



Australian Research Data Commons

# eResearch in Australia

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**Australian Research Data Commons**

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ARDC is enabled by NCRIS



Australian Government



Supporting NCRIS Capability







## About the ARDC

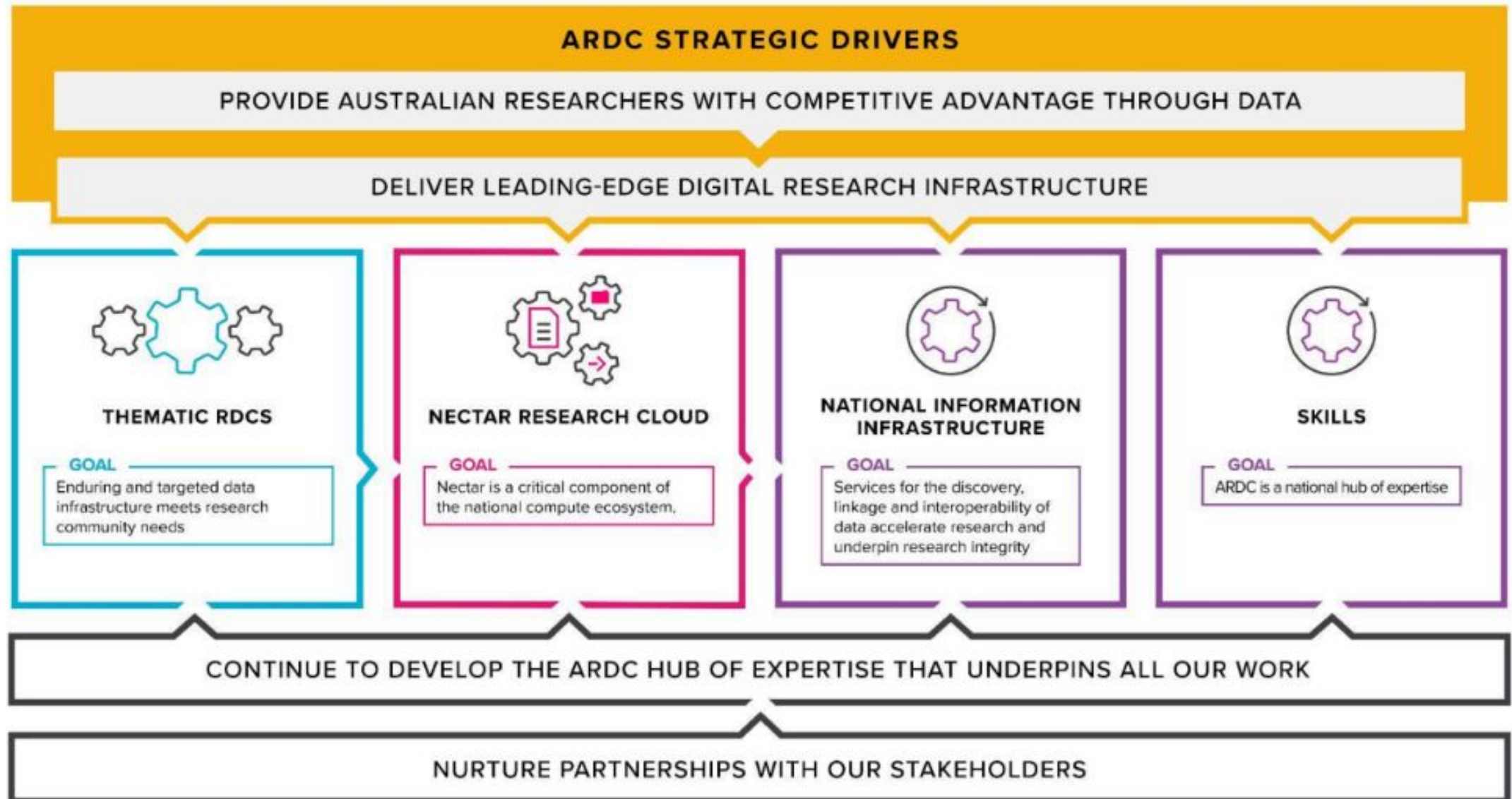
The ARDC runs programs and facilitates partnerships that ensure Australian researchers are internationally competitive through having access to high-quality data assets, platforms, infrastructure, policies, people and training to transform our lives.

# What is a Research Data Commons?

A research data commons brings together people, skills, data, and related resources such as storage, compute, software, and models to enable researchers to conduct world class data-intensive research.







# World Leading Digital Infrastructure Enables Australian Researchers to Transform Our Lives



## **PEOPLE**

**Research Data Commons**



## **PLANET**

**Research Data Commons**



## **HASS & INDIGENOUS**

**Research Data Commons**



# PEOPLE

## Research Data Commons

A national-scale data infrastructure for health research and research translation





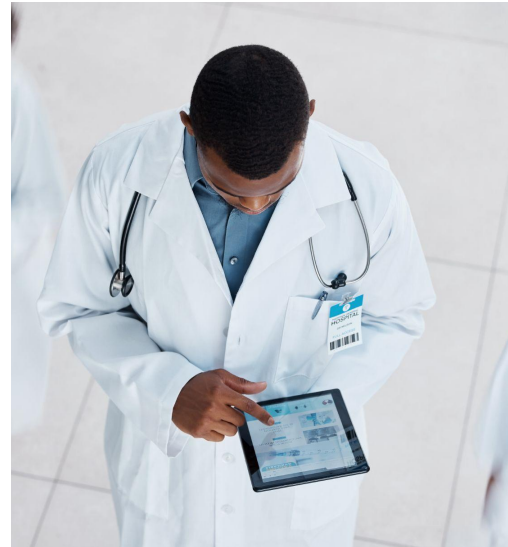


# PEOPLE

## Research Data Commons

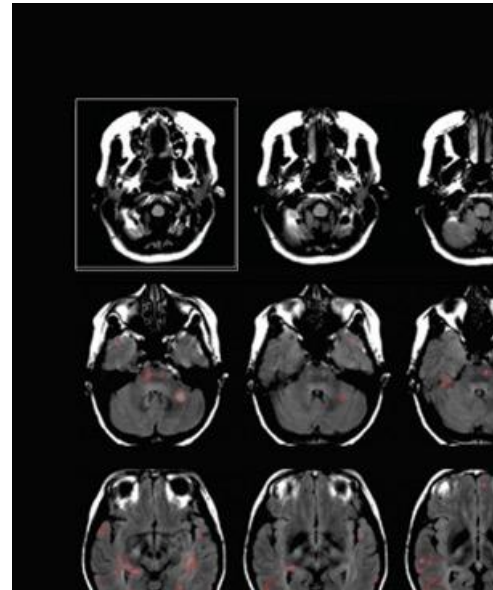
### Programs

- FAIR data assets
- Secure access
- Data integration
- Advanced analytics
- Disease applications
- Health service applications



# Transforming Clinical Image Management and Analysis

Thanks to the Australian Imaging Service, researchers are collaborating internationally to understand multiple sclerosis (MS) by sharing and analysing de-identified clinical images securely.

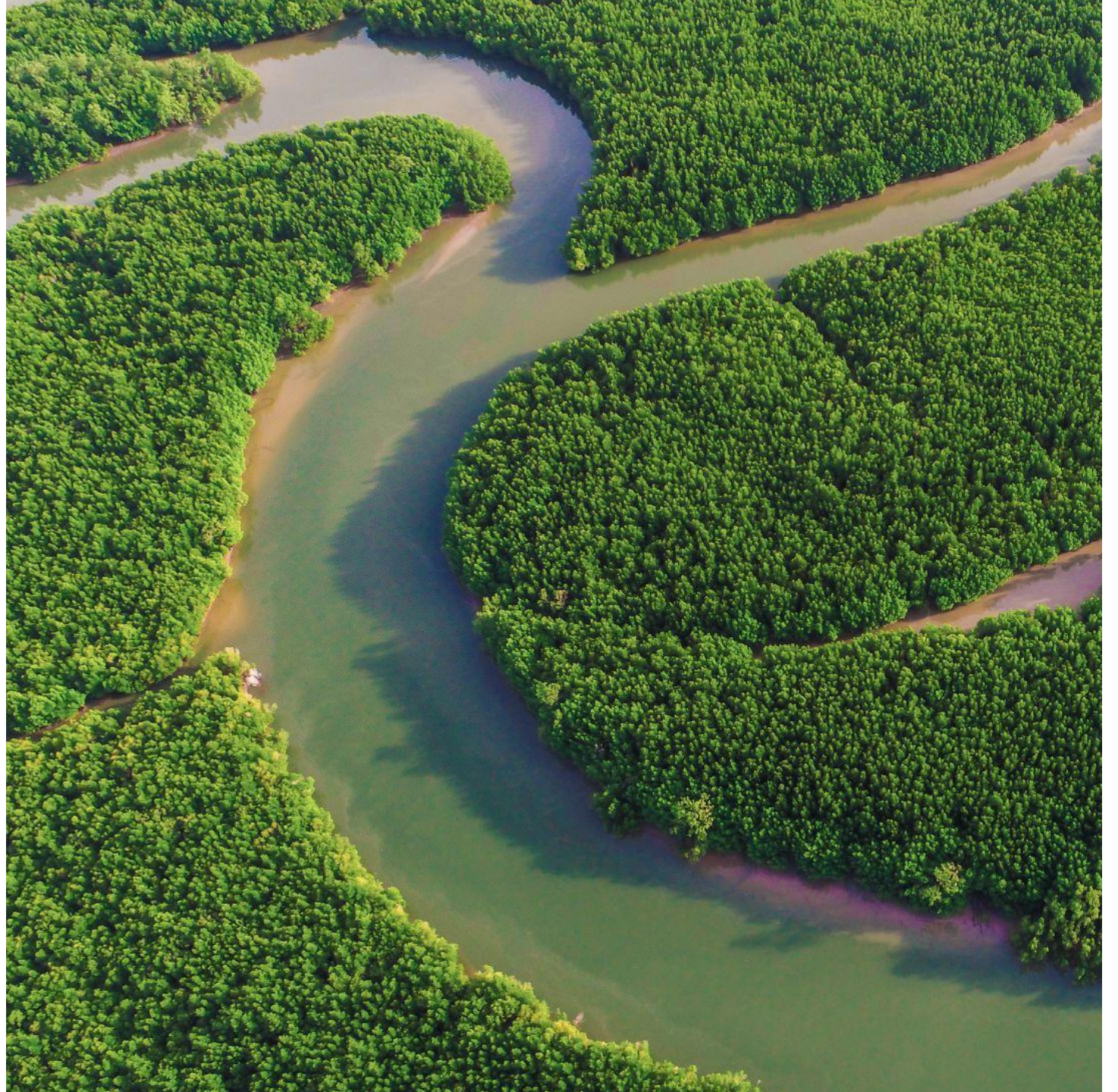




# PLANET

## Research Data Commons

National-scale data infrastructure for environmental research and decision making



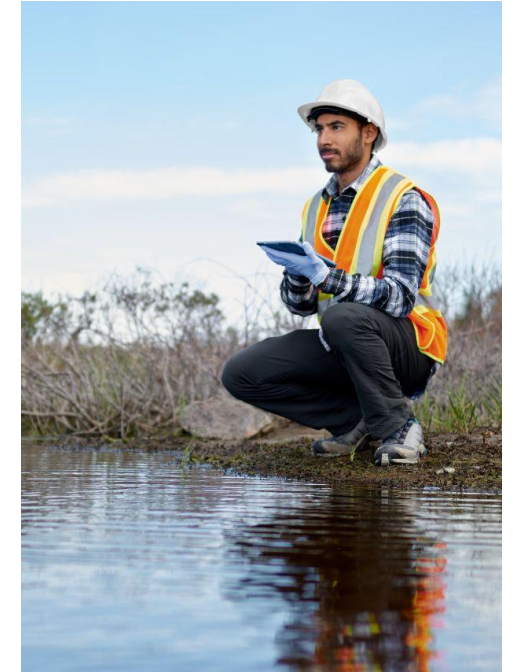
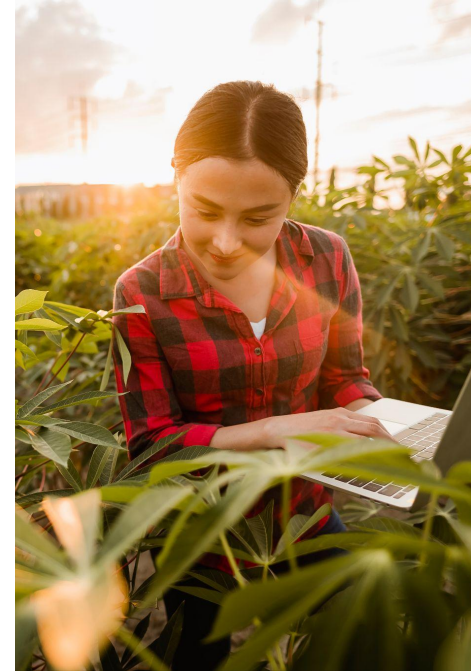


# PLANET

## Research Data Commons

### Outputs and Outcomes

- Trusted environment data and information supply chains
- National-scale integrated datasets and services
- Domain data portals
- Interoperability uplift and FAIR implementation profiles
- Modelling, analytics and decision support infrastructure
- National machine based observation data infrastructure and pipelines
- Indigenous data governance and implementing the CARE principles



# Reducing Deaths from Air Pollution

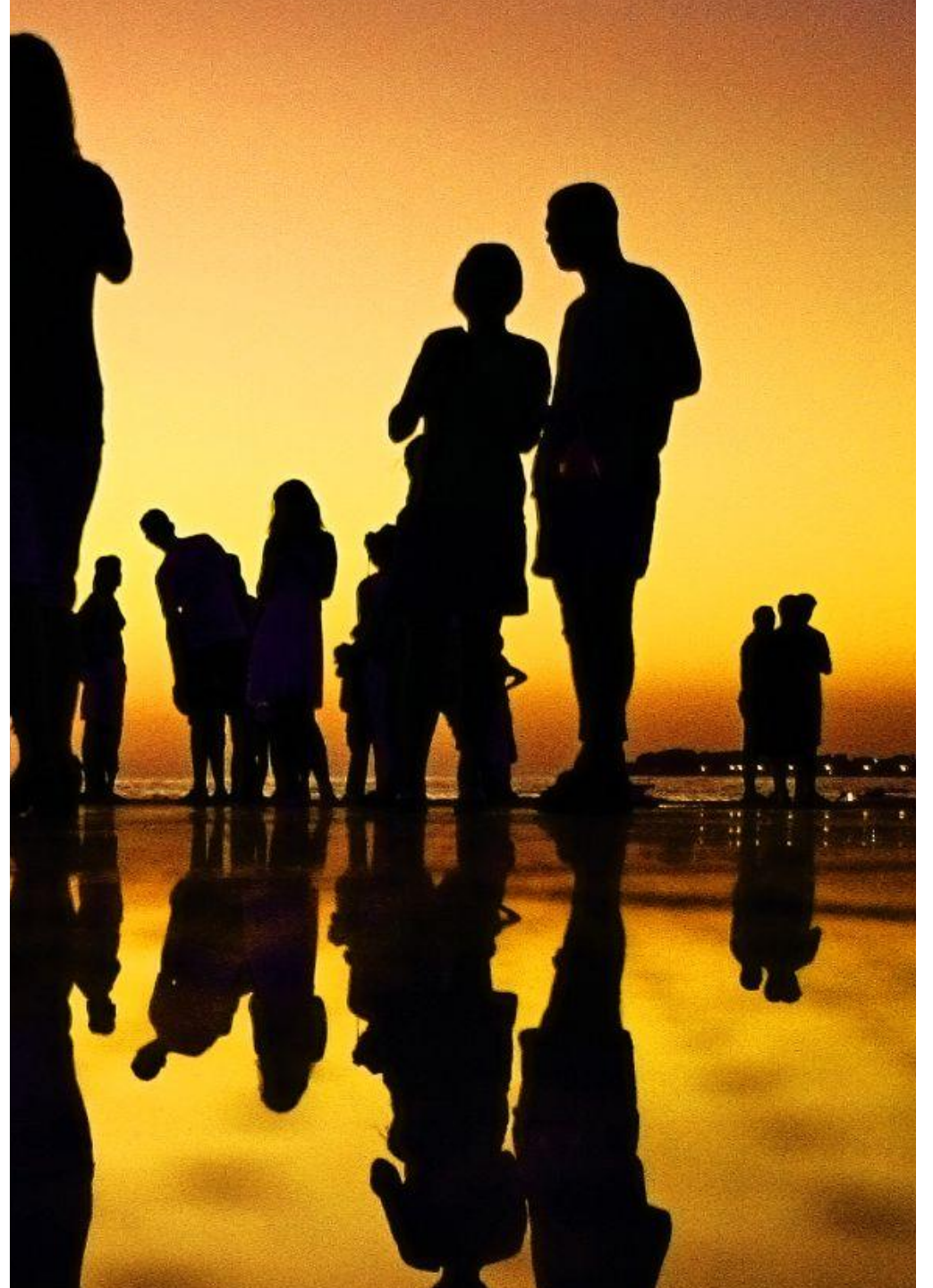
A new research platform standardises and links environment and health data, feeding into computer tools that quantify population exposure and health burden due to air pollution to inform policies that support sustainable cities and environments.





# HUMANITIES, ARTS, SOCIAL SCIENCES (HASS) & INDIGENOUS Research Data Commons

National-scale data infrastructure  
for HASS and Indigenous research  
and decision making







# HASS & INDIGENOUS Research Data Commons

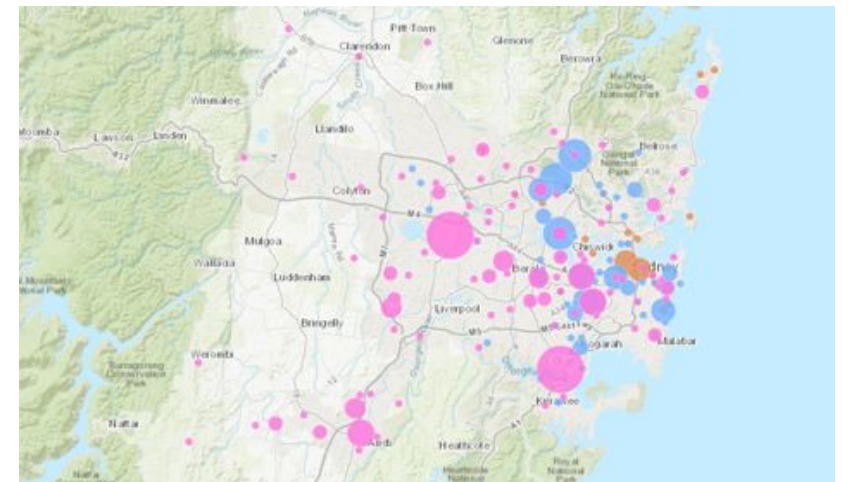
## Programs

- The Language Data Commons of Australia
- Social Sciences program
- Improving Indigenous Research Capabilities: An Aboriginal and Torres Strait Islander Research Data Commons
- Open access to data beyond researchers
- ARDC Community Lab
- Rescuing high value historical collections
- Media(ted) data
- Creative arts



# Minding Our Language Data

Scattered language data can now be found and accessed in a single place – the Language Data Commons of Australia.







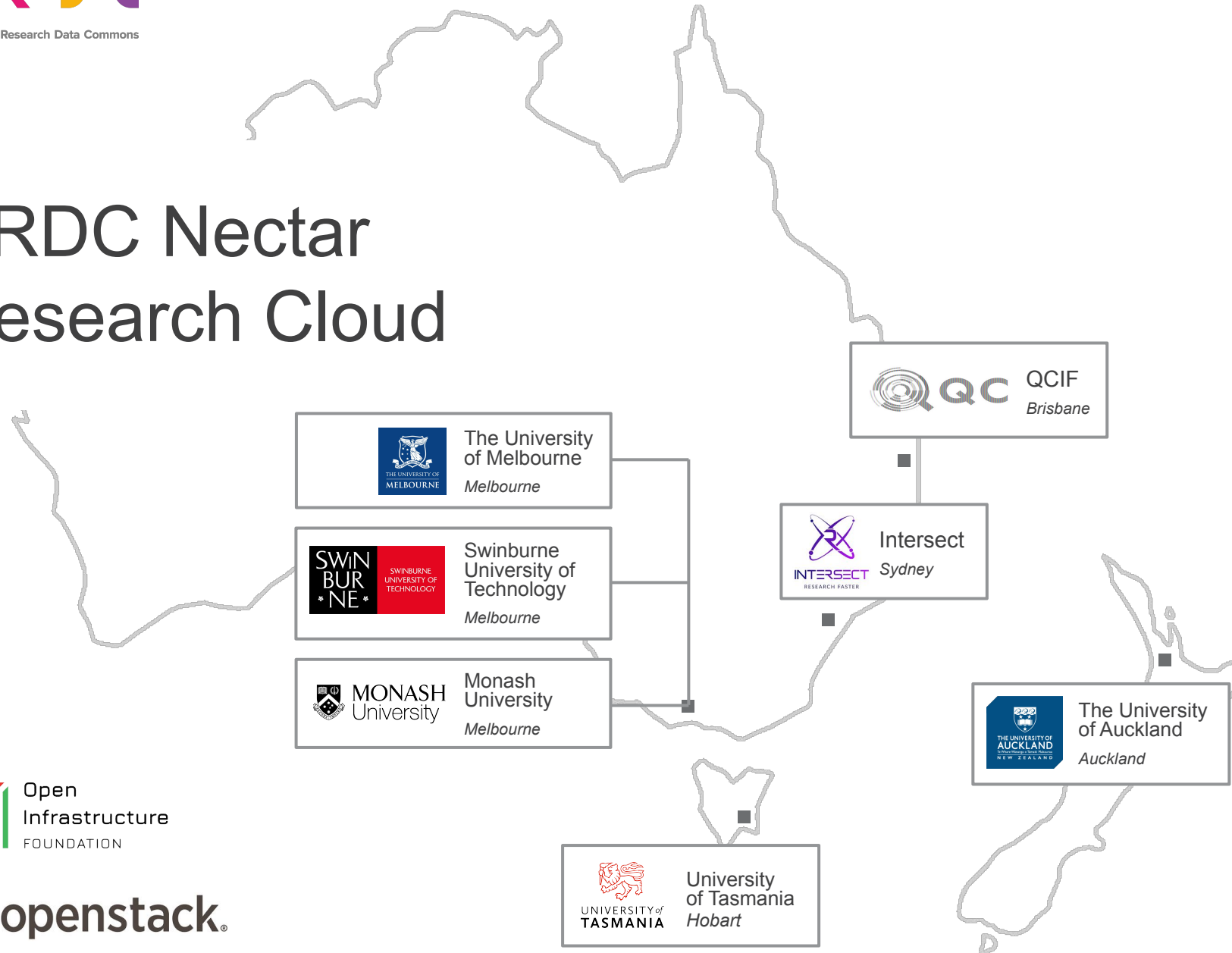
Australian Research Data Commons

# ARDC Nectar Research Cloud


is Australia's federated  
national research cloud  
providing the research  
community with on-demand  
computing infrastructure  
and software





# ARDC Nectar Research Cloud





 **8,000+**  
Virtual Machines

 **34,000**  
Physical CPU Cores

 **150,000+**  
Virtual CPU Cores

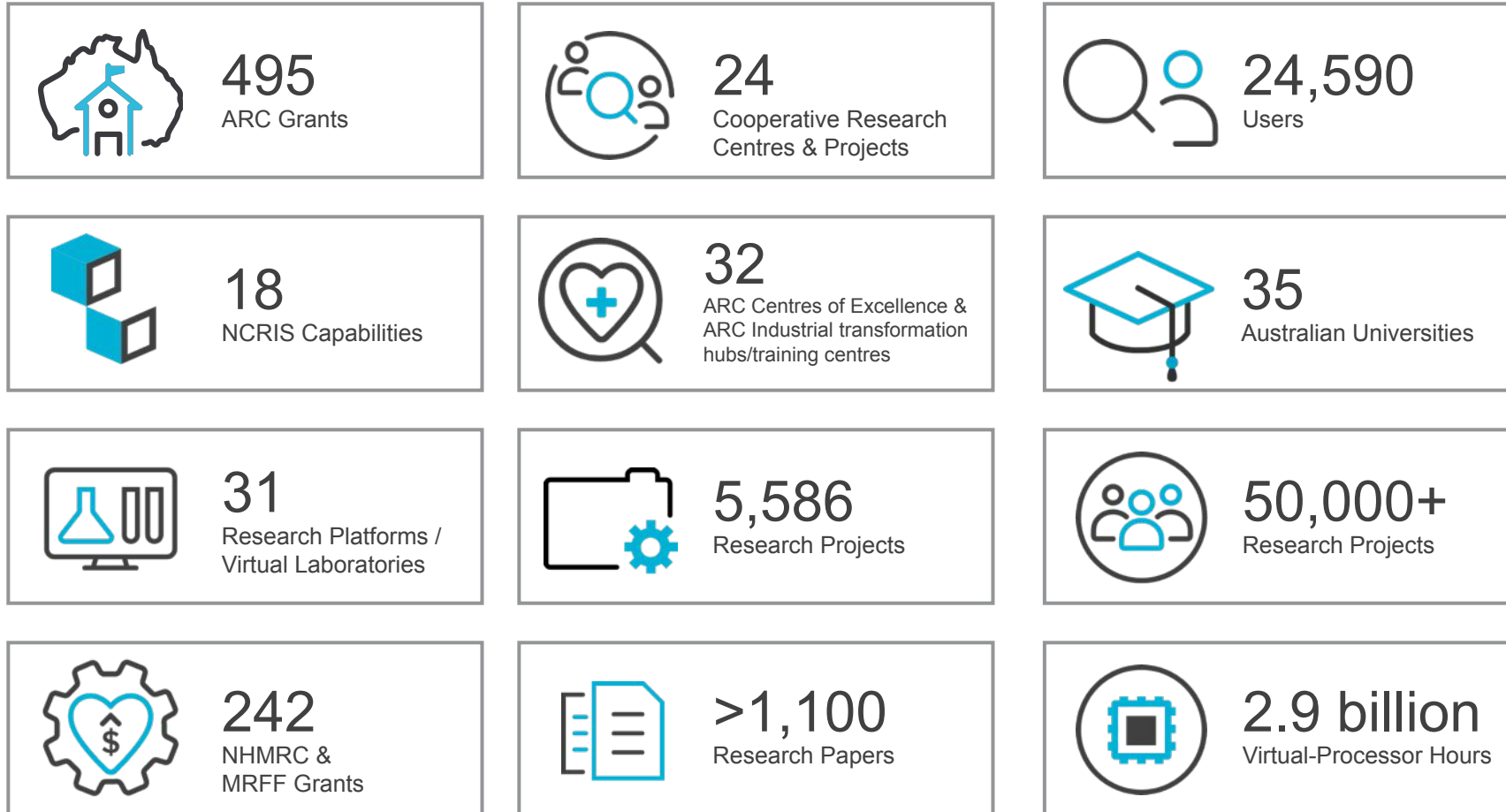
 **248**  
VGPU

 **2PB**  
Object Storage

 **5PB**  
File Storage



# ARDC Nectar Research Cloud



In 2022/2023 ARDC Nectar Research Cloud supported:



Supporting National Research Since 2012

# Understanding the Impact of Our Future Climate

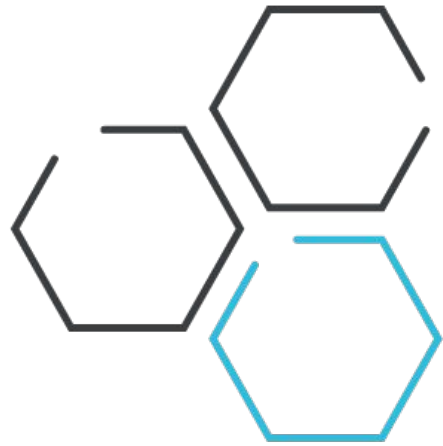
The Tasmanian Climate Futures research group uses the Nectar Research Cloud to understand the future impacts of climate change, including on bushfires and vineyards.

They recently published *Australia's Wine Future – A Climate Atlas*.

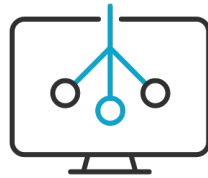




# Services Powered by ARDC Nectar Research Cloud



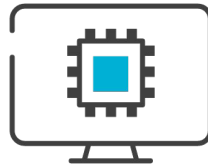
**ARDC Nectar  
Research Cloud**  
Compute & Storage



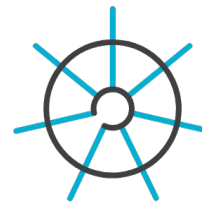
**Virtual Desktop  
Service**



**Jupyter Notebook  
Service**



**National GPU  
Service**



**Kubernetes  
Services**



**BinderHub  
Service**

## Resource Bundle

Select the most suitable bundle for your project needs...

### Standard

Most Popular!

#### 4000 SU / year

A standard resource bundle suitable for researchers wanting extra compute power, similar to a personal computer, to host a simple web application or run basic computations.

- ✓ Runs 16 VCPUs continuously (max 64 VCPUs at one time)
- ✓ Up to 40 instances
- ✓ 500 GB Object Storage

✓ SELECTED

### Powerful

#### 8000 SU / year

A more powerful bundle of compute resources for researchers wanting to run more demanding computations or host more complex web applications.

- ✓ Runs 32 VCPUs continuously (max 128 VCPUs at one time)
- ✓ Up to 80 instances
- ✓ 1500 GB Object Storage

SELECT POWERFUL

### Extreme

#### 16000 SU / year

An extra powerful bundle of compute resources for long running, large-scale computations or web applications.

- ✓ Runs 64 VCPUs continuously (max 256 VCPUs at one time)
- ✓ Up to 160 instances
- ✓ 3000 GB Object Storage

SELECT EXTREME

### Custom

For advanced cloud users with a specific set of resource requirements. Users must be able to estimate their requested SU budget using the methods suggested in [this guide](#).







SELECT CUSTOM





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## CONTACT

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