EOSC Task Force on Infrastructures for quality research software

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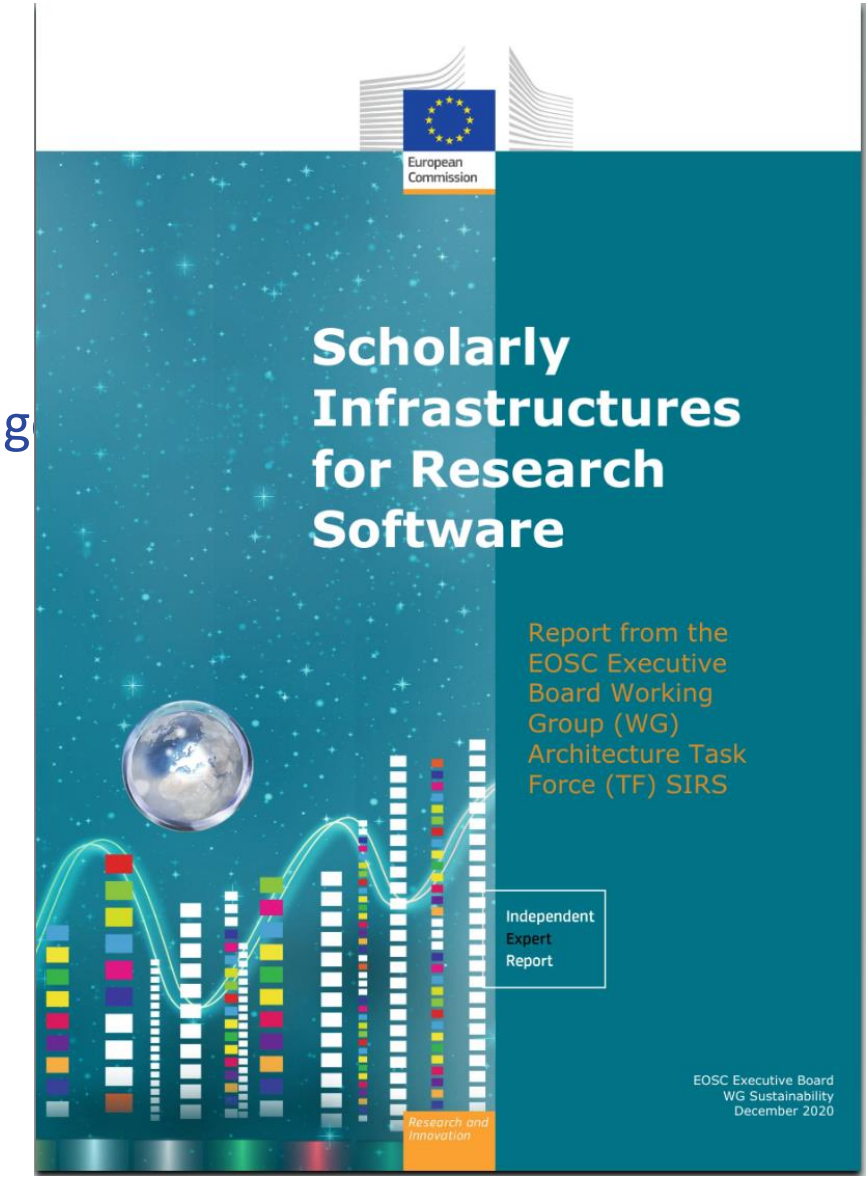
The origin: EOSC SIRS report (12/2020) doi.org/10.2777/28598

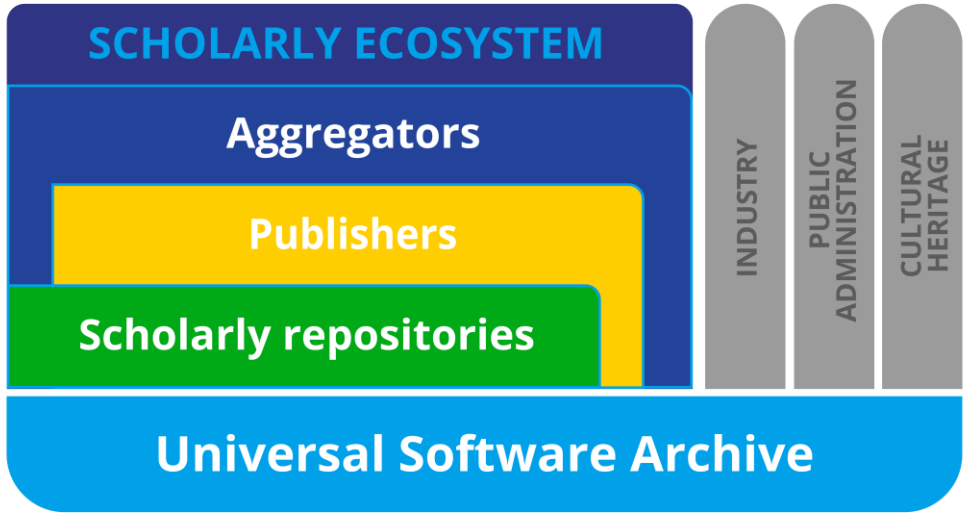
Chair: Roberto Di Cosmo, Software Heritage
Co-Chair: José Benito Gonzalez Lopez, Zenodo

- Focus on **Software Source Code**
- Four Pillars **Archive, Reference, Describe, Credit**
- State of the Art
  - Best Practices & Open Problems
  - Cross Cutting Concerns
- The Road ahead
  - Requirements & Criteria
  - 13 Workflows / Use Cases examples
- Recommendations
  - Standards & Tools
  - Policy recommendations
  - Long term perspectives

- **Archives**
  - HAL
  - Software Heritag
  - Zenodo
- **Publishers**
  - Dagstuhl
  - eLife
  - IPOL
- **Aggregators**
  - OpenAIRE
  - scanR
  - swMATH



Overall Architecture of SIRS and recommendations



Software Heritage

- **Scholarly ecosystem**
  - Aggregators collecting data from...
  - Academic publishers
  - Scholarly repositories
- **Software Heritage** connects with the global software development ecosystem

Main challenges identified :

- the long–term archiving
- global referencing
- interoperable descriptions
- crediting of authors.

Actionable recommendations to:

- Strengthen interactions between archives, publishers and aggregators,
- Agree on software metadata standards, like CodeMeta
- Generalize the use of extrinsic identifiers and intrinsic identifiers (SWHID)
- Ensure appropriate citations for research software source code,
- Foster standardization through policy and guidelines, and
- Ease adoption of the processes and tools for the research community at large

The Task Force on Infrastructures for Quality Research Software

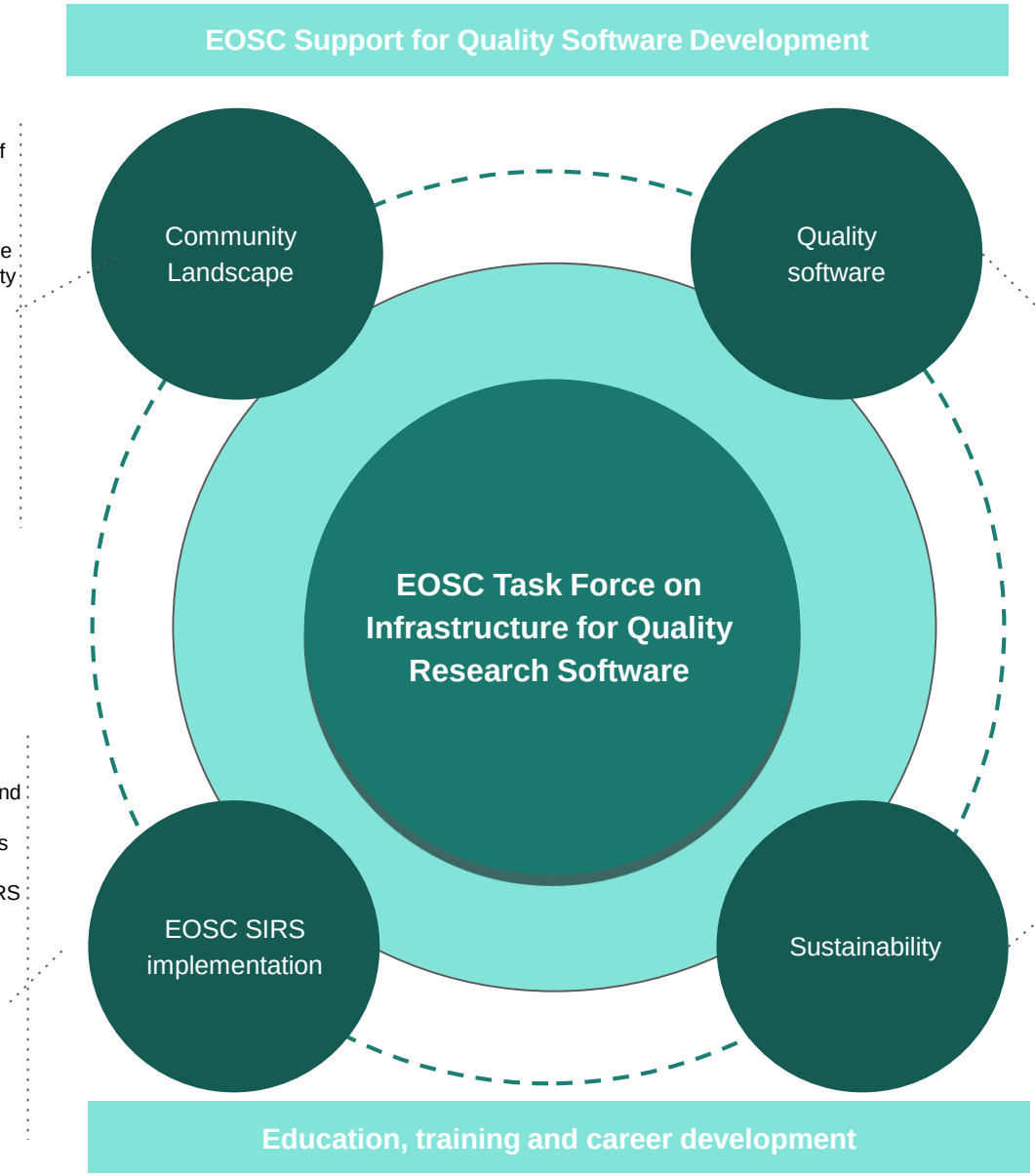
- Coordinated by Roberto Di Cosmo (INRIA–FR) and Isabel Campos (CSIC–ES)
  Draft Charter available in the EOSC–A website.
- **Objectives**

- Foster development and deployment of tools and services to properly archive, reference, describe with proper metadata, share and reuse research software

- Improve the quality of research software, both from the technical and organizational point of view and in particular the software used in the services offered through EOSC

- Increase recognition to software developers and maintainers of research software as a valuable research result, on a par with publications and data

Core Activities



1. Explore tools, standards and platforms that are used in state of the art software development
2. Identify open source development communities with which the research communities have broad connections
3. Formulate actionable recommendations, taking into account the diversity of software size, complexity, organization and longevity that one finds in the research world

1. Identify standards-based practices to be used for guidelines and procedures that would foster the development and deployment of high quality research software.
2. Provide requirements to infrastructure managers to enable the provision of platforms able to connect quality software and quality data.
3. Identify software development best practices to enable researchers to develop and run their research software on a diversity of computing infrastructures.

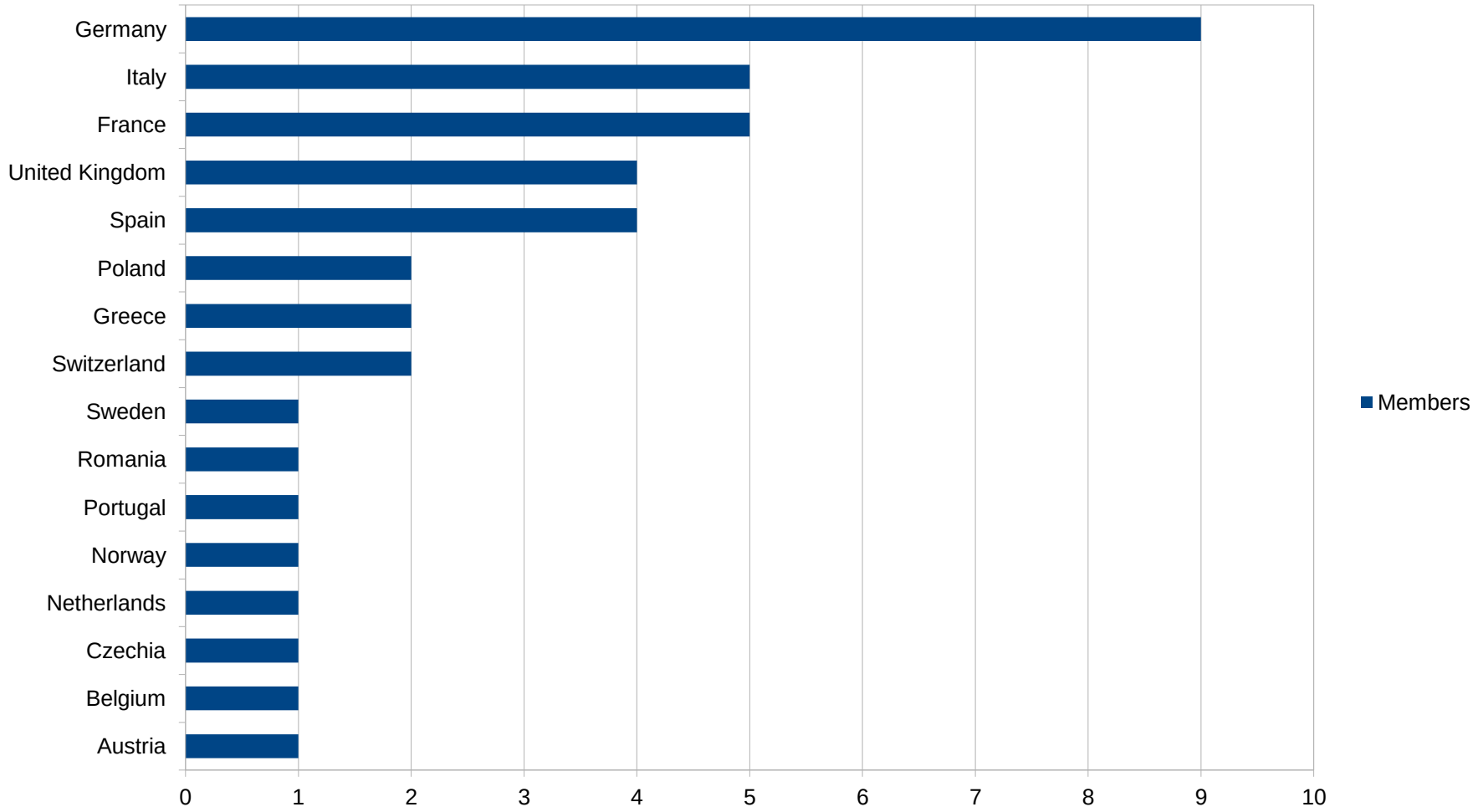
1. Broad dissemination of the EOSC SIRS report
2. Participation in existing standardisation efforts on metadata and identifiers for software source code
3. Federation and interconnection of the identified infrastructures address the interconnection between articles, data and software (extending the EOSC SIRS report)

1. Build a landscape of the approaches to sustaining the development of research software
2. Identify the blockers and limitations as well as the best practices
3. Formulate actionable recommendations based on the findings

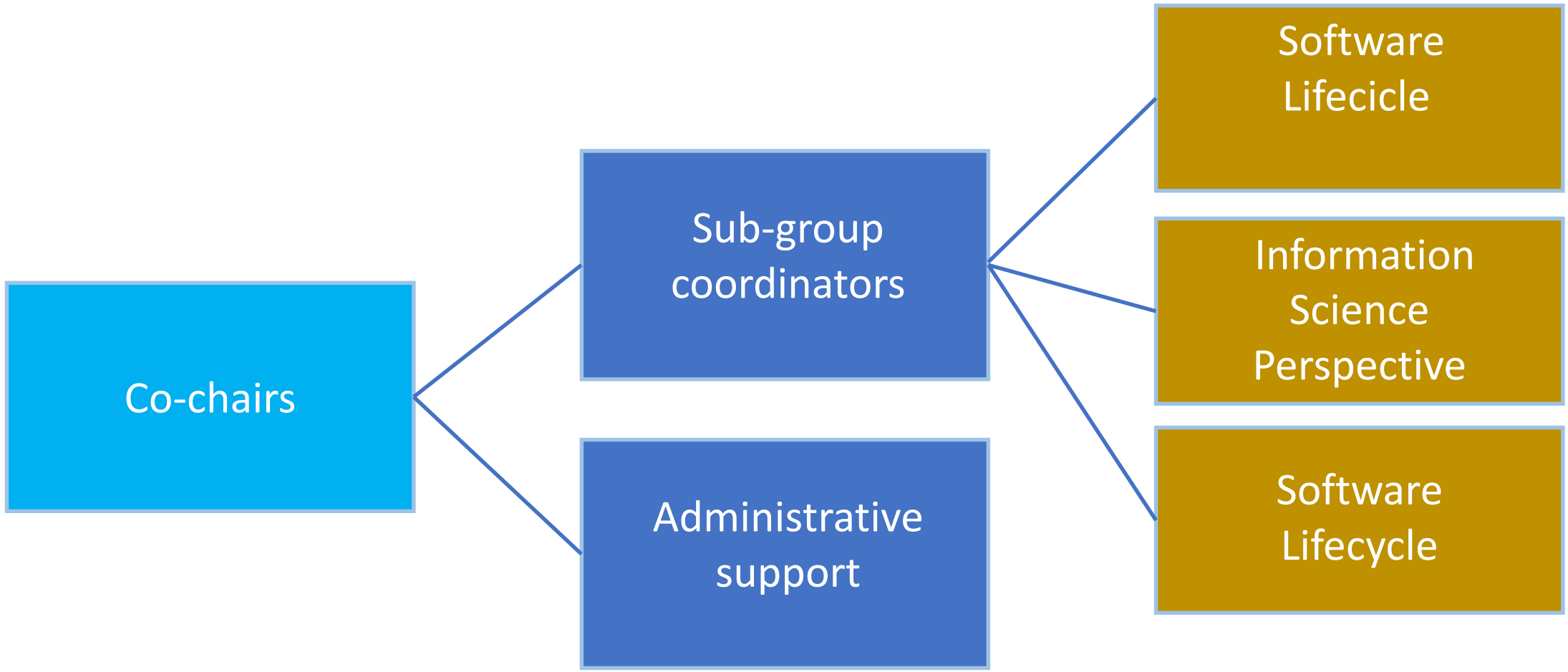
TF Members

41 members from 17 countries

Austria	1
Belgium	1
Czechia	1
France	5
Germany	9
Greece	2
Italy	5
Netherlands	1
Norway	1
Poland	2
Portugal	1
Romania	1
Spain	4
Sweden	1
Switzerland	2
United Kingdom	4



TF Organization



Web Page

https://www.eosc.eu/advisory-groups/infrastructures-quality-research-software

THANK YOU !