

Please note: the substantive content of the 2026 NRI Roadmap Survey begins at Question 20 (with prior questions dealing with administrative and other information).

As such all submissions that are published include the responses submitted from Question 20 onwards only.

Q20.

Part 2: Research themes

2.1 NRI comprises the assets, facilities and associated expertise to support leading-edge research and innovation in Australia and is accessible to publicly and privately funded users across Australia and internationally. We are seeking your input on possible directions for future national-level investment - i.e., where the requirements are of such scale and importance that national-level collaboration and coordination are essential.

The [2021 Roadmap](#) used a challenge framework to support NRI planning and investment. With this in mind, consider likely future research trends in the next 5 - 10 years, and with respect to one or more of the 8 challenge areas identified in the 2021 Roadmap as listed below:

- describe emerging research directions and the associated critical research infrastructure requirements that are either not currently available at all, or not at sufficient scale and
- describe current national infrastructure requirements that you anticipate will no longer fit the definition of NRI in 5-10 years.

Do not limit your commentary to NCRIS funded capabilities.

Q21.

Resources Technology and Critical Minerals Processing

Q22.

Food and Beverage

**Q23.
Medical Products**

**Q24.
Defence**

**Q25.
Recycling and Clean Energy**

**Q26.
Space**

Emerging directions in astronomy include the increasing need for higher angular resolution imaging as the targets that answer our questions move to the smaller scale (planets and stars) or further distance (galaxies). Astronomy currently has access to the world-class European Southern Observatory through a limited Strategic Partnership that ends 2027. In 2029-2030 the European Southern Observatory will finish construction of the first next-generation 30m-class optical/near-infrared telescope (of 3 planned) and given its large aperture this will provide the highest combination of optical/near-infrared angular resolution and sensitivity available for the next decades. Astronomy is also a multi-frequency science and the most exciting discoveries rely on access to facilities across the frequency range. Australia must also maximise the benefit of our investment in the radio frequency SKA Observatory (with one of the two arrays being constructed in Western Australia). High Performance Computing (HPC) and Data are a critical requirement of astronomy over the next decade - to maximise outcomes from these new telescopes that provide huge amounts of data and to support our exciting theoretical research. The Astralis Instrumentation Consortium should also be maintained, ideally through NCRIS, to retain Australia's sovereign capability in astronomical instrumentation and software and maximise Australia's engagement in global projects through collaborative instrumentation and software development. A large proportion of Australian astronomers also take leading roles within large international collaborations that generate world-leading data sets. Their access is often funded by stochastic and uncertain ARC LIEF grants despite leveraging substantial international co-investment. Examples include gravitational wave detectors such as LIGO, which generated some of the highest impact papers of the last decade; the Rubin Observatory, which will run the game-changing Legacy Survey of Space and Time (LSST); and the Cherenkov Telescope Array Observatory (CTAO), which will discover the highest energy particles in the Universe. As astronomy moves to more international facilities, the domestic facilities will move to new user/funding models in the coming decade. The Anglo-Australian Telescope will reach the natural end of its life as a professional multi-use observatory and will need to consider a new user base. With a continued technology development and upgrade path, the Parkes (Murriyang) and ASKAP telescopes can demonstrate technology for future pathways for the SKA and other telescopes. The Australia Telescope Compact Array will move to a new operational and funding model, focusing on its unique scientific value in its access to common sky with SKA-Low and ASKAP, unique frequency bands, rapid-response capabilities, and in extended observing campaigns. The MWA will continue to support Australia's low radio frequency research community until SKA-Low is completed

Q27.

Environment and Climate

Q28.

Frontier Technologies and Modern Manufacturing

Q29.

2.2 The 2024 statement of National Science and Research Priorities (NSRPs) includes outcomes linked to each priority to assist in identifying critical research needed in the next 5 to 10 years. Consider the priority statements and, with respect to one or more of the 5 priority areas as listed below:

- describe emerging research directions and the associated critical research infrastructure requirements that are either not currently available at all, or
- not at sufficient scale and describe current national infrastructure requirements that you anticipate will no longer fit the definition of NRI in 5-10 years.

Do not limit your commentary to NCRIS funded capabilities, and where relevant, refer to the underpinning outcomes and research identified in the NSRPs document.

Q30.

Transitioning to a net zero future

Q31.

Supporting healthy and thriving communities

Q32.

Elevating Aboriginal and Torres Strait Islanders knowledge systems

Q33.

Protecting and restoring Australia's environment

Q34.

Building a secure and resilient nation

Q35.

2.3 The case for a new NRI capability, or enhancements to existing capabilities, typically emerges through advocacy from research communities clustering around rigorously identified needs and goals. Such a concept could respond to a requirement for novel or expanded capacity within a domain, or across domains, and must be such that it could only be made available with national-level investment.

If you have identified such a requirement, briefly describe the need, the proposed infrastructure capability, the medium-term goals, impacted research communities, and the timeframe over which you advocate its establishment. Your response can include links to relevant existing reports.

I have identified several requirements which come directly from the decadal plan for Australian astronomy 2026–2035 which is currently in the final stages of development following many rounds of Australian astronomy community consultation over the last 18 months prior to publication by the Australian Academy of Science mid-2025.

Q36.

Part 3: Industry perspectives

This section is seeking input specifically from industry-based respondents. Other respondents can skip this section.

Recommendation 6 of the [2021 Roadmap](#) related to improvements in industry engagement with NRI. To complement work on this topic that has occurred since then, we are seeking additional advice on NRI requirements as perceived by current or potential industry-based users.

Q37.

3.1 Have you (or your organisation) interreacted with or used Australia's NRI?

☐ Yes

☐ No

Q38.

3.2 If so, please briefly outline the NRI capabilities you (or your organisation) have interacted with or used. Do not limit your response to NCRIS capabilities.

This question was not displayed to the respondent.

Q39.

3.3 Please indicate your (one or more) primary reasons for interacting with NRI:

This question was not displayed to the respondent.

Q40.

3.4 If you answered no, please indicate your (one or more) primary reasons:

This question was not displayed to the respondent.

Q41.

Part 4: Other comments

4.1 Please elaborate on any of your above responses or add any other comments relevant to the development of the 2026 Roadmap. Your response can include reference or links to existing reports that you recommend be considered during the 2026 Roadmap development process.

Q49.

4.2 Optional Document Attachment.

Note: Our strong preference is that answers are provided against the relevant questions in the survey. However, this file upload option is available for submissions in file format, where needed. Please ensure the document includes your name or organisation.