Operations Overview

Douglas Bock | Assistant Director – Operations | Australia Telescope National Facility

ATUC - 11 July 2012

ATUC Recommendations – February 2012

1. Future receivers – **Bowen**
2. Test and commission new receivers before decommissioning others – **yes**
3. Mothballing – **Bock**
4. Interim receiver availability – **Edwards**
5. Review of Parkes model annually – **yes**
6. Tidbinbilla > 20 GHz – **Edwards**
7. Pulsar timing array observing cadence – **ATNF Memo (Hobbs)**
9. High-ranked Parkes proposals/ 12 months' validity – **yes**
10. Users with spec. req. encouraged to support own exp'ts – **yes**

ATUC Recommendations – October 2011

Several recommendations were related to the overall CASS strategy for the ATNF – ref. Director's statement of 15 December 2011

Others:

4.(a, b) ASKAP - **tba**

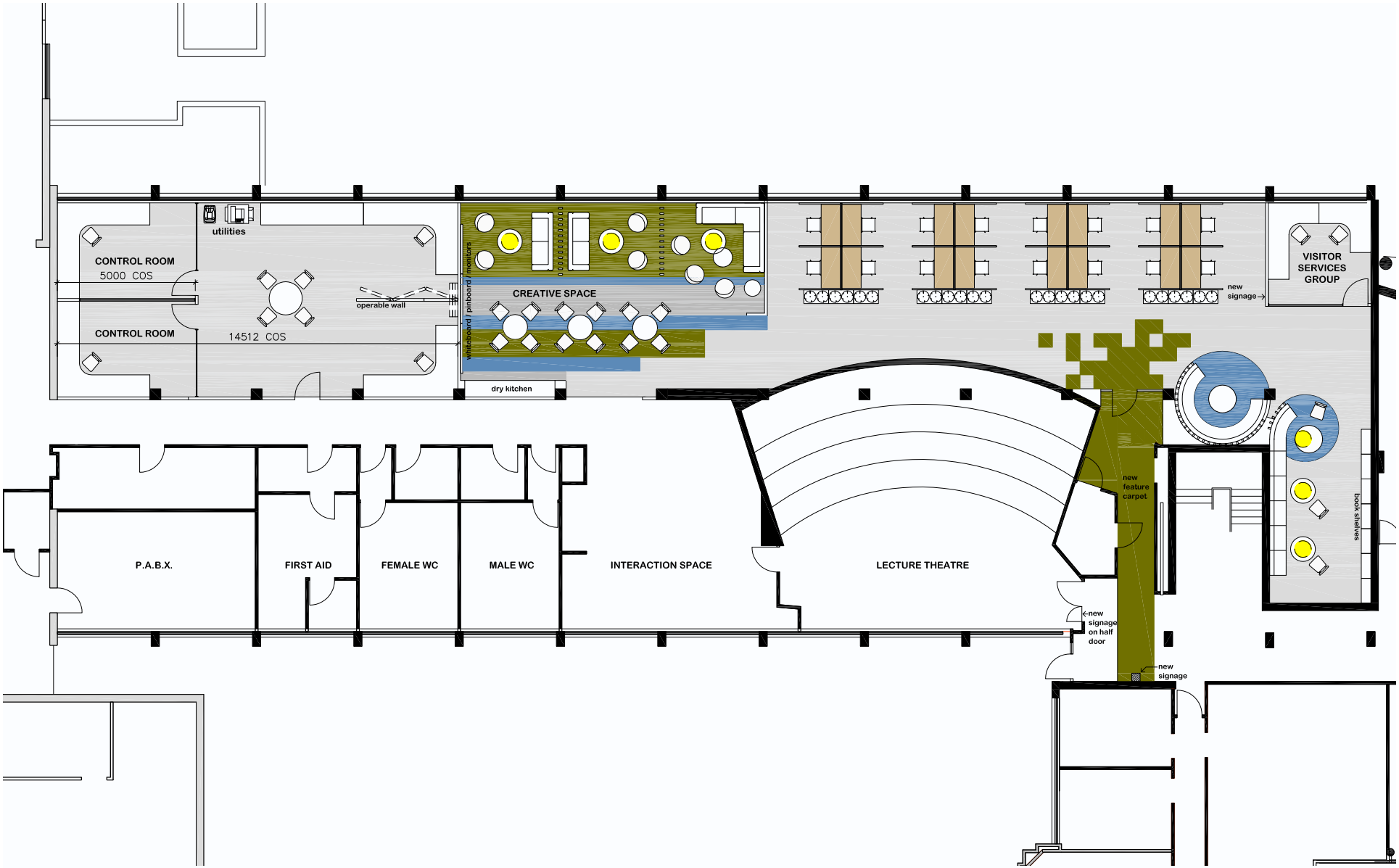
1.(b) & 5. Mopra (deadline, TAC, legacy projects, students) – **Bock**

6.(c) MIRIAD communication – **Edwards**

Science Operations Centre (Marsfield)

- Telescope control for ASKAP, ATCA, Parkes, LBA
- Principally daytime support (some after hours' support from Narrabri)
- Astronomer "Friends" will provide support for proposal preparation, schedule file preparation, Marsfield observing, and on-site data reduction (no change to Narrrabri observing arrangement)
- Visitor desks and meeting rooms/breakout space
- Creative/Interaction area
- Accommodation and meals

- Work underway


utilities
CONTROL ROOM
5000 COS
CONTROL ROOM
14512 COS
operable wall
CREATIVE SPACE
whiteboard / pinboard / monitors
dry kitchen
new signage
VISITOR SERVICES GROUP
new feature carpet
book shelves
P.A.B.X.
FIRST AID
FEMALE WC
MALE WC
INTERACTION SPACE
LECTURE THEATRE
new signage on half door
new signage

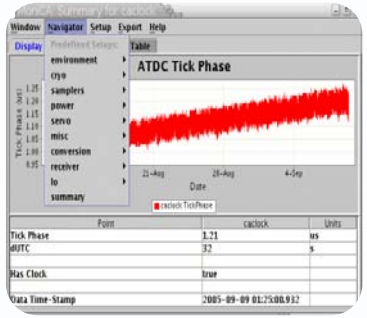
Parkes update

- Long-term instrumentation plan under development – but capital funding required
- Interim instrumentation arrangements from Oct 2012
- Parkes quarters will remain open for ~another year but there will be service level changes
- Limited remote observing to begin late this year (initially from Marsfield)
- Transition to remote observing planned for nearly all projects within 1 year

Parkes Infrastructure

Control

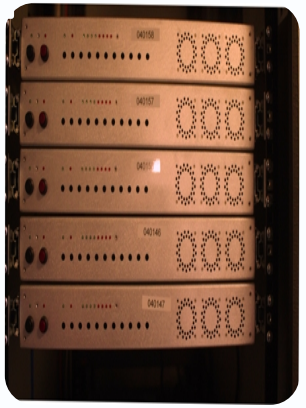
Monitor



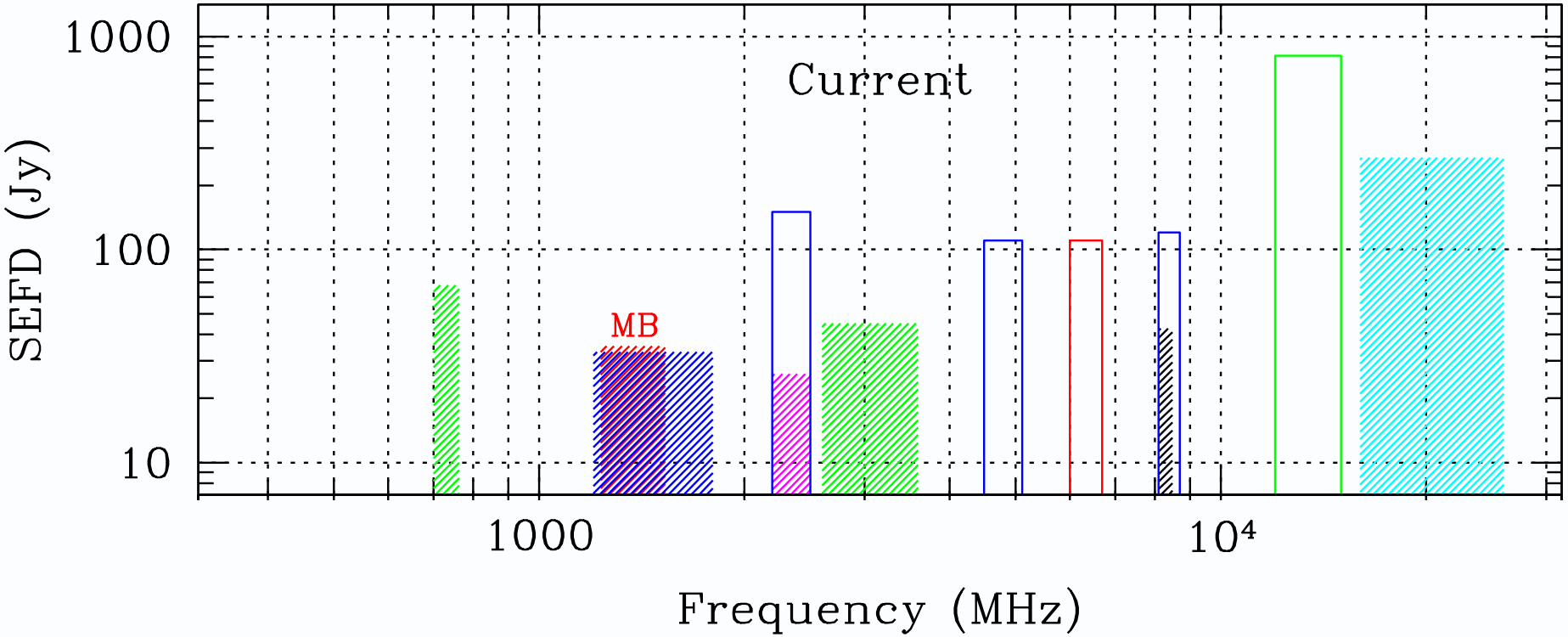
Automated instrument reconfiguration

Power reliability

Backend - HIPSR



A new maser enclosure at Parkes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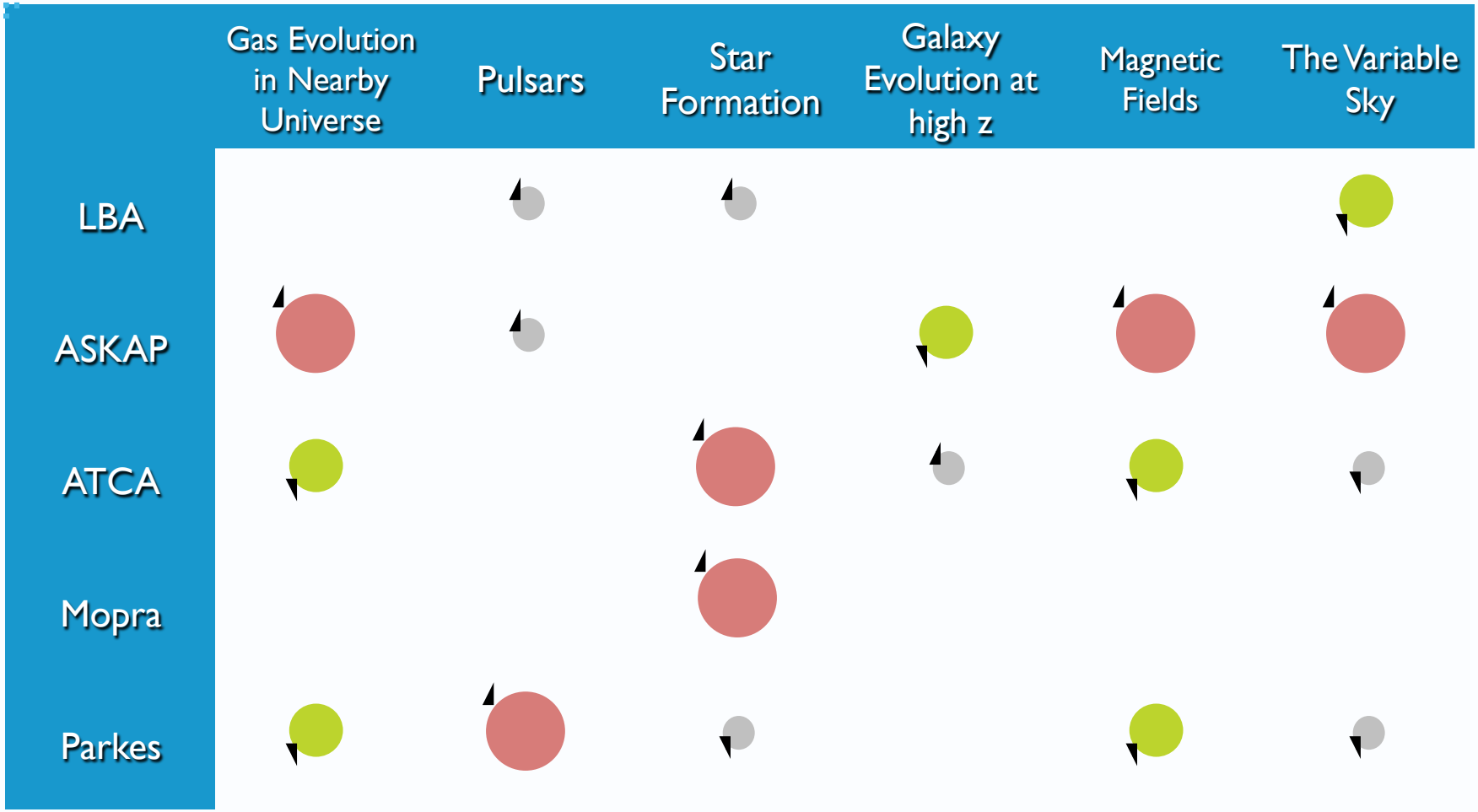
Frequency (MHz)

Science Priority Areas



(ATNF Science Priorities: Science in 2010-2015; Ball et al. 2008)

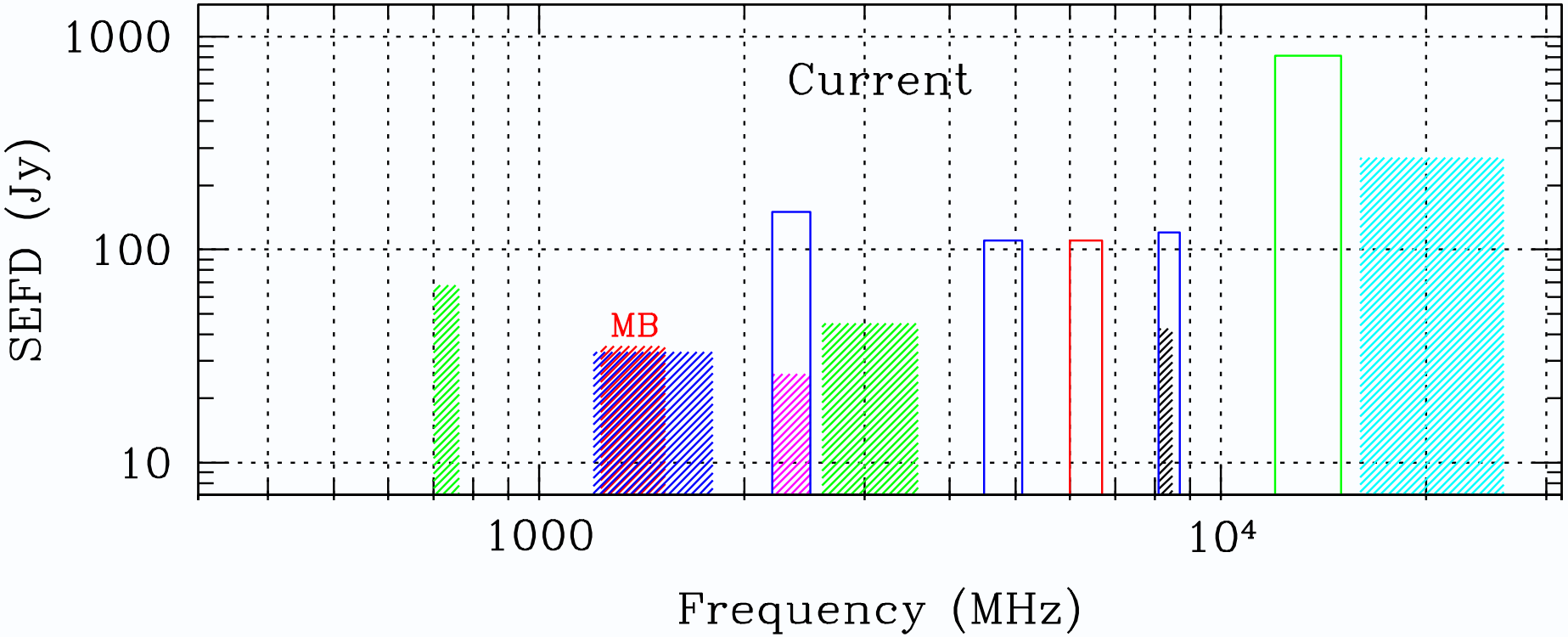
Long-term strategy (2-5 yrs)

Broadband, flexible backend(s)

Eliminate routine receiver changes, by providing

- Low frequency ultra-wideband receiver (0.7 – 4 GHz?)
- High frequency ultra-wideband receiver (4 – 20+ GHz?)
- Phased array feeds (1.4 GHz?)
- ?? High-frequency multi-pixel receivers

Ongoing consultation with user community – see Naomi and Mark talks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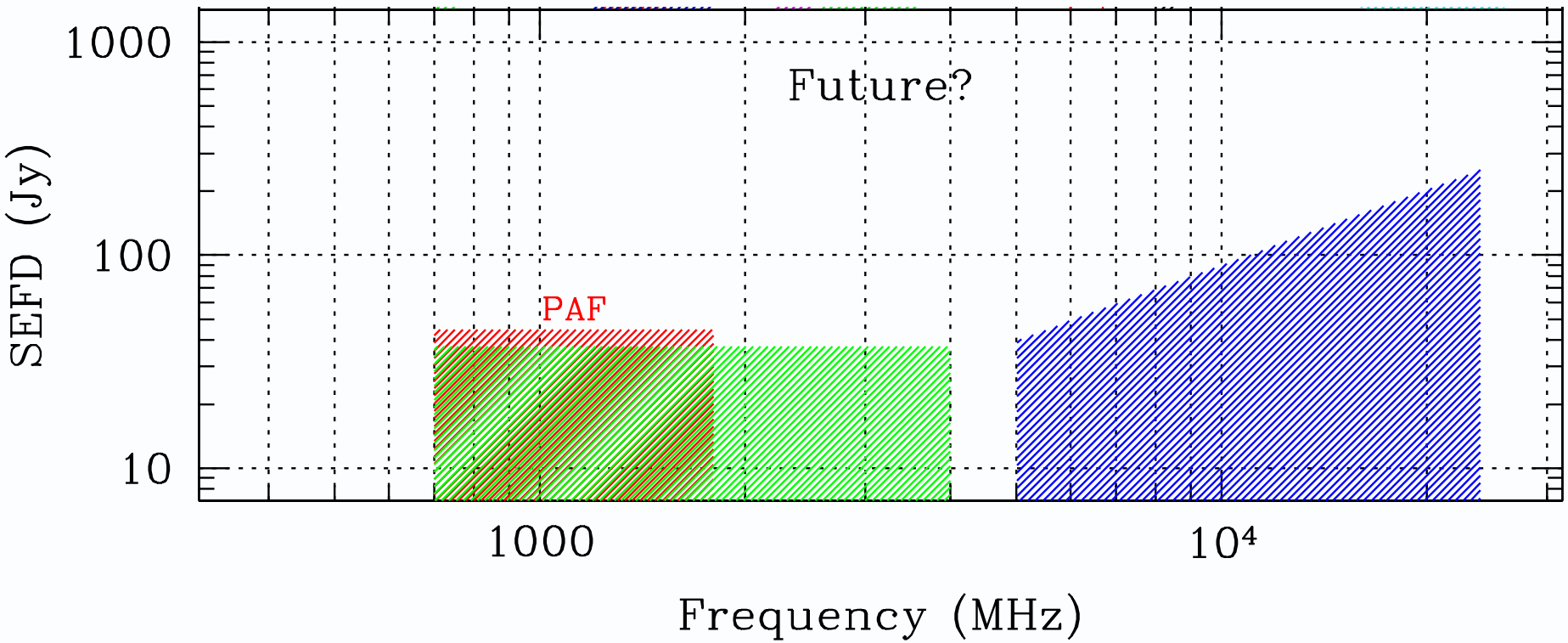
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Future?
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Interim instrumentation strategy

Need to reduce support

- Science user/software support reduced by ~ 50%
- Engineering support reduced by ~ 20%
- On track for reduction of effort by 30% total by 2013-14 (from 2010-11 levels)

Solution

- Eliminate manual reconfigurations (lose some capabilities)
- Reduce receiver changes to 6 per semester (some receivers will not get scheduled)
- Proposal life of 12 months when receivers not scheduled

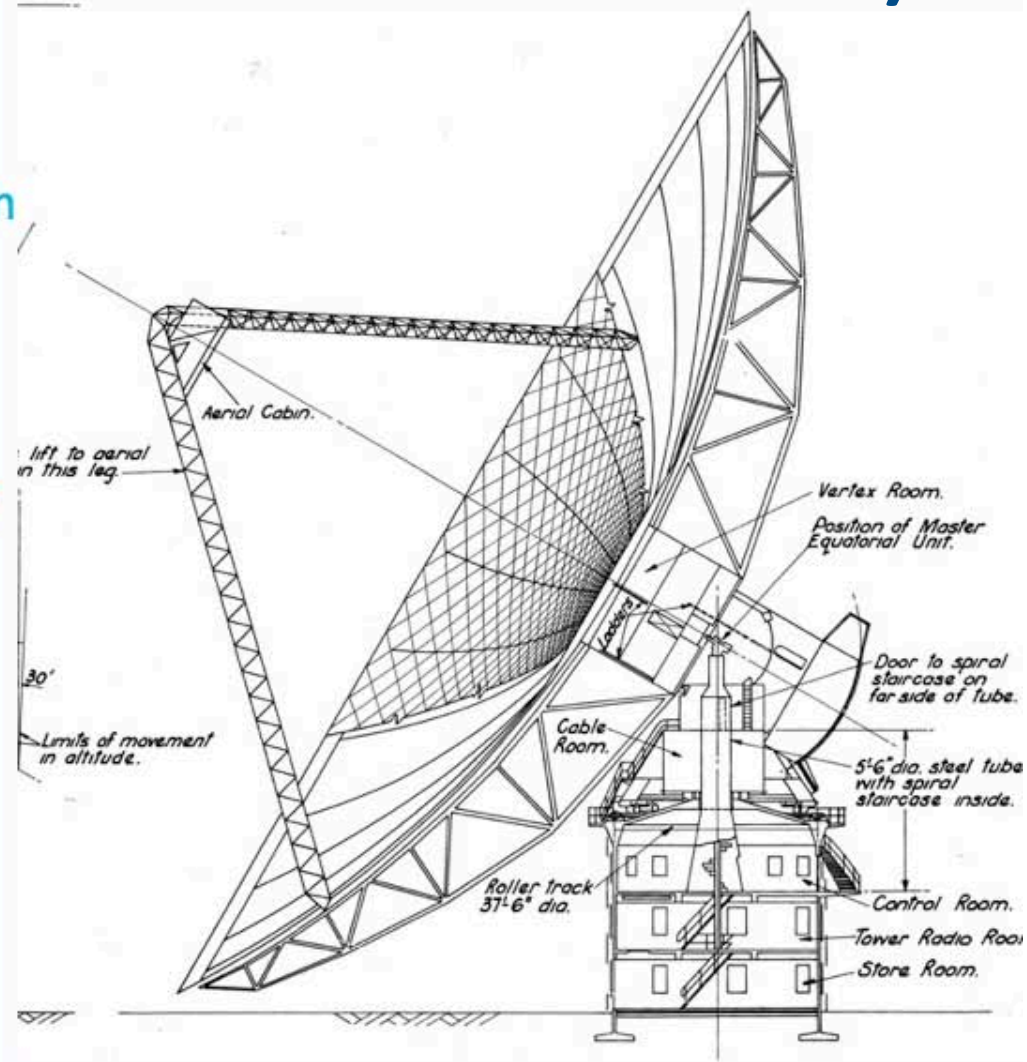
RAPT (Remote Access to the Parkes Telesc.)

Work packages

- Build a Telescope Protection System
- Install a Drives UPS
- Provide a drives stability monitor
- Establish a remote User Interface
- Redefine the operating procedures

- *Data quality the responsibility of the observer*

- *Telescope safety the responsibility of the observatory (telescope protection system and staff)*



Mopra update – I

UNSW is leading a consortium to provide substantial operating funds

Negotiations underway with another potential partner

CSIRO will not charge a management fee or for the cost of existing infrastructure but will instead retain some ATNF time:

- LBA
- 8 weeks' millimetre time per yr (including any winter LBA obs.)

Decision on future of Mopra in early August

Mopra update – II

The likely support level (60% of current costs) allows only the conduct of major largely self-supporting projects in ATNF time.

For the first two years, CSIRO proposes to continue the community legacy project, MALT-90, to completion (700 further hours). The project has undergone regular TAC review since the original proposal.

Future ATNF time will be subject to a new process

Operations staff notes

New staff:

- Bob Kaletsch (electrical, Parkes)

- Liza-Jane McPherson (admin., Narrabri)

- Louise Prestage (lodge, Narrabri)

Departures: Mark Calabretta (>25 yrs!), Andrew Hunt (40 yrs!), Matt McFarland, Ian McRoberts,

Relocations: Brett Armstrong (Parkes to Geraldton)


Robin Boddington (G)


Priscilla Clayton (G)


Alex Harding (G)


John Morris (G)


Wilfred Pena (G)


Lou Puls (G)


Michael Reay (G)


Barry Turner (G)


Gemma Whiting(G)


Shaun Amy (M)


Douglas Bock (M)


Mark Calabretta (M)


Jessica Chapman (M)


Vicki Drazenovic (M)


Leanne Edwards (M)


Phil Edwards (M)


Balt Indermuehle (M)


Elsa Kachwalla (M) (C)


Arkadi Kosmynin (M)


Dave McConnell (M)


Vince McIntyre (M)


Chris Phillips (M)


Nathan Pope (M)


John Reynolds (M)


Euan Troup (M)


Tasso Tzioumis (M)


John Bateman (N)


Christoph Brem (N)


Dave Brodrick (N)


Sue Dodd (N) (C)


Kylee Forbes (N)


Mike Hill (N)


Brett Hiscock (N)


Pam Kelly (N)


Brett Lennon (N)


Clarrie Leven (N)


Brian Madden (N)


Jock McFee (N)


Margaret McFee (N)


Peter Mirtschin (N)


Scott Munting (N)


Louise Prestage (N)


Meg Rees (N)


Mick Shields (N)


Jamie Stevens (N)


Graeme Sunderland (N)


Bruce Tough (N)


Robin Wark (N)


Norm Webster (N)


Mark Wieringa (N)


Chris Wilson (N)


John Wilson (N)


Tim Wilson (N)


Brett Armstrong (P)


Scott Brady (P)


Ettore Carretti (P)


Daniel Craig (P)


John Crocker (P)


Anne Evans (P)


Julia Hockings (P)


Simon Hoyle (P)


Shirley Ingram (P)


Tom Lees (P)


Erik Lensson (P)


Stacy Mader


Margaret Marshall (P) (C)


Matt McFarland (P)


Ian McRobert (P)


Brett Preisig (P)


Ken Reeves (P)


Tim Ruckley (P)


John Sarkissian (P)


Mal Smith (P)


Gina Spratt (P)


Beverly Wilson (P)

Operations staff
March 2012

ATUC -- 11 July 2012

Thank you

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Backup slides follow

Backends

Backend	IF x channels	Maximum Bandwidth [MHz]	Polarisations (1,2= total intens. 4= full Stokes)	Freq res (spectrometers)	Observation modes
MBCORR (Multi-Beam Correlator)	14 x 2048	64	2	2 kHz (13 beams) 0.25 kHz (1 beam)	Spectral lines Continuum
BPSR	13 x 1024	400	2		Pulsar
AFB	14 x 96	288	1		Pulsar
HIPSR (to be commiss.)	13 x 8192	400	4	1.5 kHz (13 beams) (potentially arbitrary)	Pulsar Spectral lines Continuum Polarization
PDFB3	2 x 8192	1024	4	1 kHz	Pulsar Continuum Polarization Spectral lines (VLBI)
PDFB4[4]	1 x 8192	1024	4	1 kHz	Pulsar Continuum Polarization Spectral lines
APSR	1 x arbitrary	1024	4		Pulsar
DAS	2	64	4		VLBI
Mk-V	1	14x16	4		VLBI

Backends

Backend restructure:

To retain	To decommission
DFB3 DFB4 BPSR (=> HIPSR) APSR (=> HIPSR) MK-V HIPSR (to be commissioned)	AFB MBCORR DAS (in the long term)

Parkes Receiver Fleet

Frequency	Receiver	Remotely Operable?	Perform. 1=poor, 5=good	Reliability 1=poor, 5=good	Usage (last 3yr)
1.2-1.6 GHz	MB-20	Y	5	5	54.4 %
700-764 MHz 2.6-3.6 GHz	10/50 cm	Y	5	5	16.4 %
1.2-1.8 GHz	H-OH	Almost	5	5	5.5 % (now ~1%)
2.2-2.5 GHz	GALILEO	Almost[2,3]	5	5	4.6 % (now ~1%)
6.0-6.7 GHz	Methanol 6	Almost[2,3]	3	3	2.4 %
8.1-8.5 GHz	MARS	Almost[3]	5	5	2.4 %
2.3+8.5GHz (S/X) 5 GHz (C)	Multi band (S/X , C)	Almost[2,3]	2	2	1.4 %
12-15 GHz	Ku	Almost[2,3]	2/3	3-	0.4 %
16-26 GHz	13 mm	Y	5	4	4.3 %