

SSG Response to NRAO Internal Technical Review

The Technical Working Group of the VLASS thanks NRAO for its thorough technical review of the VLASS Technical Implementation Plan (TIP). The issues raised, along with a description of the modifications that have been made to the TIP as a result of those comments, are described below.

Major Issues

- **High Cumulative Risk:**

The proposal has been simplified to reduce the number of survey elements, and to reduce the scope of what is included in the basic data products. Effort estimates have been revised in consultation with NRAO management. We recognize that taking on the VLASS will necessarily have to be prioritized and balanced against other NRAO activities. However, whether to proceed with the VLASS, and what other activities will be impacted, is a decision that needs to be made by NRAO management with knowledge of the VLASS resource requirements, not by the proposers of the VLASS.

- **Severity of Impact on PI-led Projects:**

We now make more explicit the assumptions going into the calculated impact on PI-led science, as well as providing a clearer description of how the configurations might be modified within a configuration cycle to reduce the impact on the primary VLASS configurations (A and B) by balancing the load across all configurations within a configuration cycle. We note that the length of the configurations within a VLA configuration cycle are, in fact, already adjusted to reflect expected demand based on prior experience, and also note that while the median values of the requested hours stated for the last three configuration cycles is correct in the technical review, there is a large dispersion in demand for a particular configuration from one cycle to the next.

- **Focus on a Single Survey:**

The revised proposal has reduced the number of survey elements from four to two. We feel that the science demands this combination of All-Sky and Deep, as described in the proposal.

- **Wide-Field Snapshot OTFM Polarimetry:**

We acknowledge that wide-field, snapshot, OTFM polarimetry is going to be challenging. Much of the risk, however, lies in the development needed in the post-processing step, and does not affect the observing procedures. This being the case, we have modified the *initial* polarization data products to be confined to the center of the primary beam (with reduced sensitivity compared with Stokes I, as noted in one of the detailed technical reviews), and will deliver the full polarization products only after the post-processing is better understood.

- **Automated Production of Pipeline Images (Including Processing On Demand – POD)**

Completion of polarization calibration heuristics for the calibration pipeline is part of the pipeline heuristic development planned for FY15. Imaging has been pipelined for Stripe-82, and for this specific observing mode, we believe can be automated. POD is a longer term development item, which may need to wait until towards the end of the VLASS to be implemented, for the reasons noted in the technical review related to the Science Data Model.

Other Issues

- **EPO Needs More Complete Integration**

The Communication, Education, and Outreach Work Group welcomes the suggestion that the NRAO EPO department be more closely involved in the VLASS planning and execution. We do note, however, that participation in the CEO Working Group was open throughout the proposal development period, and that multiple requests for participation in all SSG Working Groups were posted through the NRAO eNews and the vlass-announce email exploder. We regard the problem of engaging the wider community, even within the NRAO, as indicative of the challenges facing this element of the VLASS implementation.

- **”Shared Calibration”:**

Recognizing that automating the use of shared calibration will be a longer term effort, potentially requiring modifications to the SDM infrastructure, amongst others, we now propose that until these capabilities are in place, each scheduling block will have self-contained calibration.

- **Integrated Pipeline Development**

We propose to use AIPS-Lite and python scripting to develop heuristics only, which can then be implemented in the CASA pipeline.

- **Observing Time Contingency:**

We disagree that the total time requested for the VLASS should include an explicit time request for failed observations or other contingency. No regular proposal includes such contingency requests. Observations that fail due to technical or other issues unrelated to observer error are the responsibility of the Observatory to repeat, and the Observatory should be including such contingency in its scheduling process.

- **Image Quality:**

The issue of image quality in the Galactic Plane or other regions of confusing source structure is now discussed in the proposal, with reference to the experience of the CORNISH survey (Purcell et al. 2013).

Minor Issues

The authors thank the individual technical reviewers for their careful reports on all aspects of the TIP, which has resulted in an improved implementation plan for the VLASS.