EUROPEAN
PLASMA RESEARCH
ACCELERATOR WITH
EXCELLENCE IN
APPLICATIONS

EuPRAXIA
Preparatory Phase

WP5: user strategy and services

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Grant agreement

Funded by the European Union

Work package WP5 – User strategy and services

Work Package Number	WP5	**Lead Beneficiary**	6. UNITOV
Work Package Name	User strategy and services		
Start Month	1	**End Month**	48

Objectives
The primary objective of WP5 is to update the Demand Analysis (i.e. who are the users of EuPRAXIA and what services EuPRAXIA will be able offer to those users). So, this objective is to define a comprehensive list of services for the users and an access policy for them related to the specific service required.

Description
WP5 is following up on the following work items coordinated by University of Tor Vergata and Elettra, supported by the collaborating institutes with their extensive experience and knowledge base: • Market study of open-access, similar facility models • EuPRAXIA potential user base and their needs • Update services offered at EuPRAXIA-RI and assist WP3 in updating the EuPRAXIA-RI Access policy • Develop the "Terms of service" document • User and technology intelligence and monitoring

Milestones & Deliverables

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14	User & market study including RI potential user base & needs	WP5	6-UNITOV	Report	12
15	EuPRAXIA report on access policy	WP5	6-UNITOV	Report	30
16	Service Catalog & Organizational requirements for user services	WP5	6-UNITOV	Report	42

D5.1	Report (R) on EuPRAXIA-RI demand analysis	WP5	6 - UNITOV	R — Document, report	PU - Public	32
D5.2	Report (R) on EuPRAXIA-RI terms of services	WP5	6 - UNITOV	R — Document, report	PU - Public	42

Milestones & Deliverables

Funded by the European Union

14	User & market study including RI potential user base & needs	WP5	6-UNITOV	Report	12

EuPRAXIA-PP

27/09/2023

User and market study including RI potential user base and needs

Abstract

The user base of the future EuPRAXIA infrastructures has to be analysed and defined in order to create the best conditions for exploiting the EuPRAXIA photon and particles sources. The milestone 5.1 of WP5 is conceived to provide a preliminary study of the EuPRAXIA user community and its needs to be used for operating forthcoming strategic choices of the EuPRAXIA-PP project. This task was accomplished, besides presenting the EuPRAXIA infrastructure to the potential users at international conferences, mainly by preparing, advertising and analyzing a survey distributed to a wide scientific community.

- In its first year, WP5 focused on identifying the **potential EuPRAXIA user base** and their needs through the design, implementation, and promotion of a **survey** (details by Emiliano Principi)

- **Outreach** efforts at **international meetings** and **conferences** helped raise awareness of EuPRAXIA and foster dialogue with prospective users to better understand their requirements and expectations.

- WP5 is complementing the survey analysis by examining **user policies** from similar European research infrastructures, allowing for the refinement of strategies and alignment with international best practices.

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15	EuPRAXIA report on access policy	WP5	6-UNITOV	Report	30

Roadmap

•Regular discussions in WP5 internal meetings, on average one/month, allowed WP5 to get a preliminary overview of access models

• Broad spectrum internet searches on similar research infrastructures

• Focused on-site discussion with user offices and/or users communities at similar facilities

What do we want to know?

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Access policy

- Is there any **official documentation** about the "Access policy"
- How to **get access** to beamtime?
- **Scientific proposals selection**: procedure, critical aspects, acceptance rate, calls per year
- **How many proposals** received/accepted every year?
- Do users complain about **limited access** to the facility?
- Proposals **review panels**: composition, duration of the panel, budget for travels, in person sessions or ZOOM sessions
- **Industrial users**: how many, access policies, evaluation of industrial experimental proposals, access costs for industrial users

What do we want to know?

Funded by the European Union

User services

- Is there any **official documentation** about the offered "User services"
- What is needed to operate a user office?
- Support offered to users: Guest House, Canteen, affiliated hotels, travel organization and/or reimbursement
- What services can be **improved**, what are already excellent?
- What are the most required **services**?
- Monitoring users' satisfaction (post-beamtime surveys, …)
- Annual budget for users services

‘Similar’ facilities - Synchrotrons

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FR **European Synchrotron Radiation Facility (ESRF, France)**
Located in Grenoble, ESRF is one of the most powerful synchrotrons, providing high-energy X-rays for a broad range of scientific fields.

US **Advanced Photon Source (APS, USA)**
Located at Argonne National Laboratory in Illinois, APS is a leading source of high-brightness X-rays for research in materials science, chemistry, and biology.

GB **Diamond Light Source (UK)**
Located in Oxfordshire, Diamond is the UK's national synchrotron facility and supports a wide range of scientific research with its versatile X-ray beamlines.

JP **SPring-8 (Japan)**
Located in Hyogo, SPring-8 is one of the world's largest synchrotron radiation facilities, providing high-energy X-rays for advanced research.

AU **Australian Synchrotron (Australia)**
Located in Melbourne, this facility provides a variety of X-ray techniques for research in materials science, biology, and medicine.

TH **Synchrotron Light Research Institute (SLRI, Thailand)**
Based in Nakhon Ratchasima, this facility offers synchrotron radiation for research and industrial applications.

IT **Elettra Sincrotrone Trieste (Italy)**
Located in Trieste, Elettra is a cutting-edge research facility offering a range of synchrotron radiation techniques for studies in materials science, environmental science, and life sciences. It plays a key role in advancing scientific knowledge and industrial applications in Europe.

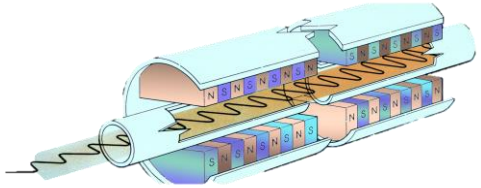
DE **PETRA III (Germany)**
Located at DESY in Hamburg, PETRA III is one of the most brilliant X-ray sources worldwide. It supports a wide array of scientific disciplines, including physics, chemistry, biology, and nanotechnology, offering high-resolution imaging and structural analysis capabilities.

‘Similar’ facilities - Free Electron Lasers

Funded by the European Union

DE **European XFEL (Germany)**
Located in Hamburg, the European XFEL is one of the most powerful X-ray lasers in the world, capable of generating extremely short and intense X-ray pulses.

US **Linac Coherent Light Source (LCLS, USA)**
Located at SLAC National Accelerator Laboratory in California, LCLS was the first FEL to produce hard X-rays and is widely used for research in molecular and atomic physics.



CH **SwissFEL (Switzerland)**
Located at the Paul Scherrer Institute, SwissFEL is a cutting-edge facility that provides ultra-short X-ray pulses for a wide range of experiments.

JP **SACLA (Japan)**
Located in Harima, SACLA is one of the most compact XFELs in the world, producing intense X-ray beams for high-resolution imaging and other applications.

DE **FLASH (Germany)**
Operated by DESY in Hamburg, FLASH is primarily used for soft X-ray and ultraviolet experiments.

IT **FERMI (Italy)**
Located in Trieste, FERMI is a state-of-the-art free electron laser facility specializing in soft X-rays and extreme ultraviolet light, offering advanced capabilities for ultrafast spectroscopy and imaging

KR **Pohang Accelerator Laboratory X-ray Free Electron Laser (PAL-XFEL, South Korea)**
Located in Pohang, PAL-XFEL is a state-of-the-art facility providing hard and soft X-ray laser pulses for various scientific applications. It supports research in biology, chemistry, and materials science by offering ultrafast imaging capabilities.

CN **Shanghai Coherent Light Facility (SCLF, China)**
Located in Shanghai, SCLF is a major free electron laser facility designed to produce high-brilliance X-rays for cutting-edge research. It aims to advance studies in physics, chemistry, and life sciences with its powerful and versatile X-ray beams.

‘Similar’ facilities - Free Electron Lasers

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EU initiatives related to light sources (https://lightsources.org/lightsources-of-the-world/europe/)

•**LEAPS** – the League of European Accelerator-based Photon Sources – is a strategic consortium initiated by the Directors of the Synchrotron Radiation and Free Electron Laser (FEL) user facilities in Europe
For more information visit: https://www.leaps-initiative.eu/
•**FELs Of EUROPE** – is a collaboration of all free electron laser (FEL) facilities in Europe, with the goal to meet the technological and scientific challenges of these novel and rapidly developing technologies
For more information visit: https://www.fels-of-europe.eu/
•**Wayforlight** – is a portal for users of European Light sources; wayforlight is an initiative of the European H2020 projects CALIPSOplus and EUCALL
For more information visit: http://www.wayforlight.eu
•**CALIPSOplus** – The aim of the CALIPSOplus project is to remove barriers for access to world-class accelerator-based light sources in Europe and in the Middle East.
For more information visit: http://www.calipsoplus.eu/
•**EUCALL** – is a network between leading large-scale user facilities for free-electron laser, synchrotron and optical laser radiation working together on common methodologies and research opportunities, as well as developing tools to sustain this interaction in the future.
For more information visit: https://www.eucall.eu/
•**ExPaNDS** – ExPaNDS is the European Open Science Cloud (EOSC) Photon and Neutron Data Service.
The ambitious ExPaNDS project is a collaboration between 10 national Photon and Neutron Research Infrastructures (PaN RIs) as well as EGI. The project aims to deliver standardised, interoperable, and integrated data sources and data analysis services for Photon and Neutron facilities.
For more information visit: https://expands.eu/
•**PaNOSC** – The Photon and Neutron Open Science Cloud (PaNOSC) is a European project for making FAIR data a reality in 6 European Research Infrastructures (RIs), developing and providing services for scientific data and connecting these to the European Open Science Cloud (EOSC).
For more information visit: https://panosc.eu/

Where do we start?

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From **ESRF** & **Eu-XFEL** policies

ESRF
The European Synchrotron

European XFEL

Why **ESRF** & **Eu-XFEL** ?

Both are **multinational projects involving European countries** that commit themselves in an intergovernmental convention.

Their collaboration and funding mechanisms involve a broad international community.

Other research infrastructures to look at: Fermi/Elettra , …

Elettra Sincrotrone Trieste

ESRF

ESRF
The European Synchrotron

User policy @ ESRF

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- **Proposals are evaluated based on scientific impact and feasibility, with two calls per year and an acceptance rate of around 50%.** Each proposal can **request up to six days** of beam time. **Special agreements exist** for specific beamlines funded by certain countries**, reserving time for proposals including a principal investigator or team member from the respective country**.

- **Beamline scientists/managers may offer extra shifts** for feasibility tests or to complete experiments required by journal referees.

- **The review panel**, divided into 12 areas of expertise, **meets twice a year** (one online and one on-site meeting) and each reviewer serves a 2 (+1) year term. **The ESRF covers all related expenses**

User policy @ ESRF

Funded by the European Union

ESRF upcoming proposal call

Standard Proposals

DEADLINE	4th March 2024 (at 5pm CET)	10th September 2024 (at 5pm CET)
SCHEDULING PERIOD	August 2024 to February 2025	March 2025 to July 2025
REVIEW PANELS	25th-26th April 2024	24th-25th October 2024
EXPERIMENT REPORTS	8th March 2024	13th September 2024
SUMMARY	Request for public beamtime over a period of 6 months on ESRF or Collaborating Research Group (CRG) beamlines that are not structural biology beamlines.	

SPECIFIC GUIDELINES | PROJECT DESCRIPTION TEMPLATE

Long Term Project Proposals

DEADLINE	15th January 2025 (at 5pm CET)
SCHEDULING PERIOD	from: August 2025 - February 2026 to: March 2028 - July 2028
REVIEW PANELS	24th-25th April 2025
EXPERIMENT REPORTS	7th March 2025
SUMMARY	Request for public beamtime over a period of up to 3 years on ESRF or CRG beamlines, for projects with and identifiable benefit to the ESRF user community.

SPECIFIC GUIDELINES | PROJECT DESCRIPTION TEMPLATE

HUB Project Proposals

DEADLINE	15th January 2025 (at 5pm CET)
SCHEDULING PERIOD	from: August 2025 - February 2026 to: March 2028 - July 2028
REVIEW PANELS	24th-25th April 2025
EXPERIMENT REPORTS	7th March 2025
SUMMARY	Collaborative community access for research topics of high societal relevance.

SPECIFIC GUIDELINES | PROJECT DESCRIPTION TEMPLATE

BAG Proposals

DEADLINE	4th March 2024 (at 5pm CET) - Group 1	10th September 2024 (at 5pm CET) - Group 2
SCHEDULING PERIOD	August 2024 to July 2025	March 2025 to February 2026
REVIEW PANELS	25th-26th April 2024	24th-25th October 2024
EXPERIMENT REPORTS	8th March 2024	13th September 2024
SUMMARY	Block Allocation Group community access for non-structural biology beamlines.	

SPECIFIC GUIDELINES | PROJECT DESCRIPTION TEMPLATE

Structural Biology: MX-BAG Proposals

DEADLINE	4th March 2024 (at 5pm CET) - Group 1	10th September 2024 (at 5pm CET) - Group 2
SCHEDULING PERIOD	August 2024 to July 2025	March 2025 to February 2026
REVIEW PANELS	25th-26th April 2024	24th-25th October 2024
EXPERIMENT REPORTS	8th March 2024	13th September 2024
SUMMARY	"Block Allocation Group" community access for structural biology beamlines.	

SPECIFIC GUIDELINES | PROJECT DESCRIPTION TEMPLATE

Structural Biology: MX Rolling Proposals

	ALL TYPES
DEADLINE	At any time
SCHEDULING PERIOD	Around 6 - 8 weeks after submission
REVIEW PANELS	Within 3 weeks after submission
EXPERIMENT REPORTS	Same time as proposal submission
SUMMARY	Request for rapid access Structure Biology beamtime for a single or small number of projects (for non-BAG members only).

SPECIFIC GUIDELINES

EXPERIMENT GROUPS	CRYSTALLOGRAPHY	BIOSAXS	SSX & TR-SSX	CRYO-EM
	PROJECT DESCRIPTION TEMPLATE	PROJECT DESCRIPTION TEMPLATE	PROJECT DESCRIPTION TEMPLATE	PROJECT DESCRIPTION TEMPLATE

ESRF The European Synchrotron

User policy @ ESRF

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The ESRF offers comprehensive user services, including documentation on available resources and the user office. To better operate the user office, improvements in resources and support are continuously considered.

Support for users includes accommodation at **the Guest House and meals at the Canteen** (including dinner and weekends). **Travel organization and reimbursement cover up to three users**, adhering to policies that minimize costs (e.g., no first-class travel, preference for public transportation over taxi).

User policy @ ESRF

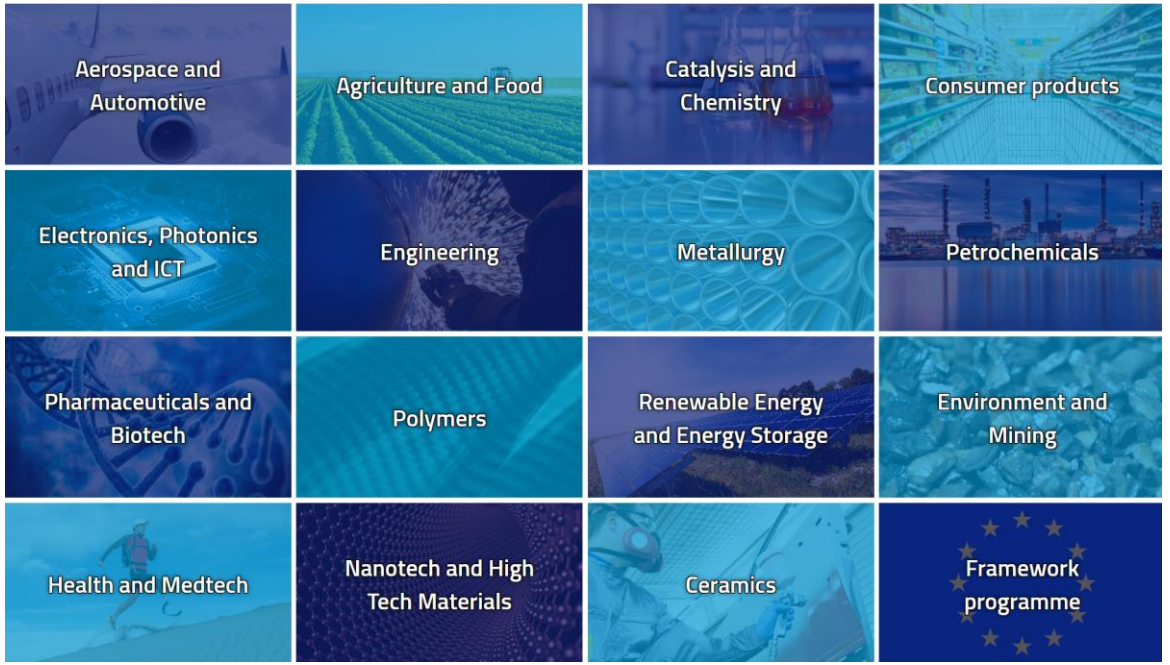
Funded by the European Union

For **industrial users**, the access cost varies depending on the experiment and beamline, as there is no standardized policy.
https://www.esrf.fr/Industry

Programs to enhancing SME access to European research and technology infrastructures are being developed
https://www.esrf.fr/home/Industry/industry-news/content-news/esrf-news-list/enhancing-sme-access-to-european-research-and-technology-infrastructures.html

A potential **broad range** of industrial applications

ESRF
The European Synchrotron



EuXFEL

Funded by the European Union

European XFEL

User policy @ euXFEL

Funded by the European Union

The European XFEL (EuXFEL) is a research facility open to scientists worldwide. Beamtime is free of charge, but experiment proposals must go through a review process. Proposal must be submitted through the User Portal to the European XFEL (UPEX).

Proposals are evaluated based on scientific impact, originality/new scientific applications, maturity of experiment plan, need for European XFEL and specific instrument, scientific/methodological risk for successful conduct and, prior results**.** Feasibility information provided by the instrument staff is made available prior to the meetings. **Proposal evaluation is made by at least 3 review panel members and the total evaluation process takes 14.5 weeks after the proposal call (once per year) deadline.**

Submission of the **experiment report** for standard experiments is required between 3 to 6 months after end of last shift of the experiment at the latest.

The review panel divided into 6 areas of expertise, each with 9-12 members
Two-day **review meeting** meetings in person, with costs for travel and living subsistence covered by European XFEL.
Generally, members appointed for a **2+2-year** period.

User policy @ EuXFEL

Funded by the European Union

EuXFEL last call for proposal

13th Call for Proposals for User Experiments: Regular, Screening and Molecular Water Research Proposals

European XFEL

Allocation period	Call opening	Call deadline	Experiment report deadline
run 2025-I (first half of 2025)	28 March 2024	30 April 2024 at 16:00 CEST (Hamburg/Schenefeld time/Central European Summer Time)	6 May 2024

User policy @ EuXFEL

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Various kinds of proposal:

Regular

Few days of beamtime allocated on a by-yearly basis

Screening

Combines sample characterization and injection tests in the laboratories, followed by screening beamtime at the SPB/SFX instrument

Special Topic

Beamtime allocated on particular topics (e.g. Molecular Water Research)

Cross-instrument

If specific parts of a project should be conducted by using different European XFEL instruments, the selection of two instruments is allowed

Community Proposal

Proposals with leading scientist, but open to the community → cooperative science

User policy @ EuXFEL

Funded by the European Union

European XFEL

User consortia

European XFEL accepts contributions by **User Consortia** to the **construction** of **scientific instruments**, to the **ancillary instrumentation**, and to the technical **infrastructure**.

Contributions by User Consortia are regulated by a clear set of guidelines.

In a first evaluation round seven User Consortia proposals have been approved.

In 2011 a Call for Expressions of Interest in contributing to the European XFEL in the form of User Consortia was published.

This call was published with an initial deadline, in order to start a first evaluation, but is open, allowing new proposals to be submitted at any time.

User policy @ EuXFEL

- The EuXFEL also offers comprehensive user services, including documentation on available resources and the user office.
- The user office are available to communicate with the users and to get updates by emails.
- Support for users includes accommodation at **the Guest House and meals at the Canteen.**
- **Travel organization and reimbursement cover up to six users**, and **sample shipping** can be reimbursed as well.
- Online or on-site trainings is available for users before experiment upon request.
- Users can have access to their data up to 3 years.
- Funding from a third party is accepted too.

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Dissemination

Presentation of EuPRAXIA-PP at National and International conferences in various fields

- EBSA 2023 (Biophysics)
- EEAC2023 (Accelerators)
- CMD-Fismat 2023 (Condensed matter physics)
- Italian-Swedish workshop sponsored by the Italian Ministry of Foreign Affairs and International Cooperation (Bilateral cooperation → engagement of the Swedish community)
- SILS 2023 & 2024 (Synchrotron radiation)
- Big Science Business Forum 2024 (Industry)
- XFEL users meeting 2023 & 2024 (FELs)
- SIBPA 2024 (Biophysics)
- Science@FELs 2024 (FELs)

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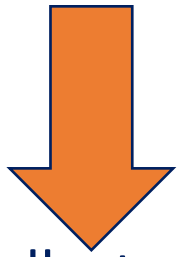
EuPRAXIA potential user community survey

- WP5 twofold aim:
  1. Report on demand analysis
  2. Report on term of services



Web-survey to collect expectations and requirements of the potential user community

→ Talk by *Emiliano Principi*