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Project Response To Conceptual Design Review Committee Report

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Change Record

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1.0	7/14/2020	Final document version

I OVERVIEW

This document records the project response to the Telescope Time Allocation Tools Conceptual Design Committee report (688-TTAT-006-MGMT). In section 2 the action planned or taken by the project in response to the explicit recommendations of the committee are described.

Responses to individual RIDs and final disposition are available through the Jira instance used for the review. In summary, all RIDs submitted by the committee have been addressed and closed. The document set on the review confluence page¹ has now been updated with the latest version of all documents including the modifications made as part of the RID process.

We would again like to thank the committee for their time and insight, and persevering with the review in spite of the challenges of the pandemic.

2 COMMITTEE RECOMMENDATIONS

R1. We recommend meeting with the proposal review process stakeholders to ensure that no parts of the processes have been missed.

During first phase of the implementation process (Logical Design) we will involve stakeholders from throughout the process. By involving them during this period, where the concepts are more concrete and aligned with prior experience and prototype implementations exist, focused feedback on gaps or misconceptions will be most detectable.

R2. Re-assess how the technical justifications should be done, taking into account the various interested stakeholders, and develop some detailed use cases to exercise the design. Specifically consider one TJ and feasibility report per facility.

Thank you for identifying this, we have re-evaluated TJs and have modified the design accordingly. A modified design which addresses the concern is described in the System Technical Description. The updated design allows for a single technical justification per facility while permitting the flexibility in the design to accommodate more than one should that be required in the future.

R3. Where technical risk areas have been identified we recommend early detailing of the design, prototype implementations and testing to mitigate the risk.

Reducing technical risk through prototyping and early design iterations is one of the objectives of the initial Logical Design phase. We will include this activity as a deliberate action in the planning of each of the first three phases.

R4. Add some description of how sub-arrays fit into the design, at least at the conceptual level, paying a due level of attention to the future ngVLA needs.

We have added a section on sub-arrays in the System Description document (688-TTAT-004-MGMT). We have identified two different types of sub-array projects: (1) when an interferometer is divided up in to multiple sub-arrays for a given Project; and (2) when a Project only wants to use a subset of the Facility. This should accommodate current Facilities and plans for the ngVLA.

¹ <https://open-confluence.nrao.edu/display/SRDP/SRDP+Conceptual+Design+Review>

R5. We recommend that the provision of commensal observing as a capability to be requested is not designed out.

We believe that commensal observing can be accommodated in the existing design. Commensal observing would be represented as a capability with a filter for when the project would run, rather than a specification of the requested resources. The review process would be unchanged, but the allocation process would need to be modified (as would the interface to the telescope systems). Defining those processes are out of scope for the current project, but we see no in principle incompatibilities based on reasonable assumptions about the process.

R6. Develop some Quality Attribute Scenarios to quantify key attributes of the systems, in particular reliability and performance, including scenarios covering the system loading in the last hours and minutes before the proposal deadline.

Before the beginning of the Logical Phase, the DMSD Architect will use a utility tree to articulate and prioritize reliability and performance quality attribute scenarios (QASs) for peak operations (i.e. the day of a proposal deadline) and normal operations (i.e. all other times). The DMSD Architect and Project Scientist will document the QASs and assign High/Medium/Low “business importance” priorities. The DMSD Architect and SSA Architect will assign High/Medium/Low technical risk priorities and will address in the architecture the prioritized list of QASs in order of descending priority (i.e. HH to LL). Metrics related to the QASs will then be established in the Logical Phase and monitored through the Physical Phase and deployment.

R7. We recommend the development of a test plan suitable for the Conceptual Design Level, as prescribed in the DMSD Work Management Plan.

We agree and will prepare this test plan prior to the beginning of the first implementation phase.

R8. Engage with the key stakeholders for validation and User Interface testing – this should be detailed in the test plan.

Agreed, we have a detailed plan for internal stakeholder testing in place, but have not elaborated external stakeholder testing or widespread UX testing. We will address both of these gaps in the test plan under development.

R9. We recommend that the project seeks the assurance of NRAO senior management to ensure the support of the project as a high priority supplied with the continuity of resources and funding it requires.

This project was discussed at the NRAO 2020 Budget Summit (internal meeting of all department heads). At this meeting the urgency of the need for new tools was discussed and an additional scientific staff member was allocated to provide support (both direct and indirect) for the project. The implementation phase of the project was delayed and is now scheduled to start in the fourth quarter of 2020, based on realistic assessments of availability of developers within the DMS department.

R10. A plan for transition to the new tools and for continuing operational support (and development) after the end of this project should be developed.

A plan has been drafted with information that we have at this time. This plan will be updated and reviewed by key stakeholders as the project evolves.