



## KeyPoint

A universal trusted research environment for sharing, accessing and analysing sensitive data

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19 October 2023

#QCIF



@qciftd



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# The Why?



- ↑ Volume of sensitive data generated
- ↑ interest from researchers



- Lack of suitable environment ↑ risk and breaches
- Lengthy assessment & validation of suitable environments to ensure compliance ↓ research efficacy



- Trusted research environment that is fit-for-purpose ↑ innovation and research impact

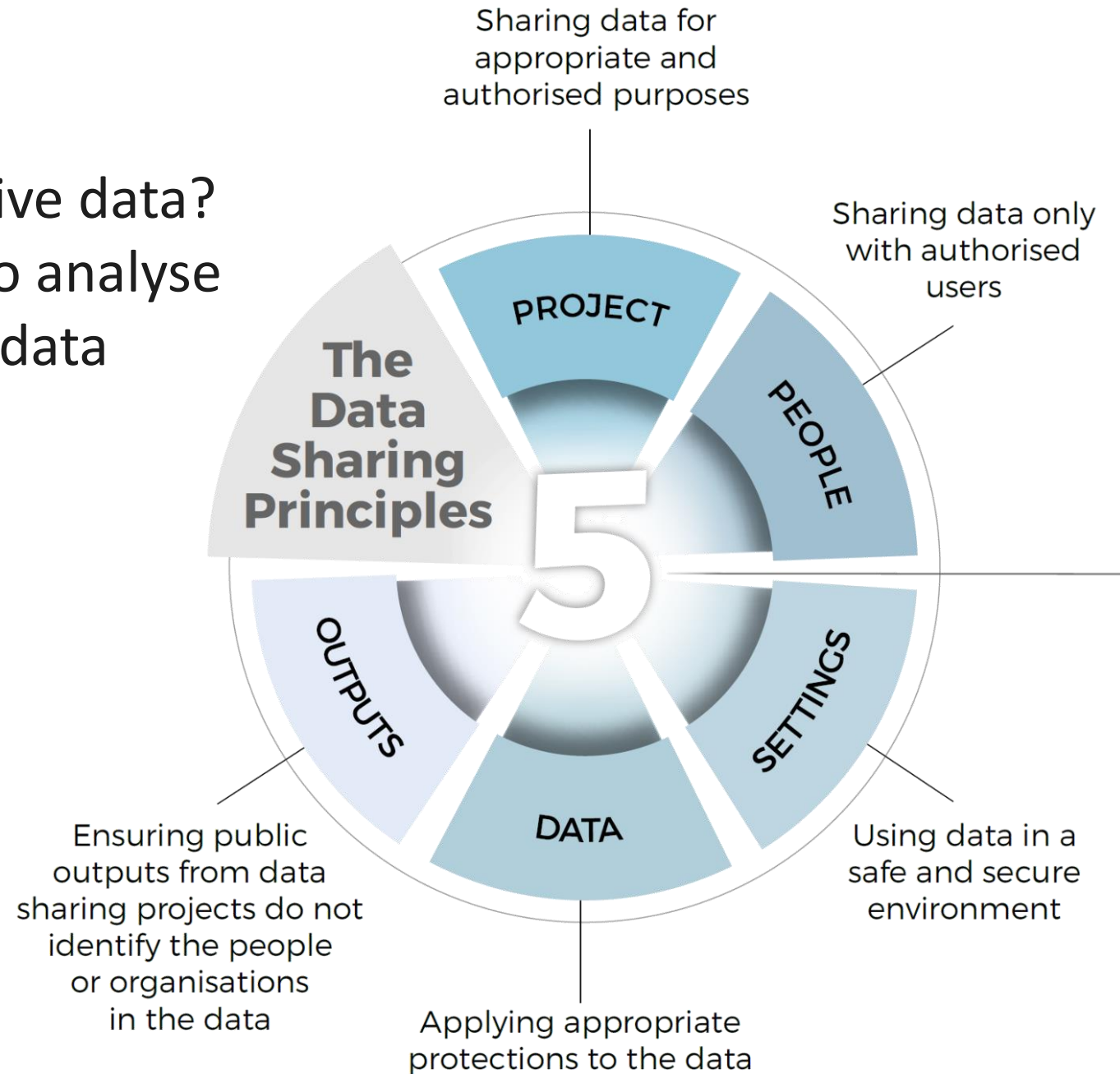
# Addressing gaps in the market

Feature	KeyPoint
Sustainable cost for research	<input checked="" type="checkbox"/> Resource usage – base vault resource cost + additional resource usage cost above base allocation
Permitted data types	<input checked="" type="checkbox"/> Any
Ingress/Egress file size limits	<input checked="" type="checkbox"/> No
User identity	<input checked="" type="checkbox"/> Existing institutional credentials (+ externals)
Project separation	<input checked="" type="checkbox"/> Enforced
User managed/vetted ingress and egress	<input checked="" type="checkbox"/> Yes – all ingress/egress reviewed by data steward appointed reviewers.
Restricted administrator access	<input checked="" type="checkbox"/> Yes

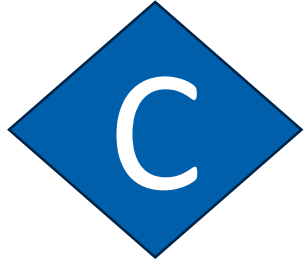
# How can we:

- Work collaboratively on sensitive data?
- Allow external organisations to analyse sensitive data whilst ensuring data sovereignty at all times?

The Five Safes are used as the basis for the Five Data Sharing Principles by the Australian Government and its agencies.



# Indigenous data governance



## **Collective benefit**

- For inclusive development and innovation
- For improved governance and citizen engagement
- For equitable outcomes



## **Authority to control**

- Recognising rights and interests
- Data for governance
- Governance of data



## **Responsibility**

- For positive relationships
- For expanding capability and capacity
- For indigenous languages and worldviews



## **Ethics**

- For minimising harm and maximising benefit
- For justice
- For future use

## **CARE Principles**

<https://ardc.edu.au/resource/the-care-principles/>

# KeyPoint – A secure collaborative research environment

## Data custodian governed

- Fine-grained access controls and permissions
- Highly governed environment
- File in and file out approval processes

## Secure remote access from anywhere

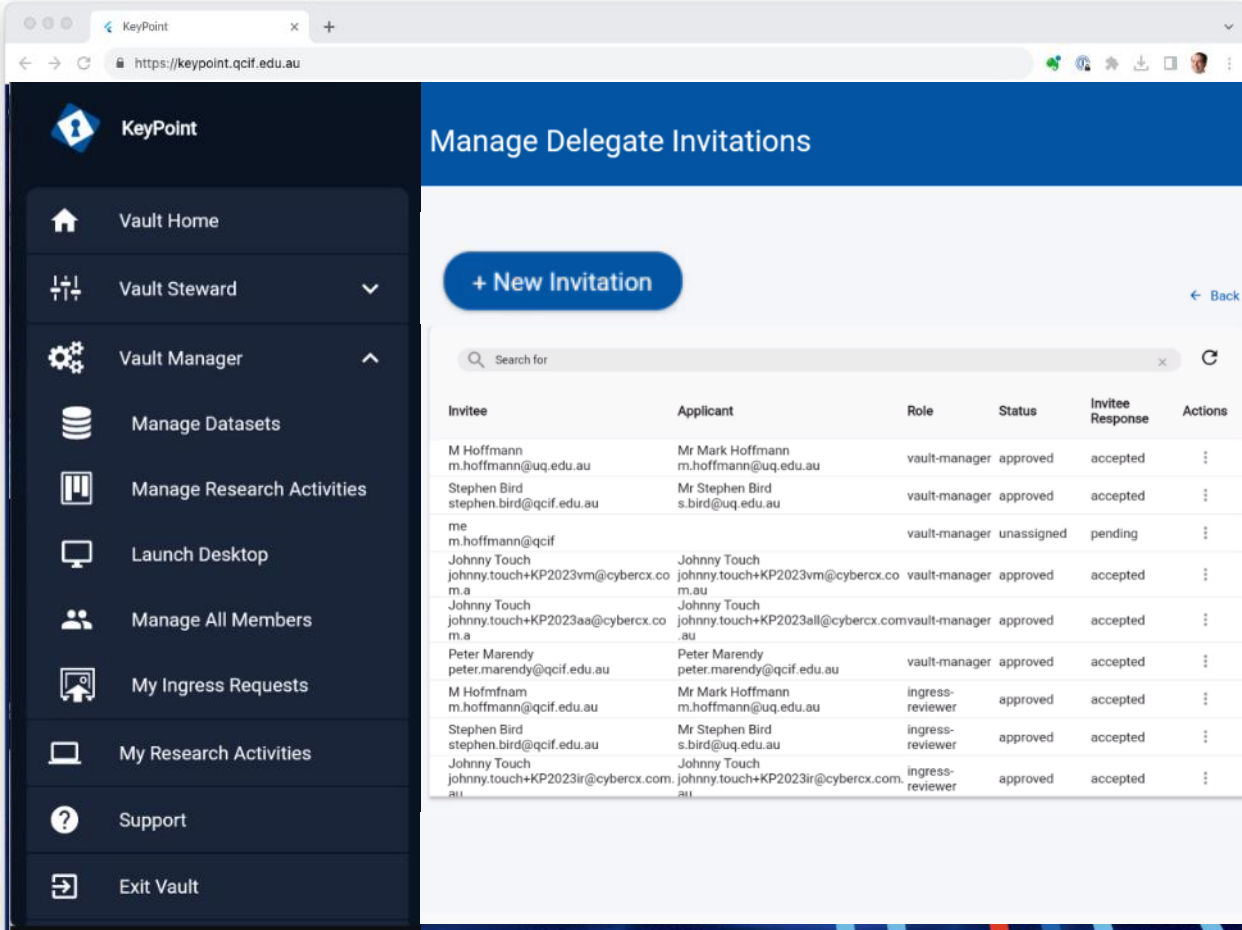
- Restricted access via VPN (even internally)
- Remote desktop access
- No printing, copy/paste, or access to internet/email

## Pre-installed suite of software available

- Customisable to the project and user
- Office/Excel, STATA, R, Python, SPSS and SAS
- Ability to request R packages

## High-powered computing

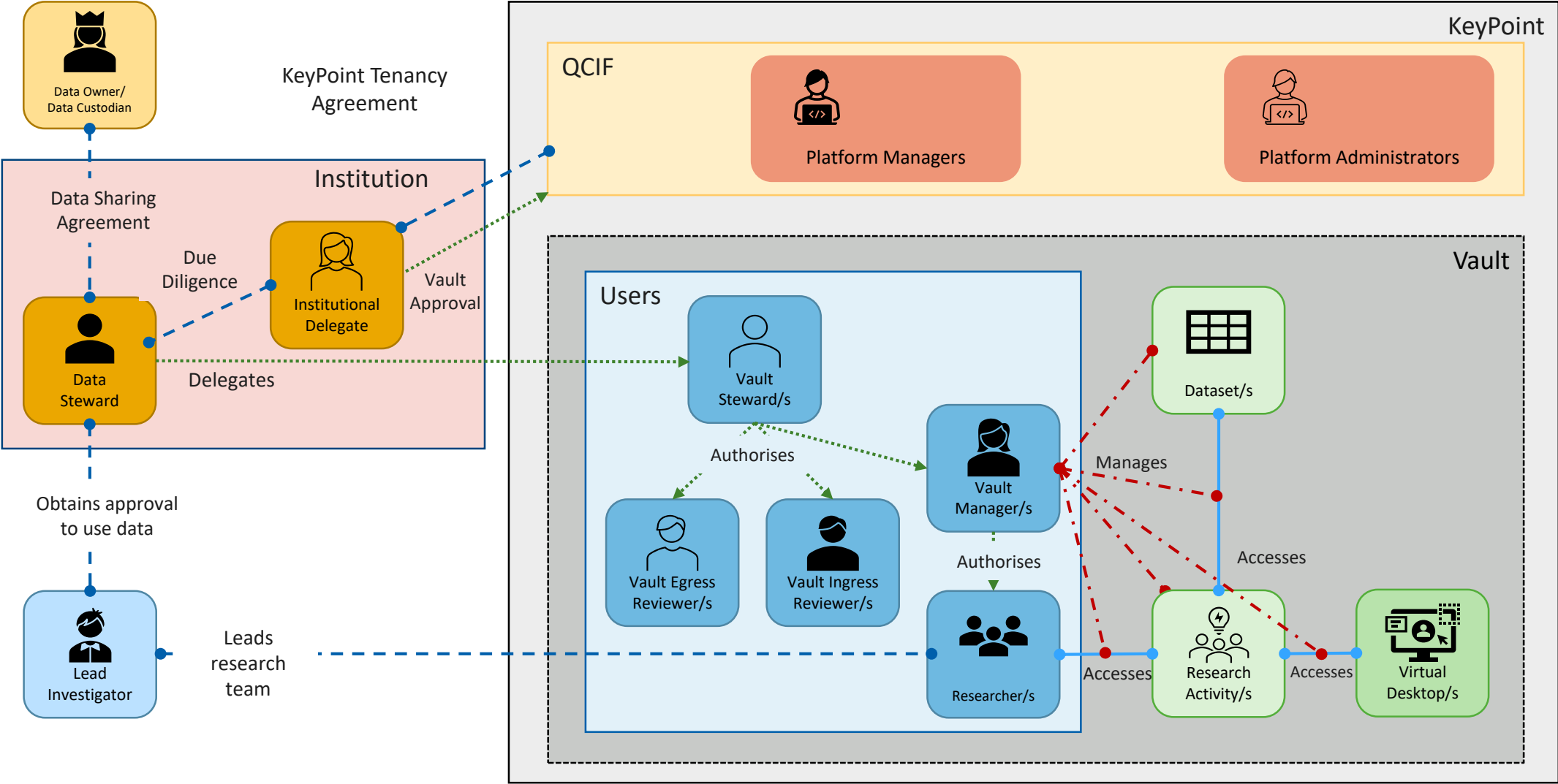
- Various flavours Windows Virtual Machines (VDI)
- High memory and GPU nodes



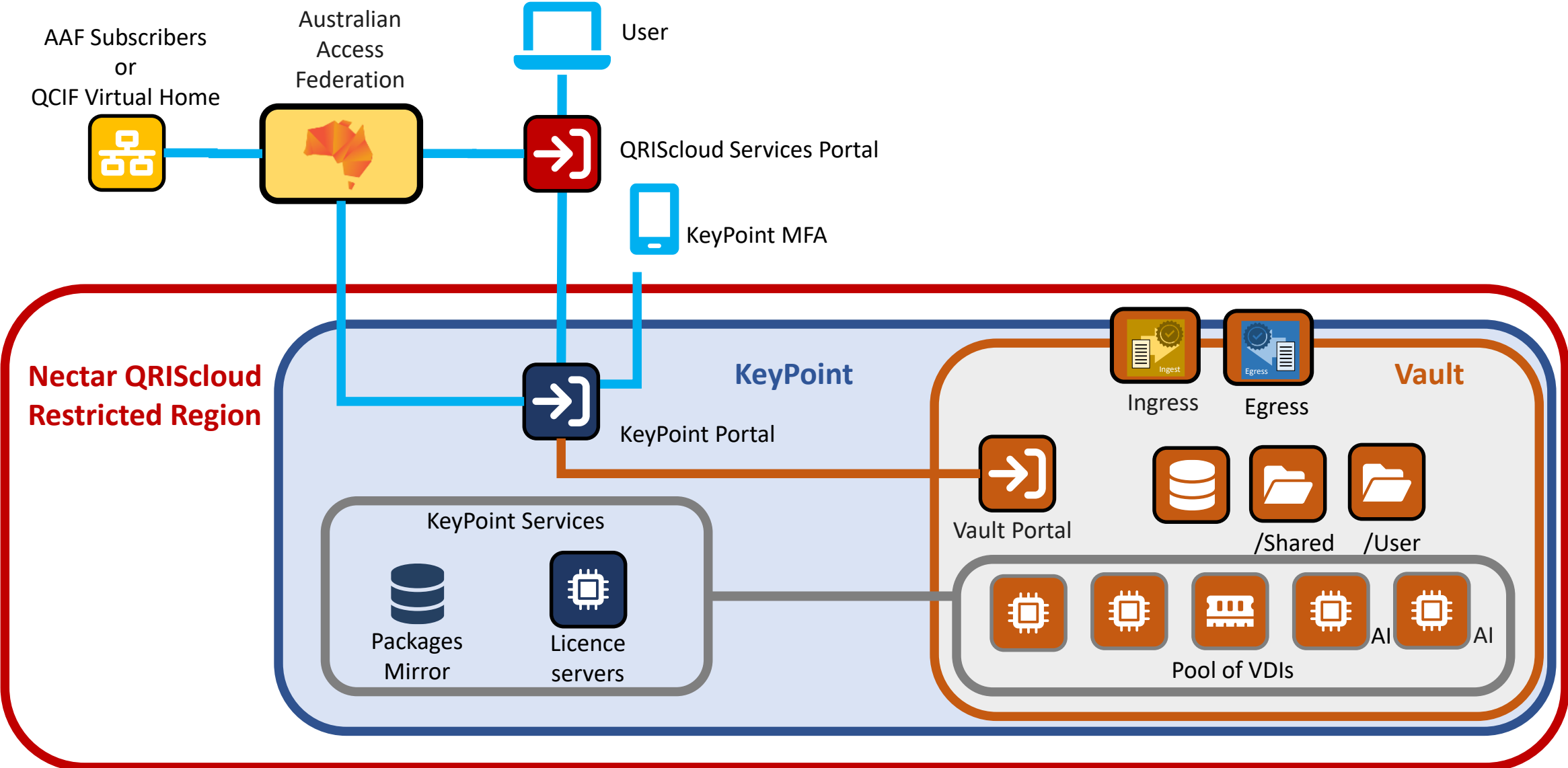
The screenshot shows the KeyPoint web interface. The browser address bar displays <https://keypoint.qcif.edu.au>. The page title is "Manage Delegate Invitations". A sidebar on the left contains the following navigation items: Vault Home, Vault Steward, Vault Manager, Manage Datasets, Manage Research Activities, Launch Desktop, Manage All Members, My Ingress Requests, My Research Activities, Support, and Exit Vault. The main content area features a "+ New Invitation" button and a search bar. Below the search bar is a table of invitations.

Invitee	Applicant	Role	Status	Invitee Response	Actions
M Hoffmann m.hoffmann@uq.edu.au	Mr Mark Hoffmann m.hoffmann@uq.edu.au	vault-manager	approved	accepted	⋮
Stephen Bird stephen.bird@qcif.edu.au	Mr Stephen Bird s.bird@uq.edu.au	vault-manager	approved	accepted	⋮
me m.hoffmann@qcif		vault-manager	unassigned	pending	⋮
Johnny Touch johnny.touch+KP2023vm@cybercx.com.au	Johnny Touch johnny.touch+KP2023vm@cybercx.com.au	vault-manager	approved	accepted	⋮
Johnny Touch johnny.touch+KP2023aa@cybercx.com.au	Johnny Touch johnny.touch+KP2023all@cybercx.com.au	vault-manager	approved	accepted	⋮
Peter Marendy peter.marendy@qcif.edu.au	Peter Marendy peter.marendy@qcif.edu.au	vault-manager	approved	accepted	⋮
M Hoffmann m.hoffmann@qcif.edu.au	Mr Mark Hoffmann m.hoffmann@uq.edu.au	ingress-reviewer	approved	accepted	⋮
Stephen Bird stephen.bird@qcif.edu.au	Mr Stephen Bird s.bird@uq.edu.au	ingress-reviewer	approved	accepted	⋮
Johnny Touch johnny.touch+KP2023ir@cybercx.com.au	Johnny Touch johnny.touch+KP2023ir@cybercx.com.au	ingress-reviewer	approved	accepted	⋮

# Safe, secure, and scalable

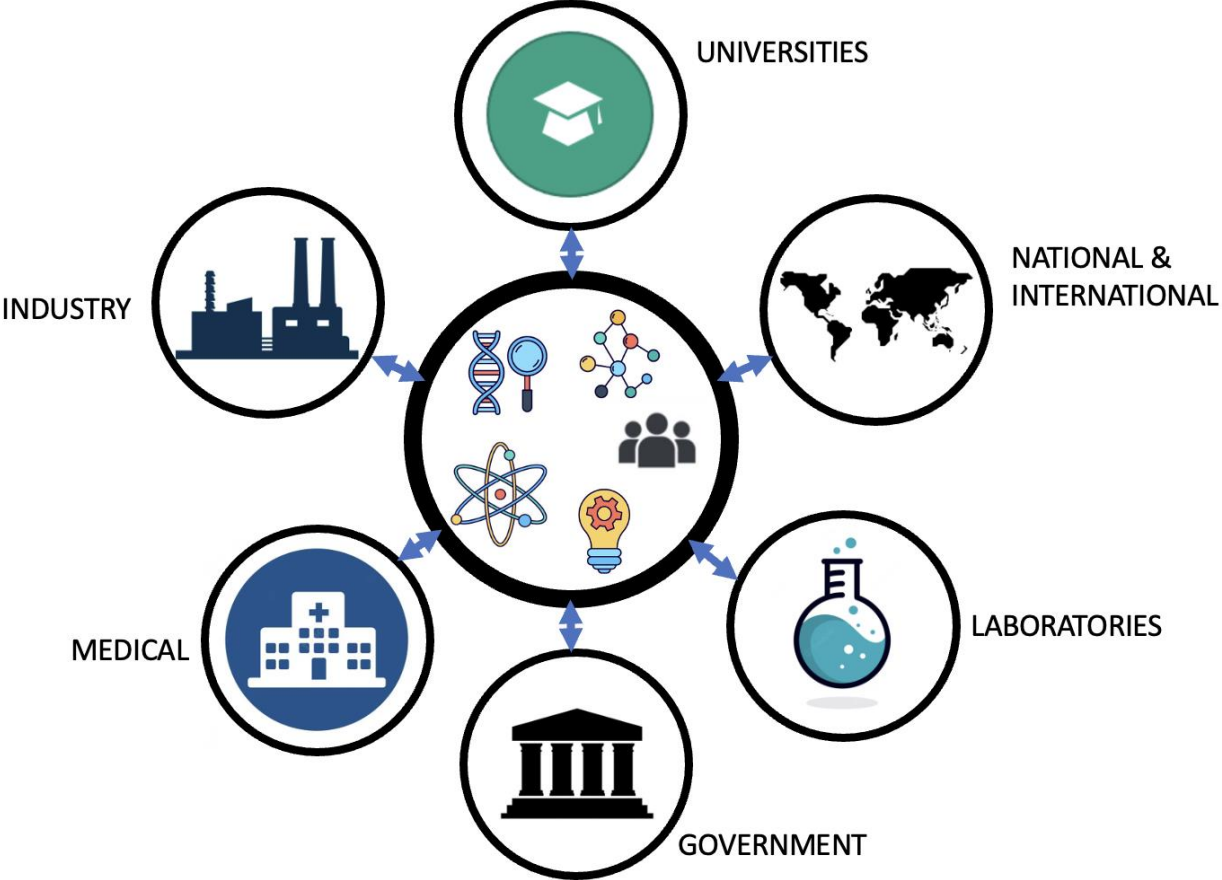


# System architecture

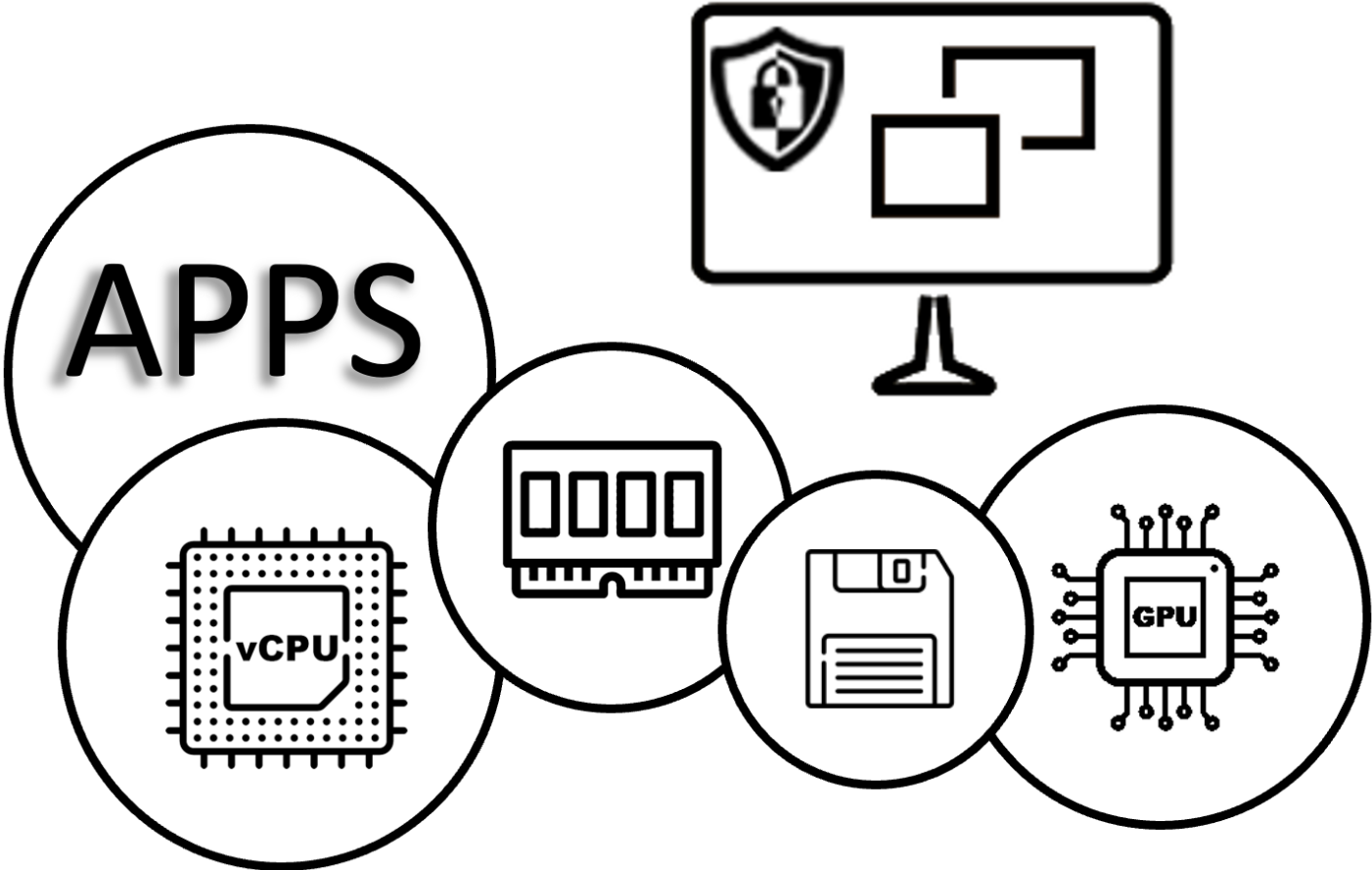




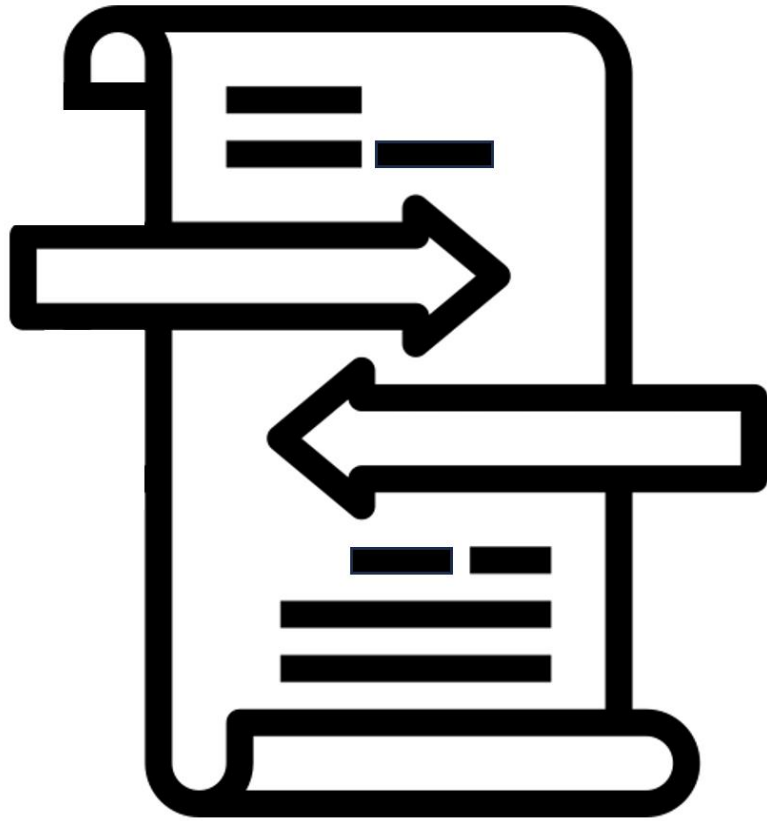
# External collaboration



# Customisable desktops and applications



# Auditing of events



# Progress since launch



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Onboarding established projects,

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Planning the onboarding of projects with approved grants,

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Participating in several grant applications,

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Fielding many enquiries for potential new projects,

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Collating new feature requests and user stories,

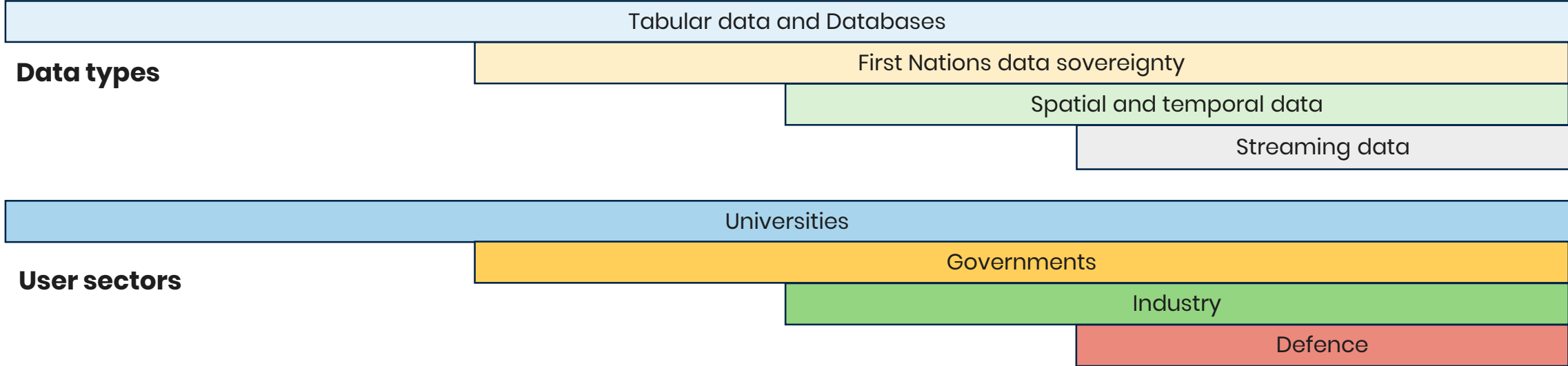
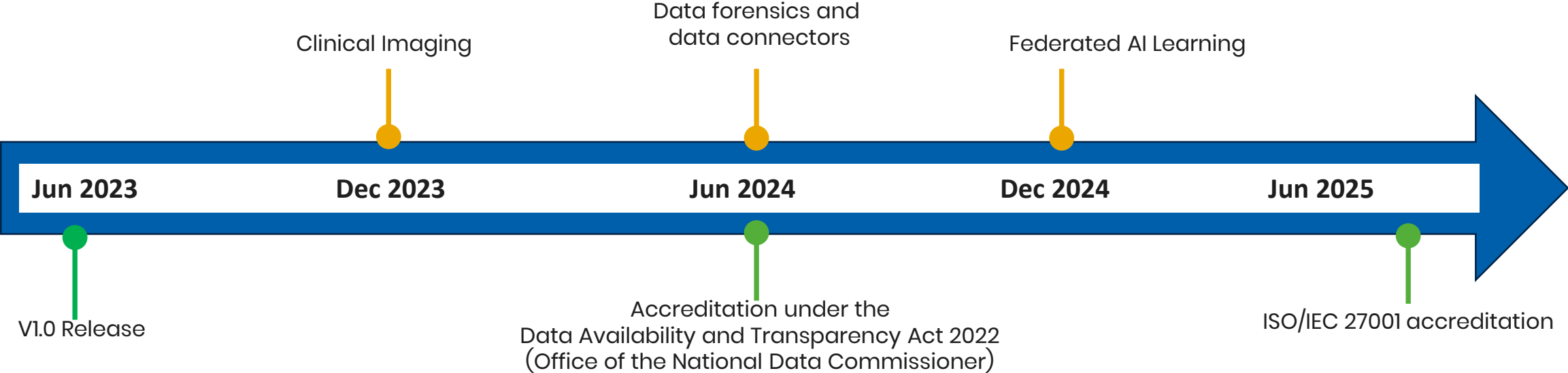
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Scoping for new data connectors, and

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Successfully completing break-out and penetration testing.

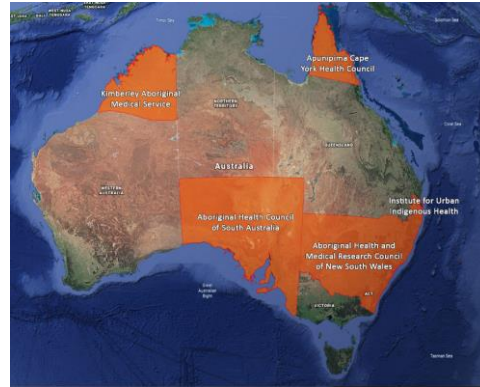
# Roadmap



# Meeting user needs



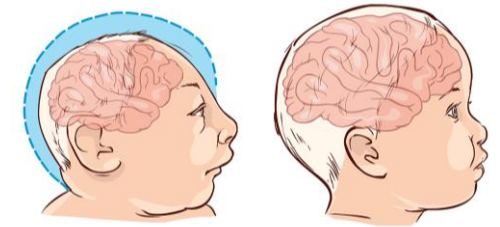
Aged Care Data Compare



First nations surveillance network for STIs and blood borne viruses



Global Drug Survey: Mitigating the harms of drug use



Fetal Alcohol Spectrum Disorder: Adapting treatment and increasing service accessibility



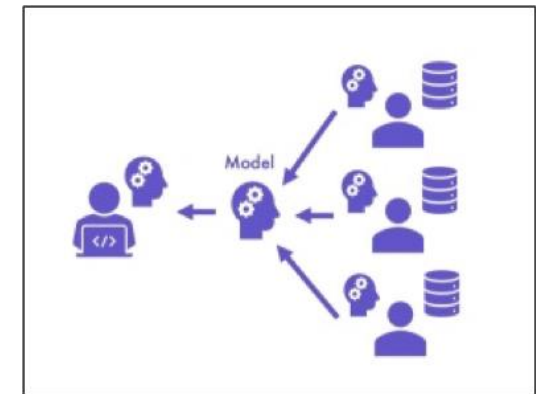
Next-generation skin cancer diagnosis



Australian Longitudinal Study on Women's Health



DIFFERENCE: Digital Infrastructure For improving First Nations matERNal and Child hEalth



NINA: National Infrastructure for Federated Learning in Digital Health

# Future industry is data-driven

- We need solutions that are safe and scalable
- Consumers will not feel comfortable sharing their data unless we have trusted software solutions
- Our economy depends upon the data driven revolution
- KeyPoint underpins safety and trust and will drive economic progress

# Thank you



“We're proud to support KeyPoint, a national trusted research environment running on the ARDC Nectar Research Cloud, where sensitive data from all research domains can be securely governed and controlled.

**Rosie Hicks, CEO, Australian Research Data Commons**

It is expected that KeyPoint will underpin all future UQ research practices that involve sensitive data, contributing to long-term economic, social, and environmental sustainability, as well as national security and prosperity.”

**Prof. Paul Bonnington, Pro-Vice Chancellor – Research and Infrastructure – University of Queensland**

“KeyPoint is a true game changer for how academics work with and share sensitive data on a global scale.”

**Prof. Jason Ferris, Director Research and Statistical Support – University of Queensland – Hosting Global Drug Survey on KeyPoint**

“The architecture that QCIF has created in KeyPoint is a pluggable approach to support a myriad of different research pipelines, simultaneously providing secure and assured connectivity back to UQ's research data storage infrastructure.”

**Mr. Jake Carroll, CTO Research Computing Centre – University of Queensland**

“We are on the cusp of exciting change, creating the platforms and systems to truly transform how healthcare will be delivered in future.”

**A/Prof. Clair Sullivan, Director Queensland Digital Health Centre (QDHeC) – University of Queensland**



# Thank you

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