



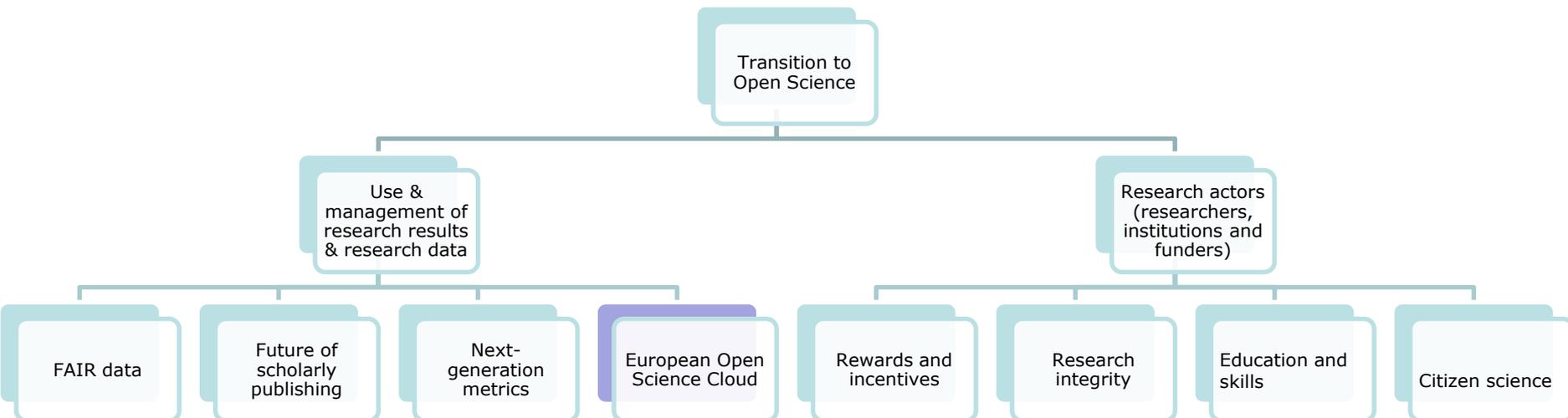
# European Open Science Cloud Implementation roadmap: translating the vision into practice

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## The 8 pillars of the European Commission's vision:



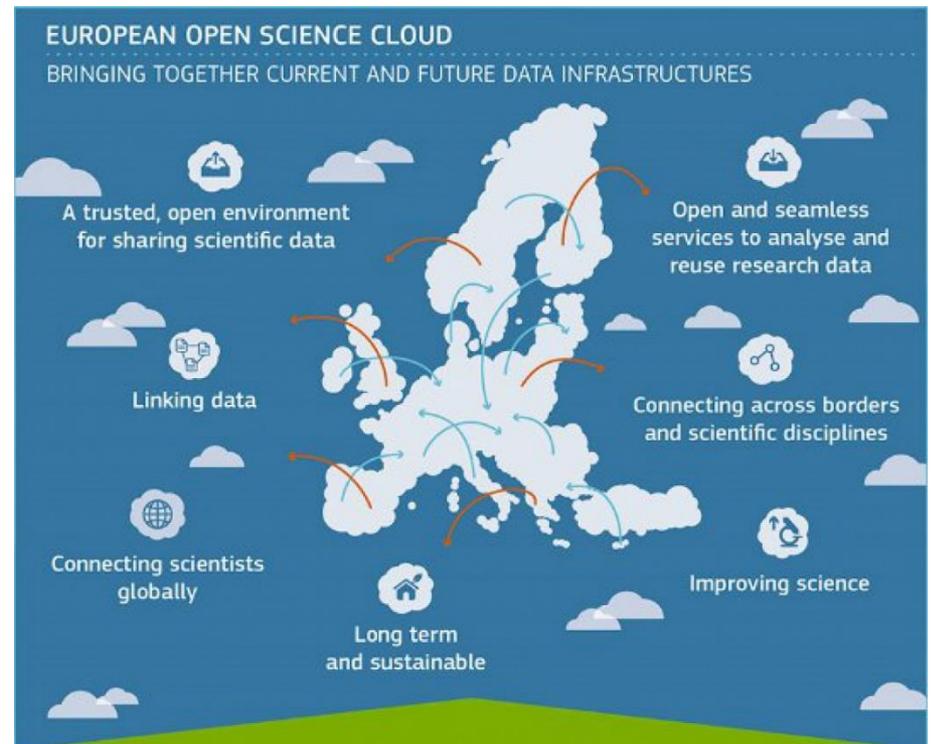
# The vision



"Europe's final transition must be one from fragmented data sets to an integrated European Open Science Cloud. By 2020, we want all European researchers to be able to deposit, access and analyse European scientific data through a European Open Science Cloud.."

*Speech by Commissioner Carlos Moedas in Amsterdam, NL:  
"Open science: share and succeed", 4 April 2016*

- EOSC will provide 1.7m EU researchers an environment with free, open services for data storage, management, analysis and re-use across disciplines
- EOSC will JOIN existing and emerging horizontal and thematic data infrastructures, bridging today's fragmentation and ad-hoc solutions
- EOSC will add value (scale, data-driven science, inter-disciplinarity, faster innovation) and leverage past infrastructure investment (10b per year by MS, two decades EU investment)





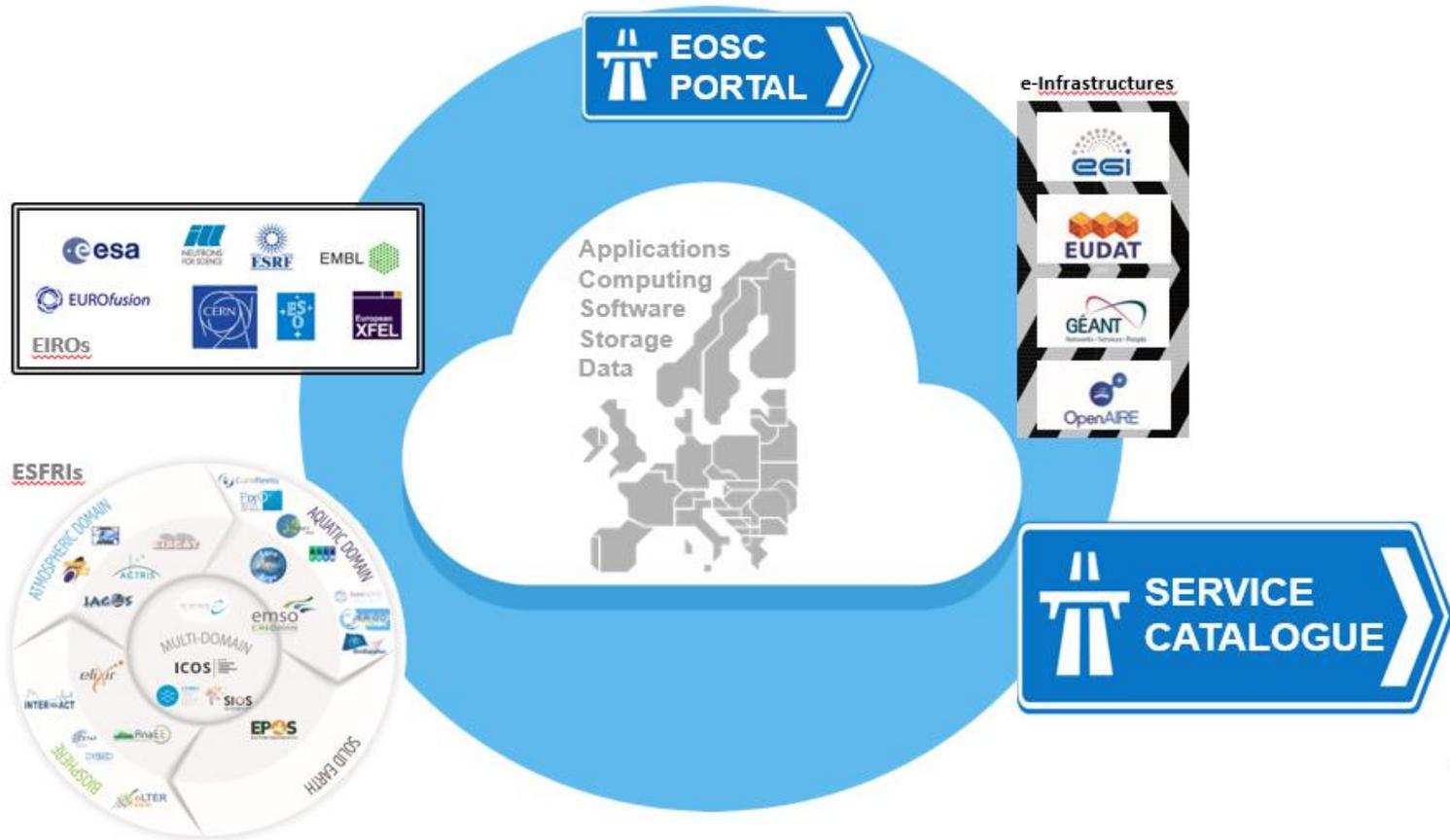
## Europe is not yet fully tapping into the potential of data

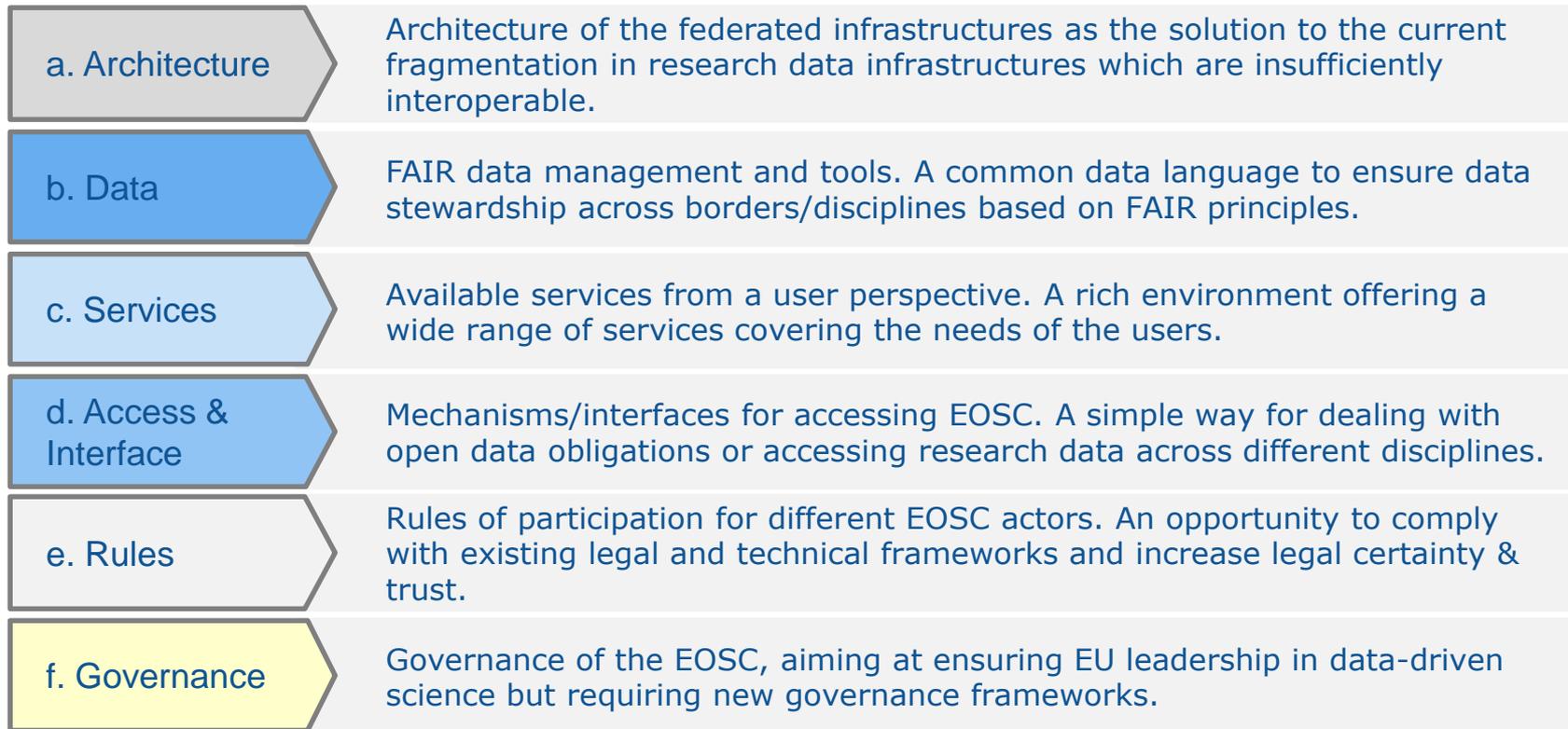
- Low awareness of the value of data sharing.
- Need to translate recent changes in privacy, data protection and copyright rules to the research data domain.
- Lack of data interoperability (e.g. via common standards).
- Fragmentation and lack of coordination over different scientific communities and countries.
- Not enough hardware capacity for scientific computing, storage, connectivity.

# EOSC Federated model



European  
Commission







## Federation of research/data infrastructures

- **A pan-European federation** of research/data infrastructures, **committed** to providing services as part of the EOSC and **by a compliance framework** including notably the Rules of Participation, will provide access to a wide range of publicly funded services supplied at national, regional and institutional levels, and to complementary commercial services.
- The process of federation will be implemented:
  - **Gradually;**
  - **On a voluntary basis;**
  - According to a **well-defined extent of involvement** per data infrastructure, in terms of the data sets and services contributed to the EOSC; data infrastructures will continue to follow their own rules outside of their specific commitments to the EOSC;
  - **Based on simple guidelines** consistent with existing good practices.



A researcher will find **five types of services** in the EOSC:

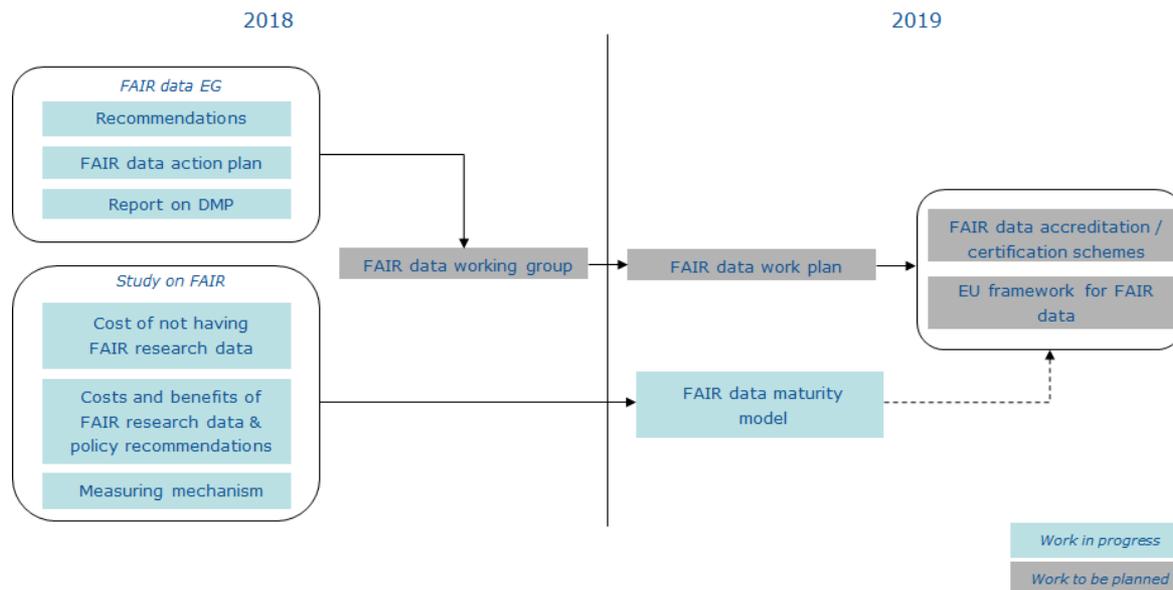
1. Identification and authentication, and an access point and routing system towards the resources of the EOSC
2. A protected & personalised work environment/space (e.g. logbook, settings, compliance record and pending issues)
3. Access to relevant information (e.g. status of EOSC, list of infrastructures, policy-related information, compliance framework) and specific guidelines (e.g. how to make data FAIR, certify a repository or service, procure joint services)
4. Services to find, access, store, re-use and analyse (e.g. analytics, data merge/fusion, mining) the data generated by others, catalogued appropriately

*Researchers would NOT have to pay for most services under 1, 2, 3 & 4, but may need co-funding via a grant or other mechanism for services under 4 & 5 (especially when big data is involved, customization required or great computation power).*

5. Services to make their own data FAIR, to store them and ensure long-term preservation



- The **EOSC shared resources** (FAIR data tools, specifications, catalogues and standards, and services) should be used by all researchers, implemented by all data infrastructures and mandated by research funders;
- EOSC shared resources needs to cover all the aspects of **FAIR**
- **Staged, iterative and flexible** process: (1) take stock and collect current tools/practices, (2) analyse and streamline, and (3) agree, catalogue, certify and implement as part of the EOSC Shared resources and EOSC rules;
- Support measures: (1) Develop a better culture of DMP research data management; (2) Skills among scientists and innovators; (3) Incentives and rewards and curricula; (4) Stimulate the demand for FAIR data by research funders and institutions





- A user should have the **choice between different entry points for accessing EOOSC services**, for practical reasons and to ensure a smooth transition from legacy systems. These different entry points to the EOOSC should be similar but not equivalent, all consisting of:
  - a **web-based user interface / front-end**, tailored to the specific needs and context of particular user communities, including individual data infrastructures. These entry points would need to comply with a set of minimum requirements.
  - a **common platform (building on the "EOOSC Hub" project and further developed in the INFRAEOOSC-06-2020 call)** or back-end, offerings access to all EOOSC shared resources (cf. data pillar) and to the full range of EOOSC services via machine-to-machine interfaces.
- By default, EOOSC services should be accessible via the **EOOSC portal**, which should act as a **universal entry point for all potential users** via a full-fledged user interface, irrespective of geographic location or scientific affiliation.

# Rules of participation



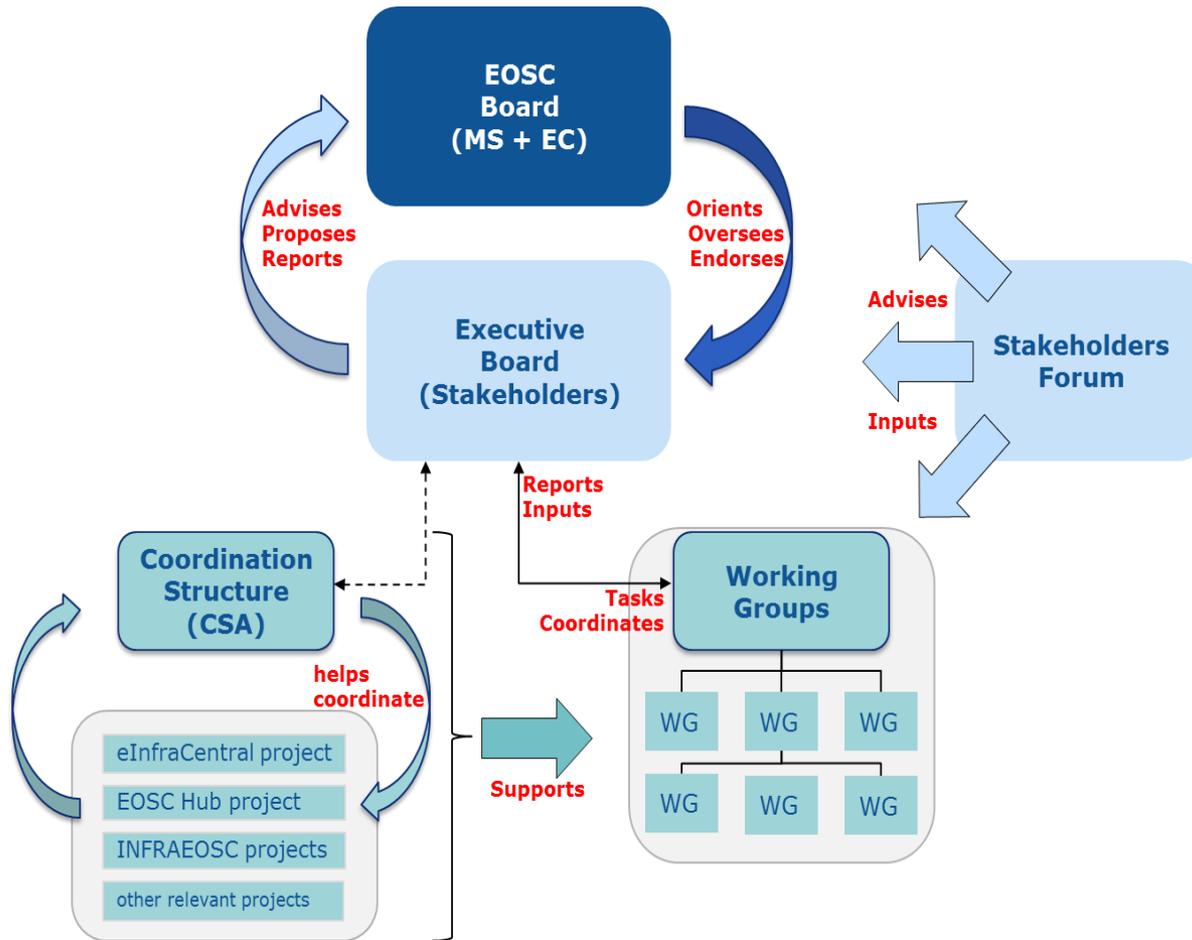
- The rules of participation define the rights, obligations and accountability of the various EOSC actors (notably data producers, service providers, data/service users).
- There will be room and need for differentiating the rules applicable to different EOSC actors depending on their maturity and role and taking into consideration:
  - The **specificities** of different scientific disciplines
  - The **diversity and level of readiness** of infrastructures and services at discipline, MS and EU level (RIs, eInfras) and the differences in their established rules and processes
  - The **variety of service providers** and users that will be involved in the EOSC (e.g. public vs private; horizontal vs specialised)
  - **changing needs and practices** regarding the implementation of the rules, in particular concerning compliance with existing legal frameworks (e.g. GDPR) and emerging ones (e.g. free flow of data)



## Guiding principles

- **Staged approach in setting governance:**
  - **Phase 1 (<end 2020):** steering and overseeing the initial EOSC development, primarily led by MS and EC, with stakeholders consulted and advising
  - **Phase 2 (>2020):** (following a thorough evaluation) steering and overseeing initial EOSC operations and further development, largely stakeholder-driven, with MS/EC keeping a higher-level oversight role
- **Guiding principles for Phase 1, supported by EOSC Declaration:**
  - Separation between advisory role, decision-making and implementation
  - Stakeholders (mainly) advise, propose and implement, while funders (MS/EC) (mainly) set orientations and endorse proposals,
- Any proposal for governance in 2nd phase would be included in Horizon Europe proposal

# Governance framework



3-layer structure as per Horizon 2020 WP 2018-2020

- *EOSC Board* of MS/AC and EC representatives to ensure effective supervision of EOSC implementation
- *Executive Board* of stakeholder representatives to help ensure proper EOSC implementation and accountability
- *Stakeholder Forum* to provide input from a wide range of actors

Further orientations for the set-up and composition of the Governance framework, to inform the consultation of MS without prejudging possible future decisions by the Council and the Commission

## EOSC policy milestones

- June 2017  EOSC Summit forming the coalition of the willing
  - Oct 2017  EOSC Declaration published for endorsements and to seek commitments
  - March 2018  EOSC Roadmap presented for consultation to Council RWP
  - May 2018  Council conclusions endorsing the EOSC Roadmap
  - Aug 2018  Commission Decision setting-up the Executive Board of EOSC
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- Fall 2018  Establishment of the Governance structure; MS designate representatives to the EOSC board. Selection of members to the governance structure
  - Nov 2018  MS agreement on EOSC governance structure (Austrian Presidency event)
  - End 2020  MS+ EC agreement on the future strategic orientation and financing scheme for the EOSC

Thank you for your attention



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# What it could be ...

