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

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

Emerging research directions focused on elevating Aboriginal and Torres Strait Islander knowledge systems in Australia are addressing different ways of incorporating digital technologies, interdisciplinary approaches, and Indigenous-led frameworks. However, significant infrastructure investments are required to support these innovative approaches at scale. Examples of critical infrastructure requirements that are either unavailable or not at sufficient scale include: - Culturally appropriate AI and machine learning tools developed for automated cataloguing and indexing and high-capacity storage systems for audio, video and visual media. - Language processing tools for Aboriginal and Torres Strait Islander languages, including AI and NLP technologies. - Scalable, high-quality remote sensing and geospatial infrastructure (e.g. GIS, satellite imagery, real-time monitoring tools) for environmental management. - Integrated, interoperable data systems and data sharing platforms that facilitate the collaborative integration of Indigenous and Western knowledges for a broad variety of disciplines (e.g. health and wellbeing, environment and ecological systems, cultural and creative). - Data interoperability and standards: Standards must be developed that incorporate Indigenous knowledges and practices with other data systems in use by researchers, governments and industry to enable the communication and exchange of data. - Secure cloud storage and decentralised data centres are needed to support the protection, ethical management, and responsible use of Indigenous data for research, policy and decision-making. This infrastructure would enable compliance with privacy legislation, cultural protocols and principles of Indigenous data governance whilst safeguarding against the risks of Indigenous data being exploited, misused or lost. Decentralised data centres would support local ownership and distributed access control whilst also facilitating local Indigenous governance approaches. - Data management and governance systems: Software solutions that embed the principles of Indigenous data governance are necessary for Indigenous data custodians across multiple sectors. This includes the development of cultural and ethical data standards and the use of approaches such as blockchain technologies to enable Indigenous control over their data.

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.

Proposed infrastructure capability: Aboriginal and Torres Strait Islander Research Data Commons (ATSIRDC) Indigenous research data is located across all academic disciplines, including health and medicine, environmental science and ecology, social sciences, law and policy, arts and humanities, education and technology and innovation. Given its breadth, it is inherently interdisciplinary and intersects with all research communities across Australia. A new National Research Infrastructure (NRI) capability focusing on scaling up the Indigenous Data Network's ARDC HASS&I 'Improving Indigenous Research Capabilities (IIRC)' project is critical for recognising, securely storing and effectively and appropriately utilising the wealth of Aboriginal and Torres Strait Islander data for research, policy-making, and cultural preservation. Led by Distinguished Professor Marcia Langton, a descendant of the Yiman and Bidjara nations, The IIRC project is a critical initiative aiming to build the capacity of Indigenous research data communities by developing and improving access to secure, culturally appropriate data management tools and platforms that enable more effective management, sharing and protection of Indigenous data in alignment with Indigenous data governance principles. The project has made significant advances to foster collaboration between Indigenous communities, researchers and other Indigenous data custodians, providing essential training, resources, and tools to strengthen Indigenous participation in research. Despite its achievements, the IIRC project lacks the scale and investment required to address the extensive needs of Indigenous data communities across Australia. To support Indigenous data governance, protect cultural heritage, and integrate Indigenous knowledge into research, significant investment in long-term research infrastructure is required. This includes dedicated resources for managing, protecting, and sharing Indigenous data to facilitate large-scale research, policy development, and community-driven initiatives. Such investment is essential to meet growing demands for digital infrastructure, data security, cultural protocols, and supporting Aboriginal and Torres Strait Islander communities to maintain control over their knowledge. To appropriately scale the IIRC project to a new NRI capability would require four years, enabling collaboration across disciplines and Indigenous data communities, testing and iterative development. This timeframe would support the development and implementation of a data commons that is robust, secure and capable of embedding Indigenous data governance whilst promoting Aboriginal and Torres Strait Islander self-determination and cultural integrity. Professor Langton and the Indigenous Data Network would be pleased to elaborate on our survey responses and offer further advice to the Department of Education.

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.