Australia Telescope National Facility
Memorandum

To: ATUC/ATSC
From: Director
Subject: ATUC response
Date: 17 February 2004

Background

The Director's response to the ATUC report from the previous meeting is a standing item at each ATUC meeting. The meeting schedule for ATUC (December and June) and ATSC (March/April) is such that there is an opportunity for the ATNF Director to provide comprehensive feedback on the ATNF's progress towards achieving some of the recommendations/actions contained in the main (December) ATUC report to ATSC at their meeting. [Note that the provision of a report by ATUC to the ATSC is now included in the formal terms of reference for ATUC (see below). As a committee appointed by the ATSC, it is appropriate that the ATSC formally approve these ToR.]

In common with the approach adopted for the Director's response to the steering committee actions I propose a 'monochrome'[1] traffic light evaluation of ATNF's response to the ATUC recommendations. The symbols against each non-trivial action/recommendation are as follows:

○ Action done/recommendation adopted. (18)

◍ Action attempted or still ongoing, recommendation partially adopted (10)

● Action not attempted, recommendation not adopted (2)

Numbers in parentheses indicate numbers of actions/recommendations evaluated to fall in each category. ATUC are welcome to change any of these evaluations as the see appropriate.

It would be appropriate for the ATSC to define a goal for the fraction of "grey" and "black" traffic lights reported back at each meeting as a measure of the Director's performance in implementing the User Committee's recommendations.

Recommendations

It is recommended that the User Committee

- Endorse the Director's responses to their actions/recommendations from the 2003 report
- Agree, incorporating any revisions, with the 'traffic light' evaluation provided

It is recommended that the Steering Committee

- Approve, with any revisions, the proposed ATUC Terms of Reference below
- Make the Director's response to the ATUC December report a standing item on the ATSC agenda.

[1] To save on the expense of colour printing

- Adopt an appropriate goal for the maximum fraction of ‘grey’ and ‘black’ traffic lights reported in this response.

ATUC Comments	Director's response
3.5 Terms of Reference Prior to the meeting the ATNF Director provided draft ATUC Terms of Reference for consideration by ATUC. ATUC endorsed the draft Terms of Reference with a few minor alterations and an additional item outlining the membership structure of the committee. The revised suggested ATUC Terms of Reference follow: • To provide advice to the Director on operational and developmental issues relating to the facilities provided by the ATNF. These include the Australia Telescope Compact Array, the Parkes radio telescope, the Mopra radio telescope, the Long Baseline Array, the Tidbinbilla radio telescopes, and all aspects of National Facility support. • To make recommendations to the Director that seek to maximise the scientific productivity and maintain the international competitiveness of the ATNF, taking into account the likely resource availability. • To consult widely with the national and international community, liasing where necessary with the national time assignment groups, to make informed recommendations to the Director on priorities for both operations and future developments. • To meet twice a year in both open and closed sessions, with appropriate input on developments and responses to issues from the ATNF. • To provide an annual written report to the Director for communication to the AT Steering Committee in March/April of each year. • To maintain a membership of 10 to 13 voting members, two of which will be students, plus a non-voting Secretary. The membership will reflect the geographical distribution of users and include users of the full range of facilities.	The ATNF will submit these proposed terms of reference to the ATSC for approval.

5.1 Operational Plan ATUC endorses the 03-04 Operational plan. ATUC will compile advice on the 04-05 Operational Plan and make it available to the Director.	ATUC are asked to note that the 04/05 Operational Plan has expanded significantly in information requested. ATNF plans to make a draft available for comment to ATUC by mid-March.
5.4 Project Management ATUC strongly endorses the implementation of co-ordinated project management practices and believes that they will add to the efficiency and success of ATNF projects, with benefits for the ATNF and users.	ATNF thanks ATUC for their endorsement and will proceed with the implementation of its PM policies and procedures. ATNF will bring an updated report on the PM implementation to the June meeting
5.5 SKA/LOFAR ATUC are happy to see a high degree of coordination between the LOFAR and SKA projects within the ATNF, since this will allow an efficient use of limited resources. However, ATUC will reserve discussion or comment on the level of ATNF participation in LOFAR until the LOFAR Options Paper becomes available. ATUC do not feel that they have sufficient information available to discuss this issue in an informed fashion at this time.	The ATUC recommendation proved highly valuable in pushing forward the LOFAR Options process. The consultation process proved highly successful, with a broad cross-section of the community engaged in the process. A white paper was produced in December (supported by a public meeting), and its recommendations were subsequently endorsed by the NCA. The LOFAR Options WG recommendation proved crucial in subsequent negotiations with international partners. The clear community requirement that the telescope be located in the best site led to Australia withdrawing from negotiations with the Dutch on an NL-based telescope. A meeting co-sponsored by MIT, NRL, ASTRON and ATNF to discuss the way forward with any WA-based faciltiy is scheduled for March 18-24.
6.1 Six month semesters	
For ATUC position see report.	The ATNF hears what ATUC has had to say on this topic. It feels that the discussion with ATUC has moved the debate forward in a constructive sense and that the revised implementation below will address many of the valid concerns highlighted in their report.
What do ATUC think of a Triage system? ATUC sees little value in the triage process for the current level of over-subscription. ATUC request that users be fully informed of changes that are made to the proposal evaluation process.	The TAC considers approximately 120 proposals at each meeting and does not always have sufficient time to discuss the proposals fully. The triage system is strongly supported by the TAC, who ultimately must have ownership of the process by which they conduct their business. To amplify the point, at the forthcoming (March 2004) meeting the TAC will have over 180 proposals to review; with an oversubscription rate of 3:1 on the Compact Array. Triage is a system that requires more input before the TAC meeting so that the time during meetings is better used. Perhaps the greatest advantage provided by the triage system is in the level of preparation required before the meeting, resulting in greater and more equitable attention – not less – to all proposals. The TAC will therefore trial a triage system at the next meeting, scheduled for March 2004. Proposers will continue to receive TAC grades and comments. Users will be fully informed of the triage system at the next ATUC meeting.
Does ATUC have any view as to when deadlines for six-	

month terms should fall?

ATUC recommend the following dates for the new six-month semesters:

Proposals Due	TAC Meets	Sched out	Start Term	End Term
1 Dec	15 Jan	15 Feb	15 Mar	31 Aug
1 Jun	1 July	1 Aug	1 Sept	14 Mar

Considering:

1. The September 1 start gives mm users opportunities in both semesters and provides flexibility in the important first mm season for the new system. This allows the Australian mm community to be responsive to new science opportunities and a rapidly evolving 3mm system at the ATCA.

2. These dates also meet the needs of new students and post-docs commencing early in the year who might otherwise have to wait another 12 months to propose for mm observations.

3. This takes into account Australian university semesters so that proposal deadlines occur during term breaks and don't coincide with ARC deadlines.

4. This takes into account transition issues such as allowing users time to adjust and plan for six month terms.

5. Four month terms should remain until the September 1 semester. The last proposal deadline for four month terms will be 15 Feb and the first proposal deadline for six month terms will be June 1.

6. This proposal is consistent with the ATNF meeting schedule and allows adequate time for the TAC to meet and OICs to produce schedules.

If ATNF require any further user input, ATUC would be happy to consult further on the details and we strongly encourage ATNF to keep ATUC
informed in the implementation of six month semesters.

ATNF thanks ATUC for their careful consideration of this issue and for their proposed model for new semester dates. We note that the proposed deadlines of 1 June and 1 December provide a good solution to several of the issues raised by ATUC. There are however two concerns with this model:

1. It is not feasible to hold a TAC meeting between mid-December and end-January due to the holiday season.

2. The proposed term lengths are unequal – with a shorter 5.5 month term over the winter months when demand for ATCA facilities is likely to be greatest. This would create an imbalance in the oversubscription rate between the two semesters and would require additional effort to reconcile our key performance indicators.

After consultation with both ATUC and TAC, and careful reconsideration of all the issues, the ATNF has decided to move to six month semesters with application deadlines on June 01 and Dec 01, for semesters that begin on Oct 01 and April 01.

For the transition period, the dates for the next three terms will be as follows:

Semester	Applications due	TAC meets (approx)	Scheds out
MayT May 01 – Sep 30	Feb 15	Mar 3	Apr 01
Oct04S Oct 01- Mar 31	Jun 01	Jul 15	Sep 01
Apr05S Apr 01 – Sep 30	Dec 01	Feb 2	Mar 01

Notes:

- The two semesters are of equal length
- The TAC will review proposals over the Xmas period and will meet in early February
- The deadlines are well suited to new students and to the Australian universities
- Some limited millimeter observing will be available for 3-4 weeks in October.
- The deadline on Feb 15 will be for a five-month Term (May to Sep). The first six month term will begin on Oct 01

Director's time

ATUC would like to see a clarification on the purpose of discretionary time. Time is already available in the ATCA and Parkes schedules for observers who lose time, for commissioning instruments and for testing purposes. Processes are in place for scheduling unallocated time and ATUC don't see any reason for discretionary time given the amount of unallocated time currently available. ATUC are unclear as to whether the idea of discretionary time applies to all facilities or just the ATCA. What would be the rules for allocating discretionary time? If these rules are substantially different from existing rules for unallocated time, ATUC are concerned that this might act as a disincentive for Duty Astronomers, who currently have first priority to unallocated time after observatory requirements.	The ATSC has recommended that 5% of time on ATNF facilities should be scheduled at the Director's discretion. At present, around 10% of time at Parkes and the Compact Array is unallocated in the initial schedules. The use of this time is specified as (i) OIC discretion, (ii) maintenance (other than regular maintenance), (iii) DA, (iv) local staff, (v) other observers. In the light of ATUC's comments the following resolution was put to the TAC at their March meeting: *With effect from May 1, all unallocated time at the Compact Array and Parkes will be designated as Director's time. The ATNF Director will have overall authority for the allocation of this time. In most cases this will scheduled according to previously established priorities:* *1. OIC discretion (targeted opportunities, lost time replacements), 2. Repairs (other than regular maintenance), 3. Duty astronomer, 4. Local staff, e.g. adjacent observers, 5. Other observers present on-site, 6. Remote observers* *Applications to use this time should be directed in the first instance to the relevant OiC, via the existing application process.* *In addition, one or two longer blocks of typically 12 hours may be scheduled each month as Director's time, provided that the total amount of Director's time does not exceed 10% in any one semester.* *Opportunities to use this time will be advertised to the user community as appropriate and applications submitted to the Director.*
8.1 ATCA/Mopra report Can ATUC suggest ways in which Mopra can be more heavily used by Australian users? **[question from ATNF]** ATUC suggest that ATNF facilitate some Key Science Projects. For example a multi-line targeted survey with the new wide band spectrometer that could be run using the very successful HIPASS project as a model. There will be a Millimetre Workshop in December and a session will be devoted to new large projects with Mopra. Also, it seems likely that the implementation of reliable remote observing for Mopra would increase usage. ATUC suggest that implementation of remote Mopra observing could be brought forward to the 2004 winter, so that Mopra can be utilised in conjunction with the first observations of the full 3 mm system at the ATCA	The ATNF thanks ATUC for this helpful suggestion. The ATNF will develop a white paper on the future of Mopra that includes plans to fast track remote observing and the support of larger, potentially higher impact, science programs. It will present this paper to ATUC at their June 2004 meeting.
8.2. Users' Guide What is the status of the updated Users Guide that was recently being edited by Jess O'Brien**?**	Updated users' guide is now available and on the WWW.
9.2 Opera House ATUC would like to see the new areas converted to office	Based on ATUC's recommendation, the work is now in

space for observers and visitors, with computer facilities for data reduction, network connections for laptops etc.	progress and will be complete by the end of March.
9.3 Parkes Receivers ATUC noted queries from users on the timescales for planned upgrades to Parkes receivers.	Major receiver projects at Parkes undertaken in 2003/04 include; • refurbishment of the AT Multiband receiver (complete) • commissioning of the 8GHz (MARS) receiver (complete) • commissioning of the dual-frequency 10/50cm receiver (complete) • rectification and RFI mitigation of 10/50cm receiver (ongoing) • refurbishment of the 21cm Multibeam receiver (in progress) • refurbishment of H-OH receiver (complete) • construction of 7-beam 6GHz receiver (Marsfield project: in progress). The ATNF sees the next priority as upgrading the K-band (22GHz) capability. It has not been possible to initiate this project yet, largely due to uncertainties in, and priority of, the 21 cm refurbishment project. A detailed project plan for receiver upgrades will be distributed at or before the next ATUC meeting.
ATUC are encouraged by the potential 4dB improvement to the 12 mm system at Parkes and still consider this to be the first priority receiver for serious upgrade at Parkes. Will this upgrade be possible before the start of the 2004 winter season?	The endorsement of this upgrade as the highest priority is noted. It is unlikely that a serious commencement can be made before the middle of this year (see above).
ATUC would also like see the H-OH receiver upgraded with the Arecibo LNA's in the near term. Apparently this is not considered to be a large job. Could ATNF comment on the possibility of performing this upgrade before the start of the January term?	This upgrade was effected in December 2003, by replacing the LNA modules with new modules similar to those being made for the Arecibo multibeam. The upgraded receiver has 20% improved performance at 1.4GHz (33Jy SEFD v. 40Jy), much closer to the that of the 21cm Multibeam centre-beam (30Jy), but with considerably wider overall bandwidth. The upgraded receiver also has improved stability and gain properties.
10.1 Tidbinbilla Does ATUC see the need for a mapping mode at Tidbinbilla? If so, when would they like to see it implemented? **[question from ATNF]** ATUC sees great value in a mapping mode at such a powerful telescope and a significant potential demand. ATUC recommend that a spectral-line mapping mode be implemented as soon as possible, since on the advice of Jim Lovell this seems to be not such an onerous task. ATUC also request that Jim Lovell look into options for total power mapping and beam switching and report back to ATUC with a realistic timescale for implementation of this additional	ATNF has investigated the possibility of implementing a scanning mode on the 70-m. Test observations indicate that this is possible and will significantly reduce the observing overheads compared to a point-by-point observing mode. New antenna control software will need to be written and tested. The current milestone is the end of May at which point the system will be able to scan a region of sky while collecting data from the correlator. This will provide a basic spectral-line mapping capability. Total power mapping is a more difficult problem. There

mapping mode.	are a couple of issues. First, internal gain variations require a Noise-Adding Radiometer (NAR) at 12mm. For this we need a small (~1K) noise diode and a means of modulating it. Neither is available at the moment but a NAR is on JPL's development plan for DSN radio astronomy. Second, sky subtraction is an important issue. The 70-m is equipped with a 12mm off-axis feed and, when the second downconverter is installed (hopefully this winter) we will be able to take total power data from the on and off-axis feeds simultaneously. Questions still to be answered include: how well the shape of the off-axis beam matches the on-axis?; Is it possible to map extended continuum sources when the off-axis beam is also seeing the source? It is likely that the final system will be able to make good continuum flux density measurements of compact sources in the future but unlikely to be able to do a good job on extended objects.
11.1 LBA report ATUC feel that access to New Norcia would improve the operation of the LBA and request that Tasso Tzioumis provide a more detailed plan for access to this antenna at the next meeting. For example, is the aim with New Norcia to negotiate an agreement with ESA for access? What work is required to get the antenna ready for astronomical observations, apart from the provision of a data recording system as outlined in item 17.4 below?	In common with ATUC, the ATNF believes that the issue of New Norcia must be viewed in the broader strategic context of the future of VLBI in Australia. This not includes access to facilties, but the opportunity to fully upgrade to disk-based recording systems or even real-time recording systems eventually using the new broadband correlation at Narrabri. It will bring a "White Paper" on VLBI opportunities to the June 2004 ATUC meeting.
12.2 Time Usage Statistics ATUC request that the ATNF provide ATUC the same proposal statistics that the Steering Committee receive, as outlined under agenda item 3.4, action 8, of the Actions and Recommendations of the ATNF Steering Committee, July 2003. [request by ATUC] These statistics should ideally include a breakdown of proposals for overseas, ATNF, and other Australian proposers (by country for overseas proposals and by institute for other Australian), into the following categories, for each facility: • proposals submitted • proposals allocated • time allocated • breakdown of mm usage for the ATCA; • proposals involving students • breakdown on instrument (for Parkes)	The ATNF will endeavour to provide this information at future meetings.
13.1 Software Report ATUC encourage the ATNF to pursue the MOU for aips++, potentially with a view to long-term maintainance of the project. [statement by ATUC]	Unfortunately, ATNF were unable to get all parties to sign up to an MOU. A less formal agreement has been drafted between ATNF and NRAO. ASTRON have also expressed some interest in being part of this agreement. The main goal of the agreement is to ensure that all

	those working on aips++ remain informed of each others' activities, and do not compromise each others activities. Joint planning will be undertaken where appropriate (e.g. infrastructure changes) and work tradeoffs will be negotiated. ATNF is now highly focussed on developing applications with aips++ for its own needs. ATNF will continue to do some infrastructure work as needed (e.g. upgrade Coordinates to new WCS FITS standards).
13.2 SPC replacement ATUC would like to reinforce their previous statements that they consider the planned SPC replacement a very high priority. ATUC are encouraged by the outlined plan for the SPC replacement and look forward to a report on the expected progress toward this goal at the next ATUC meeting.	The SPC replacement is now a high priority task in the Scientific Computing Group at Marsfield. The project scientist is Chris Phillips and the project software engineer is Malte Marquarding. This project was commenced in mid January and is presently generating the requirements document (with community consultation). The goal is to have a useful prototype by mid 2004 but the detailed project plan depends upon the outcome of the requirements exercise.
13.3 Online archive ATUC notes comments from users that to be really useful, the ATCA data archive will need to record information from the observing system. **[Issue raised by users]** ATUC recognise that the ATNF is well aware of this issue. ATUC suggest that on-line logging of ancillary data be implemented at the ATNF telescopes as part of any data archives. A simple filtering of existing electronic logs might be a useful first step and should be incorporated into future observing software upgrades, especially as Linux becomes more pervasive throughout observing systems.	A small working group (Lister Staveley-Smith and Bob Sault) has been established to look into this issue. A report will be provided at the next ATUC meeting.
13.4 Miriad Support ATUC would like clarification on who is providing the 0.2 FTE support for MIRIAD. It appears that support for MIRIAD has decreased. Given that MIRIAD is a mission critical package for the ATNF, we encourage that it be continually supported at a reasonable level i.e. timely responses to bug reports, supported compatibility with new computers and new versions of Linux operating systems.	Since September 2003, Miriad support has been provided by Neil Killeen. All Miriad queries have been answered within one working day and all queries have been either resolved or are awaiting more information from the user in question (1 query). Bob Sault still provides some expert advice as needed and some application support, mainly for mm activities. There are no outstanding O/S support issues that ATNF is aware of.
13.5 ssh ATUC notes comments from users that the lack of the ssh2 software on ATNF computers is making difficult to connect to outside institutions. **[Issue raised by users]** ATUC requests that ssh2 be installed on the ATNF Unix computers.	ATNF acknowledges the frustration felt by many users. Most of our (Marsfield) IT support comes from the Computer Services Group (managed by CTIP), augmented by Vince McIntyre. A recent meeting between ATNF and senior CSG personnel has established firm milestones for a number of key IT issues that has languished for some time.

	These include: • Solaris upgrades • Linux support (mainly laptops) • Browser upgrades • ssh upgrade • User account name change over (to CSIRO ident) In particular, the ssh upgrade process will be much simplified by the Solaris upgrade. The present milestone is that the Solaris upgrade will be completed by June 2004. ATNF has also asked CSG to produce (by end March 2004) a plan to implement ssh2 immediately following the Solaris upgrade.
15.1 Technology Development Report ATUC propose to undertake a review of all projects before the next ATUC meeting. At this meeting ATUC will be willing to advise the ATNF on projects that have such a low priority, in the users view, that they can be dropped from this list. Would the ATNF consider this to be useful input from the ATUC?	ATUC's comments would be indeed be valued as part of the priority setting process for new projects.
16.1 Wide band correlator for Tidbinbilla ATUC suggest that ATNF explore the option of sharing the yet-to-be-constructed wide-band Mopra correlator between Mopra and Tidbinbilla, as an alternative to building two correlators, which will occupy a significant amount of precious time for key engineering personnel. It seems to ATUC that, if possible, sharing a wide-band correlator over the winter season between Mopra and Tidbinbilla may satisfy the demand for such an instrument on both antennas. ATUC would like to see an analysis of the shared correlator idea at its next meeting.	The ATNF Project Review Board has evaluated the initialisation documentation for the Tidbinbilla wide band correlator. It appears impractical to share the Mopra spectrometer (funded by UNSW), and there is significant doubt over whether NASA/JPL would pay for the IF conversion required. Moreover, the performance requirements for Tidbinbilla would appear to be not identical to the Mopra requirements and that, consequently, the resource needs have been underestimated. No further action on this program will be taken, along the ATNF will remain in touch with NASA regarding their requirements and receiver plans for Tidbinbilla.
16.2 EoR instrument ATUC can see the value in such an instrument but feel that the scale of the project is more suited to a collaboration between the ATNF and a university department, funded possibly via the ARC. Regardless of the funding, this project could require a significant amount of ATNF engineering effort, which currently is the limiting factor in prioritising new projects. ATUC suggests that engineering support for this project could also be found outside the ATNF, through collaboration with a university department. This project should therefore be a low priority for the ATNF.	Given the potential strategic importance of such a project (e.g. EoR science is increasingly influencing SKA design), the ATNF Project Review Board has approved limited resources ($10k, 0.5FTE) for a initial design study to develop a more complete concept, including more accurate costing, detailed project plan and risk assessment which can presented to ATUC. Any further resources required as this stage will be sought from external sources.
16.3 SUSI delay line ATUC also think that this is a very interesting and novel idea. However it appears that this project will be soon rivaled by the planned upgraded wide-band ATCA correlator and any resources would be better spent on this larger and higher priority project.	The ATNF Project Review Board considers the main driver for this project is the delivery of a 32GHz bandwidth An initial expenditure of $20k has been approved to develop the concept, but approval to proceed further will depend on: • Satisfactory negotiation with Sydeny University over resources & schedule • No impact on CABB or DSN

	• The delivery of a project plan with milestones by March 2004.
16.4 Portable VLBI terminal This project should be considered as part of a broader upgrade to LBA facilities. New hardware for New Norcia should only be considered after negotiation with ESA for access to the antenna**.**	Agreed. The portable VLBI project has been put on hold. Future consideration of the portable VLBI terminal project will only be considered as part of a larger strategic VLBI upgrade program, including opportunities for real-time VLBI and negotiations with ESA over the use of New Norcia.
16.5 Pulsar digital filter bank This project should have priority over the upgrade of the existing pulsar correlator to high time resolution. ATUC will review the overall priority of this project along with other existing projects, before the next ATUC meeting.	The pulsar digital filter bank has been given approval to proceed (including resources from RNM federation fellowship) once resources are available (June 2004). Approval also depends on the development of a coherent plan taking into account RFI mitigation and cooperation with the Swinburne plan. The ATNF would welcome feedback on this plan from ATUC at its next meeting.
16.6 Faraday/PHAROS ATNF should provide a project scientist to develop an initial science case, in the event that no especially interested person from the user community steps forward to provide a justification for these instruments. More information on the frequency range that these instruments might operate over would be useful. ATUC will review the overall priority of this project along with other existing projects, before the next ATUC meeting.	It has not yet proved possible to identify a project scientist from the ATNF or from the broader astronomical community for this project. A more complete description for the PHAROS program and its linkage with the European FP6 program will be presented to ATUC at their June meeting.
16.7 HIFAR This is a very large project. The scientific and technical case for HIFAR should be developed further, in particular how it aligns with LOFAR and the SKA. ATUC will review the overall priority of this project along with other existing projects, before the next ATUC meeting.	An updated and extended science case, incorporating pulsar, local HI and galaxy evolution science, is currently being developed under full version control, with broad community engagement. It is planned to present the latest version to ATUC for their feedback at the next meeting.