

# Data Stewardship: Institutional role and national collaboration

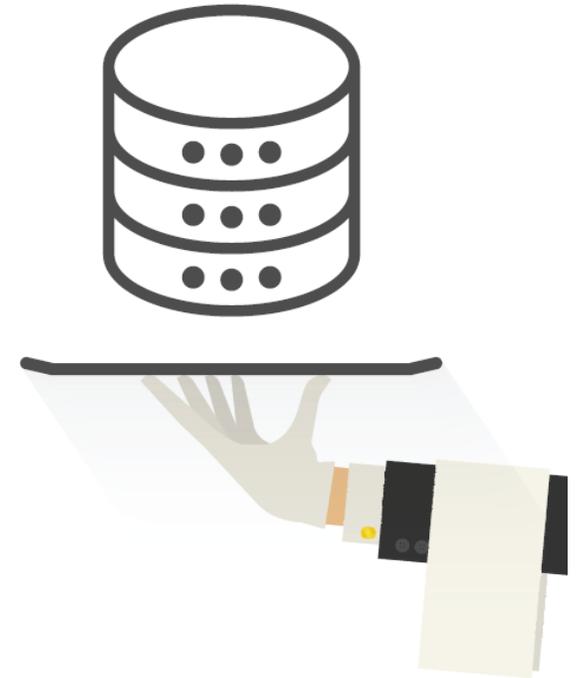
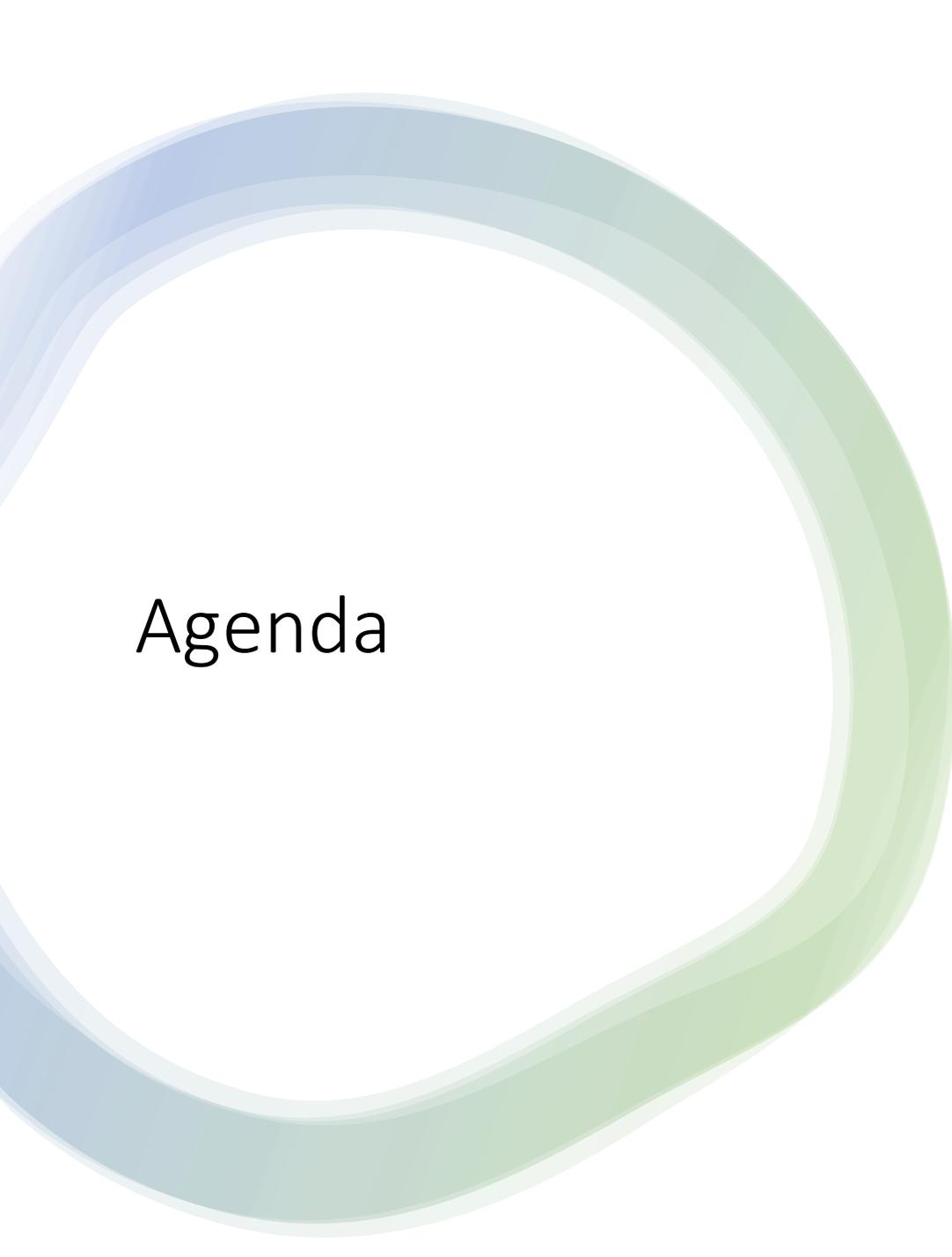


Image from Wildgaard et al. (2020), p. 6

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# Agenda

Introduction (MB)

## *Data Stewardship Competences*

- Digital Competences: A General Perspective (RB)
- Skills4EOSC: Minimum Viable Skillset for Data Stewards (MB)
- Short Brainstorm on Competences and National Collaboration (all)

## *Organising National Collaboration on Competences*

- Possible Organisational Models (RB)
- Discussion of Organisational Models (MB)

Round-up (MB)

# Introduction

# Relations

Inside & outside Skills4EOSC Consortium

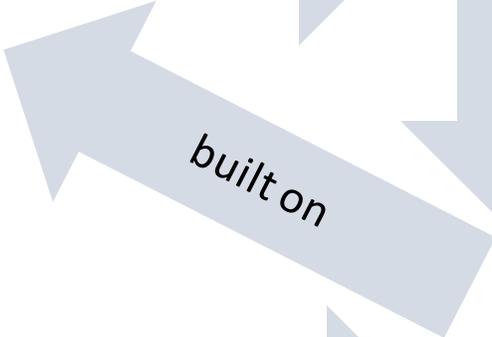
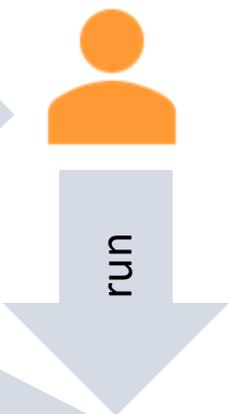
Competencies

People

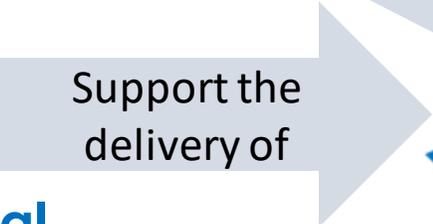
Institutions



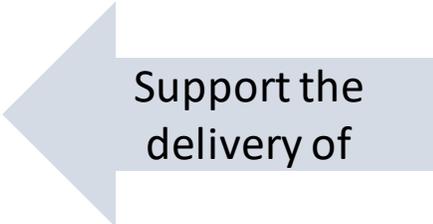
Skills4EOSC Minimum Viable Skillset Catalogue



Operational Tools



Services



Resources



FAIR by design Methodology for learning material

First toolset delivered in April 2024

Under definition

# Competence Centres



## Strategic Research and Innovation Agenda (SRIA)

### of the European Open Science Cloud (EOSC)

Version 1.1 – 1 November 2022



## EOSC Multi-Annual Roadmap 2025-27

Karel Luyben  
President EOSC Association

EOSC Symposium 2023, Madrid

### EOSC Compilation of national priorities (2025-2027)

- Aligning European curricula for data stewardship;
- Establishing cost of data management as eligible;
- Leveraging national Competence Centres;

### EOSC Compilation of institutional priorities (2025-2027)

- Offering core Open Science, FAIR and CARE training to researchers and research support units
- Ensuring research support staff to have the required data stewardship skills;
- Engaging in competence centres and networks for data stewards, research software engineers, semantic artifact curators and Open Science communities to share practises;

# Digital Competences: A General Perspective

> **Background for increased focus on competence and national competence centres**

1. **EOSC** and the increased focus on competence centres (CC) for the FAIR Data Management/ Open Science area. For example, the latest draft of the [EOOSC Multi-Annual Roadmap](#) explicitly mentions the Skills4EOOSC project in relation to the gathering of national CCs.

*Extract:*

### 1.2 National level priorities

Building **competence centres** is key to knowledge transfer on Open Science and FAIR in the EOSC context. While the structure, operational mode and organisation of **Competence Centres** may vary very widely, they are usually associated with excellence, training, interdisciplinarity, standardisation and a collaborative approach that ensures harmonisation and alignment at European level.

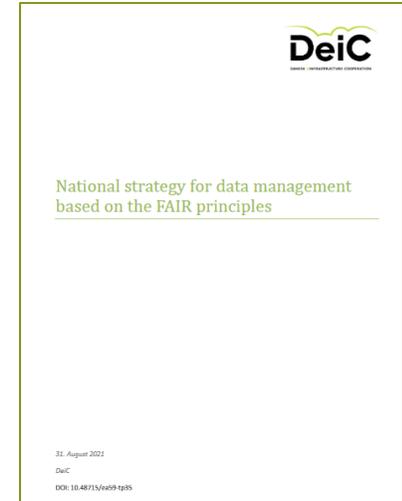
Leverage existing **national Competence Centres**, such as those run by **Skills4EOOSC** and the Dutch Digital Competence Centres, and strengthen their participation in coordination networks.

- > **Background for increased focus on competence and national competence centres**
- 2. The National FAIR strategy and the implementation follow-up mandate from the **Danish Agency for Higher Education and Science** explicitly mentions a national CC.

*Extract:*

11. To what extent is there interest in developing and offering the research support function jointly at national level? E.g. under a centralized or decentralized **National Competence Centre**.

12. Are the research institutions interested in national coordination of training (not research support) within FAIR research data management? Can a possible national collaboration aim at division of labour, specialization and joint national provision of educational offers – e.g. in the form of a **Competence Centre** under the auspices of DeiC? There is regarding teaching at all levels, from bachelor's to continuing education for scientific staff.



- > **Background for increased focus on competence and national competence centres**
- 3. The **EuroHPC** competence centre, EuroCC (European network of 33 national High-Performance Computing (HPC) competence centres), and its national nodes, seem in many ways to be:
  - duplicated for the FAIR Data Management (DM) area or
  - expanded to swallow up the DM competence area

*Extract:*

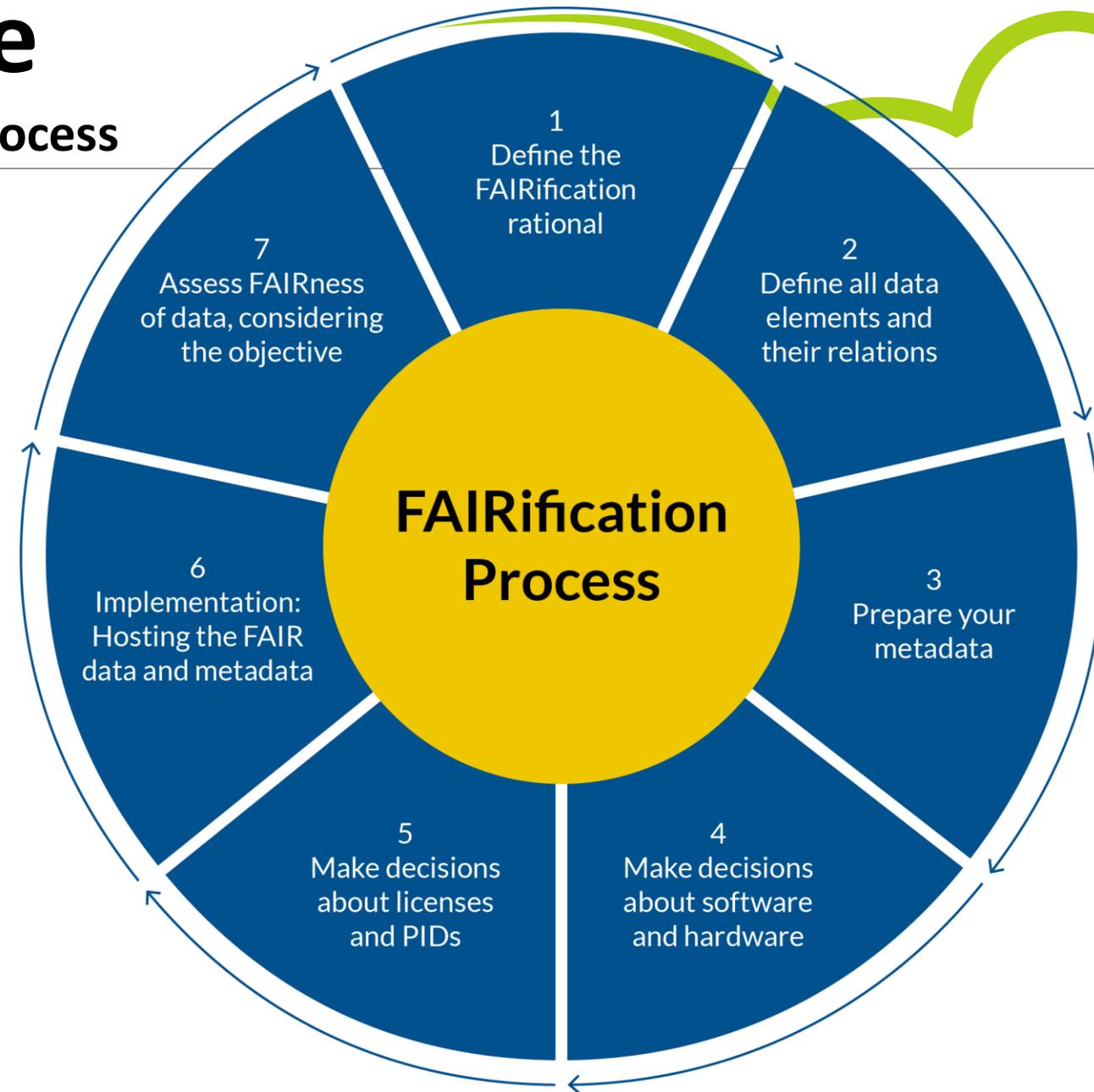
The competence centres will coordinate HPC expertise at national level and ease access to European HPC opportunities for research and scientific users...

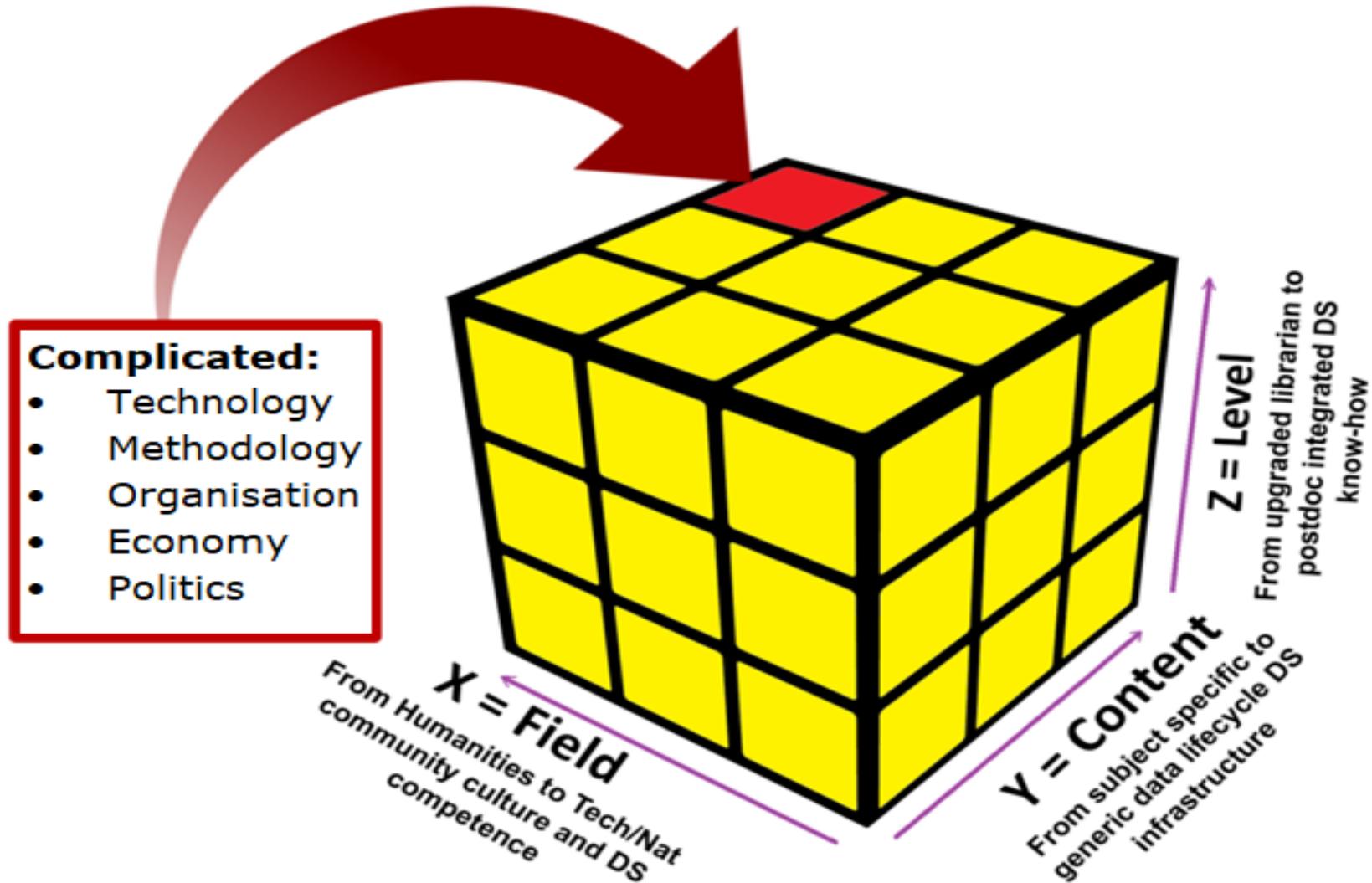


**Which  
infrastructure and tools?**

### Which competence?

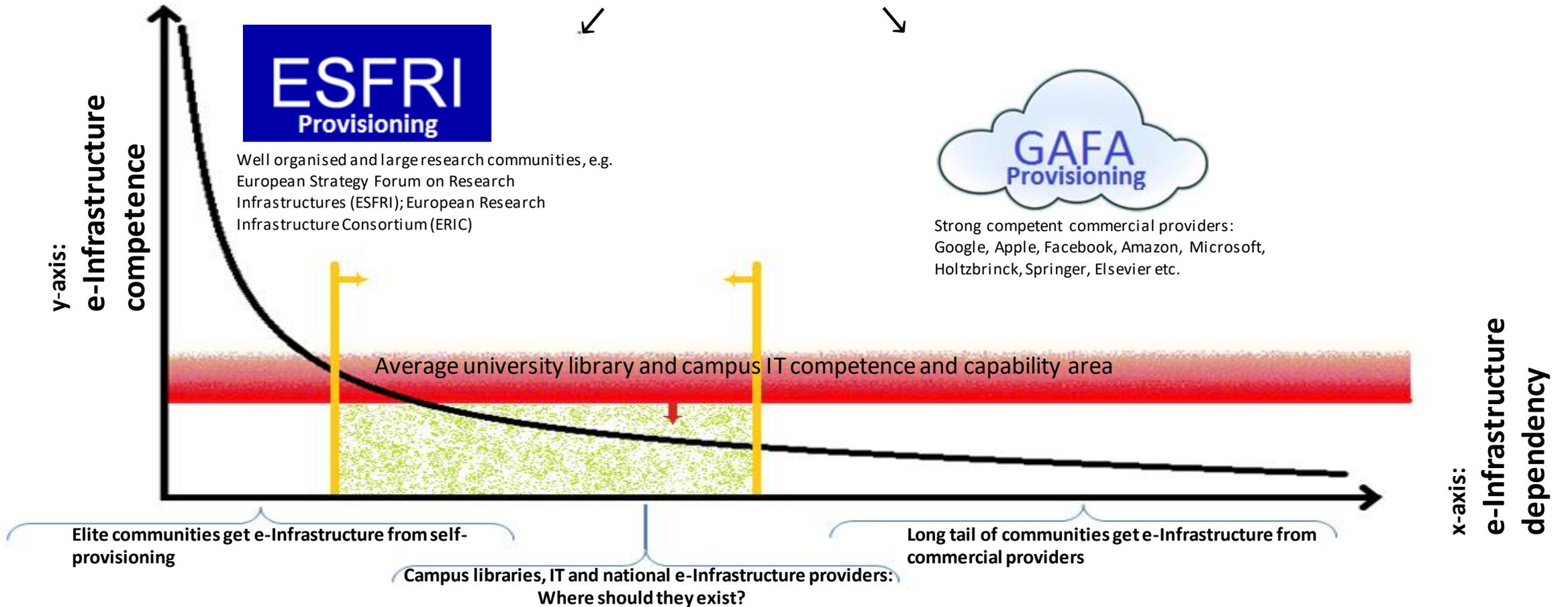
- So much more to be done
- So many more FAIR-enabling resources are needed
- So much is yet to be discussed, formulised, organised, professionalised, and financed
- A lot of FAIR enabling tools exist, mostly of a *domain-specific* origin
- We have little to no overview...





# The evolving e-infrastructure landscape: Who will have the competence?

Discipline-specific vs. generic



# Skills4EOSC: Minimum Viable Skillset for Data Stewards

# Skills4EOSC: Skills for the European Open Science Commons



44 participants, 18 countries



“Key doers” in Open Science in their country/region/domain



2 ESFRI research infrastructures



7 millions €, co-funded by European Union and UK Research and Innovation



Lazzeri, Emma. (2022, December 21). Skills4EOSC induction. Zenodo. <https://doi.org/10.5281/zenodo.7470587>



# Objective

Skills4EOSC's core objective is to **advance Open Science (OS) skills by unifying the current training landscape**, closing the three gaps identified in the EOSC Strategic Research and Innovation Agenda (SRIA) in relation to OS competences:

- lack of **Open Science and data expertise**,
- lack of a clear definition of **data professional profiles** and corresponding career paths, and
- fragmentation of **training resources**.



Lazzeri, Emma. (2022, December 21). Skills4EOSC induction. Zenodo. <https://doi.org/10.5281/zenodo.7470587>



# Key Concepts



- Competence Centre
- Competence Centre Network
- Minimum Viable Skillset
- Training of Trainers
- Master trainer
- Professional Networks
- User Support Network
- Co-Creation

# Key Concepts

- Competence Centre
- Competence Centre Network
- Minimum Viable Skillset

Training of Trainers

Master trainer

Professional Networks

User Support Network

Co-Creation

# Relations



Skills4EOSC  
Minimum  
Viable Skillset  
Catalogue

Competencies



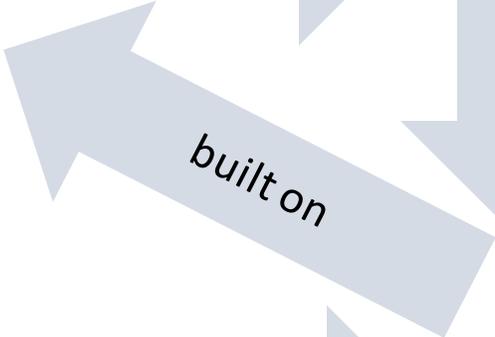
People



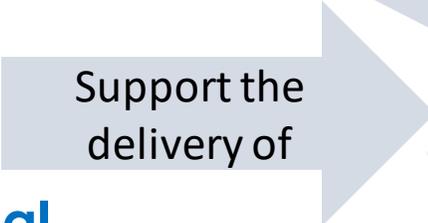
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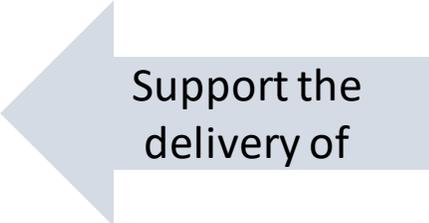
Inside & outside  
Skills4EOSC  
Consortium



Operational  
Tools



Services



Resources

FAIR by design  
Methodology for  
learning material



Under definition

First toolset  
delivered in April  
2024

# Minimum Viable Skillset - MVS

- The MVS draw on established competences frameworks and resources defining the Open Science (OS) **mission, activities, or outcomes** expected of relevant roles
- MVS profile **each role** as an aid to developing new curricula, career paths and courses
- A simple MVS format is proposed to articulate **key skills and competences** that enable researchers, professionals, and stakeholders to fulfil the OS expectations of the EOSC



Lazzeri, Emma. (2023, May3). *Skills4EOSC: Skills for the European Open Science Commons*. EOSC-A Taskforce on Upskilling Countries to Engage in the EOSC. Zenodo. <https://doi.org/10.5281/zenodo.7890392>



# Data Stewards: Mission & outcomes

**Open Science mission:** Data Stewards work with stakeholders to establish, govern and maintain processes. These include collecting research data, making it usable for research objectives, facilitating its transformation into research outputs, assist in their quality assurance, and support informed decision-making on their FAIRness and openness for reuse, according to ethical, legal and social expectations.

- *Relevance of Open Science dimensions (1-Low to 3-High): Technology: 3, Interpersonal: 2, Domain: 2, Communication: 1; Leadership: 1*
- *Organisational context: Research Performing Organisations, Research Infrastructures, Service Providers, Competence Centres.*
- *Related [EOSC](#) learning paths: service and resource consumers and providers*

**Contributes to which Open Science outcomes?**

- Research data and related digital objects are effectively managed to ensure their suitability for curating, sharing, and reuse, and potential impacts towards advancement of research methods appropriate to the discipline(s). Digital research objects are made as FAIR and open as possible, and as closed as necessary.
- Opportunities are identified for creating or connecting with professional Open Science networks at institutional, cross-institutional, regional, national, or international levels.
- Relevant competence centres with a FAIR data and Open Science support role are utilised effectively according to local needs and policies.
- Open Science skills and practices are facilitated and enhanced using, where appropriate, EOSC resources and services, including any relevant Open Educational Resources.

Whyte et al. (2023)

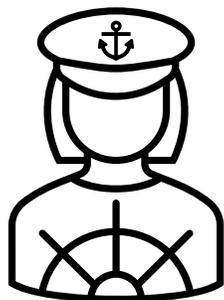


# Coordinator Data Steward

## Coordinator Data Steward

Provides a 'centralised knowledge and communication hub' for researchers. Advises and trains on policy, guidelines, data management plans, institutional infrastructure and tools. These may include software code, and its development as a FAIR and open resource.

**Associated function titles:** Data Steward, Data Librarian, Research Data Management Specialist, Research Data Manager, Research Data Management Consultant, Research Data Coordinator. Reproducibility Librarian.



## Main activities

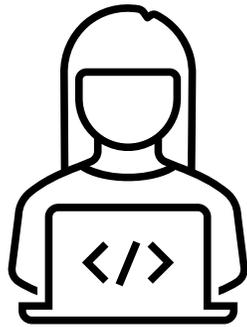
- Contributes to policy development and community governance
- Develops institutional guidance on cross-domain principles for DM planning
- Advises on metadata standards and documentation for archiving
- Understands research stakeholder needs
- Analyses trends
- Engages in advocacy
- Develops and delivers training
- Maintains networks of research data support staff

# Embedded Data Steward

## Embedded Data Steward

Serves research teams, faculties, departments, sections of organisations directly involved in producing research outputs. Helps embed FAIR and CARE principles in research practices, meeting needs of researchers as they arise, and working with others to ensure the long-term **preservation** and reusability of research outputs. These may include software code, and its development as a FAIR and open resource.

**Associated function titles:** Data Steward, Data Manager, Data Curator, Research Data Manager



## Main activities

- Develops DMP templates for research teams and helps writing DMPs
- Implements good data practice locally
- Advises on disciplinary standards and relevant community practices
- Advises on technical support for researchers
- Supports researchers on legal and regulatory compliance
- Identifies gaps and takes action to ensure ethical research conduct
- Develops and delivers training
- Maintains networks of research data support staff

# MVS Summary for Data Stewards

Essential skills and competences in five domains:

- 1) **Technology:** Data policy, Data curation, Preservation, ...
- 2) **Domain:** Domain knowledge to contextualise data handling, ...
- 3) **Interpersonal:** Mentoring, teaching, training, ...
- 4) **Communication:** Advocacy, dissemination, ...
- 5) **Leadership:** Data governance, community governance, ...

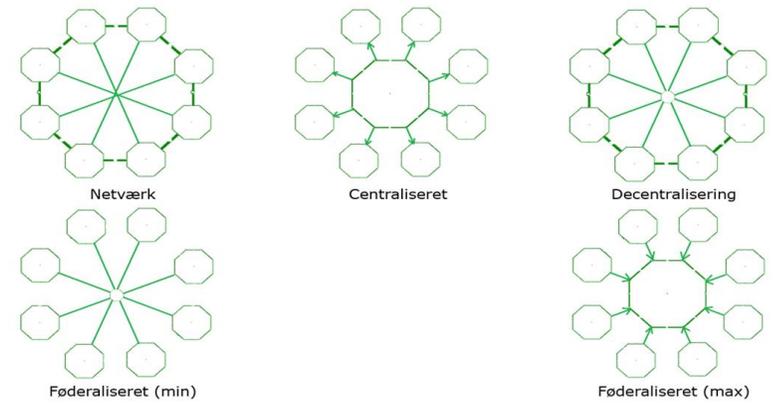
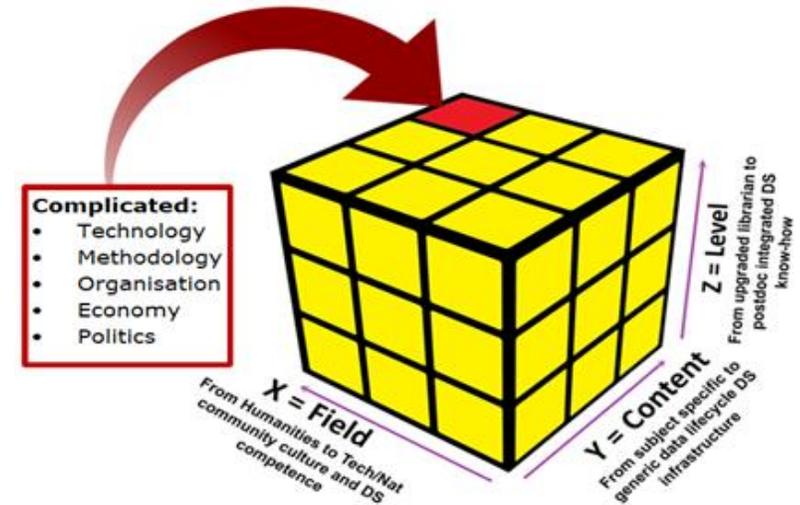


Whyte et al. (2023)

# Brainstorm on Competences and National Collaboration

# Brainstorm on Competences and National Collaboration

- 1) What are the most relevant data stewardship competences? And how can they be developed?
- 2) Which competence development efforts could benefit from national coordination, e. g. to ensure enough “critical mass”?
- 3) How could a national coordination of competence development efforts look like (funding, organization, management)?
- 4) How to distribute competence development efforts between the institutions and a national competence center (DK-CC)?

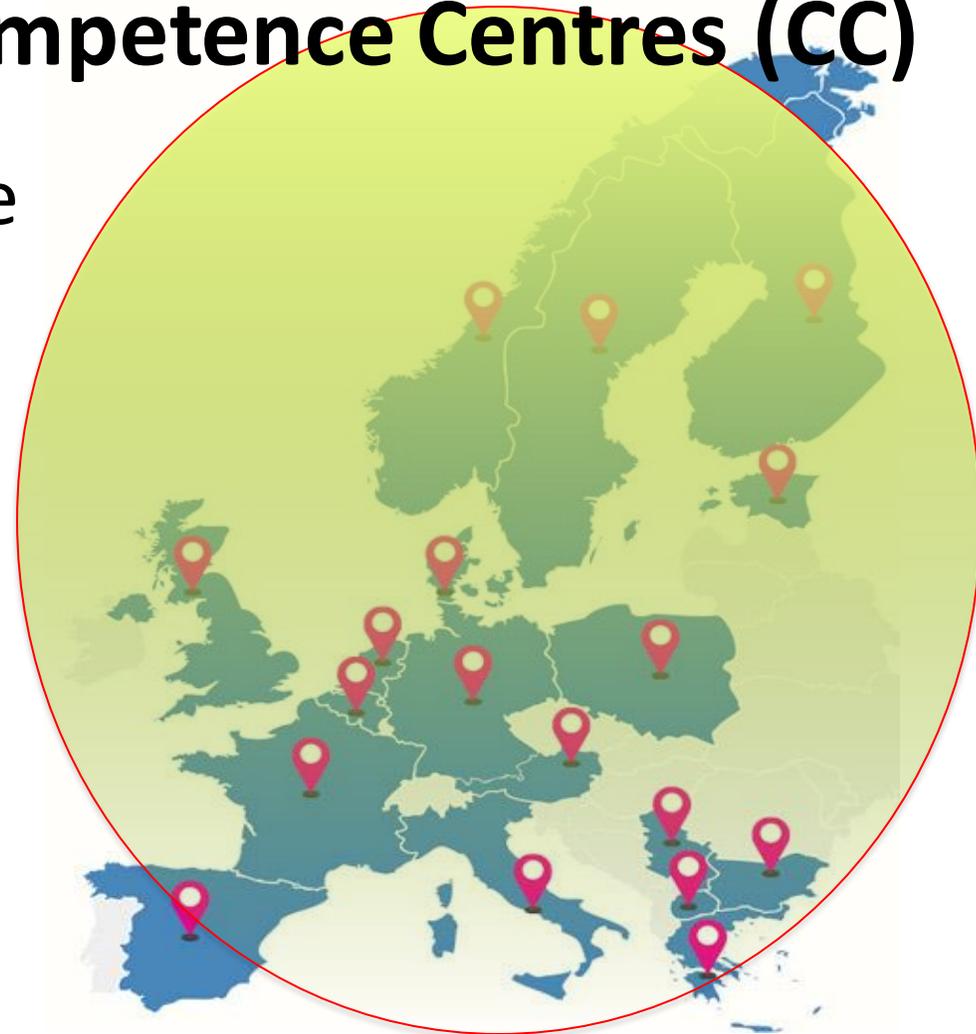


# Possible Organisational Models

# DeiC Framework Conditions

## > EOSC & the National Competence Centres (CC)

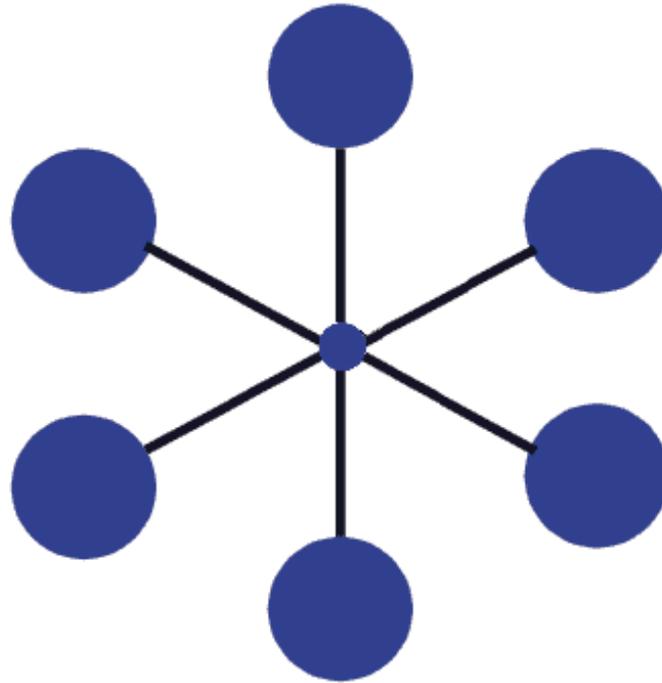
- **Critical mass of competence**
- **One CC in every country**
- **Cofounded by EU & MS**
- **All CC federated at EU level**



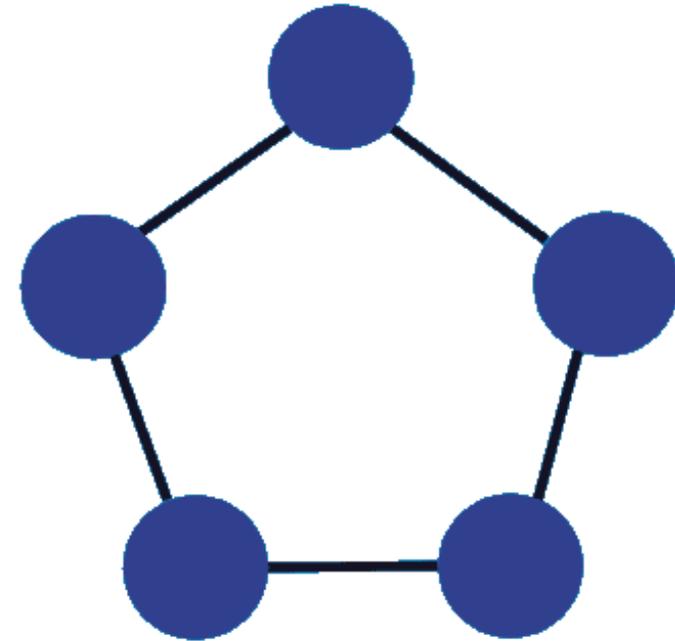
## > Organising national CCs – Many possibilities



**Centralised**

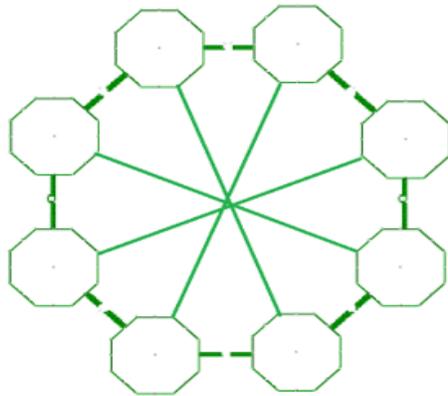


**Decentralised**

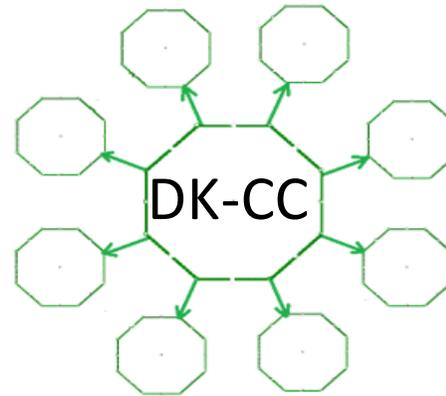


**Networked**

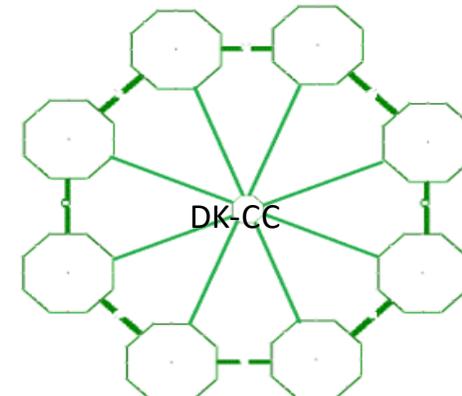
## > National Competence Centres



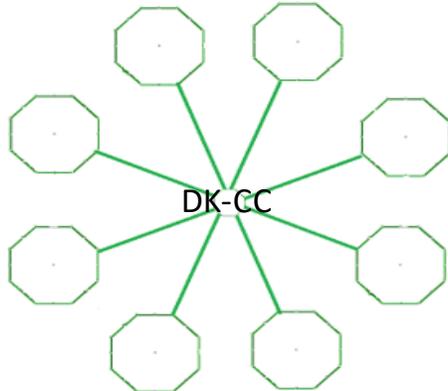
Netværk



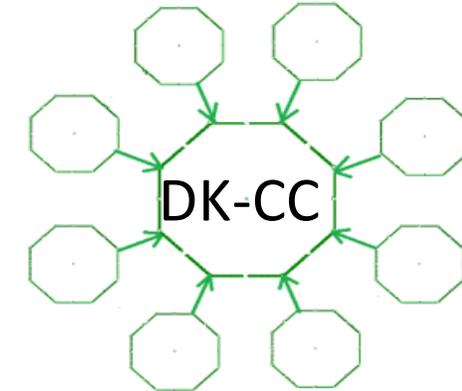
Centraliseret



Decentralisering



Føderaliseret (min)



Føderaliseret (max)

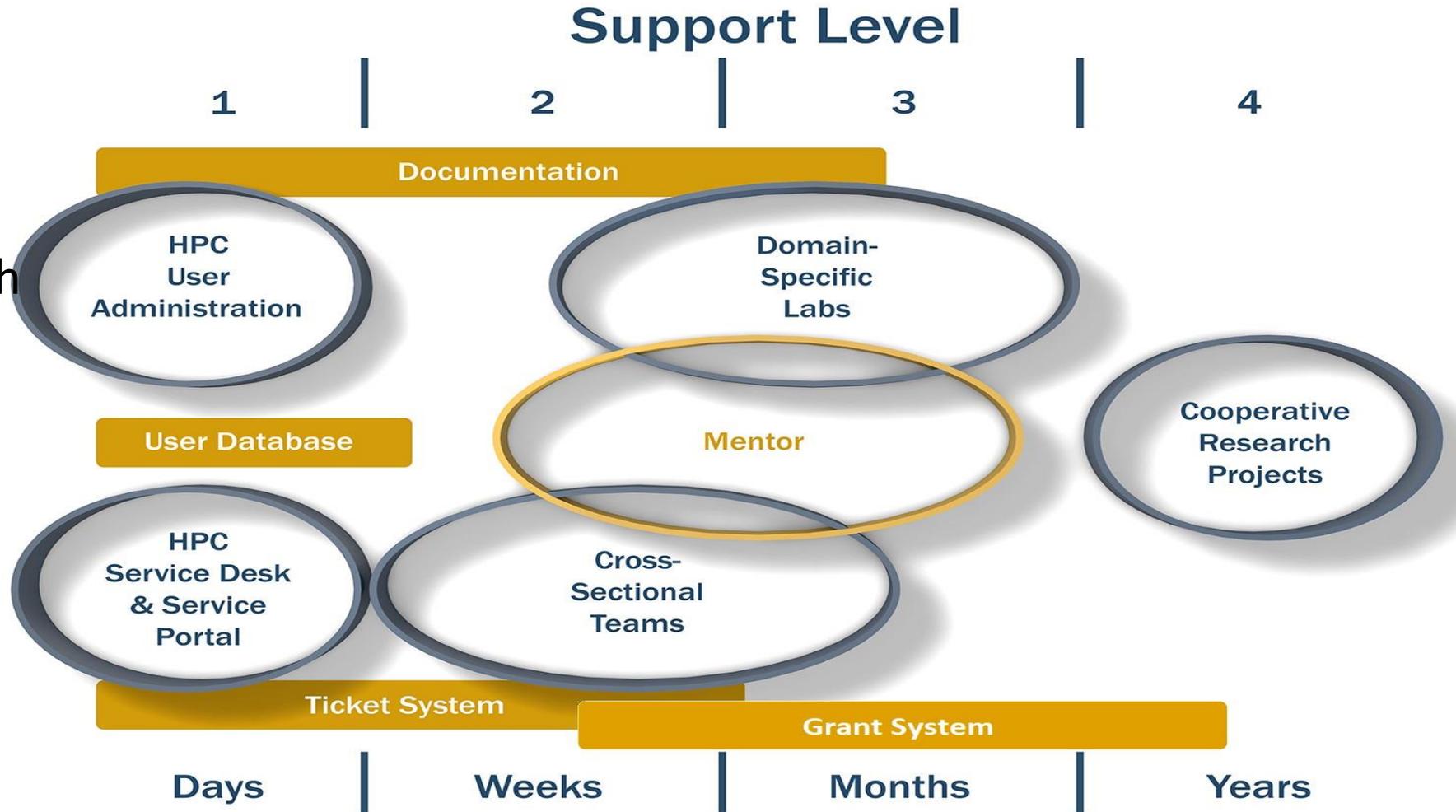
Training, education,  
assistance

vs.

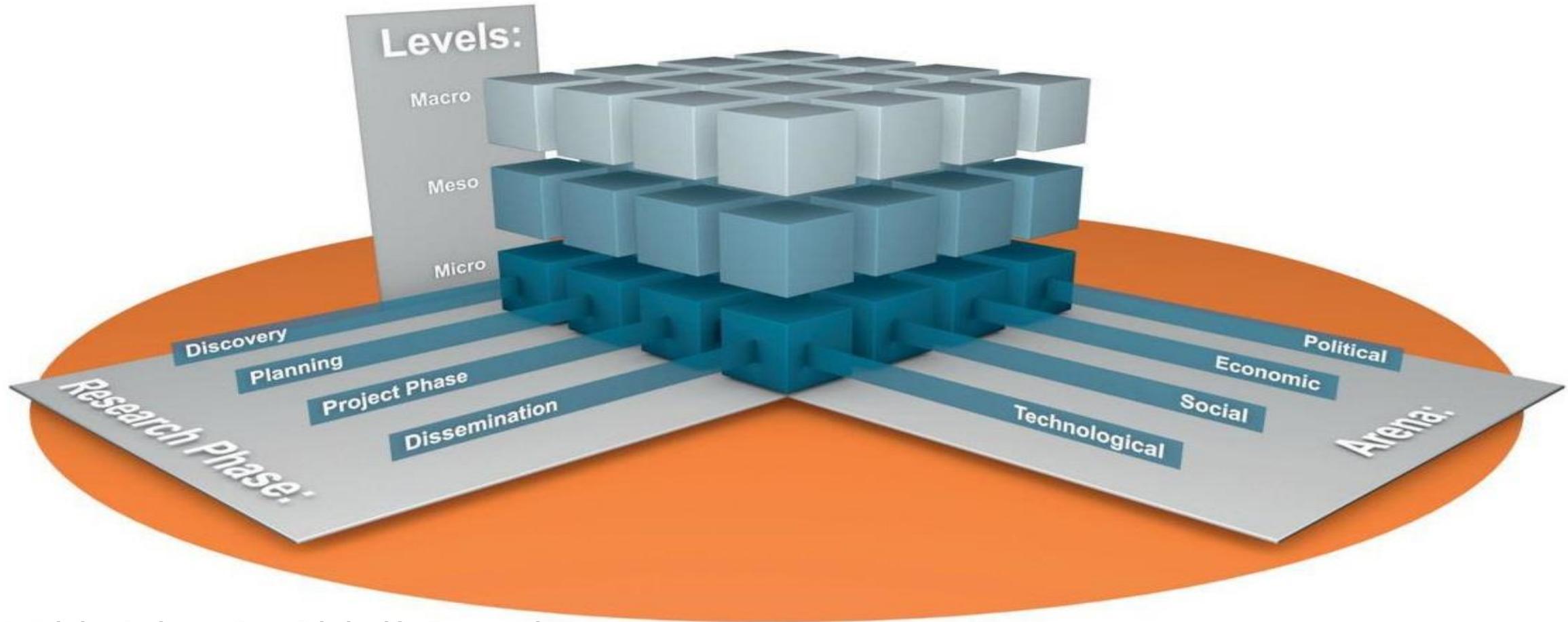
Integration into research  
process/team

Increased:

- Professionalisation
- Specialisation
- Scaling
- Organisation
- Funding



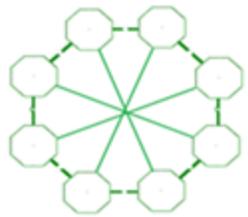
Source: Gauss Centre for Supercomputing



Source: Knowledge Exchange Open Scholarship Framework

# Discussion of Organisational Models

# Discussion



Netværk



Centraliseret



Decentralisering



Federaliseret (min)



Federaliseret (max)

- How could a national coordination of competence development efforts look like (funding, organization, management)?
- How to distribute competence development efforts between the institutions and a national competence center (DK-CC)?

# Skills4EOSC Competence Centre

Skills4EOSC CC represent a **single point of reference** in a specific Country/Region/Theme to find key **competencies** to enable the practice of **Open Science** with adequate knowledge of standards, applications and tools and best practices for delivering, managing, re-using, sharing and analysing **FAIR** data, as well as other digital research objects.

Competences



People and Institutions



Services



Resources



Operational Tools



Lazzeri, Emma. (2023, May 3). *Skills4EOSC: Skills for the European Open Science Commons*. EOSC-A Taskforce on Upskilling Countries to Engage in the EOSC. Zenodo. [DOI:10.5281/zenodo.7890392](https://doi.org/10.5281/zenodo.7890392)



Skills  
4 EOSC

Supporting



Co-funded by  
the European Union



UK Research  
and Innovation

# What do Competence Centres do?

**Skills4EOSC CC** are dedicated to knowledge organization and transfer in the Open Science, FAIR research output management and EOSC context.

They are associated with excellence, advice, training and knowledge transfer, and a collaborative approach of different institutions or departments.

open science

rdm fair research output  
eosc

knowledge

excellence training  
advice  
collaboration

Lazzeri, Emma. (2023, May 3). *Skills4EOSC: Skills for the European Open Science Commons*. EOSC-A Taskforce on Upskilling Countries to Engage in the EOSC. Zenodo. [DOI:10.5281/zenodo.7890392](https://doi.org/10.5281/zenodo.7890392)



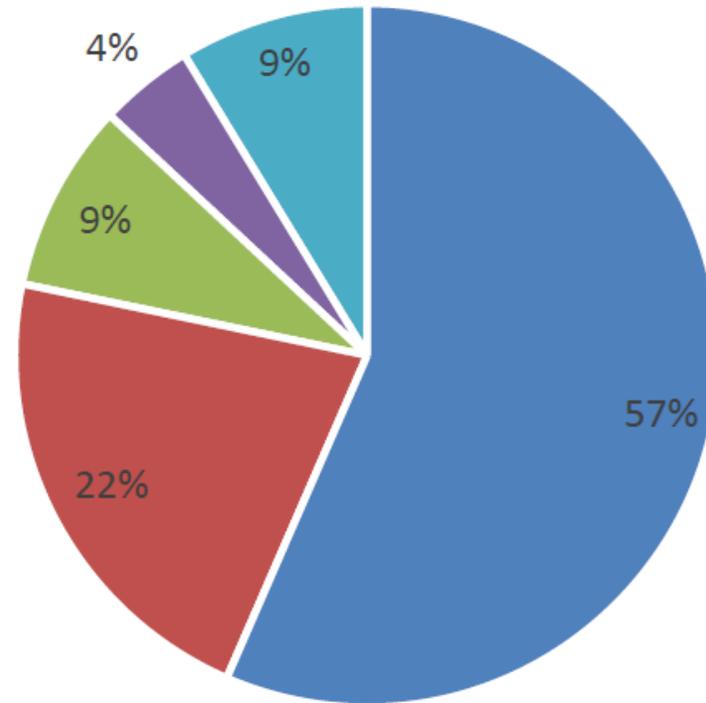
## How do you see the CC to be organised and governed at national/regional level?



Community feedback from Skills4EOSC internal Workshop on Competence Centers (July 2023), see Berberi (2023)



# How do you think the CC should interact with other local initiatives, CCs or organisations?

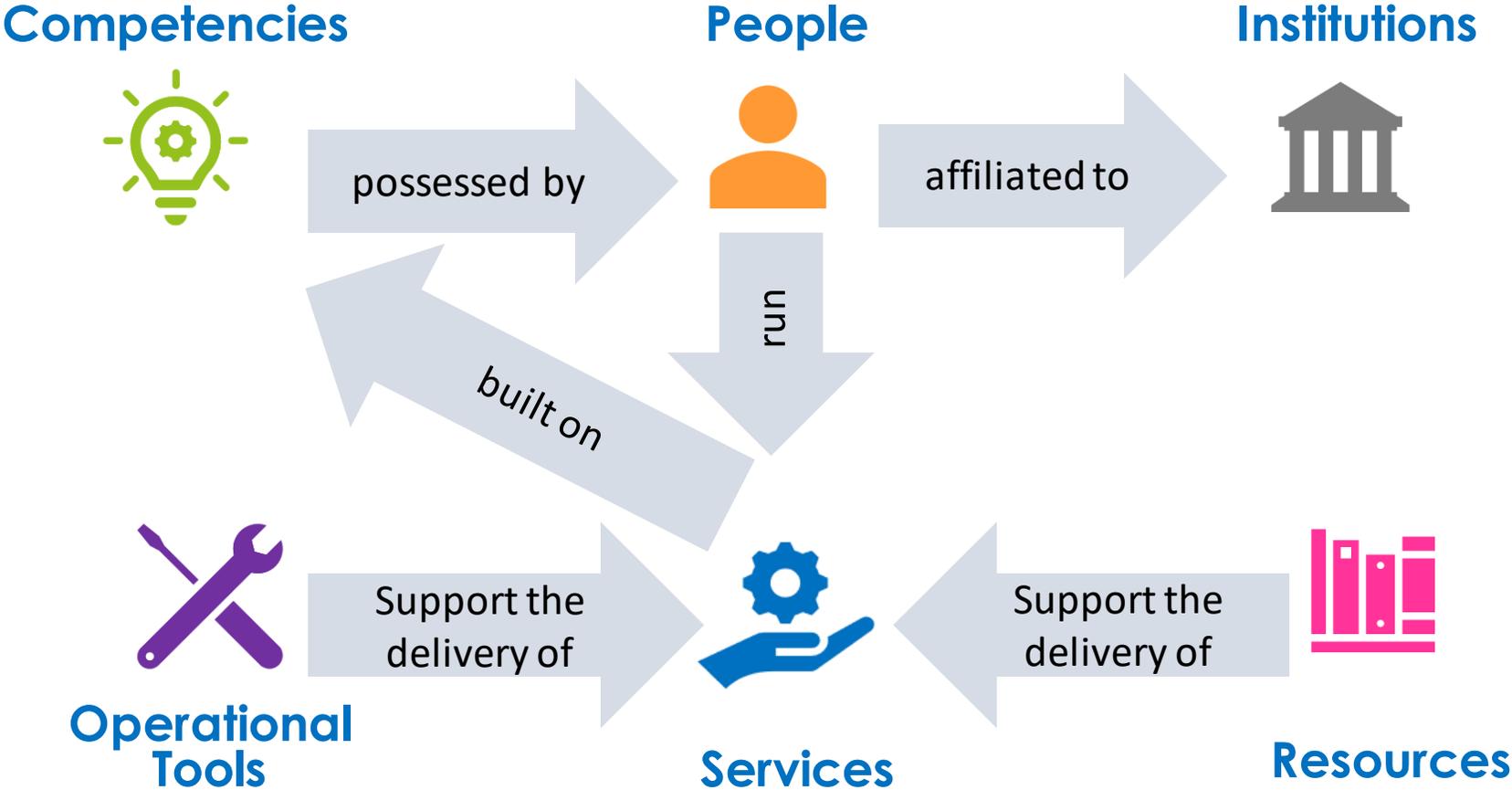


- National/Regional Coordination and Collaboration Forum
- Organization of Conferences and Workshops/Dissemination
- Identify competences/skills/gaps of the National CC
- Local Representatives Coordination
- Manage Local Institutions Needs/Requirements

Community feedback from Skills4EOSC internal Workshop on Competence Centers (July 2023), see Berberi (2023)



# Relations



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Round-up

## Key take-aways

- We have to **address the question of FAIR data stewardship locally and nationally** – by taking into account international developments.
- CC-DK can **benefit all universities and all disciplines**.
- We will draft a **short memo** on the basis of the discussion today, send it around for **community feedback** and present the results to DeIC's DM Advisory Forum, the National RDM Network, and FAIR Working Group D "Competences".



# References

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