



Australian Government
Department of Education

Next steps for National Digital Research Infrastructure

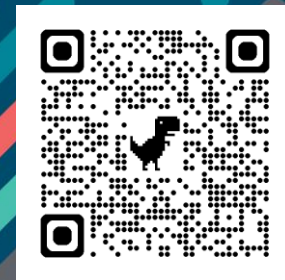
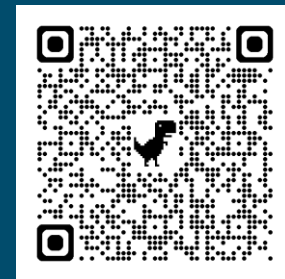
Joe Shapter, Chair, NDRI Working Group

<https://www.education.gov.au/national-research-infrastructure/national-digital-research-infrastructure-ndri>

Liz Sonenberg, Chair, NRI Advisory Group

<https://www.education.gov.au/national-research-infrastructure/advisory-group>

October 2024 @ eResearch Australasia



Acknowledgment of Country





Australian Government
Department of Education

National Research Infrastructure Advisory Group Update

eResearch Australasia
October 2024



Overview

National research infrastructure (NRI) comprises nationally significant assets, facilities and services and associated expertise to support leading-edge research and innovation. NRI is prioritised through **NRI Roadmaps** and the advice of the **NRI Advisory Group**, and managed through the **National Collaborative Research Infrastructure Strategy (NCRIS)**.

NRI Roadmap Cycle

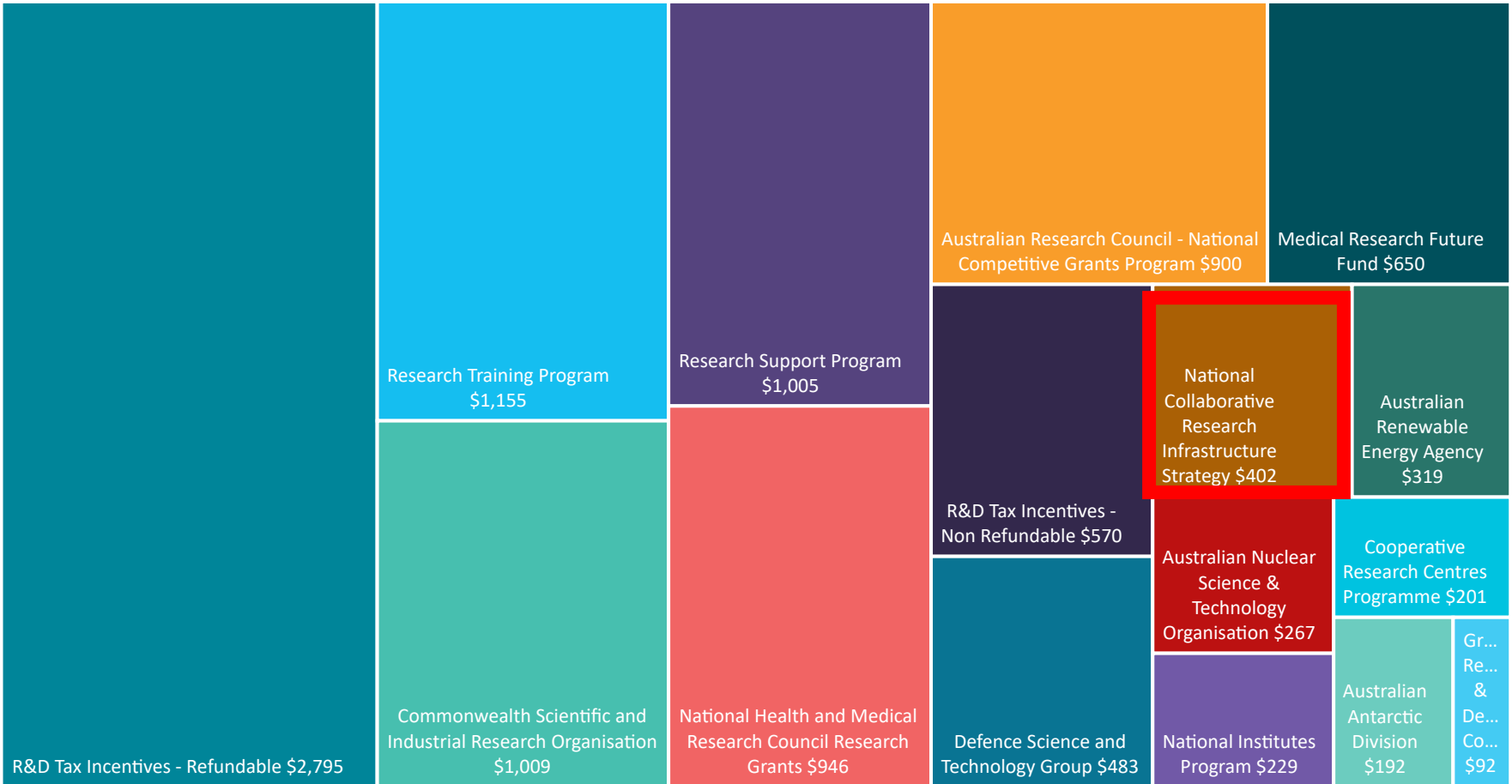
- Every five years the Australian Government develops an NRI Roadmap to identify research infrastructure capabilities and future areas of need.
- The most recent Roadmap was developed in 2021.
- A new Roadmap is being planned for 2026.

NRI Advisory Group

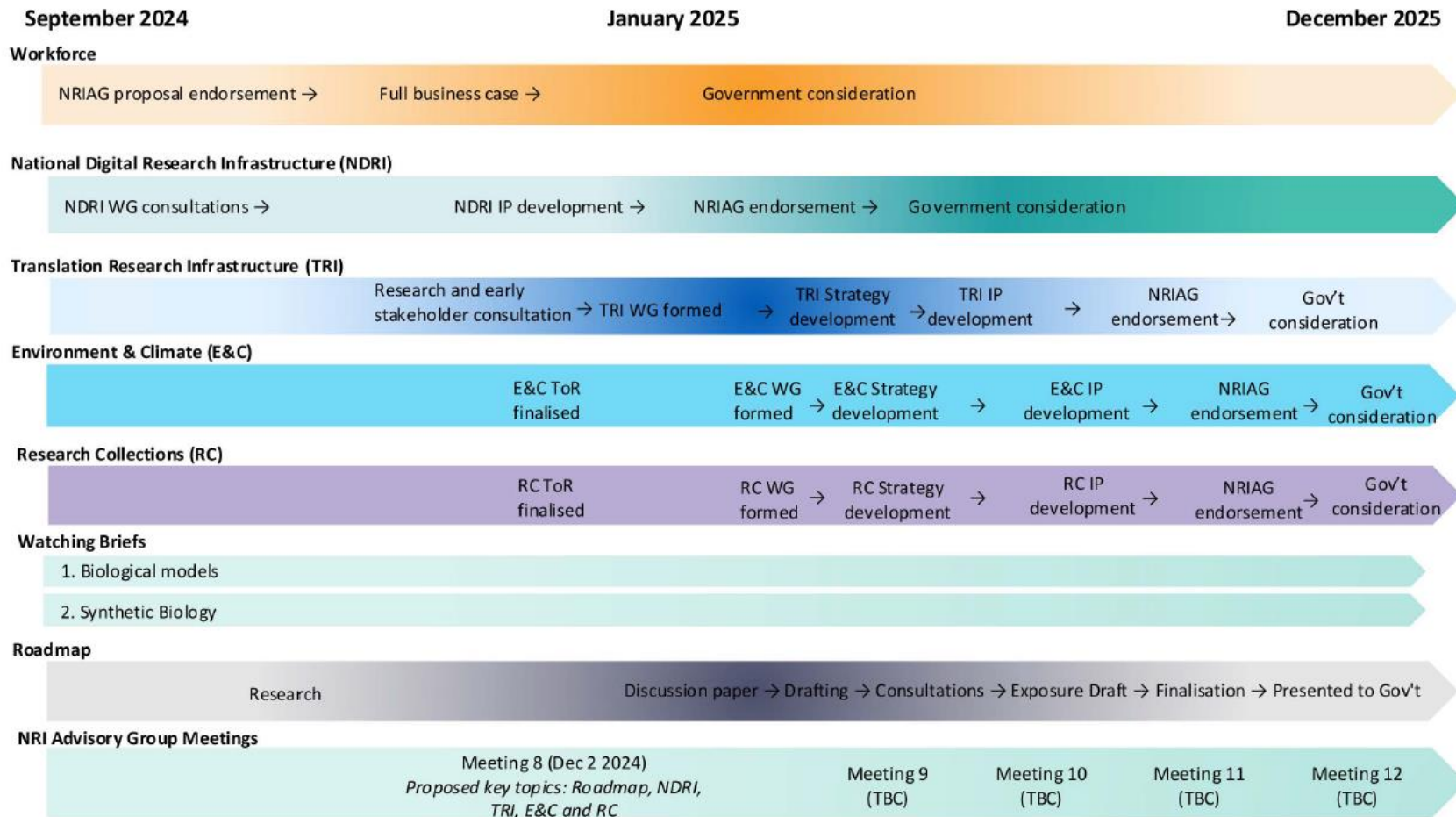
- Establishment recommended in the 2021 Roadmap.
- Commenced work in 2023.
- Guided by a Terms of Reference which states that the group will advise on NRI policy and investment and develop future NRI Roadmaps.

NCRIS sits within a broader national ecosystem

Budget Tables by program (\$ million) 2023-24



NRI Advisory Group Forward Workplan (September 2024)





Australian Government

Department of Education

National Digital Research Infrastructure Working Group update

eResearch Australasia
October 2024



NDRI step change work to date

- The [NDRI Strategy](#) was released in July 2024.
- An NDRI Investment Plan (IP) is being developed, with funding through the [National Collaborative Research Infrastructure Strategy \(NCRIS\)](#).
- The NDRI Working Group has been established to support the Department of Education to develop the NDRI IP.
 - Chair: Emeritus Professor Joe Shapter
 - Professor Liz Sonenberg
 - Mr Mike Hill
 - Professor Elanor Huntington
 - Mr Richard Northam
 - Emeritus Professor Robyn Owens
- The NDRI Working Group's [Terms of Reference](#) are available on the Department of Education's [National Digital Research Infrastructure](#) webpage.



Vision

User-centric design must lie at the heart of Australia's NDRI system.

Australian researchers, from all disciplines, should have access to cutting-edge, sovereign NDRI capabilities to continue delivering world-class research and innovation.

| <u>Outcome 1</u> UNDERPINNED BY TRAINING FRAMEWORKS FOR RESEARCHERS AND NRI WORKFORCE | <u>Outcome 2</u> RESPONSIVE TO TECHNOLOGICAL AND SOCIETAL SHIFTS | <u>Outcome 3</u> CONSISTENT IN ITS STANDARDS FOR DATA COLLECTION, CURATION AND ACCESS | <u>Outcome 4</u> INTEGRATED ACROSS LEVELS OF COMPUTING AND DATA INFRASTRUCTURE | <u>Outcome 5</u> CYBERSECURE, PARTICULARLY FOR NATIONAL-SCALE DATA AND COMPUTING | <u>Outcome 6</u> MAXIMISED BY OPENLY AVAILABLE RESEARCH SOFTWARE TOOLS |
|--|--|--|--|--|---|
| <p>Opportunity: Supporting Australia's NDRI workforce will enhance the quality of the nation's research.</p> <p>Challenge: Without a highly skilled NDRI workforce, Australia will not reach its full potential.</p> <p>Approach: Governments should work with NDRI providers to address staff shortages and expand workforce training opportunities.</p> | <p>Opportunity: NDRI technological advancements support Australian researchers to perform unprecedented research.</p> <p>Challenge: Rapid advances and societal shifts can lead to obsolete and ineffective digital resources.</p> <p>Approach: Coordinated, expert-informed strategic planning should underscore Australia's future NDRI system.</p> | <p>Opportunity: Ensuring Australia's growing volume of research data is as FAIR as possible will offer benefits to researchers.</p> <p>Challenge: Increasing volumes of research data are being generated that are not FAIR/CARE compliant.</p> <p>Approach: A sector-wide data management framework that supports FAIR/CARE compliance nationally.</p> | <p>Opportunity: A seamlessly integrated NDRI ecosystem will support Australia's researchers.</p> <p>Challenge: Researchers have rapidly expanding NDRI demands but may lack expertise to use data efficiently and effectively.</p> <p>Approach: Pursue integrated access to different tiers of compute and shared data.</p> | <p>Opportunity: Enforcing Australia's NDRI cybersecurity protects nationally valuable and sensitive digital resources.</p> <p>Challenge: Cybersecurity threats are growing as research data sensitivities increase.</p> <p>Approach: NDRI providers should support assessment and mitigation of cybersecurity risks, underpinned by system-wide trust and identity solutions.</p> | <p>Opportunity: Supporting research software tools as critical NDRI capabilities ensures efficient and effective research conduct.</p> <p>Challenge: Software is critically important, yet its place in NDRI is not well defined.</p> <p>Approach: Research software tools should be recognised with equal importance to NDRI computing, data and networking capabilities.</p> |

Implementation

An independent NDRI Working Group will develop an NDRI Investment Plan to implement the NDRI Strategy. The NDRI Investment Plan will be underpinned by stakeholder engagement and guided by the NRI Advisory Group. The Investment Plan will be funded, implemented, and monitored through NCRIS.

NDRI step change work to date

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NDRI step change work to date

- The NDRI Working Group has held stakeholder consultations, including a [series of targeted discussions](#) to support the development of the NDRI IP (summaries on line now).
- A publicly available [NDRI Investment Plan Consultation Survey](#) was launched to provide an opportunity for the community to highlight key issues for Australia's NDRI ecosystem.
- The [NDRI Investment Plan Environment Scan Survey](#) gave stakeholders the opportunity to suggest specific solutions that meet Australia's NDRI needs.



NDRI step change work to date


- NDRI targeted discussion series topics:
 - Aboriginal and Torres Strait Islander Peoples NDRI
 - Compute and AI
 - Data
 - NDRI for Humanities, Social Sciences and GLAM
 - NDRI Skills
 - Software
 - Trust & Identity and Cybersecurity
 - Other consultations have discussed software and data repositories, T&I/Cyber experiences in the US, institutional roles and challenges, other government activity, etc.
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What we have heard so far?

- There should be better coordination nationally for:
 - High Performance Computing
 - Trust & Identity and Cybersecurity
 - Data System, Classifications and Standards (domain specific, machine actionable).
 - Investment is needed to make data more FAIR (Findable, Accessible, Interoperable, and Reusable) and CARE (Collective Benefit, Authority to Control, Responsibility, and Ethics) compliant.
 - There is a need for a spectrum of skills within the NDRI facilities and a system of training is needed for both staff and users that ensures leading-edge and workhorse capabilities are available. Sharing knowledge across capabilities would be of great value.
 - Investment is needed to ensure Aboriginal and Torres Strait Islander as well as Humanities, Social Sciences and GLAM researchers have the required NDRI skills.
 - Investment is needed to ensure that Australia can evaluate and make the best use AI/ML.
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NDRI step change next steps

- Continued consultations (currently underway).
- Call for potential investments.
 - Potential NDRI providers will be invited to submit costed outlines on potential research infrastructure.
- Drafting and testing of the initial draft NDRI IP.
 - Feedback sought from stakeholders, including the NRI Advisory Group.
- Consultations on the draft final NDRI IP.
 - Open and targeted consultation.
- NDRI IP reviewed and endorsed by the NRI Advisory Group and submitted to the Department of Education for consideration.

