The «EOSC-5b» projects: quick update

FULVIO GALEAZZI, *EOSC-PILLAR PROJECT MANAGER*

e-IRG workshop, Geneve,
20-21 May 2019

This presentation reflects only the author's view, the Commission is not responsible for any use that may be made of the information it contains.

The fine print...

Being the PM (-to-be) of one of the "5b" projects, I feel a little bit uneasy...

So let me rephrase:

**This presentation reflects only the author's view,
not those of the Commission
nor of any of the other INFRAEOSC-05 projects**

Having said that...

Outline

All the material about the "5b" projects was gathered at the EOSC-hub week (Prague, 9-11 April) and is available on the web:

https://www.slideshare.net/TheEOSChubproject/eosc-nordic-project-overview

https://www.slideshare.net/TheEOSChubproject/ni4oseurope

https://www.slideshare.net/TheEOSChubproject/eoscpillar

https://www.slideshare.net/TheEOSChubproject/expands

https://www.slideshare.net/TheEOSChubproject/eoscsynergy

Few slides for each of the projects, then some personal thoughts.

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EOSC: what is it? where we are?
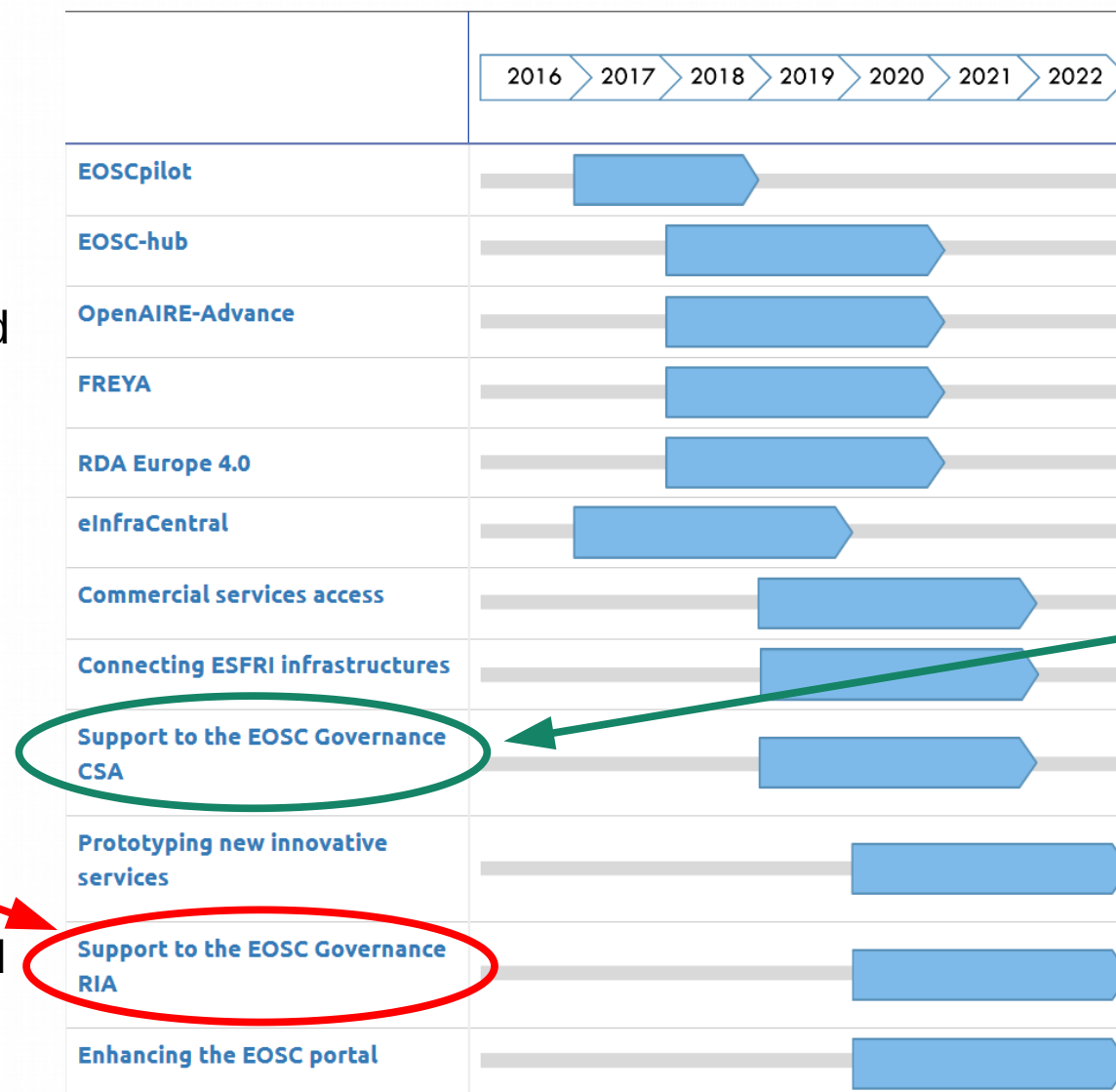
Not a "project", rather a "vision" or a "process"

The initiave was initially proposed in 2016, as part of the European Cloud Initiative to build a competitive data and knowledge economy in Europe.

The roadmap articulates along a series of projects (more than shown in the picture).

We are **HERE**

Noteworthy:
- long journey, a lot has been achieved already
- long journey, we are only half-way...

	2016	2017	2018	2019	2020	2021	2022
EOSCpilot							
EOSC-hub							
OpenAIRE-Advance							
FREYA							
RDA Europe 4.0							
eInfraCentral							
Commercial services access							
Connecting ESFRI infrastructures							
Support to the EOSC Governance CSA							
Prototyping new innovative services							
Support to the EOSC Governance RIA							
Enhancing the EOSC portal							

This corresponds to EOSCsecretariat and FAIRsFAIR

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INFRAEOSC-05-2018-2019 sub b)

RIA, Research and Innovation Action

30 M€ budget, call closed on 21st November 2018

From the topic description:

> *This sub-topic aims to support the **coordination**, **convergence** and **federation** of EOSC-relevant **national and/or thematic initiatives** for open research data and services through the development of appropriate common tools and mechanisms. The aim is, on the one hand, to **support the gradual alignment of policies and practices** of EOSC-relevant national and/or thematic initiatives to EOSC standards and, on the other hand, to **enable EOSC-relevant, non-commercial services to be accessed** through the EOSC portal.*

Mix of organizational and technical challenges.

"Horizontal" (thematic initiatives) and "Vertical" (national initiatives) dimensions.

Total of **5 projects** funded, as **complementary grants**: 4 "national", 1 "thematic"

NI4OS-Europe (857645)

Start:
1st September

Duration:
36 Months

NI4OS-Europe
National Initiatives for Open Science in Europe

EOSC-Hub Week 2019, Prague

Dr. Anastas Misev (UKIM), Dr. Ognjen Prnjat (GRNET), on behalf of NI4OS-Europe consortium

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NI4OS-Europe (857645)

Mission and Vision

❑ Mission and vision of the project are to be a core contributor to the EOSC service portfolio, commit to EOSC governance and ensure inclusiveness on the European level.

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NI4OS-Europe (857645)

Partnership

|			
1	Ethniko Diktyo Erevnas Technologias AE	GRNET	Greece
2	ATHINA-Erevnitiko Kentro Kainotomias stis Technologies tis Pliroforias, ton Epikoinonion kai tis Gnosis	ATHENA	Greece
3	The Cyprus Institute	CYI	Cyprus
4	University of Cyprus	UCY	Cyprus
5	Institute of Information and Communication Technologies	IICT	Bulgaria
6	Sveuciliste u Zagreb - Sveucilisni Racunski Centar	SRCE	Croatia
7	Ruđer Bošković Institute	RBI	Croatia
8	Kormanyzati Informatikai Fejlesztesi Ugynokseg	KIFU	Hungary
9	Debreceni Egyetem	UD	Hungary
10	Institutul National de Cercerate-Dezvoltare in Informatica – ICI Bucuresti	ICI	Romania
11	Unitatea Executiva pentru Finantarea Invatamantului Superior, a Cercetarii, Dezvoltarii si Inovarii	UEFISCDI	Romania
12	Akademska raziskovalna mreza Slovenije	ARNES	Slovenia
13	Univerza v Mariboru, Univerzitetna knjiznica Maribor	UMUKM	Slovenia
14	Institut za fiziku	IPB	Serbia
15	Univerzitet u Beogradu	UOB	Serbia
16	Qendra Nderuniversitare e Sherbimeve Dhe Rrjetit Telematik	RASH	Albania
17	Univerzitet u Banjoj Luci	UNI BL	Bosnia-Herzegovina
18	Ss. Cyril and Methodius University in Skopje	UKIM	Northern Macedonia
19	Javna Ustanova Univerzitet Crne Gore Podgorica	UOM	Montenegro
20	Research and Educational Networking Association of Moldova	RENAM	Republic of Moldova
21	Institute for Informatics and Automation of the Academy of Sciences of Armenia	IIAP	Armenia
22	Georgian Research and Educational Networking Association	GRENA	Georgia

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NI4OS-Europe (857645)

Overall objective

❑ The overall objective of the project is to support the development and inclusion of the national Open Science Cloud 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; and provide technical and policy support in on-boarding of the existing and future service providers into EOSC, including generic services (compute, data storage, data management), thematic (domain-specific) services, repositories and data sets – thus introducing new services that cover the whole spectrum of services related to Open Science, data and publications

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ExPaNDS (857641)

Start:
1st September

Duration:
36 Months
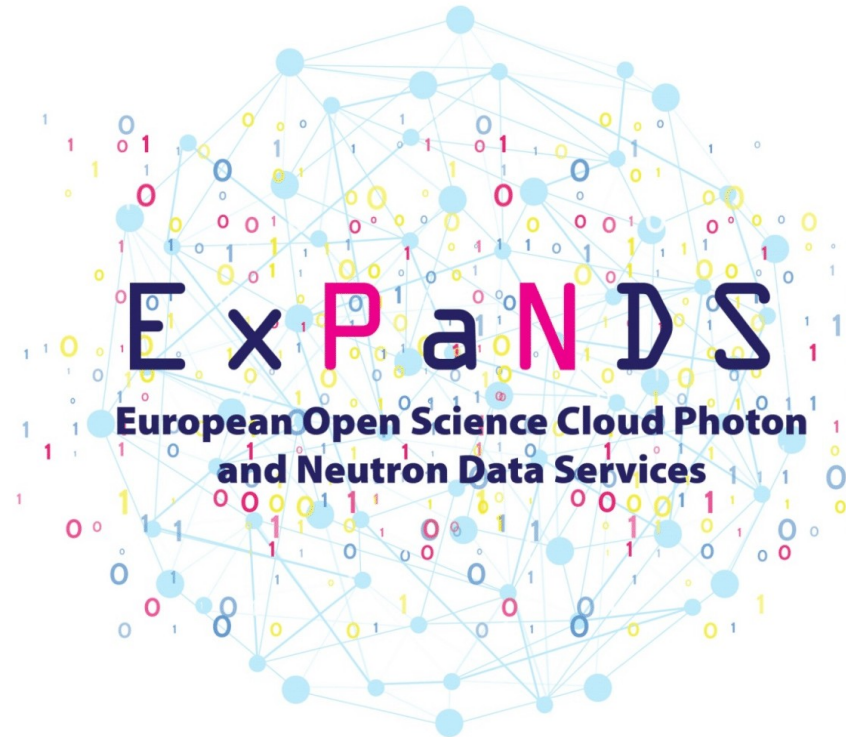
Knut Sander

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It is envisaged that this project will receive funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 857641

ExPaNDS (857641)

ExPaNDS Objectives

- Enable EOSC services and provide coherent FAIR data services to the scientific users of PaN sources

- Connect PaN NRIs through a platform of data analysis as a service for users from research institutes universities, industry etc.

- Maintain and develop a catalogue of data and analysis software for PaN data

- Gather feedback and cooperate with the EOSC governance bodies to improve the EOSC

- Develop standard relationships between scientific publications, PaN scientific datasets, experimental reports, instruments, authors

2

ExPaNDS (857641)

ExPaNDS Project Team

Federation of 10 European National Photon and Neutron RI & EGI

- one 4th generation storage ring (MaXIV),
- seven 3rd generation storage rings (ALBA, DLS, SLS, Elettra, SOLEIL, PETRA III, BESSY II),
- five free electron lasers (SwissFEL, FLASH, FLASH II, Fermi, FELBE),
- two Neutron sources (ISIS and SINQ)

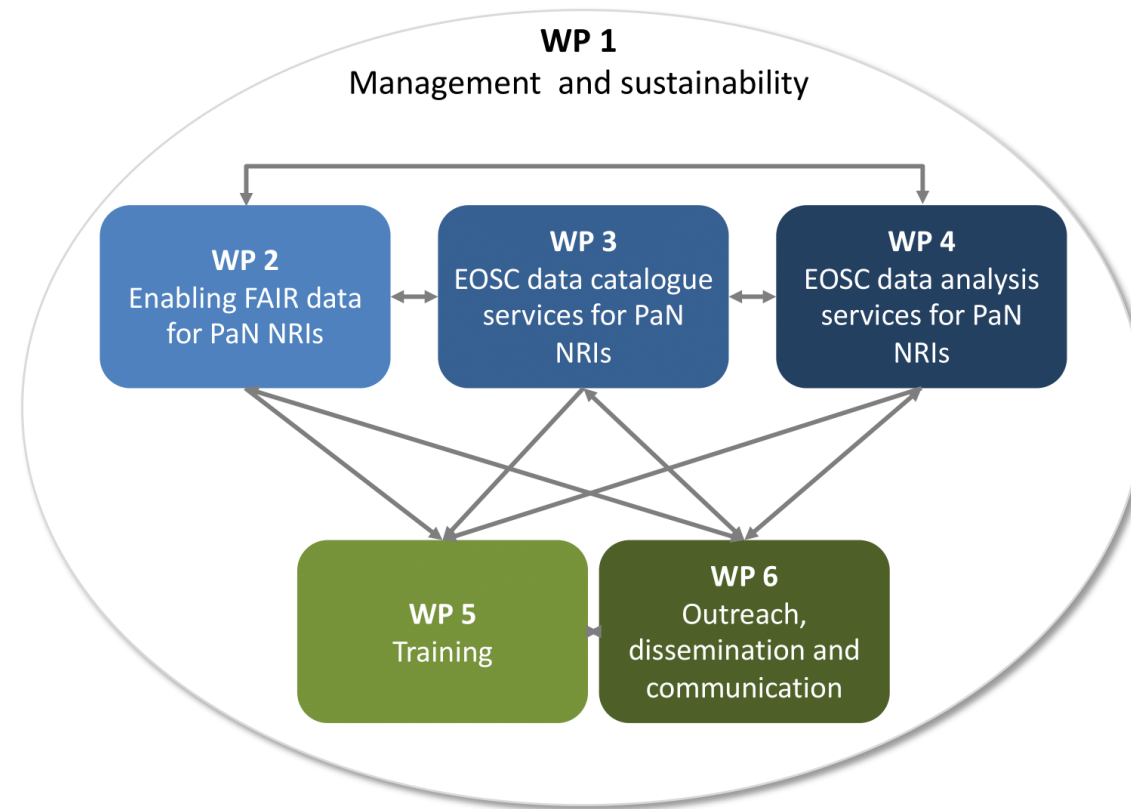- a federated e-infrastructure (EGI)

3

ExPaNDS (857641)

ExPaNDS Work Packages

WP 1
Management and sustainability

WP 2
Enabling FAIR data for PaN NRIs

WP 3
EOSC data catalogue services for PaN NRIs

WP 4
EOSC data analysis services for PaN NRIs

WP 5
Training

WP 6
Outreach, dissemination and communication

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EOSC-synergy (857647)

Start:
1st September

Duration:
30 Months

EOSC-synergy (857647)

Project Vision: Rationale and Key ideas

- Deployment of an **EOSC-enabled digital infrastructure with a critical mass**
- Designing a **rational strategy** to deploy **FAIR National Data Repositories**

- Definition of an **EOSC software quality baseline**
- Service Quality Assurance as a Service: **SQAaaS**
- **FAIRness** checking **"as a Service"**

CAPACITY EXPANSION

SKILLS DEVELOPMENT

FOSTERING SERVICE INTEGRATION

BUILDING CAPABILITIES

- Enable **auto-training** in EOSC
- Explore and **implement a MooC** solution following a **Marketplace approach**

- Integration of production-level **National Thematic Services in EOSC**
- Thematic service **certification based on SQAaaS.**

EOSC-Hub Week. Prague 10-12th April 2019

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EOSC-synergy (857647)

Project Consortium: headlines

- The consortium has **extensive expertise** in supporting the full lifecycle of advanced services acquired through **state-of-the-art research** and by **providing support** to national communities and international scientific collaborations **at large scale**.

- The consortium is **very well positioned** to address **the implementation of harmonized data access mechanisms**, integrated with the EOSC core services, that respect EU directives in Cloud security and data privacy.

- Not only brings expertise on data infrastructures, but also **on National Data Repositories** via excellent partners that connect directly to FAIR policy development efforts.

- Relevant **Research Communities internationally consolidated** will **validate the service integration** solutions provided in the course of the project.

AN ENVIRONMENT DESIGNED
FOR COLLABORATION

An Iberian computing infrastructure for scientific research

Integrating computing and data resources for research and innovation

EOSC-synergy coordination structure is based on IBERGRID: www.ibergrid.eu

Project management and legal coordination resides on CSIC (Spanish coordinator of IBERGRID)

EOSC-Hub Week. Prague 10-12th April 2019

EOSC-synergy (857647)
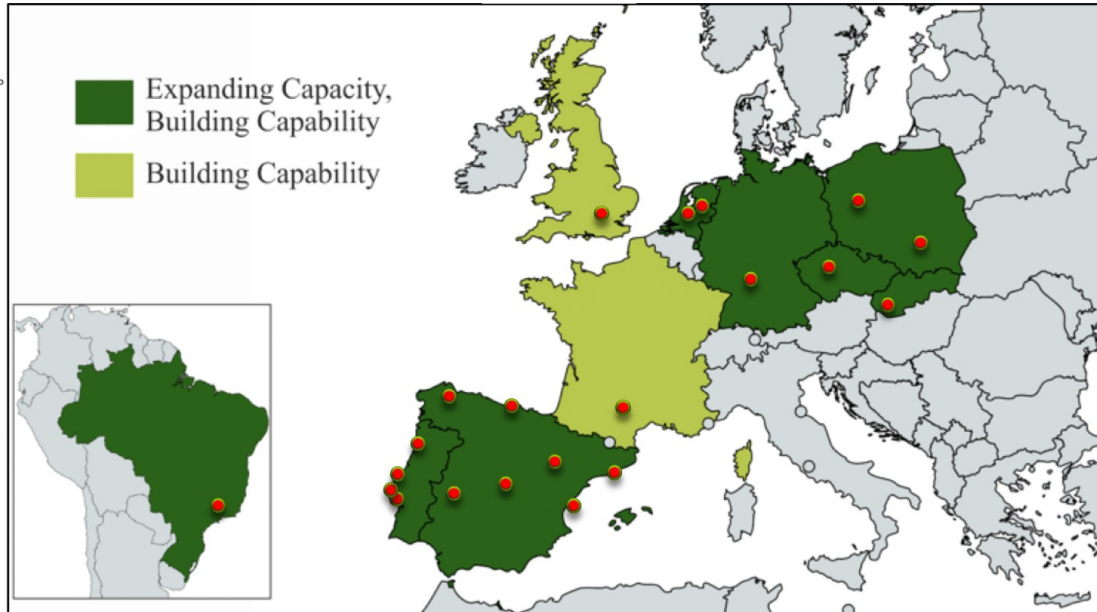

Project Consortium

EOSC-Nordic (857652)

Start:
1ˢᵗ September

Duration:
36 Months
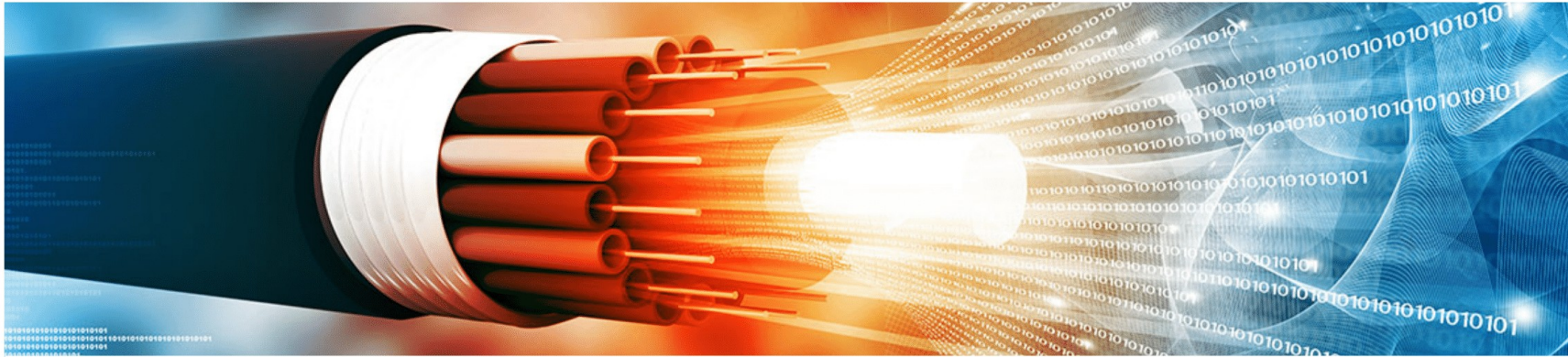
EOSC NORDIC | **Project Overview**
EOSC-hub week, Prague, 9.04.2019

EOSC-Nordic project has received funding from the European Union's Horizon 2020
research and innovation programme under grant agreement No 857652

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EOSC-Nordic (857652)

Call: INFRAEOSC-05-2018-2019
Participants: 24
Budget: 5.9M€
Coordinator: Gudmund Høst, NeIC Director - Gudmund.Host@nordforsk.org

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EOSC-Nordic (857652)

24 Participants

Iceland
- UNIVERSITY OF ICELAND

Norway
- NORDFORSK
- UNINETT SIGMA2 AS
- NORWEGIAN CENTER FOR RESEARCH DATA

Finland
- CSC – IT CENTER OF SCIENCE
- UNIVERSITY OF HELSINKI
- UNIVERSITY OF TAMPERE
- UNIVERSITY OF EASTERN FINLAND
- FINNISH METEOROLOGICAL INSTITUTE

Estonia
- UNIVERSITY OF TARTU
- NATIONAL INSTITUTE OF CHEMICAL PHYSICS AND BIOPHYSICS

Latvia
- RIGA TECHNICAL UNIVERSITY

Denmark
- DENMARK TECHNICAL UNIVERSITY
- UNIVERSITY OF SOUTHERN DENMARK
- DANISH NATIONAL ARCHIVES
- UNIVERSITY OF COPENHAGEN
- CAPITAL REGION OF DENMARK
- NORDUNET / AS

Sweden
- UNIVERSITY OF UPPSALA
- SWEDISH RESEARCH COUNCIL
- UNIVERSITY OF GOTHENBORG

Lithuania
- UNIVERSITY OF VILNIUS

Netherlands
GoFair

Germany
DKRZ

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EOSC-Nordic (857652)

EOSC NORDIC

OBJECTIVE 1

Support coordination, harmoni-sation and alignment of Nordic and Baltic national policies and practices related to the provision of horizontal research data services with EOSC

OBJECTIVE 5

Provide a Knowledge Hub to deliver training and technical support to new service providers and communities willing to engage with EOSC during and after the project lifetime

MAIN OBJECTIVES
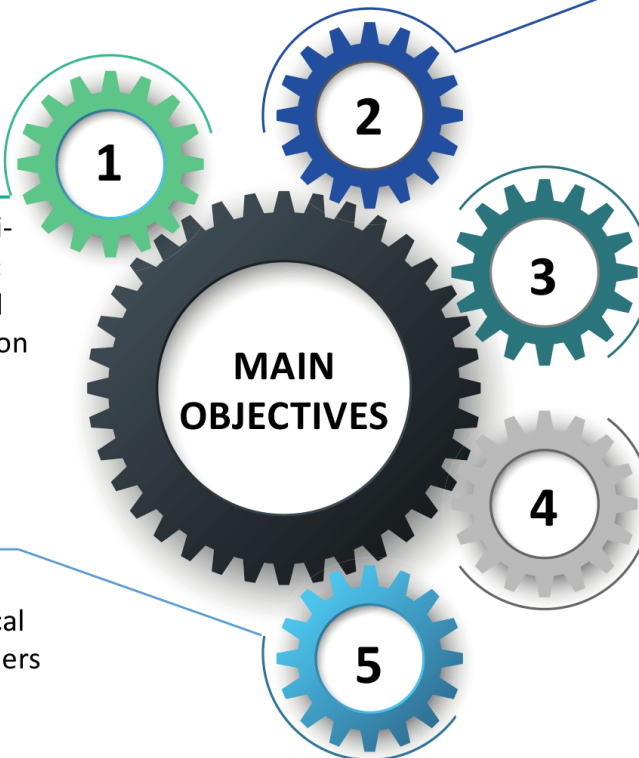
OBJECTIVE 2

Increase the discoverability of Nordic & Baltic services. Extend and expand their use by making them accessible through the EOSC portal

OBJECTIVE 3

Promote and support the uptake of FAIR data practices and certification schemas across the Nordics

OBJECTIVE 4

Accelerate the progress and attractiveness of EOSC by piloting & delivering innovative solutions developed and tested in a useful and functional cross-border environment

EOSC-Pillar (857650)

Start:
1st July

Duration:
36 Months

Grant Agreement:
signed

Consortium Agreement:
being discussed

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EOSC-Pillar

FULVIO GALEAZZI

on behalf of EOSC-Pillar collaboration.

EOSC-hub week, Prague, 11 April 2019

EOSC-Pillar is about to receive funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 857650

EOSC-Pillar (857650) – Project

- Acronym: EOSC-Pillar

- **Coordination and Harmonisation of National and Thematic Initiatives to support EOSC**

- H2020 call: INFRAEOSC-05-2018-2019 (RIA)

- 18 Partners

  - Austria: University of Vienna

  - Belgium: University of Gent

  - France: ***CINES (Technical Coordinator)***, CNRS, INRA, INRIA, IFREMER, INSERM

  - Germany: DKRZ, Fraunhofer, GFZ, KIT

  - Italy: **GARR (Coordinator)**, CINECA, CMCC, CNR, INFN, TRUST-IT

- Total EC Contribution: € 6.880.965,00

- Start date: 1 July 2019, duration 36 months

EOSC-Pillar (857650) – Objectives

Support the EOSC implementation leveraging national initiatives of the Member States (MS) and Thematic Initiatives (TI) developed by research communities working in national and European collaborations to build a future based on Open Science and FAIR data practices

- **O1 - Analyse the state of the art** of existing national initiatives and services for computing and data services in the countries involved, and **support their consolidation**

- **O2 - Harmonise procedures** for the delivery of horizontal enabling services for research data across countries;

- **O3 - Co-ordinate with other initiatives** to achieve harmonisation across different regions, countries, and trans-national research communities to build a truly inclusive EOSC;

- **O4 - Promote the uptake of FAIR data practices and services** at national levels and across scientific communities and national borders

- **O5 - Enable non-commercial trans-national services** to be accessed through the EOSC portal;

- **O6 - Support the growth of an active community of stakeholders** in each involved country, who will actively contribute to the success of EOSC;

- **O7 - Propose viable business models** for the sustainable provision of trans-national services.

EOSC-Pillar (857650) – Activities

Project's workplan tackles both **organisational** and **technical** issues using a mix of study, coordination, research and demonstration, training and service activities.

- **WP3 (National Initatives survey)**: recognition of communities, services, data management, access policies, AAI models, privacy and legal, business models, SLA, user support

- **WP2 (The human factor of the EOSC: Dissemination, Outreach and Community building)** and **WP4 (From National Initiatives to trans-national services)**: harmonisation of national policies, outreach and engagement of all EOSC-related stakeholders, coordination with "the EOSC bigger picture"

- **WP5 (The data layer: establishing FAIR data services at the national and transnational level)** and **WP7 (The infrastructure layer: delivering horizontal data storage and computing services, from national to transnational)**: integration, delivery and validation of services at the data and infrastructure level

- **WP6 (EOSC in action: Use cases and community-driven pilots)**: 9 pilots (and an open call!) selected on the basis of readiness level, trans-national nature, opportunity/interest of generalisation to other communities

My

"EOSC-5b" – common objectives

- Mapping and integration of national and local services to enhance their discoverability/usage

- Enhancement of the EOSC with new thematic services

- Support of trans-national services integration the EOSC through appropriate technical and policy measures (including legal and business model aspects).

- Cross-nation and Region coordination and policy harmonisation.

- Scientific community engagement and skill development

- FAIR and ORDM promotion

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"EOSC-5b" - common activities

- Business model, innovation, exploitation and sustainability
- Communication, dissemination, community engagement
- Service integration into EOSC
- Policy Harmonisation
- Service harmonisation & best practices
    - Integration of data repositories
    - Ontologies
    - SW management
- Integration platform/tools and horizontal services
- FAIR implementation and certification
- Landscaping
- Training
- FAIR and ORDM promotion
- Data services/ lifecycle and exploitation
- Use cases & demonstrators/validation

"EOSC-5b" - use-cases and demonstrators

- Earth Observation

- Geology/ seismology

- Biomedical

- Astrophysics

- Environment

- Material sciences

- Agrifood
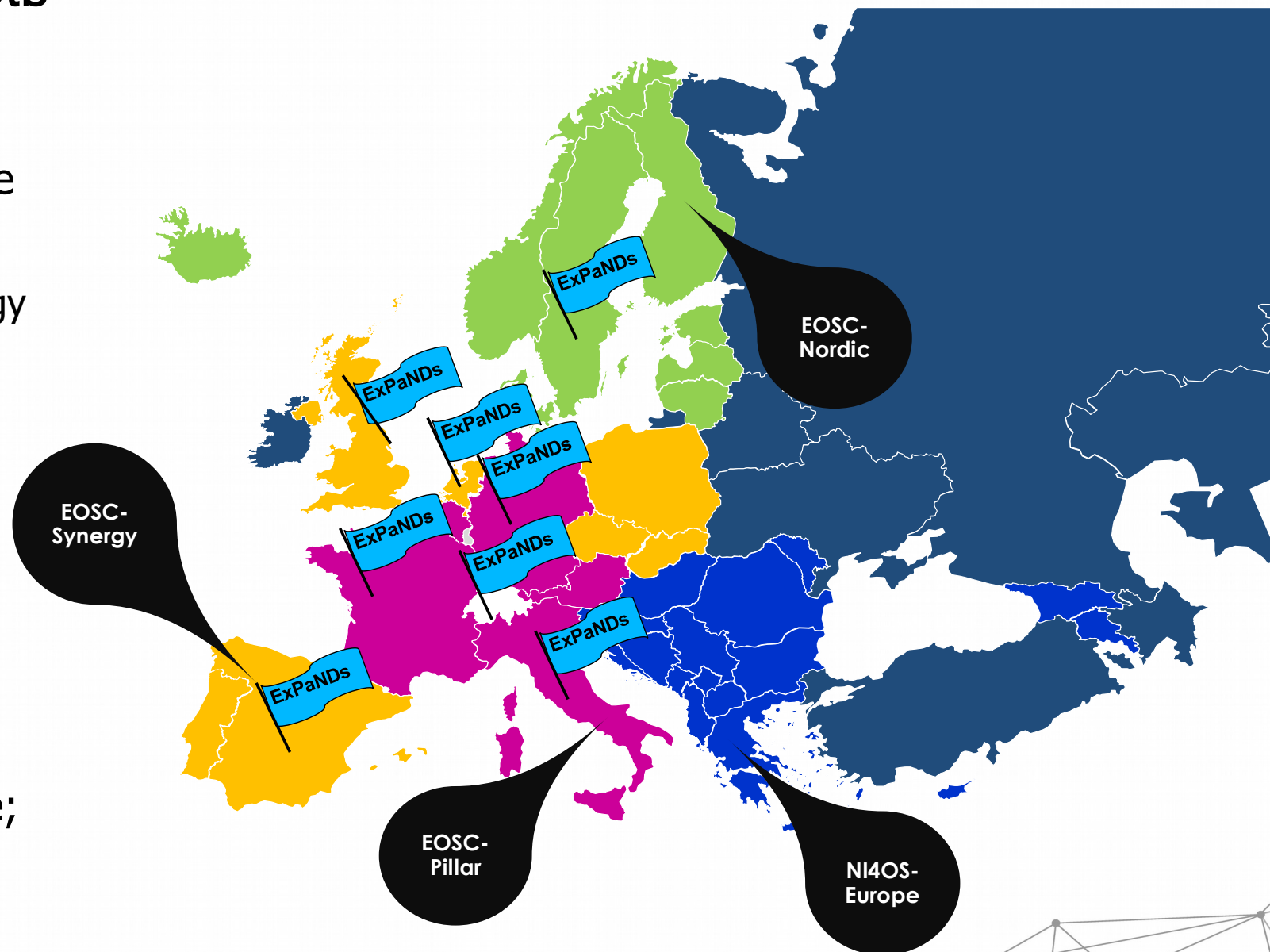
- SW heritage

- Humanities

- HEP

"EOSC-5b" – all projects

Shown here are only projects awarded within subtopic b) of the call

• France and Germany also in Synergy

Strong interaction is envisaged, specifically in the fields of:

✔ Landscaping;

✔ Training and Skills;

✔ FAIR data;

✔ National policies & Governance;

✔ Onboarding;

✔ Dissemination and Events.

National Initiatives & the EOSC: the vision of EOSC-Pillar

National Initiatives involving RIs and e-Infrastructures can play a key role to involve live user communities and research infrastructures in the very design of EOSC and its sustainable evolution.

Action is required:

- **At the national level**, to bring together all relevant stakeholders

- **At the international level**, to harmonise the National Initiatives and streamline the trans-national roll out of services that can be of interest to different communities distributed across multiple countries.

Having their intrinsic sustainability, the NIs can be a key element to support the development of the EOSC ecosystem, and develop into a cornerstone on which to build its long-term sustainability.

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"EOSC-5b" - N-times duplication?

Short answer: **NO**

- All RIAs, but don't have mandate (nor resources nor willingness) to re-invent the wheel:
  - several activities build upon past and current projects (e.g., FAIRsFAIR)

- National environments are very different from one another

- Regional Coordination Board is being defined, among all 5a/b/c projects:
  - together with EOSCsecretariat, will be main vehicle for interaction with Executive Board Working Groups (and Governing Board sub-groups?), ESFRI clusters, … to be understood
  - to align on different matters (e.g., possible business models, involvement of institutional funders, triggering uptake of FAIR practices,…)

- Concrete proof of constructive interaction: landscape analysis being designed together
  - all projects had some sort of recognition, during the first months of activity
  - EB-WG (members being nominated as we speak), aim at completing landscape recognition by Q3/Q4-19

"EOSC-5b" - specificities

Each of the "National" projects emphasizes different aspects:

- tackle gaps in current EOSC ecosystem:
  - lack of capacity
  - ensure software quality
  - establish pre-production environment
  - service validation in "production mode"
  - integrate "complex" use-cases
- involve different communities and propose cross-discipline activities
- national initiatives as set of policies/programmes vs. inclusive "boards" of stakeholders
- address the need for training and technical support
- strict relation with EOSC-pilot/EOSC-hub vs. "templating" their experience

Sparse thoughts about the "portal"

Services should be registered/visible/accessible from some kind of "portal".

What functionalities should the portal offer?

- as a minimum, act as a registry, capable to interoperate with national "(functional) clones"

- offer API access, allow communities to create tailored views

- the portal should "solve some of the researchers' problems": for example, suggestion of services of potential interest

- positive side effect: "certification". If a service is found in the portal, user can be confident that a procedure was followed

  - "certification" may mean different things according to specific services, yet it may have something to do with the concept of "quality".

Summary

FAIR data, federation, trans-national access, cross-community research are not just buzzwords.

The EOSC is the new perspective to see research from.

The EOSC will be useful/sustainable/functional/… only if deeply rooted in National Initiatives and Thematic Initiatives.

The EOSC is being built/assembled now: let's get involved and do our share!

Thanks for your attention
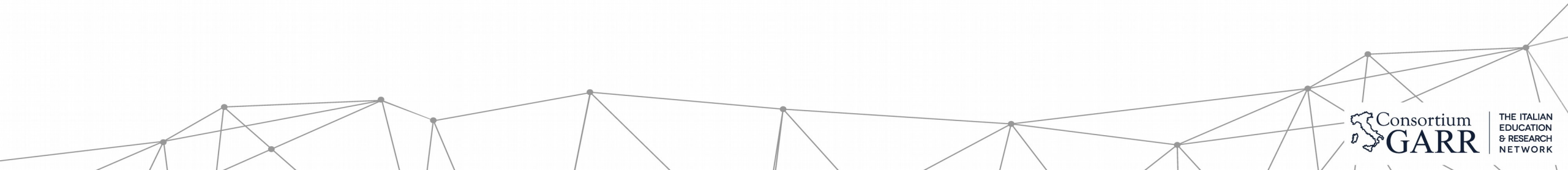
Backup slides

The Italian ICDI initiative: objectives & activities

- **Sign a MoU among the Research Organisations in Italy to create a core group**

- **Develop an inclusive coordination between RI & eI**

- **Supporting the Italian Scientific Research System** by fostering synergies between RIs and e-Is at national level

- **Harmonizing Italian participation to pan-EU initiatives** to optimize available resources and facilitating prioritization and sustainability

- **Establish a national coordination** to increase the Italian capability to address and foster decision-making at EU level

- Facilitating the **harmonization and synchronization of the Italian priorities and strategies with the European context**

- **Mapping national contributions to pan-European initiatives involving RIs and e-Is**

ICDI

Italian Computing and Data Infrastructure

ICDI: Italian Computing & Data Initiatives

Born as a Bottom-up initiative, it currently includes major national research organisations and several universities

ICDI: Italian Computing & Data Initiatives (cont.)

ICDI brings together key RIs in Italy:

- National chapters of ERICs
- ESFRI Projects
- JRUs
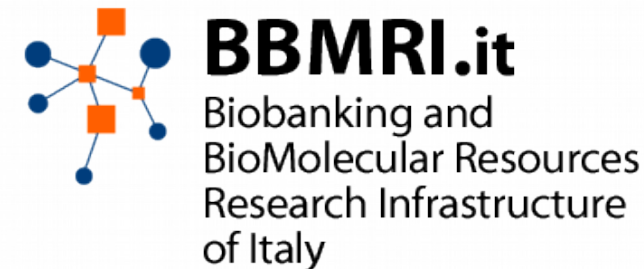
Onboarding services: EOSC-Pillar

EOSC-Pillar has two WP dedicated to integration of services within EOSC.

Selected services are born "thematic" and/or "national", but share features (trans-national, multi-domain) which make the relevant experience suitable to be generalized.

•WP6 focuses on data: 9 trans-national (multi-domain) pilots, and an open-call

•data provenance, FAIR data for environment and earth communities, data repositories interconnection, software code preservation, SSH, life-sciences, seismology, cultural heritage

•additionally, there is an open call to select new pilots (M18-M36)

•WP7 focuses on services: bring national services to EOSC (or make them ready to be connected to EOSC), overcoming technical and non-technical difficulties, to provide seamless access to services/infrastructures/data.

•Scale up services (GPU computing, Galaxy, Business Decision Support Sytem, VLE/VRE, "code mobility") to European level, and validate (services themselves, integration procedure, AAI solutions).

Final goal: assess robustness, establish operational readiness for production environment.

Onboarding services: EOSC-Pillar example

EOSC-Pillar Task 6.9: Integrating heterogeneus data on cultural heritage

Heritage Sciences produces large quantity of data only loosely related to the cultural object. This task (initially) focuses on archeometry.

Problems:

- lack of standard data model makes interoperability impossible
- documentation is mostly textual, with very basic metadata

Objectives:

- setup a very general data model
- implement multi-lingual text mining tool based on machine-learning
- establish connection between data and text descriptions

Why this activity, within EOSC-Pillar?

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Onboarding services: EOSC-Pillar example (cont.)

Quick description:

- Activity builds on previous experiments dating back to 2016, in the context of European projects (ARIADNE/EOSCpilot):

- Text-mining: initially based on rule-based system, now evolving into a cloud service based on machine learning.

- Scientific Dataset Management: initially developed within e-RIHS, now as part of ARIADNEplus work programme

- Currently a prototype service in beta development stage

Expected outcomes:

- scale-up an advanced service

- enrich EOSC portal

- initial service for archeometry, to be extended to other communities

Why this activity, within EOSC-Pilla

trans-national interest

degree of maturity

cross-communities potential

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Onboarding services: EOSC-Pillar open-call

At PM18 (12/2020), EOSC-Pillar will engage in an open-call to enable other thematic communities and research areas to bring their services into EOSC.

Projects will be evaluated and selected, according to viability, requested resources, estimated duration of integration and overall contribution to the project and to EOSC.

Selected proposals will be invited to a workshop where WP5 ans WP7 experts will provide one-to-one support to integrate their specific service.

Open call will be good chance to involve new thematic communities, contributing to the enrichment of the service portfolio.

Services will not necessarily end up in the EOSC portal, but may be offered via national portals (designed to be inter-operable with EOSC portal).