European Open Science Cloud
Current and future EU support to the EOSC and EC way forward from EOSC Summit to Roadmap for Implementation

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e-IRG workshop - Tallinn, 3 October 2017

EOSC Summit: figures

- **110** key participants

- **80** from all scientific fields

- **15** national scientific infrastructures

- **13** research funders

- **19** officials from Member States and Associated Countries

- Overall, **23** Member States and Associated Countries represented

- **1800** via web stream and extensive coverage via Twitter

EOSC Summit Highlights

*The Summit provided **strong support for the implementation of the EOSC** and marked a step change in the initiative*

*Ground European science in a **common culture of data stewardship & sharing** throughout research data lifecycle. Only a **considerable cultural change** will enable long-term reuse of research data*

*Develop the **EOSC as a commons** of research data, knowledge and infrastructure with different roles and responsibilities by actors at EU and MS level*

*Stimulate compliance through **incentives and rewards***

EOSC Summit Highlights

Make **FAIR principles pragmatic**, equally encompassing all four dimensions: findability, accessibility, interoperability and reusability

Apply **FAIR principles to all digital research objects**, incl. data-related algorithms, tools, workflows, protocols & services

Disciplines must develop their notion of FAIR in a coordinated fashion. **Standards are fundamental** but a one-size-fits-all approach must be avoided

EOSC Summit Highlights

Build **trust between all stakeholders**, e.g. scientific communities, e-infrastructures, research infrastructures, funders - *"look outside the organisational boxes and work together"*

Set out both **the science case and the financial case** *to raise commitments for the EOSC, in particular of MS – "whatever we do needs to be integrated with the national systems"*

Some of the actions identified will require more times than others to implement due to e.g. budget commitments, division of labour, building of trust. **Implementation will need to fast-track some actions over others**, *depending on the level of priority, support and maturity*

Develop a **formal framework for governing the EOSC** *(open, dynamic, trial-and-error process) to sustain and strengthen related policies & programmes and secure commitment of funders and users - "what needs to be governed and how?"*

EOSC – the way forward

EOSC Declaration (Sept 2017)

- key input for the Roadmap
- for agreement and poss. specific commitments by stakeholders
- basis for follow-up discussion with MS (ERAC SWG 5+)

EOSC Stakeholders Forum (Nov 2017)

- open to ALL categories represented at the Summit & endorsing EOSC Declaration
- by end August, EC to define application procedure & working modalities
- initially based on EOSCpilot project (Stakeholder Engagement Event 28-29 Nov)

EOSC Roadmap (Dec 2017)

- **Governance structure** , incl. mandate & selection procedure for Executive Board
- Broad (federated) architecture, incl. EOSC core services
- Financing

EOSC Declaration

- 33 high level statements meant to capture our common understanding on the required
  - ✓ Data culture & FAIR data,
  - ✓ Research data services & architecture,
  - ✓ Governance and funding

- Sent to Summit participants for agreement (stakeholders) and discussion (MS representatives)

- Web-posting for wider diffusion/agreement expected early September

Ref. Ares(2017)3488418 - 11/07/2017

EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR RESEARCH & INNOVATION

The Director-General

Brussels, 10 July 2017

EOSC Declaration

RECOGNISING the challenges of data driven research in pursuing excellent science;

GRANTING that the vision of European Open Science is that of a research data commons, widely inclusive of all disciplines and Member States, sustainable in the long-term,

CONFIRMING that the implementation of the EOSC is a process, not a project, by its nature iterative and based on constant learning and mutual alignment;

UPHOLDING that the EOSC Summit marked the beginning and not the end of this process, one based on continuous engagement with scientific stakeholders, the European Commission,

PROPOSES that all EOSC stakeholders consider sharing the following intents and will actively support their implementation in the respective capacities:

Data culture and FAIR data

➤ **[Data culture]** European science must be grounded in a common culture of data stewardship, so that research data is recognised as a significant output of research and is appropriately curated throughout and after the period conducting the research. Only a considerable cultural change will enable long-term reuse for science and for innovation of data created by research activities: no disciplines, institutions or countries must be left behind.

➤ **[Open access by-default]** All researchers in Europe must enjoy access to an open-by-default, efficient and cross-disciplinary research data environment supported by FAIR data principles. Open access must be the default setting for all results of publicly funded research in Europe, allowing for proportionate limitations only in duly justified cases of personal data protection, confidentiality, IPR concerns, national security or similar (e.g. 'as open as possible and as closed as necessary').

➤ **[Skills]** The necessary skills and education in research data management, data stewardship and data science should be provided throughout the EU as part of higher education, the training system and on-the-job best practice in the industry. University associations, research organisations, research libraries and other educational brokers play an important role but they need substantial support from the European Commission and the Member States.

➤ **[Data stewardship]** Researchers need the support of adequately trained data stewards. The European Commission and Member States should invest in the education of data stewards via career programmes delivered by universities, research institutions and other trans-European agents.

➤ **[Rewards and incentives]** Rewarding research data sharing is essential. Researchers who make research data open and FAIR for reuse and/or reuse and reproduce data should be rewarded, both

EC gathering endorsement and commitments on the EOSC declaration

- EOSC Declaration won't be modified

- Action list/commitment its evolutive part

- Roadmap will follow (and will have future updates)

By endorsing the principles of the EOSC Declaration, stakeholders signal their intention to be involved in the making of the EOSC (eg. by taking specific action, by joining the Executive Board, by providing inputs via the annual stakeholder forum, or again by joining consortia , to implement the EOSC via Horizon 2020).

Objectives:

- *Identifying 'doers' out of wide range of stakeholders*

- *Promote accountability*

EOSC Declaration / Services & Architecture

[EOSC architecture]
The EOSC will be developed as a data infrastructure commons serving the needs of scientists...EOSC will federate existing resources...service provision will be based on local-to-central subsidiarity...Users should contribute...continuous dialogue to build trust and agreements…

[Implementation]
Resources, components and initiatives of pan-European relevance will be federated on the basis of objective criteria...to deliver EOSC main functionalities…

[Legacy]
The EOSC should incentivise the re-use of existing building blocks, state-of-the-art services and solutions...It should facilitate learning from the past…

[User needs]
Users should see the EOSC as a one-stop-shop...Services and functionalities shall be user driven and determined by clear use cases…

[Service provision]
Research Data Infrastructures, e-infrastructures and commercial operators will develop and provide services based on user needs...Services will be offered at highest Technology Readiness Levels (TRLs) and kept future-proof...avoid lock-in by individual service providers…

[Service deployment]
The EOSC shall support different deployment models...Software sustainability should be treated on an equal footing as data stewardship.

EOSC Roadmap

Governance – (3-layered structure, mandates, working procedures)
- o   Member States and EC (strategic)
- o   Executive Board (operational)
- o   Stakeholders Forum (advisory)

Architecture – launching EOSC stage 1 by 2020
- o   Supporting EOSC components (geographical & thematic)
- o   Core data & services through an EOSC Hub
- o   Advanced services by certified actors
- o   Catalogues of data & Catalogues of services
- o   Rules of participation
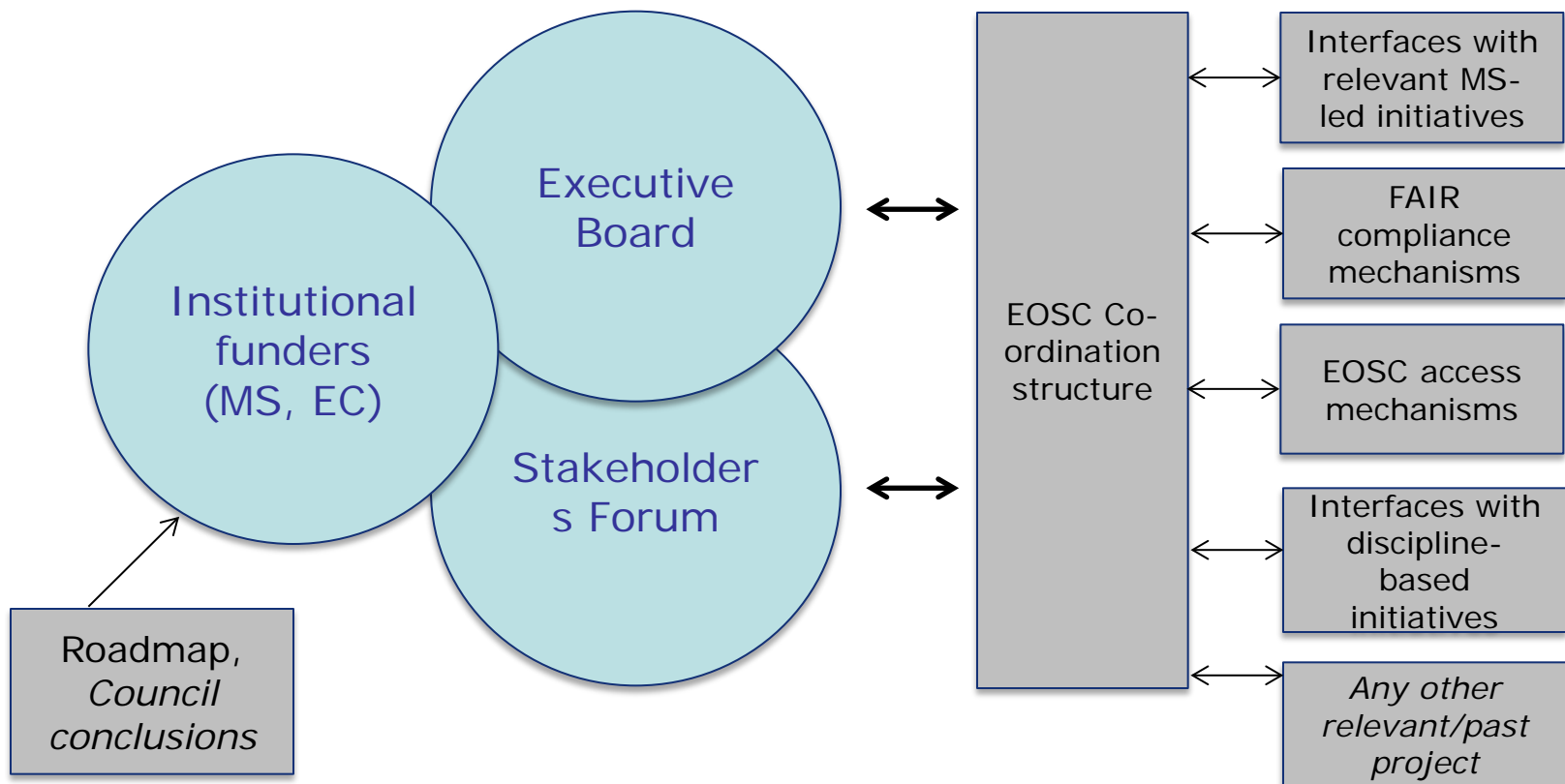- o   EOSC Portal as a universal entry point
- o   FAIR data / FAIR Action Plan

Financing – stage 1 / stage 2
- o   H2020 – RI, in particular through WP2018-20
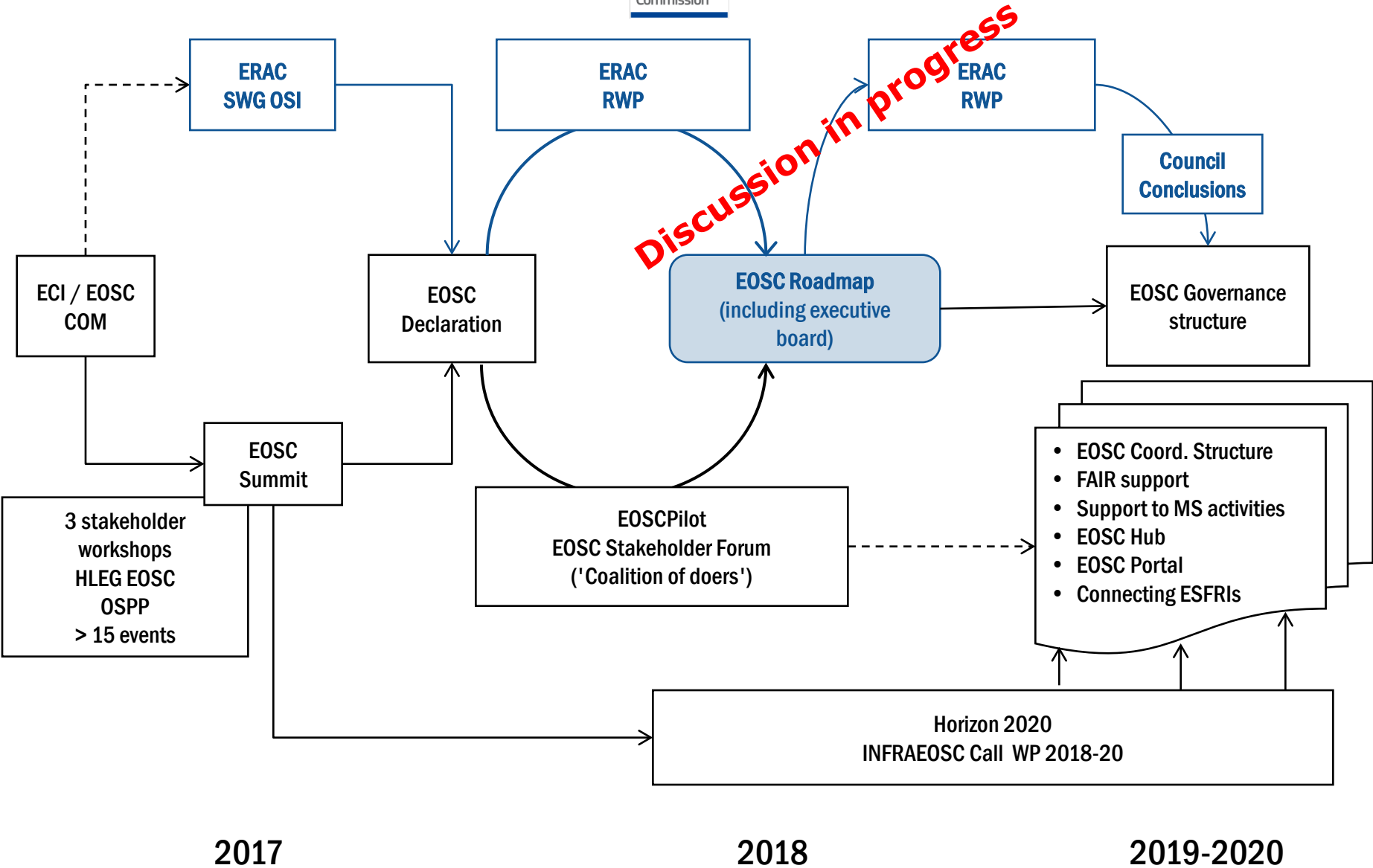- o   Developing an EOSC Business Model for long-term sustainability

EOSC Governance structure

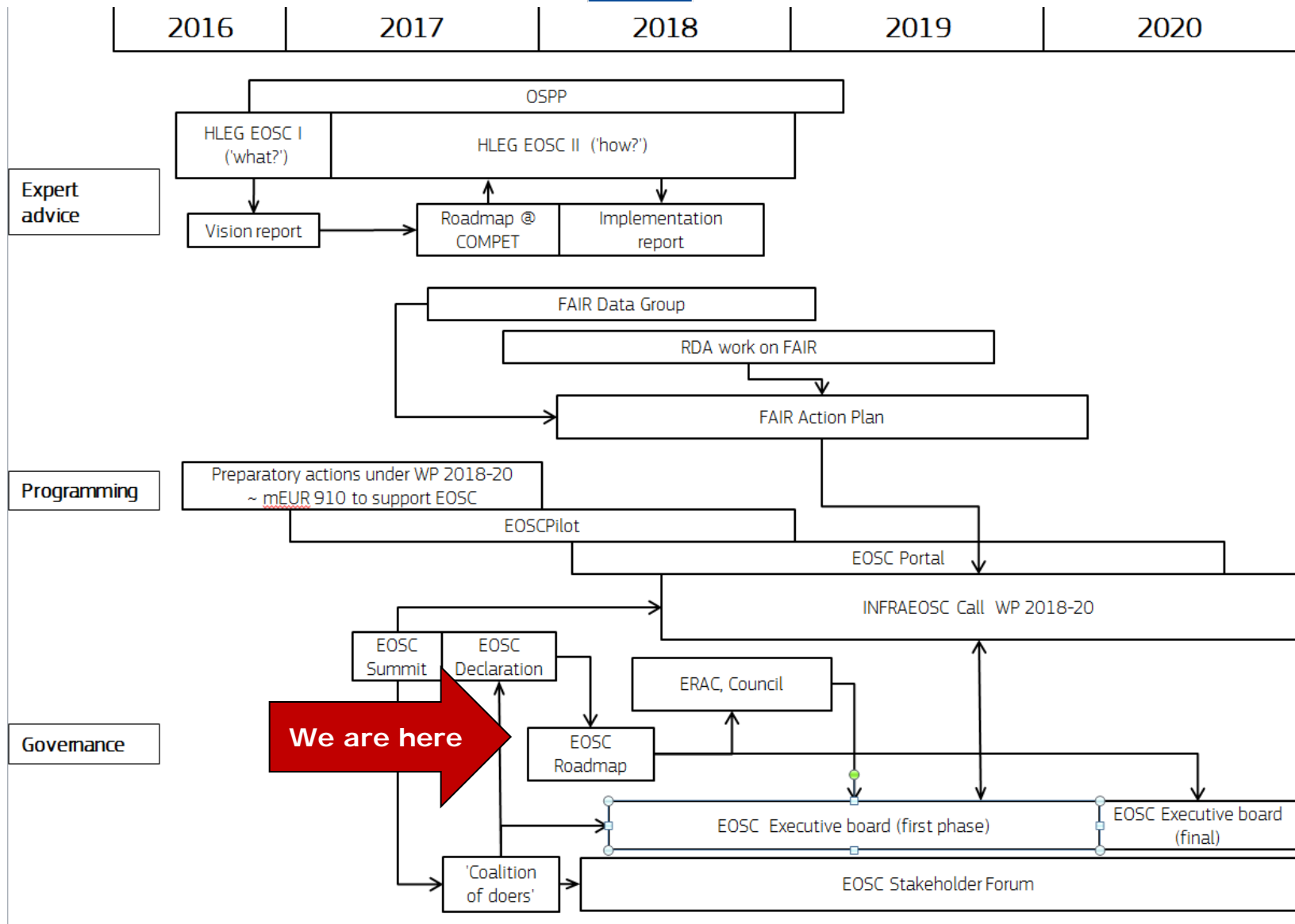**Not for discussion with stakeholders until end of November.**

Co-design process in progress with Member States at ERAC level

EOSC Timeline

Meeting stakeholders again soon

- 28-29 November: EOSC Pilot Stakeholder Forum – The Square – Brussels

- 30 November (tbc): Info Day Research Infrastructures WP2018-20 - Brussels

- 30 Nov -1 Dec: Digital Infrastructures for Research - The Square – Brussels

Questions?

EOSC Team

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