposals with A grades having the highest priority and proposals with C grades having the lowest. All other proposals will not have Phase 2 Scheduling Blocks (SBs) prepared (see Sect. 6.1) and not be considered for scheduling at the telescope.

The ALMA Observatory may declare any type of observation that does not conform to the advertised capabilities technically infeasible at any stage of the Proposal Review Process or during "Phase 2" (see Sect. 6.1). The final decision on project infeasibility will be taken by the ALMA Director, based on the advice from a small standing committee consisting of senior staff at the JAO. PIs of proposals found to be infeasible will be notified by email with a description of the technical issue.

5.4 Outcome

An email notification will be sent to the PIs that will include the consensus report from the ALMA review and the assigned letter grade. The outcome of the proposal selection process is final.

In case of questions about details in the consensus report, the PI may submit a request for clarification through the ALMA Helpdesk. However, in no case will such a request lead to a revision of the grade assigned to the proposal based on the scientific assessment.

6 Preparation and Execution of ALMA Observations

This section details policies that govern the preparation, execution, and quality assessment of approved projects.

6.1 Observation preparation: Phase 2

Once a project has been approved for execution, it passes into Phase 2.

The PI will retrieve the project from the archive with the OT, and use the OT to check and approve the Phase 2 material following the guidelines provided through the SP (see Phase 2 QuickStart Guide and User's Guide to ALMA Scheduling Blocks). These guidelines describe any allowed changes that may be made by PIs with

respect to the submitted proposal before the Phase 2 material is generated. Any changes to a project mandated by the proposal review process (as described in the consensus report) or motivated by technical considerations will be made by ALMA staff. PIs may contact ARC staff at any time for questions or recommendations regarding checking and generating Phase 2 material.

Once the SGs are prepared and reviewed, the PI has the responsibility to submit them through the OT to the ALMA archive. This submission constitutes the PI approval that the project is valid for scheduling on the telescope. ALMA staff may modify submitted projects for technical reasons (e.g. to improve the efficiency of the observational setup). If such technical modifications may affect by any means the scientific output (e.g. moving slightly the spectral windows from the band edge) of the project, the PI will be contacted to approve the changes.

Non-minor changes to a project that are not mandated by the proposal review process or technical considerations may only be made after the approval of a PI-initiated Change Request (Section 7).

If the PI does not approve the Phase 2 products within the given deadline as indicated in the email notification, the project may be downgraded to the next lower grade.

6.2   Observation scheduling

Science observations will be executed by ALMA operations staff, taking into account the weather conditions, the array configuration, target elevation and other practical constraints, the project grades and the Executive balance. All other things being equal, the proposal with the highest grade will be observed first.

The individual SBs of approved projects will be observed until one of the following three criteria are met:
1. The data are determined to meet the user specified criteria (see Sect. 6.3)
2. The potential scheduling period has ended (one observing season for grade B and C projects, two observing seasons for grade A projects)
3. There are no more 12-m Array configurations planned for the rest of the scheduling period that match the SB angular resolution requirements or time constraints have expired.

If a project has been observed for more than twice the originally estimated time, further executions may be deprioritized (see Section 6.3).

6.3   Quality Assurance, project completion and carry-over

Data acquired with ALMA are subject to a near real-time verification of data quality for each individual execution (Quality Assurance level 0 or QA0), and again after an SB has run to completion or been terminated (QA2) [2]. The quality assurance criteria and outcomes (Pass, Fail, SemiPass) are described in the Quality Assurance chapter of the Technical Handbook. Data that have no scientific value (e.g. no valid data or cannot be calibrated or exported) are marked "QA0 Fail". These data do not count against project completion or regional time shares, are not available to PIs, and do not show up in archival searches. Data that are not useful for the proposed science goal but which are worthy of archiving (e.g. because they contain useful calibrator data) are marked "QA0 SemiPass". These data will not be used in the generation of

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[2] Quality assurance level 1 (QA1) deals with the overall performance of the array. See the ALMA Technical Handbook for details.

PI science products, and do not count against the PI or regional time shares, but the raw data follow the same access rules and proprietary periods as "QA0 Pass" data (Sect. 8.4.1) and do show up in archival searches.

QA2 is performed on the data that result from all executions of an SB (called an ObsUnitSet or OUS). Data that meet the PI-specified goals within cycle-specific tolerances (as published in the Technical Handbook for each cycle) are marked "QA2 Pass" and are made available to the PI. Data that do not pass QA2 have two outcomes: if there is still the chance to obtain more observations in the current cycle then the data are marked "QA2 Fail" and the corresponding SB is re-inserted into the observation queue; otherwise they are marked "QA2 SemiPass" and delivered to the PI. A special case is constituted by an OUS that has been already observed for more than twice the originally estimated time and still does not pass QA2. In this case, the region where the QA2 assessment was performed will report on how much time was already spent, how much additional time is anticipated to be needed to complete the OUS, and whether the additional time is thought to be useful for that OUS. Based on this, the ARC manager at each region will take the decision to mark the corresponding OUS as "QA2 Fail" and have it placed back into the observing queue or as "QA2 SemiPass" and have the data products delivered to the PI. QA2 SemiPass data have the same proprietary period as other data deliveries (Sect. 8.4), and do count against regional shares (Sect. 6.4).

SBs from Grade B and C projects that have not been started or completed by the end of the cycle and have not been accepted as a resubmission in the new cycle will be "TimedOut" and removed from the observing queue. Grade A proposals that have not been completed at the end of the cycle in which they were submitted will be carried over to the next cycle. At the end of the second cycle in the observing queue, Grade A proposals will also be "TimedOut" and removed from the observing queue unless a resubmission has been accepted for the upcoming cycle.

A project is deemed completed if all associated QA0 Pass data have been assessed and delivered and all its OUS have been assessed and delivered as QA2 Pass.

If none or not all of the project's OUS have been delivered as QA2 Pass but there is no further opportunity to observe the project in the current cycle (e.g. because the requested configuration is no longer available) or to roll it forward into the next cycle, the project is terminated and marked as "NotObserved" or "PartiallyCompleted", respectively.

6.4   Time accounting

The policies of time accounting are described in the *Principles of Proposal Review Process* document in the ALMA SP.

The ALMA Observatory strives to balance the observing time among the regions over two-year periods. Balance across regions is based on the actual execution time of valid 12-m Array observations, i.e. data that are "QA0 Pass" and have been delivered to PIs (see Section 6.3 for details on QA0).

Regular, ToO and DDT projects will have their observing time assigned to the region of the PI. As long as it does not exceed 5% of the total observation time of the cycle, observation time for PIs unaffiliated with an ALMA partner (Open Skies projects) will be accounted to the regions, proportionally to their regional share, i.e., 10% for Chile, 22.5% for EA, and 33.75% for each of EU and NA. Any additional time required by Open Skies observations will be assigned to NA.

The observing time of Large Programs and VLBI Proposals will be assigned to the regions of the PI and of the Co-PIs, proportionally to the fraction that are affiliated with each region.

For calculation of the Executive balance, the affiliation of a PI – or of a Co-PI, in the case of Large Programs and VLBI Proposals – is the affiliation in his/her ALMA user profile at the time of the proposal's last submission. For EA/NA affiliation, 50% of the time is accounted to EA and 50% to NA.

6.5   PI errors

The Observatory is not responsible for errors in tuning or pointing due to incorrect information included in a given project by the PI. All ALMA time allocations charged to observations that are flawed due to user error will be charged to the relevant region as if the observation had been completed without errors.

Should a PI realize after observations of his/her project have been made that, due to an error on his/her part, they do not actually produce the expected scientific outcome, then the observations will not be repeated. Any remaining unexecuted Scheduling Blocks from the same project without errors may be retained in the observing queue at the discretion of the Observatory. If unexecuted parts of the project are found to contain similar (or any other) errors before the project execution has been completed, the PI should immediately submit a change request to correct those errors. This change request will be handled through the standard procedure (see Section 7).

7   Changes to ALMA Proposals

After the proposal deadline, submitted proposals may not be changed prior to the completion of the review process.

Changes to a project recommended by the proposal review process (and included in the feedback to the PI) or motivated by technical considerations will be considered for implementation during Phase 2. Any other change may only be made after the approval of a PI-initiated change request (see below).

Changes to a project for which Phase 2 has been finalized and accepted for admission to the ALMA observing queue will only be permitted in exceptional circumstances and only if the pertinent Scheduling Block has not been observed and had some data pass QA0. An exception is the correction of errors introduced by the Observatory (either by ALMA staff or ALMA tools) in the generation of a Scheduling Block and identified after it is submitted to the observing queue. Consultation with the PI, if required, will be handled via the respective support ARC. Any time spent executing such erroneous SBs will not be charged against the PI observing time.

Change requests initiated during Phase 2 that are not resolved before the deadline for generation and approval of Phase 2 products will result in generation of the Phase 2 products by ALMA staff once the change request resolution is announced. For change requests initiated after the Phase 2 products have been submitted to the observing queue, these products will be immediately removed from the queue until the change request status is resolved.

Change requests leading to duplications against ALMA proposals in the observing queue or archival observations are not allowed.

The Observatory's decision on the requested change will be communicated to the PI via the Helpdesk system. Approved changes will be implemented by ARC staff, in consultation with the PI.

7.1 Project withdrawal

A PI may withdraw a submitted project at any time. If a PI withdraws a project prior to completion, a Helpdesk ticket should be filed so that no further observations are acquired for the project.

8 ALMA Data Delivery and Data Rights

This section details policies that govern ALMA data, including proprietary times.

8.1 Data property

All data taken by ALMA shall be jointly owned by the Parties[3]. Ownership shall not impact the free access to the data for use by observers and the astronomical community, according to the policies described in this document.

8.2 ALMA proposal data

Proposal data includes: the Phase 1 materials submitted by the PI (proposal title, abstract, scientific and technical justification, and the names, institutions, and regions of PIs Co-PIs and Co-Is); the APRC grades and reviews; and the Phase 2 content prior to execution, including target positions, frequency settings, and spectral window parameters.

For proposals assigned grade A or B, the project code, proposal title and abstract, and the names of the PI, Co-PIs and Co-Is will be made public soon after PIs are informed of the outcome of the proposal review process. For proposals assigned grade C, the corresponding information will be made public when the first data pass QA0.

Proposal metadata (for example the source positions, observation frequencies, and integration times) for Grade A proposals will become public soon after the proposal review process is completed. For Grades B and C proposals metadata will be made public for each SB as soon as the first data of such SB are archived. The metadata for unaccepted proposals or unobserved proposals (or parts of it) will remain confidential.

The scientific and technical justification, figures, references, and panel review rankings and reviews are never made public for any proposal.

8.3 Observational metadata

Observational metadata describe the observations and the bulk data (excluding proposal data). They include positional and sky coverage information; frequency settings, frequency coverage and resolution; angular resolution, *uv*-coverage, and antenna lists; source and calibrator names; polarization; observation date(s) and start/end times; time on source and sampling rate; basic weather; and PI name.

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[3] The 'Parties' are defined in the ALMA Trilateral Agreement as the NSF (National Science Foundation of the United States), ESO (European Organisation for Astronomical Research in the Southern Hemisphere) and NINS (National Institutes of Natural Sciences of Japan).

Observational metadata will be made available without restrictions when an observation that passes QA0 is archived, regardless of its grade.

8.4 Observational data

Observational data (also called 'instrumental data') include visibility data and all resulting products and images.

8.4.1 Observational data access and proprietary periods

All OUSs that do not fail QA2 (see Sect. 6.3) will be made available to the PI, and any ALMA users delegated by the PI (see Sect. 4.1). These data are subject to a 12-month proprietary period that begins when the ARC sends an email notification to the PI that the data are available. For DDT Projects, this proprietary period is 6 months. The ALMA Director may exceptionally grant a different proprietary period.

Successful proposers will have exclusive access to their project's observational data for the proprietary period, after which the data will become publicly accessible. PIs may be contacted by their supporting ARCs to answer questions helping ALMA to provide better data and support in the future.

ALMA staff will have access to observational data at all times, as necessary for technical analysis and performance tuning. In addition, ALMA staff members formally assigned to perform project Quality Assurance (stage 2, QA2) can download and reduce project data for this purpose.

Until the proprietary period expires, ALMA staff may not disclose or scientifically use ALMA observational data from projects for which they are not PI, including projects they support, without explicit PI permission registered on a Helpdesk ticket. Similarly, ALMA staff performing QA2 may not disclose any intermediate or final data reduction products of PI observations to anyone outside the ALMA/ARC network, including the project PI, co-PIs and Co-Is, prior to data delivery. Any exceptions to this policy must be approved by the Head of Science Operations and the associated ARC Manager.

For ToO observations that require follow up/subsequent observations based on the outcome of the initial observation, PIs have the possibility to request the release of the raw data via the Helpdesk to enable a prompt analysis. The proprietary period for these observations will start when the quality assured data products are delivered to the PI, as for any other observation (see above).

8.4.2 Stale Data

SBs that have been started but not completed and have no opportunity to be completed for some time (e.g. due to observing conditions or configuration schedule) result in partially completed OUSs. These OUSs are said to be in "stale" state if they satisfy the following set of conditions:

- No new data for the given OUS is expected to be taken for a period of at least 90 days since the last QA0 Pass/Semipass execution;
- The SB remains "active" (it is not TimedOut, e.g. due to no further observing opportunities for the remainder of the observing season);

Data that are considered stale are eligible for "intermediate data delivery", which means that the raw (QA0 Pass and Semipass) data may be made available to the PI or PI delegates (see Section 4.1). Intermediate data delivery will only be done if triggered by the Principle Investigator (PI). In each case the possibility and consequences of delivering the data partially to the PI will be assessed by ALMA staff. Considerations must

include the benefit provided to the PI, the burden on the Observatory, and the probability of additional data to be collected.

As a minimum, raw (uncalibrated) visibilities will be made available. The details of the delivery products may evolve with time as the pipeline becomes more mature and are left to the discretion of the Integrated Science Operations Team. The data will be made available without undergoing the full set of quality assurance checks and will be delivered without further support from the ARCs.

Intermediate data delivery does not initiate the proprietary period. The normal proprietary period restrictions and extension request processes apply once calibrated products are delivered.

8.4.3 Problems with delivered data

If users discover problems with the calibration or imaging data products that they believe require the project to be re-observed, they should submit a Helpdesk ticket to their supporting ARC. These problems may include incorrect observing procedures, calibration, or observing parameters (e.g. target positions, mosaic spacing), different than those approved by the PI during Phase 2 or anything else that may reflect an underlying data validity problem.

Unless the reported case is due to a mistake or incorrect interpretation of the data by the users, all active project components and any other projects that might be affected by the reported issue and have not yet been delivered will be put on hold. For delivered data, public access of the archival data will be suspended until the corrected data have been re-delivered to the PIs.

For issues that have little to no impact to the affected projects' Science Goals, the solution or work-around will be communicated to the PI, and the original proprietary period will be reinstated (see Sect. 8.4.1).

If all or part of the project needs to be re-observed, the relevant Scheduling Blocks will be placed back in the observing queue with the original priority. If necessary, corrected Phase 2 SBs will be produced and resubmitted. Re-observation will only be possible within the same Cycle, except for grade-A proposals that are carried over to one subsequent cycle. When re-observed, the data will be processed through QA2 and re-delivered to the PI with the corresponding proprietary period (see Sect. 8.4.1).

If the data need to be corrected rather than re-observed, this corrected data will replace the original data in the archive.

8.4.4 Extension of Proprietary periods

ObsUnitSets that need to have their data corrected (Section 8.4.3) but which do not need to be re-observed will have their proprietary period extended if the proposal Science Goals are affected by the correction. To encourage PIs to check the data they receive as soon as possible, the extension of the proprietary period is granted based on the rapidity of the problem report:

- Problems reported within two months of original delivery: the full proprietary period will be reset based on the delivery date of the corrected data.

- Problems reported more than two months from the original delivery: the affected PIs will only receive an extension equal to the elapsed time between the posting of the reporting Helpdesk ticket and the delivery date of the corrected data.

- Problems reported after the proprietary period has expired: the affected PIs will receive the corrected data when available and such data will also replace the faulty products in the archive. In this case, a new proprietary period will not be granted.

Parental/sick/military leave may be considered as a justification for the extension of proprietary time if the leave has been approved by the supervisor/employer. PIs may submit the request through the Helpdesk and justify that the approved leave takes significant time away from the office. For these cases, the extension must be requested at least one month before the end of the proprietary period. An extension will not be granted if requested within 30 days before the data are scheduled to become public. Vacation, home, science, sabbatical leaves do not fall within this category and will not be considered for an extension.

8.5 Calibration data

Standard calibration data are observations of calibrators needed to perform the correct calibration of the scientific data. They include the bandpass, amplitude, phase and polarization observations taken during PI observations as well as grid survey observations run by the JAO.

All standard calibration data that have passed QA2, whether generated from JAO or PI observations, have no proprietary period and will in the future be accessible separately from the ALMA archive. Until then, PIs may request the delivery of such data to the corresponding ARC via the Helpdesk. Such requests will be handled by each ARC on a best-effort basis.

8.6 ALMA Test and Science Verification Data

Data obtained during commissioning or engineering tests or science verification (SV) activities that have not been publicly released will be used only for the purposes of characterization and development of the ALMA system, including hardware and software. The release of intermediate or final data reduction products or test images from these data to anyone who is not an ALMA staff member, including use in ALMA publicity, requires the authorization of the ALMA Director or Deputy Director. Any plots or figures shown must have an appropriate watermark identifying them as test or commissioning data and will not have axis labels that allow them to be used for scientific purposes.

No personnel granted access to ALMA test or SV data may use these data for any scientific purpose unless and until the data are offered at the ALMA Science Portal for public release. Any ALMA registered user may then request such data by opening a Helpdesk ticket at the corresponding ARC. Users are advised to carefully check the characteristics of a given offered dataset at the Science Portal before requesting the raw data since often test data do not fulfil the requirements of scientific data regarding calibration.

Science Verification projects may not duplicate any PI proposal approved with A, B, C grades nor any DDT approved proposal while unexecuted or during their proprietary period. If a PI proposal is approved that duplicates a SV observation planned after the proposal submission deadline, the corresponding SV project must be changed to avoid duplication. DDT proposals that duplicate a SV observation already planned and announced at the SP before the submission of the former will be rejected.

9 Confidentiality of Information

Through the Observing Tool, any authenticated ALMA user has access to the following information: first and last name, email address, affiliation, Executive, and ALMA username of registered users. All other ALMA user information is confidential.

ALMA records the IP address and browser information of registered users logging in to the Science Portal. This information is used exclusively to track download parameters such as download speed and file size.

ALMA also records the IP address and browser information of authenticated and non-authenticated Helpdesk users. Access to this information, as well as to the contents of Helpdesk tickets, is restricted to authorized ALMA staff.

Helpdesk Knowledgebase articles will not contain any information which would identify users or reveal confidential proposal information.

10 Publication of ALMA Results

The following statement must be included in the acknowledgment of papers that use ALMA data:

"*This paper makes use of the following ALMA data: ADS/JAO.ALMA#YYYY.C.NNNNN.Z. ALMA is a partnership of ESO (representing its member states), NSF (USA) and NINS (Japan), together with NRC (Canada), NSC and ASIAA (Taiwan), and KASI (Republic of Korea), in cooperation with the Republic of Chile. The Joint ALMA Observatory is operated by ESO, AUI/NRAO and NAOJ.*"

In this statement, YYYY.C.NNNNN.Z must be replaced by the actual project code. Here, "YYYY" denotes the year when the Call for Proposals for a given cycle is issued, "C" identifies the cycle ID during that year[4], "NNNNN" is a five-digit running number and "Z" denotes the proposal type (**S:** Regular, **V**: VLBI, **L: L**arge, **T: T**oO, **C: C**alibration, **E: E**ngineering, SV: **S**cience **V**erification).

In addition, publications from NA authors must include the standard NRAO acknowledgement:

"*The National Radio Astronomy Observatory is a facility of the National Science Foundation operated under cooperative agreement by Associated Universities, Inc.*"

10.1 Naming convention of sources discovered by ALMA

If referring to sources detected for the first time in ALMA fields one should follow the naming convention **ALMA JHHMMSS.s+/-DDMMSS** (approved by IAU "Clearing House" of Commission 5 Working Group on Designations), where J indicates J2000 coordinates.

The coordinates should be truncated according to the precision in the position of the source. Typically, this should be approximately 1/10th of the size of the synthesized beam used in the discovery observation (see the ALMA Technical Handbook for details on ALMA astrometric precision), e.g. for a 1" beam, declination

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[4] The "C" is used to identify both regular cycles (using a single digit), and DDT cycles (using a single letter). C=1 for the first regular cycle of the considered year, C=2 for the second (if any), etc. C=A for the DDT cycle coinciding with the regular C=1 observation period, C=B for the DDT cycle corresponding to the C=2 observing period, and so on.

should be given to a precision of 0.1" of arc and RA to 0.01s of time (ALMA JHHMMSS.ss+/-DDMMSS.s), for a 0.1" beam declination to 0.01" of arc and RA to 0.001s of time (ALMA JHHMMSS.sss+/-DDMMSS.ss) etc.

11 Final Provisions

Any situation that is unforeseen or for which ambiguity exists in this Users' Policies document or in the associated Call for Proposals material will be referred to the ALMA Director, whose decision is final.

ALMA reserves the right to change the policies defined in this document at any time. Barring unforeseen emergencies, such changes will apply at the start of the observing cycle following the date of their introduction. These changes will be published in the users' policy document at the call for each cycle and the proposers should review the policies with each proposing cycle.

A. Appendix: Definition of a Duplicate Observation

A proposed observation is considered a duplicate of another observation if *all* of the following conditions are met:

<u>Target field location</u>

- For single-field interferometry, the proposed position coincides within the half-power beam width of the other observation. Moving objects (e.g., Solar System objects) will be identified by name.
- For mosaic observations, more than 50% of the proposed pointings are within the half power beam width area covered by the other observation.

<u>Angular Resolution</u>

- The proposed angular resolution differs by a factor of ≤2 from the other observation.

<u>Spectral windows</u>

- Continuum: The requested sensitivity (rms) for the aggregate bandwidth is better by a factor of ≤ 2 from the other observation and the requested frequency is within a factor of 1.3.

  - or –

- Spectral line: If the central frequency in any requested correlator window observed in Frequency Division Mode (FDM) mode is encompassed by the other observation observed in FDM mode and the sensitivity per spectral channel, after smoothing to the same spectral resolution, is better by a factor of ≤ 2.

To be considered a "continuum" observation, the proposed correlator setup must contain 2 or more windows with a bandwidth > 1.8 GHz.

Solar observations will not be checked for duplications.