# WP2.2 news

Piergiulio Lenzi, Alberto Annovi

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# Reporting

**New procedure agreed with the referees:**

**For each project milestone we will need to produce a report for each flagship UC.**

Milestones are:

- Month 18 (Feb '24) → Milestone 7
- Month 22 (June '24) → Milestone 8
- Month 26 (Oct '24) → Milestone 9
- Month 36 (Aug '25) → Milestone 10

Every two months an interim short report is needed as well for every flagship UC

# Tool for resource requests

The ICSC Resource Allocation Committee (RAC) is in office.

They have prepared a tool to submit resource requests at:
https://pica.cineca.it/icsc/richiesta-risorse-e-servizi/

➪ Requires “Loginmiur” credentials, or PICA credentials (form to request them).

Flagship PI are invited to look into it and see if they find it usable to submit their requests

A few caveats:

➪ There is currently no way to specify a temporal development of the requests.
➪ More instructions will come in the coming days.

# Resources one can (or will be able to) request

- **Leonardo:**
  - **Booster** module **already available:**
    - 3456 nodes, each equipped with:
      - 1 x CPU Intel Xeon 8358 32 cores, 2,6 GHz;
      - 512 GB RAM DDR4 3200 MHz;
      - 4 x NVidia custom Ampere GPU 64GB HBM2;
      - 2 x NVidia HDR 2×100 Gb/s cards;
    - 10% of the resources available for Italy, i.e.:
      - **up to 470'000 GPU hours per month**;
      - **up to 1 PB Work and 1 PB archive** (no quota on scratch);
  - **DC-GP** module **TBD**
    - **Available by the end of the year;**

## INFN Resources Available by Now

**Resources available for ICSC on the current INFNCLOUD infrastructure**
**availability of the hardware that is being procured via tenders on projec**

- **Compute:**
  - 1500 vCPU; (HyperThread ON)
  - 200 TB net disk space;
  - a marginal number of GPUs (NVIDIA V100 and A100);

## INFN Resources made available during H1 2024 – procured via ICSC tenders

Compute:
- 40k core on the distributed infrastructure

Storage:
- 14PB DISK on the distributed infrastructure
- 6PB DISK on the CNAF Tier1 Datacenter
- tape library access for long term archival on the CNAF Tier1 Datacenter

Part of the resources will be accessible via Cloud interfaces, part via Grid systems

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## INFN: TERABIT HPC Bubbles

tender in the evaluation phase – not yet decided which fraction of the Terabit resources will be made ava

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|---|---|
| CPU Nodes | Min 112 cores (max 192)<br>RAM > 8GB/core DDR5<br>IB NDR 400G<br>20TBL + OS disks |
| GPU Nodes | As CPU node + 4x NVIDIA H100 SXM5 - min 80GB and HBM2 |
| FPGA Nodes | Min 32core<br>RAM > 512GB DDR4 o DDR5<br>IB NDR 440G<br>4 x XILINX U55C o 4 x TerasicP0701 |
| Storage Nodes (CEPH Bricks) | Min 48cores<br>RAM >512GB DDR4 o DDR5<br>>360 TBL HDD + 12TBL SSD |
| Extras | Switch IB, Switch ETH<br>Cables IB, Cables ETH<br>Transceivers |

# Tracking WP2.2 activities

- Tracking of WP2.2 will happen in this document. The document can be edited freely so you can update information. (Just the summary sheet is protected)
- It contains also a list of conference opportunities (see next slide)
  - ✓ **You are welcome to add in new conferences.**

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | **Conference** | **Dates** | **Venue** | **Website** | comments | | |
| 2 | IML2024 | 29/1/2024 - 2/2/2024 | CERN | https://indico.cern.ch/eve | Call for abstracts closes on Nov 15th 2023 | | |
| 3 | AISSAI2024 | 4-7/3 2024 | Clermont-Ferrand | https://indico.in2p3.fr/event/30272/ | | | |
| 4 | EuCAIFCon | 30/4-3/5/2025 | Amsterdam | https://www.eucaif.org/ | | | |
| 5 | LHCP2024 | 3-7/6/2024 | Boston | https://indico.cern.ch/event/1253590/ | | | |
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Conference Opportunities | Conferences | Publications | Summary

# Upcoming conferences

- 2023 November LHCC meeting, student poster session.
- 29 January 2024 to 2 February 2024, CERN, 6th Inter-experiment Machine Learning Workshop https://indico.cern.ch/event/1297159/
- 4–7 Mar 2024, Clermont-Ferrand, AISSAI Anomaly Detection Workshop, https://indico.in2p3.fr/event/30272/
- 30 April - 3 May 2024, Amsterdam, European AI for Fundamental Physics Conference https://www.eucaif.org/
- 3–8 Jun 2024, Boston, USA, 12th Edition of the Large Hadron Collider Physics Conference https://indico.cern.ch/event/1253590/
- **Please consider them for abstract submissions!**

# Agenda for today

## Bi-weekly WP2 meeting

Tuesday 7 Nov 2023, 14:00 → 16:10 Europe/Rome

Alberto Annovi (Istituto Nazionale di Fisica Nucleare), Piergiulio Lenzi (Istituto Nazionale di Fisica Nucleare)

Description Zoom link: https://cern.zoom.us/j/61596304322?pwd=NVNxMGJQZWp0LzdZUzNUWk1rbkVGdz09

**14:00** → 14:10 **News** 10m

Speakers: Alberto Annovi (Istituto Nazionale di Fisica Nucleare), Piergiulio Lenzi (Istituto Nazionale di Fisica Nucleare)

**14:10** → 15:00 **Quasi interactive analysis of big data with high throughput**

Conveners: Francesco Giuseppe Gravili (Istituto Nazionale di Fisica Nucleare), Tommaso Diotalevi (Università e INFN, Bologna)

- 14:10 **Status report** 15m

  Speakers: Francesco Giuseppe Gravili (Istituto Nazionale di Fisica Nucleare), Tommaso Diotalevi (Università e INFN, Bologna)

**15:00** → 16:00 **Porting of algorithms to GPUs**

Convener: Adriano Di Florio (Istituto Nazionale di Fisica Nucleare)

- 15:00 **Status Report: Alice** 20m

  Speaker: Adriano Di Florio (Istituto Nazionale di Fisica Nucleare)

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# Backup

# Upcoming events

- CERN launches its Open Source Program Office (OSPO) on Nov 28th and 29th.

# Flagship use cases

Flagship documents available at these links:

- **Quasi interactive analysis of big data with high throughput**
  - ✓ Tommaso Diotalevi (UniBo), Francesco Gravili (UniSalento)
- **Advanced ML: flash simulation and other bleeding edge applications**
  - ✓ Lucio Anderlini (INFN Fi)
- **Development of ultra-fast algorithms running of FPGAs**
  - ✓ Bernardino Spisso (UniNa), Simone Gennai (INFN MiB)
- **Porting of algorithms to GPUs**
  - ✓ Adriano Di Florio (Poliba)
- **Physics validation of reconstruction code on ARM**
  - ✓ Francesco Noferini (INFN Bo)

Thanks to the work of the PIs over the summer and to all of your contributions

# Flagship UC mailing lists

- Quasi interactive analysis of big data with high throughput
  - ✓ [cn1-spoke2-wp2-analysisfacility], subscribe
- Advanced ML: flash simulation and other bleeding edge applications
  - ✓ [cn1-spoke2-wp2-flashsim], subscribe
- Development of ultrafast algorithms running on FPGAs
  - ✓ [cn1-spoke2-wp2-fpga], subscribe

**Please subscribe to the list that is relevant for the work you are doing in ICSC.**

# ICSC spoke 2 github organization

Available at: https://github.com/ICSC-Spoke2-repo

People are encouraged to add repositories with software developed in the context of ICSC - spoke 2. Send us a request for the creation of repos/moving of repos

Important: if you are not the owner of a repository (e.g. because it is the repository of an experiment and it contains code other than the one developed in the context of ICSC), we'd still be interested in forking the repo in this organization

**Having spoke 2 code in this organization is important for reporting/auditing from the referees**