EURO-LABS

EUROpean Laboratories for Accelerator Based Sciences

Research Infrastructures for Nuclear and Particle Physics

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RD-50 Workshop, June 21st 2022

Transnational Access

- EC instrument to facilitate *User Access* to *Research Infrastructures* (RI) across Europe
- Provides funding for cost of *Access Units* (AU) at RI and support for User Access
- AU get allocated to *Projects* with *Users*
  - Principal investigator must not originate from the country of the RI (trans-national)
- Very handy mechanism, especially in the R&D phase where funds are scarce

EU HEP Detector Projects

- EUDET 2007-2011
- AIDA 2011-2015 (including TA)
- AIDA2020 2015-2020 (TA continued)
- AIDAinnova 2021-2025 (no TA)
  - a big drawback for a project dealing with detector R&D
  - induced by EC not allowing more than two instruments in the project (JRA, NA – TA was left out)

EURO-LABS

- Brokered a dedicated call within Horizon Europe (2021-2027, 95.5 GEUR)

Programme

Horizon Europe Framework Programme (HORIZON)

Call

Research infrastructure services to support health research, accelerate the green and digital transformation, and advance frontier knowledge (2021) (HORIZON-INFRA-2021-SERV-01)

Type of action	Type of MGA
HORIZON-RIA HORIZON Research and Innovation Actions	**HORIZON Action Grant Budget-Based [HORIZON-AG]**

Deadline model	Opening date	Deadline date
single-stage	**22 June 2021**	**23 September 2021 17:00:00 Brussels time**

Research infrastructures services advancing frontier knowledge

TOPIC ID: HORIZON-INFRA-2021-SERV-01-07

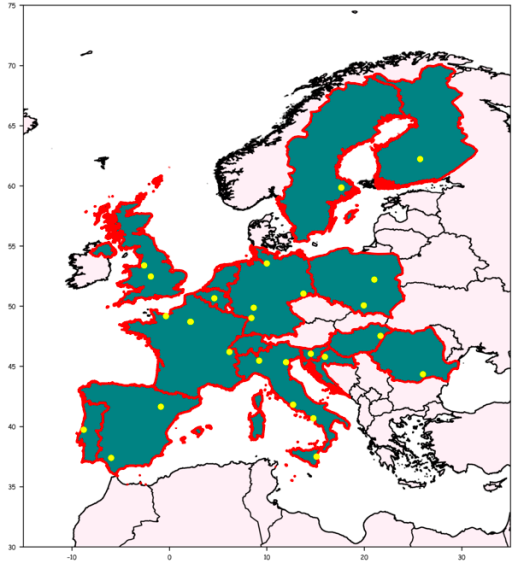
In 2021, the scientific domains called under this topic are:

- Geosphere, including geo-hazards and geo-resources;
- Biosphere: terrestrial biodiversity and ecosystems, including Arctic and forest;
- Particle and nuclear physics.

Tentative budget: 14.5 MEUR per domain

EURO-LABS on the Way

- Proposal preparation
  - Minimal time-span between the call and submission – 2 months
  - Holiday time – proposal due Sep 23rd
  - Very diverse communities: Nuclear, HEP Accelerators & Detectors
    - 43 RI's from 12 countries
  - Barely made it… submitted in the last minute
- Jan 18th – EURO-LABS accepted
- Jun 15th – Grant Agreement ready to be signed
- Start of 4y project: **Sep 1st 2022**



Europa / Funding & Tenders Portal notification

Dear Madam/Sir,

Congratulations. Your proposal has reached the stage of Grant Agreement preparation.
To view the evaluation results and the instructions on how to provide additional information and data required for the preparation of your Grant Agreement, log on to the Funding & Tenders Portal > My Project(s) (https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/myarea/projects) and click on Action > Manage Project.

Regards,
Grant Management Services

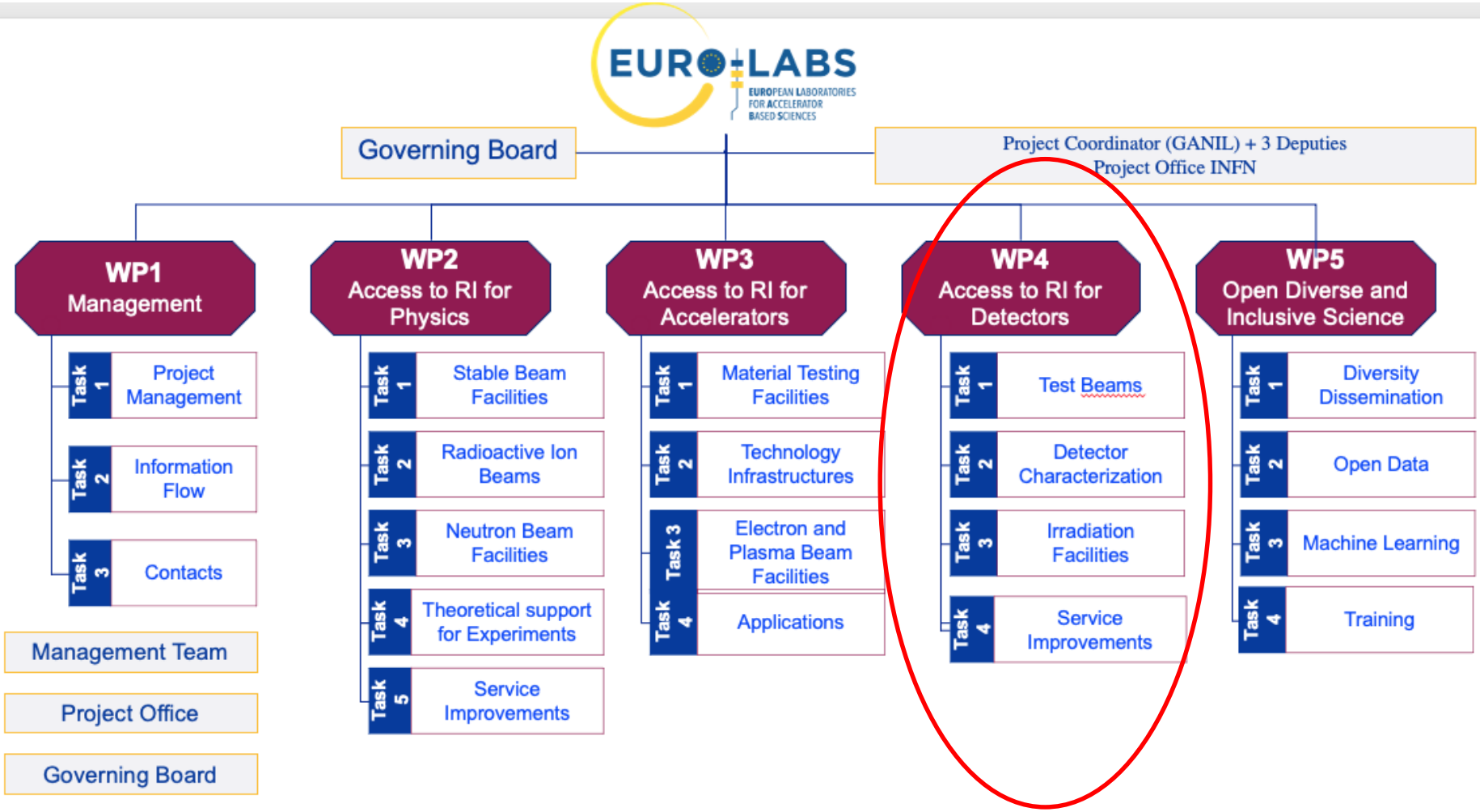
Europa / Funding & Tenders Portal notification

Dear Madam/Sir,

The Grant Agreement for the above project is ready for your signature. Please sign the Grant Agreement online.
Log on to the Funding & Tenders Portal > My Project(s) (https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/myarea/projects) and click on Action > Manage Project.

Regards,
Grant Management Services

EURO-LABS Structure



EURO-LABS Management

EUROPEAN LABORATORIES FOR ACCELERATOR BASED SCIENCES

Management Team

Scientific coordinator

A. NAVIN
GANIL

Deputy Scientific coordinator

M. COLONNA
INFN-LNS (Catania)

Deputy Scientific coordinator

I. EFTHYMIOPOULOS
CERN

Deputy Scientific coordinator

M. MIKUZ
Univ. Ljubljana

Project office Manager

PAOLO GIACOMELLI
INFN Bologna

Adam Maj, IFJ
WP2

Maria Borge, CSIC
WP5

The Project Office will be organised by INFN Bologna with the collaboration of CERN.

WP4 Budget

Task name	WP label	EC + CH + UK	EC
Test Beams	WP4.1	1,033,300	855,175
Detector Characterization	WP4.2	236,420	236,420
Irradiations	WP4.3	1,074,713	908263
Service Improvements	WP4.4	740,675	606,800
Total Budget	**WP4**	**3,085,108**	**2,606,658**

- EC allocation 2.6 MEUR
  - Supplemented by CH and UK contributions from their national funds

About 40 % more TA funding than in AIDA2020

WP4.1-3 Deliverables

- Each RI delivers Access Units (~beam hours) to Projects with Users
- Two access modes: physical/remote access
  - Physical: users at RI (user support)
  - Remote: users send samples to RI (handling, shipment)

Task	WP name	Institute	Facility	Access Units	Users	Projects	User support
Test Beams	WP4.1.1	CERN	PS & SPS	8736	504	56	yes
	WP4.1.2	DESY	TESTBEAM	8640	120	30	yes
	WP4.1.3	PSI	PiM1/UCN	5376	136	32	yes
Detector Characterization	WP4.2.1	RBI	RBI-AF	504	24	12	yes
	WP4.2.2	ITAINNOVA	EMCLab	800	56	14	yes
Irradiations	WP4.3.1	CERN	IRRAD	4000	65	16	yes/remote
	WP4.3.2	CERN	GIF++	4060	74	14	yes
	WP4.3.3	JSI	TRIGA	700	150	50	remote
	WP4.3.4	IFJ-PAN	AIC-144	800	140	28	yes/remote
	WP4.3.5	UCL	HIF/LIF/NIF	100	20	10	yes
	WP4.3.6	UoB	MC40	300	36	12	remote

WP4.4 Service Improvements

- Aimed at improving access to RI for EURO-LABS
  - Each RI proposed improvements with maximum impact on user access
  - Improvements have to be ready in Y2 of the project
  - EC contributions are matched by RI's own funding, typically exceeding EC
  - Supplemented by WP4 (!) of AIDAinnova

CERN TB, IRRAD & GIF++	Data base handling of beam time and irradiation requests
DESY Test Beams	Precision motion stages for large detector setups
PSI Test Beams	Beam monitor
RBI-AF	Ion beam focusing lens
ITAINNOVA	Cooling System and Graphical User Interface for EMC test station
CERN IRRAD	Beam profile monitor
JSI TRIGA	Cadmium shielding in the tangential channel
IFJ PAN AIC-144	2-D scanning table for irradiation
UCL CRC	Test chamber for the heavy ion irradiation facility
UoB MC40	Scanning system upgrade for high fluence delivery

RD50 Particular Interest

- Irradiations
  - 6 RI's covering a broad range of particles and fluences
  - special campaigns foreseen for 1e17++ ballpark

Infrastructure short name	Sub-task number	Installation name	Source	Particle	Energy	Φ_{Max} [SEP]
					(in MeV)	part $s^{-1}cm^{-2}$
CERN	4.3.1	IRRAD	PS	Protons	24000	10^{10}
	4.3.2	GIF++	^{137}Cs	Gamma	0.662	14 TBq
JSI	4.3.3	TRIGA Mark III	Reactor	Neutrons	<10 (Watt spectrum)	$6.7x10^{12}$ n_{eq}
IFJ_PAN	4.3.4	AIC-144 Cyclotron	Cyclotron	Protons	10-60	10^{12}
UCLouvain	4.3.5	CRC NIF, LIF, HIF	Cyclotron	Neutrons	0-50 (cont.)	$3x10^{9}$
				Protons	10-62	$2x10^{8}$
				Heavy Ions	110 Q^2/M	10^{4}
UoB	4.3.6	MC40 Cyclotron	Cyclotron	Protons	27	$3x10^{12}$

How to Apply for TA?

- Single entry point foreseen
  - EURO-LABS web page in development
- Generic review procedure in WP4:
    - *The scientific RI coordinator checks the technical requirements and eligibility of applications. Then the EURO-LABS WP4 User Selection Panel gets notified the application and decides on the allocation of resources.*
- Some facilities require additional approval by their Scientific Committees (CERN, PSI…)
  - e.g. CERN:
    - *The selection of users proceeds through the review procedure that is already in place at CERN: Requests for more than two weeks (one week) of beam time at the PS (SPS) have to be examined and recommended by the "PS and SPS experiments committee"; those requests which concern R&D projects for the upgrade of LHC experiments are considered by the "LHC experiments committee". Both are international committees composed of well-known experts in particle physics, they meet typically five times per year and report to the CERN "Research Board". Shorter requests for beam time are usually easier to fulfil. They are examined, in accordance with the present CERN procedure, by the "CERN PS and SPS physics coordinator". Where appropriate the requests are discussed with the DESY and PSI test beam coordinators and the EURO-LABS management. In all cases, the selected requests for test beam at the PS or SPS are sent to the USP for endorsement and allocation of EURO-LABS resources.*

Don't get frustrated, it's not as complicated as it sounds !

Summary

- EURO-LABS from HEP detector perspective
  - TA complement to AIDAinnova
  - follow up of successful TA in AIDA and AIDA2020
- Access to RI tailored to HEP detector R&D free of charge
- RD50 should be a major customer, especially for Irradiations
  - was ~1/3 in AIDA(2020)
- Stay tuned, apply for TA starting Sep 1 2022 !