



DIRISA for Open Data and Open Science

Stellenbosch University Symposium
13 October 2021

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NICIS - DIRISA

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

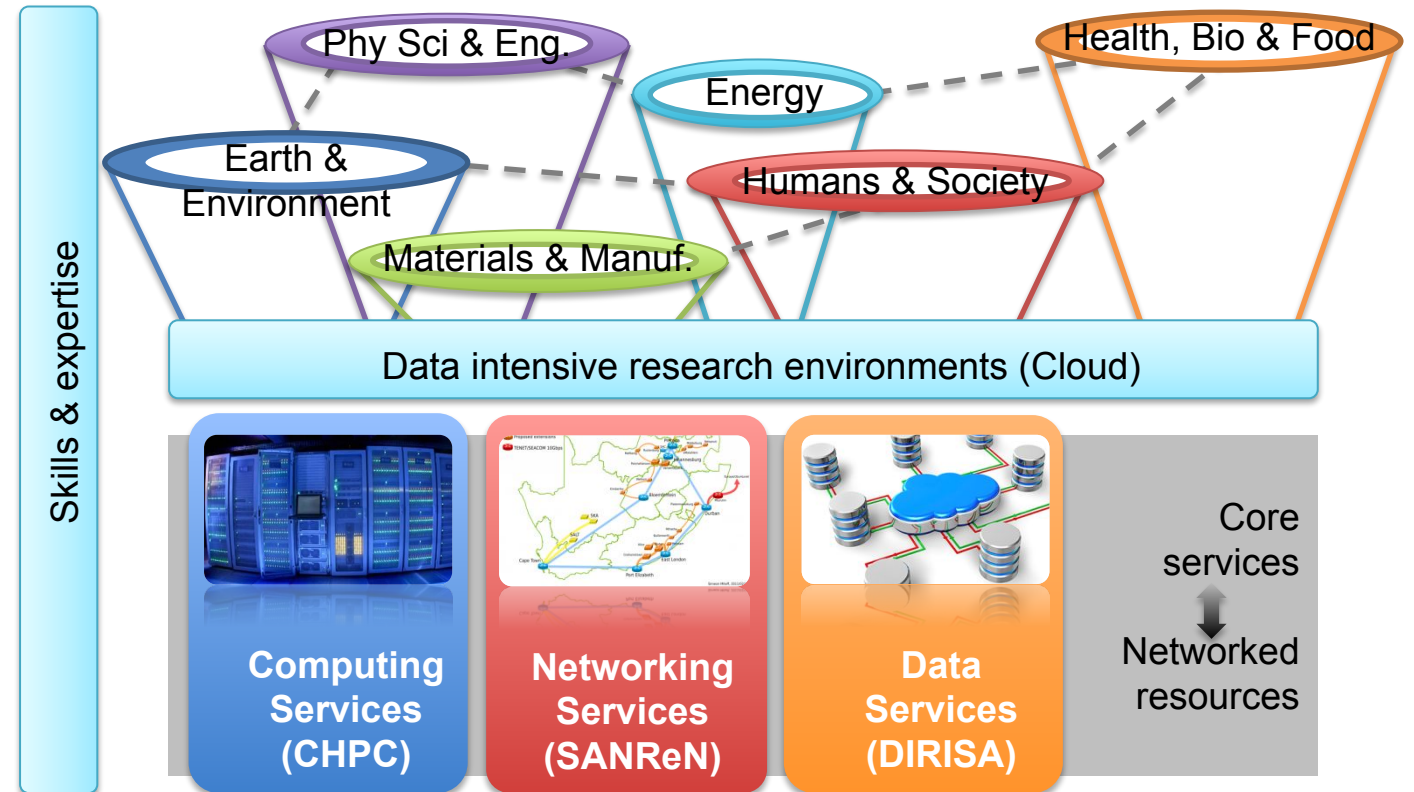


Outline

- About NICIS & DIRISA
- Open Data, Open Science, Open Minds
- Global Open Science
- South African Open Science Cloud (SAOSC)
- South African Open Data Cloud
- A Tiered Data Infrastructure
- Open Data Management and Open Access

National Integrated Cyberinfrastructure System (NICIS)

- Common services between any two Service Areas
- Tight integration among Areas.
- Development of cross-cutting skills internally and within the community



Data Intensive Research Initiative of South Africa (DIRISA)



Advocate & coordinate

- Stakeholder engagement
- National R&D projects



Build data infrastructure

- Build and maintain Tier 1 node and services
- Start T2 domain nodes



Manage research data

- RDM services
- Policies & guidelines



Develop capacity and skills

- Support e-Research programmes
- Coordinate training & workshops

Open Data, Open Science, Open Minds

“...outputs of publicly funded research are publicly accessible with no or minimal restriction” [OECD, 2015]

Increased efficiency & return

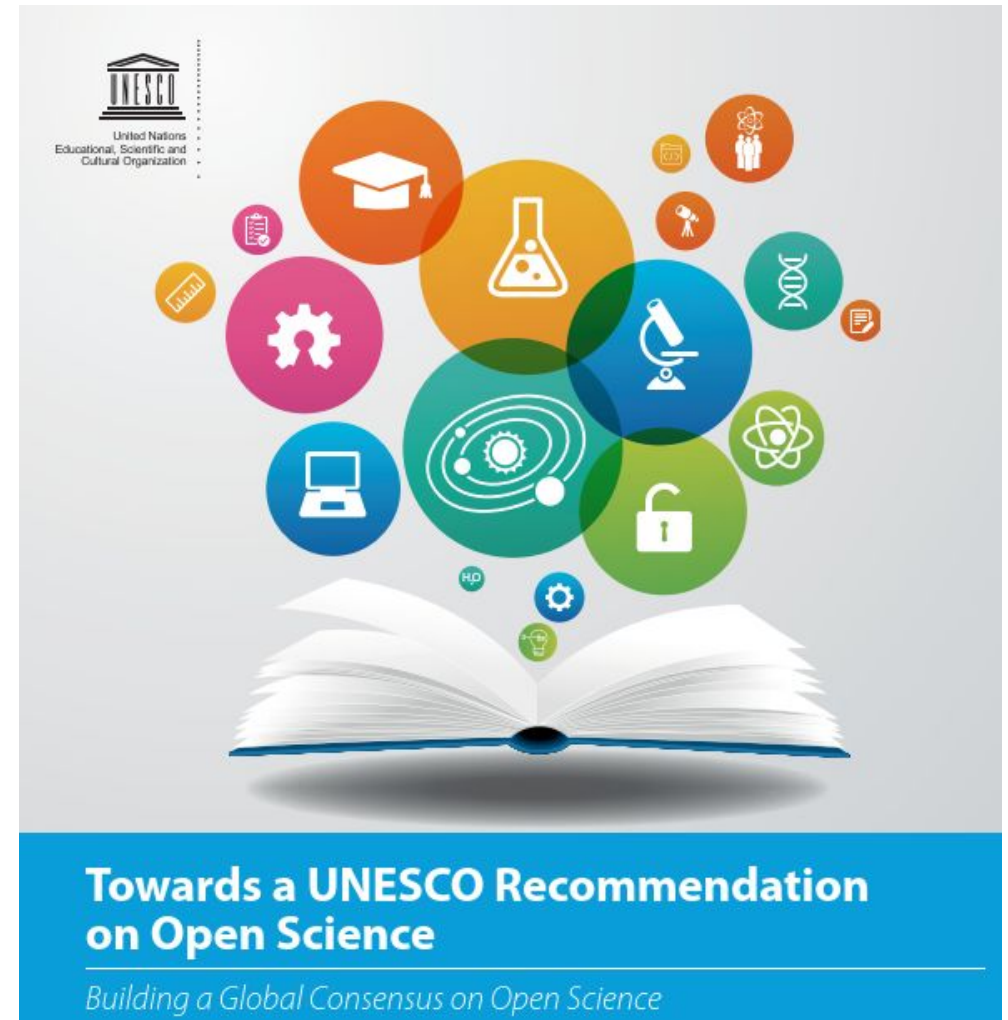
Cost-benefit analysis: FAIR vs not FAIR

- Multiplier effect & spill-over (COVID-19 R&D a good example)
- Transparency, integrity & quality
- Citizen science & awareness



Global Open Science

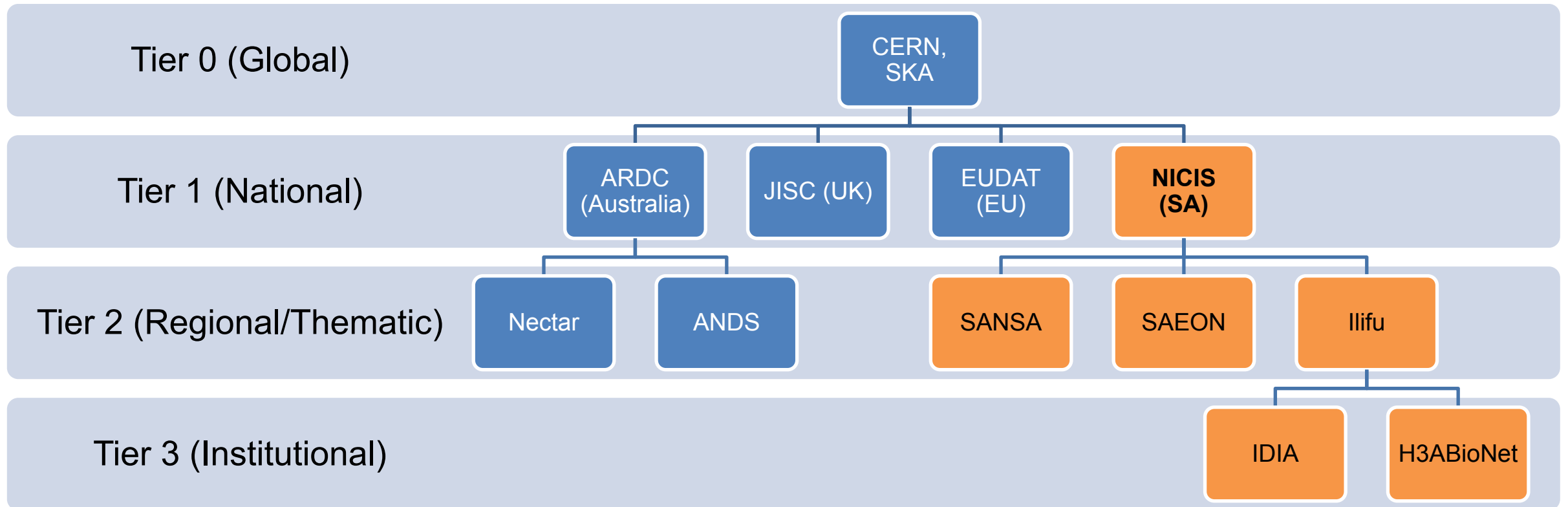
- OECD, CODATA, UNESCO, WDS, Global Science Forum
- Underway or emerging
 - European Open Science Cloud (EOSC)
 - China Science and Technology Cloud
 - Australian Research Data Commons (ARDC)
 - Malaysian Open Science Platform (MOSP)
 - **African Open Science Platform (AOSP)**
 - Latin America, Korea, Canada's NDRIO and Germany's NFDI
- Global Open Science Cloud (GOSC)



South African Open Science Cloud (SAOSC)

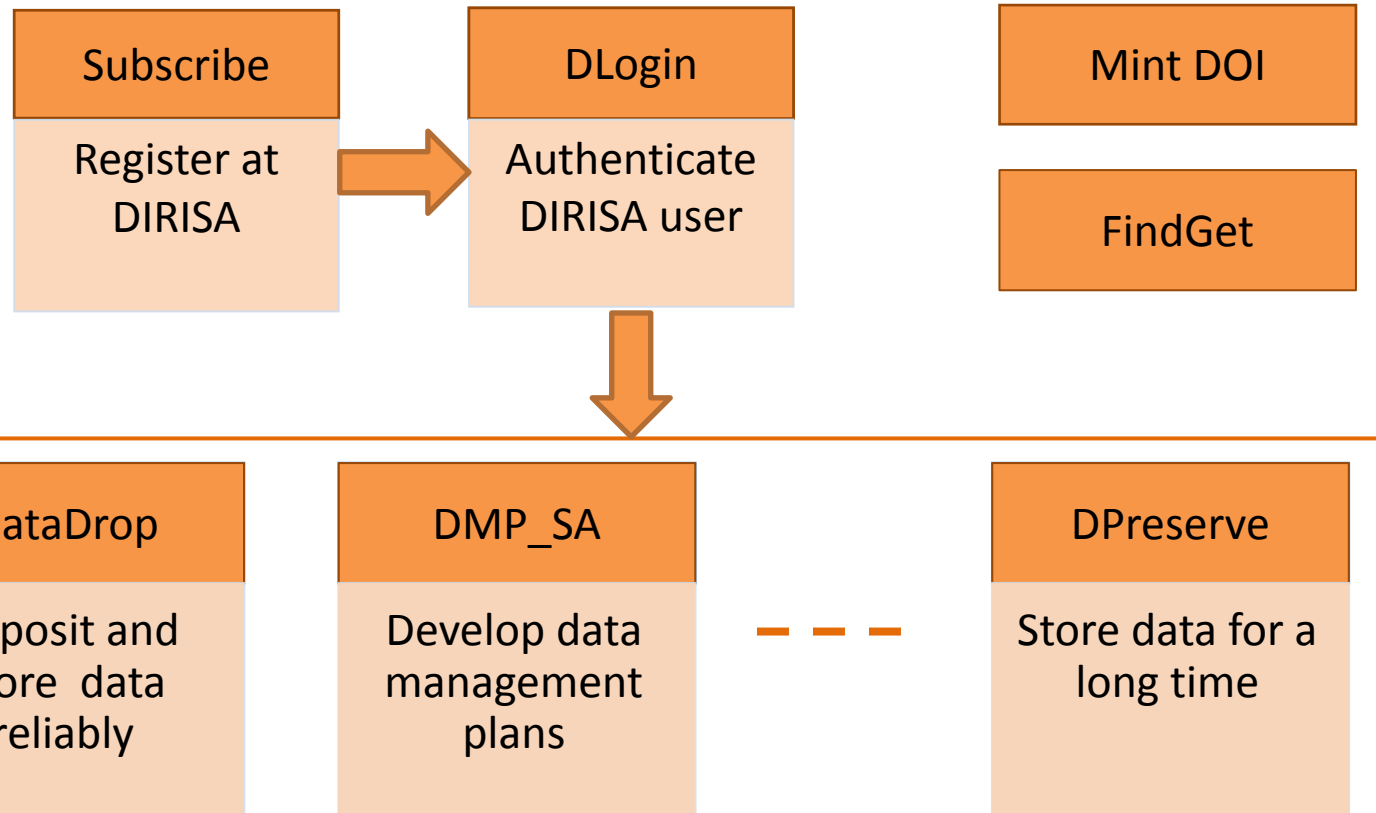
- SA-EU Open Science Framework Report (2018)
- Dialogue with EU (EOSC)
- SAOSC: Build on existing resources
 - SA Research Cloud (NICIS)
 - SA research data infrastructure (DIRISA)
 - Develop policies and governance structures
 - Federate into other local resources, and internationally into Africa & Global Open Science Cloud (GOSC)
 - Advocate

Global & National Data Commons



South African Research Data Commons (SA Research Data Cloud)

Phase 1: Research Data Management



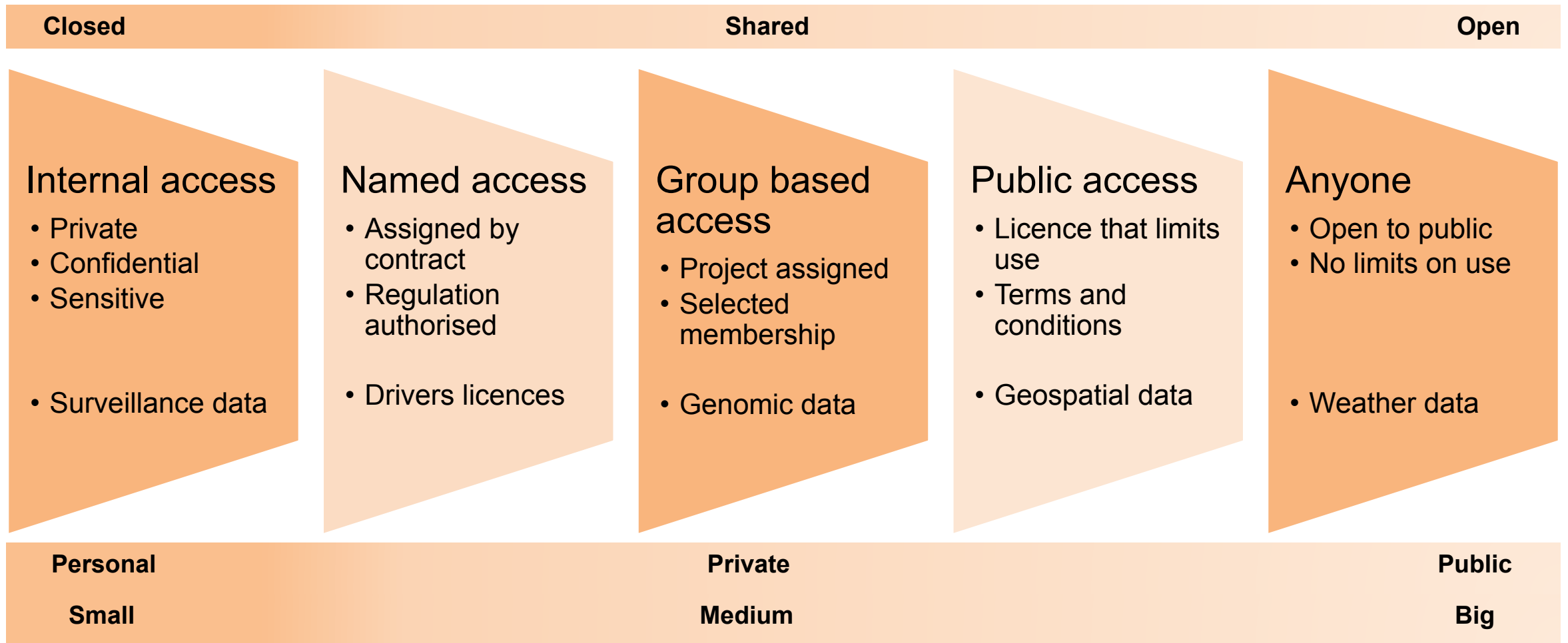
Phase 2: Collaborative Research Environments

My analytics & workflows
My data sets and outputs
My communities

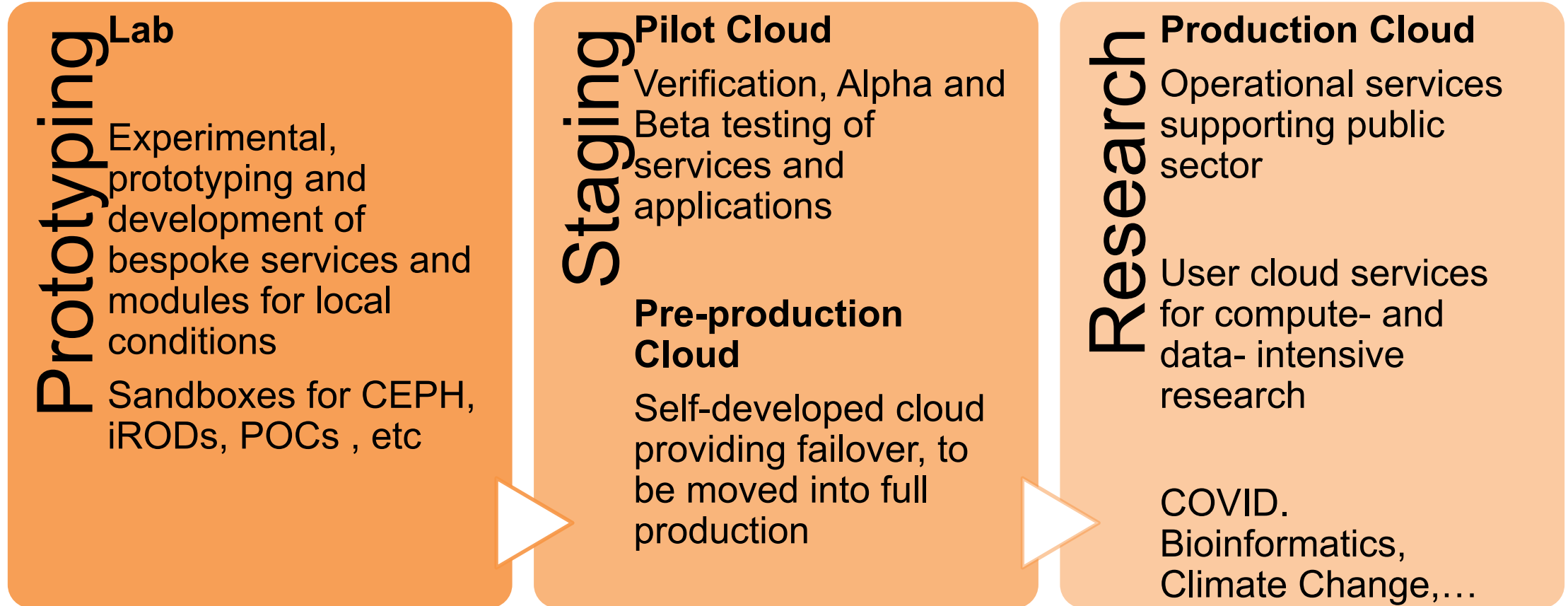
Virtual Machines
Jupyter Notebook

Data Access: Open by Default

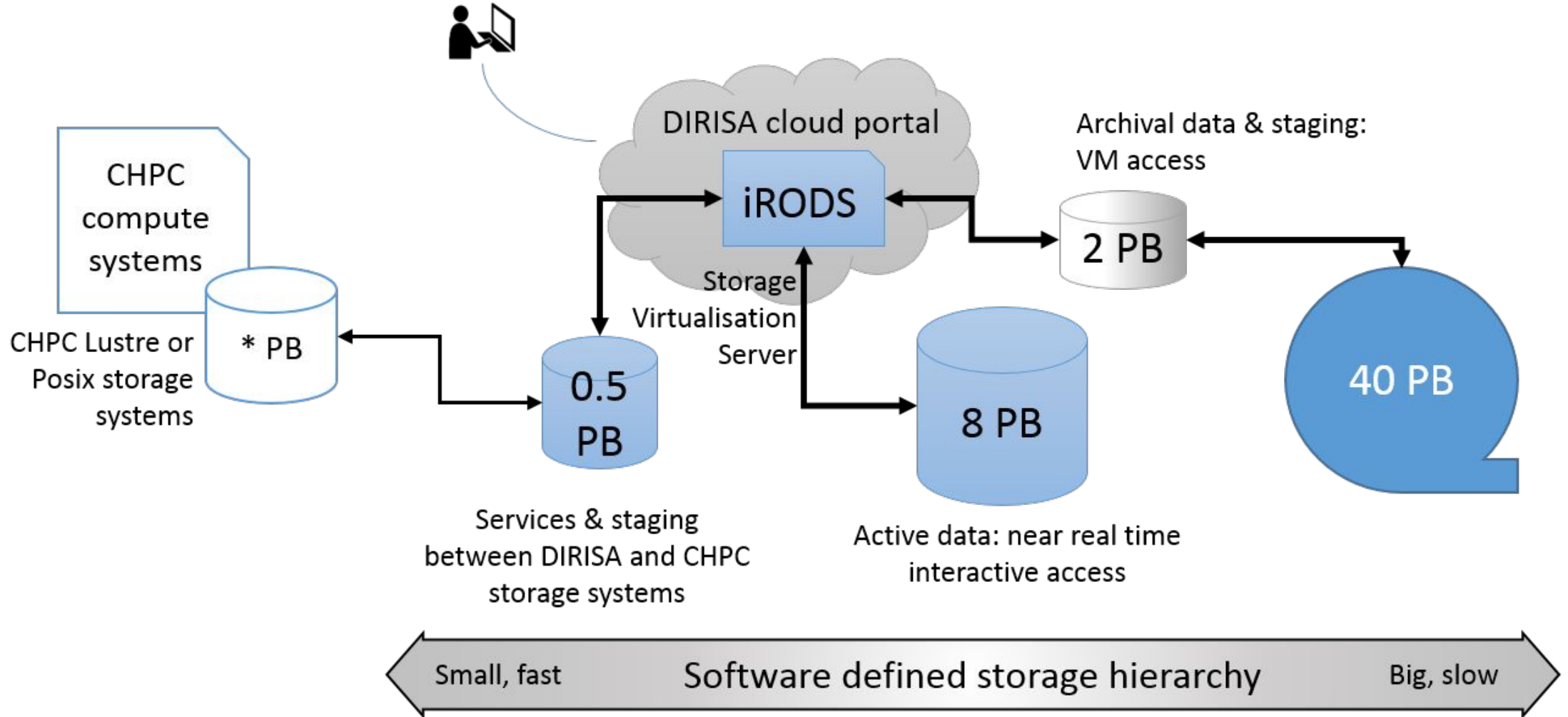
FAIR: “As open as possible; as closed as necessary”



SA Open Research Cloud



DIRISA Data Cloud Portal



Things to do

Time lined implementation roadmap:

- Policies and governance
- Interoperability arrangements, & Digital Object management
- Design and expand cyberinfrastructure
- Funding
- Develop skills
- Communicate and advocate

Is it urgent? Yes, challenges are global and surprisingly common

Concerns About Open Science

- “This is my data and research...” [Accreditation & Helicopter Science]
- Increase in digital divide between researchers in high-income and low-income countries
- Confusion between “fast” and “open” science
- Confusion between “open” and “private”
- Reliability of data, models, methods and analysis disseminated



Thank you

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