

# WP3 – Access to Research Infrastructures for Accelerator R&D

I. Efthymiopoulos – for the WP3

*many thanks to all WP3-FC for the work done !!*

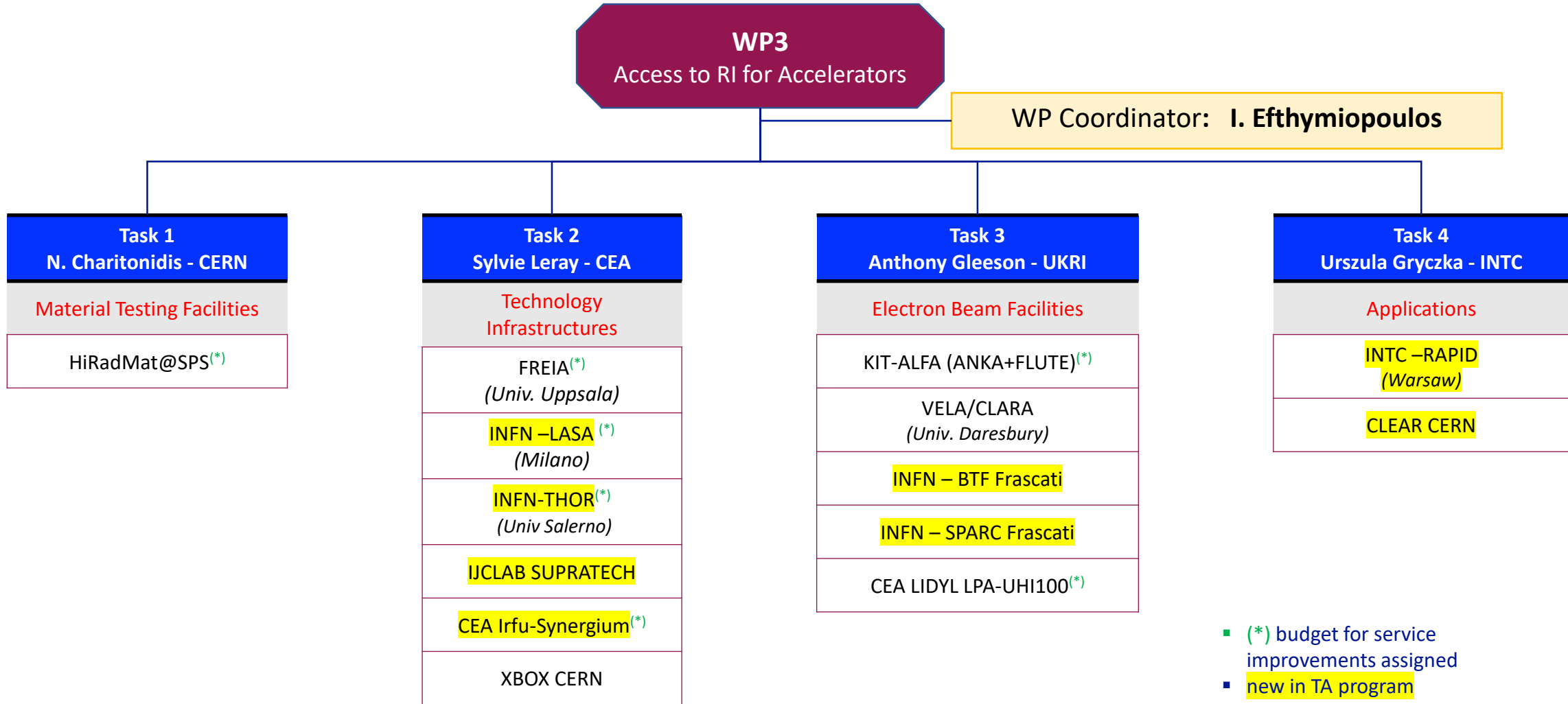


*This project has received funding from the European Union's Horizon Europe Research and Innovation programme under Grant Agreement No 101057511.*



- Include the **leading facilities** involved in **Accelerator R&D** in Europe
- **Maintain** and further **strengthen** the collaboration, exchange of information, and knowledge between the **facilities** and the **User Community**
- **Support** the User Groups in their Research
  - provide expert help, **exploit the full capabilities** and extract the **maximum scientific outcome** from the facilities
- With targeted **service improvements**, **enrich the possibilities of the facilities** to the profit of the Users
- Fertilize **synergies** between the **research communities** and **applications**
- Support ongoing **R&D efforts** in the **Present** and **Future Accelerators**
- Targeted **Outreach & Training** activities to attract **new** (or to be) **Researchers** in the Field of **Accelerators**

# WP3 - Structure

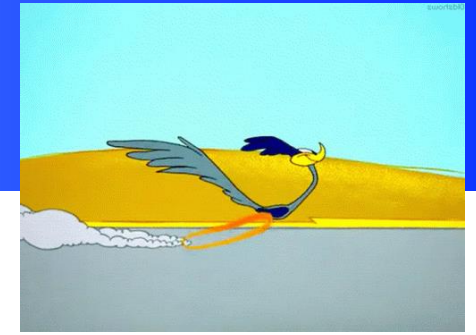


## Navin's view of WP3



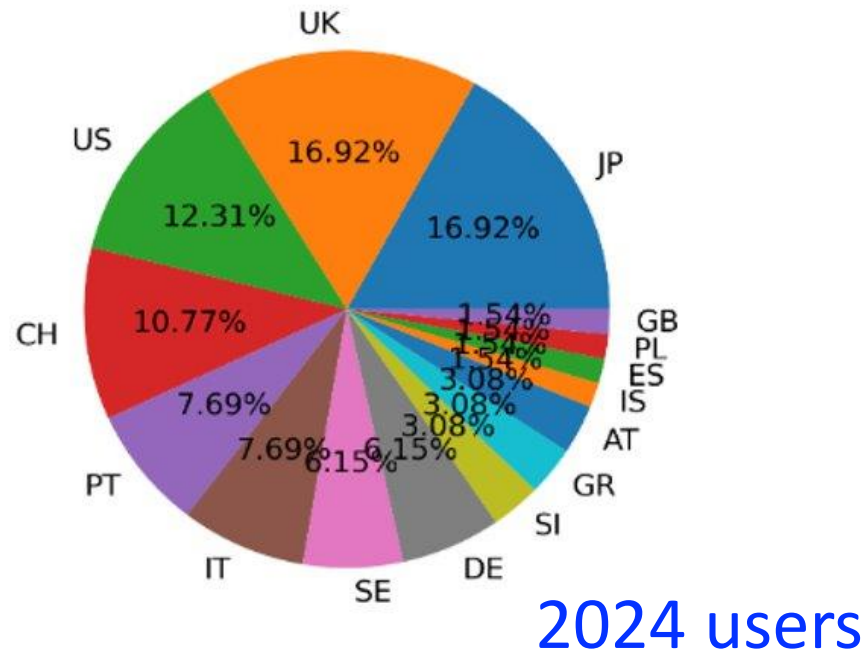
**Indeed!**

**WP3 is a great team of runners!**

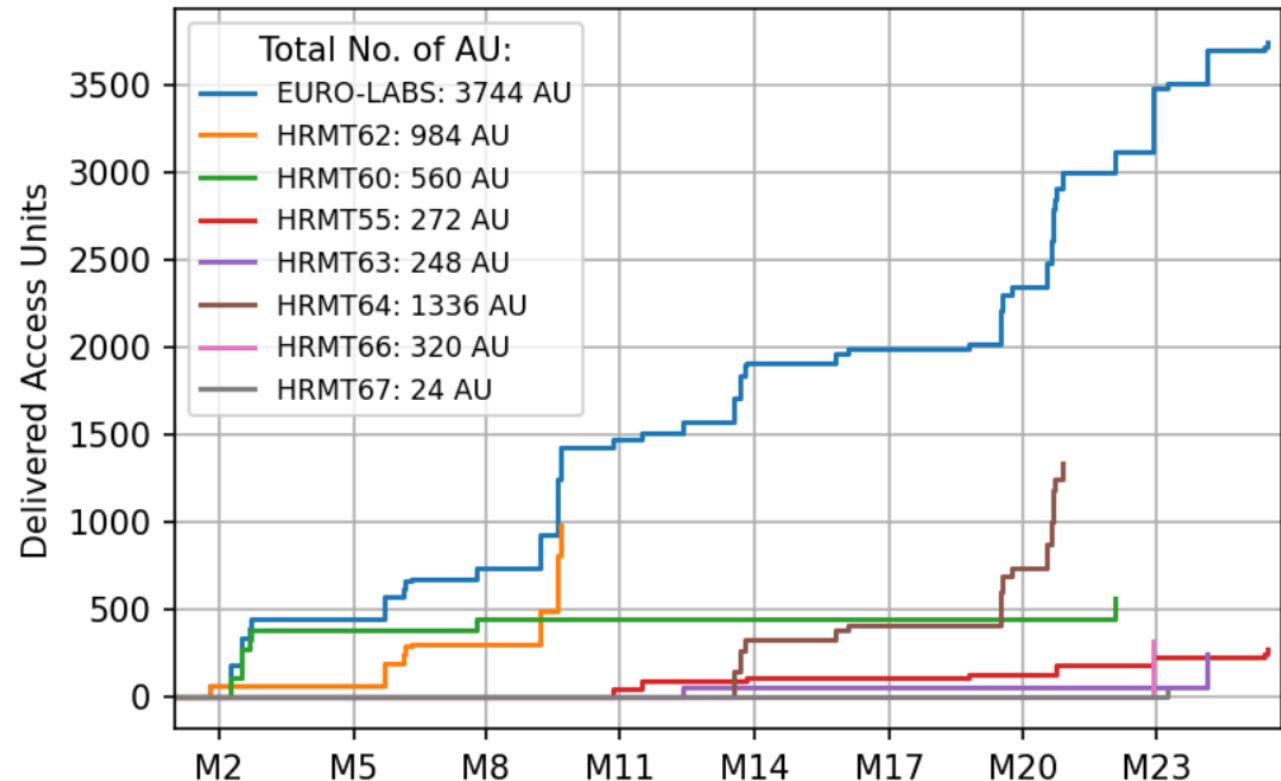


## CERN - HiRadMat

- Delivered 3744/4800 - **78%**



Delivered AU in HiRadMat since M1 of EURO-LABS and up to date  
Extracted October 2024





## CEA/Irfu-Synergium platform – MACHAFILM

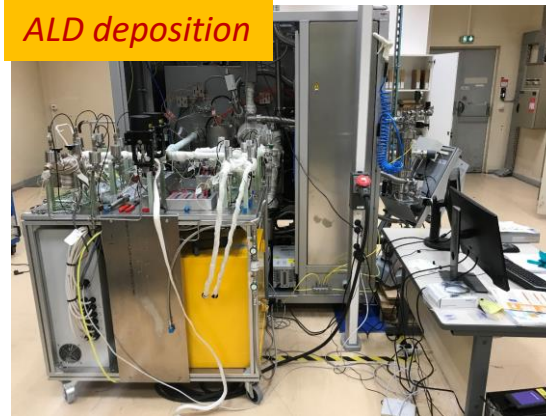
Description	PI, key participants	AU delivered	Status
QPR sample regeneration	David Oliver Kugeler/HZB Thomas Proslie/CEA	48	completed
Characterize the superconducting properties of Nb and Nb <sub>3</sub> Sn films on Sapphire	Anne-Marie Valente/JLab Cristian Pira/INFN Thomas Proslie/CEA	240	ongoing
1,3 GHz Nb cavity surface treatments	Reza Valizadeh/STFC Thomas Proslie/CEA	143	approved
		<b>Total</b>	<b>431 / out of 650 – 66%</b>

### Service Improvements

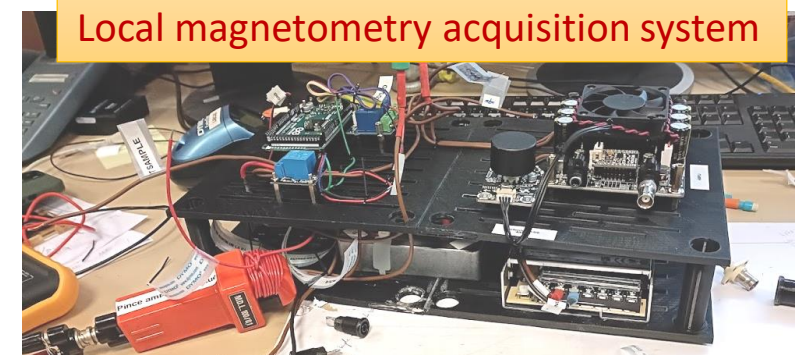
Tunneling spectroscopy



ALD deposition



Local magnetometry acquisition system





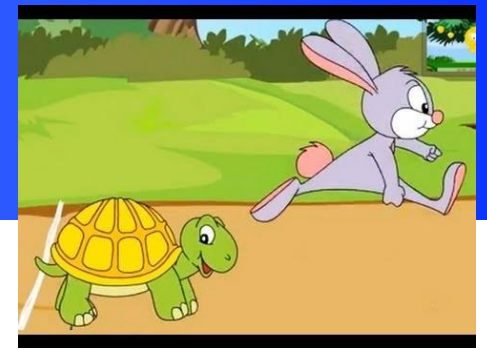
## IJCLAB - SUPRATECH

Description	PI, key participants	AU delivered	Status
QPR sample rejuvenation (SUPRATECH+MACHAFILM)	HZB	8h	Completed (10/01/24)
<b>3 PIP-II spoke resonators qualification</b>	Zanon company (Italy)	138h	Completed (15/07/24)
<b>PIP-II SSR1 plasma cleaning test</b>	Fermilab (USA)	150h	USP-evaluation
	<b>Total</b>	<b>296 / out of 672 – 44%</b>	

- Zanon company (Italy) : Testing at cryogenic temperature of 3 prototypes Spoke resonator (SSR2) for PIP2 project
  - all three cavities tested and shipped to Fermilab
  - 2 cavities have been validated and reached PIP-II project specifications
  - 1 not validated but shipped to Fermilab for R&D tests
  - testing report issued to Zanon company.
- For Fermilab (USA) : 2 cryogenic tests of 1 prototype Spoke resonator (SSR1) before/after plasma processing.
  - Under validation by USP



PIP-II Spoke resonators built by Zanon installed on insert 7



## UU - FREIA

Description	PI, key participants	AU delivered	Status
FCC SuShi septum testing • Test the performance of the first CCT magnet impregnated with wax and its quench behaviour, without the shield.	D. Barna Wigner Research Centre for Physics (Hungary)	314	Completed (2023)
Prototype crab cavity testing for HL-LHC – ▪ Transport influence on beam vacuum cavity influence ▪ Reproducibility of cavity performance with respect to beam vacuum quality	K. Turaj CERN (Switzerland)	166	Completed (2023)
<b>Total</b>		<b>480 / out of 960 – 50%</b>	

- There has been no TAs for FREIA since October'23. Initial discussions for testing PIP II Cavity in HNOSS did not lead to an agreement
- Currently there are no TAs planed, despite efforts to promote the facility within the community
- Recruiting technicians for magnet testing has proven extremely challenging
- Work on service improvements advanced well, further development put on hold due to lack of TAs



# Running in place

A few facilities have not yet provided TAs due to technical issues but are eagerly preparing to start soon!

**INFN-LASA** : lack of cooling water due to construction works affecting the liquid helium supply for the test. Now resolved, since 21/10/2024

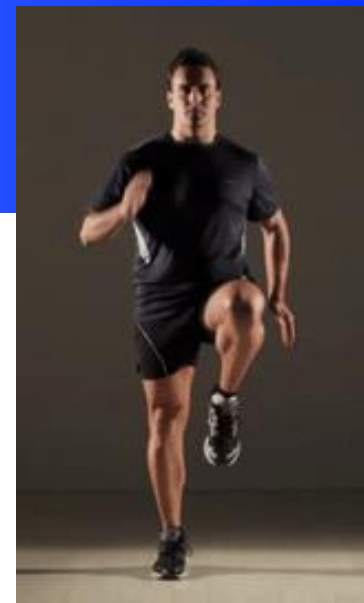
- First TAs expected end of 2024 (SRF) and PERLE cavities in 2025
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**INFN-THOR** : planned to start in 2<sup>nd</sup> year, no TAs yet.

**CEA-LPA-UHI100** : waiting authorization from Nuclear Safety Authority (ASN) to start operations with nominal electron beam parameters

**UKRI – CLARA** : waiting to resume operations following safety incident earlier in 2024

**CERN-XBOX** : no requests so far despite effort to promote the facility within the community





## KIT-ALFA

- **FLUTE** : late start foreseen
  - new photo-injector & RF system commissioned,
  - experiments started < 5 MeV. First experiment in the pipeline 40 AU/ out of 330 – **12%**
- **KARA** : steady operation with several projects completed
  - 915 AU delivered / out of 880 – **104%**

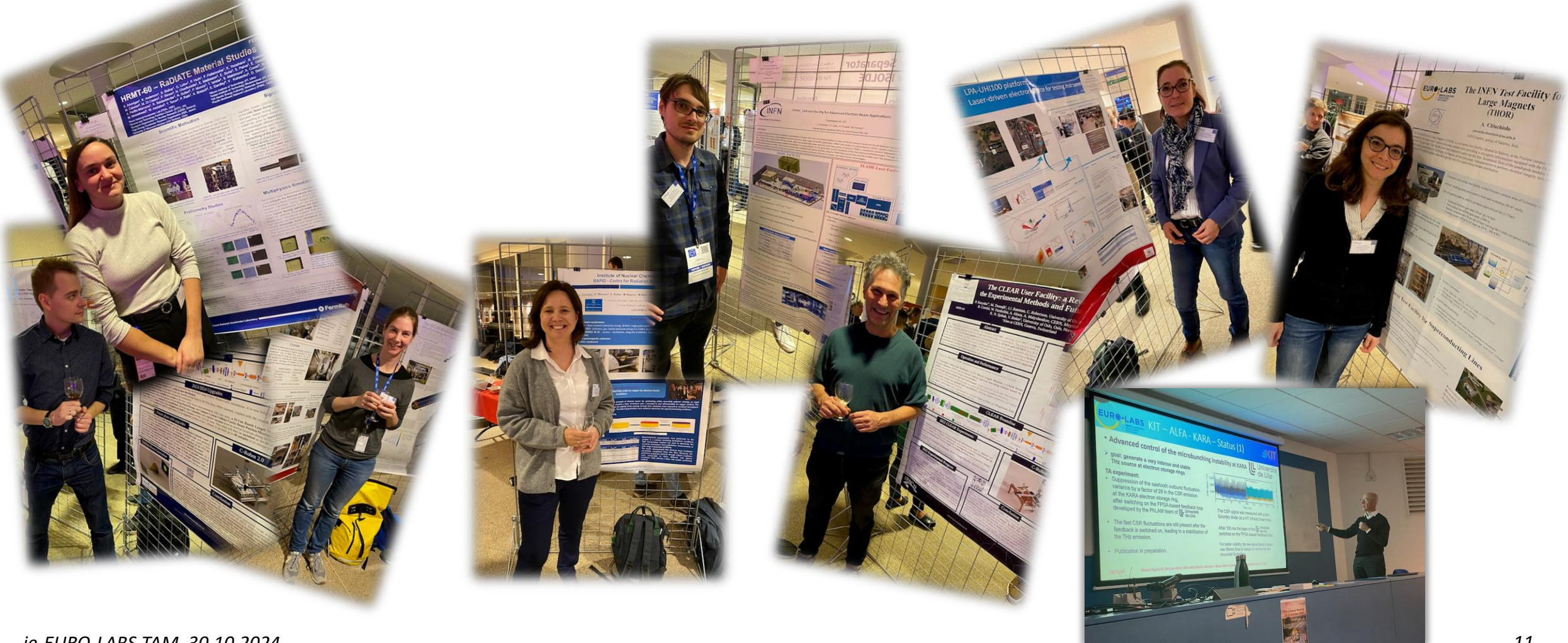
## CERN-CLEAR

- steady operation, several projects have been completed. Initial difficulties in reimbursing TA users have now been resolved
- 328 AU/1200 delivered – **27%**

## INTC – RAPID

- steady operation with 5 projects completed and 4 in the pipeline
- 130 AU / 600 delivered – **21%**, 130 AU in the pipeline

- Featured in the highlight talks and posters over the past two days



## DELIVERABLES

D#	Deliverable Name	WP	Task	Due month	Delivery date (expected/actual)	Status	Comments
D1.1	Periodic Report-2 (Sept 2023-Feb 2025)	WP1	1.1	32	30 Apr 2025		Report
D2.5	Services improvement Report	WP2	2.5	36	31 Aug 2025		Report
D3.5	Report on the service improvement for material testing RIs	WP3	3.1	36	31 Aug 2025		Report
D3.6	Report on the service improvements for Technology Infrastructures	WP3	3.2	36	31 Aug 2025		Report
D3.7	Report on the service improvement for electron and plasma beams	WP3	3.3,3.4	36	31 Aug 2025		Report
D5.2	EURO-LABS users' diversity final report	WP5	5.1	36	31 Aug 2025		Report
D5.3	Release of the first functional version of the Open NP and data access tools	WP5	5.2	36	31 Aug 2025		Report





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D3.1	Report on the progress of TA for Material Testing RIs	WP3	3.1	42	28 Feb 2026		Report
D3.2	Report on the progress of TA for Technology Infrastructure RIs	WP3	3.2	42	28 Feb 2026		Report
D3.3	Report on the progress of TA for Electron and Plasma Beam RIs	WP3	3.3	42	28 Feb 2026		Report
D3.4	Report on the progress of TA for Application oriented RIs	WP3	3.4	42	28 Feb 2026		Report
D2.1	Report on Access to Stable Beam Facilities	WP2	2.1	46	30 Jun 2026		Report
D2.2	Report on Access to Radioactive-ion Beam Facilities	WP2	2.2	46	30 Jun 2026		Report

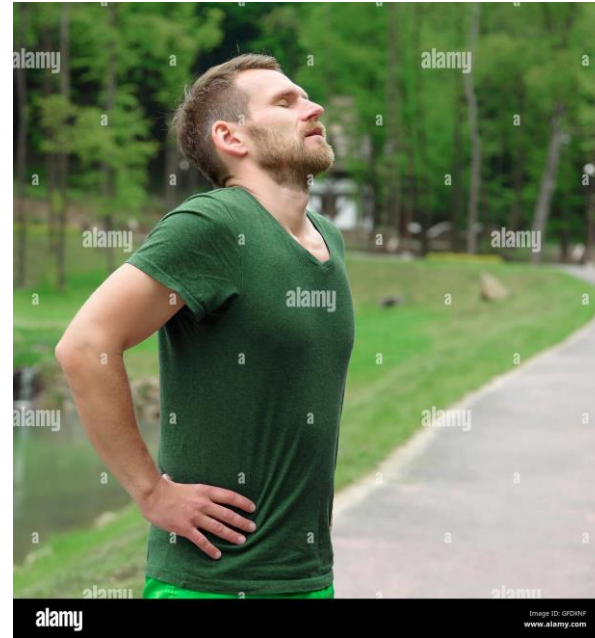
**Demonstrate** : 70% of the Access Units delivered

**Describe** : how/if the remaining 30% of AU will be delivered

**Request** : for additional AU (and budget) if the case

# The next challenge

- Take a break from running, catch your breath



- ...and **prepare the PR2 report!**

- gather the energy to keep running...



*Success is a marathon, not a sprint;*

