

News from the HSF

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Note:

- ❑ Largely an executive summary of recent reports on CERN SFT and HSF / community activities to the WLCG Management Board and the LHCC
- ❑ And summary from HSF own work / discussions

Intermezzo on the HSF daily life: engagement is welcome !

□ Recap of the structure of the HSF:



*There is no standing chair for the HSF Coordination Team meetings which are focused on running the day to day work of the HSF

□ It's run as a do-ocracy. Have you thought of engaging and contributing ... ?

HSF organisation: Advisory Group

- ❑ Recap - Mandate and composition described in a [public document on the HSF website](#)

Mandate

The purpose of the Advisory Group (AG) is to represent HSF Engaged Communities (ECs) that contribute to HSF activities, in order to provide strategic input to the HSF on their long-term strategies and needs. The AG is an advisory group and not a decision-making entity; decisions on HSF strategy are taken by the **HSF Steering Group** (SG). Engaged Communities are envisaged to cover major HEP experiments (including the LHC experiments) and WLCG.

- ❑ Current membership: LHC Experiments, WLCG, DUNE, Belle II and MCnet

- ❑ First meeting held in January

- ❑ Key points made:

Advertising the HSF

We discussed the lack of visibility of the HSF for people coming into the field. There was agreement that the AG would help to raise the HSF's profile if we can provide them with the details we'd like to advertise.

- We should certainly advertise the HSF Website, the main mailing list (HSF Forum) and the HSF's activities; can ask for the HSF to be visible as a link on their pages and in their onboarding documentation.
 - Should we advertise or deprecate the activity mailing lists? They seem quite moribund.
 - We should consolidate (mostly) onto the forum
 - A few activities also have conveners lists - are these useful?
- Also try to push HSF at major events like CHEP and ACAT.

HSF organisation: Steering Group

- ❑ **Recap - SG members get roles assigned, in particular to follow at least one of the Activity Areas and discuss plans for the future**

- ❑ **Various SG actions (some detailed in the next slides ...)**
 - **Lead the HSF community document input to the European Particle Physics Strategy Update**
 - **Run the Advisory Group meetings**
 - **Run many of the coordination meetings with conveners**
 - **Lead the lightweight evaluation processes for HSF Affiliated Projects and Software**

- ❑ **Mailing list for the SG is hsf-steering@googlegroups.com**

HSF activities: European Particle Physics Strategy Update

- ❑ Recap – European Particle Physics Strategy Update:
 - Inputs from the community by March 31st 2025 and Open Symposium 23–27 June 2025
- ❑ The HSF has a strong track record of submitting inputs to these strategic deliberations. No exception here.
- ❑ Preparation and finalisation of a community document as input to the EPPSU process has been a central (and bandwidth consuming) area of work in the past few months !
 - Main goal: continue to emphasise the importance of investment in software and computing in order to meet our physics goals, and relevant career paths is a key aspect.
 - Topics discussed: Generators, Simulation, Reconstruction & Triggers, Data Analysis, plus Training and Careers
 - Several meetings and/or workshops by the various relevant activity area conveners
- ❑ Document, “The Critical Importance of Software for HEP”, has been submitted and is available on Zenodo. It will soon be submitted to the ArXiv.
- ❑ It has been endorsed by the major HEP experiments (ALICE, ATLAS, Belle II, CMS, DUNE, ePIC, LHCb), the MCnet collaboration and WLCG
- ❑ A HUGE thanks to everyone involved!

The Critical Importance of Software for HEP

Prepared by the HEP Software Foundation, with inputs from the HEP community.

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This document has been endorsed by the following experiments and communities:

ALICE, ATLAS, Belle II, CMS (TBC), DUNE (TBC), ePIC, LHCb, MCnet, WLCG (TBC)

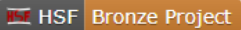
doi:10.5281/zenodo.15097159

HSF activities: Affiliated Projects and Software

- ❑ **Recap** – goal of initiative is to “support and promote community software for high-energy physics” to “help projects gain greater visibility and enhance the positive impact of their software”
- ❑ **Further information:**
 - <https://hepsoftwarefoundation.org/projects/affiliated.html>
 - <https://hepsoftwarefoundation.org/projects/guidelines.html>
- ❑ **Lightweight evaluation process ongoing with the NNPDF collaboration, which spontaneously poked the HSF with interest**
 - Other projects have been approached
- ❑ **Status as of today:**

<https://hepsoftwarefoundation.org/projects/projects.html>

This is the list of projects which have become **HSF Affiliated**.

Name	Description	Affiliation	Year
prmon	Standalone lightweight process resource consumption monitor		2024

- ❑ **The recognition of bijective engagement with the HSF is displayed via GitHub Badges. Three levels distinguish mainly the level of maturity, community support and engagement: Bronze, Silver and Gold. Attribution of the endorsement level is based on the guidelines linked above.**

HSF activities: seminar series

- ❑ **Recap – significant change in the way we organise activities**
 - goal is to have these as regular HSF events

- ❑ **Seminars started officially in October 2024**
 - Most recent seminar: “Balancing accuracy, performance, and maintainability in research software” March 26th (see [Indico](#))

- ❑ **Consult [Indico](#) for past and future seminars ...**
 - Next, in May, will be on [“AdePT and Celeritas for detector simulation on GPUs”](#)

HSF activities: workshops

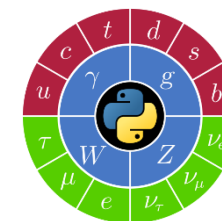
□ WLCG/HSF 2025 joint workshop @ IJCLab, Orsay, France, 5–9 May 2025

- This year's theme for the HSF will be
Software Sustainability, Community Software and Training

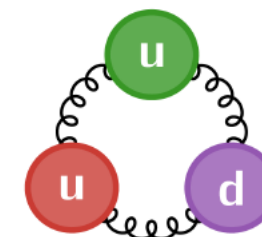


□ PyHEP workshops

- PyHEP.dev 2025 Developers workshop @ Seattle, Washington, US, 14–18 July 2025
(the week after SciPy @ Tacoma, Washington, US)
- PyHEP 2025: Users workshop (virtual only) planned for 27–30 October 2025

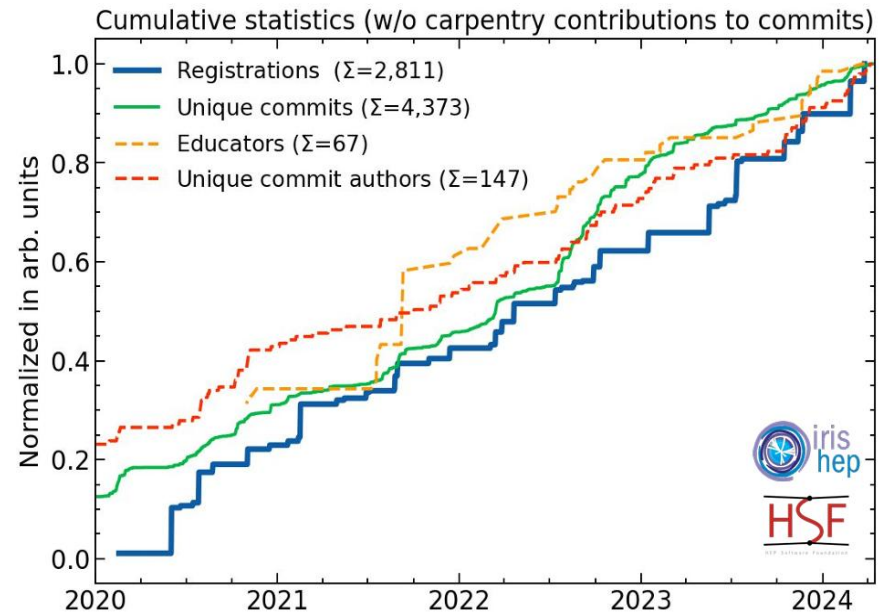


□ 3rd JuliaHEP 2025 workshop @ Princeton University, US, 28–31 Jul 2025



HSF activities: training




- Check the [HSF Training Center](#) currently listing over 20 modules!



HSF Training Center
Training and educational material for the High Energy Physics community.

Curriculum | All Tutorials

Basic
Basic skills for HEP software development.

-  **The UNIX Shell** [GitHub](#)
A guide through the basics of the file systems and the shell.
-  **Version controlling with git** [GitHub](#)
Track code changes, undo mistakes, collaborate. This module is a must.
-  **Programming with python** [GitHub](#)
Get started with an incredibly popular programming language.

- ❑ “EVERSE: Paving the way towards a European Virtual Institute for Research Software Excellence”
- ❑ New project, funded by Horizon Europe, to set up a network of those interested in improving the quality of research software (among several other things, see the [objectives page](#))
- ❑ <https://everse.software/>

High Quality Research Software for the Communities by the Communities

Software for the Communities by the Communities

The **EVERSE** project aims to create a framework for research software and code excellence, collaboratively designed and championed by the research communities, in pursuit of building a **European network of Research Software Quality** and setting the foundations of a future **Virtual Institute for Research Software Excellence**.

- ❑ The online [Launch Event](#) took place on February 18th



- ❑ **Significant milestone achieved with the development release of 6.34.00 in November 2024:**
release features the **1.0 version of the RNTuple format**, which guarantees backward compatibility for future ROOT versions
- ❑ **From version 6.34, ROOT is integrated and tested on ARM nodes**, essential for the current hardware landscape on WLCG
- ❑ **Automatic differentiation is now transparently available to users in RooFit:**
minimisation acquired improved numerical stability and runtime performance



❑ A fair amount of org packages being tested within IRIS-HEP's Analysis Grand Challenges

❑ News:

- **Coffea package from the Fermilab's Coffea team joined the org (and enhanced it considerably) in Dec. 2024 !**

- Coffea = Columnar Object Framework For Effective Analysis

a library that has acted as an incubator for different design patterns for CMS and ATLAS style analyses



- Key package for processing at scale, center part of the IRIS-HEP Analysis Systems pipeline

- Uses and integrates many tools in the Scikit-HEP toolset (many developments in Coffea have in the past been migrated out into Scikit-HEP)

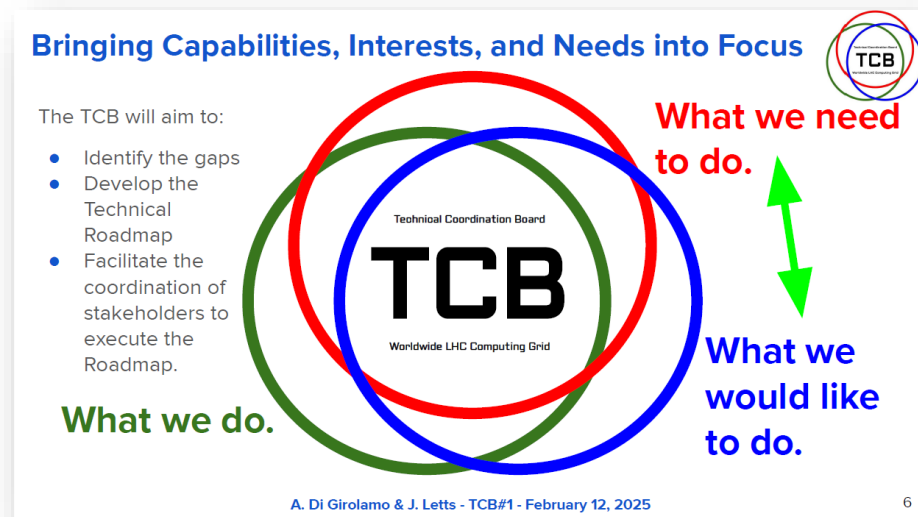
- **Scientific Python expanding the scope of the core projects that give input on and (might) adopt the Scientific Python Ecosystem Coordination (SPEC) recommendations to include domain specific ecosystem projects**
Scikit-HEP project has been invited to join as core project to test drive this experience !

- Process being finalised



❑ Also work towards welcoming more developers and maintainers to improve on sustainability

- ❑ The Management Board created in 2024 a new **Technical Coordination Board (TCB)**
- ❑ The mandate has been approved and the TCB composition is been prepared
- ❑ Kick-off meeting in Feb. this year



- ❑ Further info at <https://wlcg.web.cern.ch/organisation-boards/technical-coordination-board>

Thanks for listening !

❑ **Several activities of general interest, many of particular interest to SWIFT-HEP**

❑ **Happy to discuss anything further, especially on cross-engagement 😊**