

# Building the European Open Science Cloud

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Vice Chair of EOSC  
Executive Board

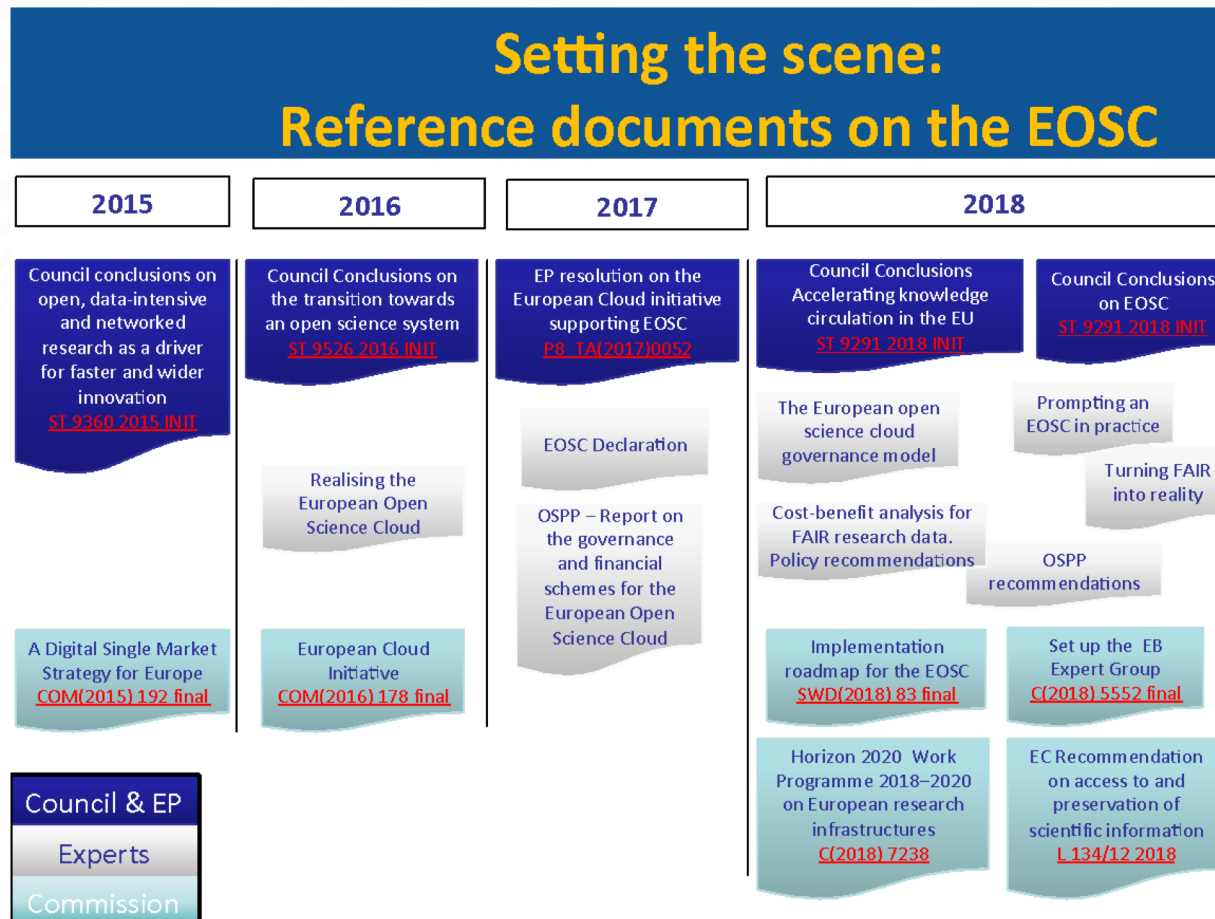
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Sarah Jones

Chair of EOSC FAIR  
Working Group

Twitter: @sjDCC

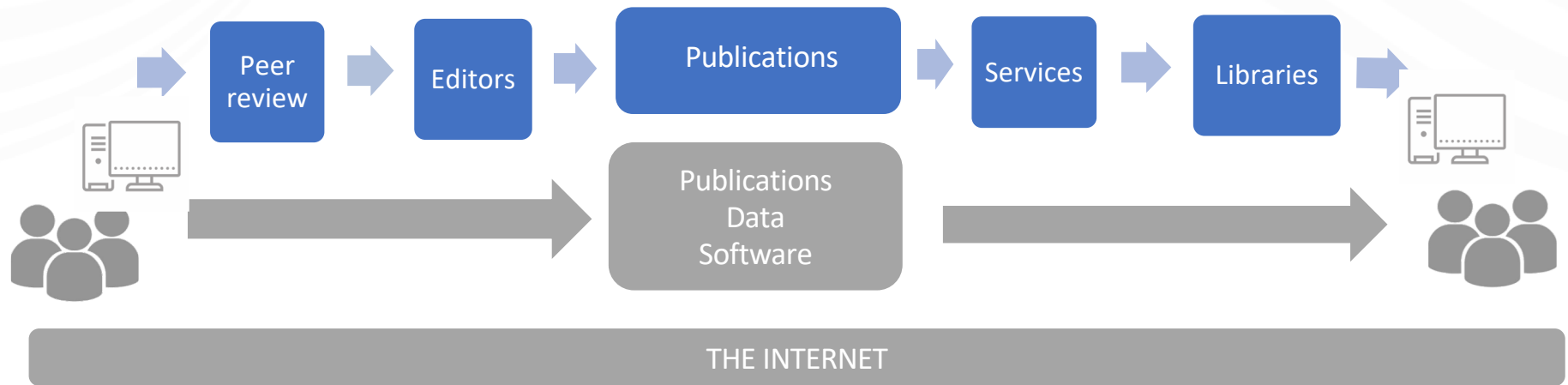
# Four years of EOSC in documents & projects





# The opportunity

Harness the power of the web to connect research communities, collaborate and share quicker and more easily



**Gutenberg** to Berners-Lee science

# Why the EOSC?

Enable Open Science and the digital transformation of science

Empower 1.7 million European researchers to reap the benefits of data-driven science

Build an open research data commons in Europe widely inclusive of all disciplines and Member States, sustainable in the long-term

Give Europe a global lead in research data management; help developing an internet of FAIR digital objects

Reduce fragmentation by federating existing Research Infrastructures (including e-Infrastructures)

Enable interdisciplinary research to address societal challenges

Enable the Digital Single Market and stimulate the emergence of a competitive EU cloud sector

# What is the EOSC?

A trusted and open virtual environment for the scientific community with seamless access to services (with highest TRLs) addressing the whole research data life cycle:

- Federating core services to federate and connect existing or planned RIs
- Services to make data FAIR, store them, ensure their long-term preservation
- Services to find, access, combine, analyse and process data
- Protected, personalized work environment

FAIR competition, no lock-in by individual service providers

Free at the point of use for the researchers

User-oriented and inclusive (across borders and disciplines)

Accessible through a non-exclusive, simple, universal gateway

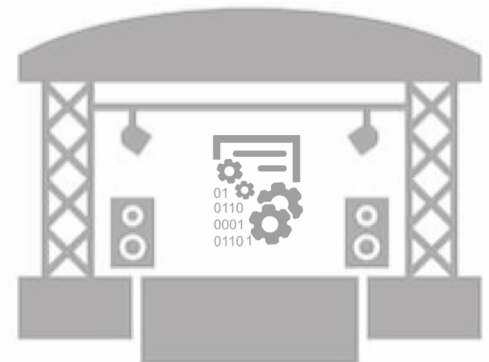
Governed by a minimal set of Rules of Participation

Steered by a governance based on increasing mutuality

# An open festival for science

- Virtual space where science producers and science consumers come together
- Inclusive to people of all backgrounds and cultures
- An open-ended range of content and services
- Quality mark « Data made in Europe »

*A platform for European research*



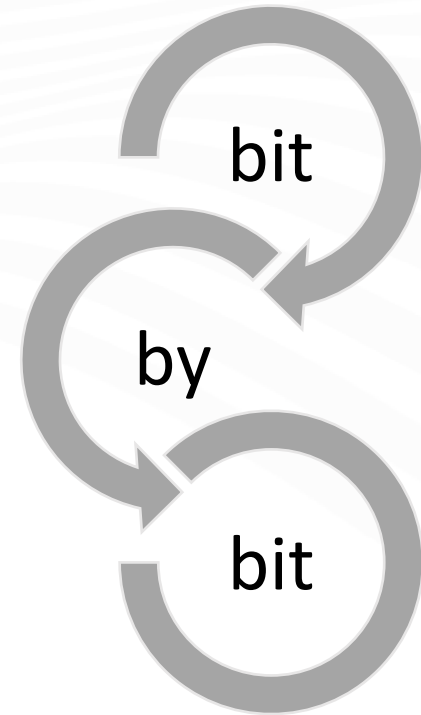
# Grow in stages...

- Underlying infrastructure needs to be developed, owned and operated publicly
- Extend to engage with private initiatives
- All must adhere to Rules and uphold common values
- Be a living, breathing system that adapts to changes

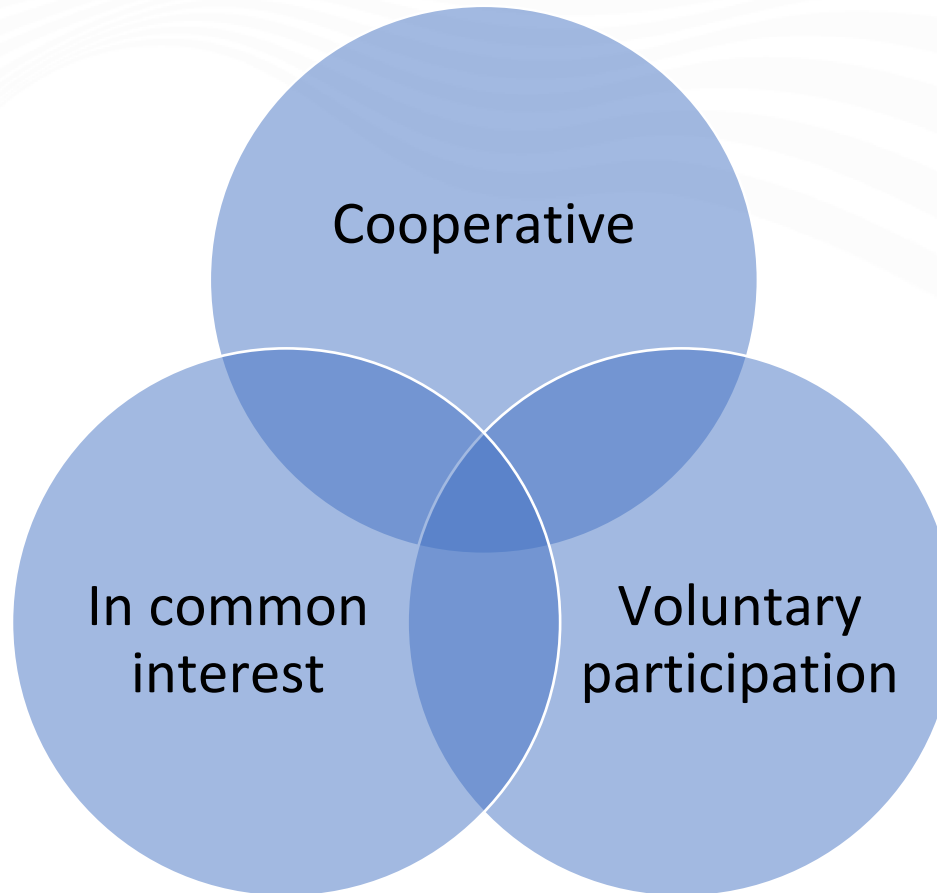


# Design principles

- Co-creation
- Research-led
- Community-driven
- Flexible by design
- Extensible / scalable
- Incremental and iterative
- Hands-on and participatory
- Continuous engagement, consultation & user testing



# Driving principles for implementation

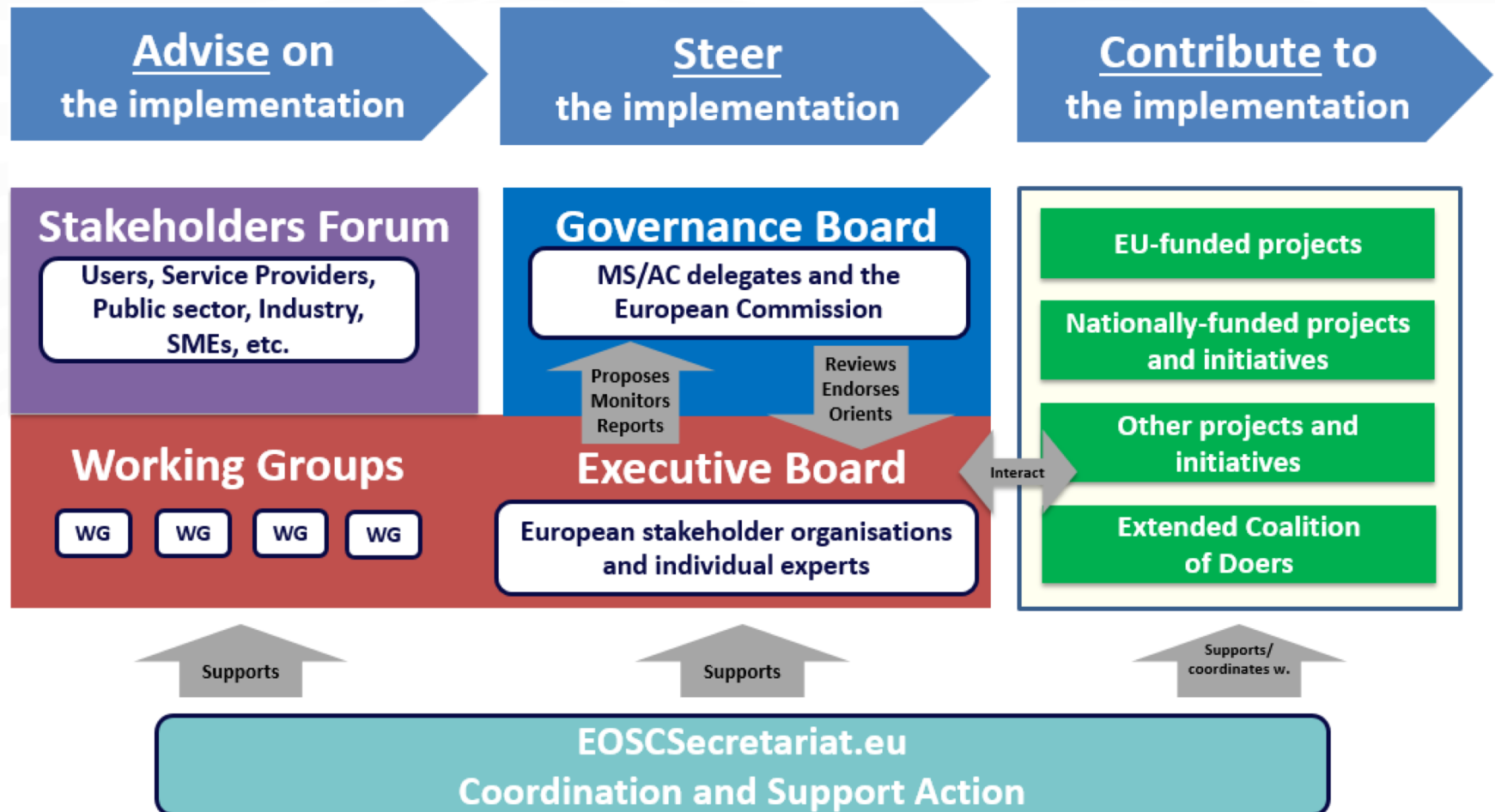


# Decision making process

- **Openness** - processes open to all interested and informed parties
- **Broad consensus** - allow for all views to be considered, such that agreement can be found across a range of interests
- **Transparency** - stakeholders will provide public notice of proposed development activities and conditions for participation. Easily accessible records of decisions.
- **Balance** - activities will not be exclusively dominated by any particular person, organisation or interest group
- **Due process** - decisions will be made with equity and fairness among contributors. Periodic reviews and updating will be well defined.



# EOSC governance structure



# Governance Board

- Representatives from all 28 member states and 10 associated countries
- Chaired by Hans Josef Linkens, BMBF, Germany
- Forming sub-groups to feed strategic inputs into EOSC Exec Board and Working Groups

[https://ec.europa.eu/research/openscience/pdf/ec\\_rtd\\_eosc-governance-board\\_062019.pdf](https://ec.europa.eu/research/openscience/pdf/ec_rtd_eosc-governance-board_062019.pdf)

# Executive Board

- Karel Luyben & Cathrin Stöver as Co-Chairs
- 8 representatives of stakeholder groups
- 3 independent experts

<https://www.eoscsecretariat.eu/eosc-governance/eosc-executive-board>



KAREL LUYBEN



CATHRIN STÖVER



JEAN-FRANCOIS  
ABRAMATIC



JUAN BICARREGUI



JAN HRUSAK



SARAH JONES



STEPHAN KUSTER



RUPERT LÜCK



NATALIA MANOLA



JOHN WOMERSLEY



RON DEKKER

# Communications

- Must be 2-way...
- Engage, don't just broadcast!



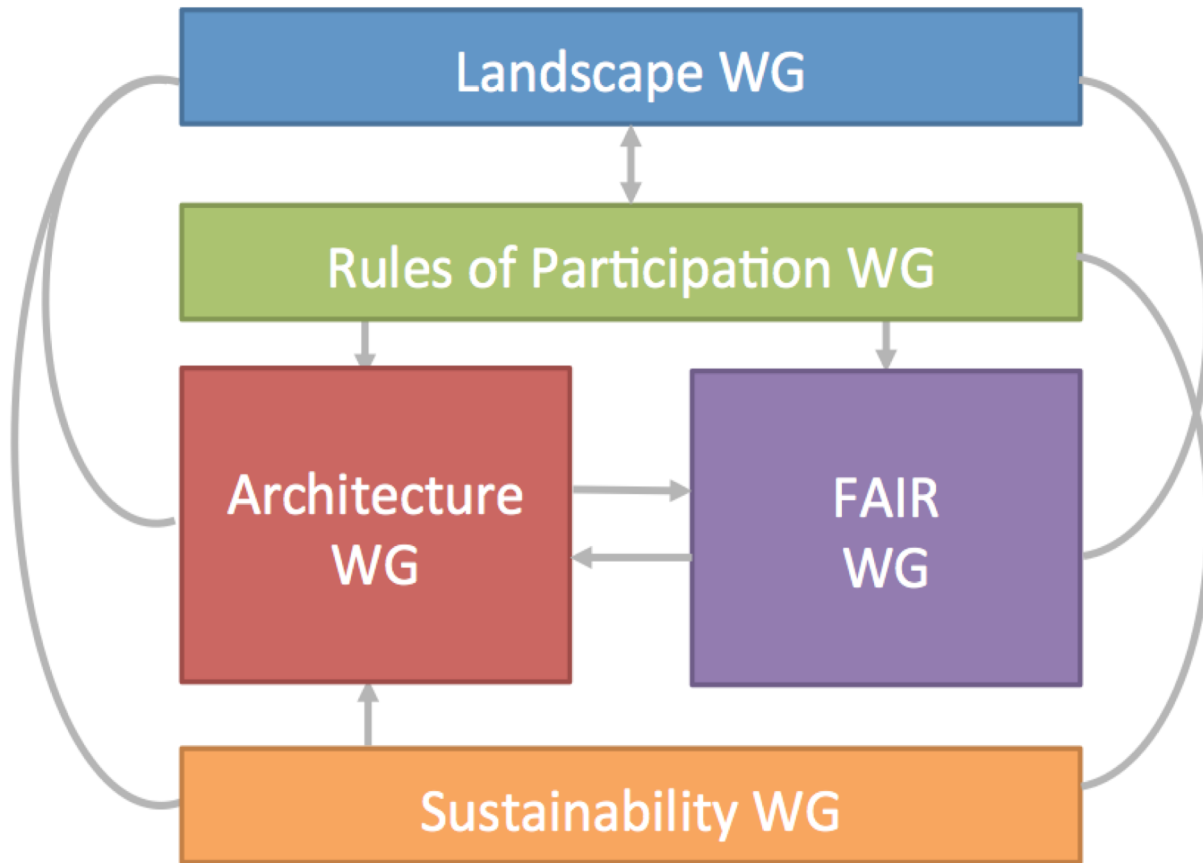
# Communications & engagement

- Strong and consistent communication strategy
  - Messaging in different ‘languages’ to speak to all stakeholders
  - Use of the existing communications channels to reach scale
  - Need to develop a collectively-owned EOSC brand
- 
- Critically important to engage with stakeholders at all times
  - Continual testing and feedback loop to support adoption
- 
- Set up a co-owned sub-group between EB/GB to manage this

# Key documents and links

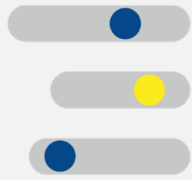
- EOSC Strategic Implementation Plan
  - <https://www.eoscsecretariat.eu/eosc-governance/eosc-executive-board>
- EOSC Work Plan
  - Watch this space!
- Working Group remits
  - <https://www.eoscsecretariat.eu/eosc-working-groups>
- Blog
  - <https://www.eoscsecretariat.eu/news-events-opinion>

# EOSC Exec Board Working Groups



<https://www.eoscsecretariat.eu/eosc-working-groups>





## WHAT

Provide options for progressive convergence and alignment of structures and initiatives in Europe to facilitate the EOSC

## HOW

1. Build on outcomes of EOSC-related H2020 projects and input from member states
2. Map EOSC-relevant national infrastructures and spending
3. Take stock of federation constraints and opportunities at the various architectural levels

## WHY

### **Consolidate the existing landscape**

- National research infrastructures, e-Infrastructures and open science policies
- ESFRI RIs, cluster projects, thematic initiatives and clouds

4. Propose mechanisms and best practices for national and regional alignment
5. Analyse member state preparedness for financial resources, political stability and infrastructural planning

**Q3 2019**

Initial mapping based on existing EOSC-related projects and national initiatives

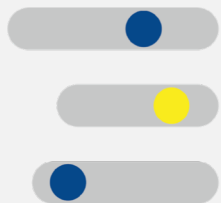
**Q4 2019**

Final mapping with input of INFRAEOSC-5B cluster projects

**Q3 2020**

Report on EOSC readiness of the Member States and RIs  
*(joint output)*





## WHAT

Recommend rules of participation which define rights, obligations and accountability to govern EOSC users, providers and operators. Identify common requirements.

## HOW

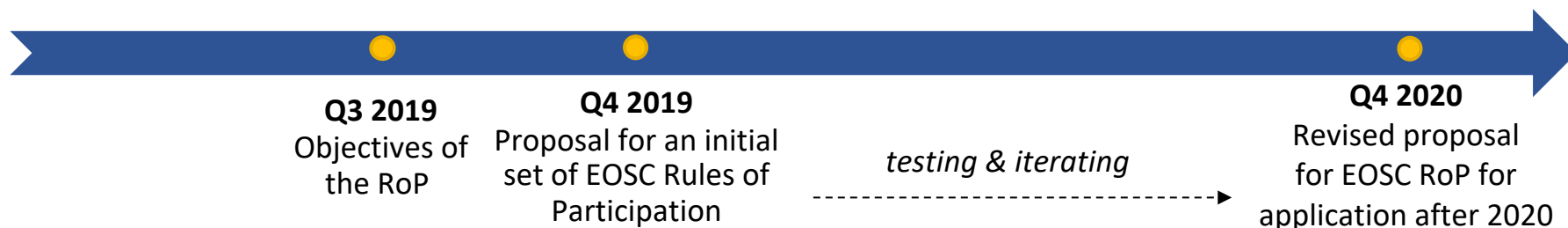
Identification of different rules taking into account:

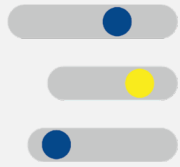
1. Differing roles and services
2. Scientific disciplines
3. Preparedness of infrastructures, services and member states
4. The growing range of EOSC users and providers
5. Changing needs and practices including regulations

## WHY

Guarantee open, secure and cost-effective federated EOSC with services of documented quality

### Assessable Quality





## WHAT

Propose a technical framework to enable and sustain an evolving EOSC, including an interoperability layer to build the federation of systems

## HOW

Review current offerings and define

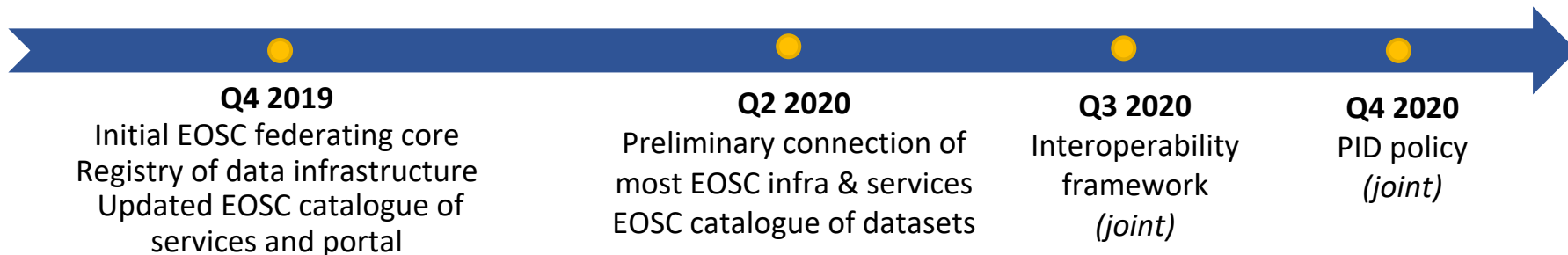
1. EOSC core services and their interfaces
2. EOSC OS APIs for reuse by thematic services
3. EOSC portal components and catalogues

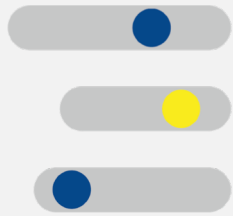
## WHY

Define the interoperability layer necessary for seamless operation of the EOSC federation core

### Identify the federated core of EOSC

4. EOSC data description standards
5. Other standards and best practices
6. Converge towards globally-accepted frameworks





## WHAT

Provide recommendations on the implementation of FAIR, including corresponding requirements for services, in order to foster cross-disciplinary interoperability

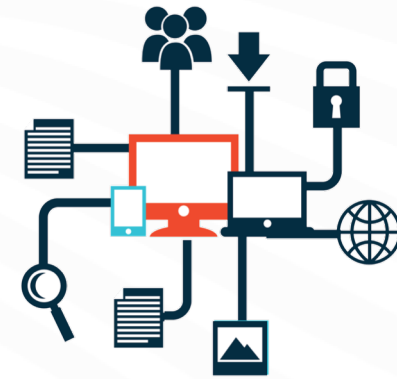
## HOW

1. Data standards & sharing agreements
2. Upscale best-practice solutions
3. EOSC Interoperability Framework
4. Identify service requirements for FAIR

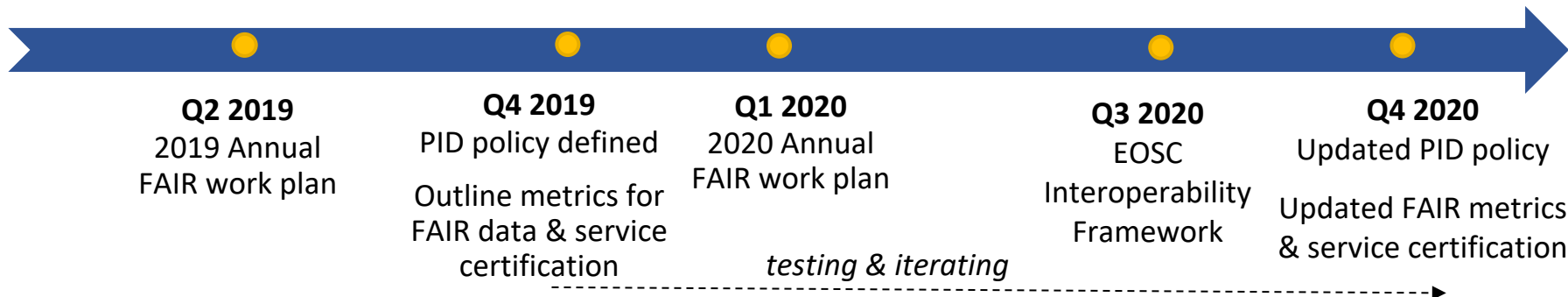
## WHY

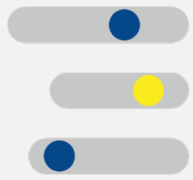
Connect people, data and service via standards

**Be the glue**



5. Persistent Identifier Policy for EOSC
6. Frameworks to assess FAIR data and certify services that enable FAIR
7. Converge towards globally-accepted frameworks





## WHAT

Provide strategic, legal and financing recommendations for an operational, scalable and sustainable EOSC federation after 2020

## HOW

1. Analyse business models and implications on legal entity, costs, regulations, financial strategies, supporting NDI alignment
2. Map potential legal entities, taking into account national and European legislation
3. Examine options for a governance framework to oversee EOSC operations and development
4. Analyse regulatory/policy environments and assess impact of proposed structures and funding streams at national & European level

## WHY

A clear understanding of key strategic, financial and legal aspects is essential for the second phase of the EOSC implementation

### **Towards a sustainable EOSC**




# MVP by end 2020

- Agreed and tested Rules of Participation
- Analysis of the existing national infrastructures and policies
- Financing model, legal entity and post 2020 governance structure
- Functioning federated core & initial services
- Catalogues of EOSC data and services
- EOSC Interoperability Framework
- Persistent Identifier policy
- Metrics for FAIR data and repository certification

# Work plan

Iteration and testing built into plan

Initial / outline outputs → TEST → Updated / final  
Agree versions for implementation post 2020

	Landscape (Jan Hrušák)	Sustainability (Rupert & Stephan)	Architecture (JF Abramatic)	FAIR (Sarah Jones)	Rules of Participation (Juan Bicarregui)	
Q2 2019 Apr-Jun				Annual FAIR workplan		
Q3 2019 Jul-Sep	Initial landscape mapping				Initial EOSC Rules of Participation	
Q4 2019 Oct-Dec	Final landscape mapping		Outline PID policy			
			Initial federating core Registry of infrastructure Updated catalogue & Portal	Outline FAIR metrics & repository certification		
Q1 2020 Jan-Mar				Annual FAIR workplan		
Q2 2020 Apr-Jun			Preliminary connection of infrastructures and services EOSC Catalogue of datasets			
Q3 2020 Jul-Sep	Report on EOSC readiness		EOSC Interoperability framework (joint output)			
		Strategic & financing options post 2020				Final EOSC Rules of Participation
Q4 2020 Oct-Dec			Updated PID policy			
				Updated FAIR metrics & repository certification		

# Working Group formation

- Nominations by Governance Board (all)
- Nominations by Executive Board (FAIR WG)
- Nominations by H2020 projects (Architecture)
- Open calls to engage wider stakeholders (Architecture, FAIR and Rules of Participation)
- WGs may call in Experts, H2020 projects and commission consultancy reports where needed

# WGs by numbers

## Landscape

11 male  
5 female

## RoP

5 male  
7 female

## Architecture

27 male  
2 female

## FAIR

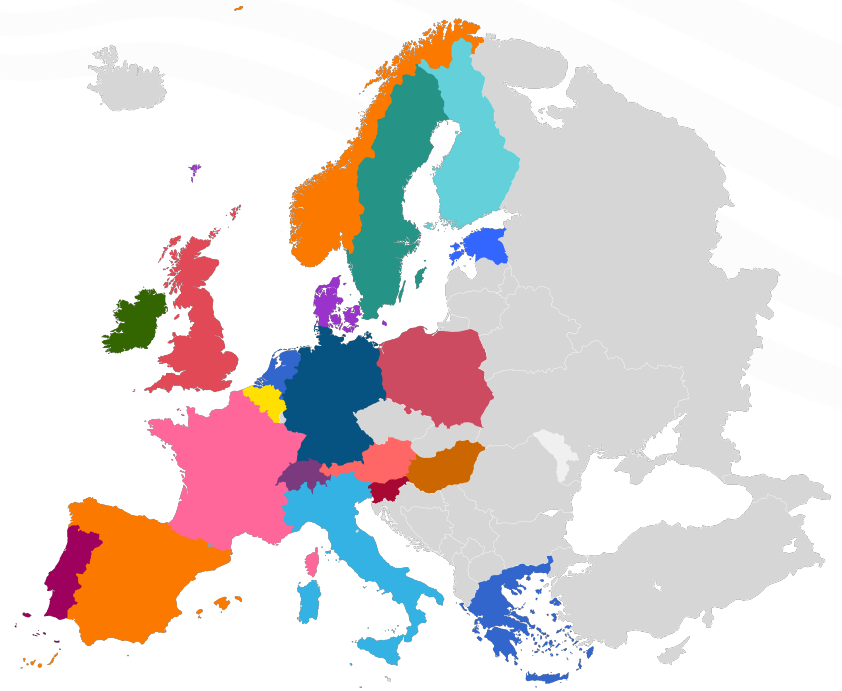
15 male  
11 female

## Sustainability

10 male  
8 female



Experts represent 20 of  
the EU Member States  
and Associated Countries





# Status of Working Groups

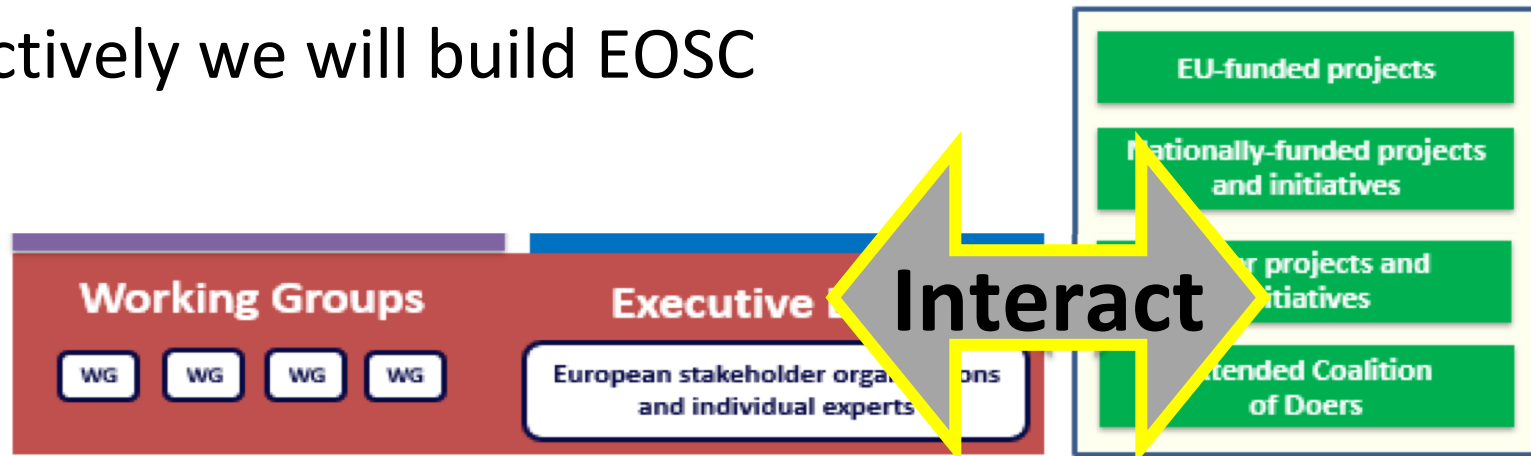
- First meetings all scheduled or happened
- Working Groups establishing who will do what
- Identifying any missing skills across membership
- Planning engagement with projects

# Open Call

- Will happen for three groups
  - Architecture
  - FAIR
  - Rules of Participation
- Priority will be filling skills gaps
- Open to all – apply with short CV and statement of what skills you will bring
- Expect to be open late Summer

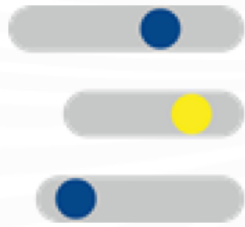
# First steps

- Need to reach out to H2020 projects, national initiatives and coalition of the doers
- Working Groups dependent on YOU!
- You building and we coordinate & endorse
- Collectively we will build EOSC



Let's get this show on the road!





**EOSC**ExecutiveBoard

Thanks for listening!

Questions?

