

OPEN TIME PROPOSAL SUBMISSION SYSTEM FOR THE MEERKAT RADIO TELESCOPE



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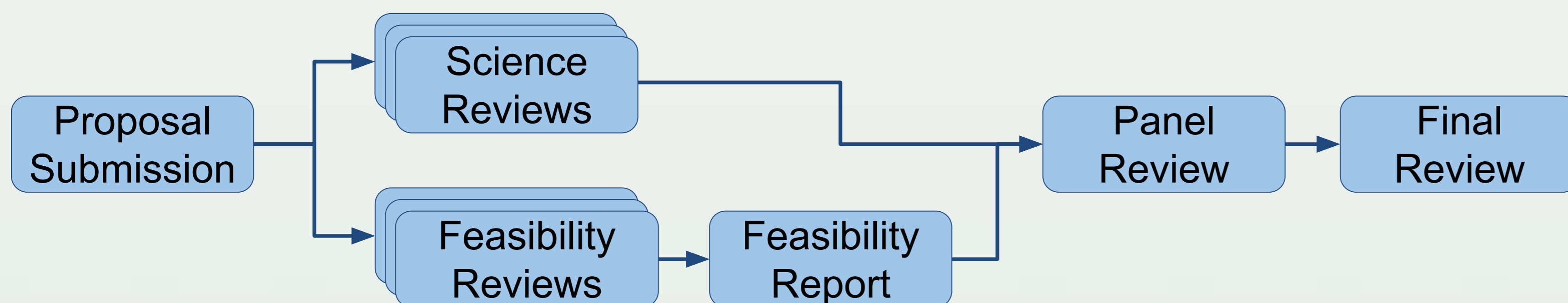


01 Introduction

The MeerKAT Radio Telescope is a project of the South African Radio Astronomy Observatory (SARAO) under the National Research Foundation (NRF). Inaugurated in 2017, it currently comprises 64 interlinked receptors in the Meerkat National Park, located in the Northern Cape, South Africa.

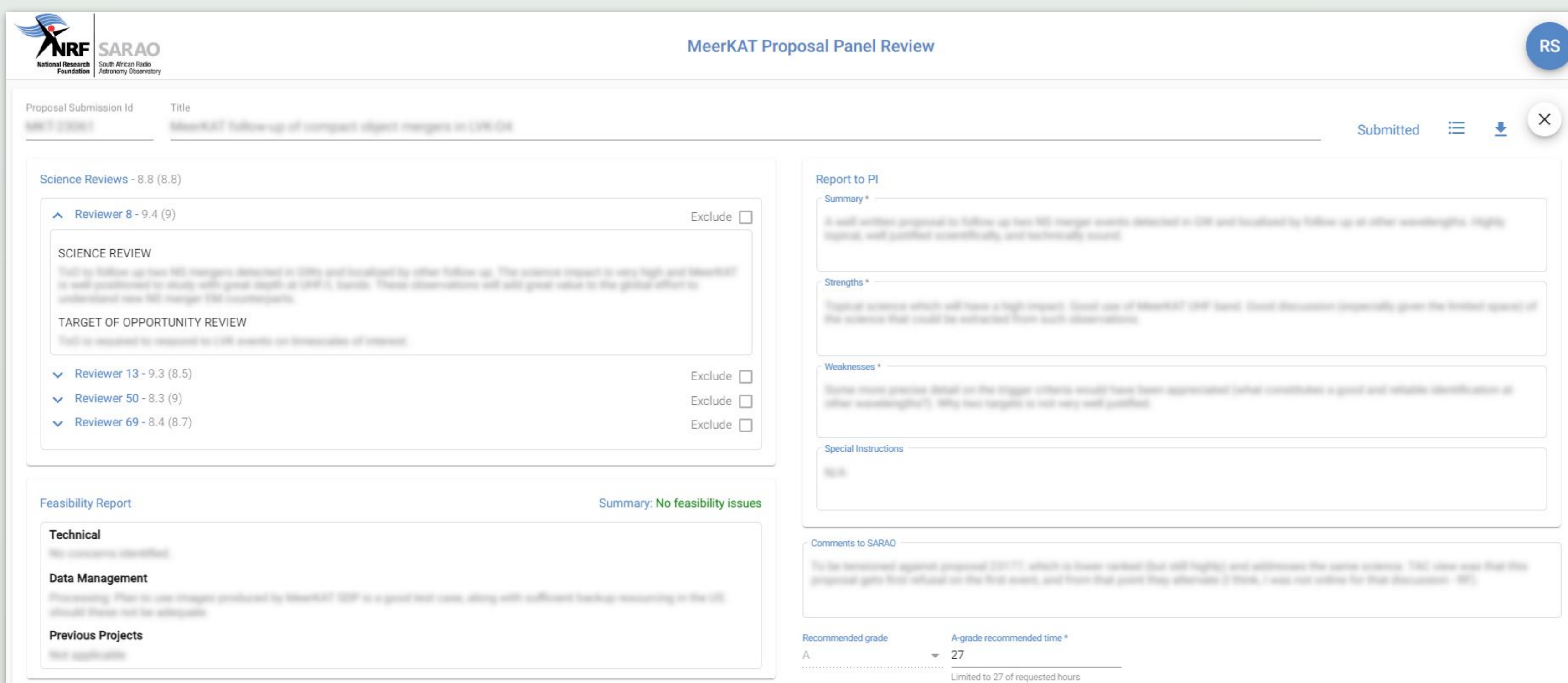
SARAO offers telescope time through Open Time Calls (OTC). An OTC is the workflow that gathers radio observation proposals from astronomers, followed by a rigorous review process to rank proposals. The best proposals receive time on the Meerkat radio telescope in the coming year.

A front-facing web application, the Proposal Workflow System (PAWS) was designed and developed to assist in the collection of proposals and the reviews.



04 Proposal Review Process

Following the closure of the submission period, the submitted proposals enter the review process, which is composed of several reviews. The PAWS system renders the review forms to capture and store the review content.



Reviews are double-blinded to maintain anonymity and objectability. Proposals are scored and graded, and a report to written. Scores are normalised in an attempt to reduce the variations in reviewer grading.

05 Outcomes and Conclusion

The 2023 OTC has seen a drastic increase in the amount of time requested on the MeerKAT telescope, going from 3343 hours in 2020 to 7554 hours in 2023, with the available time only being around 1750 hrs. This shows the importance of a good review process, as the volume of information increases each OTC.

It should be noted that a “cookie-cutter” system is likely not to meet all the needs of the institution regarding a proposal submission and review system, as each year the process changes slightly based on telescope improvements, and more software development to the tools are then needed.

02 Proposal Workflow System

The OTC process follows ordered events that are initiated and managed by PAWS and are as follows:

- Users create submissions through a collection of forms.
- A rigorous review process commences, assigning a numerical score to submitted proposals.
- The proposals are ranked, reviewed and graded by a panel experts.
- The SARAO director grants telescope time to proposal submissions that receive higher grades.
- After the review process concludes, PAWS notifies all proposal submitters of the outcome.
- Submitters who have been allocated telescope time can then provide their observation plans.

03 Submission Form

At the start of the OTC, the submission system is open to the scientific community. Proposal data is collected through the submission form includes:

- Investigator’s details
- Abstract and science case
- Scientific, and observation categories
- Target information
- Telescope instrumentation parameters
- Data management details

