

Community Governed Infrastructure

A National Infrastructure for Data and Data-Intensive Research

OPEN ACCESS EVENT

22 October 2024

Sthembiso Mkhwanazi

A national initiative of the Department of Science
and Innovation and implemented by the CSIR



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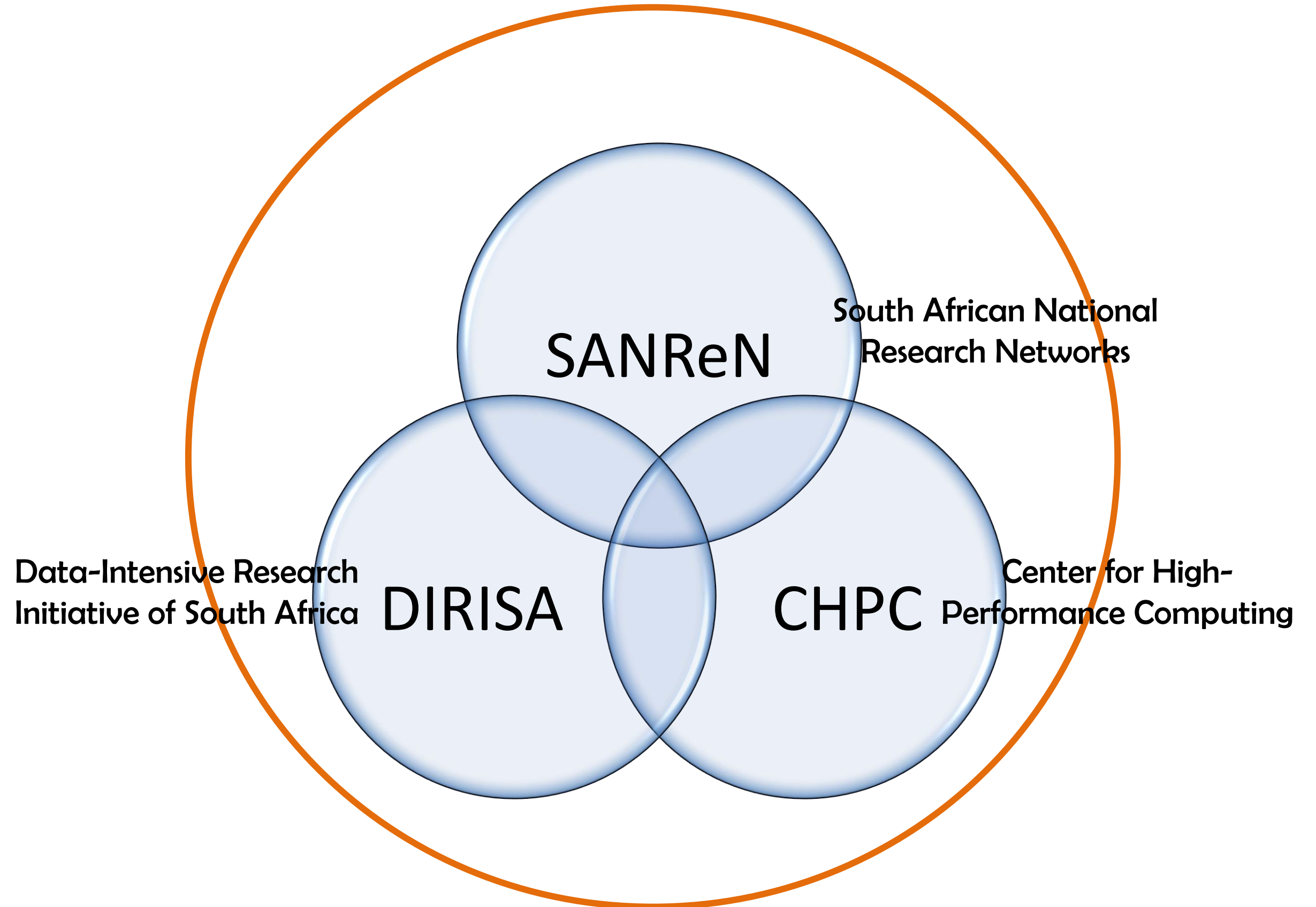


Scope

- NICIS Overview**
- DIRISA Objectives**
- Infrastructure Highlight**
- Access DIRISA Services - SSO**
- DIRISA Services**
- HCD Initiatives**
- Upcoming Events**
- Concluding Remarks**

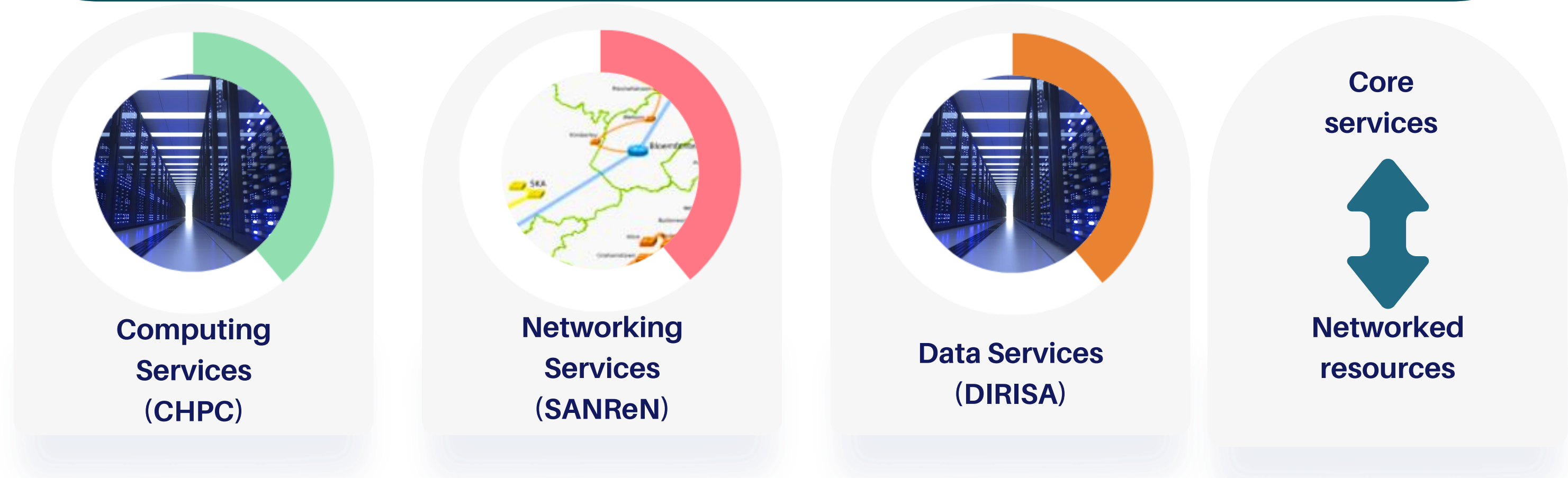
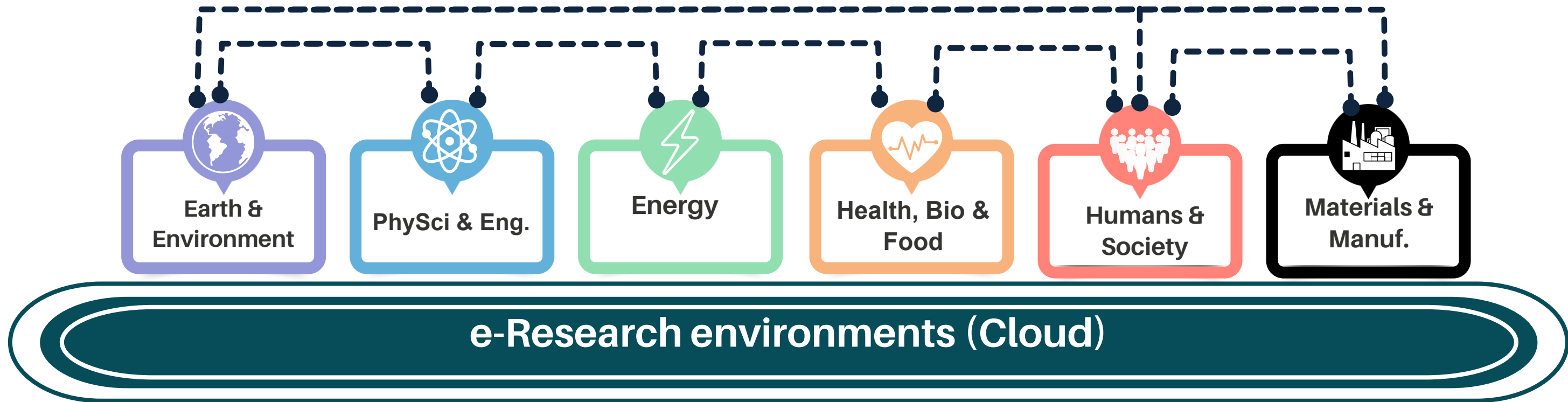
National Integrated Cyberinfrastructure System (NICIS)

NICIS Overview

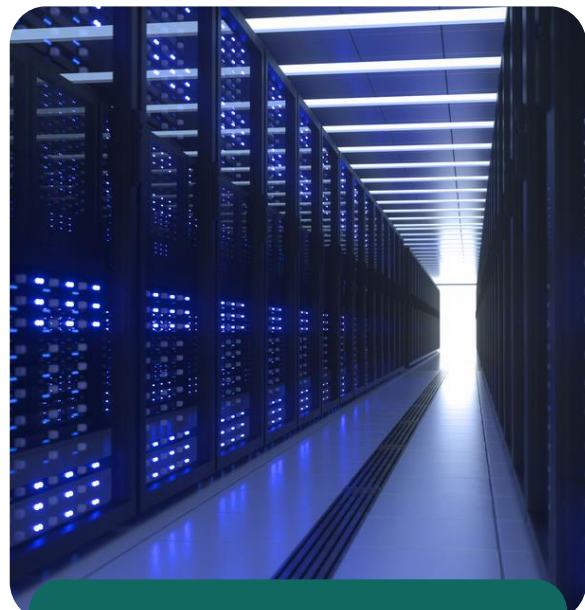


National Integrated Cyberinfrastructure System (NICIS)

Skills & expertise

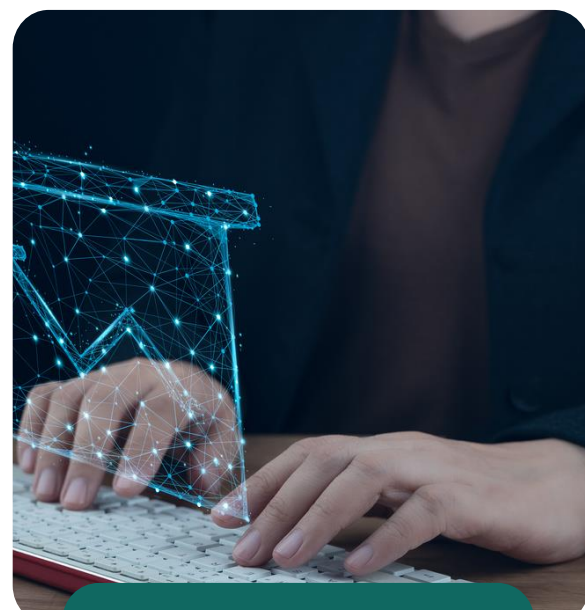


DIRISA Strategic Objectives



National Research Data Infrastructure

- Research Data Repository
- Long Term Archiving



Research data management

- SA DMP tool
- Data Share
- Data Deposit
- DOI Service
- Policies and standards



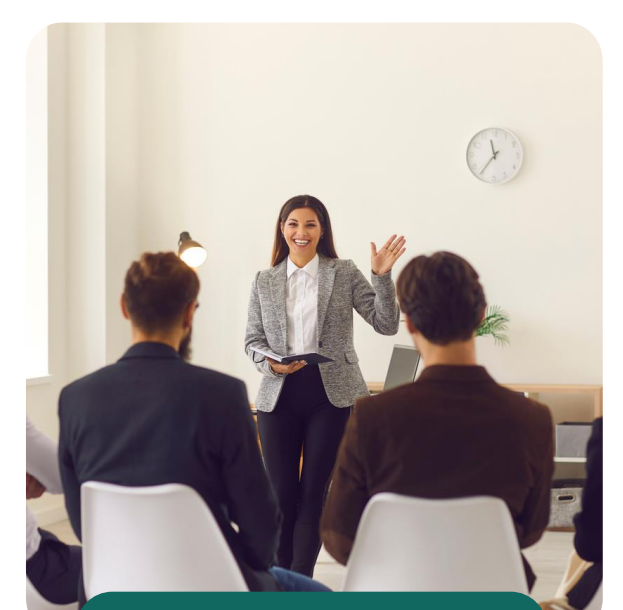
Advocate and coordinate

- Stakeholder engagements
- Conferences
- Workshops



Develop human capital

- E-Science Masters
- Student Datathon Challenge
- Coding School

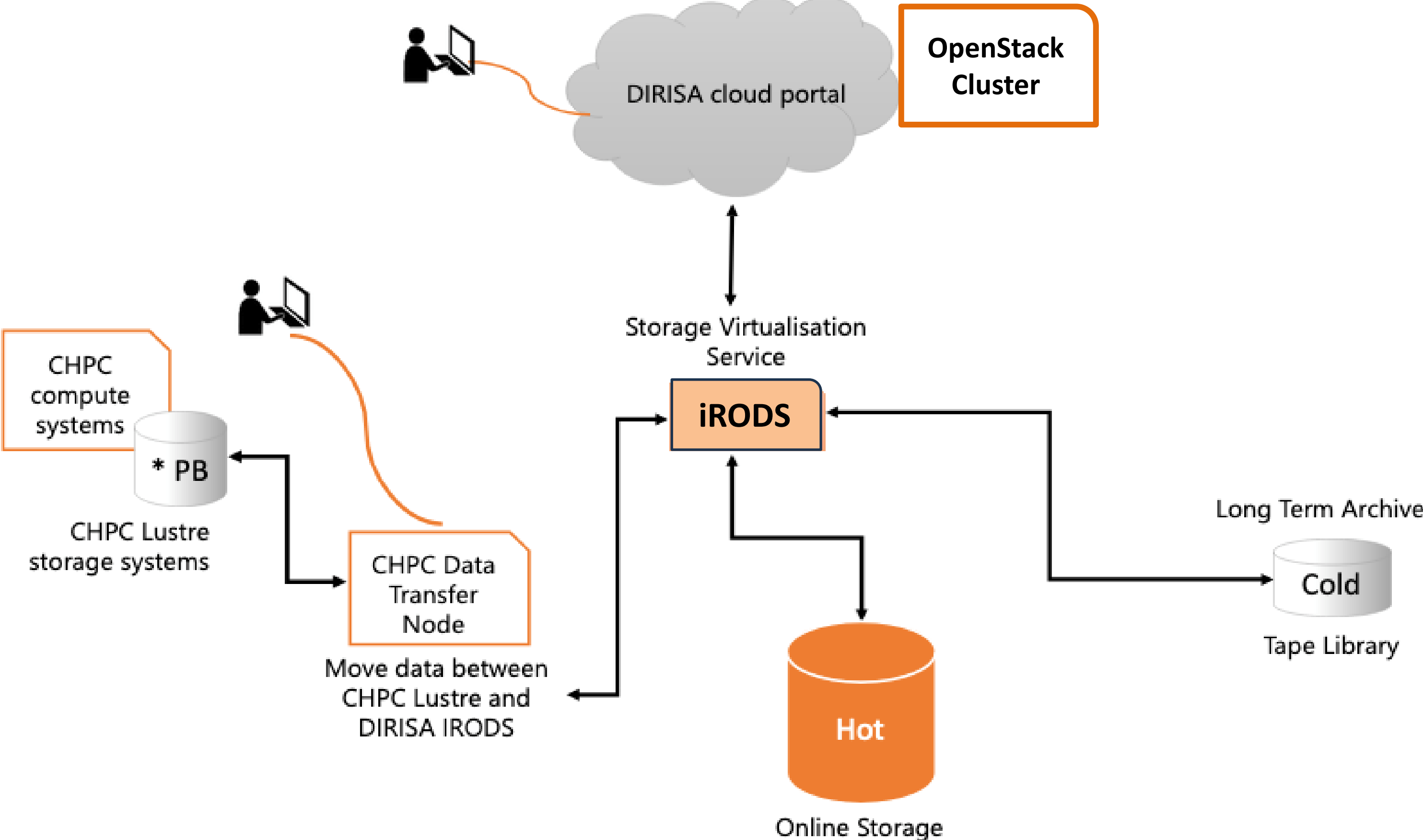


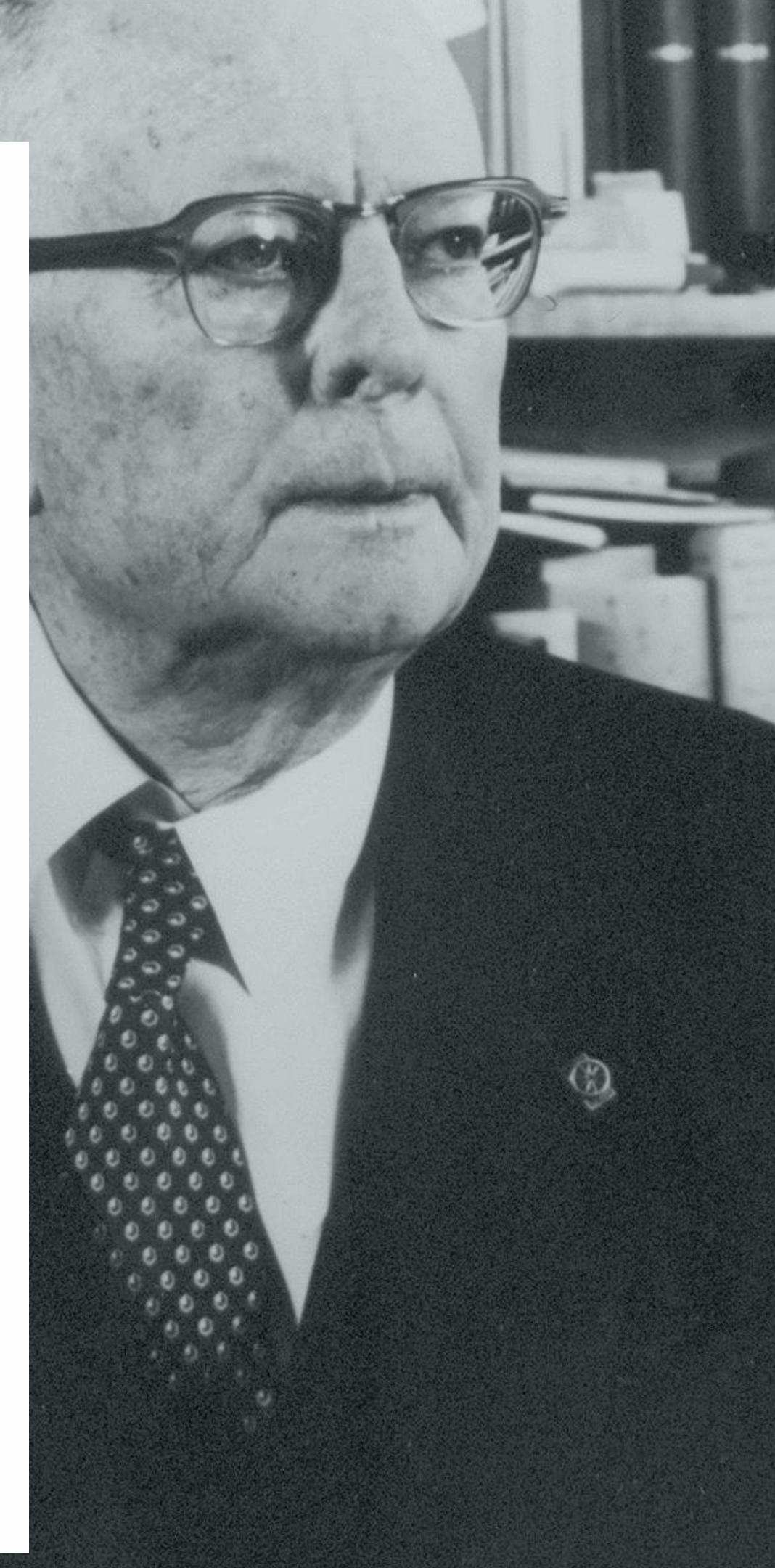
Thought leadership

- Big data strategy
- African Open Science Platform
- e-Science Framework

National Research Data Infrastructure

Hot Storage: ~ 8PB
Cold Storage: ~ 20PB





“Without data, you're just another person with an opinion.”

W. EDWARDS DEMING.

Access to DIRISA Services

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What is SSO?



SSO is an identification method that enables users to log in to multiple applications and websites with one set of credentials



DIRISA Services



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SA DMP Tool




Online

Data Deposit Tool




Online

Storage Request



Online

Data Identifier



Online

<https://service.dirisa.ac.za/>

DIRISA Wiki

Ask Question

My Dashboard

Welcome

You are now ready to create your first Data Management Plan (DMP).
Click on the 'Create Plan' button below to begin.

Create Plan

Create New Plan

Plan title:	What research project are you planning:				
<input type="text" value="Plan Title"/>	<input type="text" value="Project Name"/>				
Plan description:	Project Description:				
<input type="text" value="Plan Description"/>	<input type="text" value="Project Description"/>				
Grant Reference Number:	Project Number:				
<input type="text" value="Grant Number"/>	<input type="text" value="Project Number"/>				
Researcher(s) Information:					
<input type="text" value="Name and Surname"/>	<input type="text" value="Email"/>	<input type="text" value="Cape Peninsul"/>	<input type="text" value="Orcid"/>	<input type="text" value="Primary Researcher"/>	<input type="button" value="+"/>
Funders: (If you select Other, please provide the funder name when completing your plan)					
<input type="text" value="Council for Scientific and Industrial Research
National Research Foundation
Other"/>					
Which template do you want to use for the data management plan?					
<input type="text" value="NRF Template"/>					
Availability:					
<input type="text" value="Public"/>					

[Back](#)

Data Deposit Tool (DDT)

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SA DMP Tool




Online

Data Deposit Tool




Online

Storage Request



Online

Data Identifier



Online

<https://service.dirisa.ac.za/>

DIRISA Wiki
Ask Question



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- Collections
- Search
- Shared Links
- Favorites
- Trash

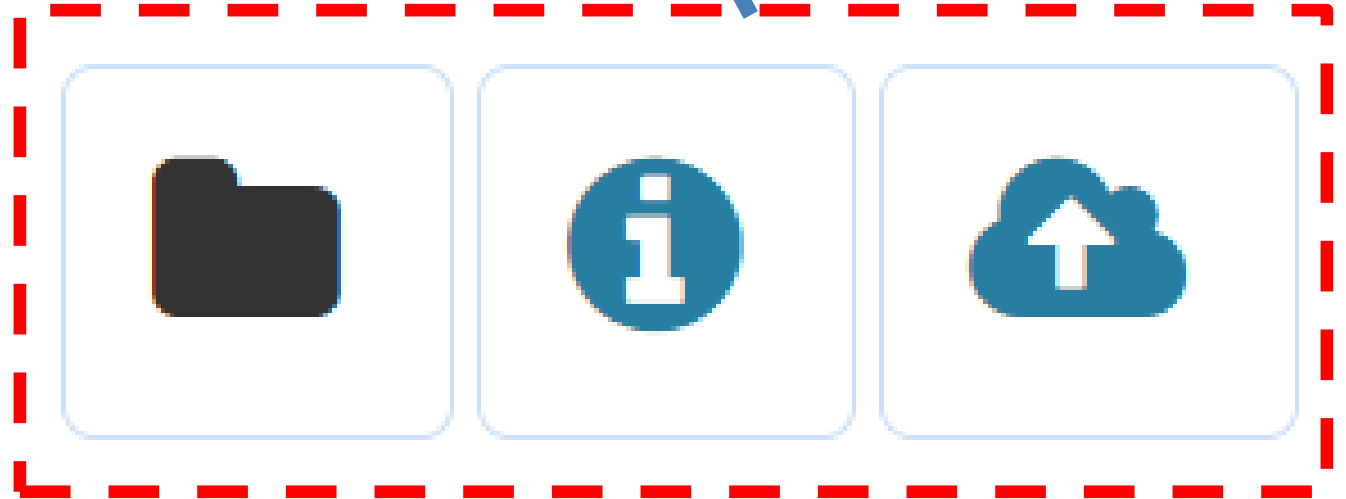
dirisa.ac.za » home » smkhwanazi@csir.co.za

Navigation Tools

Action

Showing 0 to 0 of 0 entries

<input type="checkbox"/>	Name	Modified	Size	Action
<input type="checkbox"/>	Studies	Aug 07 2024 09:53	-	View Info



Add Collection	View Info	Upload Files to iRODS
----------------	-----------	-----------------------

Space Offered
 DIRISA offers you **100GB** storage for free.
 If you need more storage contact DIRISA at:
 ✉ dirisa@csir.co.za



smkhwanazi@csir.co.za

Collections

Search

Shared Links

Favorites

Trash

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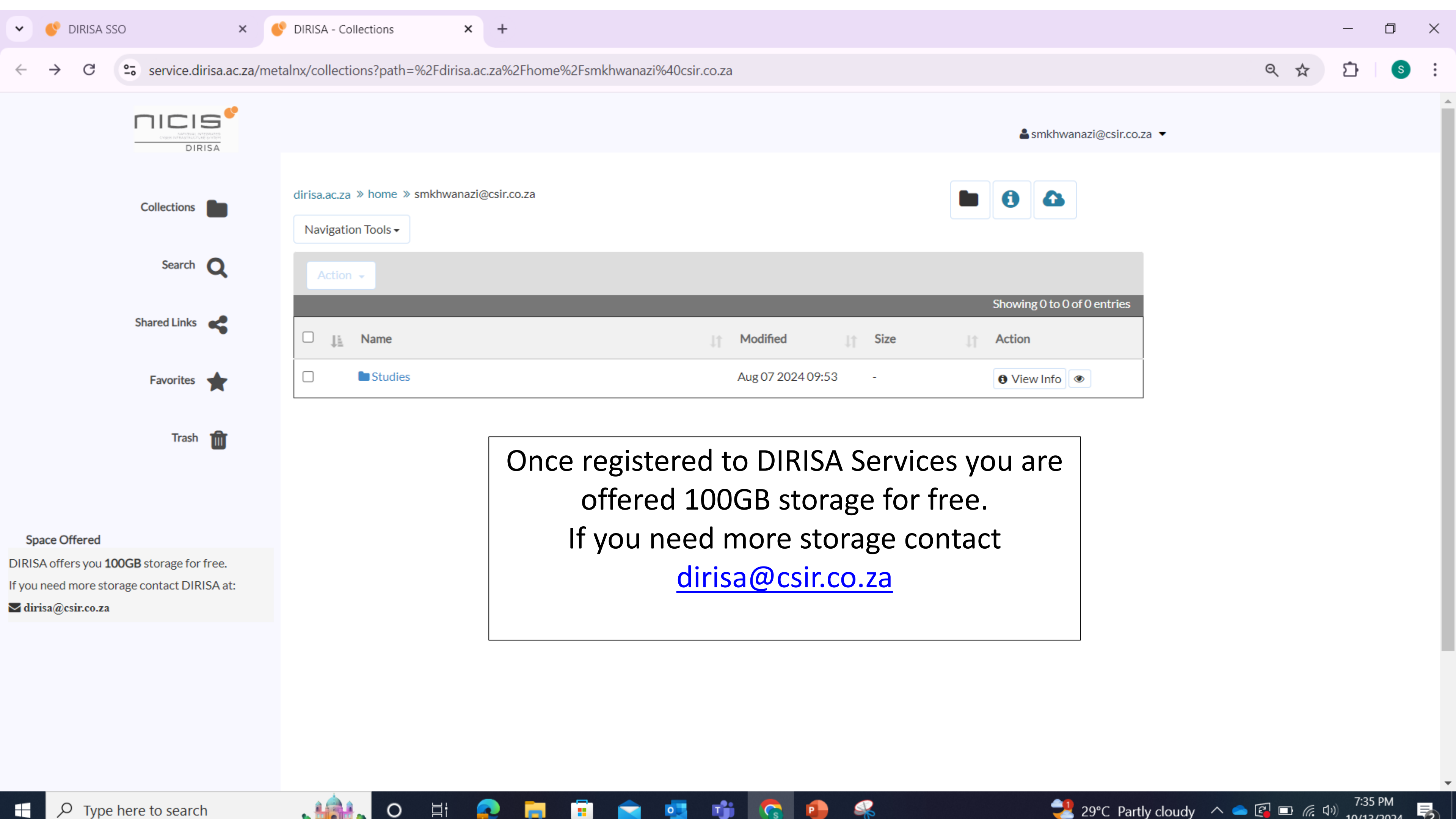
Navigation Tools

Action

- Move
- Copy
- Rename
- Download
- Delete

Showing 0 to 0 of 0 entries

	Modified	Size	Action
	Aug 07 2024 0...	-	View Info



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Navigation Tools

Action

Showing 0 to 0 of 0 entries


<input type="checkbox"/>	↓↑ Name	↑↓ Modified	↑↓ Size	↑↓ Action
<input type="checkbox"/>	Studies	Aug 07 2024 09:53	-	View Info

Once registered to DIRISA Services you are offered 100GB storage for free. If you need more storage contact dirisa@csir.co.za

Space Offered


DIRISA offers you **100GB** storage for free. If you need more storage contact DIRISA at: dirisa@csir.co.za

SA DMP Tool




Online

Data Deposit Tool




Online

Storage Request



Online

Data Identifier



Online

<https://service.dirisa.ac.za/>

DIRISA Wiki

Ask Question



Menu

Sthembiso Mkhwanazi
smkhwanazi@csir.co.za

Storage Request

Request for disk storage from DIRISA

Type Of Storage

Select Storage Type

- Data Deposit Tool (DDT)
- Long Term Archive (LTA)

Submit Request

Cancel

DIRISA Wiki

Ask Question



What is the plan for data retirement?

**Retirement Data Plan required*

What is the plan for data preservation?

**Data Preservation required*

NB: Please ensure that you have completed a DMP and marked it as public, as part of your motivation. Please share the title of the DMP to ensure that the storage request approver can find and review it.

Motivation

0 Characters (Min 10 Characters and Max Characters 3500)

**More descriptive motivation required*

Fill In Amounts

Requested Amount: GB/TB

**Requested Amount required* **GB/TB required* **Storage Period in Month required*

Data Ownership

Is there intellectual property (IP) related to data?

**Intellectual Property indication required*



Storage Request

Request for disk storage from DIRISA

Type Of Storage

Select Storage Type
Long Term Archive (LTA)

Primary Custodian
Information of Primary Custodian

First Name:

Last Name:

Email:

Institution:

Division/Department:

Phone Number:

**Division/Department required*
**Primary Custodian Phone Number required*

Secondary Custodian
Information of Secondary Custodian

First Name:

Last Name:

Email:

Institution:

Division/Department:

Phone Number:

**Secondary Custodian name required*
**Secondary Custodian surname required*
**Secondary Custodian email required or invalid email entered*
**Secondary Custodian Institution required*
**Secondary Custodian Division/Department required*
**Secondary Custodian Phone Number required*

Project Description

0 Characters (Min 10 Characters and Max Characters 2500)
**More descriptive of Project Description required*

NOTE: Please ensure that you have completed a DMP and marked it as public, as part of your motivation. Please share the title of the DMP to ensure that the storage request approver can find and review it.

Motivation

0 Characters (Min 10 Characters and Max Characters 2500)
**More descriptive motivation required*

Data Description

0 Characters (Min 10 Characters and Max Characters 2500)
**Data Description required*

Fill In Amounts

Requested Amount: GB/TS Select Years/Period for storage:

**Requested Amount required* **GB/TS required* **Storage Period in Years required*

Data Ownership

Is there Intellectual property (IP) related to data?

**Intellectual Property Indication required*

Digital Object Identifier (DOI)




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SA DMP Tool




Online

Data Deposit Tool




Online

Storage Request



Online

Data Identifier



Online

<https://service.dirisa.ac.za/>

DIRISA Wiki

Ask Question



Create DOI

Title	Handle URL	Resource Type	Created Date	Status	Action
Research Data	10.60577/4uhn-q531	Collection	2024-03-14 15:20:26.706	draft	Edit Publish Delete

HCD Initiatives



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DIRISA HCD INITIATIVES

01



High Schools

DIRISA Coding School

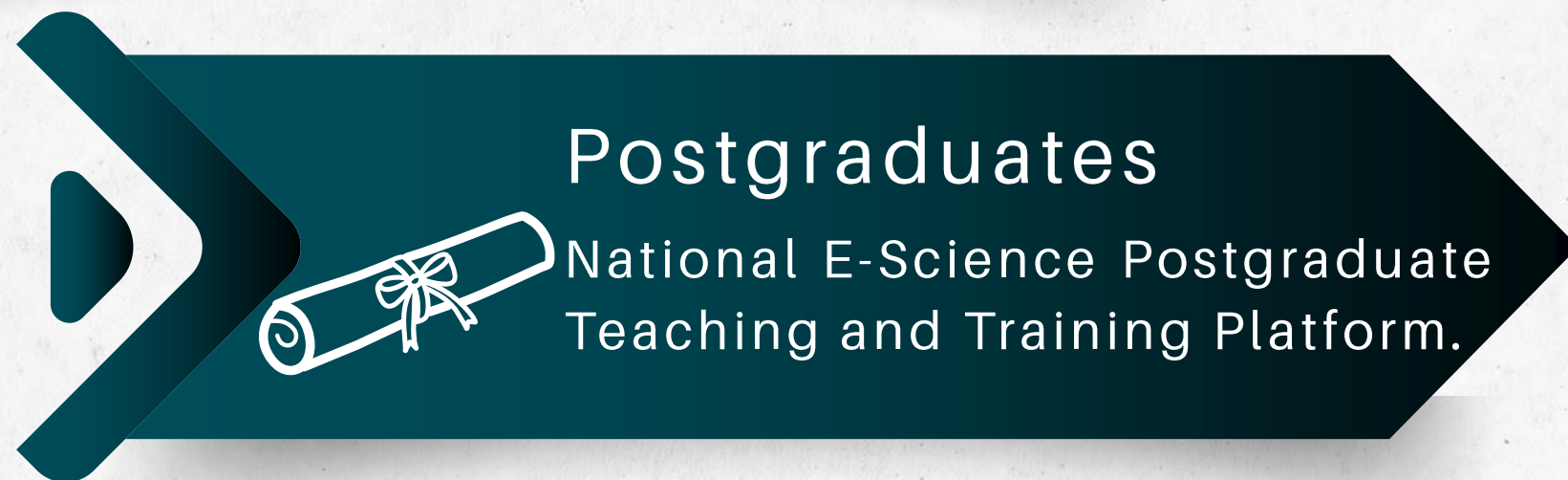
Undergraduates

DIRISA Student Datathon
Challenge.



02

03

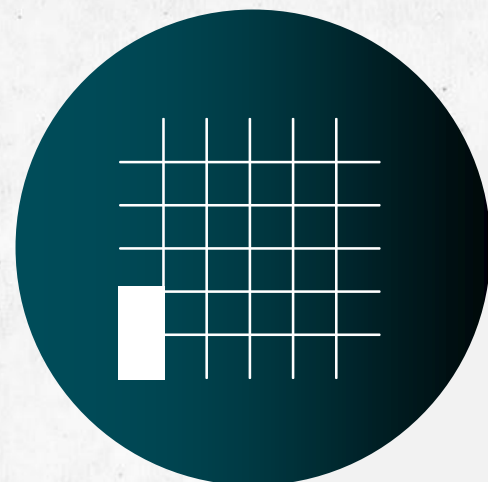


Postgraduates

National E-Science Postgraduate
Teaching and Training Platform.



DIRISA Coding School



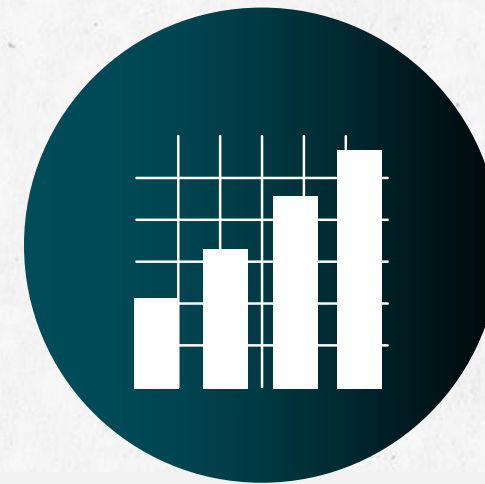
Established
in 2019



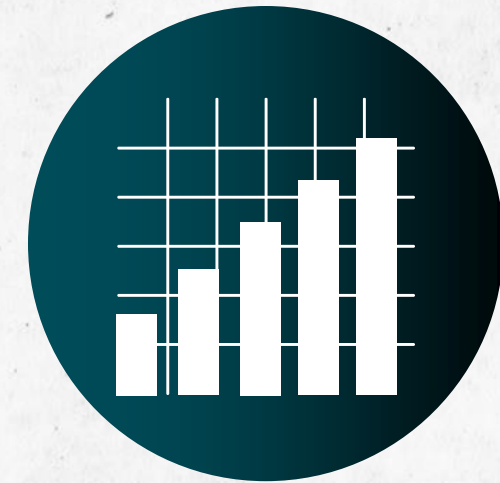
Grade 10 and
11



Adopt 2x schools a year
(Capacity limitations)

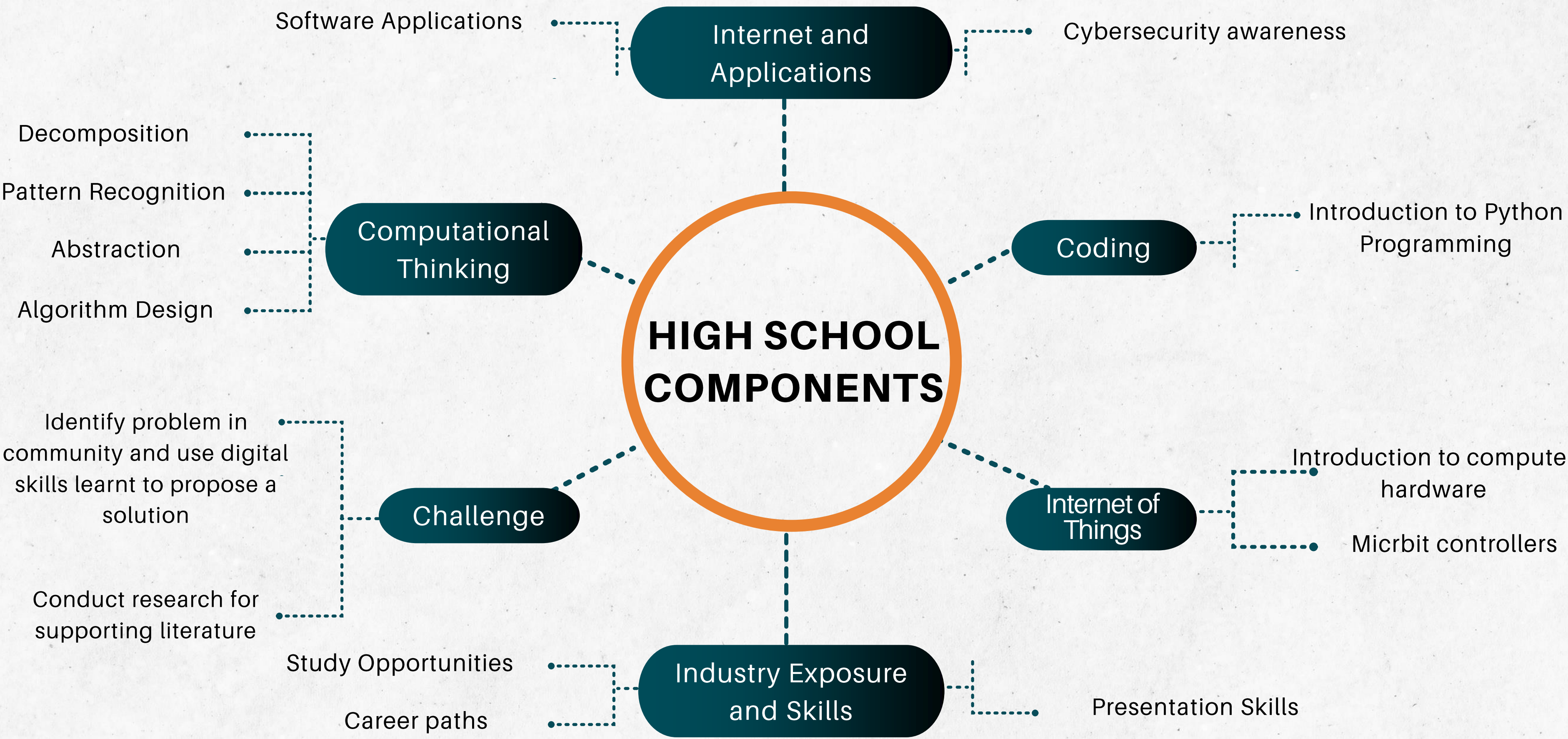


Mamelodi (2019, 2023),
Atteridgeville (2022)



2024 - KZN







DIRISA STUDENT DATATHON CHALLENGE

Launched in 2019

Showcase the use of Open Data to solve South African problems through South African solutions.

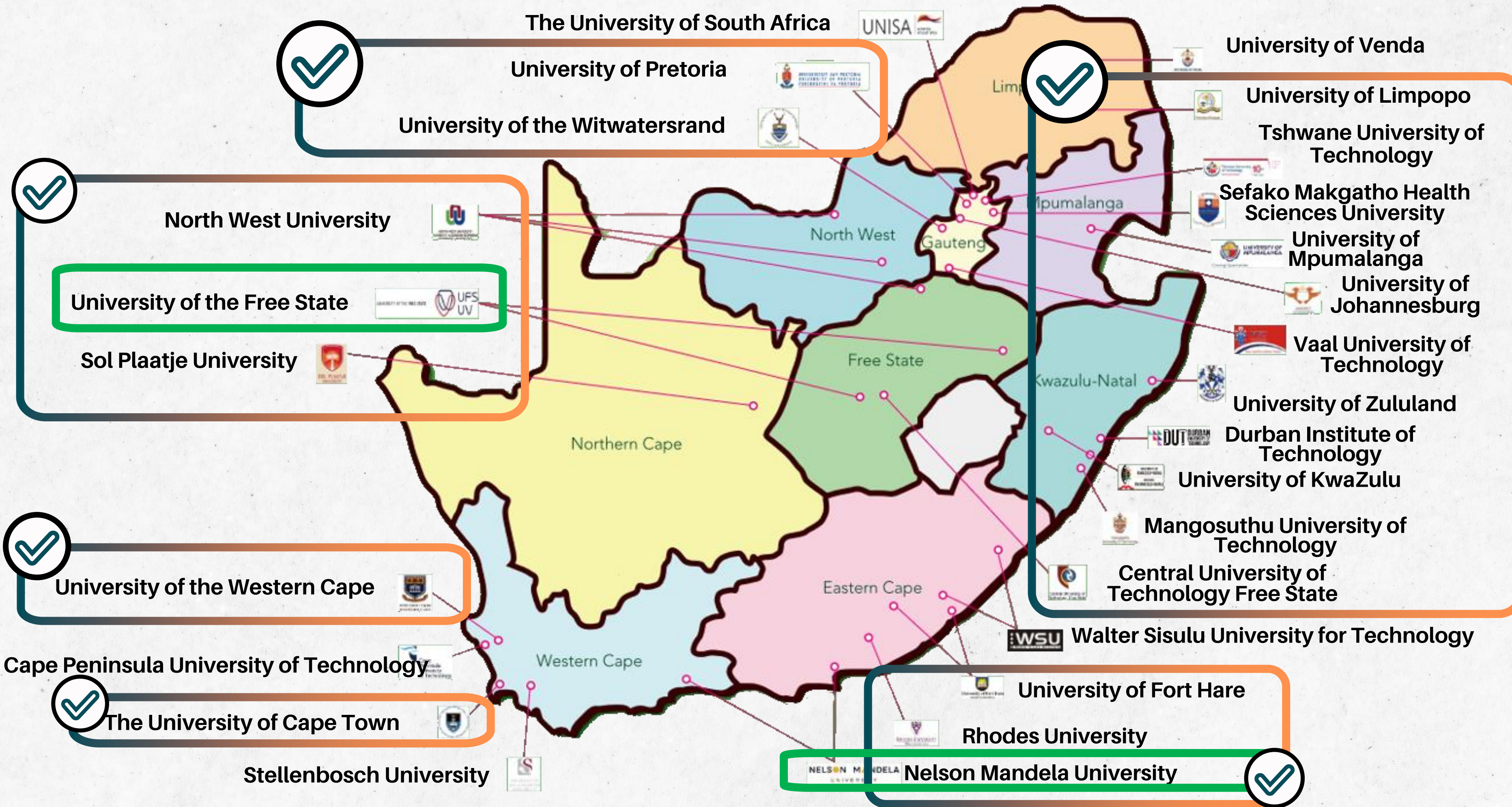
Promote data literacy skills

Undergraduate students

- **Universities and TVET colleges**
 - **Select participants from DIRISA Coding School**
-

Themes aligned to Sustainable Development Goals





National e-Science Postgraduate Teaching and Training Platform (NEPTTP)



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NATIONAL E-SCIENCE POSTGRADUATE TEACHING AND TRAINING PLATFORM (NEPTTP)

- Launched in 2017
- “Identified the need to establish a multi-institutional consortium in data science in South Africa. This platform exists to develop human capital, with the knowledge and skills to conduct cutting-edge research in the field of e-Science – in line with the South African Research Infrastructure Roadmap (SARIR), the Square Kilometre Array (SKA) and others” .

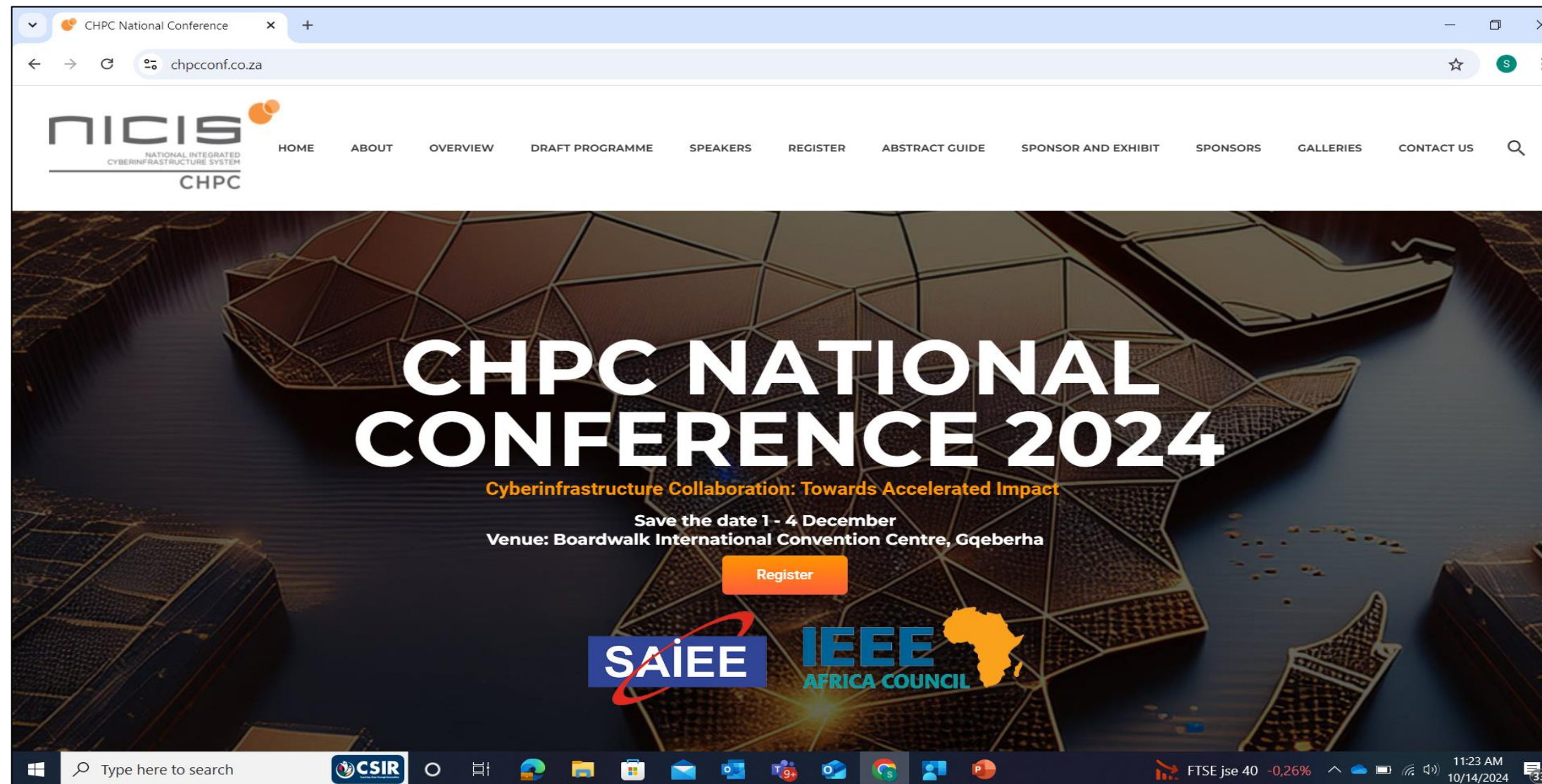


NATIONAL E-SCIENCE POSTGRADUATE TEACHING AND TRAINING PLATFORM (NEPTTP)

Six Universities:

- University of the Witwatersrand (Wits) Administrative Hub.
- Master of Science Degree: Sol Plaatje University (SPU), University of Limpopo (UL), University of Pretoria (UP), University of Venda (UniVen) and University of the Witwatersrand (Wits)
- Masters of Arts: Wits, North-West University (NWU)
- Since inception, 88 students completed their MA & MSc Degrees
- Publications: 15 journal articles, and 18 conference papers

Upcoming Events



❑ CHPC National Conference 2024 – Gqeberha (Port Elizabeth)

Broadwalk from 01 to 04 December 2024 - <https://chpcconf.co.za/>

- DIRISA Track 04 December 2024
- Student Datathon Challenge – 30 Nov to 04 December 2024

❑ IDW2027 – CTICC from 20 to 23 September 2027

Concluding Remarks

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Ongoing Study on Leveraging CI Resources to improve Socio-Economy

Aim of Study:

- Seek to assess the status of CI resources in SA and to propose a framework to breach identified gaps.

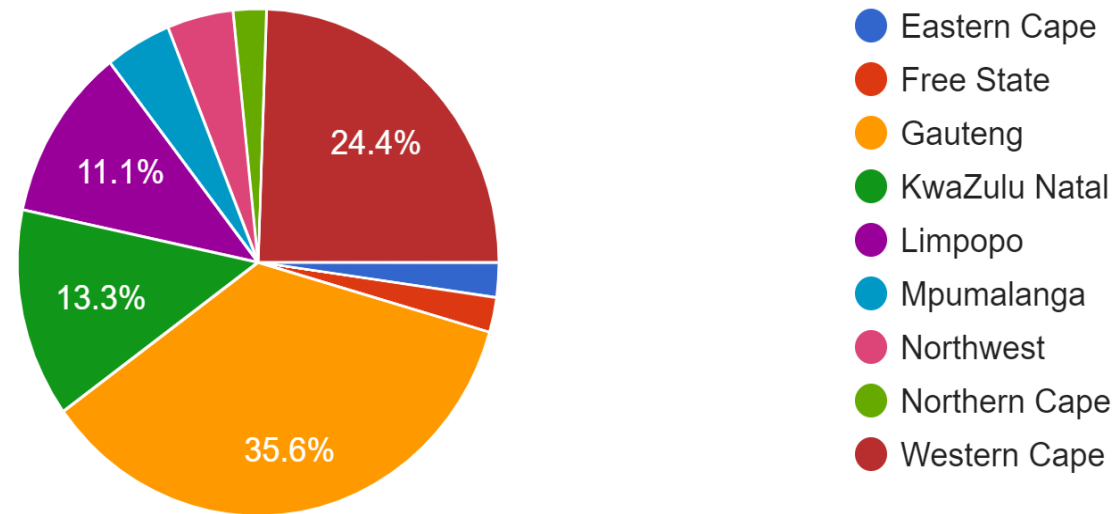
Research Problem:

- Lack of clear evidence regarding the leveraging of existing CI resources in South Africa, which is negatively affecting the country's socio-economic position.

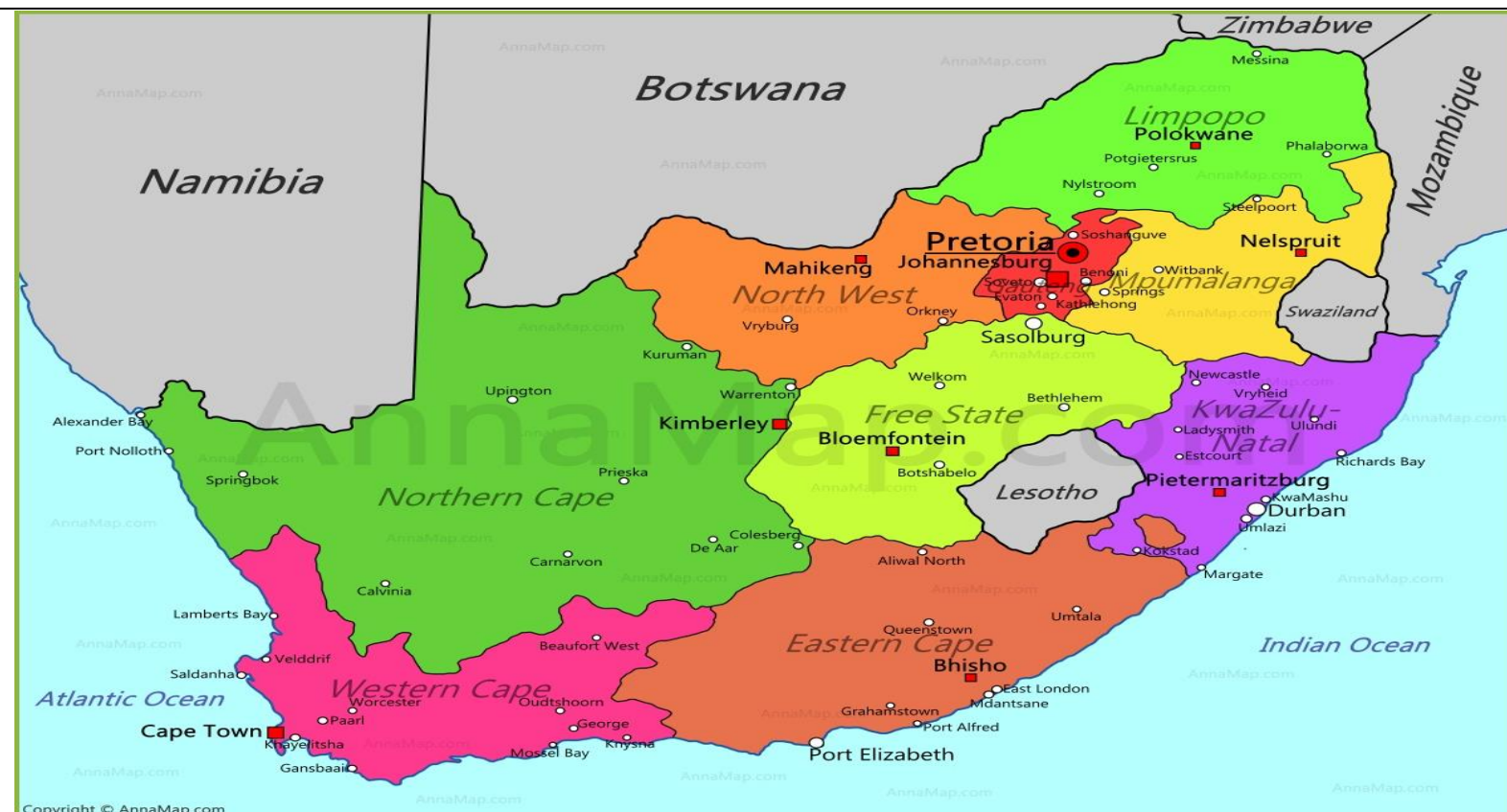
Location of Participants in SA

Section A: Biographic Information Question 1 In which region of South Africa are you currently based?

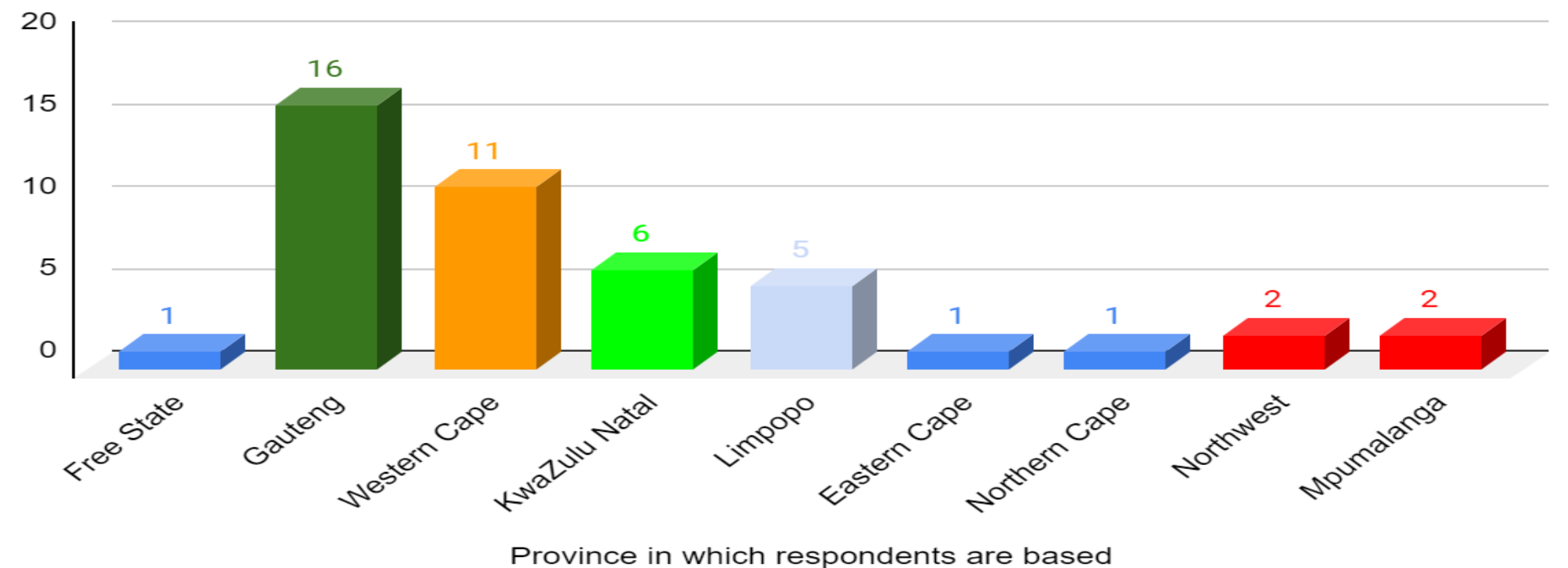
45 responses



- The distribution of responses indicates a clear concentration in South Africa's more economically developed and urbanized provinces, with Gauteng and the Western Cape having the highest representation.
- This aligns with their status as major economic hubs.
- NICIS infrastructure (data & computing resources) are located in GP and WC
- The lower representation from provinces like Mpumalanga, Northwest, Northern Cape, Eastern Cape, and Free State may reflect their relative economic and demographic characteristics.

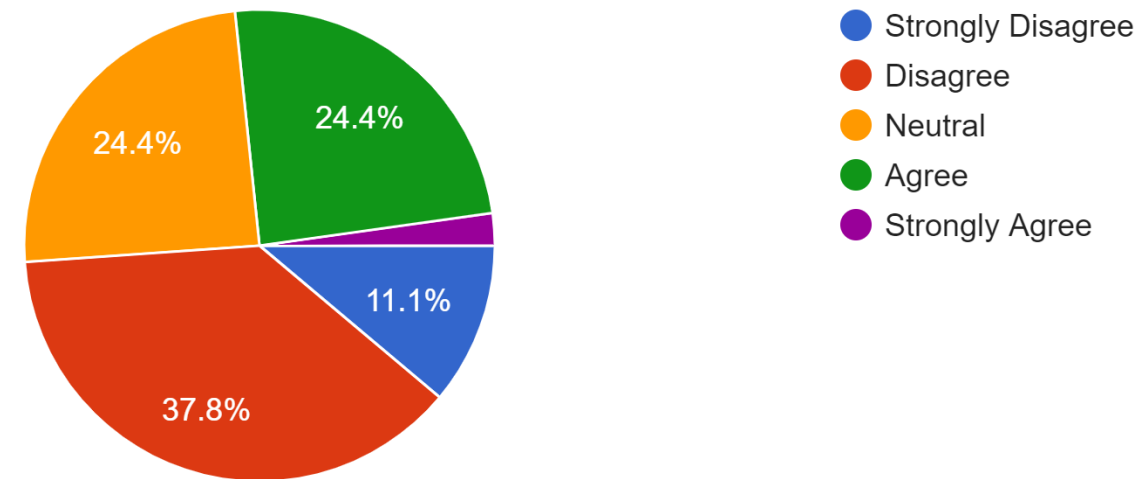


Section A: Biographic Information Question 1: Number of Respondents per province



Utilization of CI Resources in SA

SECTION B: Perceptions of Cyberinfrastructure (CI) Resource Usage and Socio-economic Benefits Question 3 To what extent do you agree ...ucture resource utilization in South Africa is high?
45 responses

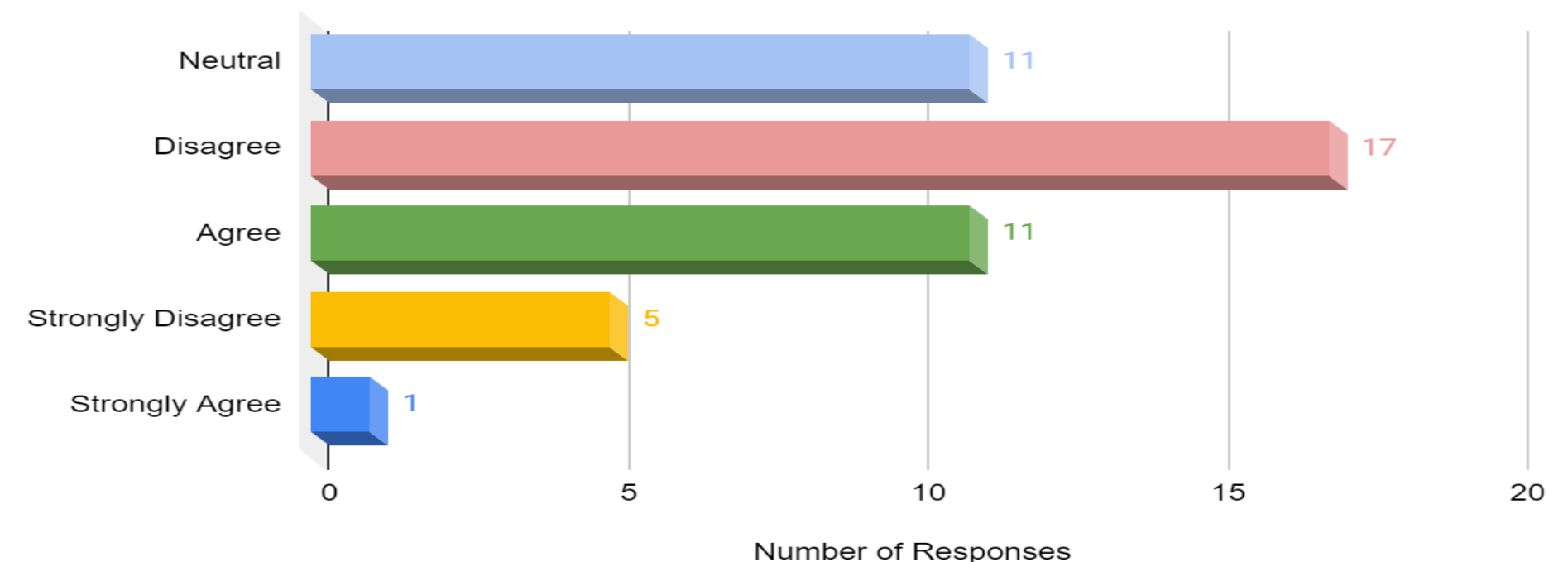


- **Critical Views:** The largest portion of respondents (37.8%) disagrees with the notion that utilization is high, and **11.1% strongly disagrees**, indicating significant concern about underutilization and potential inefficiencies.
- **Neutral Stance:** A substantial **24.4% are neutral**, reflecting uncertainty or lack of sufficient information, suggesting a need for more transparency and data.
- **Positive Views:** **24.4% agree** that utilization is high, though this is a minority view. Only 2.2% strongly agree, highlighting that the sentiment of high utilization is rare among respondents.



Source: Shutterstock

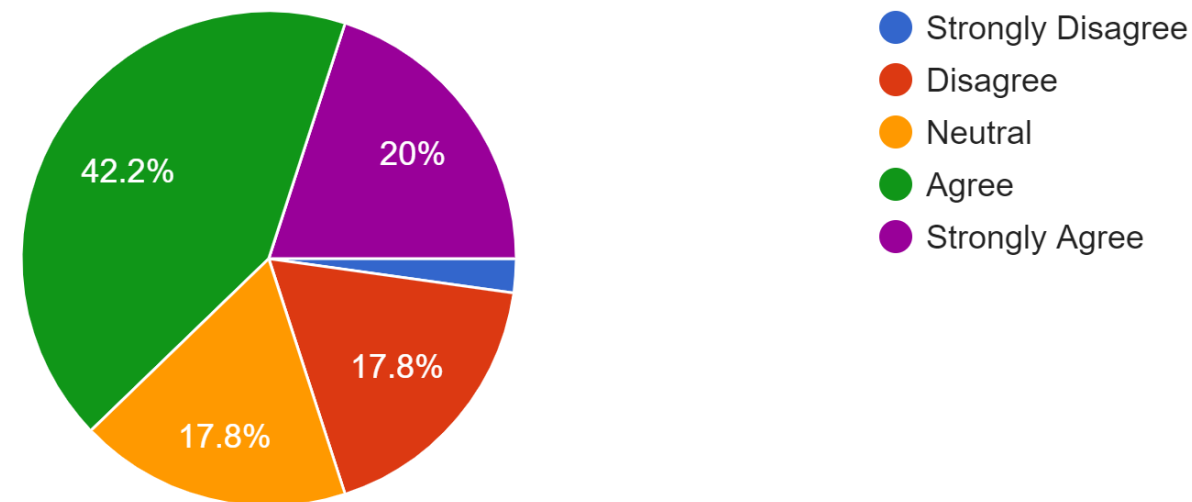
Question 3: Perceptions that CI Resource Usage and Socio-economic Benefits are high



Utilization of CI contributes to improving Socio-economy in SA

Question 4 To what extent do you agree or disagree that the utilization of Cyberinfrastructure resources (Compute, Data, Network) directly contribute to socio-economic conditions in your area or province?

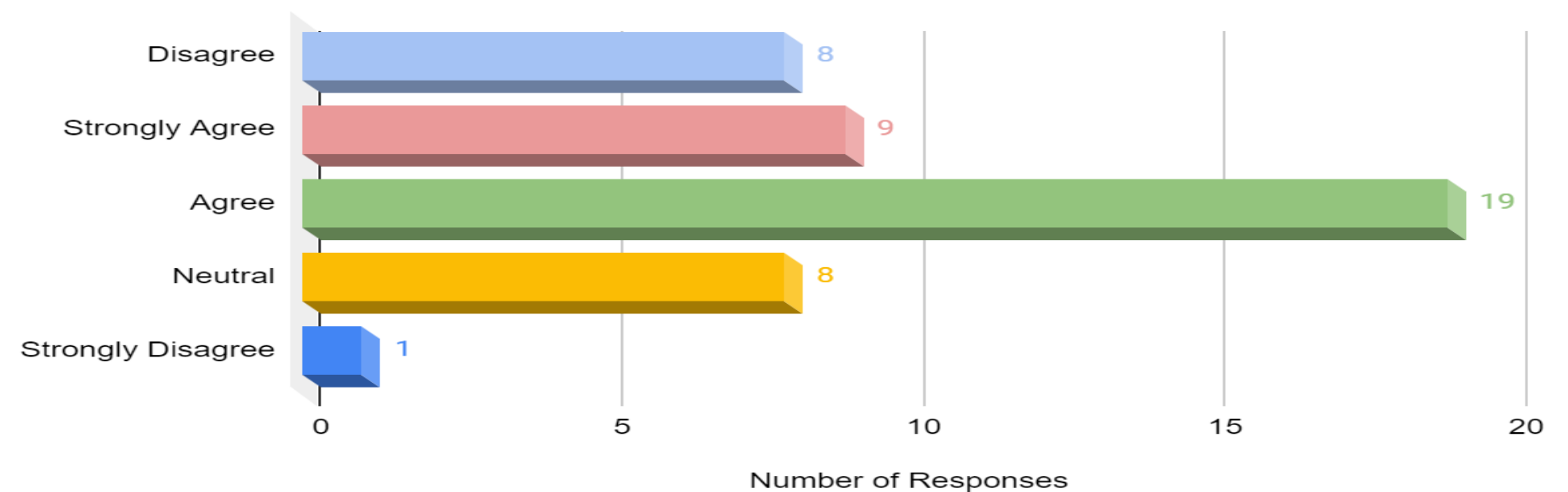
45 responses



- **Positive Perception:** A combined total of 62.2% of respondents (Agree and Strongly Agree) view CI as having a beneficial impact, indicating widespread recognition of its value in socio-economic development.
- **Neutral Stance:** 17.8% of respondents are neutral, reflecting uncertainty or a lack of clear information about the impact, suggesting a need for more targeted communication and data.
- **Critical Views:** 37.8% of respondents (Disagree and Strongly Disagree) express scepticism or dissatisfaction, pointing to concerns about the effectiveness or reach of CI in their regions.



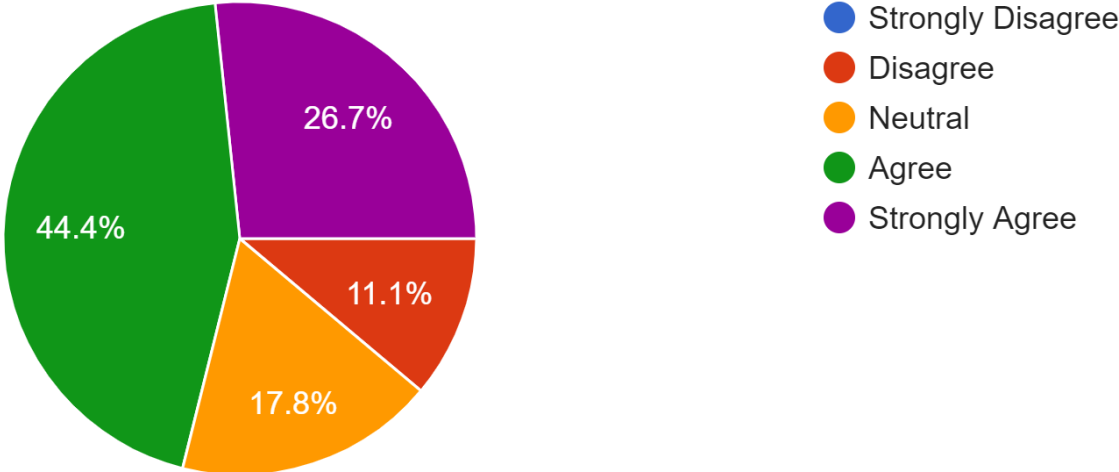
Question 4:
Utilization of CI resources directly contributes to enhancing the socio-economic conditions



CI contributes to Job Creation

Question 5 To what extent do you agree or disagree that the utilization of Cyberinfrastructure resources (Compute, Data, Network) contributes to job creation and economic growth in South Africa?

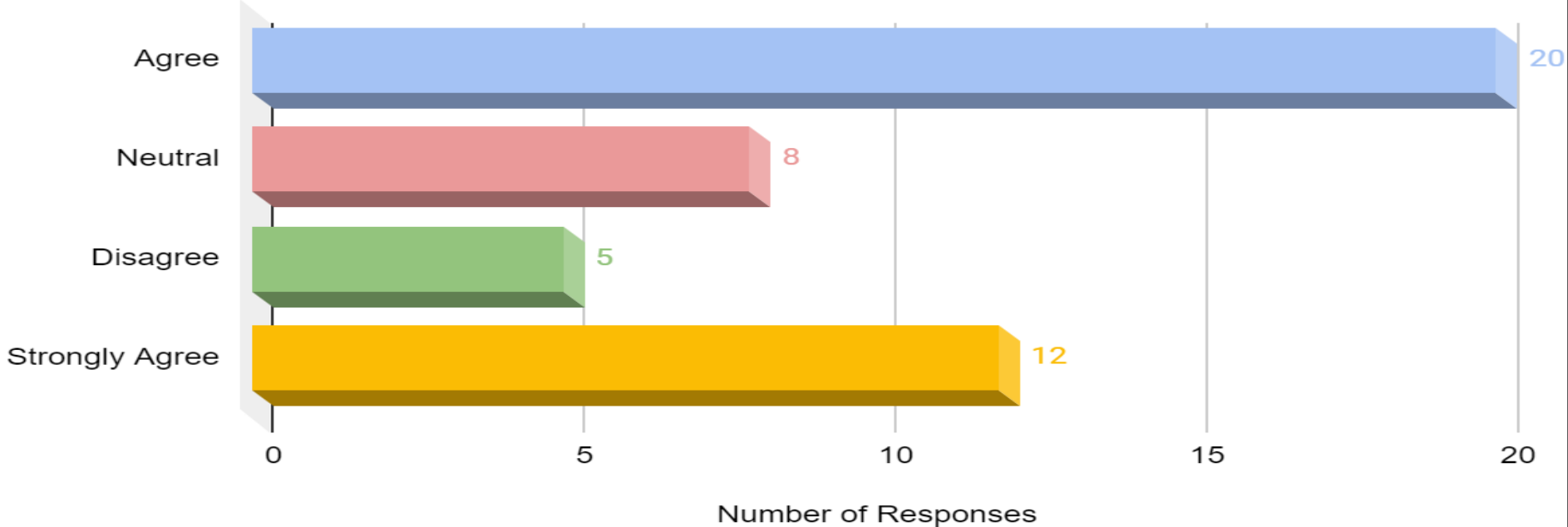
45 responses



- **Positive Perception:** A combined total of **70.5%** of respondents (Agree and Strongly Agree) view CI as contributing to job creation and economic growth. This strong majority reflects a widespread belief in the benefits of CI for economic development.
- **Neutral Stance:** **18.2%** of respondents are neutral, indicating a lack of definitive evidence or uncertainty about the impact. This suggests a need for better communication and more data on the economic benefits of CI.
- **Critical Views:** **11.4%** of respondents disagree, which points to some scepticism or concern about the current effectiveness of CI. This group may benefit from targeted efforts to address their concerns and demonstrate the value of CI.



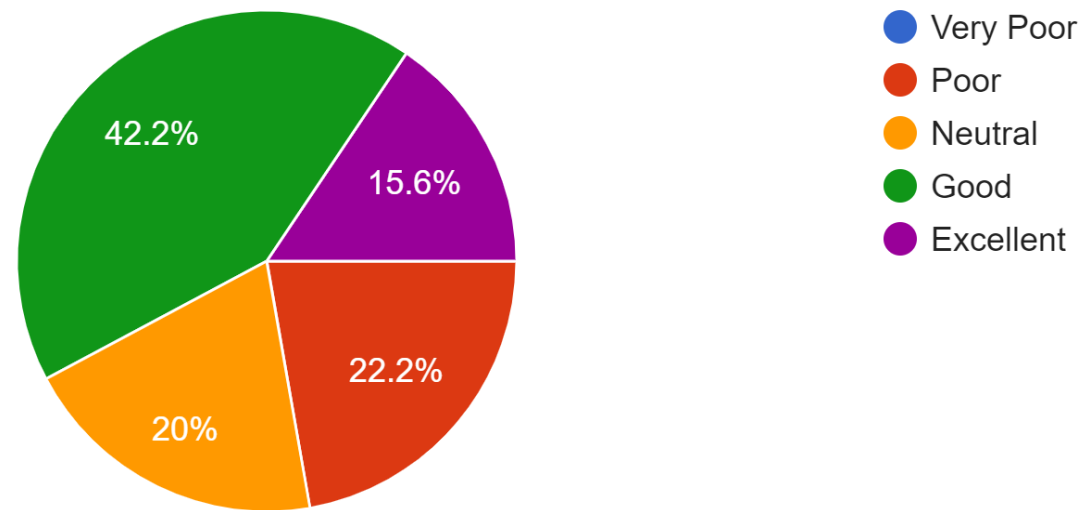
Question 5
Utilization of CI resources contributes to job creation and economic growth in South Africa?



Quality of CI in SA

Question 6 How do you perceive the current quality of Cyberinfrastructure resources (Compute, Data, Network) in your area or province?

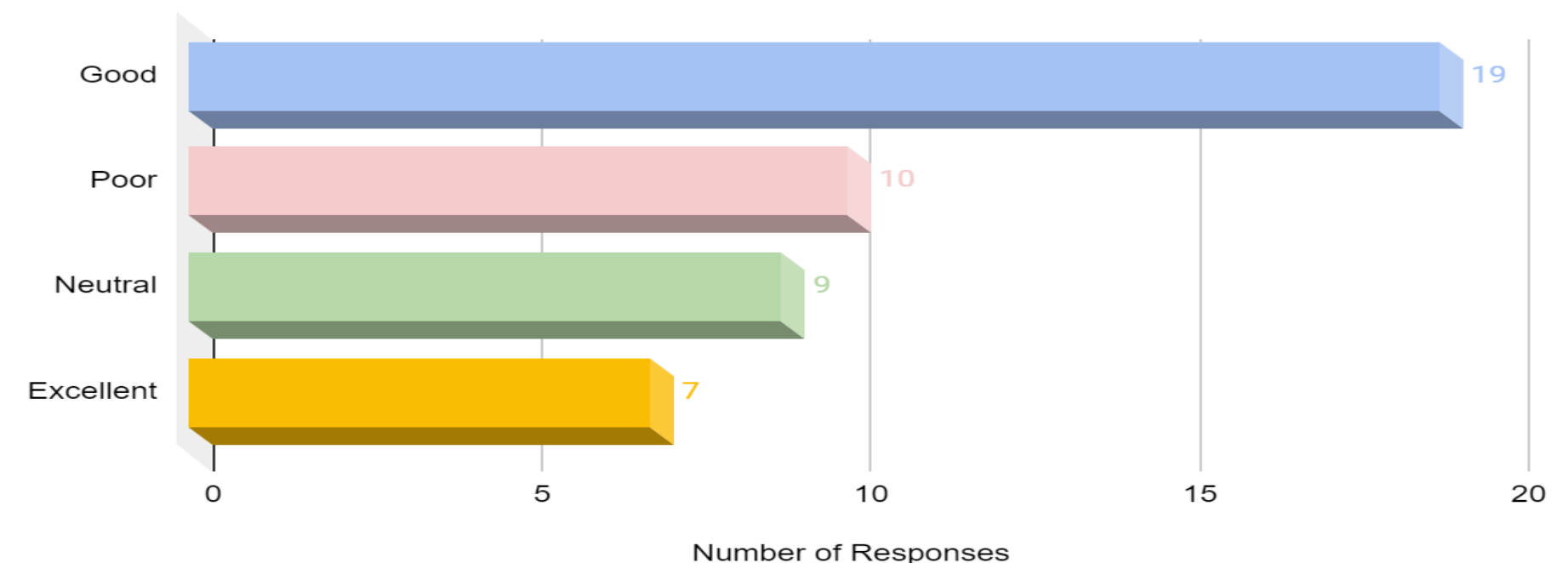
45 responses



- **Positive Views:** The majority of respondents rate the quality as Good (42.2%) or Excellent (15.6%), indicating that there is a solid foundation of CI that is viewed favourably by a substantial portion of users. The presence of Excellent ratings also suggests that there are standout examples of high-quality infrastructure.
- **Areas for Improvement:** A significant portion of respondents rate the quality as Poor (22.2%), pointing to notable dissatisfaction and areas needing critical attention. This indicates that there are specific issues with the CI that require targeted improvements.

- **Uncertainty:** The 20% of Neutral responses reflect a need for more detailed feedback and information about the infrastructure. This group might benefit from additional data or clearer communication about the state and performance of CI.
- **Lack of Extreme Dissatisfaction:** The absence of Very Poor ratings suggests that while there are areas for improvement, the situation is not perceived as completely failing, which may provide a more optimistic starting point for making enhancements.

Question 6:
Current quality of CI resources



Thank you

[service.dirisa.ac.za/](mailto:service.dirisa.ac.za)
dirisa@csir.co.za
smkhwazazi@csir.co.za
+27128413400
+27833907782

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