



ATNF Futures 2030 Overview

Cathryn Trott | February 18, 2026

Australia's National Science Agency





I would like to begin by acknowledging the Wallamuttgil People as the Traditional Owners of the land that we're meeting on today, and pay my respect to their Elders past and present.



'Eternal Wisdom, Infinite Innovation'
artwork by Rachael Sarra, working with Gilimbaa.



Meeting Code of Conduct

The organisers of this meeting are dedicated to providing a **harassment-free experience for everyone**, regardless of age, gender, gender identity and expression, sexual orientation, disability, physical appearance, body size, nationality, race or religion. We expect our attendees to contribute to a **professional and respectful atmosphere**. All attendees, speakers and organisers are required to comply with the Code of Conduct. Organisers will enforce this code throughout the meeting to ensure a safe, inclusive and welcoming environment for everyone.

In practical terms:

- Treat each other with respect and consideration
- Behave in a professional manner
- Critique ideas, not individuals
- Be kind

<https://www.atnf.csiro.au/code-of-conduct/>





Who we are

Australia's national science agency



One of the world's
largest multidisciplinary
science and technology
organisations



Dedicated people
working across
50 sites in Australia
and globally



State-of-the-art
national research
infrastructure



We delivered
\$13.3 billion of benefit
to the nation in
FY2023-24

The international context

- New facilities on a 5-year horizon
- Existing advanced facilities: FAST, ASKAP, CHIME

Telescope	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	'35	'36
ASKAP												
SKA-Mid AA2												
SKA-Mid AA*												
DSA												
ngVLA												



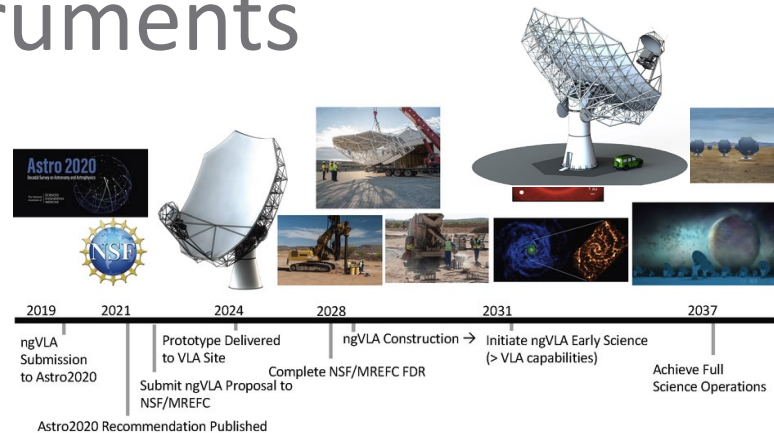


2030s international instruments



DSA
(USA)
Radio
camera
6m dish

ngVLA
(USA)
1000km
baselines
18m dish



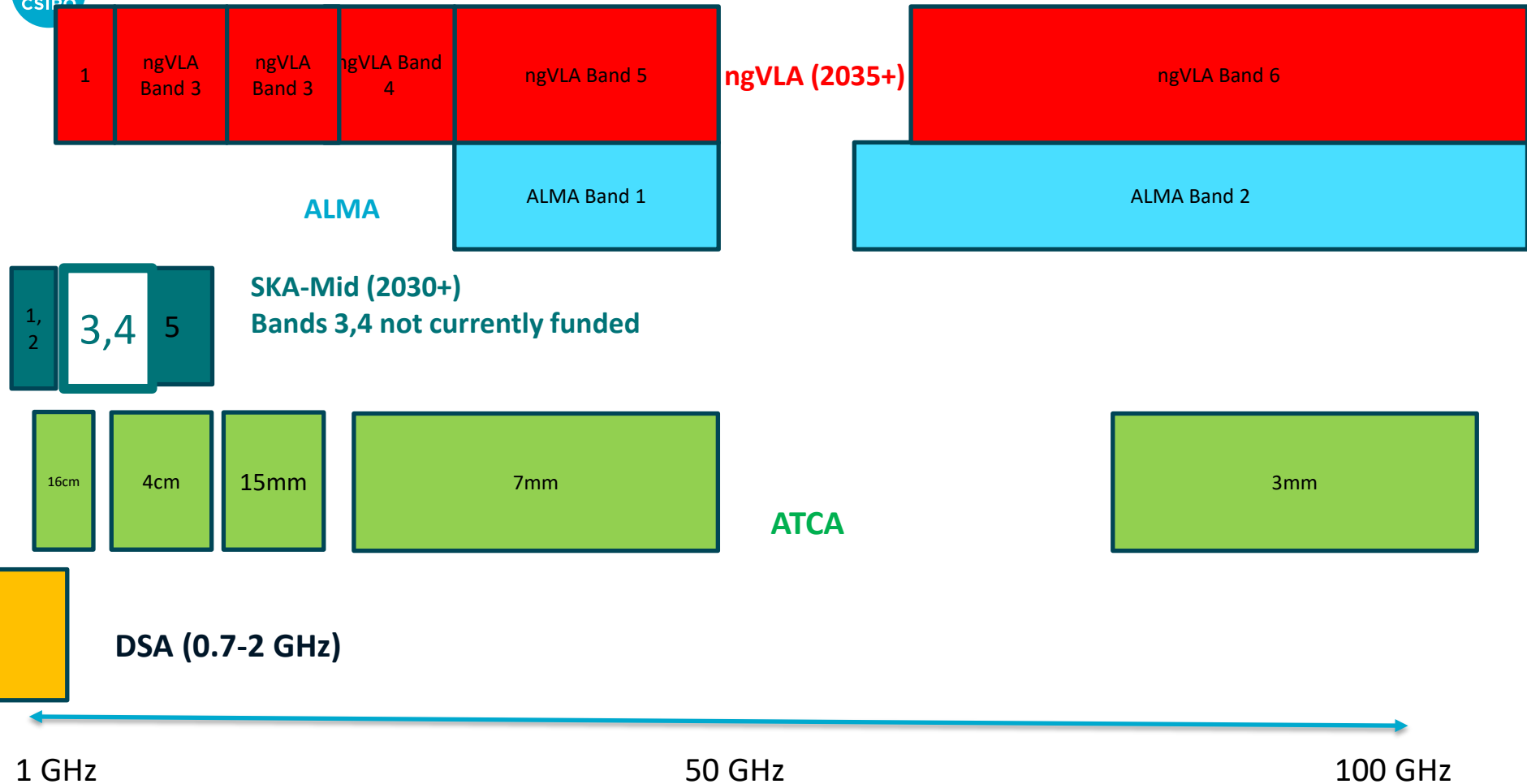
SKA-Mid
(RSA)
150km
baselines
15m dish

SKA-Low
(Aus)
74km
baselines
35m AA





Current and Future Facilities – Receiver Bands



The international context: HI science

Telescope	FOV (deg ²)	$A_{\text{eff}}/T_{\text{sys}}$ (m ² /K)	Survey speed $(A_{\text{eff}}/T_{\text{sys}})^2 \cdot \text{FOV}$ m ⁴ /K ² .deg ²	Angular resolution (arcsec) at 1.4GHz	HI column density at 1 arcmin, 10h, 3sigma
ASKAP	31	51	80,300	7.2	5×10^{18}
SKA-Mid AA2	1	640	409,600	0.8	2×10^{18}
SKA-Mid AA*	1	1216	1,480,000	0.3	1×10^{18}
DSA	3.5	1099	11,480,000	3.5	4×10^{17}
ngVLA	0.45	3650	5,960,000	43 (core)	1×10^{17} (core)



The national context



Australian Government
Department of Education

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National Collaborative Research Infrastructure Strategy (NCRIS)



Australian Government
Department of Industry,
Science and Resources

Explore science, technology and innovation ▾

[Home](#) / [Science, technology and innovation](#) / Strategic Examination of Research and Development

Strategic Examination of Research and Development

The Australian Government is undertaking a strategic examination of our research and development (R&D) system.



Science questions

- How is stellar and galaxy evolution interconnected across all scales?
- What is the dark Universe made of?
- How does physics work in extreme environments?
- How do planetary systems form and evolve – and are they habitable?



NATIONAL COMMITTEE FOR
ASTRONOMY

ASTRONOMY DECADAL PLAN **2026–2035**





Science questions

- *How is stellar and galaxy evolution interconnected across all scales?*

Hydrogen; AGN; gas and magnetism

- What is the dark Universe made of?
- *How does physics work in extreme environments?* Radio transients, GWs
- *How do planetary systems form and evolve – and are they habitable?*

Molecules



NATIONAL COMMITTEE FOR
ASTRONOMY

ASTRONOMY DECADAL PLAN **2026–2035**





The national context

CSIRO funding pressure: ATNF does not have sufficient funding to operate all its current facilities toward the end of the decade, with a significant funding gap from 2027/28

Optical astronomy uncertainty: AAT funding cliff; ESO strategic partnership ending 2027/28

Large SKAO commitments by Australian Government

By the end of the decade, ASKAP will require a significant capital refresh





ASKAP's mission

The ASKAP radio telescope was built to:

- Help establish an observatory site for the SKA Observatory's SKA-Low telescope, and
- Demonstrate SKA survey science technologies.

Following the construction of ASKAP, CSIRO ran an open proposal process, and initiated the 5-year Science Survey Projects, which are still in progress.

The majority of ASKAP observing time between now and 2030 is dedicated to completing the large-scale surveys





ATNF Futures 2030 Workshop

Why?

- Context: difficult financial environment; SKA telescopes incoming; international landscape step change in 5 years
- Crucial for a National Facility to consult with the community + internal
- ASKAP surveys on track for 2030 completion; now is the time to plan for 2030+

What next?

- Combine input from ATNF staff R&D survey + ATNF Futures 2030 workshop + Decadal Plan to inform the forward strategy





Concepts and intent

ASKAP upgrade

- New PAFs
- Wider BW
- More dishes



New dish array

- Mid-high freq
- Wide BW
- PAF + SPF
- Smaller/larger dish



Aperture Array

- Mid-high freq
- Wide BW
- Potential for >1
- No moving parts



Concept X

- New ideas!



Other considerations

- Operational model
- Efficiency and sustainability
- Software, pipelines, storage and compute
- Training opportunities
- Connectivity: VLBI
- National Facility: ATNF's role in providing infrastructure for Australia





Logistics & SOC

- Reminder: large online participation
- One question per speaker; please introduce yourself first
- Remaining questions for discussion sessions (google doc)
- SOC: George Hobbs, Aidan Hotan, Kelly Gourdj, Josh Preston Pritchard, Keith Bannister, Amanda Gray, Nithya Thyagarajan





Thank you

Space and Astronomy

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