

The EOSC

A personal vision

(supported by some facts)

Dr. Patrick J.C. Aerts

PLAN-E

The EOSC-the bigger picture

- The European Open Science Cloud (EOSC) is ultimately about *accelerating discovery¹ in Science* by:
 - stimulating and enabling access to earlier scientific results
 - harmonizing procedures, formats, meta-information on data
 - sustainable data access through sustainable software
 - providing proper infrastructures and integration

¹ Term conceived by Scott Lusher NLeSC

Choice for Data

- The Commission has apparently chosen Data as the main focal point for the EOSC
- And adopted FAIR is one of the main vehicles to support the goal
- And governance structures to give the EOSC a stable sustainable embedding

- But there is more (or at least there should be)

EOSC and eScience

What do eScience and the EOSC have in common?

Both are about injecting the capabilities of ICT in Science

- So now we have quite some physical e-infrastructures
PRACE (HPC), EUDat (data integration), EGI (the grid), Géant (the net)
- But how to deploy all these, and the national e-infrastructures, to do better, faster, more explorative, more creative, deeper SCIENCE?

EOSC and eScience (2)

- That is what eScience is about
- And that is also what the EOSC is about

- But the EOSC acts more in the organisational arena
- And eScience acts more in the scientific arena

The EOSC Pilot

The EOSC Pilot is to realise the first phase of the EOSC

- Propose and trial the **governance framework** for the EOSC and contribute to the development of European open science policy and best practice;
- **Develop a number of demonstrators** functioning as high-profile pilots that integrate services and infrastructures to show interoperability and its benefits in a number of scientific domains; and
- **Engage with a broad range of stakeholders**, crossing borders and communities, to **build the trust and skills required** for adoption of an open approach to scientific research.
- **Reduce fragmentation between data infrastructures** by working across scientific and economic domains, countries and governance models, and
- **Improve interoperability between data infrastructures** by progressing and demonstrating how data and resources can be shared even when they are large and complex and in varied formats.

The EOSC Pilot involves the following 33 partners (and over 15 more associated or unfunded partners)

Parties participating in the EOSC Pilot

Logo	Name	Country
	SCIENCE AND TECHNOLOGY FACILITIES COUNCIL (STFC)	UK
	CSC-TIETEEN TIETOTEKNIKAN KESKUS OY (CSC)	FI
	MAX-PLANCK-GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFTEN EV (MPG)	DE
	EUROPEAN MOLECULAR BIOLOGY LABORATORY (EMBL)	DE
	SURFsara (SURFsara)	NL
	Stichting EGI (EGI)	NL
	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE FR CNRS (CNRS)	FR
	KARLSRUHER INSTITUT FUER TECHNOLOGIE (KIT)	DE
	THE UNIVERSITY OF EDINBURGH (UEDIN)	UK
	STICHTING LIBER (LIBER)	NL
	TRUST-IT SERVICES LIMITED (TRUST-IT)	UK
	ATHENA RESEARCH AND INNOVATION CENTER INFORMATION COMMUNICATION & KNOWLEDGE TECHNOLOGIES (ARC)	GR
	JISC LBG (JISC)	UK
	PARTNERSHIP FOR ADVANCED COMPUTING IN BE EUROPE AISBL (PRACE)	BE
	CONSIGLIO NAZIONALE DELLE RICERCHE (CNR)	IT
	ISTITUTO NAZIONALE DI FISICA NUCLEARE (INFN)	IT

	STIFTUNG DEUTSCHES ELEKTRONEN-SYNCHROTRON DE DESY (DESY)	DE
	ISTITUTO NAZIONALE DI GEOFISICA E IT VULCANOLOGIA (INGV)	IT
	BARCELONA SUPERCOMPUTING CENTER - CENTRO ES NACIONAL DE SUPERCOMPUTACION (BSC)	ES
	GEORG-AUGUST-UNIVERSITÄT GOETTINGEN DE STIFTUNG OEFFENTLICHEN RECHTS (UGOE)	DE
	KONINKLIJKE NEDERLANDSE AKADEMIE VAN NL WETENSCHAPPEN - KNAW (DANS)	NL
	ICOS ERIC (ICOS)	FI
	GEANT VERENIGING (GEANT)	NL
	ISTITUTO NAZIONALE DI ASTROFISICA (INAF)	IT
	BIOBANKS AND BIOMOLECULAR RESEARCH INFRASTRUCTURE CONSORTIUM (BBMRI- AT ERIC) (BBMRI)	
	EUROPEAN SPALLATION SOURCE ERIC (ESS)	SE
	NATURAL ENVIRONMENT RESEARCH COUNCIL (BGS)	UK
	EUROPEAN X-RAY FREE-ELECTRON LASER FACILITY DE GMBH (XFEL)	DE
	ECRIN EUROPEAN CLINICAL RESEARCH FR INFRASTRUCTURE NETWORK (ECRIN)	FR
	THE UNIVERSITY OF MANCHESTER (UMAN)	UK
	PIN SOC. CONS. A R.L. - SERVIZI DIDATTICI E IT SCIENTIFICI PER L UNIVERSITA DI FIRENZE (PIN)	IT
	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX FR ENERGIES ALTERNATIVES (CEA)	FR
	CONSORZIO INTERUNIVERSITARIO CINECA (CINECA)	IT



EOSC Hub

- Is a funded project, until 12-2020, worth €30 million, over 100 partners
- The EOSC Hub involves all major *service providers*
- the Hub: a single contact point for European researchers and innovators to discover, access, use and reuse a broad spectrum of resources for advanced data-driven research
- Close co-operation with the EOSC Pilot Project
- Very significant overlap in partners between EOSC Pilot and EOSC Hub

Goals of the Hub¹

- **Simplify access** to a broad portfolio of products, resources and services provided by different actors through an **open service catalogue**
- **Remove fragmentation** of service provisioning and access to digital services
- Increase **innovation capacity** of digital Infrastructures
- **Consolidate digital infrastructures** by
 - Expanding capacities and capabilities
 - Improving discoverability, access, interoperability and sharing , across research communities and countries
- **Extend access to integrated compute, storage, data and software to new user groups** including high-education and industry, increase the user base
- **Expand human capacity** (consolidate/expand a distributed network of experts and service operators at local/national level)

¹ From Indigo Data Cloud presentation, May 2017, by Luciano Gaido (gaido@to.infn.it)

OpenAire (advance)



- OpenAIRE aims to establish an open and sustainable scholarly communication infrastructure responsible for the overall management, analysis, manipulation, provision, monitoring and cross - linking of all research outcomes (publications, related datasets, software and services) across existing, planned and future repositories. Promote the discoverability and reuse of data - driven research results, across scientific disciplines and thematic domains. OpenAIRE2020's objectives are:
- Support the H2020 vision of open access for scientific publications and the Open Data Pilot for H2020: make OpenAIRE a central infrastructure and service in H2020.
- Build a pan - European Research Information platform to monitor OA research outcomes from the EC and other national funders .
- Develop research analytics tools to promote new scientific metrics and support evidence - based decision - making.
- Create an international OA repository collaboration platform to support truly global research and scholarly communication
- Make OpenAIRE a hub for 3rd party providers to build innovative services that explore new forms of scholarly communication and promote alternative, competitive Open Access publishing models.
- Make OpenAIRE a legal entity to promote its long - term sustainability and uptake.

(From the OpenAire website)

Last month the EOSC working document was accepted by the Commission

Brussels, 14.3.2018
SWD(2018) 83 final

COMMISSION STAFF WORKING DOCUMENT

Implementation Roadmap for the European Open Science Cloud

From the working document

Architecture	Architecture of the federated infrastructures as the solution to the current fragmentation in research data infrastructures which are insufficiently interoperable.
Data	FAIR data management and tools. A common data language to ensure data stewardship across borders/disciplines based on FAIR principles.
Services	Available services from a user perspective. A rich environment offering a wide range of services covering the needs of the users.
Access & Interface	Mechanisms/interfaces for accessing EOSC. A simple way for dealing with open data obligations or accessing research data across different disciplines.
Rules	Rules of participation for different EOSC actors. An opportunity to comply with existing legal and technical frameworks and increase legal certainty & trust.
Governance	Governance of the EOSC, aiming at ensuring EU leadership in data-driven science but requiring new governance frameworks.

From the working document

Starting from	Committed resources (non-exhaustive)	Action	Milestones
2018, Q1	<ul style="list-style-type: none"> EOSC -hub project OpenAIRE-Advance project FREYA project 	Develop initial EOSC federating core including the EOSC shared resources	Q4 2019: Initial EOSC federating core in place
2019, Q1	<ul style="list-style-type: none"> EOSCpilot project INFRASUPP-01-2018-2019 (b3)	Develop catalogue of interested and eligible (per Rules of Participation) data infrastructures to be federated into the EOSC and identify EOSC federate centres	Q4 2019: Registry of data infrastructures of the EOSC (initial)
2018, Q4	<ul style="list-style-type: none"> INFRAEOSC-04-2018 	Connection the research infrastructures identified in the ESFRI Roadmap to the EOSC. Support to this activity will be provided through cluster projects.	Q2 2020: Preliminary connection of most infrastructures and services to the EOSC

EOSC and PLAN-E

- ✓ PLAN-E offered to help and promote implementing FAIR principles for data and software across all domains.

Today we investigate what we established so far regarding the FAIR principles

- ✓ PLAN-E & eScience Center offered to help support scientists to translate scientific requirements into practical services and infrastructural components.

After that, we'll try to agree on how we can deliver on this second promise

Let's deliver

What is missing

- A project, in support of the EOSC ideas, in close co-operation with the EOSC-Pilot, EOSC Hub and the OpenAir activities, that focusses especially on

FAIR

- With that, I hand over to...