



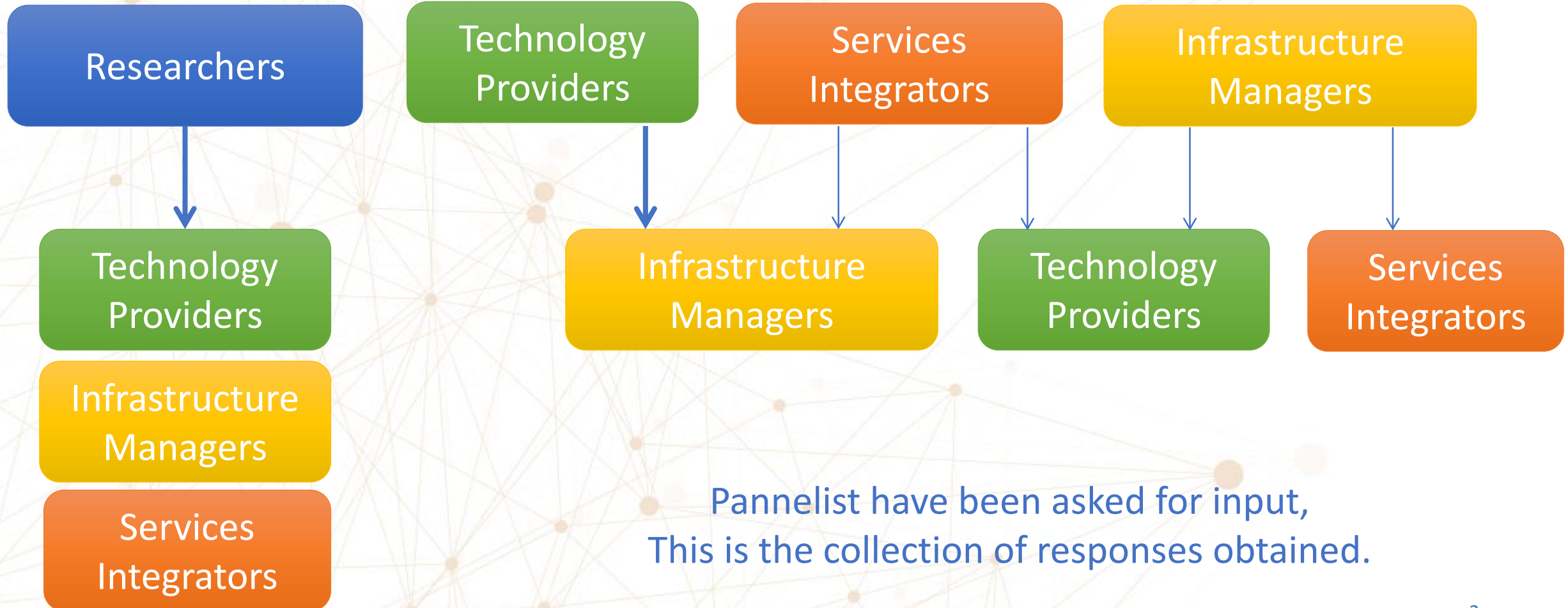
PROMPTING AN EOSC IN PRACTICE

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**EOSC Summit - Rules of
Participation Workshop, Brussels
11th June 2018**

PROMPTING AN EOSC IN PRACTICE

What would each actor impose on the other as Rule of Participation ?



Pannelist have been asked for input,
This is the collection of responses obtained.

PROMPTING AN EOSC IN PRACTICE

First, a wordle exercize with the input received, with a “surprising” result: “data” is not the most frequent word...



How to make EOSC look like how the Researchers want it to look like ?

Photon science community (Volker)

- » Well-defined service quality and reliability classes
- » Service interoperability
- » Easy and „standardized“ access
- » Data accessibility and transfer „in“ and „out“
- » Software and Analysis pipelines
- » User help desks
- » Financing

Coastal Engineering community (Anabela):

- Availability of services and support for proficient to basic users
- Quality control and guarantee of service provisioning for medium to long term
- Simplified access to infrastructures, integrated with the general funding mechanisms
- Co-Development: real opportunities to collaborate with IM and TP to improve our capacity and knowledge to take advantage of infrastructures (promote better coastal research)

Making EOSC the ideal ecosystem for which to develop (Germán)

» Software should have a similar level of importance as data in EOSC

- **351 occurrences of 'data' vs 1 of 'software' in the "Implementation Roadmap for the EOSC" Staff Working Document**



615 occurrences of "data" vs 49 of "software" in the EOSC HLEG Interim Report

» Application of FAIR principles to Software (and Software Services)

- Findable (Public Repositories), Accessible (Open Software Licenses), Interoperable (APIs), Reusable (Documentation)

The ideal ecosystem for which to develop software (Germán)

» **Technology Providers: Software Developers + Service Operators**

- **Software:** A minimum subset of Software Quality Assurance (SQA) metrics should be required for software to gain an EOSC-approved seal
- **Service:** Operational management of Services could be done by the responsible institution part of the federation, provided that a Service Level Agreement between EOSC and the institution is enforced (Availability of Service, Mean Time To Recovery, etc.).

» **Standards**

- **Standards should be adopted but beware of locking-in to a standard. Foresee industry adoption and best practices.**
- OCCI (Open Cloud Computing Interface) / TOSCA (Topology and Orchestration Specification for Cloud Applications)

Rules on Infrastructure from the point of view of Technology and Service integrators
(Donatella)

- » No violation of the terms of use and access policies
- » Clear specification of the infrastructure offered support
- » Clear specification of the sustainability level

EOSC as an infrastructure based on Open Standards: pros and cons (give one example of each).

- » EOSC is a federation/system of systems
 - Pros: Open Standards facilitate interoperability and reusability
 - Cons: "*EOSC is based on existing and emerging elements*" - existing elements may not comply with (a single) standard – emerging may rely on de-facto standards or on no standards at all

In the eyes of Infrastructure Providers: How should Technology providers look like in EOSC?



- » How can the verification of those rules (certification) be ensured? EOSC could help by providing mechanisms to verify those rules.
- » Services and Technologies should provide a reliable way of classifying their services (possibly certified) in terms of stability and other capabilities. EOSC could provide a metric or mechanisms to classify services or technologies.
- » Services and Technologies must provide a realistic sustainability plan (prove of funding) This is in particular important for ‘persistent services’ like archive and data storage.
- » Services and Technologies need a well-defined, sustained and resilient support infrastructure. (here again, best would be even certified)
- » Clear escalation plan for security related problems. The service/technology support team must be involved in the EOSC security response team.

In the eyes of Infrastructure Providers: How should Technology providers look like in EOSC?



Integration of new services should occur only if:

- » There is evidence of the real need, with clear and identified use cases
- » They should bring a clear added value
- » The new services should be production level and their adoption should not be disruptive, e.g. backward compatibility should be assured and/or an easy path for their adoption should be defined
- » If new technologies are not based on open source solutions the business model should be clearly defined and accepted

In the eyes of Infrastructure Providers:

EOSC as a framework for cooperation with Research Infrastructures

- » EOSC could help making community software TRL8 ready, by providing tutorials, code review, certification and integration testbeds.
 - So the e-infrastructures would be less reluctant to install RI software.
- » RI usually have a good understanding of distributed services. (on the human and technical level).
- » e-Infrastructure usually are more focused on the local services portfolio.
- » Therefore e-Infrastructures could benefit from the experience of RI and possibly even on the technical core services
 - WLCG is offering FTS which DESY could offer XFEL (either directly or through EGI /EOSC) to XFEL.
 - dCache originally from HERA, now providing storage services for many communities
 - GGUS as ticket manager

In the eyes of Infrastructure Providers: Current blocking factors to integrate in EOSC

- » Fear of low quality of services being provided
- » Reliable general maintenance and update concepts, are currently missing
- » In consequence, strong dependencies on external entities (RIs) of which they do not have any control or real influence.
- » No sustainable and consistent classification of available technologies and services concerning reliability and performance. “Reputation based on rumors”
- » Missing business models
- » Parallel and sometimes conflicting funding streams.
- » No habit or real incentives to share resources, know-how and solutions and to rely on each others’ assets.

How to promote EOSC among researchers?

- » What do you think is the “most likely” reason of frustration for a researcher after a long day of work, using e-Infrastructures across Europe?
 - A. *What a frustrating day: I needed to run a simulation/analyse data,... and there was no way to access any resources today... despite all the promises. Took me one hour until I could finally login, and then there are no available resources.*
 - B. *What a frustrating day: I had to transfer data to my collaborations, and the transfer keeps hanging... I called IT support at both ends, and they keep blaming on each other, then on me... How can it be that 1TB of data cannot be moved across Europe in a transparent way?*
 - C. *What frustrating day: I wanted to cite the work of some colleagues when writing a paper, and I could not find a proper way to do it.*

How to promote EOSC among researchers as Open Science environment (Anabela)

- » Examples of complementary policies to be implemented at the EU and National levels to incentive the adoption of infrastructures like EOSC among researchers.
 1. In addition to EU/national project funding call limits, provide complementary computing hours (in a fast, easy and friendly way) to financed projects
 - a) Efficiency - Financing EU and national infrastructures, avoid “in-house datacenters”, maximizes funding for research
 - b) Scales-up research –improved research given availability of computing resources with no extra cost for project team
 2. Promote training of infrastructure use in area-specific large conferences using materials, demos (related to the event area) and hands-on sessions involving area-specific people

How to promote EOSC as Open Science environment (Germán)

» EOSC 'Evangelists':

- Highly-skilled individuals/teams, with a deep knowledge of the EOSC services, working in close collaboration with key research communities to solve challenging problems.
- Showcasing in international venues the results of pan-European collaborations using EOSC services, improving awareness and fostering adoption of EOSC services by other research communities.
- Producing training material to facilitate on-boarding new researchers from the Long Tail of Science to adopt EOSC services.

» Proper Recognition

- Specific R&D Calls of Member States should clearly indicate that contribution to EOSC services will be considered as part of the project proposal evaluation.
 - Multiple roles: Data Producers, Data Consumers, Service Adoption, Service Extension, Service Integration, etc.

How to promote EOSC as Open Science environment (Luciano)

» At the EC level

- rationalization of the funding streams
- Incentives to joint e-infrastructures-RIs activities and initiatives
- Promote the dissemination and outreach of the EOSC-related project results

» At the national level:

- Incentives to the use of existing e-infrastructures by means of specific grants or vouchers

How to promote EOSC as Open Science environment (Donatella)

- » Incentives have to first concern the principles of Open Science (e.g. deposition policies & rewards for data publication), as a side effect an infra is needed to facilitate the implementation and monitoring of these principles
- » EU H2020 Deposition Mandate in an OpenAIRE compliant repository – Other funding organizations in different MS are adopting a similar policy.

How to promote EOSC as Open Science environment (Dale, Prodromos)

- » RoP need to balance:
 - Requirements for researchers to produce open research outputs, against
 - (Cost and effort of) Demands placed on providers of infrastructures/services to support provision of open outputs
- » Policies, RoP and governance need to complement and support one another
- » Example 1: Infrastructures, services and other resources supplied through the EOSC should provide assurance, for example by developing accreditation or certification schemes:
 - to users, that their **research outputs are open, FAIR and citable**
 - to the EOSC for the purposes of FAIR data governance and compliance monitoring
 - > Governance to develop certification / RoP, in time, to adopt scheme
- » Example 2: Funders should encourage the use of unique and persistent digital identifiers - based on global, sustainable and community-governed solutions - to **support openness, FAIRness and citability of all research outputs** and to provide the basis for mechanisms to assess compliance with Open Science policies
 - > Support RoP / RoP support this policy / Governance to develop monitoring