

EURIZON Annual Project Meeting 2023

09-10 February 2023 @GSI/FAIR, Darmstadt

Project overview, status and outlook

Martin Sandhop, DESY
Project coordinator

Darmstadt, 9 February 2023



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 871072.

eurizon

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1. Intro: The project in a changed world

24 February 2022.

Almost one year ago, Russia started its criminal military attack and invasion of Ukraine.

This causes a tremendous suffering of the Ukrainian people, and it is a continuing vital threat to entire Europe.



European Council of EU:

- 24 February 2022: **condemns Russia's military aggression** against Ukraine
- Subsequently adopted “**far-reaching restrictive measures** in response to this aggression”



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Consequences for the project

- S&T Cooperation with Russian entities has been frozen since February 2022, at all levels in all EU-projects with RU-beneficiaries
- By far our project the largest, in terms of budget grant to RU-beneficiaries: **highest political observation** what will happen with this project?
- March 2022: Coordinator together with EB team: first informal proposal submitted to EC with a **plan for saving the project by reorienting its scope**:
 - technical WPs: build on the achieved results and reach the project's aims without RU participation; yielding **state-of-the-art technologies at RI facilities in EU**
 - introduce new horizontal coordination and support measures specifically aimed at **supporting scientists from Ukraine and integrating UA landscape into EU RI landscape**

Revised proposal GA No. 871072

Proposal: EURIZON (former CREMLINplus)

EURIZON

European network for developing new horizons for RIs

Intro

CREMLINplus was a project designed to strengthen European large-scale physical and analytical RIs, and to create benefit through collaboration with Russian RIs. This project was originally initiated by the EU to implement an EU-Russian collaboration agenda on both EU and Russian RI projects. It was stopped as a consequence of the Russian war against Ukraine.

4 The purpose of this paper is to show how a fundamental reorganisation of the work programme of the project under the new name EURIZON can:

- (i) build on the achieved results and reach the project's aims without RU participation; yielding state-of-the-art technologies at physical and analytical RI facilities in EU (benefit EU RI landscape and EU scientists)
- (ii) introduce new horizontal coordination and support measures specifically aimed at supporting scientists from Ukraine;
- (iii) identify opportunities for capacity building, reconstruction of the Ukrainian RIs and their integration into the European RI landscape (ESFRI).

We suggest to dedicate at least 50% of the remaining budget originally foreseen for the Russian beneficiaries (around ~4,6M€) for the additional horizontal activities supporting Ukraine science (see ii and iii).

Technical Work Packages

The modified scope of the technical WPs is of strategic interest for EU because it will allow the continuation of technical and scientific work for ESFRI landmarks (e.g. FAIR, ESS, ELL) and further large-scale physical and analytical RIs at European laboratories such as CERN, DESY, ILL, ESRF, Laserlab-Europe. The cutting-edge technologies already addressed in the technical WPs will be further worked out for the European RIs.

The modification of scope of the technical WPs is minor in some WPs (WP2-Heavy ions, WP7-Detectors), while more substantial adaptations are needed in others (WP3-Neutrons, WP4-Synchrotrons, WP5-Lepton colliders, WP6-High-power lasers).

The modification of scope for each WP is summarised below (details in the annex):

WP2-Heavy ions: Instrumentation for CBM experiment at ESFRI landmark FAIR (nuclear physics science community involved)

WP3-Neutrons: Next generation moderators and instrumentation at existing and future neutron sources (LENS and neutron users community involved)

WP4-Synchrotrons: Technical developments for Synchrotrons in the EU (LEAPS and photon science users community involved)

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1 of 2



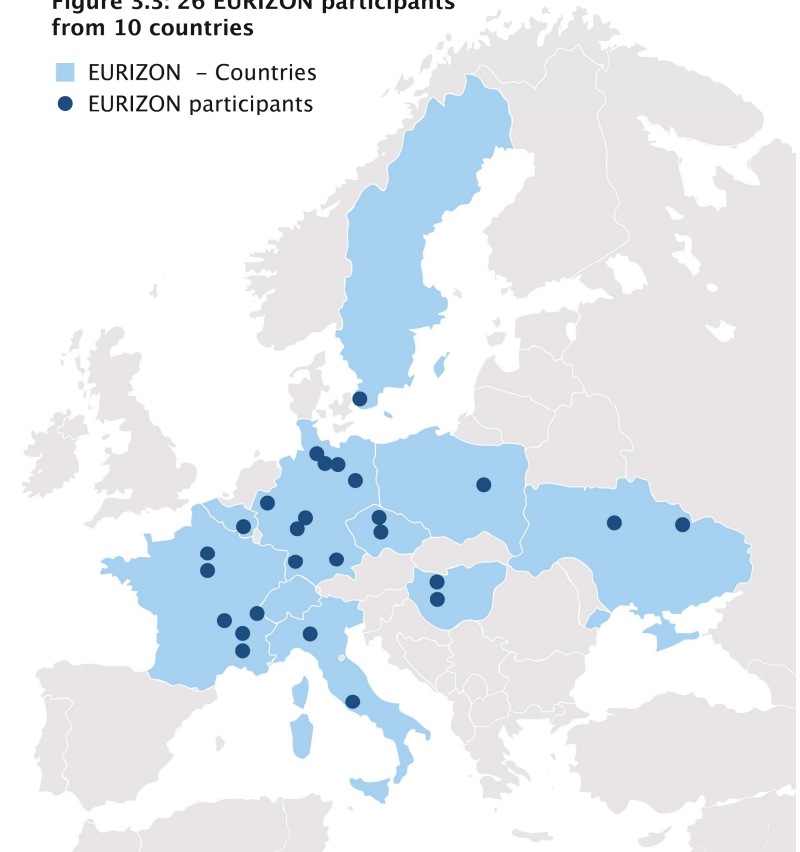
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Towards Creating EURIZON



Figure 3.3: 26 EURIZON participants from 10 countries

- EURIZON – Countries
- EURIZON participants



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2. Creating EURIZON

- Since then: Working out and constantly refining a detailed **fundamental reorientation of the entire work programme**
- 8 April 2022: submit 17-page more elaborated proposal to EC, including Task-structure of WPs
- Meanwhile: inviting **NSC Kharkiv Institute of Physics and Technology** to the new consortium
- 20 May 2022: Submit **further elaborated 77-page (part B) proposal** plus new work programme and budget as Amendment to GA
- Proposal 3 months under **assessment** by three external experts invited by EC
- 12 August 2022: detailed Assessment report including **huge amount of suggestions** to be worked on

- Develop software framework and data management systems for the SCT detector.
- XCELS high-power laser
- Design a prototype of a relativistic plasma mirror for XCELS and develop a prototype of nonlinear compressor of ultra-intense laser pulses for XCELS
- Develop technologies for ultrashort laser pulse contrast enhancement based on non-linear optical devices as well as related few-shot spatio-temporal diagnostics for ultrashort + ultra-intense laser pulses for XCELS
- Train experts in Europe and Russia for high-power laser technologies.

Level two: Non-technical objectives in the LIST-11 and megascience collaboration.

The specific non-technical objectives in EURIZON with a special focus on coordination and support measures targeted at Ukraine and Widening Countries, are:

- In the field of a fellowship and training programme: set up and implement a fellowship programme for displaced scientists and technical specialists from Ukraine, enabling up to 25 one-year job contracts at EURIZON consortium participants
- A specific staff exchange programme will be set up to better integrate key personnel at RIs from Ukraine and Widening countries into the European RI landscape
- Train management staff at RIs in Ukraine and the Widening Countries by providing fellowships to take part in the UNIMIB-based EMMRI programme, and also by setting up a specific mentoring programme for RI leaders from Ukraine and Widening Countries
- With a specific focus on Ukraine: one objective is to assess the landscape and the situation of the RIs in Ukraine and to develop measures to mitigate the risk of brain drain from Ukraine and to stimulate capacity building for Ukrainian RIs
- In the area of science diplomacy, a dedicated consultation meeting with Ukrainian stakeholders from politics and academia will be organised to explore opportunities in the area of science diplomacy together with European stakeholders
- Finally, the exchange on best practices on "remote and virtual access to RIs" will be stimulated and coordinated among the consortium partners, resulting in a set of recommendations for RIs about remote access and virtual operation.

A particular focus will be on the LIST-11 facilities. This is a list of priority Russian RIs mentioned in the recommendation list of the Russian Federation Infrastructure from the five Russian megascience projects, however, will be included, wherever this is possible and intended.

The Russian science ministry has provided a specific list of research infrastructures "open to international collaboration". These LIST-11 facilities define the operational level two of CREMLDplus.

The list was established on the basis of a prior, initially much longer "List of Russian RI which have expressed interest in cooperation with European scientific communities and which may be of particular interest to European researchers and scientists".

Remarkably, LIST-11 covers all six domains of ESFRI Roadmap 2018:

- Energy (ENE)
- Environment (ENV)
- Health & Food (H&F)
- Physical Sciences & Engineering (PSE)
- Social & Cultural Innovation (SCI)
- Data, Computing & Digital RI (DIGIT)

The fact that all six areas are covered by LIST-11 is significant. CREMLDplus hereby has the opportunity to achieve a real progress and increase in the mutual utilisation of RI in Russia and Europe.

LIST-11 comprises 11 facility hosting laboratories in Russia. In fact, there are altogether 19 RI comprised in this list. The term "research infrastructure" in this list corresponds to the definition provided in the "European Charter for Access to RE". These are:

List of Russian priority research infrastructures: "LIST-11 facilities"
(in bold: CREMLDplus consortium participants)

871072 EURIZON – Part B

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Everyone wondering since March and April 2022: When will amendment be greenlighted?



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A long way to go...

- 23 September 2022: resubmit **revised amendment**, taking into account assessment results, including gigantic reshuffle of deliverables, milestones, risks
- 23 November 2022: again Revision draft amendment underway, dealing with ever more subtle refinements...
- 20 December 2022: Resubmit **final version AMD**

Again: all needs to be super-correct, due to high political attention to this very exceptional AMD-procedure

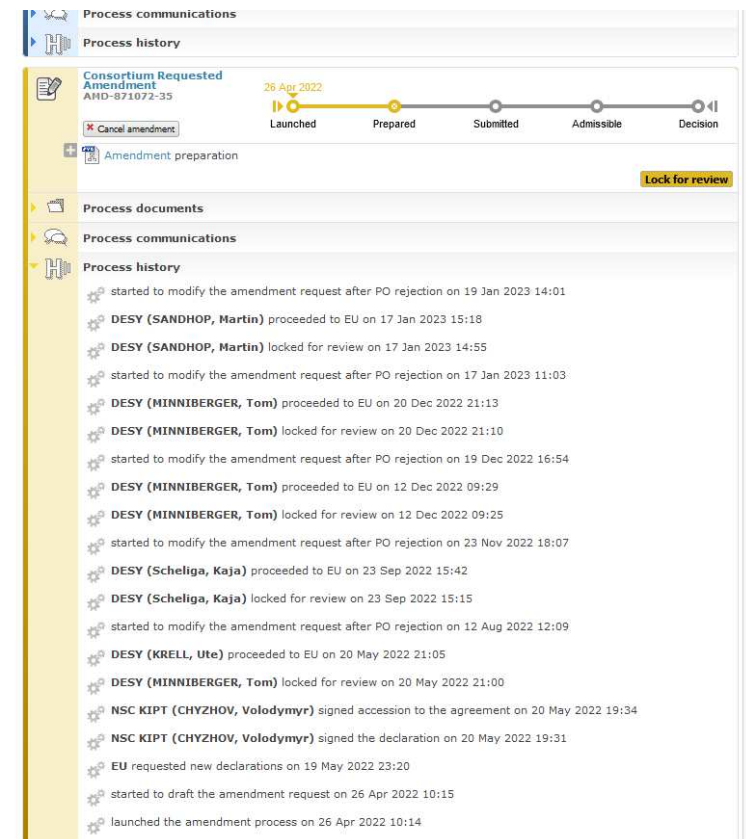
In the meanwhile:

Expenses specific to EURIZON are already underway:

- EMMRI-programme with UA-participants (Taks 9.3) since Nov. 2022: 9 candidates from Ukraine enrolled (5 onsite, 4 remote)
- Collaboration with subcontractor SourceLab (WP6)
- Open the call: WP7 „**EURIZON Detector School**“

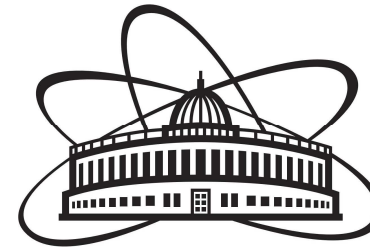
Since April 2022:

Submit – give back – redraft – re-submit – assess – reagree with consortium – refine – submit again...



3. Termination of participation of Russian beneficiaries

- Became clear: termination of participation of **JINR** and **ICISTE** = prerequisite to be included into AMD!
- Needs to be a „**consortium-initiated termination**“
- This is currently done: GA-chair and coordinator collect the **GA-decision necessary for this** (until 7 Feb 2023), plus care for the communication with JINR and ICISTE
- formally both still members of project consortium
- Termination of 8 other RU-beneficiaries („public entities with > 50% RU state-funding“) has been **initiated by Commission**, based on respective EU-sanctions:
 - effective as of 14.05.2022
 - Costs ineligible as of 09.04.2022
 - Coordinator supports procedure and collects technical final reports and final financial statements – underway



According to Council Regulation (EU) No 833/2014¹, as subsequently amended², it is prohibited to provide direct or indirect support, including financing and financial assistance, such as grants, or any other benefit to any legal person, entity or body established in Russia with over 50% public ownership or public control.

2	BINP	Budker Institute of Nuclear Physics of SB RUS	RU
3	IAP	Institute of Applied Physics, Russian Academy of Sciences	RU
4	ICISTE	International Centre for Innovations in Science, Technology and Education	RU
5	INR RAS	Institute for Nuclear Research of the Russian Academy of Sciences	RU
6	JINR	Joint Institute for Nuclear Research	RU
7	MEPhI	National Research Nuclear University "MEPhI"	RU
8	NRC KI	National Research Center "Kurchatov Institute"	RU
9	NUST MISIS	National University of Science and Technology MISIS	RU
10	PTI	IOFFE Physico-Technical Institute of the Russian Academy of Sciences	RU
11	SPSU	Saint Petersburg State University	RU



EURIZON: WP overview and participants

WP1 MG	Management and dissemination	DESY
WP2 Heavy Ions	Instrumentation for CBM experiment at ESFRI landmark FAIR	<u>FAIR</u> , WUT, Wigner RCP, NPI CAS, EKUT
WP3 Neutrons	Next generation moderators and instrumentation at existing European reactor sources and future sources	<u>FZJ</u> , CEA-LLB, ESS, Hereon, ILL, MTA-EK, TUM, UCA, UNIMIB
WP4 Synchrotrons	Collaboration with X-ray light sources in Europe	<u>ESRF</u> , DESY, EuXFEL, INFN
WP5 Lepton Colliders	Joint technology development around future lepton colliders	<u>CERN</u> , CNRS-IJCLab, INFN, JLU
WP6 High-power Lasers	Technology development for future multi-PW laser facilities	<u>CEA-LIDYL</u> , Laserlab-Europe AISBL, ELI-ERIC
WP7 Detectors	Joint development of detector technologies	<u>FAIR</u> , DESY, GUF, CNRS-IPHC, ESS, INR NASU, UNIMIB, CERN, WUT
WP8 TNA <i>Finalised 11/2022</i>	<i>Transnational Access to RI</i>	<i>DESY</i>
WP9 TRAIN	Fellowship and training programme	<u>UNIMIB</u> ; DESY; all
WP10 LTS	Sustainability for RIs	<u>DESY</u> , INR NASU, UNIMIB

List of participants: EURIZON

Participant No *	Participant short name	Participant organisation name	Country
1	DESY	Stiftung Deutsches Elektronen-Synchrotron	DE
12	EKUT	Eberhard Karls Universität Tübingen	DE
13	European XFEL	European X-Ray Free-Electron Laserfacility GmbH	DE
14	FAIR	Facility for Antiproton and Ion Research in Europe GmbH	DE
15	FZJ	Forschungszentrum Jülich GmbH	DE
16	GUF	Johann Wolfgang Goethe-Universität Frankfurt am Main	DE
17	Hereon	Helmholtz-Zentrum Hereon	DE
18	JLU	Justus-Liebig-Universität Gießen	DE
19	TUM	Technische Universität München	DE
20	CEA	Commissariat à l'Énergie Atomique et aux Énergies Alternatives	FR
21	ESRF	European Synchrotron Radiation Facility	FR
22	ILL	Institut Max von Laue - Paul Langevin	FR
23	CNRS	Centre National de la Recherche Scientifique	FR
24	UCA	Université Clermont Auvergne	FR
25	ELI ERIC	Extreme Light Infrastructure ERIC	CZ
26	NPI CAS	Nuclear Physics Institute, Czech Academy of Science	CZ
27	MTA EK	Magyar Tudományos Akadémia Energetikai Kutatóközpont	HU
28	Wigner RCP	Magyar Tudományos Akadémia Wigner Fizikai Kutatóközpont	HU
29	INFN	Istituto Nazionale di Fisica Nucleare	IT
30	UNIMIB	Università degli Studi di Milano-Bicocca	IT
31	CERN	European Organization for Nuclear Research	CH
32	WUT	Politechnika Warszawska	PL
33	ESS	European Spallation Source ESS ERIC	SE
34	INR NASU	Institute for Nuclear Research of NAS of Ukraine	UA
35	LLE-AISBL	Laserlab-Europe AISBL	BE
36	NSC KIPT	National Science Center Kharkov Institute of Physics and Technology	UA

*No. Official participant number



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4. Project bodies adjusted

EURIZON General Assembly (GA)

Chair: J. Eschke, GSI/ FAIR

Composition as shown is the GA as expected **after (!) the transition phase** between phase one until 24 Feb 2022 and phase two, which will be officially effective as of approval of AMD

3rd GA meeting: tomorrow, 10 Feb, 2023

Invitation of **NSC KIPT**: effective as of tomorrow's approval

Without 8 Russian beneficiaries

Without JINR, ICISTE: GA-decision taken by 8 Feb 2023

Most important decision of GA-meeting tomorrow:

- **endorsement of Substantial reorientation of work programme DOA, leading to EURIZON (submitted as complex amendment)**

New General Assembly

No.	Beneficiary	Member	Deputy
1	DESY	Martin Sandhop	
12	EKUT	Hans Rudolf Schmidt	Günter Lang
13	European XFEL	Serguei Molodtsov	
14	FAIR	Jürgen Eschke	Peter Senger
15	FZJ	Stephan Förster	Stefan Mattauch
16	GUF	Joachim Stroth	
17	Hereon	Martin Müller	Klaus Pranzas, Jochen Fenske
18	JLU	Michael Düren	
19	TUM	Wiebke Lohstroh	Jürgen Neuhaus
20	CEA	Catalin Miron	
21	ESRF	Michael Krisch	Jean-Luc Revol
22	ILL	Oliver Zimmer	
23	CNRS	Marc Winter	Walid Kaabi
24	UCA	Marc Dubois	
25	ELI ERIC	Allen Weeks	Florian Gliksohn
26	NPI CAS	Andrej Kugler	Ondrej Svoboda
27	MTA EK	Ákos Horváth	László Rosta
28	Wigner RCP	Gyorgy Wolf	
29	INFN	Mikhail Zobov	Gianluigi Cibinetto
30	UNIMIB	Marialisa Lavitrano	
31	CERN	Andre Sailer	Lucie Linssen
32	WUT	Wojciech Zabolotny	
33	ESS	NN	Robert Connatser
34	INR NASU	Valery Pugatch	
35	LLE-AISBL	Jens Biegert	Claes-Göran Wahlström
36	NSC KIPT (effective after approval of amendment by EC)	Sergii Fomin	Sergii Pugach
37	STCU	Mykola Lubiv	



proposed new member of consortium: STCU

NEW: also invitation to consortium proposed for STCU (Science and Technology Center Ukraine)

→ stcu.int

Why?

- Will be our key partner to implement a sound and efficient in Task WP9.1 **EURIZON Ukraine Fellowship programme**
- STCU: **international** organisation with **HQ in Kyiv**, acting since early 1990s
- Experienced in running S&T programmes with UA researchers and technicians (original mission: support non-proliferation)
- Current Agreement signing states: Canada, Ukraine, USA, European Union

Mykola Lubiv, deputy director

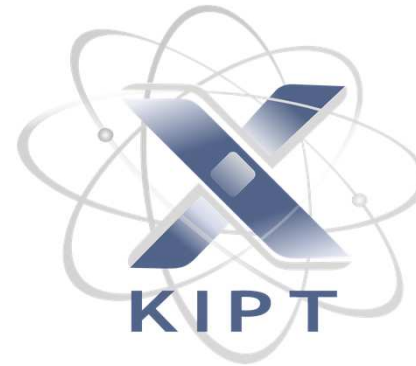


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new member Kharkiv KIPT

Invitation to consortium proposed for NSC Kharkiv Institute of Physics and Technology (KIPT)

- *De facto* already close collaboration with KIPT since summer 2022
- Representative of KIPT in the project: Sergii Fomin
- NSC KIPT (www.kipt.kharkov.ua/) is the **largest institute** of the National Academy of Sciences of Ukraine (~2,000 employees)
- **Main activities** of KIPT: fundamental and applied problems of theoretical physics, solid-state physics, physics of radiation effects and radiation materials science, and many more
- **KIPT** will be the **second UA-laboratory in the consortium**, while **KINR** (Kyiv Institute of Nuclear Research) has been a member since project start in 2020



Courtesy M. Shulga, KIPT-director;
Destructions of KIPT after
bombings in March 2022



DESY, 15 July 2022

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Executive Board (EB)

EURIZON Executive Board

Chair: M. Sandhop, DESY

EB has been **most active (!)** in the work process on **re-orienting the work programme of the project** towards EURIZON DoA since February 2022

- EB meeting 17 March 2022 (discuss reorganisation of the project; **new project name** suggestions...)
- EB meeting 19 July 2022 (**termination reports** of Russian beneficiaries; develop WP9 fellowship programme for UA)
- EB meeting 1 September 2022: „discuss how to best redraft the amendment **considering the recommendations from the review report** (received 12 August)”
- EB meeting on 1 February 2023: **preparing project meeting** GA-meeting Darmstadt; (first on-site meeting since virtual March-2021 meeting)
- [EB7 8.12.2020, EB6 14.09.2020, EB5 09.06.2020, ...]

New Executive Board

WP	WP Managers
WP1 MGT	Martin Sandhop, DESY
WP2 Heavy Ions	Jürgen Eschke, FAIR
WP3 Neutrons	Stefan Mattauch, FZJ
WP4 Synchrotrons	Michael Krisch, ESRF
WP5 Lepton Colliders	André Sailer, CERN Lucie Linssen, CERN
WP6 High-power Lasers	Catalin Miron, CEA-LIDYL
WP7 Detectors	Christian Schmidt, GSI
WP8 TNA	Greta Facile, DESY
WP9 TRAIN	Enrico Guarini, UNIMIB (Greta Facile, DESY)
WP10 LTS	Greta Facile, DESY (Martin Sandhop, DESY)



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SAC external Scientific Advisory Committee

Chair: Hans Gutbrod

Special SAC-meeting on 14 March 2022:

- SAC recommendations for **dealing with the project under conditions of suspending Russian participation**
- Suggestions for an adaptation of the work programme with EU partners only
- input by J. Eschke on how WP2 and WP7 could be adapted

Also: via email **updates to SAC about progress in developing the EURIZON** work programme, e.g. 25.05.2022, 13.1.2023

New division of WPs to members now

Previous meetings: 4.3.2021, 20.4.2021

New Scientific Advisory Committee

Jean Moulin	BELSPO Honorary General Advisor; Limal, Belgium
Hans Gutbrod	retired nuclear physicist at GSI/ FAIR, pioneer in heavy ion physics, Darmstadt, Germany
Caterina Biscari	Director of ALBA Synchrotron, Cerdanyola del Vallès, Spain
Arantxa Arbe	Research Professor at Materials Physics Center CFM, San Sebastián, Spain
Kiyoshi Ueda,	Professor at the Tohoku University, Sendai, Japan



MST Management Support Team

- Still Needs to be set up

New Management Support Team

M. Sandhop	DESY, DIR-Office
T. Minniberger	DESY, EUP
G. Facile	DESY, EUP
J. Eschke	GSI/ FAIR
Who else?	



SRP Science Review Panel

Chair: to be determined

SRP's role in the project is to approve nominations for EURIZON grantees receiving grants within WP9 open activities

- Task 9.3 **Open EMMRI-Call** towards UA-scientists and technicians: nomination in Nov. 2022
- Task 9.1 upcoming **EURIZON Ukraine Fellowship Programme**, to be opened in March 2023

New Science Review Panel

Energy	Manuel J. Blanco	EC H2020 European Research Area (ERA) Project Chair	Cyprus Institute - EU SOLARIS
	Sverre Quale	Executive Director	ECCSEL ERIC
Environment	Werner Kutsch	Director General	ICOS ERIC
	Juan-Miugel Gonzalez-Aranda	CTO	LifeWatch ERIC
Life Sciences	Niklas Blomberg	Executive Director	ELIXIR
	Michael Raess	Head of General Management	Infrafrontier GmbH
Physical and analytical Sciences	NN		
	Jana Kolar	Executive Director	CERIC-ERIC
Social Sciences & Humanities	Angelika Scheurer	Executive Director	ESS ERIC
	Jennifer Edmond	Director	DARIAH ERIC
eInfrastructures	Tiziana Ferrari	Managing Director	EGI Foundation
	Hilary Hanahoe	Secretary General	RDA Foundation



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5. Many Activities EURIZON already underway

- WP9: RÅC International Summer School in August 2022 in Varberg, Sweden: with ~17 participants supported by EURIZON (2 UA students)
- Task 9.3 EMMRI programme: 9 out of 37 applicants from UA nominated and already taking part in the MA classes at Milano Bicocca
- **Technical WPs:** all technical WPs are constantly with great impetus implementing all the reorganised work programmes: this is with strong determination, and it is a proof that the reorganization work very well!
- Just pick one example: WP4, Task 4.6 “Development of a generic Conceptual Design Report for automated X-ray Absorption Spectroscopy Beamlines” (DESY, ESRF) a workshop was realized along the DESY Photon Science Users’ Meeting end of Jan. 2023, with many LEAPS-members: “X-Ray Absorption Spectroscopy today and perspectives for future PETRA III and IV beamlines”
- → Big thanks to the entire wonderful EB-team of WP leaders



Group photo of the in-person participants of the XAS satellite workshop.

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6. Second Periodic Report

3rd Project Period started in M37 = February 2023

→ 2nd report is due by roughly end of March 2023

Also expected:

Another **mid-term Review** after submission of 2nd report (?)

Previous Review in Nov. 2021 was a very successful review with very good results! Consortium has started working on implementing the suggestions – some of them also relevant for EURIZON



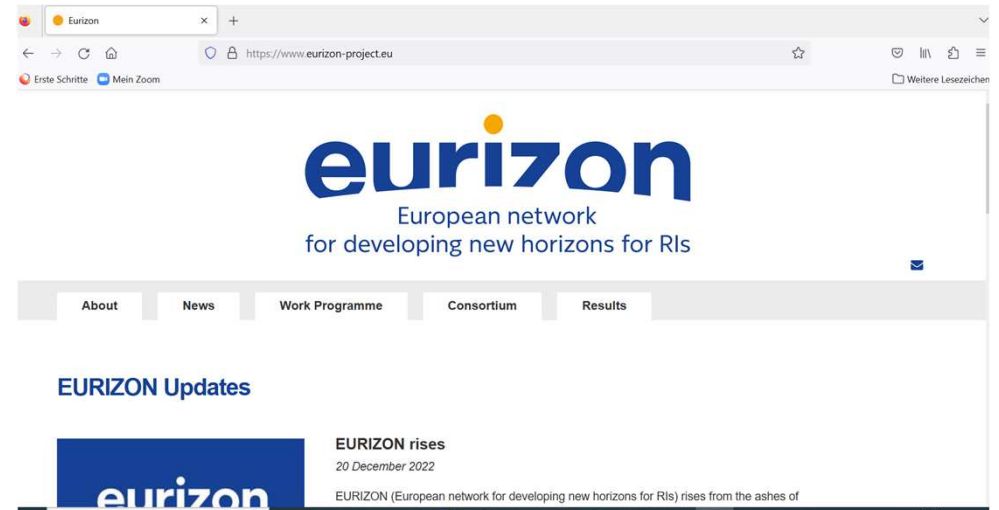
7. Project website www.eurizon-project.eu

New website **already online**, as of 20 December 2022

Official launch after Amendment green-lighted

Contents of the website is considered to **present all achievements and work of the entire project**, i.e. both phases

→ also for instance deliverables of previous phase available



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8. Project team at DESY

MS

Tom Minniberger, DESY EUP

Juliane Marauska (as of March 2023), DESY IT/EUP

farewell and big thanks to:

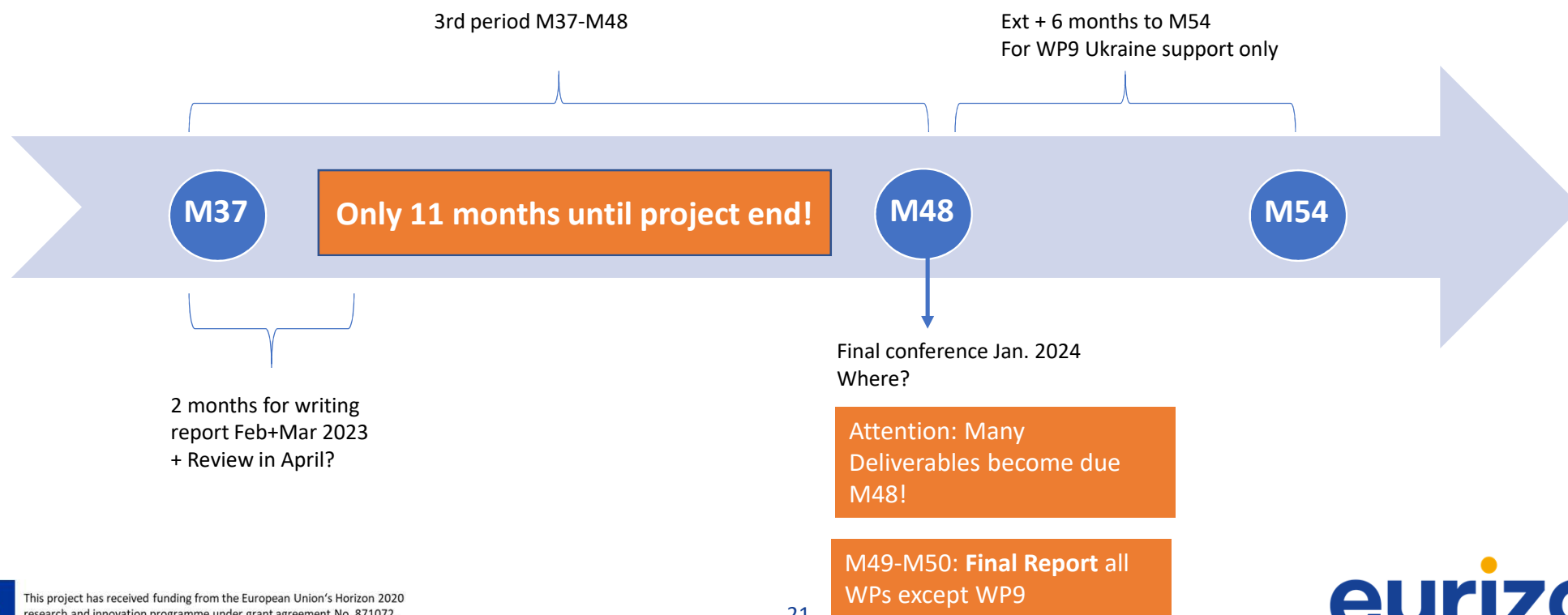
Kaja Scheliga, DESY

Ute Krell, DESY EUP



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9. Outlook



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Big Thanks to:

GSI /FAIR team: Jürgen Eschke, Peter Senger, Oxana Ivanova, Annette Zimbelius

EB managers

GA-members

SAC members

PO Pierre Quertenmont



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Thank you very much!



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