

Director's response to ATUC Report – June 2015

ATUC Recommendation	Director's Response	Traffic Light
Commendations and successes		
<p>ATUC wishes to commend ATNF on:</p> <ul style="list-style-type: none"> • Innovation award for PAFs • 3 science papers submitted for BETA • 3 MKII PAFs shipped to MRO with 1 already installed on Antenna 29 • SOC and remote observing improvements, including the ATCA videos and PORTAL • Bronze Pleiades award • The decision to have a radio school this year • The data reduction workshop being held in the first week of June 	Noted and thanks	
Recommendations		
ATUC Open Meeting		
Encourage management to continue consulting with the community about funding implications.	We intend to do this.	Green
1. SOC and Remote Observing		
<p>a) Continue to develop online video tutorials, and link them into the documentation where possible.</p> <p>b) When the next update is made to the portal software is implemented, a “per-hour” observer sign up, and project view capability is added.</p>	<p>Two videos are currently on-line, with further videos planned.</p> <p>The main purpose of the portal is to enable operations staff to ensure that the team has made arrangements for suitably qualified observers to conduct the observations from the designated location. We appreciate that a “per-hour” sign-up would be useful for project teams with large observing blocks, but implementing this in a robust way is likely to require significant effort. We will give this further consideration and report back to ATUC next meeting.</p>	<p>Green</p> <p>Yellow</p>
2. ASKAP		
a) ATUC requests regular updates on the implications of deferral of SKA-SURVEY for ASKAP and other ATNF facilities.	We will provide regular updates at ATUC meetings and through other fora such as the ATNF community meetings at the ASA ASM.	Green

<p>That ATNF places the completion of the ASKAP SSPs at highest priority when negotiating the incorporation of ASKAP into the SKA. We also request further information on the implications of the handover on ASKAP surveys in light of ASKAP's reduced performance.</p> <p>b) ATUC suggests that if ASKAP operations are taken over by SKA, any resources previously allocated to ASKAP are used to upgrade and operate other ATNF facilities.</p> <p>c) That ATNF negotiates an open skies policy for ASKAP in the case that it is incorporated into the SKA.</p> <p>d) ATUC seeks clarification on the actual performance of the PAFs, any available upgrade path, and implications for ASKAP surveys.</p>	<p>It remains our intention is to deliver the key science survey outcomes of the SSPs, consistent with the priorities already identified for the survey projects.</p> <p>While we appreciate the intention of this suggestion, it is not possible to make any commitment as to the allocation of future resources at this stage.</p> <p>This is a reasonable goal but cannot be assured, and would be contrary to the likely SKA access policy.</p> <p>In recent preliminary measurements on an ASKAP antenna, the first Mk II PAF achieved a minimum system temperature over efficiency (T_{sys}/η) of 78 K at 1.23 GHz and is 95 K or better from 835 MHz to 1.8 GHz. The ASKAP specification is 62.5 K. There are no plans for upgrading the ASKAP PAFs at present. Given this fact, in addition to the reduction from 36 to 30 telescopes in the full survey array, ASKAP survey projects may take 2-3 times longer than originally planned to reach the desired sensitivity limit.</p> <p>As originally planned, CASS will solicit revised SSP proposals after the ASKAP early science projects have been carried out, to refresh the science cases and guide time allocation.</p>	<p>Green</p> <p>Yellow</p> <p>Yellow</p> <p>Green</p>
<p>3. Parkes</p>		
<p>a) ATUC recommends that the RFI monitor data be archived for posterity to enable the science teams to determine the high time-resolution RFI environment, as a function of time.</p>	<p>The EB500 RFI monitoring tools perform a complete band scan every 20 sec. It therefore does not have high (i.e., < 1 sec) time resolution but the value that comes from this monitoring is that it operates continuously, reliably and independent of the main telescope's activity. The data are archived.</p>	<p>Green</p>

<p>b) ATUC recommends that an identical RFI monitor be installed at the MRO to enable characterisation of the time variable RFI environment there, something which has currently not been studied.</p> <p>c) That the plan and timescales for commissioning the Effelsberg PAF be communicated to the community. This would involve writing up information presented in talks and discussions at the ATUC open day, which far exceeded the information provided in the OCT2015 call for proposals.</p> <p>d) That by the time the Effelsberg PAF is commissioned that there is a solid plan in place for developing the backend, so as to mitigate the risk of wasted science time.</p> <p>e) That the procedure for getting science access to the Effelsberg PAF in the APR2016 semester be communicated with the community without delay so as to give science teams sufficient time to acquire any relevant resources.</p> <p>f) A 5-10 year road map document be solicited and prepared for Parkes, as is currently underway for the ATCA.</p>	<p>A waterfall display, similar to Narrabri and Parkes but from 20MHz to 6GHz, is underway with completion expected in a few months. This ongoing monitoring will be a value addition to the comprehensive surveys made leading up the selection of the site for ASKAP and the SKA. A directional skyplot is out of scope for the initial implementation, but may be considered at a later time.</p> <p>The plan has been made available to the community via the ATNF webpage and an email to current Parkes users.</p> <p>The backend is already under development by the MPIfR and Jodrell Bank groups. They have undertaken to complete the work according to the agreed timelines.</p> <p>This is included in the plan above.</p> <p>We are currently following the strategy developed with the community in 2012-13 and will summarise this for ATUC at the next meeting.</p>	<p>Green</p> <p>Green</p> <p>Green</p> <p>Green</p> <p>Green</p>
<p>4. Australian Telescope Compact Array</p>		
<p>4.1. Operations</p> <p>4.1.1. Future of CABB Support</p> <ul style="list-style-type: none"> - ATUC recommends that ATNF works on a plan to support and maintain the CABB backend in the longer term. 	<p>The CABB has been adequately supported in its current modes and we will continue to do so. There are adequate spares for most hardware. Some current engineering staff have CABB hardware, firmware and software experience and we still have the support of the fellows as needed.</p>	<p>Green</p>
<ul style="list-style-type: none"> - The CABB 16-MHz zoom mode is crucial for spectral-line observations and 	<p>The development of this mode is reliant on a post-retirement CSIRO fellow, who is continuing to work on this mode.</p>	<p>Yellow</p>

<p>should be made available as soon as possible.</p>	<p>An alternative path using GPUs is being considered.</p>	
<p>4.1.2 ATCA GPU Correlator</p> <ul style="list-style-type: none"> - A GPU upgrade shouldn't simply concentrate on replicating existing capability, but rather extend existing capability as the technology would allow the possibility for wider bandwidths, new zoom modes and other new functionality such as ultra-short dump times. 	<p>The proposed GPU correlator offers a number of enhancements over the existing CABB backend. We will explore the resources required to develop such a system and report progress to ATUC at the next meeting.</p>	<p>Green</p>
<p>4.1.3 Observing mode direction</p> <ul style="list-style-type: none"> - ATUC would encourage ATNF to investigate the feasibility of rapid follow-up NAPA observations when the array is already in a suitable mode. 	<p>We have in recent years implemented the capability to commence NAPA observations within an hour of a trigger, and we will continue to investigate the possibility of switching within minutes in response to a NAPA trigger and will report the results at the next meeting.</p>	<p>Green</p>
<ul style="list-style-type: none"> - Options for dynamic scheduling during the mm season should be investigated. 	<p>The current system of "mm swaps" continues to provide a limited form of dynamic scheduling, in those cases where pairs of high and low frequency observations are available requiring same LST range and CABB mode. We will continue to study options to support dynamic scheduling for ATCA to the degree they are supported by the ATCA strategy currently being developed. One option is to adapt the ASKAP system, and this option was presented at the ATUC meeting.</p>	<p>Green</p>
<ul style="list-style-type: none"> - The exact meaning of the terms "queue mode observing", "service observing" and "dynamical scheduling" should be clarified and communicated to ATUC. 	<p>A brief paper will be distributed to ATUC prior to the next meeting to more clearly define these terms. Briefly, in "queue mode" observing, a schedule (possibly covering more than one project) is prepared in advance, and executed without the requirement for observers to interact with, or, in some circumstances, monitor the observations. "Service observing" is an observing mode where ATNF staff conduct the observations in place of the observers (who will usually have prepared the schedule files) without any expectation that the observatory staff will become part of the proposal team (and so would not, e.g., become a co-author on any resulting paper. Full "dynamic scheduling" means a decision is only made some hours to</p>	<p>Green</p>

<ul style="list-style-type: none"> - Automation of support generally welcomed if observing efficiency can be improved. - Retaining the full science capabilities of the ATCA should take precedence over automation or operator-mode observing. 	<p>days in advance, based on environmental conditions, as to which observing program will run next. While this mode would to increase observing efficiency, it would require substantial changes to the observer-operator model, and could be implemented as a form of service observing.</p> <p>Noted. However, other factors such as science impact and operating cost may motivate automation even if observing efficiency decreases slightly.</p> <p>Noted.</p>	<p>Yellow</p>
<p>4.1.4 Mid-week RFI</p> <ul style="list-style-type: none"> - A clear distinction should be made in ATCA documentation between mid-week RFI and the typical RFI environment at 16 cm and how to identify each regime e.g. using the RFI weather radar (which is an excellent tool). A clear strategy should be defined to mitigate mid-week RFI, particularly if it is known ahead of time when it may occur, e.g. changing to an unaffected band if the science is not affected or modifying the schedule (dynamic scheduling?) to avoid observing at 16 cm during mid-week RFI periods. 	<p>The ATCA User Guide will be improved as suggested. ATNF is usually advised of likely mid-week RFI occurrences, but often only several days in advance. In such instances, swaps between observing programs or with maintenance blocks are made, if possible. If not, observers are advised of the likely time range so they can arrange their observing accordingly (e.g., switch to higher frequencies, if conducting multi-frequency observations). The relatively short notice, together with CABB mode constraints and observer availability, limits the ability to implement a full dynamic scheduling approach (particularly at Parkes where a large fraction of observing is in the 20cm band). We believe the current strategy is the best that can reasonably be adopted with current resources</p>	<p>Green</p>
<p>Users proposing observations at 16 cm should be directed to a document or web page highlighting the 16 cm RFI landscape (particularly where RFI is typically an issue e.g. the lower end of the band) and the possible implications for particular observing modes. This is mostly a potential problem for polarimetric and spectroscopic observations.</p>	<p>This information, including a link to the most recent RFI survey in the 16cm band, will be included in the next call for proposals.</p>	<p>Green</p>

<ul style="list-style-type: none"> - It would instructive to provide examples for pgflag to help users efficiently flag data. Consideration of typical source types (e.g. calibrators, quiet fields, complex fields), bands (16 cm, 4 cm, mm) and correlator modes (continuum, spectral line) would be helpful. An online video tutorial may also work extremely well here. 	<p>Improved documentation in this area will be provided.</p>	<p>Green</p>
<p>4.2. Large surveys</p> <ul style="list-style-type: none"> - We recommend the implementation of unattended observing as a major step towards enabling the execution of regular, large surveys on the ATCA. There are many software components of the ATCA which require user input and which can be automated, including the potential for automatic reprogramming of the CABB blocks. - We recommend further discussion of the ATCA large survey strategy before the call for 2016APR proposals. 	<p>Trials of unattended observing as described at the meeting will be made in the coming months. We will continue to define the conditions under which unattended observing can be permitted.</p> <p>We will present a specific strategy and seek further input from ATUC in advance of the proposal call</p>	<p>Green</p> <p>Green</p>
<p>4.3. The fate of mm receivers</p> <ul style="list-style-type: none"> - The ATUC would like to see that full mm receiver capabilities be maintained. - With the fiscal situation of the mm receivers in mind, moving the 6 km antenna to the 3 km track does not seem appropriate to the ATUC. There are also a high number of proposals for the 6 km array configuration. 	<p>Noted. However, this cannot be assured under all budget scenarios</p> <p>Noted. There are no current plans to move the 6km antenna.</p>	<p>Yellow</p> <p>Green</p>
<p>5. Long Baseline Array</p>		
<p>a) CASS continues to support the LBA, including upgrades to wider band width and continued access to Mopra and Tidbinbilla.</p>	<p>We intend to continue supporting the LBA at its present capability. Access to Mopra will depend on any future operator. Options for implementing wider bandwidth recording across the LBA are under investigation, but the timescale for implementation is not clear.</p>	<p>Yellow</p>

6. Mopra		
a) ATNF gives all practical support to the LIEF grant led by Michael Burton.	We intend to continue our support for this project.	Green
b) ATNF TAC offers to review Mopra proposals on behalf of the Mopra University consortium, if they request it, through the existing OPAL system. Such an arrangement would be the simplest for the user community.	We are able to offer this support for proposals from the open community.	Green
7. Tidbinbilla		
a) The minimum amount of time available with Tidbinbilla, both within the LBA and as a single dish, for proposals under the Host Country Agreement be reported in the regular call for proposals, each semester.	This will be done	Green
8. Other issues		
No recommendations		
9. Feedback from the reply to the previous report (November 2014)		
a) The requalification requirements for ATCA observers is reassessed, particularly given the efforts in improving the remote observer experience for ATCA, and the automation advances being implemented by Jamie Stevens.	This will be done.	Green
10. Date and Format of the next meeting	The next meeting will be held in Nov/Dec 2015, with exact date TBC.	