

**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**

While ADM+S research and NRI interests extend across net zero, health, first nations knowledge systems and environment issues, our general comments address our main concerns with the 2026 Roadmap.

Q31.

### **Supporting healthy and thriving communities**

Q32.

### **Elevating Aboriginal and Torres Strait Islanders knowledge systems**

Q33.

### **Protecting and restoring Australia's environment**

Q34.

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.

ADM+S supports the enhancement and expansion of existing ARDC HASS & Indigenous Research Data Commons facilities. The Australian Internet Observatory in particular plays a notable role in giving researchers unprecedented levels of observability of the interactions between Australians and digital platforms. There is now an opportunity extend the capabilities of the AIO to encompass the rapidly growing environment of digital devices and services, from media platforms to health apps, connected vehicles and smart devices. We see five key areas for the second phase investment in AIO. Data collection and auditing tools: Digital platforms, services and smart devices Development of automated, adaptive data collection tools for digital platforms and services, smart data and Internet of Things (IoT) Expanded forms of crowdsourcing and data donation tools to provide access to a wide range of digital systems for auditing at scale Web scraping and API-based tools for data collection from established and emerging digital platforms, services and smart devices. GenAI and ML Research Infrastructure Domain-specific LLMs for Australian contexts, including models trained on local datasets relevant to law, health, and media studies and tools for fine-tuning open-source generative models tailored for research in HASS Secure, institutionally managed AI systems that support text, image, audio, and video synthesis for research while ensuring privacy and compliance. Visualisations, Simulation Environments and Digital Twins Researchers need a range of tools to visualise and analyse data and new technologies are opening up innovations for data analysis from digital and social data that are unprecedented. Sandbox environments that simulate platform interactions to determine algorithmic and social drivers of misinformation spread, and rigorous and independent testing of platform effects. Digital Twins for observing and analysing platforms and communication ecosystems to model the impact of regulatory interventions. A range of synthetic data and interactive visualisation tools are also required to provide insights into large scale systems and connect data across disciplines and related NRI facilities. Digital Public Infrastructure (DPI): Systems and Standards DPI is an emerging concept being adopted around the world which involves networked open technology standards built for public interest, governance frameworks and a multisector community of participants working to drive innovation in the operations of public goods. AIO's DPI program aims to: Build the capacity of all actors to implement, innovate, scale, and lead digital transformation, ensuring digital sovereignty and a thriving local digital ecosystem. Develop systems and standards for AIO and related DPI to enable data portability and interoperability which is a fundamental precondition for service delivery, credential verification, security, data privacy and data sharing in areas of social security, health, education, travel, and finance. Training and Translation Research translation and engagement: A whole-of-society approach is essential for inclusive digital transformation. Governments, the private sector, civil society, academia, and individuals must have access to tools and research findings to support policy development and regulation, digital inclusion and new social and economic innovations. Expanding the skills and capabilities of the next generation of HASS researchers to understand and work with new tools and methods is critical if we are to address the digital transformation challenge. The AIO program will develop specialised training for uplift across HASS disciplines and researchers across sectors and for the Research Software Engineers that work with them. Research communities For ADM+S AIO demonstrates the importance of NRI investment. AIO has enabled us to make ADM+S developed tools and methods available for a substantially larger research community, both inside and outside universities. We are already seeing rapid take up of the tools AIO Phase 1 provides. The Australian Internet Observatory is an initiative of the ARC Centre of Excellence for Automated Decision-Making + Society (ADM+S) in collaboration with researchers and research centres, university partners and organisations across Australia and internationally. The AIO was established in 2024 with investment from the Australian Research Data Commons (ARDC) as part of the HASS & Indigenous Research Data Commons and funded under the National Collaborative Infrastructure Strategy (NCRIS). Phase 1 is being developed and led by RMIT University in partnership with Queensland University of Technology, The University of Queensland, The University of Melbourne, Swinburne University of Technology and Deakin University. An expanded AIO will look to develop new partnerships including with facilities such as the International Digital Policy Observatory at University of Sydney and the Australian Data Archive. AIO Phase 2 will continue to work closely with the wider research infrastructure sector, particularly the ARDC, AURIN, HASS and Indigenous NRI facilities, as well as Health and Environment facilities to develop interoperable, integrated and collaborative data and technology solutions. Phase 2 will also build on and extend partnerships internationally including collaboration with Smart Data Research UK, Data Donation Europe and the Internet Observatory in the US.

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) interacted 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.