

NI4OS-Europe: Servicing the Service Providers

Community support discussions: FAIR implementation for NI4OS-Europe service providers

29th of April

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The Cyprus Institute



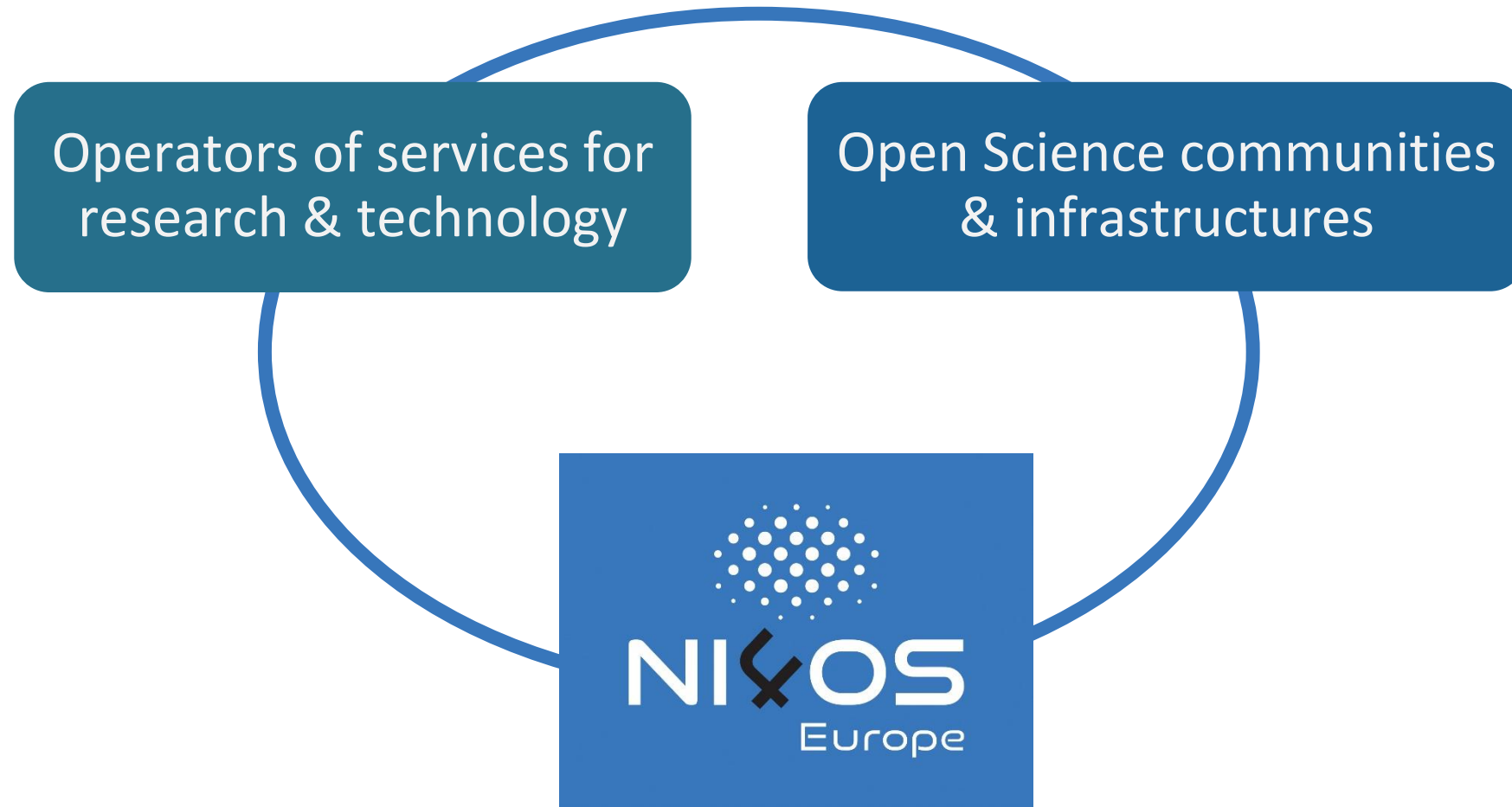
15 Member States and Associated Countries | 22 Partners



Participating countries

Greece	Hungary	Albania	Republic of Moldova
Cyprus	Romania	Bosnia-Herzegovina	Armenia
Bulgaria	Slovenia	North Macedonia	Georgia
Croatia	Serbia	Montenegro	







Support the **development and inclusion** of the national Open Science Cloud (OSC) initiatives in 15 Member States and Associated Countries in the overall scheme of EOSC governance



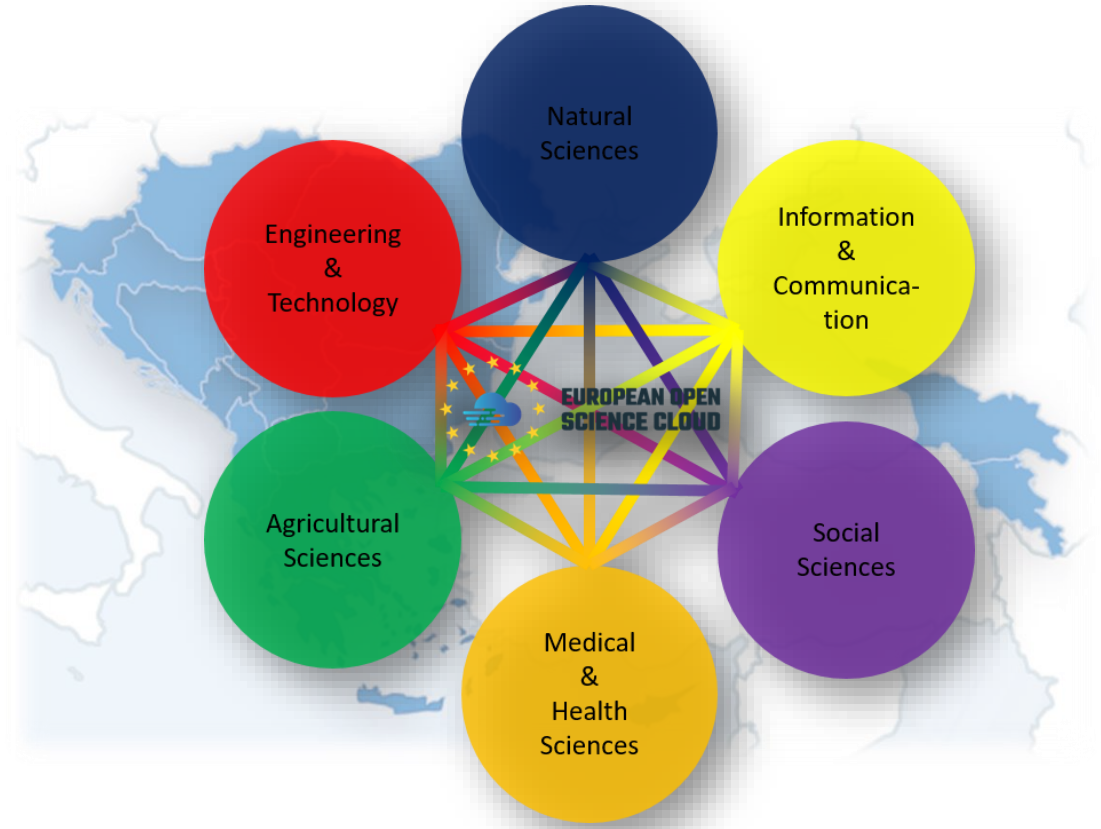
Spread the **EOSC and FAIR principles** in the community and train it



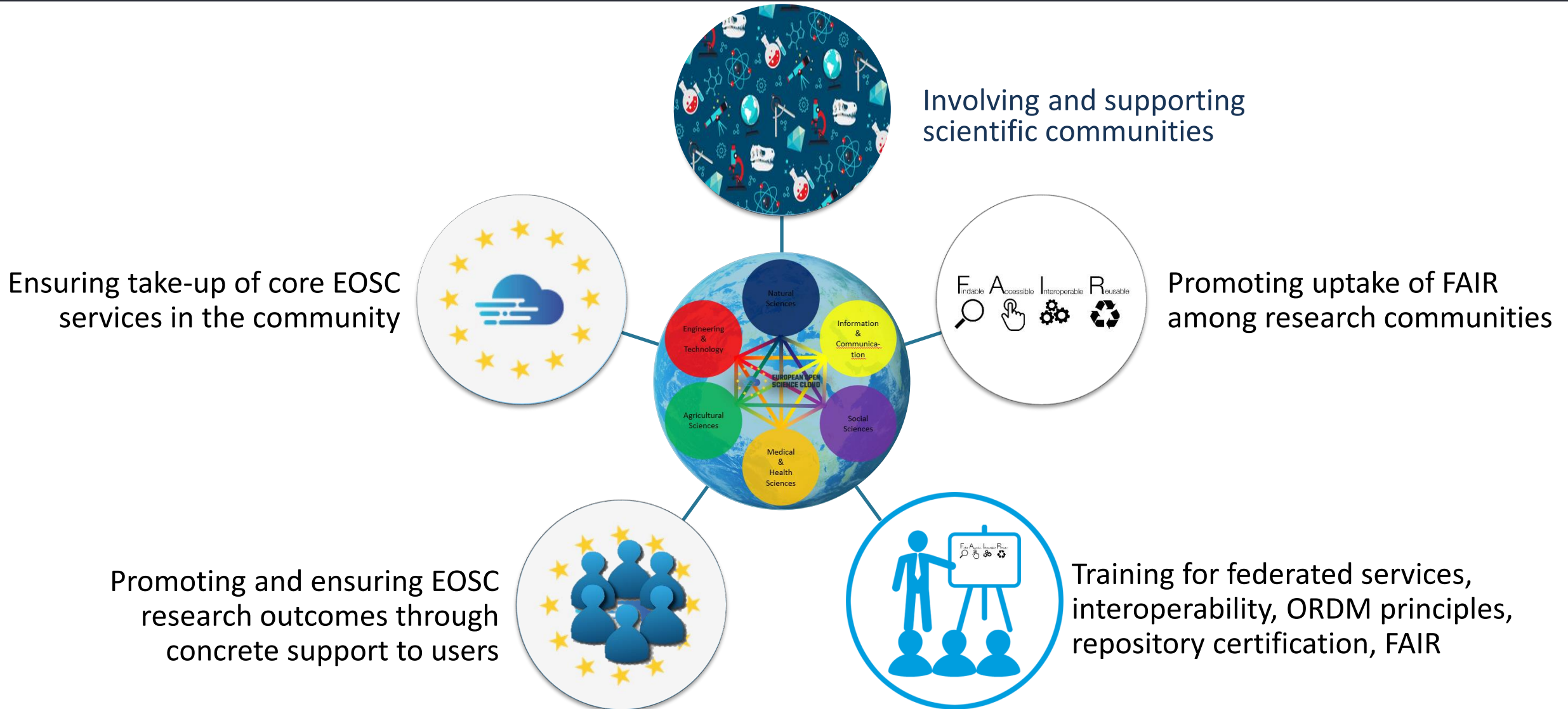
Provide technical and policy support in on-boarding of the existing and future service providers into EOSC

NI4OS-Europe supports OPEN SCIENCE!

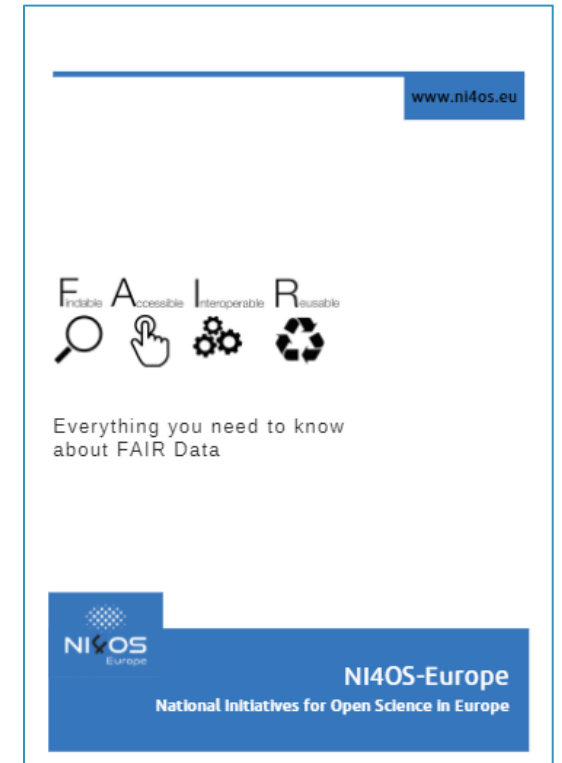
- ❑ We support 
- ❑ By providing all the necessary tools to the **LONG TAIL OF SCIENCE** throughout the **EOSC**
- ❑ Servicing **ALL** possible disciplines
- ❑ Namely we support the on-boarding of
 - ❑ Thematic Services
 - ❑ Generic Services
 - ❑ Repositories
- ❑ We provide access to **ORDM tools**
- ❑ We provide training on **FAIR**



User engagement, training and demonstrators



- ❑ Policy/Strategy: **Ambassadors** from each country assigned as EOSC promoters
- ❑ Training and dissemination: **material for FAIR and EOSC service uptake** is available in all different mother languages of the NI4OS-Europe area. Webinars for disseminating EOSC and FAIR principles in each country
- ❑ Infrastructures and tools: Provide **ORDM tools** and enhancing current practices



Flagship scientific communities

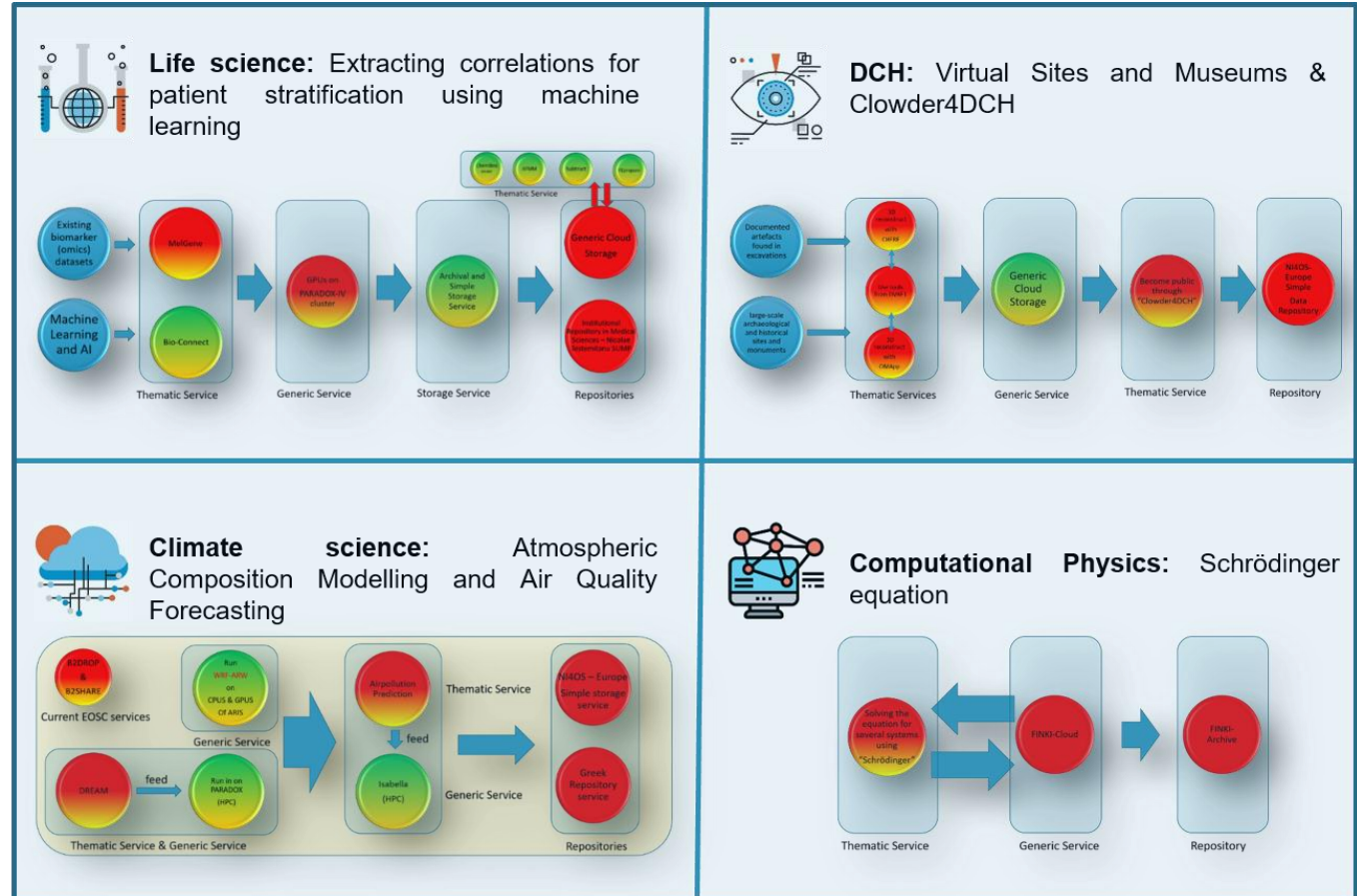
We have identify four highly cross-disciplinary, real-user communities:

Life Science

Digital Cultural Heritage

Climate Science

Computational Physics



at: <https://ni4os.eu/>

OPEN CALL

OPEN 11 April 2022

CLOSE 11 May 2022

GAIN ACCESS

to EOSC on-boarded NI4OS-Europe services



OPEN CALL
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COMPUTATIONAL PHYSICS

Research Topics

- | Computational fluid dynamics | Computational particle physics | Molecular dynamics | Electronic structure methods |
- | Computational electromagnetics | Lattice gauge theories | Astrophysics |

OPEN CALL
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CLIMATE RESEARCH

Research Topics

- | Regional climate modelling for climate change, impacts & phenomena | Air quality modelling, including atmospheric chemistry, air pollution transport | Weather forecast & extreme weather prediction, model development, application |

OPEN CALL
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80% **LIFE SCIENCES**
CLIMATE RESEARCH
DIGITAL CULTURAL HERITAGE
COMPUTATION PHYSICS

20% **OTHER SCIENTIFIC FIELDS**

Learn more about EOSC compatible projects:
<https://ni4os.eu/access/opencall>

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LIFE SCIENCES

Research Topics

- | Modelling & Molecular Dynamics study of important drug targets | Computer-aided drug design | Analysis of next generation DNA sequencing data | Synchrotron data analysis |
- | Image processing for biological applications |

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DIGITAL CULTURAL HERITAGE

Research Topics

- | Online services & access to repositories to enable studies of the cultural heritage assets in the region | Online visualization tools to drive breakthrough contributions to heritage enquiries |
- | Training material & tools for the creation of interactive and immersive environments to support the GLAM industry with limited resources to generate virtual exhibitions of their collections of artefacts |

EOSC candidate generic services: examples

□ HPC Resources

□ CPU



□ GPU



□ Xeon Phi



□ Cloud Virtual Machines



□ Generic Storage



□ Data management services (Archival, Repository, Data discovery, Hadoop on-demand, Data analysis service, Simple storage)



ChemBioServer

The screenshot shows the ChemBioServer website interface. It features a navigation menu with 'Home', 'Example Data', and 'Help'. The main content area is titled 'Welcome to ChemBioServer' and provides information about the server's purpose, which is to facilitate computational compound screening and analysis. It lists various services such as 'Filtering', 'Advanced Filtering', 'Clustering', and 'System requirements'. A sidebar on the left contains 'Basic Search' and 'ChemBioServer Info' sections.

DCH Clowder

The screenshot shows the Clowder website interface. It features a navigation menu with 'You', 'Explore', 'Create', 'Selections', and 'Help'. The main content area is titled 'Welcome to Clowder' and provides information about the server's purpose, which is to share, organize, and analyze data. It lists various resources such as 'Spaces', 'Collections', 'Datasets', 'Files', 'Bytes', and 'Users'. A sidebar on the right contains a 'Resources' section with a table of statistics.

Resource	Count
Spaces	0
Collections	6
Datasets	57
Files	7,150
Bytes	61.3 GB
Users	20

Live Access Server

The screenshot shows the Live Access Server website interface. It features a navigation menu with 'Data Set', 'Layers Panel', and 'View'. The main content area is titled 'Live Access Server' and provides information about the server's purpose, which is to provide live access to data. It lists various data sets and layers, including 'APM400116 project_V0.02_daily precipitation analysis_Rest Mediterranean_Middle east' and 'APM400116 project_V0.02_daily precipitation analysis interpolated onto 0.25deg grids (mm/day)'. A sidebar on the left contains a 'Layers Panel' section with a list of layers.

OVRET

The screenshot shows the OVRET website interface. It features a navigation menu with 'Home', 'About', 'Contact', and 'Help'. The main content area is titled 'OVRET' and provides information about the server's purpose, which is to provide a virtual reality environment for research. It lists various features and services, including '3D visualization', 'Data integration', and 'User interaction'. A sidebar on the left contains a 'Features' section with a list of features.

Airquality

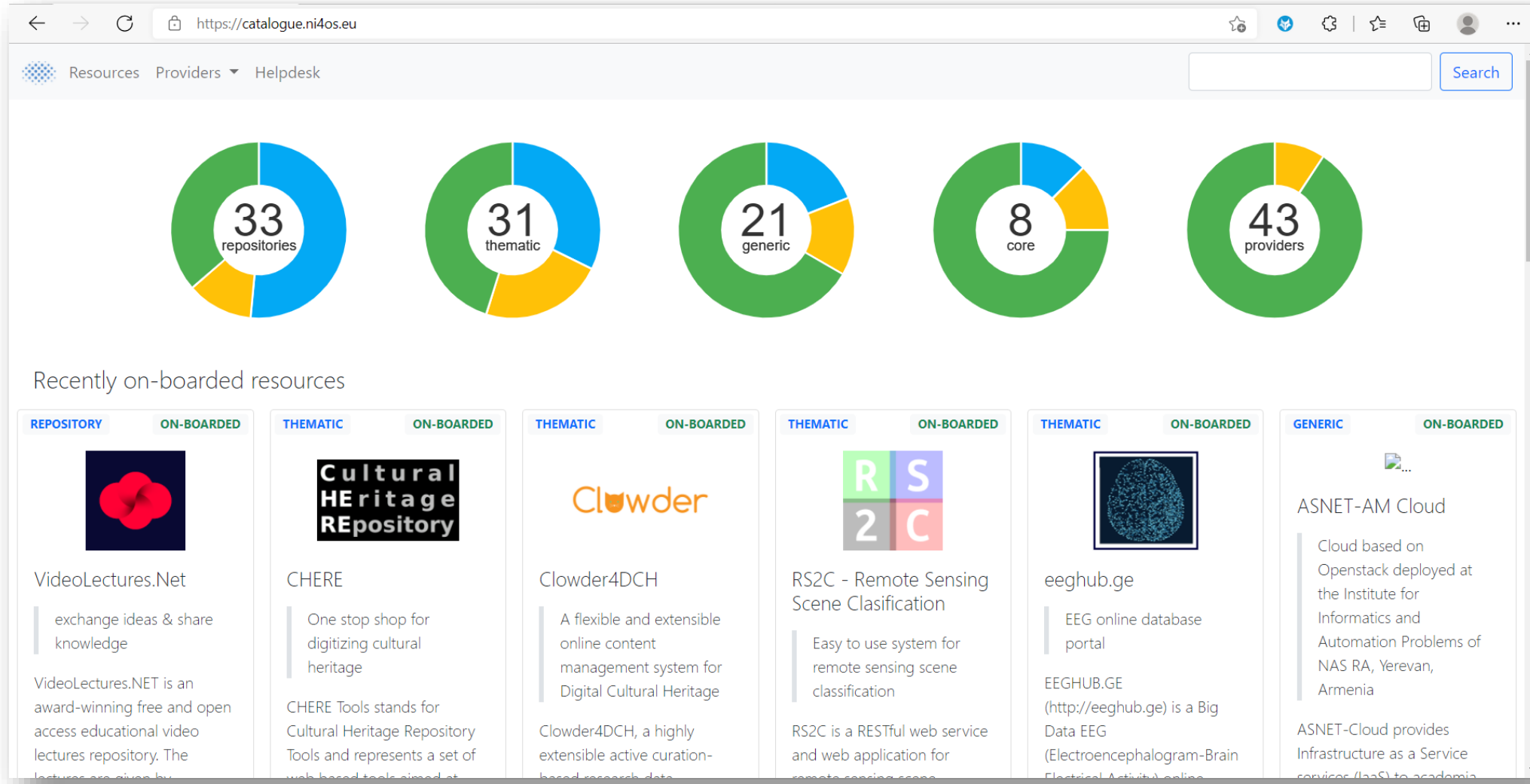
The screenshot shows the Airquality website interface. It features a navigation menu with 'Home', 'About', 'Contact', and 'Help'. The main content area is titled 'Airquality' and provides information about the server's purpose, which is to provide air quality data. It lists various data sets and layers, including 'Air quality index' and 'Air quality index by region'. A sidebar on the left contains a 'Layers Panel' section with a list of layers.

Schrödinger API

The screenshot shows the Schrödinger API website interface. It features a navigation menu with 'Home', 'About', 'Contact', and 'Help'. The main content area is titled 'Schrödinger API Docs' and provides information about the server's purpose, which is to provide a REST API for Schrödinger software. It lists various endpoints and services, including 'GET /api/v1/compounds' and 'POST /api/v1/compounds'. A sidebar on the left contains a 'Endpoints' section with a list of endpoints.

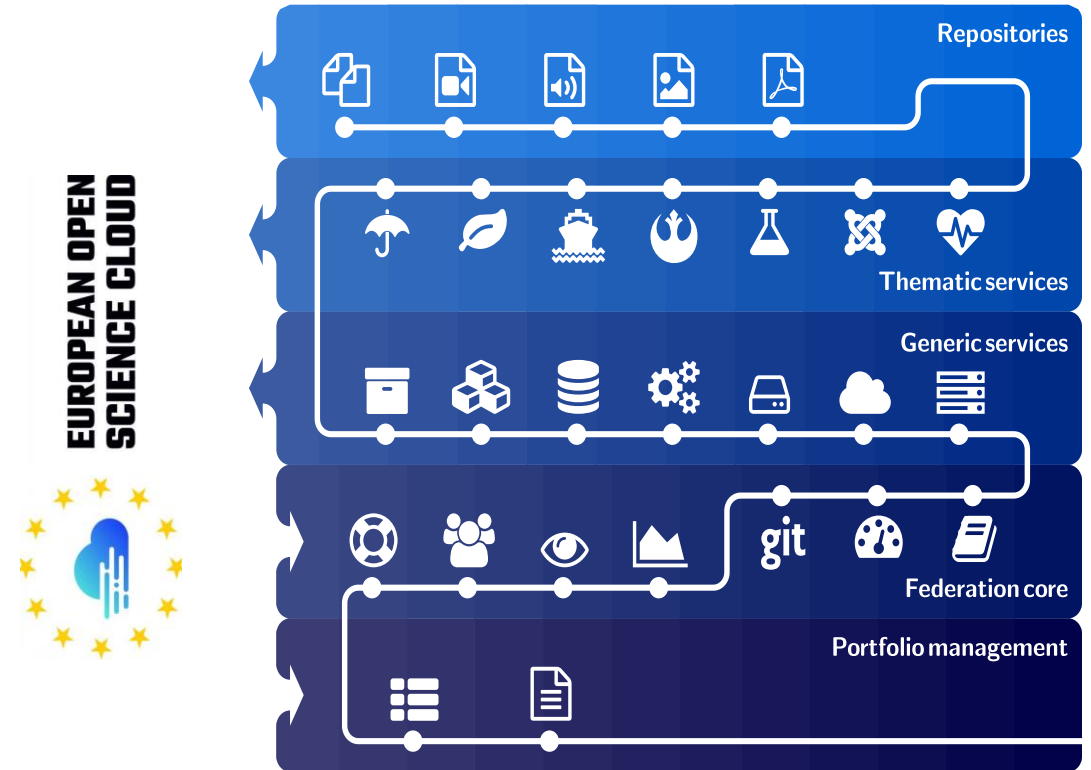
NI4OS-Europe Service Catalogue: examples

[Link: https://catalogue.ni4os.eu/](https://catalogue.ni4os.eu/)



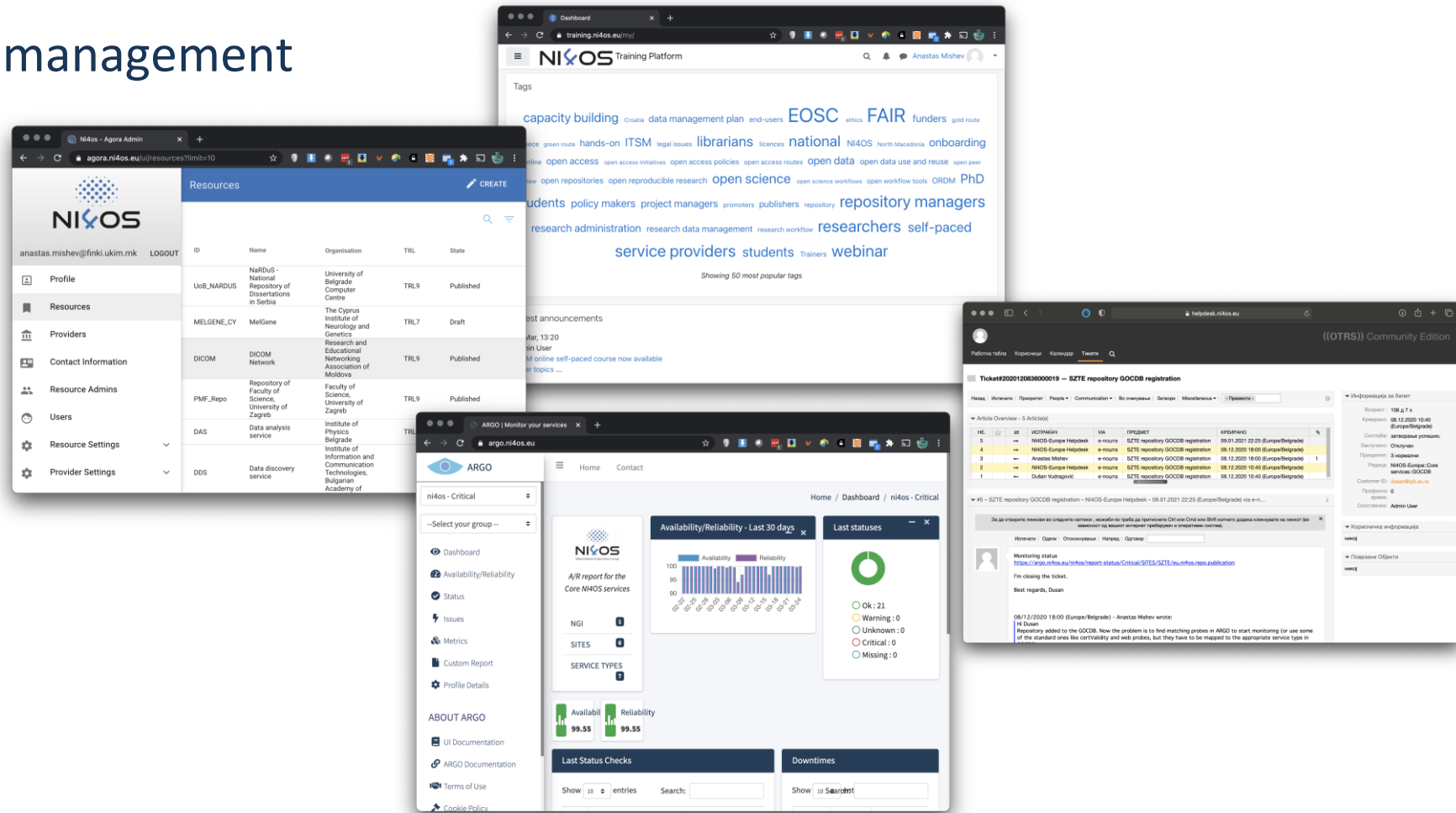
The screenshot shows the NI4OS-Europe Service Catalogue website. At the top, there are navigation links for 'Resources', 'Providers', and 'Helpdesk', along with a search bar. Below the navigation, five donut charts display statistics: 33 repositories, 31 thematic, 21 generic, 8 core, and 43 providers. The main content area is titled 'Recently on-boarded resources' and features six resource cards, each with a category label (REPOSITORY, THEMATIC, or GENERIC) and an 'ON-BOARDED' status. The cards are: VideoLectures.Net (REPOSITORY), Cultural Heritage REpository (THEMATIC), Clowder (THEMATIC), RS2C - Remote Sensing Scene Classification (THEMATIC), eeghub.ge (THEMATIC), and ASNET-AM Cloud (GENERIC). Each card includes a logo, a title, and a brief description.

- Pre-production environment – validate readiness and maturity level for EOSC onboarding
- Service portfolio management system based on the EOSC provider and service profile
- Integration with federation core services
- Service categorization
- Onboarding of
 - generic services
 - thematic services
 - repositories



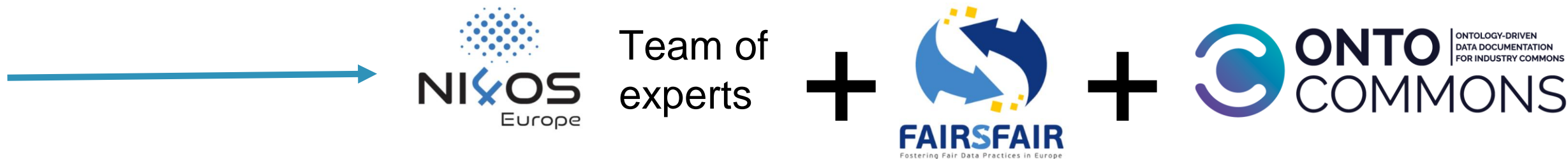
□ Federating core

- Service catalogue management system (AGORA)
- AAI
- Helpdesk
- Monitoring
- Accounting



How FAIR-enabling are the services?

- ❑ Does a service support metadata?
- ❑ Does a service support semantics?
- ❑ Are there metadata standards available for a specific domain?
- ❑ How much FAIR-educated are the scientists developing a service?
- ❑ How about semantics interoperability?
- ❑ How do we facilitate the inclusion of semantics, metadata schemas, ontological solutions on a service at practical level?
- ❑ Address the above



□ NI4OS-Europe Team of experts:

- Consists of academics with experience on metadata and controlled vocabularies

- Panos Constantopoulos



- Agiatis Benardou

- Georgios Artopoulos



- Zoe Cournia

- Valentina Vassallo



- Adam Szaldobagyi

- Vicky Liakopoulou



- Branko Marović



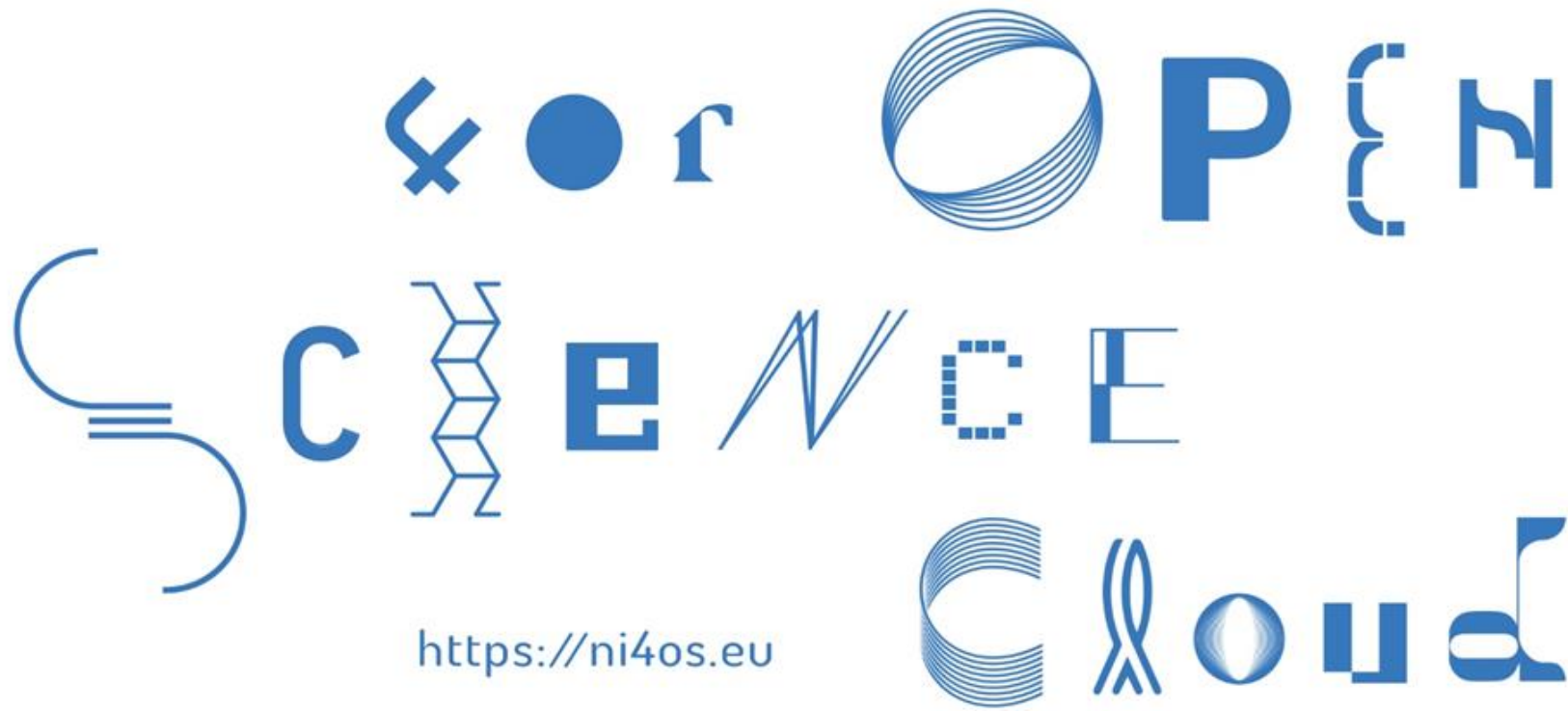
- ❑ NI4OS-Europe Team of experts:
- ❑ Goals:
 - ❑ Provide more context on the foggy subject of FAIR-enabling services
 - ❑ Answer questions and increase awareness on the technicalities of FAIR implementation
 - ❑ Everyone to understand the basics of semantics and the role of metadata and controlled vocabularies (ontologies, taxonomies, etc)
 - ❑ Work with service providers to analyse the different types of metadata
 - ❑ Provide tailored advice for appropriate use in a research data management lifecycle
 - ❑ Contribute to some parts of the implementation of domain data protocols (to later be implemented in the Argos DMP service)
 - ❑ Contribute to the EOSC FAIR TF and EOSC FAIR Metrics and Data Quality TF conversations

□ Activities:

- Organisation of webinars for on-boarded service providers and repository managers
- Providing a pathway on integrations and/or alterations that are necessary for enhancing existing services or new services
- Feedback on ORDM tools (RePol, LCT, RoLECT)
 - LCT – License Clearance Tool: <https://lct.ni4os.eu>
 - RePol – Repository Policy Generator <https://repol.ni4os.eu/>
 - RoLECT – EOSC RoP Legal & Ethics Compliance <https://rolect.ni4os.eu/>

- ❑ Consolidate the ‘experts group’ activities to Guidelines for service providers
 - ❑ Clearly demonstrate how different services (eg data analysis, storage, etc) can enhance FAIRness
- ❑ Create a metadata standard based on best practices

Thanks for your attention!



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