Conferenza GARR 2017

Moving Forward to deliver an «EOSC in Practice» by 2018

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Trust-IT Services
Communicating ICT to markets

EOSC pilot
The European Open Science Cloud for Research Pilot Project

EOSC

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Mission profile

Our domains of expertise

Market & Tech RESEARCH

Market Research & Technology Radar
Policy & ICT Standards Reports
Roadmaps
Action Plans
Benchmarking & Positioning
Cartographies

ONLINE SOLUTIONS

Collaboration Platforms
Cyber Risk Assessment Tools
Cloud Tools & Services
Cloud Procurement Wizards
Carbon Footprint Measurement

SUSTAINABILITY Strategies

Business Modelling & Planning
Cross-fertilisation & Concertation Actions
Grass Rooting

BRANDING & PROMOTION

Event Organization & Promotion
Graphic & Brand Identity
International Press & Media Coverage

DIGITAL MARKETING & Communication

Digital Strategy Design & Implementation
Community Engagement
Social Media Presence & Impact Analysis
Websites, SEO & Mobile Apps
Multimedia Content Production

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Sharing the Vision of a European Open Science Cloud

Contents

- What is the EOSC HLEG expected to do ?
- Starting with some Solid Building Blocks / «Assets»
- An EOSC in Practice
- How are the EOSC Science Demonstrators (SDs) in EOSCPilot Project doing ?
- Mapping these SDs onto a common service model going forward
- Possible new financing instruments and that other models alternatives to grants

EOSC HLEG Goal & Deliverables

Our **Goal** is to address the setup of a data-driven infrastructure that builds on:

- what exists,
- caters for the whole scientific community and
- provides the governance and services that are today missing.

Produced Deliverables

- Short summary reports of the 2 plenary meetings;
- A scoping paper for the Commission to present at the stakeholders' workshop;
- A short summary report of the minutes of the stakeholder workshops;
- An Interim report – Feb 2018;
- A PowerPoint presentation for discussion with the Commission;
- A Final Roadmap Report including advice on implementation of the EOSC preparatory phase Latter part of 2018

User-Oriented Open Science – Pragmatic Approach

EOSCpilot
The European Open Science Cloud for Research Pilot Project

- An «EOSC in practice»
- The Group wishes to provide a further elaboration and insights on the basis of outputs from funded related projects, national projects or other community fora (ie: EOSCPilot & EOSChub, eInfraCentral, OpenAire, RDA, FAIR, OSSP, etc.)
- Structure thinking about EOSC into **Technical, Organizational & Financial** aspects
- Introduce and analyse **Incentive Mechanisms** to whet the appetite for all stakeholders
- Services should be offered by **different, existing infrastructures** not by one single infrastructure
- Have a **Functioning Methodology** that is practical that can be followed
- Functional Thinking vs Principle thinking
- User oriented vs Service thinking
  - Users using commerical solutions & find out why & take into account

Introduce a Business Thinking oriented approach. EOSC is an environment for sharing & making data available to all.
Usability and usefulness of the EOSC are central

Other relevant past Best Practices – Being Aware of our Assets

EOSCpilot
The European Open Science Cloud for Research Pilot Project

Ensuring long-term sustainability of research data across all disciplines, with strong & flexible governance model

Boosting the value of EU Big Data research as part of the EC strategy to promote a data economy

Harmonising stakeholder's offerings under a common service catalogue framework

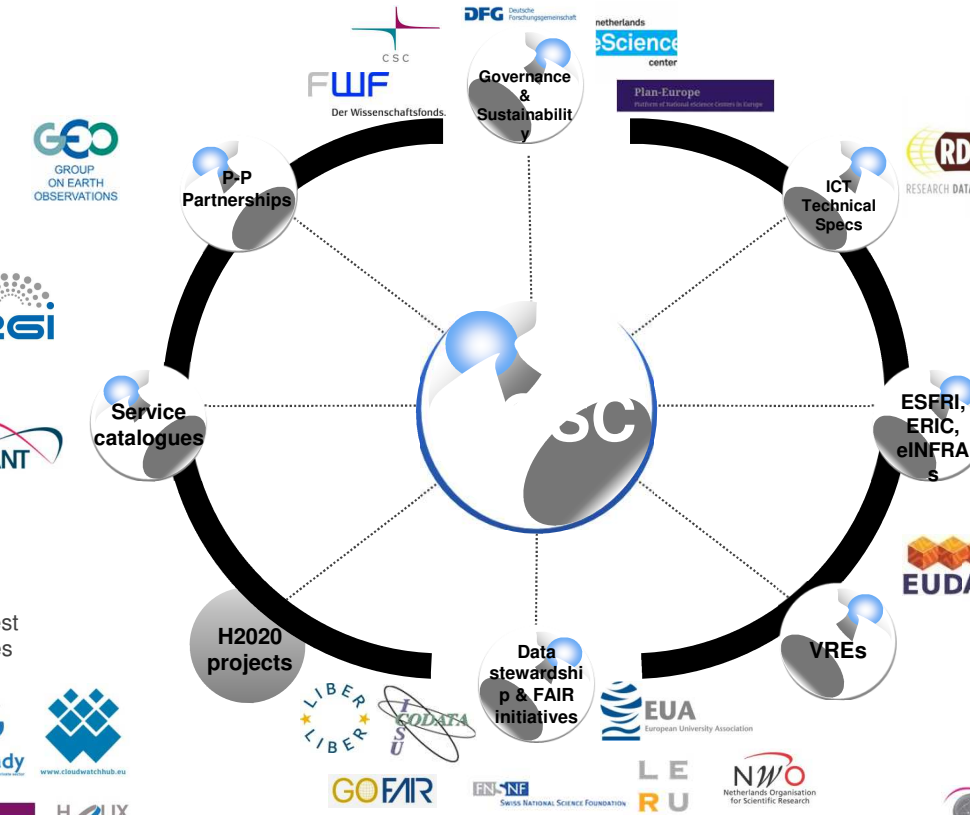
Leveraging on existing best practices & real use cases

Leveraging RDA as a global neutral discussion forum as well as the technical & social infrastructure solutions & ICT technical specifications developed by RDA WG & IG that enable data sharing, exchange, & interoperability

Building on the implementation & governance best practices, & multi-disciplinary approach to community building of ESFRIs & ERICs

EOSC data catalogue capitalise on recommendation from major users like ELIXIR, EOS; ENES & GEOSS

Facilitating communication between scientists & computer infrastructures



Promoting common data culture, skills data stewardship, FAIR principles

Leverage on existing "Building Blocks" & relevant Working Service Models

Incentives to make EOSC Human-Centric

- Builds the links between **People, Data, Services, Training,** Publications, Projects and Organisations.
  - These links allow to build relevant Data, Service and Training search and recommendation engines
- **User-friendly collaborative tool** for data sharing and re-use
  - Contact people and organisations to get insights and help on data
  - The natural place to publish data with the support of **repositories**
- Visibility and network effects are great incentive mechanisms
  - Incentive to publish data
  - Incentive to become a data expert
  - Incentive to use the EOSC

Feedback from HLEG experts from 1st F2f meeting

- List here the contributions delivered so far
  - **Common Credit Pilot** model put into practice a 2 year (originally planned to be 3 year) pilot to test this business model to facilitate researcher use of cloud resources
  - **INSPIRE** framework (https://inspire.ec.europa.eu/data-specifications/2892) could serve as a model concerning selection of international standards
  - **OSSP** National Policies on Open Science. Data coming out for Publicly funded research to be considered PSI ? Review of the directive on the re-use of Public Sector information…
  - **GO FAIR** initiative https://www.dtls.nl/fair-data/go-fair/
  - **National German Data Research** help define a list of minimum viable products that should be included & that can incrementally design the working functionality
- Services to be rendered
- Come up with some **Icebreaker Use Cases** based on needs & considerations that could serve as “Common Service Working models”

Feedback from HLEG experts 2nd F2F meeting

- **Data** has to be trustworthy and the **person who generates** the data obtains some recognition that the data is getting used;
- **Data is disseminated effectively if they are available and made** through trusted and **certified repositories** and respect **FAIR** principles enabling **re-use into data products** (with related **recognition/citation** for the data producer, curators) potentially generating innovation and added value;
- What do I need to have a **Trusted Environment** ?
- A Role that could be carried out on an EU level is a certification level, seals etc – we introduce a level of trust **Open Access** – this is far better done on a continental level rather than on a national level;
- **Coin/Credit ? C**ome up with a pilot exercise in the EU context
  - a) **Recognition, b) Trusted Services, C) data certification & the selection of the cloud provider being GDPR compliant D) Voucher Schemes**

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What we can learn about user needs through H2020 EOSCpilot's Science Demonstrators (SDs)

Main User needs from Science Demonstrators

- **Advanced Virtualisation**: Transparent access to Computational Resources Progressing with a framework which will help conceptualise the range of stakeholders and interoperability objectives

- A **Market Place** for modular services to be combined in traceable **Workflows**: Build, Run and Share Workflows
  - Data workflows for extraction, analysis, curation, publication, preservation, etc.
  - The workflows should run transparently on EOSC Computational Resources

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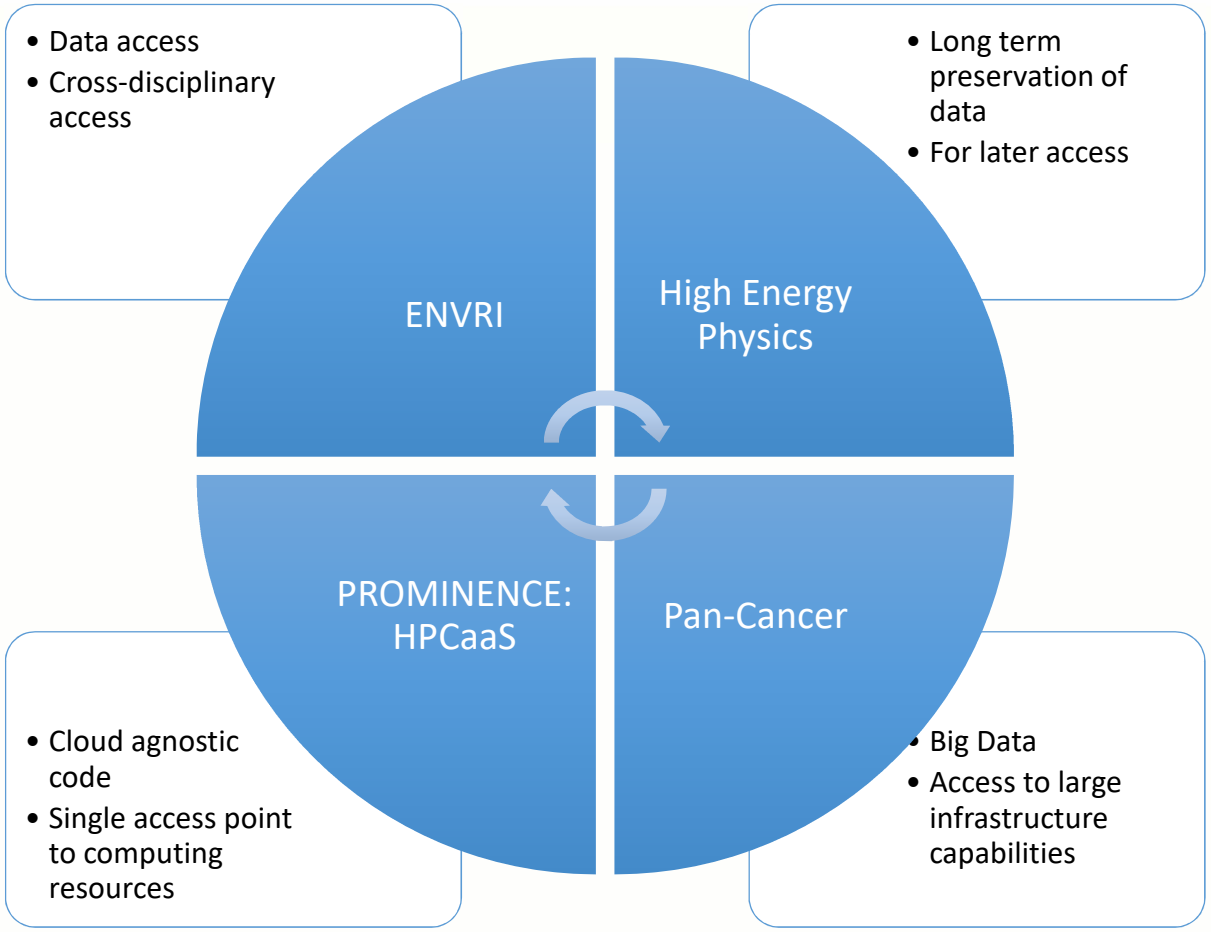
Transparent Access to Computational and Data Resources



Challenges for EOSC
Authentication & Dealing with Large Infrastructure Capabilities

Modular and Traceable Workflows

EPOS/VERCE	Genome SD	CryoEM	LOFAR
• Abstract **workflows** for distributed data-intensive applications • Support for composition • Executable in numerous parallel environments	• Framework for computational workflows • Write complex parallel **workflows** • Transparent deployment on multiple platforms	• Scipion: an image processing framework to "glue" software for **workflow** combinations • Traceable and Reproducible **workflows**	• Data **workflow** project to facilitate data access • Both to power and non power user

Potential Services for the EOSC as a market place of atomic micro-services that can be pipelined and combined in traceable workflows

EOSC Example of commons credit model … Others to be investigated

The Commons Credits Model Pilot designed to provide investigators with access to cloud based computing resources as a means to seed the **American National Institutes of Health (NIH)** Commons (https://datascience.nih.gov/commons/) with useful digital artifacts of biomedical research

- 2 year pilot to test **business model** to facilitate **Researcher use of cloud resources** (enhance data sharing and potentially reduce costs)

Mapping to EOSC

- NIH already has a full **set of standards** in place, ranging from interoperability to business relationships to access profiles
- **Finding right cloud provider** Choosing a **legally-compliant cloud provider** paramount. With a view to protecting personal data
- **GDPR** poses specific obligations onto the cloud provider, from data security to subcontracting conditions
- **Creation** of a **marketplace** for conformant cloud providers. Selection of interested cloud providers abiding by NIH standards is thoughtfully assigned directly to researchers
- They are provided with a # of **"coins"** they spend to obtain cloud services from provider of their choice

Trusting only compliant **cloud providers offering adequate guarantees** with respect to data storage and processing services, **foster and rapidly spread good practices** Other Examples ?

Sources : ***George A. Komatsoulis,*** *PhD, Chief of Bioinformatics CancerLinQ, LLC*
Emanuele BARBAROSSA *Legal Advisor Research Data & EOSC DG RTD European Commission*

How can we move forward the EOSC?

EOSCpilot
The European Open Science Cloud for Research Pilot Project

- Convergence between **Member States** actors is of the essence
- Practical **pilots** to provide solutions for easy movement of data across platforms
- **Science demonstrators** can provide evidence of pipelines being containerized
- Adoption of the **FAIR** principles
- HLEG as a facilitator of **Common Service Working Models**…
- …always helping to shape the future **workprogramme**, based on global challenges and excellence!

Thank you! Questions?

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