



SPECTRUM: Computing Strategy for Data-intensive Science Infrastructures in Europe

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the European Union

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Project Vision and General Objective

VISION

SPECTRUM unites leading European science organizations in High Energy Physics (HEP) and Radio Astronomy (RA) and e-infrastructure providers to formulate a strategy for a European Compute and Data Continuum

GENERAL GOAL OF THE PROJECT

*Deliver a **Strategic Research, Innovation and Deployment Agenda (SRIDA)** which defines the vision, overall goals, main technical and non-technical priorities, investment areas and a research, innovation and deployment roadmap for data-intensive science and infrastructures*

Key Data

[CORDIS – Grant agreement ID: 101131550](#)

Duration: 30 months – **Start date:** 1 Jan 2024 – **End date:** 30 June 2026

Partners: 8 partners + 1 affiliated entity

Budget: 2,450,000€

Funding Source: Horizon Europe – Call [HORIZON-INFRA-2023-DEV-01-05](#)

Key Objective:

Preparation of common strategies for future development of RI technologies and services within broad RI communities

Consortium Overview

- **Coordinator**

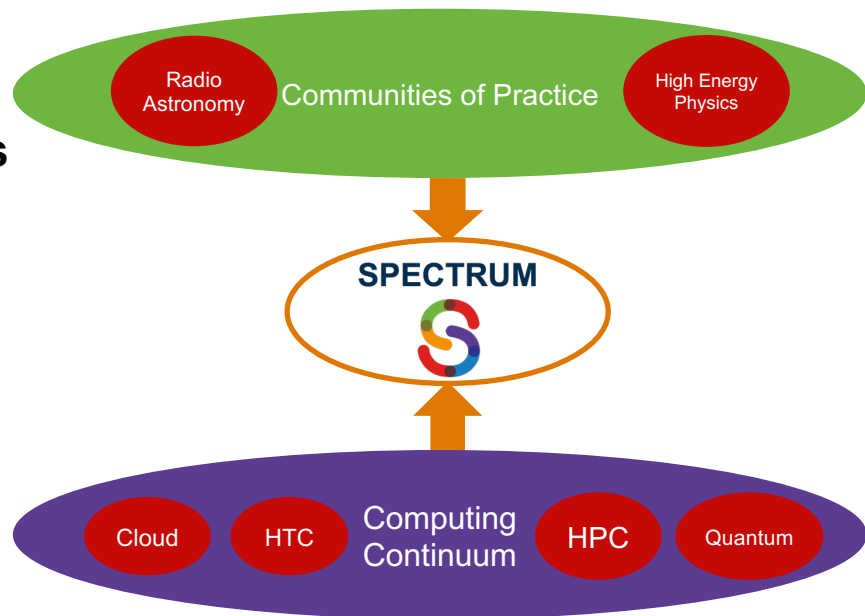
- EGI Foundation

- **Research Infrastructure representatives**

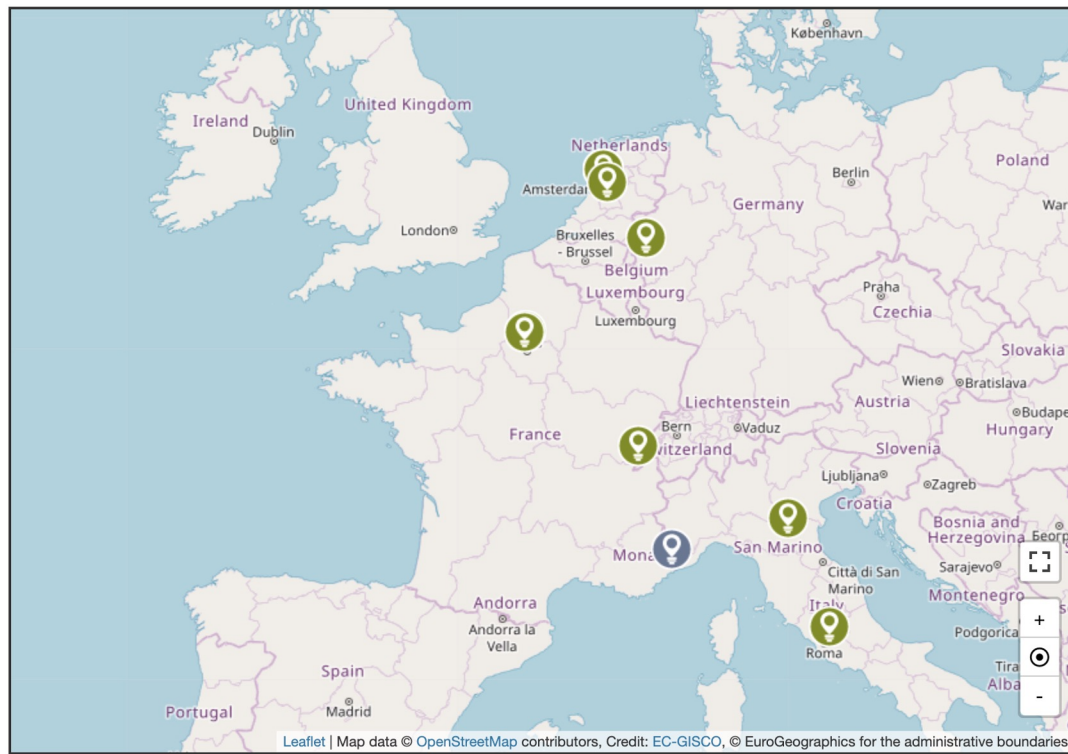
- LHC: CERN, INFN
- SKA: CRNS/OCA
- LOFAR: NWO-I through ASTRON
- PHIDIAS & ETP4HPC (TCI): NEOVIA

- **E-Infrastructure representatives**

- FZJ (HPC Exascale and quantum computing)
- CINECA (HPC & Quantum)
- SURF (HTC, HPC, Cloud) – also EGI Foundation, INFN



Consortium – Geographical Distribution



Project Objectives

PO1: Join efforts of research infrastructures and e-infrastructures to address common research and innovation needs towards exabyte-scale computing

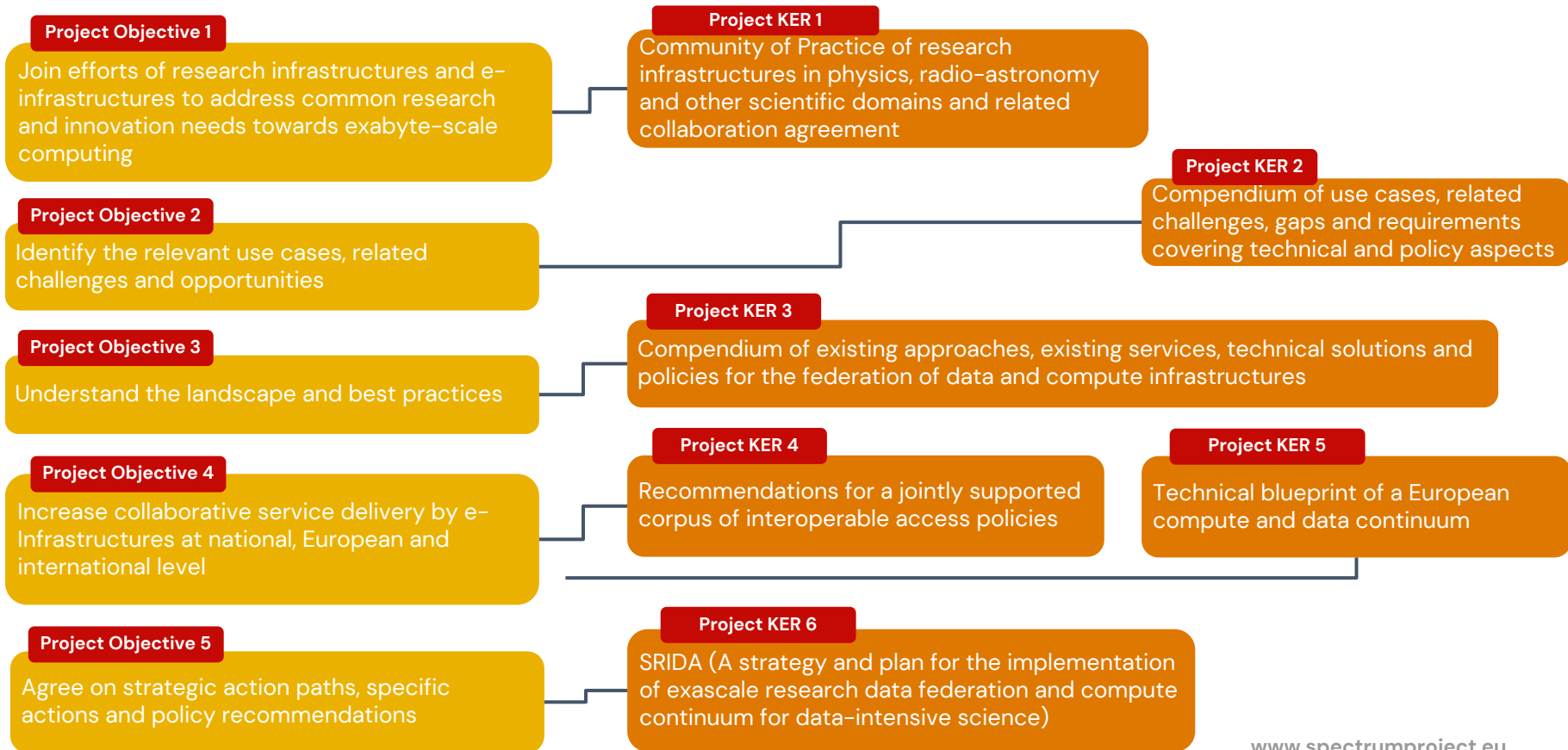
PO2: Identify the relevant use cases, related challenges and opportunities

PO3: Understand the landscape and best practices

PO4: Increase collaborative service delivery by e-Infrastructures at national, European and international level

PO5: Agree on strategic action paths, specific actions and policy recommendations

Project objectives and related results



Primary Target Groups

TG1 – Scientific Communities / Research Infrastructures

Scientific Communities in HEP and RA and other relevant domains.

Participate in CoP and WGs, Implement outputs

TG2 – Computing & Data Service Providers/e-Infrastructures

Existing Data, HPC, HTC, Cloud, Quantum

Participate in CoP and WGs. Implement outputs

TG3 – Policy Makers / Funding Bodies

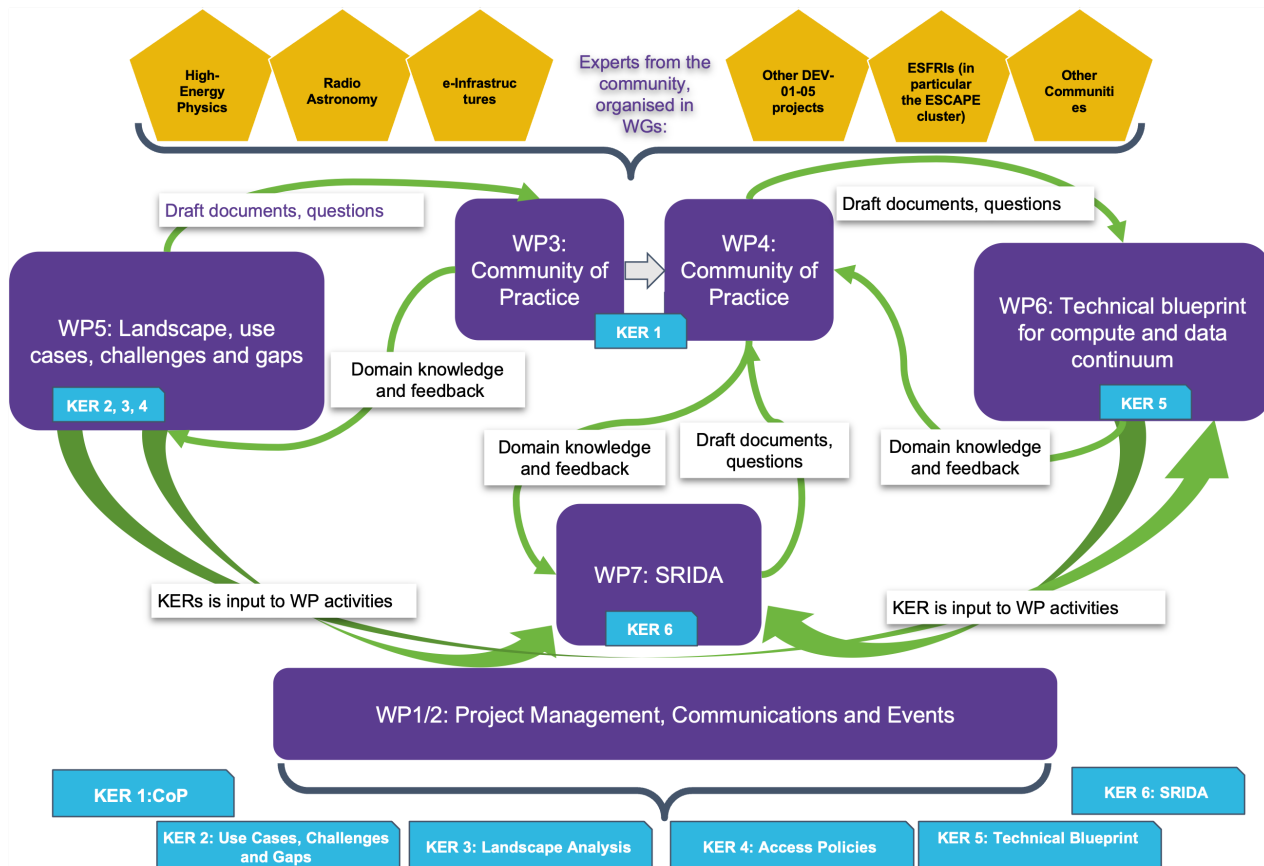
European Commission, EuroHPC, EOSC, National Authorities, ESFRI...

Provide inputs, align policies

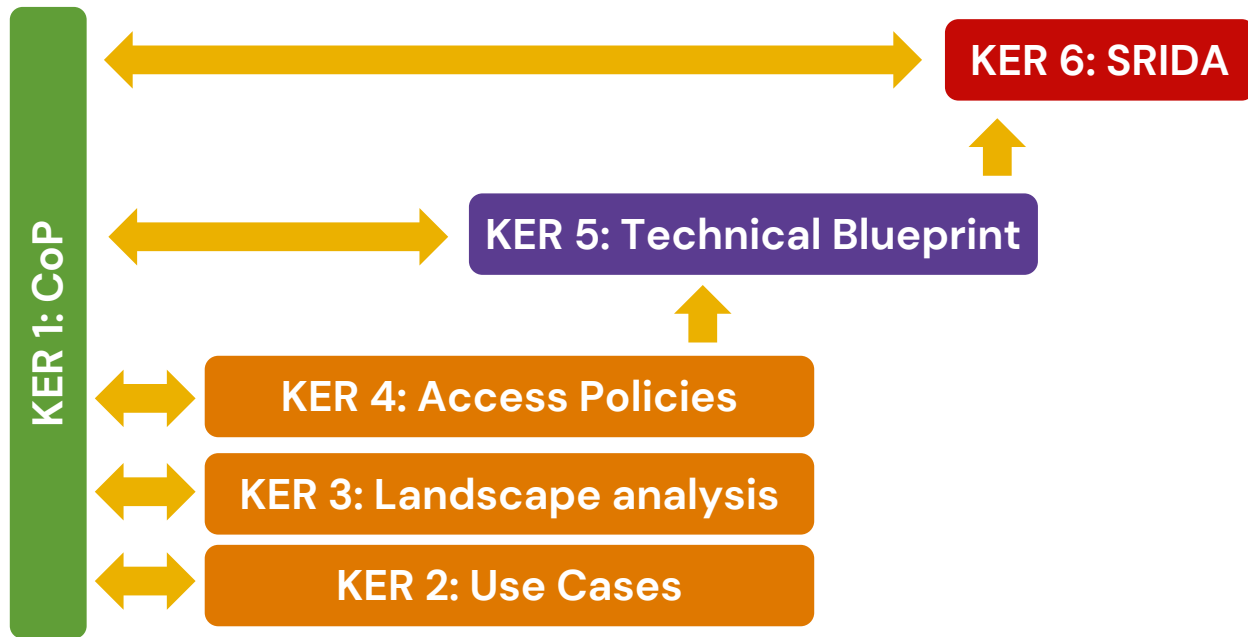
TG4 – ‘Long Tail of Science’

Inputs to use cases through represented communities

Relationship between Work Packages

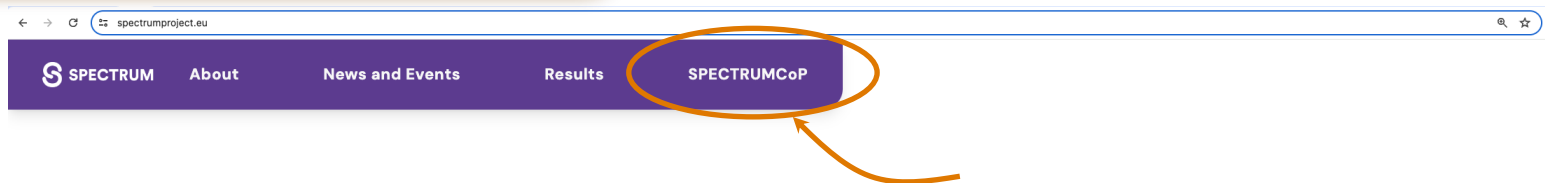


Relationship among KERs



SPECTRUM Community of Practice

Project website: www.spectrumproject.eu



Elevating data-intensive science in Europe

SPECTRUM

SPECTRUM aims to deliver a Strategic Research, Innovation and Deployment Agenda (SRIDA) and a Technical Blueprint for a European compute and data continuum.

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SPECTRUM CoP Working Groups

- **WG1: Data Management and Access**

Data Management, Data Access Protocols, Data Archiving, Security

- **WG2: Workflow management and organization**

Resource Discovery and Workflow Submission, Resource Allocation, Complex Workflows

- **WG3: Compute Environment**

Expected Tools and Services, Facility Expectations, Edge Services, Library Provisioning

- **WG4: SW tools**

Machine Learning Frameworks, Multithreading Frameworks, Multi-Node Tools, Compilers, toolchains, Quantum computing tools and frameworks, Code Management Practices

- **WG5: Scientific Use cases**

Typical Use Cases, Requirements and Needs, Best Practices Collection, Data Fluxes and Paths

- **WG6: Facilities**

HPC Centers, Access to Quantum Computing Hardware, Access to Commercial and Public Clouds, Sustainability, Security



Relationship between WPs and KERs

WG1: Data Management and Access

WG2: Workflow management and organization

WG3: Compute Environment

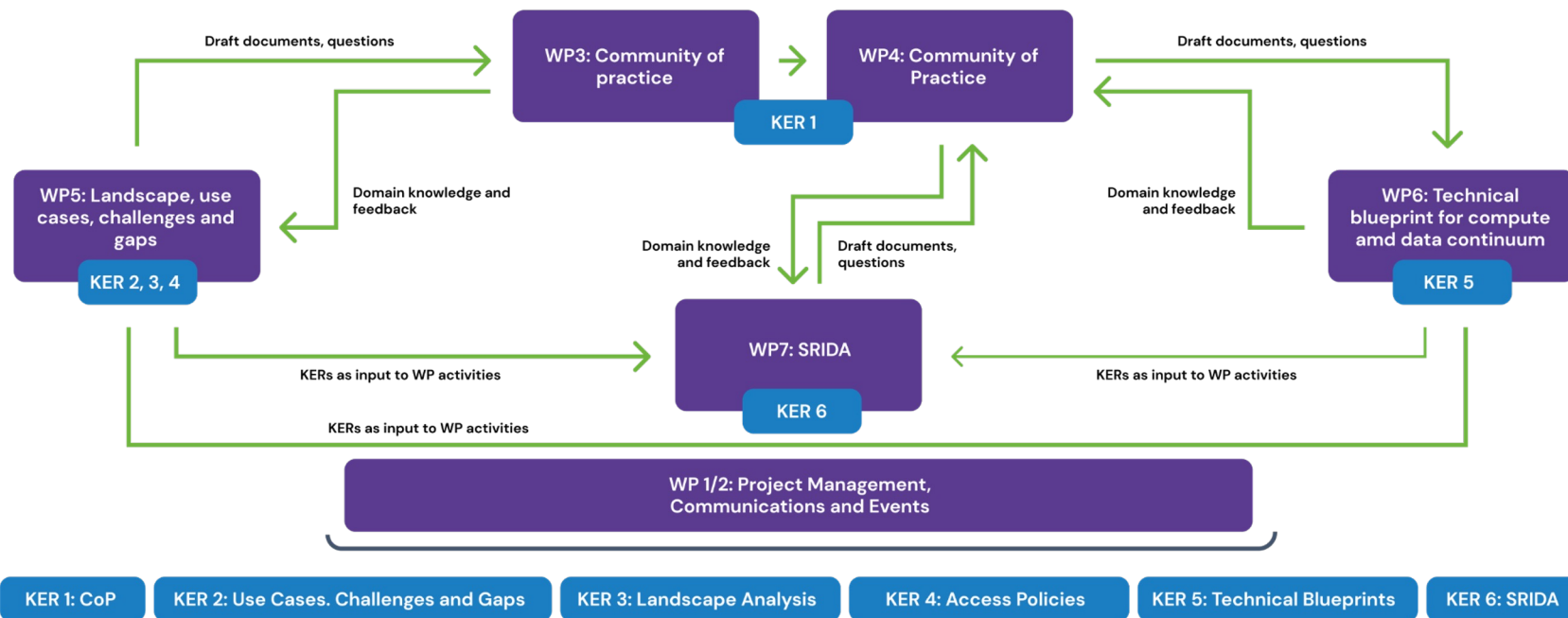
Experts from the community, organised in SPECTRUMCoP WGs:



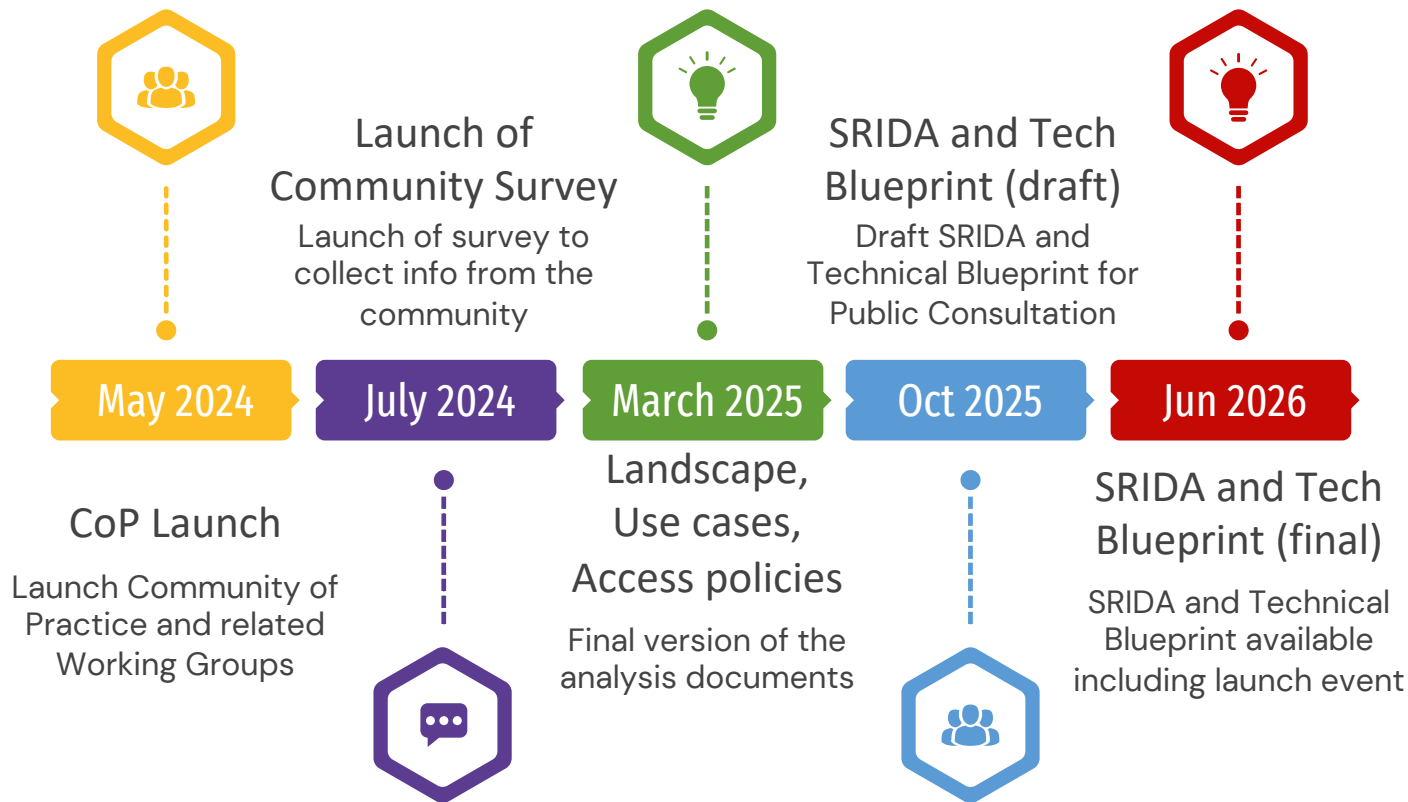
WG4: SW tools

WG5: Scientific Use cases

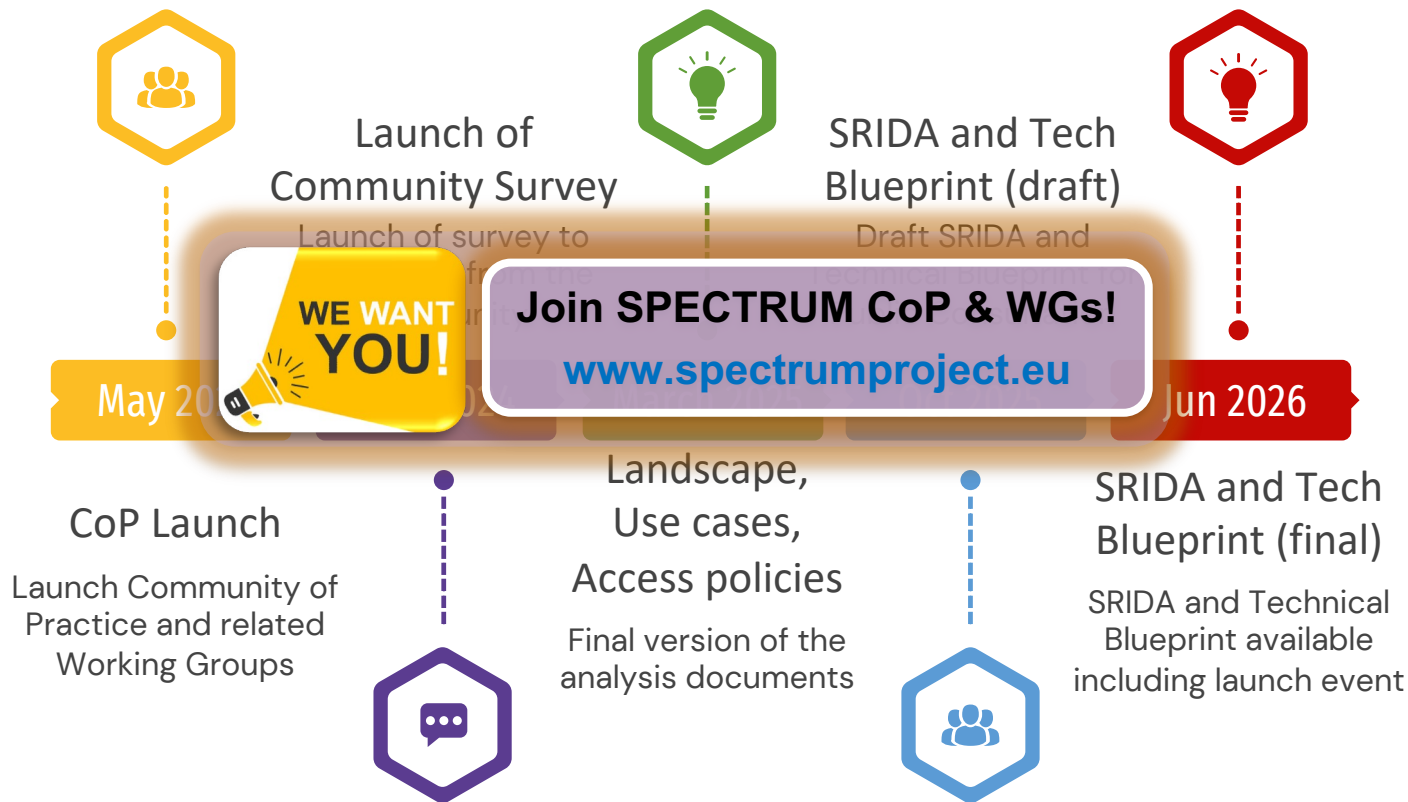
WG6: Facilities



Outputs timeline



Outputs timeline



Thanks for your attention

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