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Towards common principles for monitoring Open Science

Unesco, 2024/04/17

LAETITIA BRACCO, UNIVERSITÉ DE LORRAINE





Why do we need principles to
monitor Open Science?

May 2023 G7 Communique (excerpt)

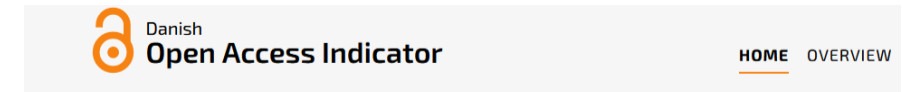
G7 cooperation on open science is set to continue, in particular to “*use research on research to inspire a framework for open science monitoring*”

▶ [source](#)



Existing initiatives: a few examples among many

- Some national initiatives:
 - **Danish** Open Access Indicator <https://oaindikator.dk/en/>
 - **French** Open Science Monitor <https://frenchopensciencemonitor.esr.gouv.fr/>
 - Helmholtz Association's Open Access Monitor for **Germany** <https://os.helmholtz.de/en/open-access/>
- International initiative:
 - **Curtin University's** Open Knowledge Initiative (COKI) <https://openknowledge.community/>
- And much more...

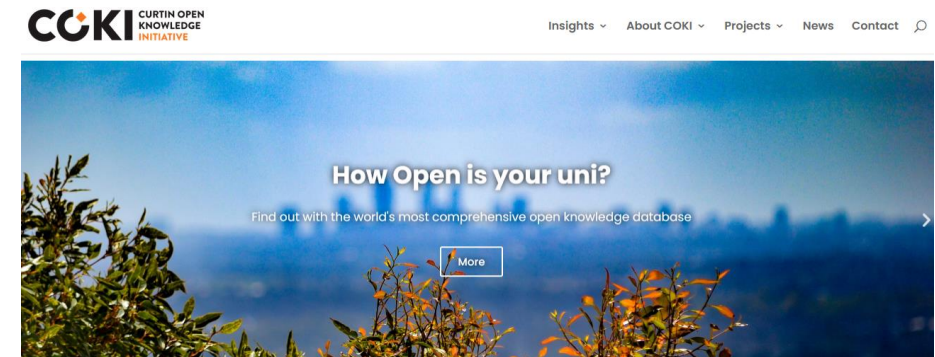


Welcome to the Danish Open Access Indicator

The Indicator is produced and released annually by the Danish Agency for Higher Education and Science, part of the Ministry of Higher Education and Science. The Indicator monitors the implementation of the [Danish Open Access Strategy 2018-2025](#) by collecting and analysing publication data from the Danish universities.

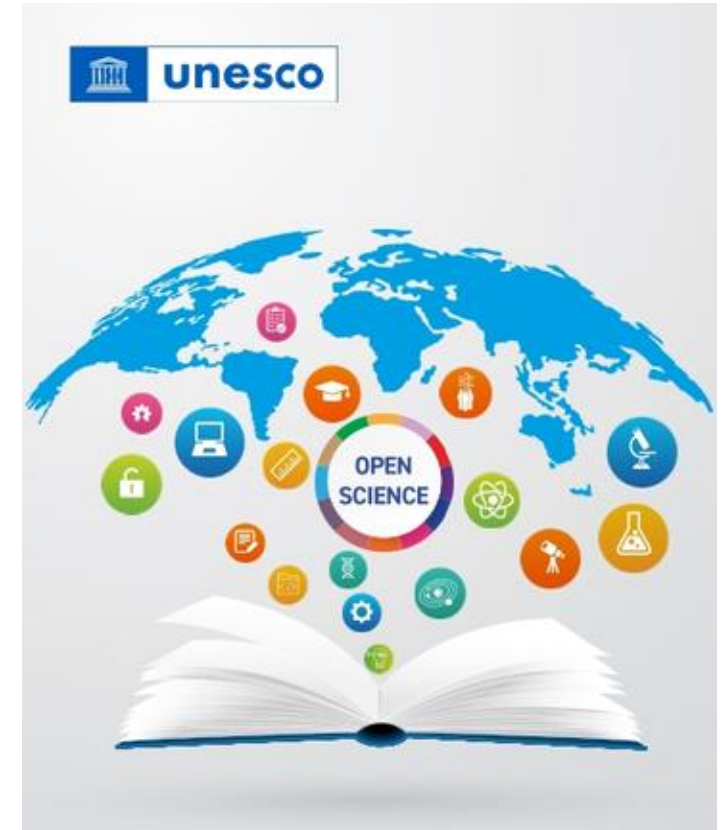
Top menu:

- **OVERVIEW** – National strategic goals as well as implementation results at the national and university levels.
- **OA-TYPES** – Types of Open Access realisation at the national and university levels.
- **DATA** – Data for download together with documentation at the overview as well as technical level.
- **GUIDES** – Information for Open Access implementers at the Danish universities. Like important dates and guides.



Some guidelines already available...

- 2020 : Principles of Open Scholarly Infrastructure <https://doi.org/10.24343/C34W2H>
- 2021 : UNESCO Recommendation on Open Science <https://www.unesco.org/en/open-science/about>
- 2024 : PathOS Open Science Indicator Handbook <https://handbook.pathos-project.eu/>
- 2024 : Declaration on Open Research Information <https://barcelona-declaration.org/>



**UNESCO Recommendation
on Open Science**

Yet no common understanding on Open Science Monitoring

- We need a global approach to monitor open science progress
- In all domains, not only open access to **publications**
- But **also**:
 - research data,
 - open source software,
 - clinical trials,
 - open science impacts,
 - open science costs,
 - citizen science,
 - etc.



The Principles of Open Science Monitoring

A French initiative within the Open Science Monitor project

- Project led by the French Ministry of Higher Education and Research, the Université de Lorraine and Inria
- Since 2021, discussions have been taking place on how to include new objects in the monitoring of open science in France
- Numerous international exchanges on the issue, notably with Denmark, Portugal and Germany
- Draft of a first version of what these principles could be

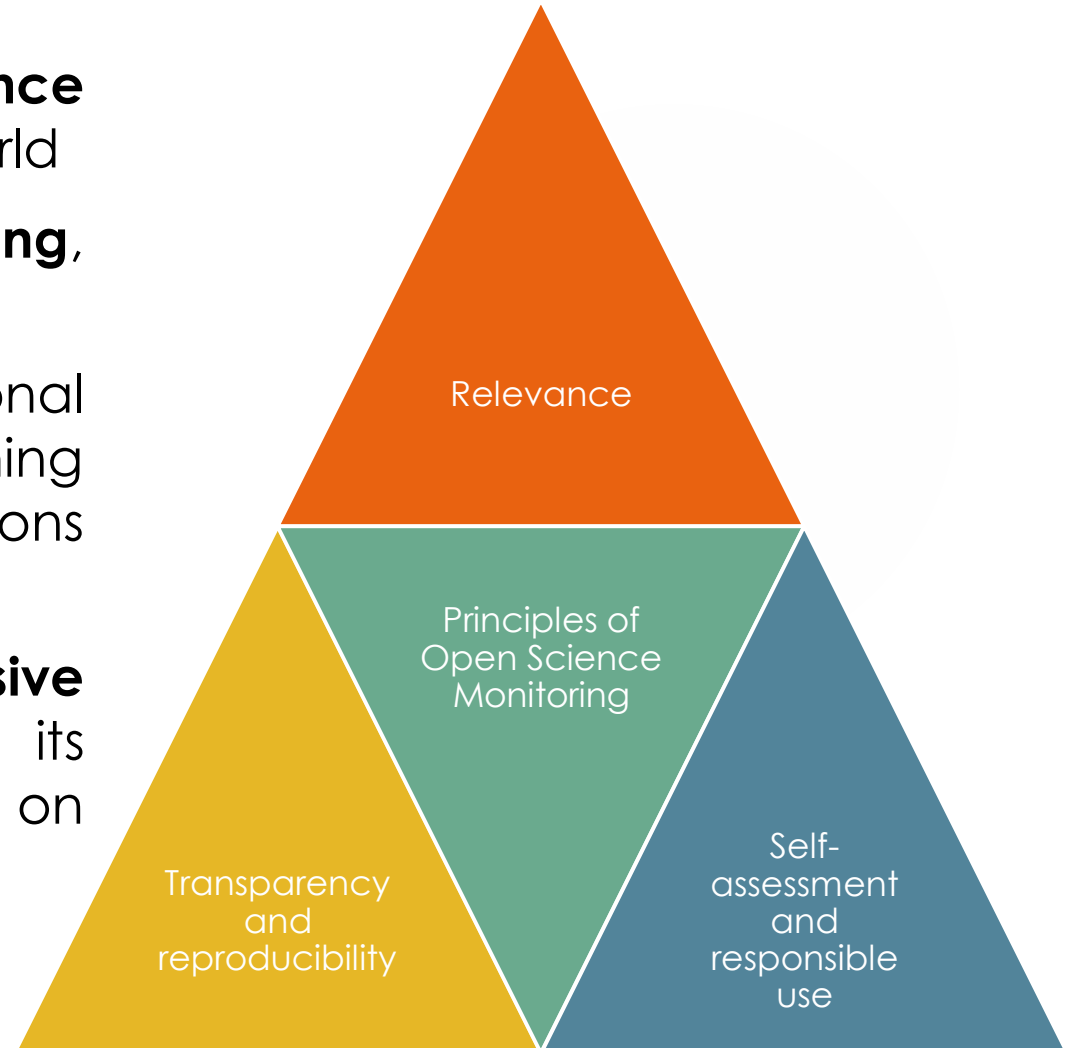
the French Open Science Monitor



Measure the evolution of open science in France using reliable, open and controlled data.

High-level principles

- Acknowledging the **diversity of Open Science monitoring approaches** throughout the world
- Providing guidelines to encourage **pooling, comparisons** and **reuse** when possible
- Helping stakeholders like national governments, research-performing organisations and international organisations to **set up their own monitoring tools**
- Global aim: monitor a **comprehensive transformation to open science** and its **impacts** on the research ecosystem and on society



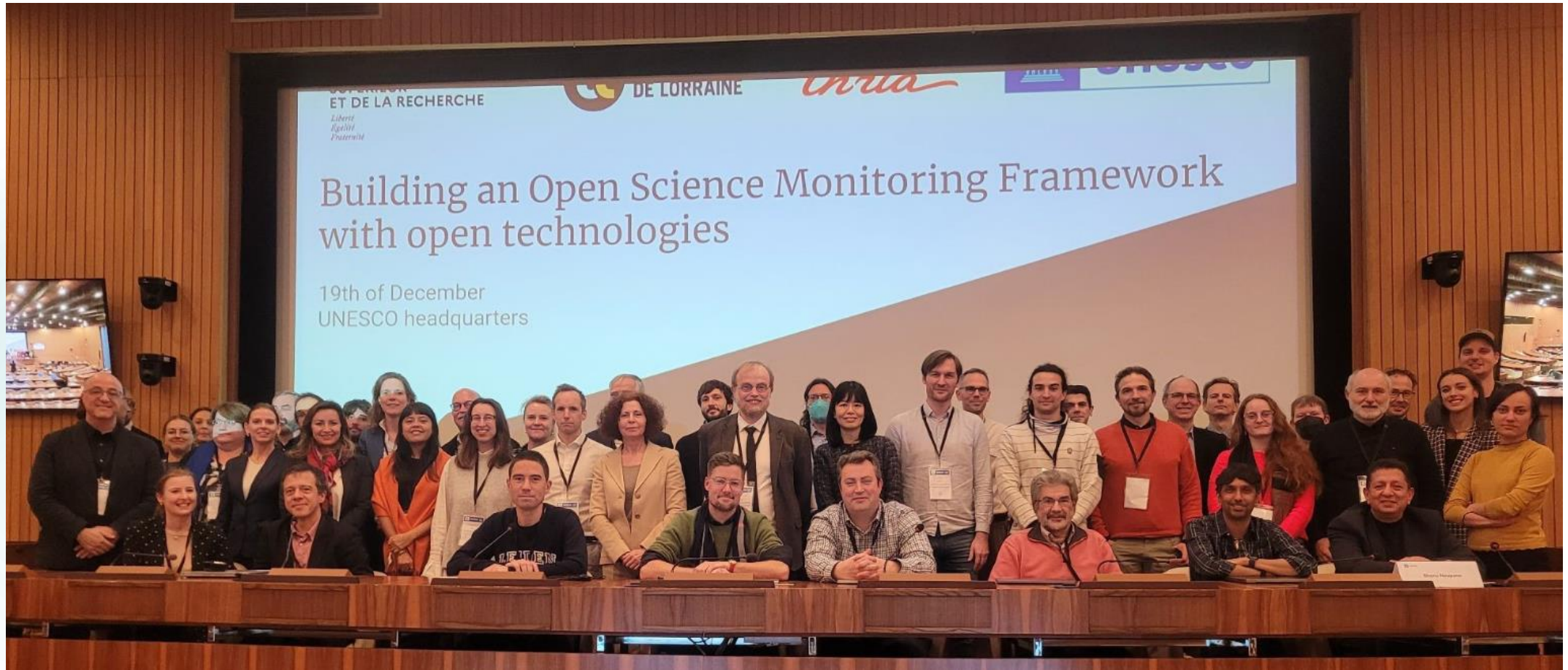
Creating the spark for international collaboration

- **Workshop** organised by the partners of the French Open Science Monitor at the Unesco headquarters on December 19th, 2023
- Objective: **gathering international open science monitoring stakeholders and experts** and **impulsing the creation of an international community on the topic**
- Fifty international experts from various institutions: CERN, NASA, CWTS, OurResearch, Crossref, DataCite, SPARC Europe, Redalyc, the OECD, COKI, the Max Plank Digital Library, PLOS, the Technical University of Denmark...
- Two breakout-sessions to work on the principles



[Slides available online](#)

Creating the spark for international collaboration

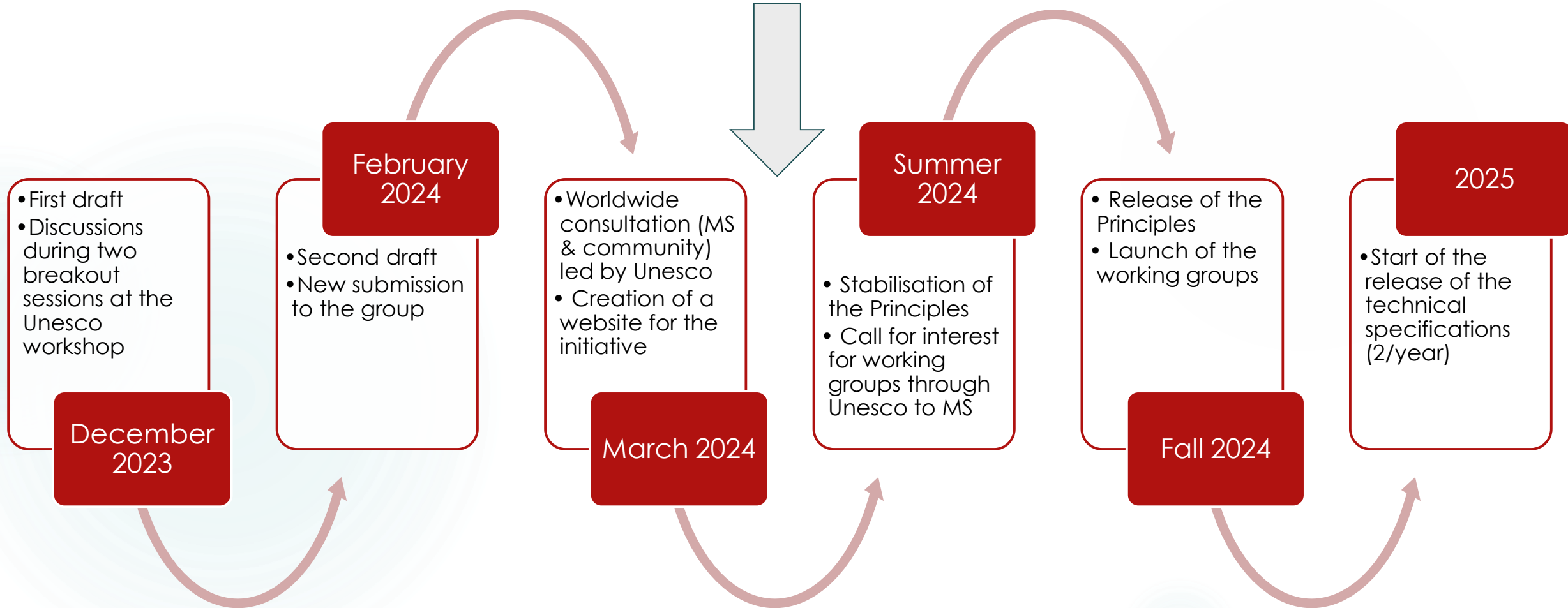




Where are we now? The current
draft of the Principles

A work in progress

We are here



The current draft

- A result of the construction process described above
- A text agreed upon by the community
- This is a starting point for the consultation that will be carried out by Unesco

Open Science Monitoring Initiative, *Principles of Open Science Monitoring*, Paris, 2024. DOI : [10.52949/4](https://doi.org/10.52949/4)

Open Science Monitoring Initiative - Principles of Open Science Monitoring

Principles of Open Science Monitoring

Draft submitted to UNESCO member states - March 28th 2024.

This document has been produced by the Open Science Monitoring Initiative. It has been prepared by a group of open science experts from August 2022. It has been discussed online and at UNESCO's workshop in Paris on December 12th 2023. It has been open to comments and suggestions from December to March 2024. It has been submitted to UNESCO Member States in April 2024.

More and more open science policies are being developed in countries, universities, research-performing organisations and research-funding organisations around the world'. To estimate the advance of open science in different regions, numerous open science monitoring initiatives are emerging, which have the collective characteristic of being heterogeneous, non-comparable and not easily transposable to other geographical areas. These Principles of Open Science Monitoring aim to establish a set of best practices and guidelines that encourage pooling, comparison and reuse of the results of open science monitoring.

The goal of the initiative is to provide help for stakeholders like national governments, research-performing organisations and international organisations engaged in scientific research to set up their monitoring tools, embracing the diversity of monitoring approaches that are needed to account for the diversity of research and policies. The Principles of Open Science Monitoring initiative also seeks to establish standards that various stakeholders, including international organisations, national governments, research institutions, funding agencies and providers of data or related services can widely adopt. This initiative originates from organisations that monitor open science practices within their own domains. However, the principles outlined here are not tied to any specific monitoring service or particular software solution.

This document defines very broad, high-level principles. While the global aim is to monitor a comprehensive transformation to open science and its impacts on the research ecosystem and society, this document proposes a pragmatic approach. The scope of this document extends to all kinds of research outcomes and their impact on the scholarly ecosystem. In the future, it could expand to monitoring open science policies in their full breadth. This document is intended to be supplemented by technical specifications for each selected family of indicators such as open access to publications and academic publishing, sharing of clinical trial results, opening up or sharing of research data, publication of software used in research under open source licences, estimation of the costs of open science, estimation of the academic impact of open science, estimation of the societal impacts of open science, study of values and beliefs in the research community, study of the evolution of citizen science, study of open citations, study of the impact of open science approaches on daily research processes, etc.

We recommend that open science monitoring relies on open, transparent and reproducible methodologies that follow shared and agreed-upon principles.

Table of content

Part 1: Relevance	2
Part 2: Transparency and reproducibility	2
Part 3: Self-assessment and responsible use	3
Annexes	4
Contributors	4
About the Open Science Monitoring Initiative	4
How to share a comment or contact the Open Science Monitoring Initiative	4
How to cite the principles	4
Bibliography	5

Relevant indicators: they should be...

- Applicable and clear in scope
- Meaningful for public policy
- Co-created
- Inclusive
- Comprehensive
- Mature
- Indicators toolboxes for different contexts
- Up to date

Transparency and reproducibility

- Communication for the general public
- Public documentation of processes and methodology
- Explicit data provenance
- Open output data
- Inclusion of FAIR and CARE principles
- Sampling
- Open source software
- Standardised indicators
- Transparency in the quality of indicators
- Reusable by design

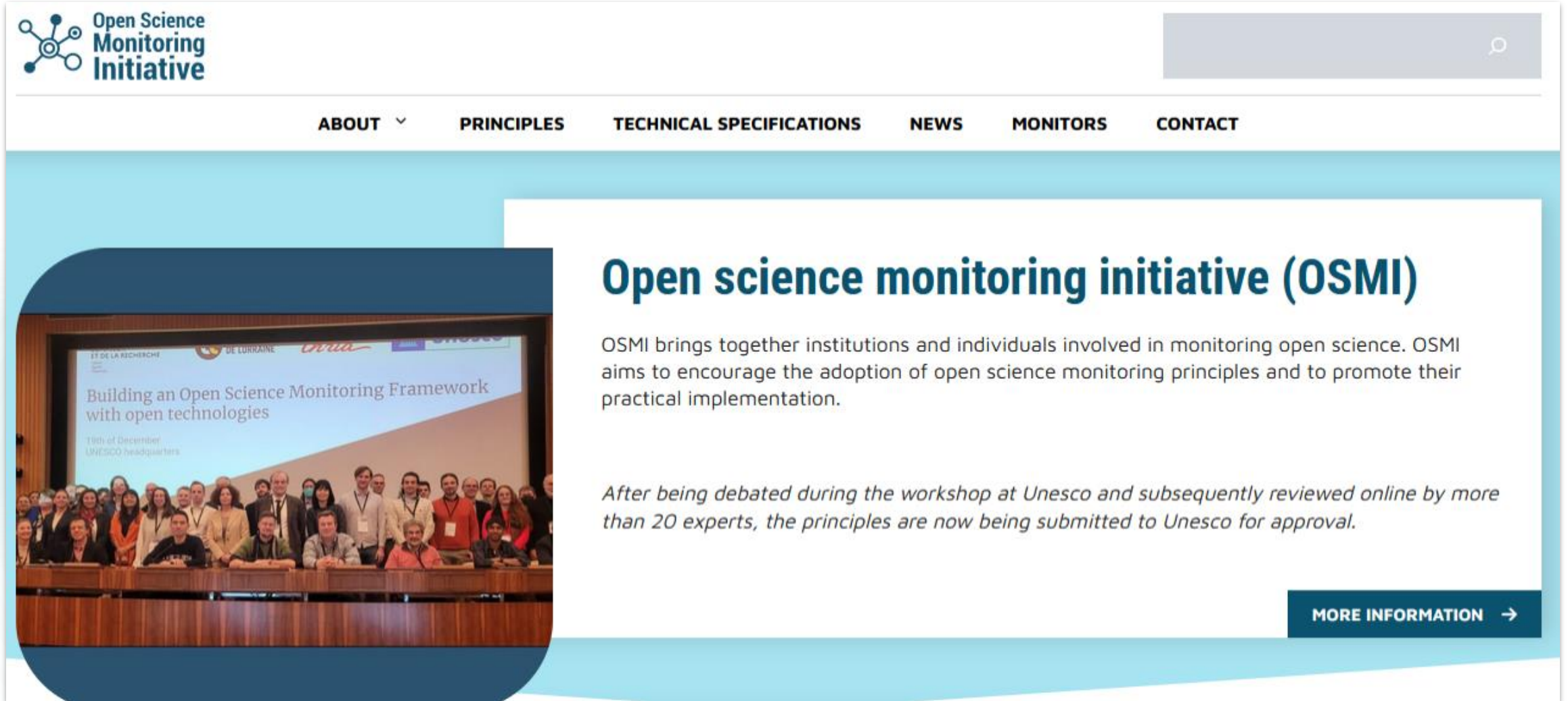
Self-assessment and responsible use

- Self-assessment
- Monitor for improvement
- Continuous assessment of the monitoring initiative
- Adaptable
- Avoid rankings



Towards an international community of practices: OSMI

Creating an open international community



Open Science Monitoring Initiative

ABOUT ▾ PRINCIPLES TECHNICAL SPECIFICATIONS NEWS MONITORS CONTACT

Open science monitoring initiative (OSMI)

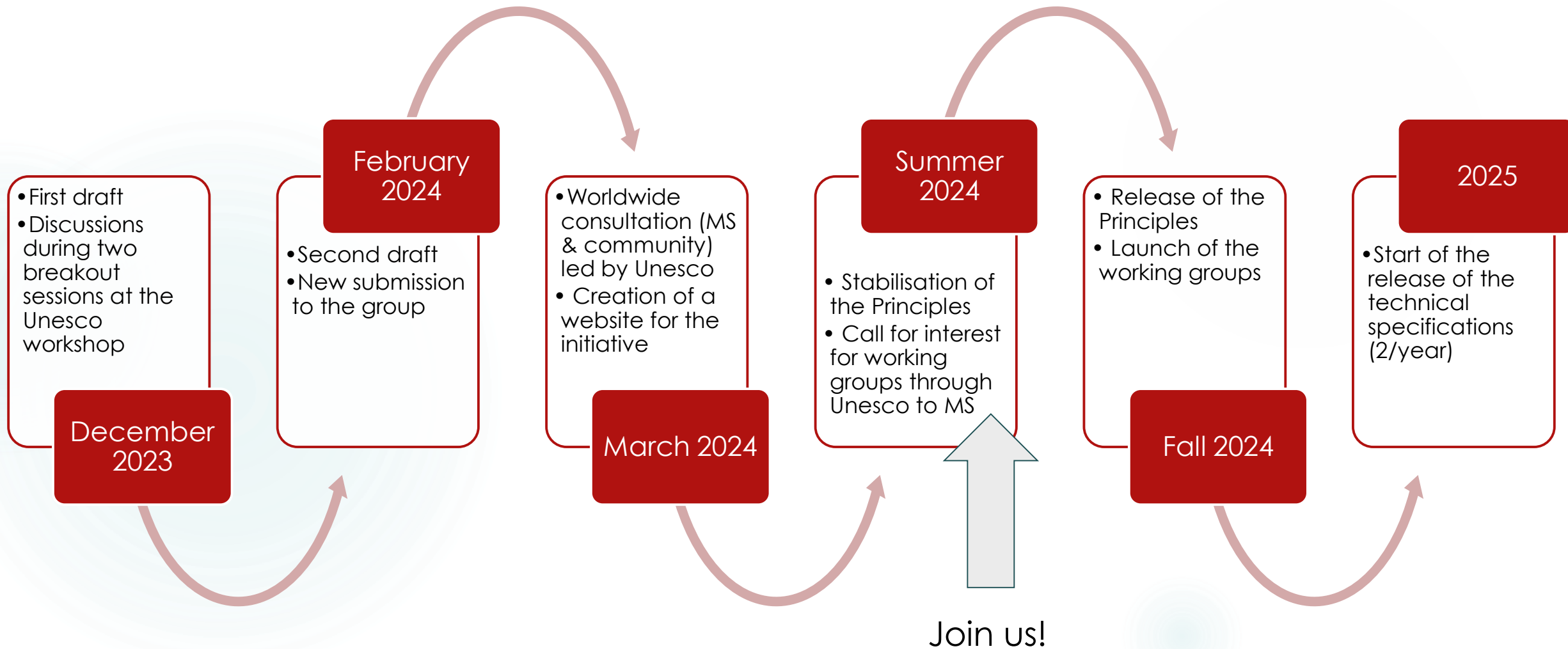
OSMI brings together institutions and individuals involved in monitoring open science. OSMI aims to encourage the adoption of open science monitoring principles and to promote their practical implementation.

After being debated during the workshop at Unesco and subsequently reviewed online by more than 20 experts, the principles are now being submitted to Unesco for approval.

MORE INFORMATION →

<https://open-science-monitoring.org/>

Building OSMI



The background features a dark teal color with numerous light teal, curved lines that create a sense of motion or light trails. In the top right corner, there is a solid red rectangular shape.

Thank you!

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