

Director’s Response to ATUC Report – April 2024

We thank ATUC for their report, which is available from [this link](#). We note that the original report was divided into explicit recommended actions and requested updates. We divide this report into (1) a discussion around which topics will be brought up during the ATUC meeting and (2) written responses to the recommendations.

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Input into ATUC Meeting

In the responses below we include the following remarks about the upcoming ATUC meeting

- 3.1: Updates on the ASKAP Key Capabilities project will be presented at the next meeting
- 3.6: We will provide a verbal update relating to Pawsey and Setonix at the ATUC meeting.
- 4.2: We will report back to ATUC in the October meeting results from our commissioning of the cryoPAF pulsar search pipeline.
- 7.6: Details on the UWMH project itself, the properties of the receivers and the status and the timeline for the project will be presented at the next ATUC meeting.
- 8.2: We will demonstrate some of the functionalities of the new website during the ATUC meeting.
- 9.2: We will include student and ECR talks, perspectives and contributions in the ATUC meeting.

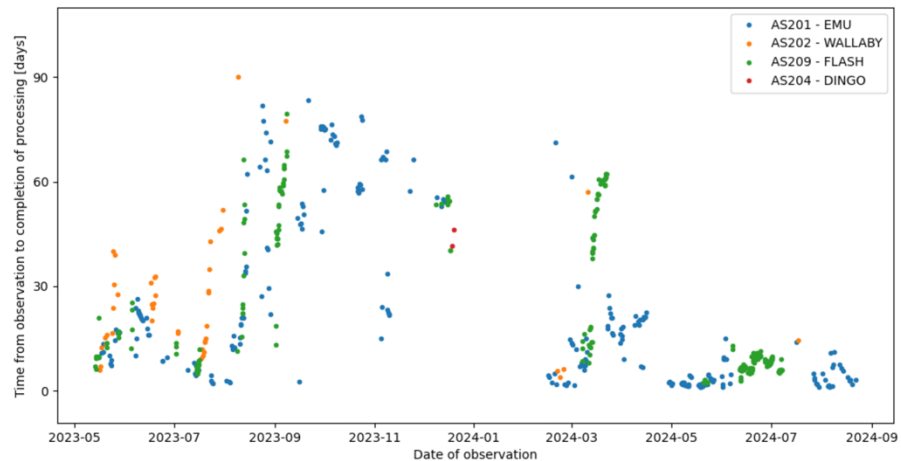
Operations

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| ID | 3.1 (ATUC-22) |
| Owner | John Reynolds |
| Type | Action |
| Summary of request | ATNF to implement necessary improvements to the ASKAPsoft workflow, including those previously recommended by ASKAP spectral line survey teams such as peeling and the RACS sky model. |
| Response | <p>This is a priority and currently in progress. A report will be given at the next ATUC meeting, but we have now formally started the “Key Capabilities Project” (also known as the Data Assurance Project). This is being led by Aidan Hotan and has the big picture goals, which includes both the RACS sky model and peeling:</p> <ul style="list-style-type: none"> • Implement VAST’s commensal fast-imaging mode |

- Improve the number of successful observations from the science team perspective (i.e., good calibration, reducing artefacts from bright sources, imaging methodology, etc.) to ensure that more than 70% of the data uploaded to CASDA is validated as good.
- Improve the reliability of the telescope control system
- Create a global sky model from RACS and integrate as part of the processing pipeline
- Implement a new calibration technique where we derive calibration solutions in one go instead of observing a primary calibrator separately with each beam.
- Ensure that we improve the data throughput to keep up with the incoming data so processing is not a bottle-neck.

This project has been approved, resources and has already started. It formally will run between 2024 and 2026 and updates will be provided at the ATUC meeting.

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| ID | 3.2 (ATUC-12) |
| Owner | Matthew Whiting |
| Type | Action |
| Summary of request | ATUC emphasises the importance of resolving current issues with the ASKAP data pipeline on the shortest possible timescales. Into the future, ATUC recommends prioritising flexible workflows and portable code bases, to enable alternative solutions to data processing when any future issues arise. |
| Response | <p>Our response here is divided into our longer term plan and our current updates. In terms of our longer term plan we are discussing the long term future of the ASKAP data pipeline and how to transition from the current system to any proposed new pipeline. We have started discussions around demonstrating the use of ASKAPsoft in more modern pipeline frameworks optimised for HPC use.</p> <p>For now, we are pleased to note that many of the Pawsey issues have been resolved, the recent (last few weeks) of observations are being processed efficiently and ensuring a long-term solution is a high priority for the ASKAP team. The severe degradation experienced in April/May has been resolved through a combination of work done at Pawsey to control poor use of the filesystems across the full user base, as well as efficiency improvements within the ASKAP processing software. For example. through June & July we were able to process a large number of spectral observations (typically the most demanding on the filesystem), and we saw throughput acceptable enough to clear the large backlog that had developed.</p> <p>As a more quantifiable figure, we show below the time from observation to completion of processing as a function of date for EMU, WALLABY, FLASH and DINGO. The major challenges that occurred from the end of 2023 to the start of 2024 are clear, but we are pleased with the most recent processing times over the last few months.</p> |



We understand that the current predictions for the completion times for many of the ASKAP surveys are long and we are working to get back on track. In particular:

- We held an initial wide-ranging discussion with Pawsey Supercomputing Research Centre management and technical staff. Pawsey staff are working with their platform vendor to improve the performance of Setonix and associated systems. Major changes to the platform management software should be completed by the end of this year and are expected to improve the stability and performance of the system.
- We are having follow-up discussions to identify resourcing for: an upgraded ingest cluster which should include expanded storage for caching observational data, the replacement of the /askapbuffer disk with a dedicated high performance storage solution that reduces or removes our reliance on the common /scratch storage system
- We are also continuing to trial continuum data processing on CSIRO's Petrichor supercomputer as a possible way to augment or extend our processing capacity.
- We have made several improvements to ASKAPsoft that increase processing efficiency in various ways and have other improvements under development, including features that should improve data quality.
- CSIRO ATNF has formally started an ASKAP Key Capabilities Project, led by Aidan Hotan, that has six primary goals including “Improved data throughput and resilience to data bottlenecks”. The project plan includes a few additional FTE of effort to speed progress on key items and is described above in ID 3.1.
- As far as possible we aim to keep the PIs of the survey project in the loop on these issues. To help get the projects back-on-track we potentially could prioritise a particular project, but this may come at the cost of other projects. It is our intention to ensure that all the spectral line teams remain in the observing pool and provide data on a more regular cadence now that many of the previous processing-related blockers have been addressed.

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| ID | 3.3 (ATUC-23) |
| Owner | John Reynolds |
| Type | Action |
| Summary of request | ATNF to engage the user community in a technically-focused way, for example through AKVET, to accelerate implementation of the upgraded workflows. ATUC requests greater visibility of progress of workflow upgrades. |
| Response | ATNF intends to restart AKVET meetings shortly. ATNF also notes that progress on workflow upgrades is reported at the monthly ASKAP Operations forum open to all SST members and in the ASKAP Commissioning updates published monthly on the ATNF Website: https://www.atnf.csiro.au/projects/askap/commissioning_update.html . |

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| ID | 3.4 (ATUC-29) |
| Owner | John Reynolds |
| Type | Action |
| Summary of request | Restart AKVET at the earliest opportunity, preferably prior to the next ATUC meeting, with a careful consideration given to leadership structure, goals, and close working relationship to SSTs. |
| Response | <p>We have spent significant time to clarify the various ASKAP-related projects. The ASKAP key capabilities project (described above) is now formally defined and has many explicit goals relating to improving and stream-lining the ASKAP data sets. The AKVET meetings clearly have overlap and so, before we restart AKVET, we have been attempting to ensure a clear distinction between the work. This has led to the following definition of AKVET:</p> <p>“AKVET is a meeting series where experts explore current ASKAP issues and identify areas that could be improved. This is led by John Reynolds, with internal-to-CSIRO and external members. This group can make recommendations to the ASKAP operations team and to the members of the key capabilities project. Any such requests would be dealt with on a best-efforts basis.”</p> <p>We expect AKVET’s next meeting to be held before the ATUC meeting.</p> |

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| ID | 3.5 (ATUC-24) |
| Owner | John Reynolds |
| Type | Action |
| Summary of request | <p>ATUC notes that the ASKAP and broader radio astronomy community in Australia have built a 15-year partnership with (and hence expectation of) the Pawsey Centre as being central to our work. ATUC seeks a better understanding of why the current Pawsey strategy does not appear to align with the community’s priorities, in the context of radio astronomy being a foundation partner for the centre.</p> <p>ATNF continues seeking appropriate support for the user community’s ongoing needs. ATUC strongly supports the ATNF in highlighting the key role of radio astronomy as a foundation partner in Pawsey.</p> |
| Response | ATNF continues its strong engagement with Pawsey at all levels including technical, management and board, to advocate the fundamental importance of radio astronomy for current and future Pawsey operations. Linked to ID 3.6 below we will provide a verbal |

update relating to Pawsey at the ATUC meeting.

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| ID | 3.6 |
| Owner | Matthew Whiting |
| Type | Action |
| Summary of request | Given Pawsey's proposal to change cluster management software on Setonix to reduce downtime, ATUC recommends that ATNF obtain evidence-based projections from Pawsey on the expected impact of this change. ATUC recommends that ATNF communicate these findings to the SST leads to ensure transparency and align expectations. |
| Response | We will provide a verbal update relating to Pawsey and Setonix at the ATUC meeting. |

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| ID | 3.7 (ATUC-25) |
| Owner | John Reynolds |
| Type | Action |
| Summary of request | In view of strong and continued user-demand, ATNF implements a ticketing system as soon as is practical, preferably prior to the next ATUC meeting. |
| Response | We have a ticketing system already for the Murriyang and ATCA observatories for faults and feature requests. Submitting requests is possible through the observing portals. The data archiving systems have their own reporting systems. Our users can also provide feedback through the ATUC feedback form (https://forms.office.com/r/nN3FSRiaue) which is advertised as part of the ATUC announcements. |

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| ID | 3.8 (ATUC-17) |
| Owner | Jane Kaczmarek |
| Type | Update |
| Summary of request | <p>ATNF continues to investigate dynamic scheduling options on Parkes, and reports to ATUC before the next meeting.</p> <p>The dynamic scheduling is described in the ATUC report as similar to “observing algorithms that will allow the telescope to remain unattended and still not risk losing a full observing block. This intelligence would recognise when a non-critical failure occurred, and when the telescope can resume operation. When resuming, it will take into account the elapsed time and select the next appropriate target in the schedule block.”</p> |
| Response | <p>In the “quick response to ATUC” we noted that we were unable to resource this recommendation at this time. The Murriyang observing system does provide a flexible system, but with the CryoPAF commissioning work and consideration towards UWM-H, we are currently unable to develop and plan a full dynamic scheduling system.</p> <p>We have followed up with ATUC to note that this request is being driven by the pulsar community. We will (later this year) work with the pulsar community to develop this request into a set of requirements that we can consider implementing in the future.</p> |

Data and archiving

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| ID | 4.1 (ATUC-13) |
| Owner | Minh Huynh |
| Type | Action |
| Summary of request | ATUC encourages CSIRO to prioritise the investigation and implementation of long-term data storage solutions that will ensure the impact of the ATNF datasets, without compromising existing telescope operations. ATUC notes that, while delivering science-ready data is not a “business as usual” activity for all ATNF telescopes, it is crucial for the long-term impact of ATNF facilities. |
| Response | <p>We understand the importance of data and data archiving and thank the ATUC for providing very clear examples in their report (such as the FRBs, Sloan digital sky survey etc.). We also note that the ATUC highlighted “the impact is even greater when the available data are science-ready and easily used by communities beyond their immediate area of research”.</p> <p>We believe that the ATNF provides World-leading data archives for radio telescopes. This includes the raw pulsar data sets in which discoveries continue to be made, such as “Discovery of 37 new pulsars through GPU-accelerated reprocessing of archival data of the Parkes multibeam pulsar survey” as well as the data products made available in CASDA from ASKAP. We discuss the possibility of archiving data products from the Parkes cryoPAF below (ID 4.2). We currently do not have any plan, or resources, to produce astronomer-ready data products for ATCA (and hence during the transition from the ATOA data sets into CASDA). We note that ATUC has responded to an earlier draft of this report and noted that astronomer-ready data products from the ATCA legacy surveys would be useful and for the existing data sets (e.g., SPLASH and Mopra CO survey) to be stored in a similar, easy-to-find place. We can provide support in making science-ready data available with options in the CSIRO DAP as normal deposits (not allowing for cone search capability etc.) or potentially as a new portal within CASDA, which would have more functionality, but would also require resourcing. As part of the webpage refresh project we will explore whether we can make the existing data sets more accessible.</p> <p>Storage of 10s of PBs of data is a significant cost, even using media such as tape. We have investigated and costed options for CASDA and DAP storage for the next five years. We are now looking at options for internal and external funding streams to meet these storage requirements. Future CSIRO data archive resourcing is likely to be mindful of the advice provided in the decadal plan.</p> |

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| ID | 4.2 (ATUC-5) |
| Owner | Lawrence Toomey |
| Type | Update |
| Summary of request | ATNF to report on the feasibility of providing pulsar searching as a service for the community. ATUC requests an update before the next meeting. |
| Response | In the April ATUC meeting, we highlighted (in the “Data Access and Archive Developments” presentation from Minh Huynh) the extreme data rates possible from the CryoPAF pulsar search mode (potentially up to ~100TB/month). This would be extremely challenging to store and archive and hence presented a suggestion that default pipelines could be used to |

pre-process the data for users and provide low-volume data products. ATUC requested further details on the pipeline specifics, final data products and what resources are needed to develop and support this effort.

The cryoPAF is still in development phase and we are only now obtaining commissioning data sets. The commissioning plan includes commissioning the pulsar search mode, which includes level setting procedures, RFI excision, data transfer, calibration and the post-processing pipelines. The output raw data products will be in PSRFITS search mode format and manageable data volumes can (and will) be archived as normal in the data archive. We note that the data archive system is now succeeding at publishing 20TB/day and this may increase in the future making a full archive of the raw data for entire surveys more feasible now.

Some of the major pulsar surveys with the cryoPAF are being planned and include ATNF staff. These survey teams will develop pipelines for processing their data sets and the expectation is that those pipelines will be run on the CSIRO high performance computing systems. We will make the recipes available for other users who wish to process search mode data, but note the full survey pipelines will include specifics for the CSIRO HPC systems. We cannot guarantee the use of those CSIRO systems for other observers, but have a working pipeline will open the potential for automatic processing in the future.

We will report back to ATUC in the October meeting

- results from our commissioning of the cryoPAF pulsar search pipeline.
- clarity around the amount of raw search mode data that can be archived, how typical users would access those data and how they would receive their results if the raw data cannot be archives.

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| ID | 4.3 (ATUC-6) |
| Owner | Lawrence Toomey |
| Type | Update |
| Summary of request | ATNF to improve the accessibility of data collections hosted on the Parkes Pulsar Data Archive. |
| Response | <p>In late 2023, DAP migrated the Parkes Pulsar Data Archive from tape to object (S3-compatible) storage. This has resulted in almost instant access to data that previously would have taken hours. Additionally, access methods have improved with the provision of pre-built commands for S3-compatible clients such as Rclone, AWS command-line interface and Globus.</p> <p>ATNF staff were aware of the limitations of accessing data returned from a search query – we have now developed scripted query and download command-line interfaces to solve this problem and improve data retrieval from multiple collections. The PIs are sent details of access methods and tools once the first collection is published. As an example for P1131:</p> <p><i>This is a courtesy email to inform you that your Parkes data will become available on CSIRO's Data Access Portal, now the primary location for data access, with collections listed on the following page:</i></p> |

<https://data.csiro.au/search/keyword?q=P1131>

If you wish to be notified as collections become available, add this feed to your favourite RSS reader:

<https://data.csiro.au/dap/ws/v2/collections/searchbylocation?p=1&rpp=25&showFacets=true&sb=RELEVANCE&q=P1131&atom=true>

For instructions on accessing your data, please navigate to the documentation repository:

https://bitbucket.csiro.au/projects/CPDA/repos/pks_data_access_docs/browse

More general information can be found on the DAP help pages:

<https://confluence.csiro.au/display/dap/Download+Data>

<https://confluence.csiro.au/display/dap/Download+via+WebDAV>

Policies

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| ID | 5.1 (ATUC-31) |
| Owner | John Reynolds |
| Type | Update |
| Summary of request | ATNF review the ASKAP GSP time allocation process and data embargo policy, including assessing the possibility of increasing the time available. ATUC requests an update by the next meeting. |
| Response | <p>The GSP program commenced at a modest level (150 hours per Semester) to gauge demand and feasibility. After 12 months' positive experience, users have been invited to submit proposals for the full 150 hours, with appropriate justification. ATNF will consider increasing the GSP allocation up to 300 hours per Semester if the subscription from good quality proposals warrants this.</p> <p>ASKAP datasets are generally released to the public CASDA archive without any proprietary period, recognising that these are science-ready products. However, a request for a proprietary period for GSP observations will be considered, up to a maximum of 12 months from the observation, under exceptional or compelling circumstances.</p> |

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| ID | 5.2 (ATUC-26) |
| Owner | Aidan Hotan |
| Type | Action |
| Summary of request | ATNF ensures that the communications mechanism for ASKAP GSPs is consistent with other ATNF facilities, including notification of proposers whether or not their project will be scheduled time before the observing semester begins. |
| Response | The ASKAP Operations team has been refining its interface with the ATNF Time Assignment Committee over the past two semesters. Our intention was always to inform PIs of their entry into the scheduling pool in advance of the semester starting, but the additional considerations around technical feasibility and compatibility with existing Survey Science Projects has caused some delays in the past. We will continue to streamline this process and provide prompt notification, though it should be acknowledged that the ASKAP Operations team manage the entire observing process for GSPs and the observations are scheduled dynamically unless otherwise constrained. There is less urgency on the PIs in this process, so some flexibility seems reasonable. |

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| ID | 5.3 (ATUC-27) |
| Owner | John Reynolds |
| Type | Action |
| Summary of request | ASKAP user policy from 2009 is updated and made consistent with that provided in the Call for Proposals. |
| Response | The updated document will be available on the ATNF Website prior to the ATUC meeting. It will include an updated statement about the allocation of GSP time. Note that this document is most likely to be an update as opposed to being a new policy. The only substantive change would be the reduction of GSP time to 5-10% as per RASSP recommendation. |

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| ID | 5.4 (ATUC-14) |
| Owner | Jane Kaczmarek |
| Type | Action |
| Summary of request | <p>ATUC supports prioritisation of NAPAs over ToOs. ATUC recommends that the official ToO and NAPA data release policy is reviewed and clarified, specifically that:</p> <ul style="list-style-type: none"> • A policy for competing rapid response mode triggers is developed. • The public release of NAPA and ToO data policy is updated, clarified, and enforced. • The policy surrounding triggering of NAPA projects is updated, as NAPAs that have been approved by a TAC for a certain number of triggers should only need to refer to their scientific justification when triggering pre-approved observations. • All of these updates are added to the NAPA and ToO policy website. |
| | <p>We are developing a document to clarify the policy. This document is currently in a draft state, but any changes to formal ATNF policy will need to be reviewed and agreed-upon by the ATNF Steering Committee whose next meeting will be held in November 2024.</p> <p>It is expected that the policy will be similar to the following and we welcome ATUC feedback on these suggestions:</p> <p>A policy for competing rapid response mode triggers</p> <p>In the event that two NAPAs with differing science cases request to trigger for the same block of time, considerations will first be made for the time sensitivity of each of the proposed observations. If both are deemed to have a similar level, priority will be given to the NAPA with the highest TAC grade. Every effort will be made to accommodate the lower NAPA trigger for a different block of time, if appropriate.</p> <p>If an event takes place that meets a NAPA criterion and ToOs request the same block of time for a similar science case, the Scheduler will first ask if there is a willingness to for the project teams to work together. If not, the NAPA with the highest takes highest priority. If the science goals between the two requests <i>exactly</i> overlap, the Scheduler may ask the ToO requester to make a case that differentiates from the two proposals.”</p> <p>The public release of NAPA and ToO data policy is updated, clarified, and enforced</p> <p>Data resulting from projects previously assessed by the TAC are subject to an eighteen-month proprietary period starting from the day of the observation. Conversely, all projects that have not been through the TAC will be given a proprietary period of two months.</p> <p>The policy surrounding triggering of NAPA projects is updated, as NAPAs that have been approved by a TAC for a certain number of triggers should only need to refer to their scientific justification when triggering pre-approved observations</p> <p>A NAPA project is one whose science goals have been set down in a proposal that the TAC has evaluated in the normal way. The amount of time requested for these projects is clearly stated in the proposal and the use of time can be triggered by the investigator at any time during the semester by notifying the Scheduler that their triggering criteria are met. This</p> |

time may displace scheduled observer, if necessary. Furthermore, NAPA claim staking can be avoided by asking for a coherent, clear & specific science case and triggering case. NAPA projects typically request both a number of triggers in a given semester and a total amount of time. They also tend to request some number of follow-up observations. If the maximum number of triggers is met without the total amount of time being exceeded, then any further request is treated as being outside the approved TAC project. In such cases, the Scheduler would likely approve any such request to observe with the same project code but would likely not approve displacement of other scheduled time.

All of these updates are added to the NAPA and ToO policy website

The webpages will be updated when the policies are finalised via the ATNF Steering Committee.

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| ID | 5.5 (ATUC-28) |
| Owner | John Reynolds |
| Type | Action |
| Summary of request | ATUC requests that ATNF clarify the policies and frameworks for installing user-supplied equipment such as data recording machines at the Parkes observatory. |
| Response | Parkes has a long history of hosting user-supplied equipment in many forms, and with great success. While circumstances vary widely between different cases, the underpinning principle is that any new instrument of significant scale should return a clear benefit to the user community, either through guaranteed open (merit-based) access to new capabilities thereby provided, and/or clear financial benefit to ATNF to assist in sustaining the operation of Parkes and our other instruments. Proposals to host smaller individual pieces of equipment such as a data recorder would be considered on the basis of demonstrable scientific return, the possible impact on other facility users, and cost. Third-party equipment will continue to be considered on a case-by-case basis, applying these principles and in consultation with the community, where appropriate. Interested parties are encouraged to contact the Head of ATNF Operations and ATNF Science in the first instance. |

Training and user support

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| ID | 6.1 (ATUC-18) |
| Owner | Shi Dai |
| Type | Update |
| Summary of request | <p>ATUC congratulates ATNF on progress with BIGCAT and CryoPAF, and notes an opportunity to develop a plan relating to training materials for both instruments by and for the community of users of these instruments.</p> <p>A plan for development of training materials is created and tested.</p> |
| Response | <p>Note: here we respond to comments around the CryoPAF. In ID 7.4 we respond for BIGCAT.</p> <p>The CryoPAF online observing system and tools are currently in development and will be commissioned later this year during the science commissioning. Simultaneously, we will create user documents and training materials. These materials and documentation will be reviewed and tested during the shared-risk observing period in 2025.</p> |

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| ID | 6.2 (ATUC-9) |
| Owner | Jo Dawson |
| Type | Update |
| Summary of request | <p>A review of existing training documentation across the national facility be undertaken, with gaps identified. Once identified, ATUC recommends that a publicly-available training development plan be developed before the next ATUC meeting, outlining ATNF's approach to mitigating these identified gaps and a plan for implementation with target timelines. The plan should also outline where these public documents are stored, as well as who is responsible for mitigating the training gaps.</p> |
| Response | <p>We have been unable to resource and complete a full training development plan. However, we note that we have an internal-to-CSIRO working group that has been tasked with re-developing our training processes. The development of a plan for the future training has already been carried out by this same working group. A deliberate decision was made to pause the creation of new training materials pending CryoPAF and BIGCAT, which will lead to significant changes in the operation of Murriyang and ATCA. FTEs are allocated for the recommencement of this plan to coincide with the completion of instrumentation upgrades.</p> <p>Note there is a distinction between "training" (videos, readings, hands-on experience etc.) and "documentation" (reference materials covering all aspects of telescope operation) and both will be updated during and after the commissioning of the new instruments.</p> |

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| ID | 6.3 |
| Owner | Robert Hollow |
| Type | Update |
| Summary of request | <p>In time for the next ATUC meeting, ATNF to investigate the feasibility of student contributions to training materials, through pairing with expert observers to create content tailored to specific problems relevant to their research projects.</p> |
| Response | <p>Our current plan is not to involve students directly in the writing of the training materials, as</p> |

they will necessarily lack the experience of our system scientists, however a group of students will be used to review and test the draft materials so that their feedback can be incorporated in the final versions.

All ATNF co-supervised students are expected to carry out some support tasks for the observatory. We are currently defining those tasks and will include the review of training material in the options that can be chosen by the students.

ATNF priorities and future priorities

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| ID | 7.1 (ATUC-15) |
| Owner | George Hobbs |
| Type | Action |
| Summary of request | ATNF to share the "ATNF of the Future" Working Group reports with the user community as a matter of priority (no later than May), to enable input into the NCA Decadal Plan for Australian Astronomy 2026-2035 which is currently in development. |
| Response | <p>The ATNF of the Future working group reports were the foundation of our document describing our vision for the decade: https://www.atnf.csiro.au/news/news.php?action=show_item&item_id=2004.</p> <p>This document has been included as an appendix to the report of Decadal Plan Working Group 2.2 on National and University Facilities, and is available from the ATNF webpage.</p> <p>We have also arranged for a slot in the ATUC meeting to discuss the future plans for the ATNF in more detail.</p> |

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| ID | 7.2 (ATUC-20) |
| Owner | Elizabeth Mahony |
| Type | Update |
| Summary of request | ATNF to share with the user community its desired future science roles for ATCA, noting the new opportunities BIGCAT will offer for the next 5-10 years |
| Response | We have described our vision for the future science roles for ATCA in our vision statement (described and linked in ID 7.1 above). The vision will be updated based on the Decadal Plan, the uptake of new science with BIGCAT and any financial constraints. |

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| ID | 7.3 (ATUC-32) |
| Owner | George Hobbs |
| Type | Update |
| Summary of request | ATUC supports ATNF's efforts to advance ASKAP's role in the future SKA-Low and Mid era. ATUC recommends that ATNF develop a science case in consultation with the community, and share in relevant public forums (such as a white paper and/or presentation at the ASA ASM) the key criteria and desired performance specifications for an upgraded ASKAP. ATUC requests an update in time for the next meeting. |
| Response | The role of ASKAP (and our other facilities) in the SKA-Low and Mid era is described in our document attached in ID 7.1 above. We are also exploring upgrades to ASKAP. We have a funded project to design, build and test a single upgraded phased array feed for a single ASKAP antenna. This will be "plug-and-play" and installed, tested and then removed. With the results from those tests we (with the community) will be able to develop the case for upgrading all 36 antennas. On a similar timescale we will also consider other upgrade possibilities for ASKAP. This will likely be carried out by (or in conjunction with) the new ATNF Chief Scientist, who is currently being recruited. |

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| ID | 7.4 (ATUC-7) |
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| Owner | Elizabeth Mahony |
| Type | Action |
| Summary of request | ATNF develop necessary user software, in-depth training materials, and a dedicated community engagement plan for BIGCAT. ATUC requests a plan for these activities, including resourcing, presented at the next ATUC meeting. |
| Response | <p>During the design and commissioning phase the user software and training material are being planned. As in recommendation 6.1, we will create user documents and training materials. These materials and documentation will be reviewed and tested during the shared-risk observing period in 2025.</p> <p>Our current understanding is that the ATCA user community is well aware of the BIGCAT project and the TAC notes that many ATCA proposals are on hold until the commissioning of BIGCAT. However, we request that if ATUC lets us know of specific communities unaware of BIGCAT's capabilities and we will reach out as needed.</p> |

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| ID | 7.5 (ATUC-33) |
| Owner | George Hobbs |
| Type | Update |
| Summary of request | ATNF considers future resource requirements to enable a path for the demonstrator to turn into a national facility with a broad user base. ATNF should investigate the benefits of co-location of LAMBDA with existing ATNF facilities. ATUC requests an update in time for the next meeting. |
| Response | <p>The ATNF steering committee (May 2024) was provided with various documents describing LAMBDA, a low frequency VLBI array, as a demonstrator capability. The ATNF has recruited a Science Leader, Tessa Vernstrom, who will lead our science goals in low-frequency astronomy, including exploring the science case for a full-scale LAMBDA. The current expectation is that the full-scale system, if funded, would include five or more stations at existing Australian VLBI sites. There is currently no guarantee that a National Facility low-frequency VLBI system will be funded and we look forward to input from the test-bed systems as well as from our new Chief Scientist, Chief Technologist and Science Leader, from ATUC members and from the Decadal Plan for Australian Astronomy in order to support our decisions around whether (and when) to progress from the demonstrator system.</p> <p>We note that the day after the ATUC meeting we will be holding a VLBI workshop that will include talks and discussions around LAMBDA and low frequency VLBI.</p> |

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| ID | 7.6 (ATUC-16) |
| Owner | Jane Kaczmarek |
| Type | Action |
| Summary of request | ATNF continues to pursue the development of the UWMH receiver to ensure the future science role of Parkes. ATUC requests an update in time for the next meeting. |
| Response | We are intending to move forward with the UWMH receiver project for Murriyang. This has been resourced and funded as an ATNF future project. Details on the project itself, the properties of the receivers and the status and the timeline for the project will be presented at the next ATUC meeting. |

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| ID | 7.7 (ATUC-30) |
| Owner | Vivek Gupta |
| Type | Action |
| Summary of request | ATUC encourages the CRACO team to work with ATNF to further develop plans to become a National Facility for the benefit of the wider community. |
| Response | <p>The CRACO capability is now supported as a National Facility at shared risk and we provide details here (further details will be included during the next call for telescope proposals):</p> <p>How to propose a project using the CRACO backend on ASKAP?</p> <p>Users who wish to take observations with ASKAP using the CRACO backend are encouraged to submit proposals through the regular ATNF call for proposals cycle. The web form for the proposal cover sheet contains a question asking ‘ Do you require CRACO data products for your science case?’. The users should respond Yes to this question, and explain why do they specifically need CRACO’s data products in the science justification section of their proposal</p> <p>How will CRACO observations get carried out?</p> <p>CRACO facility provides a fully commensal backend capturing visibility data from the ASKAP correlator. The observations requested by the user will be scheduled in the same way as all other Guest Science Proposal observations, e.g. autonomously and dynamically via the SAURON scheduler. The CRACO backend will automatically record and keep the data for those observations which have requested access to CRACO data products for their science case.</p> <p>What will be the data format from CRACO?</p> <p>CRACO will record raw uncalibrated visibilities at 110.582 ms time resolution with 288 MHz of bandwidth at 1 MHz frequency resolution. The visibilities will not contain any polarisation information (total intensity only).</p> <p>Alternatively, users may request CRAFT’s single pulse search pipeline to be run on their observations in real-time, and the output candidates (saved in a csv file) be shared with them. However, since the single pulse search pipeline is still being actively developed, it is recommended that before their observations are carried out, the users contact the PIs of CRAFT collaboration (Ryan Shannon & Keith Bannister) to better understand the searched parameter space.</p> <p>How can users access data for their observations?</p> <p>The data will be automatically uploaded to Pawsey’s warm-tier research data object storage server named Acacia, or uploaded directly to a S3 data store of the users choosing. After the data has been uploaded, a link will be shared with the users using which they can download their data. The data will be staged in Acacia for 60 days, after which it will get automatically deleted.</p> |

What tools are available to process their data?

The visibility data are stored in 'UVFITS' format. Users can use the MIRIAD package to process their data, or convert it into a more widely used 'Measurement Set' format by using the 'importuvfits' task in the CASA package.

The candidates from the CRAFT's single pulse search pipeline would be made available in a csv file format, which can be easily opened using most standard text editors.

Progress of CRACO's national facility integration?

CRACO will be offered as a shared-risk facility in OCT2024. Subject to a review of the performance in OCT2024, it will be offered in APR2025 as a National Facility without the "shared risk" moniker. Users wishing to use CRACO outside the stated capabilities are encouraged to contact the ATNF with their requirements.

Community engagement

| ID | 8.1 (ATUC-8) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------|--|------------------|------------|----------------------|-----------|----------------------|-----------|----------------|-------------------------------|------------------|------|---|---|----------------|-----------------|------------------|------|---|---|----------------|--|------------------|------|---|---|----------------|-------------------------|------------------|------|---|---|----------------|---|------------------|------|---|---|----------------|----------------------------|------------------|------|---|---|----------------|---|------------------|------|---|---|----------------|---|------------------|------|---|---|----------------|---------------------------------------|------------------|------|---|---|
| Owner | Joanne Dawson | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type | Action | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Summary of request | ATUC recommends the OE model be further defined and outlined, then socialised with the wider user communities, to allow opportunity for user feedback on what the model of upskilling Observing Experts might look like. ATUC requests an update by August. Once this information is received in a timely manner, ATUC will request user feedback specifically on the OE model in advance of the next meeting. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Response | <p>We have already provided feedback to ATUC in response to this request. Here we provide an updated response:</p> <ul style="list-style-type: none"> The ATNF observing support and observer training overview is provided at https://www.atnf.csiro.au/observers/apply/ATNF-support.html. A more detailed description of the role and responsibilities of the OE is available from https://www.atnf.csiro.au/content/observing-expert-role-responsibilities. <p>We have now produced an online spreadsheet detailing expected competencies currently required by each OE. This is available for internal CSIRO staff from this link and we copy the current version below. Here the levels are defined as:</p> <ol style="list-style-type: none"> The observer will understand these tasks at a basic level, but the OE needs to be able to support the observer These are tasks required of the OE These are tasks not required by the OE (typically for LBA observations) <table border="1"> <thead> <tr> <th>Type</th> <th>Competency</th> <th>Instrument</th> <th>Class</th> <th>ATCA Murriyang Level</th> <th>LBA Level</th> </tr> </thead> <tbody> <tr> <td>Administration</td> <td>Log into the telescope Portal</td> <td>ATCA + Murriyang</td> <td>Core</td> <td>1</td> <td>1</td> </tr> <tr> <td>Administration</td> <td>Register as OiC</td> <td>ATCA + Murriyang</td> <td>Core</td> <td>1</td> <td>1</td> </tr> <tr> <td>Administration</td> <td>Hand over the telescope to the next observer</td> <td>ATCA + Murriyang</td> <td>Core</td> <td>1</td> <td>1</td> </tr> <tr> <td>Administration</td> <td>Book an observing block</td> <td>ATCA + Murriyang</td> <td>Core</td> <td>1</td> <td>1</td> </tr> <tr> <td>Administration</td> <td>Register as OE for an observing block/project</td> <td>ATCA + Murriyang</td> <td>Core</td> <td>2</td> <td>2</td> </tr> <tr> <td>Administration</td> <td>Request a green time block</td> <td>ATCA + Murriyang</td> <td>Core</td> <td>1</td> <td>3</td> </tr> <tr> <td>Administration</td> <td>Contact the observer/Oberving Expert/on-call person</td> <td>ATCA + Murriyang</td> <td>Core</td> <td>1</td> <td>1</td> </tr> <tr> <td>Administration</td> <td>Acquire and activate a CSIRO (unix) ident</td> <td>ATCA + Murriyang</td> <td>Core</td> <td>1</td> <td>1</td> </tr> <tr> <td>Administration</td> <td>Complete an observers feedback report</td> <td>ATCA + Murriyang</td> <td>Core</td> <td>1</td> <td>1</td> </tr> </tbody> </table> | Type | Competency | Instrument | Class | ATCA Murriyang Level | LBA Level | Administration | Log into the telescope Portal | ATCA + Murriyang | Core | 1 | 1 | Administration | Register as OiC | ATCA + Murriyang | Core | 1 | 1 | Administration | Hand over the telescope to the next observer | ATCA + Murriyang | Core | 1 | 1 | Administration | Book an observing block | ATCA + Murriyang | Core | 1 | 1 | Administration | Register as OE for an observing block/project | ATCA + Murriyang | Core | 2 | 2 | Administration | Request a green time block | ATCA + Murriyang | Core | 1 | 3 | Administration | Contact the observer/Oberving Expert/on-call person | ATCA + Murriyang | Core | 1 | 1 | Administration | Acquire and activate a CSIRO (unix) ident | ATCA + Murriyang | Core | 1 | 1 | Administration | Complete an observers feedback report | ATCA + Murriyang | Core | 1 | 1 |
| Type | Competency | Instrument | Class | ATCA Murriyang Level | LBA Level | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Administration | Log into the telescope Portal | ATCA + Murriyang | Core | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Administration | Register as OiC | ATCA + Murriyang | Core | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Administration | Hand over the telescope to the next observer | ATCA + Murriyang | Core | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Administration | Book an observing block | ATCA + Murriyang | Core | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Administration | Register as OE for an observing block/project | ATCA + Murriyang | Core | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Administration | Request a green time block | ATCA + Murriyang | Core | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Administration | Contact the observer/Oberving Expert/on-call person | ATCA + Murriyang | Core | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Administration | Acquire and activate a CSIRO (unix) ident | ATCA + Murriyang | Core | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Administration | Complete an observers feedback report | ATCA + Murriyang | Core | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Observing | Know when to escalate an issue to the on-call person | ATCA + Murriyang | Core | 2 | 2 |
| Observing | Know when to escalate an issue to the OE | ATCA + Murriyang | Core | 1 | 1 |
| Monitoring | Know that it is expected to regularly monitor the PORTAL and respond to messages | ATCA + Murriyang | Core | 1 | 1 |
| | | | | | |
| Administration | Acquire the current VNC observing password | ATCA | Core | 1 | 1 |
| Administration | Report faults to ATNF-Narrabri-Remobs@csiro.au | ATCA | Core | 1 | 1 |
| Preparation | Select an appropriate calibrator for setup | ATCA | Core | 1 | 3 |
| Preparation | Demonstrate knowledge of recommended frequencies or how to find them | ATCA | Core | 1 | 3 |
| Preparation | Make a schedule for observing setup | ATCA | Core | 1 | 3 |
| Preparation | Make a schedule for observing targets | ATCA | Core | 1 | 3 |
| Preparation | Make a schedule for observing at multiple frequencies | ATCA | Core | 1 | 3 |
| Observing | Connect to the ATCA observing VNCs (including the use of SSH tunnels) | ATCA | Core | 1 | 1 |
| Observing | Load schedule into caobs | ATCA | Core | 1 | 2 |
| Observing | Demonstrate recognition of the various ATCA tools (SPD, VIS, assistance etc) and their purpose | ATCA | Core | 1 | 1 |
| Observing | Recognise focus errors and correct them | ATCA | Core | 1 | 2 |
| Observing | Recognise attenuation levels and correct them | ATCA | Core | 1 | 1 |
| Observing | Recognise the current delay value and how to change it | ATCA | Core | 1 | 2 |
| Observing | Set suitable tvchannels | ATCA | Core | 1 | 3 |
| Observing | Check the current flagging settings | ATCA | Core | 1 | 3 |
| Observing | Set flagging appropriately | ATCA | Core | 1 | 3 |
| Observing | Recognise the conditions required for successful delay calibration | ATCA | Core | 1 | 2 |
| Observing | Make appropriate use of SPD during setup to check status | ATCA | Core | 1 | 3 |
| Observing | Make appropriate use of vis during setup to check status | ATCA | Core | 1 | 3 |
| Observing | Conduct a successful continuum delay calibration | ATCA | Core | 1 | 3 |
| Observing | Conduct a successful phase | ATCA | Core | 1 | 3 |

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| | calibration | | | | |
| Observing | Conduct a successful 64 MHz zooms delay calibration | ATCA | Mode-specific | 1 | 3 |
| Observing | Conduct a successful amplitude calibration | ATCA | Core | 1 | 3 |
| Observing | Acknowledge the caveat of amplitude calibration | ATCA | Core | 1 | 3 |
| Observing | Conduct a successful pointing calibration | ATCA | Mode-specific | 1 | 3 |
| Observing | Conduct a successful paddle calibration | ATCA | Mode-specific | 1 | 3 |
| Observing | Perform a successful bandpass calibration observation | ATCA | Core | 1 | 3 |
| Observing | Perform a successful target observation | ATCA | Core | 1 | 3 |
| Observing | Time scans to finish on time | ATCA | Core | 1 | 3 |
| Observing | Understand the cycle time, how to change it, and what it affects | ATCA | Core | 1 | 3 |
| Observing | Stow antennas | ATCA | Core | 1 | 1 |
| Observing | Disable antennas | ATCA | Core | 1 | 2 |
| Observing | Detach antennas | ATCA | Core | 1 | 2 |
| Observing | Turn on/off generators | ATCA | Core | 1 | 1 |
| Observing | Successfully observe remotely without issue | ATCA | Core | 1 | 1 |
| Observing | Respond appropriately to unpredictable or uncommon errors | ATCA | Core | 2 | 2 |
| Observing | Know when to solve an issue via the ATUG or videos | ATCA | Core | 1 | 1 |
| Monitoring | Recognise when observations are affected by RFI | ATCA | Core | 1 | 2 |
| Monitoring | Recognise when observations are affected by low elevation | ATCA | Core | 1 | 2 |
| Monitoring | Recognise a soft wind stow and when to start up again | ATCA | Core | 1 | 1 |
| Monitoring | Recognise a hard wind stow and when to start up again | ATCA | Core | 1 | 1 |
| Monitoring | Recognise when a CABB block drops out | ATCA | Core | 1 | 1 |
| Monitoring | Recognise a major system fault e.g. cryo/drives/power failure | ATCA | Core | 1 | 1 |
| Monitoring | Demonstrate capacity to check the weather conditions in Narrabri | ATCA | Core | 1 | 1 |
| Monitoring | Demonstrate competent usage of MoniCA | ATCA | Core | 1 | 2 |
| Monitoring | Reboot and reprogram a CABB block, when dropped | ATCA | Core | 2 | 2 |
| Monitoring | State the extremely important condition for use of PROG | ATCA | Core | 1 | 1 |

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| Administration | Acquire the current VNC observing password | Murriyang | Mode-specific | 1 | 1 |
| Administration | Access FROG and DHAGU? | Murriyang | Core | 1 | 1 |
| Administration | Access Medusa SPIP | Murriyang | Core | 1 | 3 |
| Administration | Find information on system changes | Murriyang | Core | 1 | 3 |
| Administration | Submit a fault report | Murriyang | Core | 1 | 2 |
| Preparation | Import a source list in DHAGU? | Murriyang | Core | 1 | 3 |
| Preparation | Create, edit and save a Parameter Set in DHAGU? | Murriyang | Core | 1 | 3 |
| Preparation | View, load, download and retire a Parameter Set in DHAGU? | Murriyang | Core | 1 | 3 |
| Preparation | Determine expected file sizes | Murriyang | Core | 1 | 3 |
| Preparation | Generate global and local subband configurations and understand the difference between them | Murriyang | Core | 1 | 3 |
| Preparation | Configure an appropriate template for continuum or spectral line observations | Murriyang | Mode-specific | 1 | 3 |
| Preparation | Configure an appropriate template for pulsar fold mode observations | Murriyang | Mode-specific | 1 | 3 |
| Preparation | Configure an appropriate template for pulsar search mode observations | Murriyang | Mode-specific | 1 | 3 |
| Preparation | Understand what a scheduling block is | Murriyang | Core | 1 | 3 |
| Observing | Control the antenna via DHAGU? | Murriyang | Core | 1 | 3 |
| Observing | Control the antenna via the VNCs | Murriyang | Mode-specific | 1 | 1 |
| Observing | Understand Observing Queue control and Scheduling Block states | Murriyang | Core | 1 | 3 |
| Observing | Understand how the Observing and Pending Queues work | Murriyang | Core | 1 | 3 |
| Observing | Load and schedule observations for a project | Murriyang | Core | 1 | 3 |
| Observing | Modify Scheduling Block states via DHAGU? | Murriyang | Core | 1 | 3 |
| Observing | Stow and unstow the dish | Murriyang | Core | 1 | 1 |
| Observing | Exit limits if the telescope has drifted into the dead zone or software limits | Murriyang | Core | 1 | 1 |
| Observing | Understand wrap limits and impact on schedules (ie. slew times) | Murriyang | Core | 1 | 1 |
| Observing | Understand the impact of | Murriyang | Core | 1 | 1 |

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| | observing at high elevations | | | | |
| Observing | Change receivers using OPERFCC, PKMC and CS-Studio | Murriyang | Mode-specific | 1 | 3 |
| Observing | Check the performance of legacy receivers using PKMC, CS-Studio, LOGUI, LOMON | Murriyang | Mode-specific | 1 | 3 |
| Observing | Check Medusa is configured correctly via DHAGU? and/or Medusa SPIP | Murriyang | Core | 1 | 3 |
| Observing | Connect to the Murriyang observing VNCs (including the use of SSH tunnels) | Murriyang | Mode-specific | 1 | 1 |
| Monitoring | Recognise the difference between software and hardware limits | Murriyang | Core | 1 | 1 |
| Monitoring | Recognise a wind stow and when the observations can be restarted | Murriyang | Core | 1 | 1 |
| Monitoring | Recognise a storm stow is and know how an observer should handle it | Murriyang | Core | 1 | 1 |
| Monitoring | Check Medusa status via DHAGU? and/or Medusa SPIP | Murriyang | Core | 1 | 3 |
| Monitoring | Access logging in DHAGU? to identify Scheduling Block errors | Murriyang | Core | 1 | 3 |
| Monitoring | Check and respond to alarms in FROG | Murriyang | Core | 1 | 1 |
| Monitoring | Interpret the synoptic displays and know how to toggle their options in FROG/DHAGU? | Murriyang | Core | 1 | 1 |
| | | | | | |
| Administration | Connect to the LBA session mattermost channel | LBA | Core | - | 1 |
| Observing | Start a schedule at Murriyang, ATCA and Mopra | LBA | Core | - | 2 |
| Observing | Stop recorders | LBA | Core | - | 1 |
| Observing | Restart recorders on a different disk | LBA | Core | - | 2 |
| Observing | Set up "remote disk" recording | LBA | Core | - | 2 |
| Observing | Stow Murriyang, ATCA and Mopra | LBA | Core | - | 1 |
| Observing | Unstow Murriyang, ATCA and Mopra and restart a schedule | LBA | Core | - | 1 |
| Observing | Stop DAS monitoring | LBA | Core | - | 1 |
| Observing | Tweak gain/attenuation/sampler | LBA | Core | - | 1 |

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| | statistics on all telescopes | | | | |
| Observing | Restart the DAS GUI | LBA | Core | - | 2 |
| Observing | Restart cdisko | LBA | Core | - | 2 |
| Observing | Understand the windstow behavior of ATCA, Murriyang and Mopra | LBA | Core | - | 1 |
| Observing | Add/remove antennas from ATCA in tied array mode | LBA | Core | - | 1 |
| Observing | Identify ATCA phase issues and re-phase the tied array if bad | LBA | Core | - | 1 |
| Observing | Adjust ATCA sampler statistics in 64 MHz mode | LBA | Core | - | 1 |
| Observing | Change Murriyang receivers using OPERFCC, PKMC and CS-Studio | LBA | Core | - | 2 |
| Observing | Setup Murriyang IF (via lorun) | LBA | Core | - | 2 |
| Monitoring | Monitor Mopra Tsys and correct if values are bad | LBA | Core | - | 1 |
| Monitoring | Understand Recmon | LBA | Core | - | 1 |
| Monitoring | Understand lba_monitor | LBA | Core | - | 1 |
| Monitoring | Monitor DAS IF power levels | LBA | Core | - | 1 |

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| ID | 8.2 (ATUC-34) |
| Owner | John Reynolds |
| Type | Update |
| Summary of request | ATNF conducts user experience (UX) research to inform critical decision-making for different ATNF stakeholders (user personas, journeys) in the ATNF website redevelopment project before the commencement of wireframing, design and development. |
| Response | The ATNF website refresh team includes a professional WordPress developer and UX/UI designer. While no formal research phase is planned ATNF will invite early feedback from users as soon as the new website reaches an appropriate level of readiness. We will demonstrate some of the functionalities of the new website during the ATUC meeting. |

Student experience

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| ID | 9.1 (ATUC-10) |
| Owner | Rob Hollow |
| Type | Action |
| Summary of request | The ATNF collaborates with current ATUC student members to promptly re- invigorate the student program. This includes enhancing connectivity within the student body and at the earliest opportunity. ATUC requests an update before the next meeting. |
| Response | <p>We have set up a Mattermost channel for postgrad students and tested it with a couple of students. We have provided signup details for all students and encourage them to use it among themselves and to raise issues with the student coordinator.</p> <p>We are planning regular (likely quarterly) online/in-person catchup for students, supervisors and student coordination team to encourage them to raise and discuss issues.</p> <p>We have been looking for possible dates for a postgrad student symposium. It has been challenging finding a suitable couple of days given possible clashes with Radio School, the ANU Student Symposium and other events. One possibility would be to combine with a future Bolton Symposium for Postdocs.</p> <p>When draft training materials are developed we will call for student volunteers to help review, test and provide feedback.</p> |

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| ID | 9.2 (ATUC-11) |
| Owner | George Hobbs |
| Type | Action |
| Summary of request | <p>Incorporating a student perspective throughout the ATUC open session presentations, where appropriate, would help new ATUC members provide valuable student perspectives in the ATUC reports.</p> <p>ATUC suggests that the presenters at the next ATUC open session specifically address any possible impact of operational changes on the student body.</p> |
| Response | We are happy to include student talks and perspectives in the ATUC meeting. We will work with the ATUC Chair and Executive Officer to understand exactly what type of contribution would be useful. We will also explicitly ask the ATUC speakers to address any possible impact of their work on the student body. |