## S SPECTRUM

# 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).

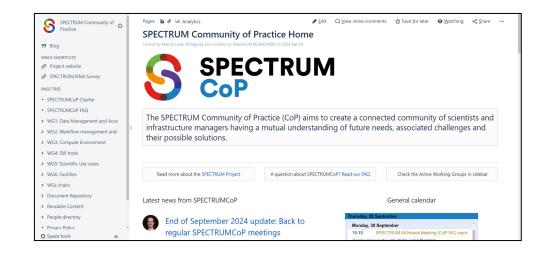
#### In practice:

- 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!





## 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.

#### <u>The Upgrade o the European Strategy for Particle</u> 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 **JFNA**

#### **JENA Working groups:**

WG1: HPC

WG2: Software

WG3: Data

WG4: AI

WG5: Training, Dissemination, Education

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#### **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:

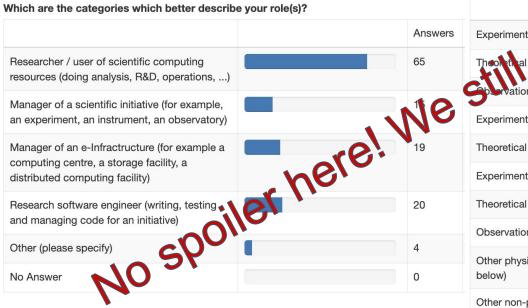
https://ec.europa.eu/eusurvey/runner/SPECTRUM-JENA\_Survey1



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

## So, which is the status???

#### Oct 1st ... 80 submissions



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#### Ratio Answers Yes Which is/are your scientific domain(s) of experiese (if applicable)? 27.50 % 72.50 % 0.00 % Answers 31 18 ational Radio Astronomy (RA) Experimental Gravitational Waves (GW) Theoretical Gravitational Waves (GW) 3 Experimental Nuclear Physics (NP) Theoretical Nuclear Physics (NP) 12 Observational Astroparticle (not RA or GW) Other physics related domains (please specify Other non-physics related research domains (please specify below)

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

centre, ...)

No Answer

## SExtra 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!

## S SPECTRUM

# Thank you! Questions?



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