



# Community of Practice and Survey

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# Outline

- The SPECTRUM Community of Practice
  - What it is
  - What happened so far
    - The kick off, the survey, ...

- What next
  - Exploring more use cases
  - Interpreting the survey
  - Drafting the report
- What even later
  - The CoP in the second part of SPECTRUM



# The Community of Practice (CoP)

- EC published a 120 pages book on «What is a CoP»
  - [Insights from the Communities of Practice playbook](#) (EC, 2021)
- « ...*the proactive pull roles of communities (of practice) are rated as needing improvements ...*
  - *investing and providing—offering a means to give members the resources they need;*
  - *community building—promoting and sustaining values/standards among relevant stakeholders;*
  - *learning and facilitation—helping communities to work more efficiently and effectively.*...»

## Community of practice

Article Talk

From Wikipedia, the free encyclopedia

A **community of practice** (CoP) is a group of people who "share a concern or a passion for something they do and learn how to do it better as they interact regularly".<sup>[1]</sup> The concept was first proposed by cognitive anthropologist [Jean Lave](#) and educational theorist [Etienne Wenger](#) in their 1991 book *Situated Learning* (Lave & Wenger 1991). Wenger then significantly expanded on the concept in his 1998 book *Communities of Practice* (Wenger 1998).

### In practice:

- **Find people with knowledge AND interest in solving a (future) problem ...**
- **.. And while doing this, willing to confront with a (slightly) different community**
- **... And able to speak a common language with infrastructure, to be able and describe which are the technical needs**



# Presentation of SPECTRUMCoP

- **Composed of 6 thematic Working Groups** (including one dedicated to use-cases)
- **Two parts:**
  - **First 15 months:** collecting needs, material and ideas, in particular through a survey (bottom-up approach)
  - **Last 15 months:** less collecting and more discussing; writing reports!

The screenshot shows the homepage of the SPECTRUM Community of Practice. The page features the SPECTRUM CoP logo, a mission statement, and a navigation menu. The mission statement reads: "The SPECTRUM Community of Practice (CoP) aims to create a connected community of scientists and infrastructure managers having a mutual understanding of future needs, associated challenges and their possible solutions." Below this, there are three buttons: "Read more about the SPECTRUM Project", "A question about SPECTRUMCoP? Read our FAQ", and "Check the Active Working Groups in sidebar". The page also includes a "Latest news from SPECTRUMCoP" section with a news item titled "End of September 2024 update: Back to regular SPECTRUMCoP meetings" and a "General calendar" section showing a meeting on Monday, 30 September.



# Collaboration with other initiatives

## JENA initiatives

- Comes from the 3 main committees for HEP, Nuclear Physics and Astroparticle Physics (Joint ECFA-NuPECC-APPEC)
- Workshop in 2023 and launch of working groups after SPECTRUM was submitted
  - Timescale similar to ours
  - WG leaders in JENA are already members of SPECTRUM WGs.

### JENA Working groups:

WG1: HPC

WG2: Software

WG3: Data

WG4: AI

WG5: Training, Dissemination, Education

## The Upgrade o the European Strategy for Particle Physics

- Happens every 5-10 years
- It was scheduled in 2026, moved 1 y earlier
- Will receive contributions/inputs from the community by March 2025
  - Same time scale as SPECTRUM, and also a target for JENA



# The CoP: List of WGs

## WG1: Data Management and Access

*Chair: BAGNASCO Stefano (INFN, ET, Virgo)*

- Data Management
- Data Access Protocols
- Data Archiving
- Security

## WG2: Workflow management and organization

*Chair: DELL'AGNELLO Luca (INFN CNAF-T1)*

- Resource Discovery and Workflow Submission
- Resource Allocation
- Complex Workflows

## WG3: Compute Environment

*Chair: BOZZI Concezio (INFN, LHCb, JENA-HPC)*

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

## WG4: SW tools

*Chair: SWINBANK John (Astron)*

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

## WG5: Scientific Use cases

*Chairs: FERRARI Chiara (CNRS, OCA), GIRONE Maria (CERN)*

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

## WG6: Facilities

*Chair: HOPPE Hans-Christian (Jülich)*

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

*A total of 75 participants, from ~50 unique individuals*

More information: <https://www.spectrumproject.eu/spectrumcop>

# SPECTRUMCoP: The survey!

Conditional survey, which adapts according to what you fill in at the beginning:

- Present yourself
- Your Role in computing

Depending on your area of expertise, topics may include:

Authentication and Authorization

Processing Needs

Data Management Needs

Training and careers

Expected Computing Environment

Use cases

Software development, distribution, policies

LINK:

[https://ec.europa.eu/eusurvey/runner/SPECTRUM-JENA\\_Survey1](https://ec.europa.eu/eusurvey/runner/SPECTRUM-JENA_Survey1)



The survey is still open, so you are still on time to fill it!

# So, which is the status???

Oct 1<sup>st</sup> ... 80 submissions

Which are the categories which better describe your role(s)?

	Answers
Researcher / user of scientific computing resources (doing analysis, R&D, operations, ...)	65
Manager of a scientific initiative (for example, an experiment, an instrument, an observatory)	11
Manager of an e-Infrastructure (for example a computing centre, a storage facility, a distributed computing facility)	19
Research software engineer (writing, testing and managing code for an initiative)	20
Other (please specify)	4
No Answer	0

Are you (ALSO) manager of an infrastructure? (computing centre, a federated infrastructure, a data centre, ...)

	Answers	Ratio
Yes	22	27.50 %
No	58	72.50 %
No Answer	0	0.00 %

Which is/are your scientific domain(s) of expertise (if applicable)?

	Answers
Experimental High Energy Physics (HEP)	31
Theoretical High Energy Physics (HEP)	18
Observational Radio Astronomy (RA)	8
Experimental Gravitational Waves (GW)	6
Theoretical Gravitational Waves (GW)	3
Experimental Nuclear Physics (NP)	9
Theoretical Nuclear Physics (NP)	12
Observational Astroparticle (not RA or GW)	9
Other physics related domains (please specify below)	6
Other non-physics related research domains (please specify below)	4
No Answer	0



# Extra CoP: In depth use-cases analysis

- **Goal:** Identifying current and future requirements of HEP and RA communities
- Template “co-design” with the survey and “internal” use-cases (from CERN/LHC and RA) as initial examples
- Selection of use cases and experts in progress

## Structure for each identified use-case:

Scientific challenge

Storage

Data transport

Compute

Workflow management

Access and analysis

Gap analysis

Non-technical challenges

# Conclusions

- The Community of Practice is the “bottom-up” part of SPECTRUM:
  - Form a community; discuss and gather documents; probe an even larger community via a survey
- In the next 6 months: analyze / reduce / distill messages from the survey , the discussions and the documents
- The CoP is active also in the second part of SPECTRUM, towards the final SRIDA and Blueprint!



# Thank you! Questions?

 [spectrumproject.eu](https://spectrumproject.eu)

 [linkedin.com/company/spectrum-project-eu](https://linkedin.com/company/spectrum-project-eu)



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