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

Q27.
Environment and Climate

Spatially continuous mapping of land motion for localised sea level projections around Australia's coastline. This is not presently available for Australia but is in Europe and NZ. There is a footprint in Space as it requires access to Satellite Radar datasets (currently from Europe). Same dataset would provide a continental scale deformation model - useful for resources sector (including groundwater). km-scale modelling of Earth's climate at global scales, including coupling ice, ocean, atmosphere, solid earth. Land ice coupling to ocean and atmosphere has commenced in ACCESS-NRI but not solid Earth as required for robust sea level and ice sheet projections. Some preparatory solid Earth model work has been funded by AuScope. NCI does not have the capacity for km-scale global climate models of enhanced complexity. year-round monitoring of Antarctic ice sheet changes, under ice and surrounding ocean regions. Sub-ice access through drilling and polar-capable robotic sensors. Polar observing systems fall outside current NCRIS capabilities. There is a very minor contribution by the Australian Antarctic Division but it is required to realise the Australian Antarctic Decadal Strategy (released March 2025).

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

Do not yet have the capability to project the future of sea level rise around our coastline or that of our regional neighbours. This will require 1. comprehensive vertical land motion observations and monitoring of that. 2. Step-change in model sophistication and horizontal resolution in terms of ice-ocean-solid Earth-atmosphere projections of the Antarctic and Greenland ice sheets and the ocean response. Current projections are uncertain at the level of 1m sea level rise by 2100 outside of forcing choices. 3. early warning monitoring in the ocean, on the ice, under the ice, and from space in Antarctica especially. Ability to adjust models to these data - this is not being done anywhere globally right now for ice-sea level type problems.

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.

Antarctic observing system. This domain has traditionally been assumed of the Australian Antarctic Division but is not funded and does not have a comprehensive needs based plan for this monitoring, especially of the physical system and downstream impacts on biological system. IMOS extends only into the Southern Ocean but not under the ice or on the ice. Medium term goals: 1. Early detection of change in key marine grounded ice sheet basins in Australian Antarctic Territory from the field and space. Development of technology for robust deployment. 2. Assimilation of observations into model projections as an operational ice sheet-climate model to provide enhanced projections of changes to Australian sea level, weather, fisheries, and those of our regional neighbours (especially Pacific) Establish over period from 2030. Ice sheet response in IPCC AR6 begins to show model-specific differences around early to mid 2030s.

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.

IMOS, AuSCope, ACCESS-NRI, NCI

Q39.
3.3 Please indicate your (one or more) primary reasons for interacting with NRI:

- [ ] For expertise or advice
- [x] Access to research resources or products
- [x] Access to equipment for research
- [ ] Access to equipment for operational reasons
- [ ] Help in translating research
- [x] Access to data
- [ ] Support for clinical trials
- [x] Other (please specify) provide expert guidance to ACCESS-NRI

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.