

THE ALMA PROPOSAL REVIEW PROCESS

ALMA TAC Subcommittee

K. Y. Lo (Chair), T. de Grauw, S. Miyama, M. Rubio, T. de Zeeuw

25 January 2010

DRAFT

Summary

There will be a single proposal review process for ALMA to assign the observing time of the ALMA partner regions, in order to optimize the scientific impact of ALMA.

The Joint ALMA Observatory (JAO) through the ALMA Regional Centers (ARCs) will issue one call for proposals per year.

The ALMA proposal review process will proceed in four stages:

- 1) Written Science Assessment by ALMA Science Review Panel (ARP) members and Technical Assessment by JAO and ARC staff, to be made available for ARP panels when they meet. The technical assessors will comment on the ability of ALMA to accomplish the desired scientific objectives.¹
- 2) Meeting of science category-based ALMA Science Review Panels (ARPs), which will provide a ranked list from each panel based on scientific merit only.
- 3) Synthesis of the rankings from each panel into an overall ranking by the ALMA Proposal Review Committee (APRC). This committee recommends projects to be submitted to the observing queue, considering distribution across right ascension (RA), frequency, weather, etc. It also recommends resolution of duplications or overlaps.
- 4) Actual formation of the observing queue involves technical feasibility issues and would be handled by the Head of Science Operations under the JAO Director. The scheduling of the projects on the observing queue will account for the shares of time for each region such that there is a cutoff for projects that would exceed the shares of any region. The observing queue will be sent to the Directors Council (DC) and a representative of Chile for concurrence before implementation.

1 Principles of Assigning ALMA Observing Time

The overarching goal is to optimize the science impact of ALMA; therefore proposal prioritization will be according to scientific merit, while assuring each region receives its share of observing time.

The ALMA observing time of the Executive Observatories (ESO, NRAO and NAOJ, on behalf of Europe, North America and East Asia, respectively) is in proportion to the Value contributed towards ALMA construction by each Partner, and Chile as host receives 10% of the available time. In general, the three Partner regions and Chile will be treated identically, as four separate regions, for the purposes of time assignment.

¹ Most problems are expected to have been caught beforehand by the Observing Tool (ObsTool) in the proposal validation stage.

Therefore, the shares of the observing time among the four regions are as follows:

- 33.75% for Europe (EU)
- 33.75% for North America (NA)
- 22.5% for East Asia (EA)
- 10% for Chile

ALMA is an international partnership and differences that may arise in the ALMA PRP will be resolved based on mutual respect among the ALMA partners and Chile.

2 Proposal Types

Standard Proposals and “Large” Proposals: There will be no explicit limit to the size of a project. Projects over 100 hours will be considered “Large Projects” for the purposes of time charging among the regions. They will be evaluated in the same way as smaller projects, taking into account their overall scientific value given their cost in time.

Key Projects & Legacy Projects: A Key Project is a large guaranteed amount of time for a highly important science topic that may extend over several observing seasons. A Legacy Project is similar, but it is undertaken as a “community” project, and proprietary time is usually waived. Either kind of program may also carry with it the expectation that enhanced data products will be released to the community. In the early years it will be most important to exercise as many observing modes as possible, which is best done with relatively short projects, therefore Key or Legacy Projects will not be considered to begin with in Early Science and only when ALMA reaches full operation.

Targets-of-Opportunity: Target of Opportunity (ToO) proposals that can reasonably be anticipated, such as gamma ray bursts and supernovae, will be submitted at the normal deadlines, and inserted into the observing queue as appropriate when an event occurs. They will be assigned an upper limit of time.

Director’s Discretionary Time: A small fraction of the observing time can be assigned by the JAO Director to unanticipated ToO or highly-rated proposals that cannot wait for the next proposal deadline. This DDT may also be used to satisfy regional preferences. A small standing review committee, with members from the JAO and the four regions, will advise the JAO Director on the proposals for DDT. Unused DDT will be used for completing the approved peer-reviewed observing queue. The overall fraction of DDT is to be recommended by the Directors Council and Chile² with the concurrence of the ALMA Board. The JAO Director will report on the usage of DDT on an annual basis.

Coordinated Proposals: It will be of great benefit to the community to coordinate the awarding of ALMA time with that of other observatories, towards a common scientific goal that each contributes a unique aspect to. Such coordinated proposals may be considered after ALMA has been in full operation for a while.

² By “Directors Council and Chile” here and below, it means Directors Council and a representative of Chile who will be appointed by the CONICYT to oversee the proposal review process along with the Directors Council.

3 Proposal Submission

Proposals shall be submitted via the ALMA Observe Tool (ObsTool) through one of the ARCs.³ ALMA users should choose the ARC corresponding to the region of their affiliation and must be registered in order to use this tool, a process done via the ALMA User Portal at each ARC. Users with affiliations in more than one region can choose which ARC to register at.

All available observing modes for a given proposal cycle will be fully described on the ALMA web page accessible at each ARC ALMA User Portal. Proposal support will be accomplished via the ALMA Helpdesk available through any one of the ARC.

Proposal preparation will be done on the client side and can be saved to local disk repeatedly as required.

Proposals must be successfully validated within the ObsTool as observable before they can be accepted by the ALMA project. This will include a check that the required configuration is available during the upcoming semester. ARC staff will work directly with the proposers of problematic proposals in order to get the technical details correct.

A proposal will include at a minimum: (a) a cover sheet, with details of all investigators, at a minimum including region affiliation and nationality, and the requested time and type of observations; (b) a scientific goal and justification, including any necessary background information, of no more than two pages, typed within specified font and margin guidelines; (c) enough details of the requirements to completely define the observational configuration; (d) a page of references; (e) a table of targets with a minimum of required parameters (which will be configuration-dependent); and (f) a summary of the status of any previous ALMA observations. Up to two pages each of figures and tables, adhering for minimum size and font guidelines, will be optional.

A proposal must be submitted successfully before the deadline, which will be adhered to strictly. Therefore proposers will be encouraged to check proper validation well in advance of the deadline, and to submit early. In the event of an unusual situation, such as a network outage on the day of the deadline, the JAO will promptly decide whether a deadline extension is justified, and will immediately announce the deadline extension to all registered ALMA users. The new deadline will be adhered to strictly.

The Observe Tool will deposit all successfully validated proposals into the archive.

4 Management, Science Categories, Set-up of Panels, and Conflicts of Interest

The ALMA Proposal Review Process will be led by the JAO, overseen by the JAO Director and implemented by the Head of Science Operations with assistance by the ARC Managers.

³ Chile is expected to establish its own ARC using the tools developed by the other ARC and by the JAO.

Science Categories: The main science areas are cosmology, the high redshift universe galaxies, galactic nuclei, ISM, astrochemistry, star formation, protoplanetary disks, stellar evolution, planetary systems, and the sun. They will be organized into four themes for the proposal review process:

- Cosmology and the high redshift universe
- Galaxies and galactic nuclei
- ISM, star formation/protoplanetary disks and their astrochemistry, exoplanets
- Stellar evolution, the Sun and the Solar system.

These science categories may change over time to optimize the balance of proposals assigned to each panel.

Review Panels:

- There will be two (or more if too many proposals) review panels for each category to minimize the load per reviewer and to accommodate conflicts of interest, resulting in eight (or more) panels overall.
- Each panel comprises nine scientists, from whom a Chair and a Secretary will be designated.
- The ARP panel members and the designation of the panel Chairs and panel Secretaries are proposed by the JAO, incorporating inputs from the ARCs, approved by the Directors Council and Chile, and appointed by the JAO Director.
- The composition of each panel and the panel chairs should aim to represent the partner regions proportionally: 3 NA members, 3 EU members, 2 EA members and one from Chile.
- None of the panel members or chairs shall be from within the JAO or the ARCs.

The workload for each reviewer must be carefully assessed; no more than 125 proposals per reviewer are acceptable, and even that many may prove to be too heavy a load.⁴ If more proposals are submitted, then extra panels may need to be convened.

Panel membership must include submm/mm expertise as well as topic expertise. Terms of service will be for three observing seasons, staggered to ensure overlap, and the panel chair will have served as a panel member the preceding season (except for the first ever observing season). Some members of the first season's panel will be asked to serve four seasons in order to initiate the overlap. Depending on the availability of suitable panel members, it may be necessary to re-appoint some panel members for successive terms or after an absence.

ALMA Proposal Review Committee (APRC)

- The APRC Chair is appointed by the JAO Director, with approval by the Directors Council and Chile, and is not a member of any of the review panels. She/He should be a senior astronomer with cross-discipline expertise who is not an ALMA Regional SAC, ASAC, ALMA Board member, a staff member of the JAO or the Executives.
- The remainder of the APRC is comprised of eight ARP Chairs.⁵

⁴ The ASAC has recommended that the load be much lighter and that panels have as many as 15 members.

⁵ If there are more than eight panels, then the chairs of the panels in the same science theme shall elect among themselves two representatives to the APRC, with the concurrence of the JAO Director.

Directors Council. The Directors Council comprises:

- The JAO Director as Chair,
- ESO Director General
- NAOJ Director-General
- NRAO Director

Conflicts of Interest. Conflicts occur when:

- A principal investigator (PI) or principal co-investigator (co-I) sits on the same panel that the proposal is submitted to.
- A panel member is from the same institution as a PI or a principal co-I of a proposal within that panel.
- A panel member is a frequent collaborator of a PI or a principal co-I of a proposal within that panel.
- A panel member considers that a conflict exists with a proposal within their panel for some other reason.

While every attempt will be made to avoid conflicts of interest, it will be inevitable that some will remain due to the limited number of potential available reviewers.

- When possible, conflicts will be resolved by assigning the proposal in question to the other panel in the same science category.
- If that is not possible then the panel member with the conflict will absent him/herself from the discussion of that proposal.
- Under no circumstances should a panel member with a conflict be assigned as a primary or secondary reviewer of the proposal in question.
- Panel members who identify a conflict that has not been recognized by the JAO will inform the chair of the panel of the conflict as soon as possible. The panel chair will work with the JAO to solve the problem, following the above guidelines.

5 The Proposal Grading System

The ALMA proposal grading system has four categories:

- Grade A: highest priority proposals which will remain in the queue until completed, including being rolled-over to subsequent observing sessions if necessary.
- Grade B: high priority proposals which will be scheduled at a lower priority than grade A proposals. They remain in the queue only until the end of the current observing session.
- Grade C: scientifically fruitful proposals which will be observed only as filler projects, only if a higher grade proposal is not available for the current conditions.
- Grade D: proposals that shall not be observed.

This group will normally contain individuals from all four regions. If not, then the panel members of that region shall elect among themselves their representative to the APRC, with the concurrence of the JAO Director.

It is expected that Grade A proposals do not constitute more than 20% of the anticipated available time in each observing session. Given the uncertainty of weather conditions and other uncontrollable factors, Grade B proposals are intended to fill the remaining anticipated available time. Grade C proposals presumably have a low probability of execution, but they are needed in order to avoid any observing time without schedulable projects. The optimal relative frequency of A, B and C graded proposals will be determined from experience.

The PEL⁶ (proposal execution likelihood) will be made available to the proposer and will be of special importance to Grade C proposals. In theory, a Grade C proposal could have a relatively high PEL, e.g. if the project requires only average weather conditions and if the target lies in an under-subscribed RA range.

6 The Proposal Review Process

Preparation for the ARP Meetings

Each proposal will be assigned a Primary Assessor (PA) and two Secondary Assessors (SA). The PA and SA are assigned by the ARP Panel Chairs and the JAO Head of Science Operations (HSO) to assess the proposal purely on scientific merit. The workload should be evenly distributed within each panel.

Each proposal is also assigned a Technical Assessor (TA). The HSO and the ARC Managers assign TAs, drawn from the pool of all ARC and JAO astronomers, to comment on whether the proposal can achieve the stated goals given ALMA's current capabilities.

The JAO packages the proposals for secure electronic download by the ARP panel members and the TAs, and alerts each panel member and TA when the packages are available for downloading. Paper copies will not be sent, except under unusual circumstances. The package will include a full set of proposals; a summary of all proposals in both the panel in question and the other panel addressing the same topic (title, list of investigators and abstract); an evaluation sheet for each proposal; a list of primary and secondary reviewers; the name and location (JAO or an ARC) of the technical assessor; automated reports, as appropriate, from the ObsTool (such as S/N estimates and *stringency*⁷); and a summary of previously scheduled and archived proposals in the science category, including percentage observed and rollover status.

Over a period of about four weeks the Primary, Secondary and Technical Assessors will enter comments into the centralized on-line review system. Assessors will only be able to have access to their own comments.

Over the same time period, all panel members enter grades, on a scale of 1 to 5, 1 being highest, for all proposals in their panel, unless they have a conflict of interest with a

⁶ The Proposal Expectation Likelihood (PEL) is a percentage likelihood value that a given proposal will actually be observed in the current semester. It combines *stringency* (see next footnote) with ranking.

⁷ *Stringency* has been defined by the ASAC as t_a/t_p , where t_a is the total time available and t_p is the time during which the proposal can be executed. The ASAC has suggested that ALMA might want separate *stringency* values for water vapor, phase stability, and wind conditions (pointing accuracy).

given proposal. These grades are strictly science merit-related, to facilitate the ranking process, and do not at this stage reflect an anticipated A/B/C/Reject grade.

The ARP Meetings

Within six weeks of the proposal deadline the ARPs meet to discuss all proposals.

- 1) **Location and Format:** To begin with, the ARP meetings may be held face-to-face. The HSO will decide where the meetings should be held, in consultation with the panel Chairs and the APRC Chair, at the JAO Santiago office or an ARC.

As video-conference technology improves, it is anticipated that significant savings in cost, time (and carbon-footprint) can be made by holding the ARP meetings via video-conferencing. The reviewers could travel to the nearest ARC to participate by videocon, or the meetings could be entirely videocon-based.

- 2) **The Scientific Review Process:** The only consideration for the ranking of the proposals, which have to be technically feasible, will be scientific merit.

Prior to the meetings, all written SA and TA comments, and grades, will have been filled in and available to the panel. For each proposal the PA will summarize all scientific and technical assessments into a single consensus report, after discussion by the panel.

The output from the ARP panels is a science ranked list of proposals for each panel.

The ARP panels will provide recommendations for where the dividing lines should be placed between categories A and B, and between B and C by the APRC. This is necessary for the APRC to be able to fairly renormalize the ranked lists between panels. The existence of Grade A projects that have been rolled-over from the previous observing period will not be considered at the ARP level for this process.

The ARP panels will make explicit recommendations for which proposals are to be rejected.

The ARP panels will discuss duplications and overlaps between proposals within their panel, and will make a recommendation for how these should be handled, based on the best scientific use of ALMA.

The ARP panels will be provided with guidelines from the JAO Director and the HSO, concurred by the Directors Council and Chile, as to whether they may make recommendations for de-scoping proposals, such as switching to technically easier spectral lines. The panel may also wish to give different priorities to different parts of a proposal. The HSO will also provide directions regarding whether the ARPs may recommend de-scopes to requested target lists or observing times. In some cases it will be necessary to allow de-scopes, for example when one or more targets are duplications and others are not.

The ALMA Program Review Committee (APRC) Meeting

The APRC will meet to review the ARP results within about two weeks after receipt of the results. The output from the meeting will be a single ranked list of all proposals along with the recommended letter grade, and the comments provided by the ARP.

The APRC may have to adjust the Grade A/B boundary to take into account any Grade A proposals that have been rolled over from the previous observing period. In addition, the APRC may consider adjusting the ranking of highly ranked Grade A proposals that are being carried over from the previous semester, to ensure they get finished. For example, it will be desirable to complete a proposal with a high PEL which is near completion before new ones in a similar class are started.

The committee will consider distribution across RA, frequency, weather, etc. in making its final ranked listing.

The APRC may revise the comments to proposers made by the ARP, as appropriate, based on any updates they may have made to the status of the proposal. In particular it will be important that the comments still accurately reflect the science merit and the PEL of the project.

The APRC will recommend final resolution of duplications or overlaps, and descopes, taking into account regional preferences as to how these are to be handled.

Formation and Execution of the Observing Queue

The HSO will take the recommendations of the APRC, apply adjustments that take into account other practical scheduling factors and produce the final ranked list of proposals, with grades, and submit to the Observing Queue, taking care not to significantly alter the scientific rankings of the APRC recommendations. The HSO will send the Observing Queue to the Directors Council and Chile before scheduling for concurrence.

The Observing Queue will be executed by the JAO, keeping a continuous account of the shares of time used by each region (including Chile) of projects that have been observed. When the share of time of any region is exceeded, projects with time allocable to that region will no longer be executed from the Observing Queue. Effectively, this approach will ensure as much as possible, the share of observing time for each region results from the Observing Queue.

If there are over-subscriptions for certain RA ranges or frequencies, the HSO will aim at the goal that each of the partners and Chile receives a fair share of this time, taking into account the preferences of the partners, the weather requirements and feasibility.

The HSO will monitor and record continuously the shares of observing time scheduled for each region and Chile and will provide the relevant statistics to the Directors Council and Chile regularly.

Reports to the Observers

Report on the status of each proposal will be sent to the PI by the respective ARC, about 11 weeks after the proposal deadline. The PI will be responsible for communicating the results of the report to the co-Is. The report will include the proposal grade, the PEL and the consensus report from the ARP and APRC.

Submission of Scheduling Blocks

Observers with A or B grades will be required to submit the schedule blocks (SBs) for their observations, during a fixed time period (six weeks).

Submission of scheduling blocks for grade C proposals is optional, unless the PEL value exceeds a threshold value (30%, TBC). It is important that a significant fraction of Grade C proposals be accepted, or ALMA may risk having no schedulable observations under certain circumstances, e.g. average or poor weather and under-subscribed RA ranges. On the other hand it will be frustrating for observers to be required to make SBs for observations with moderate or low PEL value. Therefore a balance in this process should be sought as experience is gained with ALMA in full operational mode.

If a proposer does not create schedule blocks in time, then the proposal will be tagged as currently unobservable. There will be an option to request that the proposer submit scheduling blocks at a later time if it is determined that the scheduling queue is running too low on backup scheduling blocks. However this option is for the convenience of the JAO and will not be used by an observer as a means to submit late SBs.

All SBs will be submitted through the ObsTool.

Support for the preparation of SBs will be through the helpdesk, staffed by the ARCs, and which helpdesk the user is directed to will be set by their preferences in the ALMA User Portal.

7 Timeline for the Proposal Review Process

Due Dates: The proposal due dates shall be September 1st.

ALMA Proposal Review Process Timeline	
-9 Weeks	Call for proposals
Week 1	Proposal deadline
Week 2	Proposals available to SAs and TAs
Weeks 2-6	SAs and TAs enter reviews and grades ⁸
Week 7	ARP travel and deliberations
Week 8	APRC deliberation
Week 9	Directors Council and Chile concurrence
Week 10	HSO produces observing queue
Week 10	Results sent to PIs
Weeks 10-16	Observers submit SBs

8 The Queue Scheduling System

The job of the Scheduler (either human or computerized) is paramount for ALMA. At any moment, it must select the highest ranked proposal that can be observed based on the weather, array configuration and instrumentation available. Over some longer averaging period it must also achieve a spread of observations that are consistent with the fair return of observing time to the partners.

The merging process from multiple panel rankings into a single queue cannot be a simple renormalization of each panel's ranked lists, due to complex considerations regarding weather conditions, RA range subscription, and instrument requirements. Therefore the approach will be to: (a) merge the A, B and C lists from each panel into single A, B and C lists; (b) model the likely outcome of this overall queue using a Monte Carlo simulation; and (c) re-normalize the dividing points between A/B and B/C grades so that Grade A+B just fills the semester schedule. This relative frequency of Grade A, B and C proposals can be modified as experience is gained, and as experience from other observatories is taken into account.

The need to ensure the fair return of observing time to the Executives and to Chile matching the agreements between the parties implies it must be possible to "steer" the

⁸ The technical reviews will be done during the same time period as the science reviews, and will be made available to the ARP panels when they meet. Although there could be an advantage to technical reviews being made available to the ARP members before they begin their assessments of scientific merit, such a procedure would lengthen the overall PRC process, and it is believed that the ObsPrep tool will be successful at screening out impractical observations.

Scheduler to ensure parity in the medium to long term. This implies there must be four parameters in the scheduling system, one per partner, which can be modified to change the probability of a certain partner's time share being used up.

The distribution of A+B projects amongst weather bands and RA must be checked early on to ensure that it is at least possible in principle to schedule the proposals given nominal assumptions about the weather. This must be addressed by the APRC when it does its ranking. Therefore there will be a software tool that uses the ALMA Scheduling software to examine the APRC recommendations, e.g. using Monte-Carlo simulations to assess likely outcomes depending on different weather scenarios.

There may be difficult scheduling choices to be made under certain circumstances. For example: under excellent weather conditions, whether to schedule a lower ranked proposal that requires "great weather" rather than a higher ranked one that needs only "average conditions." The HSO will formulate the solution for such circumstances and will provide explicit instructions for the scheduling system to follow. The solution must consider percentage completion of projects and Executive balance. Such solutions require concurrence by the Directors Council and Chile.

9 Accounting of Time to the Executives and Chile

The method adopted to charge scheduled time to each of the executives and to Chile should be simple, transparent and easy to set guidelines for.

For small proposals, <100 hrs, 100% of the time will be assigned to the PI's region.

For large proposals, >100hrs, 50% of the time will be assigned to the PI's region, and the remaining 50% will be assigned to the regions in proportion to the number of investigators from each region.⁹ To facilitate simple calculation, the ObsTool will record the region of each PI and co-I.¹⁰

If a PI or co-I has rights to ALMA through more than one region (e.g. due to a joint appointment at two organizations or a member of an organization in Taiwan), she/he will select which region the time should be charged to. She/He will also have an option to split the time between both regions.

In the first three years, a balancing of time to each region should be followed on a yearly basis. After three full years of operation, the time scale over which balancing is required will be relaxed to two years. A longer time scale may be deemed more appropriate and will be determined by the ALMA Board.

10 Open Skies

⁹ Other options that were considered were (a) 100% of the time be assigned to the PI's region; (b) a weighted scheme, such that the time charged from each co-PI is $50\% / 2^n * [\text{Summation}(n = 2 \text{ to } N) \text{ of } 2^n]$ when the proposal is proposed by PI ($n = 1$) and N co-PIs ($n = 2, 3, \dots, N$); and (c) equal weight scheme, the time charged from each co-PI is $50\% / (N-1)$, when the proposal is proposed by PI ($n = 1$) and N co-PIs ($n = 2, 3, \dots, N$).

¹⁰ In this context, PI's or co-I's region refers to the region to which the organization the PI or co-I is employed by belongs.

In principle, all outstanding proposals to use ALMA should be allowable. “Open Skies” proposals have a PI or co-I’s whose affiliated organization belongs to none of the four regions. Open Skies proposals will be treated in the identical way as all other ALMA proposals. If any such proposals are selected into A/B grades, the Directors Council and Chile will determine how to include the selected proposals in the scheduling queue.

After Early Science, Open Skies Proposals will be handled as follows:

- Open Skies proposals will be assigned to a panel and treated in an identical way to all other proposals by both the ARP and the APRC.
- The JAO Director will reserve the right to adjust the ranking of Open Skies Proposals, taking into account the preferences of the four regions.
- The ObsTool will record the region and nationality of every co-I, as for all proposals, so that the unaffiliated time can be easily identified should the proposal be selected for scheduling.
- The unaffiliated time attributable to PI’s or co-I’s of Open Skies proposals scheduled (under the same time accounting principle and rules set out in Section 9) will be charged to the ALMA regions -EU, NA, EA and CL- in the proportion of 33.75:33.75:22.5:10.
- The amount of Open Skies time charged to the four regions under the above formula shall not exceed 5% of the total available ALMA time. Any Open Skies time that exceeds this limit can be charged to NA, which follows the current US government policy.
- The PI of an Open Skies Project accepted for scheduling will select which ARC she/he wishes to use for support.

11 Handling of Duplications

There may be duplications of proposals to ALMA. Duplications may be classified in three categories:

- When more than one team applies to observe the same objects in the same observing mode (frequency, configuration, area, depth, etc).
- When different teams propose to try to answer similar science questions with different observations.
- Where observations of objects already in the archive are requested.

The definition of a duplication of a target must be defined in terms of sky position, sensitivity, angular resolution, frequency, velocity resolution and bandwidth. Specifically, the JAO Director, with the concurrence of the Directors Council and Chile, must supply guidelines on what constitutes duplication to the ARP panels.

As far as is possible, duplications will be handled within the ARPs, which will make recommendations to the APRC. The APRC will adjudicate when necessary, and will handle duplications occurring between proposals coming from different panels, and from earlier observing seasons.

For ALMA, there is a principle that identical data should not be taken twice unless absolutely necessary, so in this case if the proposals overlap to a very high degree, then one of the proposals will be rejected, *if one of the proposals is obviously more highly*

ranked than the other. In the case of similarly ranked proposals, the panel will use scientific judgment to decide the case. Options are:

- Recommend a collaboration, if this is acceptable to the proposers.
- Deliver the data to both teams simultaneously.

In order to properly consider duplications with archived data, the ARP panels will receive a summary of previously scheduled and observed projects within their subject area, including the percentage of completion of each project.

For similar science cases addressed by different data, either within the current season or considering data which reside in the archive, the ARP will use best scientific judgment. If a science question is of very high importance, multiple independent approaches will likely be encouraged.

The Directors Council and Chile will have the final say on duplications, including those among the four regions.

DRAFT

Relevant Documents

THE ALMA PROPOSAL REVIEW PROCESS Version 6, October, 2007, John Richer, Leonardo Testi, Diego Mardones, Satoshi Yamamoto, John Carpenter.

ALMA Operations Plan, Version D, October 2007.

Report of the East Asian ALMA Science Advisory Committee to the ALMA-J Directors, June 11, 2007. EASAC Committee, S. Yamamoto, Chair.

Structure of an ALMA Program Committee, September 2006, ASAC Committee, J. Richer, Chair.

Project Scientist's White Paper: presented to ASAC 17 September 2006, ESAC, EASAC, ANASAC (29 Sept 2006).

Wiki page maintained by A. Wootten with links to these and other documents:

<https://wikio.nrao.edu/bin/view/ALMA/AlmaPRCTAC>

which includes some password protected documents. A history of the discussion on this topic over the past two years is also available as an attachment.

DRAFT