



ALMA BOARD

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Subject: ALMA Board Charges to the ASAC
for 2017Q1 ASAC Meeting

AUTHOR(S): ALMA BOARD

Purpose of Document: To provide the ASAC with its Charges for its 2017Q1 face-to-face meeting

Status: Approved by written procedure

I. Science Committee response to the ASAC Report

Charge 1: Assessment of the performance of ALMA scientific capabilities

- Define imaging products to be stored in archive and delivered to PI.
 - The SC noted that there is a problem in the data delivery rates, and that this can be due to the undefined product deliverable and/or the lack of sufficient manpower.
 - The SC also noted that there is an apparent tension between the Pipeline goals (PI driven) and the ultimate Archive goals (maximum Archive utility).
 - The SC suggested to the AMT to work with IST, ICT and ISOpT to propose a reasonable and viable product definition as an intermediate solution, which will be presented to the ASAC for comments. In the mid-term, the AMT will assess whether the actions proposed to deal with the data delivery backlog resolved the issues or whether a de-scope of the deliverables is needed, while maintaining the utility of the products for the PIs.
 - The SC also suggested that the Communities should be better informed, so that they understand actions are being taken and that the Observatory is still ramping up and improving in getting things done.
 - Finally, the SC noted the path forward to speed up the data delivery, acknowledging that this should be the main goal of any of the measures proposed.
- Backward compatibility of CASA to older data in archive.
 - The SC noted the path forward proposed by the JAO to work with the CASA team to address this issue.
- Efficient Spectral Scans.
 - The SC noted that this is a top priority issue for Cycle 5, as soon as the 90 degrees switching is ready, whereas the current improvement is on the order of ~10-20%
- Faster progress on archive's usability is manpower limited
 - The SC noted this is indeed a manpower resources limitation and recommended to the JAO to keep paying attention to this issue.

Charge 2: Assessment of the technical aspects of the ALMA system performance

- Data backlog and need to shorten the time to delivery
 - The SC noted this is a well-known problem that has been identified as an urgent matter. The AMT is implementing some short, mid-term, and long-term actions to solve this urgent problem.
 - The SC requested the JAO to further implement management improvements to allow the data reducers to focus on the core business.
- Assess the magnitude of over-calibration during observations.
 - The SC noted that the JAO is tracking this issue and suggested to the JAO to share with the ASAC the data regarding the rates of calibration time versus

observing time requested for each program. The JAO will investigate the KPI metrics to understand the over-calibration problem.

- Vertex antenna astigmatism
 - The SC noted that North America is actively working with Vertex to get this problem solved as soon as possible. Passive measures have not been effective. The solution will be reported to the ASAC in due time.
- Project completion rate in cycle 3 is 70-75%.
 - The SC is concerned about the current project completion rate. JAO reported that, during 2016, the weather has been particularly problematic for A and B projects. However, filler projects were completed due to the additional telescope time made available for cycle 3.
 - The SC also noted that there were issues with the queue building that have been identified which will be solved for the next cycle by the JAO.
 - The SC requested to the JAO to break down the percentage of A and B projects completed for cycle 3. This will be presented to the Board, in order to allow an assessment on the number of A and B projects approved and scheduled.

Charge 3: Assessment of the science outcomes from ALMA

- Demographic data to promote evaluation of the success of non-traditional sub-mm users
 - The SC noted that, with the existing data, it is not possible to quantify the exact number of PIs that come from other communities. Nonetheless, the SC encouraged the JAO to do a survey and report the findings to the Board.
 - The SC noted the recommendation from the ASAC's Chair to use as metrics, both the proposal PI and also the main author in the scientific publications.
 - The SC recognizes this is an important matter to pursue and recommended to the Observatory to further investigate this with the existing data and to report it to the Board.
 - The SC also endorsed some suggestions to include broader communities in the ALMA conferences and meetings and, also, as panel members in the APRC.

Charge 4: Recommendations of ways to maximize ALMA's scientific impact

- Ensure success of Large Projects.
 - The SC noted that the number of accepted large programs did not meet the maximum available time in this first exercise, due to several reasons, but probably mainly to the criteria established both in the Proposal Review Principles (“...strategic scientific issues leading to a breakthrough in the field”) and the condition by the JAO that a Large Project should not utilize more than 50% of the LST range and/or a specific configuration.
 - Nonetheless, the SC also noted that the JAO has proposed some measures to ensure the successful completion of the two programs approved, which include some policy revisions and other actions, such as:
 - Delivering raw data to the PIs before the formal proprietary period (allowing PIs to see specific aspects of the data prior to the full release).

- Prioritized reduction of some type, potentially specific to the program in question
 - The SC endorsed the proposed actions by the JAO and recommended to the JAO to keep encouraging scientists to propose larger programs.
- Encourage longer projects than the typical average of 5 hours.
 - The SC noted the statistics presented by the Observatory Scientist and also the actions that are being taken in order to continue addressing and fostering this issue.
 - The SC also endorsed the suggestion by the ASAC's Chair to the JAO to reinforce in the instructions provided to the APRC panels that ALMA is not biased towards small programs and that medium or large programs should not be artificially penalized. Also, the Call for Proposals should feature the actual statistics on acceptance, which indicate no effective bias against longer programs.
 - The Principles of the ALMA Proposal Review Process were updated by the ALMA Board.
- Improve proposal pressure for ACA stand-alone proposals: higher frequencies, higher thresholds for Large Projects on ACA.
 - The SC noted the actions taken by the JAO to encourage the ACA stand-alone proposals:
 - Increase the threshold of Large Programs for ACA stand-alone projects from 50h to 150h
 - The relative priority of ACA stand-alone and ACA+12m proposals in assigning grades should be determined by scientific rank.
 - The SC also noted that these changes will impact the proposals for Cycle 6 and that the focus will be for the 7-m antennas.
 - The SC also noted that the Proposal Review Principles have been revised to allow these actions (i.e. thresholds increased, simpler criteria)

Charge 5: Reporting on issues from regional SACs

- Allow ARC personnel as APR reviewers.
 - The SC noted that there should be no reason for excluding the staff members of the ARCs from the APRC panels, as long as the conflicts of interest are well addressed. This required a revision of the Principles that was agreed upon the ALMA Board.
- OT developments, e.g. new default in spectral averaging, observing time estimates for angular resolution ranges.
 - The SC noted that there is some confusion in the communities regarding the impact on the observing time estimations. This should be better explained to the communities in the call for proposal. The JAO should craft better explanation to be included in the announcement.

Charge 6: Assessment of the scientific impacts of the ALMA Development Program

- Implement ALMA Integrate Alarm System

- The SC noted the ASAC's endorsement of this program. The ALMA Board approved it.
- Web-based survey of users to gauge needs for future software developments.
 - The SC suggested to the JAO to include the value added by software developments in the existing surveys.
- Develop process to decide between Band 2+ and Band 2+3.
 - The SC and the Observatory are concerned about the unclear process to decide this project, where a better coordination appears to be the main issue.
 - The SC noted, though, that the AMT, the Observatory Scientist and the Observatory Systems Engineer are already in the path to make a decision, although this decision-making process needs to be better communicated to the communities.

Charge 7: Review and comment on the Development Vision and Roadmap

- Recommends roadmap to be driven by scientific considerations rather than budget or technical readiness.
 - The JAO will present a consistency evaluation with the ALMA 2030, mainly regarding the scientific driver, and will send it to the ASAC for further comments.

Charge 8: Suggest specific improvements in the information given to proposers after review and via project tracker

- Would like to know the role of contact scientists and also helpdesk tickets.
- Use other platforms for communications.

The SC noted that this is mainly a regional issue and that the ASAC will further investigate it at their next face-to-face meeting in March.

II. ALMA Board Charges to the ASAC (March 16-17, 2017 ASAC Meeting)

The ASAC would recommend and assess on permanent and ad hoc charges from the Board and the ALMA Director.

The Permanent Charges are:

1. Assessment of the performance of ALMA scientific capabilities: The ASAC shall indicate what information is required from the Joint ALMA Observatory (JAO) to perform this assessment.
2. Assessment of the technical aspects of the ALMA system performance: The ASAC shall indicate what information is required from the JAO to perform this assessment.
3. Assessment of the science outcomes from ALMA: Statistics on publications, citations, press releases, web sites, etc. collected by the Executives shall be collated by the JAO, and analyzed by the ASAC.
4. Recommendation of ways to maximize ALMA's scientific impact: This includes review of the scientific effectiveness of the Proposal Review Process after each Proposal cycle.

5. Reporting on operational or scientific issues raised by the wider community as communicated by the three regional Science Advisory Committees (ANASAC, ESAC and EASAC).
6. Assessment of the scientific impacts of the ALMA Development Program, and particularly of new projects that are proposed.

The ad-hoc Charges for this meeting are:

1. Assessment of the scientific and technical justification for the proposed Total Power spectrometer. The project team will provide the information needed to make this assessment to the ASAC.
2. Comment on possible Joint Observing Proposals for ALMA, based on recommendations and information provided by the JAO.
3. Recommend the frequency and scope of future international scientific conferences organized and hosted by ALMA. ALMA will provide the ASAC with the survey results from the ALMA Palm Springs meeting.
4. Provide recommendations for the scientific priorities in upgrading the receiver bands. The Development Working Group will provide technical information, but the ASAC should base their priorities on scientific grounds, understanding that other factors, such as technical readiness, will play a role in the final prioritization in the roadmap.
5. Provide input on the primary, high level science goals for the major development paths identified in the ALMA2030 report; i.e., enhanced throughput, longer baselines, and focal plane arrays. The ASAC may also recommend additional Studies that should be carried out to examine the technical requirements needed to refine the science goals.