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DELIVERABLE 7.7

Annual Report on Community Outreach Activities

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| Abstract: Outreach activities are an essential tool to establish a strong user community around ELI ERIC which is a fundamental building block for the sustainable operation of the facility. The IMPULSE project aims to raise awareness and strengthen the brand image of ELI ERIC among the established user community as well as reach out to prospective user communities through an interactive dialogue with this target group. This document is a summary of all activities which have taken place in the second year of the project. | |



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LIST OF ABBREVIATIONS

| Abbreviation | Meaning |
|--------------|---|
| EC | European Commission |
| ELI | Extreme Light Infrastructure |
| ELI ALPS | ELI Attosecond Light Pulse Source Facility |
| ELI-NP | ELI Nuclear Physics Facility |
| ELI ERIC | ELI European Research Infrastructure Consortium |
| ERIC | European Research Infrastructure Consortium |
| ESFRI | European Strategy Forum on Research Infrastructures |
| H2020 | Horizon 2020 |
| KPI | Key Performance Indicators |
| PC | Project Coordinator |
| RIs | Research Infrastructures |
| TL | Task Leaders |
| WP | Work Packages |
| WPL | Work Packages Leaders |



1 Introduction

Outreach activities are an essential tool to establish a strong user community around ELI ERIC which is a fundamental building block for the sustainable operation of the facility. The IMPULSE project aims to raise awareness and strengthen the brand image of ELI ERIC among the established user community, as well as reach out to prospective user communities and general public audience. The ambition is to achieve this through an interactive dialogue with the target groups. This Deliverable will summarise the activities in which have been organised during the second year of the project as part of Task 7.4. The activities organised are in line with the Deliverable 7.4 Scientific Community Outreach Strategy.

1.1 Objectives

The IMPULSE outreach activities will support the development of the user base through outreach towards established and prospective user communities by raising awareness about ELI ERIC's scientific offer and user training measures. Effective outreach activities aim to strengthen the brand image of ELI ERIC among its user community and key target groups. It does that by enforcing and maintaining an interactive dialogue with them to understand their needs and expectations, and communicate the opportunities ELI ERIC has to offer.

1.2 Key Stakeholders

The Key Stakeholders for outreach activities include:

- Project partners
- Scientific and academic users (laser-based science)
- Potential existing and new user communities
- Industrial users
- Multipliers (ex. scientific associations, societies, networks)
- General Public

1.3 Activities Plan

In preparation for this Task, an Activities Plan has been developed which includes planned activities and events by ELI and IMPULSE partners, in addition to selected conferences, workshops and training events. The calendar serves as a planning as well as a reporting tool.

1.4 Covid-19 and Alternative Concepts

The planning and implementation of outreach activities have been significantly impacted by Covid-19 due to general travel and meeting restrictions. Special consideration has and will be given to the safe and effective implementation of all events and activities. With regards to this, alternative concepts for meetings and activities have been developed and a range of tools made available to make digital communication possible and more effective. These tools will continue to be employed for the duration of the project as hybrid models are efficient and expected from audiences. With the reduction of Covid-19 regulations it was possible to organise more events in person again.



2 Summary of Activities (Chronological)

Note: Some activities are featured in both Deliverable 7.6 and Deliverable 7.7 as they are considered both outreach activities while also engaging new partners and potential members.

2.1 Open for Science programme at ELI-NP (1 November 2021-April 30 2022)

ELI-NP opened up its gates in front of almost 200 high school and university students in the frame of the 'Open for Science' programme between November 2021 and April 2022. Researchers from ELI-NP guided the young visitors through their laboratories and explained about the experiments and research potentials provided by the facility.



2.2 ELI ALPS User Workshop (8-10 November)

The 8th [ELI ALPS User Workshop](#) was held on 8-10 November in Szeged, Hungary. Starting off with a plenary session featuring overview presentations about ELI ERIC and the status of its joint User Call, the programme went on with a detailed introduction of the laser systems, secondary sources and available applications which was followed by insightful reports from the users themselves about the experiments carried out at the ELI ALPS facility. The event was part of the user meeting series organised by the facilities of ELI ERIC.



2.3 TechConnect Europe (15-17 November 2021)

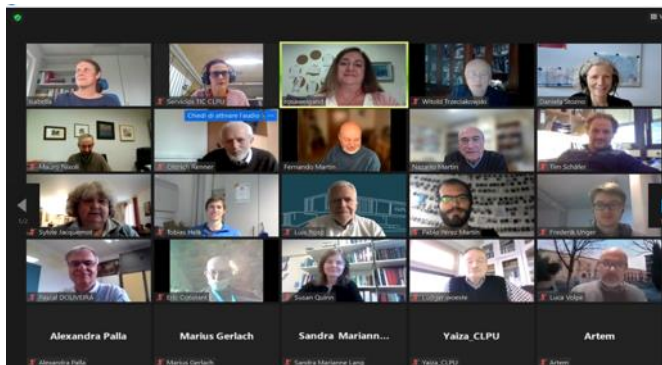
The [TechConnect Europe Innovation Conference & Expo](#) was designed to connect top applied research and early-stage technologies from universities, labs, and startups with industry, investment end-users and prospectors. ELI Beamlines scientists presented the innovation ecosystem and innovation cases, among others the, laser-



accelerated electrons for cancer treatment (QURE) in the programme while also networking at the ELI-IMPULSE booth.

2.4 Laserlab user meeting 2021 (22-23 November 2021)

This [virtual meeting](#) was organised by IMPULSE partner CLPU in cooperation with the Laserlab User Representatives. The user event focused on four topics: Material Sciences & related applications, Condensed Matter Physics & related applications, Energy, and Secondary Sources & related applications.



2.5 Laserlab NEILS (Network on Extreme Intensity Laser Systems) Workshop (24-25 November 2021)

The [event](#) provided an opportunity to share the experiences gathered at the different facilities involved in the network during the past almost two years, in which operation and scientific activities have been strongly affected by the pandemic. In addition to this, external partner institutions were invited to report on their recent progress in their newly established infrastructures. ELI ERIC and the IMPULSE project were introduced by Federico Canova, Manager for Scientific and Technical coordination.



2.6 The tall and the small...through the Universe (10 December 2021)

This is an education and science event and it takes place every year in Magurele, at the Faculty of Physics. It is dedicated to students interested in the field of physics and accompanying teachers. The ELI-NP project was represented by Daniel Ursescu, senior researcher. The participation had a hybrid approach, inviting students to be involved, curious and to discover unique elements about ELI-NP research.



2.7 Young Researcher&Young Engineer Days (10-12 January 2022)

Young Researcher&Young Engineer Days is a traditional event ELI-NP. The scientific presentations held proved that the project has a promising well-prepared young team, with a special vision and interest in the high power lasers area and related fields. Each one of the 44 speakers presented the results of their remarkable work, and, in the end, after tight jury deliberation, the winners were announced in three categories: PhD Students, Researchers and Engineers and MS and BS Students.



2.8 ERIC Forum Meeting (26-27 January 2022)

The annual [ERIC Forum Meeting](#) brings together the ERIC community and key stakeholders to discuss, among other topics, ERICs' sustainability and role in the European Research & Innovation panorama, key conclusions of the EGERIC report, and joint efforts to address key challenges in R&I. ELI ERIC participated and engaged in the discussion.

2.9 Day of Physics at the University of Szeged (29 January 2022)

The ELI ALPS facility connects to the University of Szeged through various activities and there is a strong line of cooperation in the field of outreach as well. The Day of Physics is an event held each January at the Faculty of Science and Informatics, Institute of Physics, featuring lectures, interactive experiments and presentations, and a capsule exhibition where – besides taking part in scientific talks in the programme – ELI ALPS appeared with a booth and connected with the general public, as well as young researchers from the University.

2.10 42nd Workshop on High-Energy-Density Physics (31 January-4 February 2022)

This [workshop](#) was structured to provide the international community, as well as students and young scientists an opportunity to learn about HED/ICF science and the research capacities provided by key international HED facilities, the process of international scientific peer review and collaboration, and scientific presentation skills. Colleagues from IMPULSE partner CLPU were also attending the event.

2.11 ELI Beamlines Science Challenge (18-19 February 2022)

ELI Beamlines and HiLASE Centre launched a competition for secondary school students to participate in the [Science Challenge](#). Teams made up of three students had the opportunity to gain deeper knowledge in the areas of programming, optics, physics, and most importantly teamwork. After submitting their projects, the top three teams were invited to compete in the final challenge at the ELI Beamlines laser research facilities in Dolní Břežany. The activity, supported by the IMPULSE project, demonstrated to younger audiences that laser science is interesting and fun, as well as an approachable career path for their future.



2.12 1st IMPULSE EMP and debris mitigation workshop (24-25 February 2022)

The [meeting](#) was organised online in the framework of the IMPULSE project, Task 4.2, aiming to bring together scientists from ELI facilities, their partners from major European laboratories, and users to debate critical issues on Electromagnetic Pulse (EMP) and debris encountered in high power laser experiments.

2.13 ESFRI Days (23-25 March 2022)

As part of the French Presidency of the Council of the European Union, the French Academy of Sciences hosted the [ESFRI 20th anniversary conference](#) titled European Research Infrastructures at the heart of scientific discoveries. The event, taking place in Paris on March 25, celebrated the achievements of the European Strategy Forum on Research Infrastructures (ESFRI), highlighting the role it plays in enhancing European excellence in research and innovation. Connected to this prestigious occasion, ELI received its ERIC plate from Jean-Eric Paquet, Director-General for Research & Innovation of the European Commission.



2.14 HILAS - High-Intensity Lasers and High-Field Phenomena (23-25 March 2022)

Participants of the [HILAS \(High-Intensity Lasers and High-Field Phenomena\) Conference](#) visited the ELI ALPS facility in Szeged on 26 March 2022, as part of the scientific programme. The aim of the event organised in the Hungarian capital Budapest was to assemble a multidisciplinary community to present and exchange novel ideas and breakthrough achievements relating to the physics and technology of high field sources, and high-intensity

laser-matter interaction. The program also included a presentation about the status of ELI ERIC.

2.15 Laser day for students at ELI Beamlines (8 April 2022)

As part of a well-planned line of outreach activities, the ELI Beamlines Laser Day is held each April targeting those who study technical or natural sciences at a university – lots of them are usually returning to ELI for summer internships gaining deeper knowledge in several exciting fields. This event is particularly important to be able to address and influence the future members of the relevant scientific communities. Amongst many other scientific topics, the status of ELI ERIC and IMPULSE project was addressed.

2.16 IMPULSE WP6 Partner Meeting (12 April 2022)



The IMPULSE Work Package 6 representatives met at ELI ALPS in Szeged to discuss the key innovation concepts for the Extreme Light Infrastructure, as capturing innovative ideas and working closely with industry is a key mission driver for the success of ELI.

2.17 IWA: International Women's Association of Bucharest (13 April 2022)

The International Women's Association of Bucharest is an independent, voluntary, charitable, non-profit and apolitical organisation with the purpose to promote partnerships amongst women of all nationalities living in Romania, and to introduce its foreign members to the life, science and culture of our host country. The delegation of approx. 30 participants reunited more than 10 nationalities in one group focused to find out more about the ELI-NP project and to promote it around the world.



2.18 I.Fast Workshop – Laser Drivers for Plasma Accelerators (20-23 April 2022)

The workshop followed technical meetings of the Laser drivers for Plasma Acceleration (LASPLA) task of the iFAST project and provided a unique platform for discussion in this rapidly evolving area of research and development. ELI ERIC and the IMPULSE project was presented by Federico Canova, Manager for Scientific and Technical coordination (see photo).



2.19 Laser World of Photonics Munich (26-29 April 2022)

[Laser World of Photonics](#) is the world's leading platform for the laser and photonics industry. This year, representatives of ELI participated in the exhibition section of LWOP to network with the industry about the newest research, innovative technology, and industrial application of photonics in the frame of IMPULSE Work Package 6.



2.20 17th Direct Drive and Fast Ignition Workshop (3-5 May 2022)

The [DDFIW Workshop](#) continued a series of meetings dedicated to inertial confinement research in Europe. The yearly DDFIW provides a unique opportunity for European and overseas scientists working in theory, simulations, and experiments to present and discuss their latest results and future plans in an informal atmosphere. Daniel Ursescu and Michael Ehret from IMPULSE project partners ELI NP and CLPU both presented during the programme.

2.21 International Day of Light events at ELI ALPS and ELI Beamlines (13 and 14 May 2022)

In the middle of May, both ELI Facilities opened their doors to the general public on the occasion of the Day of Light to improve the public understanding of how light and light-based technologies touch the daily lives of everybody and are central to the future development of the global society, as well as to emphasise the importance of basic research in the fundamental science of light. ELI Beamlines organised outdoor activities, including interactive scientific experiments, a Petawatt pulses simulator, and sports programmes such as the Laser Run 2021 competition. The main attraction was a laser beam projection in the city centre of Prague, lighting up the building of the Czech Academy of Sciences.





IDoL 2022 programmes organised by ELI Beamlines

2.22 767. WE-Heraeus-Seminar: Science and applications of plasma based accelerators (15-18 May 2022)

A goal of the workshop is to, on the one hand, review and discuss the applications for which the different plasma-based acceleration schemes can contribute, and, on the other hand, to review the main technological challenges that require solutions for these schemes to become practical. More than 90 international participants discussed the future of plasma-based electron and ion accelerator technology and novel approaches to solve the outstanding challenges for widespread use in nine sessions with overview lectures by world-leading scientists in the field.

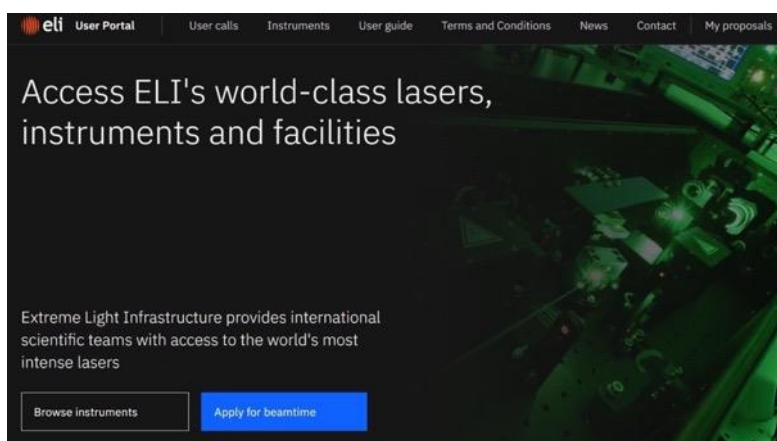
Following this, the large number of students and young scientists presented their current research projects in flash talks and on 58 posters with excellent contributions. CLPU and IMPULSE representatives from CLPU participated.

2.23 Siemens Innovation Tour 2022, ELI ALPS, Hungary, 19 May 2022

Siemens consulted opportunities in the field of electrical engineering in the innovative design and operation of ELI's equipment.

2.24 Joint ELI Call for Users (6 June 2022)

The Extreme Light Infrastructure announced the first ELI Call for Users this June to invite proposals from the scientists in the European Research Area and from around the world. This call includes all three of the ELI Facilities, thanks to a close collaboration between ELI ERIC and the “Horia Hulubei” National Institute of Physics



The new ELI User Portal



and Nuclear Engineering (IFIN-HH), and the support of the Horizon 2020 Project IMPULSE. Potential users will be granted the opportunity to conduct some of the first state-of-the-art experiments at ELI ALPS, ELI Beamlines and ELI NP. A new User Portal was also launched connected to the announcement.

Raising awareness about the Call for Users and disseminating information was performed on various levels including a dedicated website post across the IMPULSE and all ELI websites, direct mailing to approx 3000 contacts, social media posts (Twitter, Facebook, LinkedIn) along with a Webinar held on 18 July in coordination with all 3 ELI Facilities (see below in chapter 2.30).

2.25 International Conference on Lasers, Plasma, and Radiation – Science and Technology (7-10 June 2022)

[ICLPR-ST](#) aimed to bring together researchers from the field of lasers, plasma, and radiation from Romania and abroad providing a unique environment for sharing and promoting the latest scientific and technological developments. The IMPULSE project was represented by Daniel Ursescu from the ELI Nuclear Physics facility.

2.26 XXIII International Symposium on High-Power Laser Systems and Applications (HPLS&A), Prague (CZ), 12-16 June, 2022

WP4 contributed with an oral contribution to [HPLS&A 2022](#) the : “PRAGUE (Proton Range Measure Using Silicon Carbide): a detector to measure online the proton beam range of laser-driven beams”.



2.27 4th European User Office Meeting (13-14 June 2022)

ELI ERIC hosted the [4th European User Office Meeting \(EUOM\)](#) with the support of ERF, the Association of European-Level Research Infrastructures Facilities, on the 13-14 June 2022. The workshop took place at ELI Beamlines in Dolní Břežany in the Czech Republic. The event continued a series of successful meetings dedicated to the User Office Community and provides unique opportunity for the European User Office representatives for exchanging information and experiences on present and upcoming common challenges relevant to user operation at the RI facilities. A total of 61 persons were registered for the event both on- and offline.



A satellite workshop was organised for participants of WP5.1 Coordination meeting was held due to the fact that many involved were participating in person.

2.28 Science of the future educational and science fair (8-10 June 2022)

The event with approx. 5000 participants, organised by the Ministry of Education and Ministry of Research and Innovation was held in the courtyard of one of the most important museums in Bucharest and it was focused on the "sixth wave of innovation", so that young high school students who wanted to pursue a university career in the technical field were able to admire the exhibits and experiments prepared by IFIN-HH and ELI NP team.



2.29 Student Summer Camp at ELI ALPS (20-24 June 2022)

ELI ALPS organised its first ever summer camp event this year for Hungarian high school students. The week was filled with educational lectures, interesting activities and experiments, and visit to several parts of the facility.



2.30 ELI Industry Day, ELI Beamlines, 21 Jun 2022

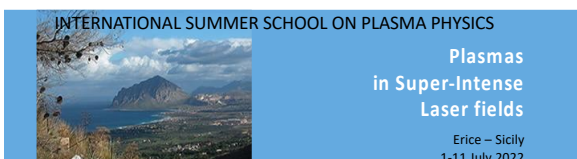
An event organised for SMEs in optics, lasers, machinery, and telecommunication to establish collaboration in development of laser-relevant instrumentation for ELI facilities.

2.31 Škoda Car company presentation at ELI Beamlines, Czech Republic, 27 Jun 2022

ELI offered its instrumentation capacities for support in specific technologies of interferometry (testing of optics) and analysis of ultrafast effects in the battery systems in electromobility.

2.32 ERICE Summer School in Sicily (1-11 July 2022)

This [course](#), organised between 1 and 11 July in Erice, Sicily, covered areas of interest to the scientific community working on laser-produced plasmas, laser-driven sources of particles and radiation physics of inertial confinement fusion. Colleagues from both ELI Beamlines and ELI NP participated in the event. The event organisation and materials were financially supported by the IMPULSE project. A total of 76 participants from 26 international institutions participated. (Programme is in the agenda



The 9th Course "Plasmas in Super-Intense Laser fields" will be held in Erice, Sicily, Italy, July 1-11 2022.

PROVISIONAL PROGRAM & SPEAKERS

- Stefano ATZENI, Univ. Rome, Italy
- Dimitri BATANI, Univ. Bordeaux, France
- Riccardo BETTI, Univ. Rochester, USA
- Vladimir TIKHONCHUK, Univ. Bordeaux
- Eric CORMIER, Univ. Bordeaux, France
- Victor MALKA, Weizmann Inst., Israel
- Matteo PASSONI, Politecnico Milan, Italy
- Manuel PERLADO, UPM Madrid, Spain
- Tony DONNE, EUROfusion
- Anabella ARAUDO, ELI-Beamlines, Prague
- Olga ROSMEJ, GSI, Darmstadt, Germany
- Arianna FORMENTI, Politecnico Milan, Italy
- Daniele MARGARONE, Queen's Belfast, UK

Basics of laser-plasma physics
 Matter in extreme conditions
 Inertial Confinement Fusion
 Laser plasma interaction
 Introduction to intense laser technology
 Laser-driven electron acceleration
 Laser-driven ion acceleration
 Materials for Fusion
 Advancements in Magnetic Fusion
 Laboratory Astrophysics
 X-rays for diagnostic of laser-matter interaction
 Numerical Simulations for Plasmas
 Laser-driven nuclear physics

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 Scholarships for reimbursement of half fee available after selection.
 Deadlines: May 10th to request scholarship; June 10th for application to the School.
 For information write to supererice2022@gmail.com and look at the web site www.supererice.polimi.it



2.33 ELI ERIC inauguration event (7 July 2022)

The European Commissioner for Innovation, Research, Culture, Education and Youth Mariya Gabriel visited the Extreme Light Infrastructure (ELI) in Dolní Břežany in the beginning of July, and was greeted by the Czech Minister of Education, Youth and Sports, Vladimír Balaš, along with Hungarian State Secretary of the Ministry of Culture and Innovation, László György, while the ELI organisation was represented by ELI ERIC General Assembly Chair Caterina Petrillo and ELI ERIC Director General Allen Weeks. During the event the ERIC plate was handed over as symbolic gesture to mark a new milestone for ELI.



ELI ERIC inauguration event and visit of EU Commissioner Mariya Gabriel



The programme featured addresses by the Commissioner, the Czech Minister and Hungarian State Secretary along with an introduction by the ELI ERIC Director General. By special request from the Commissioner a meeting with young researchers was also organised with a discussion about their interests and challenges.

2.34 Conference on Synergies in the Research and Innovation Funding in Europe (7-8 July 2022)

This [conference](#) was organised by the Czech Presidency of the Council of the EU, and took place from Thursday, 7th July to Friday, 8th July 2022 in Prague, Czech Republic. The programme addressed the topic of synergies in the research and innovation funding in its broad perspective. A lot of efforts have been already made by both Member States and the European Commission to exploit the full potential of synergies to increase the research and innovation funding intensity in the EU. ELI ERIC Director General Allen Weeks was also featured in the programme with a key note talk titled 'Synergies as a top horizontal priority of the European research and innovation policy-making approaches'.



The Synergies conference programme is available [here](#) and also included parallel sessions with one dedicated to Research Infrastructures, chaired by Lukáš Levák, *Director of Department for Research and Development, Ministry of Education, Youth and Sports, Czechia*. The [recording of the session](#) is also available.

2.35 4th European Conference on Accelerators in Applied Research and Technology (17-23 July 2022)

[ECAART14](#) held between 17th and 23rd of July, 2022 in Sibiu, Romania. The event is one of the most relevant scientific meetings for professionals working in the field of accelerator based research. While IMPULSE project partner ELI NP was involved in the organisation of the event, CLPU was also represented by a poster from Michael Ehret about the investigation of the use of tape targets, using as source the VEGA 3 system laser.

2.36 Joint Call for Users Webinar (18 July 2022)

Following the announcement of the first ELI Call for Users, a dedicated [webinar](#) was organised for more detailed information about the available equipment offered and the proposal submission process. The programme featured general information about the Call, presentations by each facility, introduce the User Office staff and include time for questions and discussions. There were a total of 71 persons registered for the event and significant

interest in the newly launched User Portal and first joint Call. The slides are available on the event page and the [video recording on the YouTube channel](#).

The First Joint User Call is a major milestone for ELI, not just as an ERIC but also for connecting all 3 ELI facilities. It should be acknowledged that IMPULSE is a critical driver which is making this possible, not just in terms of the ELI ERIC facilities for which IMPULSE is providing the necessary support for close collaboration and integrating systems and management but also in particular with regards to the inclusion of ELI NP.

In the time of the First User Call, the User Portal had a total of 938 new Users from 44 different countries, with the top 5 countries being Czechia, Romania, United States, Hungary and Germany.

2.37 LaserNetUS Users' Meeting (16-18 August 2022)

The [meeting](#) aimed to bring together the LaserNetUS user community and facility scientists to discuss a wide-range of experiments, simulations, and diagnostic and measurement techniques related to the fields of high-energy-density and high-intensity laser science. ELI ERIC Director General Allen Weeks gave an invited talk introducing the 5 PW+ lasers and a diverse set of leading attosecond high-repetition systems available at the ELI facilities. This is both a community outreach event and an event engaging with new potential strategic partners mentioned in Deliverable 7.6.

2.38 ELI ALPS Teachers' Course (29 August 2022)

ELI ALPS hosts a Teachers' Course each year before the start of the school year. In 2022, more than 20 teachers were introduced to ELI ALPS's research activities. The teachers were informed more about the specific knowledge and methods that could be incorporated into their school work. This event series is an effective tool for multiplying ELI's impact on the local curriculum in the field of physics, the 20 teachers in total have a reach of multiple hundred students.



2.39 ELI Summer School 2022 (30 August-2 September 2022)

This year's ELI Summer School, the seventh edition, was hosted at ELI ALPS Research Institute from 30 August to 2 September 2022, jointly organised by ELI Beamlines and ELI ERIC as a hybrid event. The school attracted young scientists interested in the physics of laser and ultra-



fast dynamics. A hybrid event with 183 participants from 28 countries (51 in person, 132 online)

The programme encompassed 15 speakers covering lectures, overview presentations of the facilities and insights from user experiments. The programme was complimented by social events such as a tour of Szeged and Conference Dinner.

ELISS is a core outreach activity to raise awareness about ELI from Bachelor, Master to PhD and Post Doc level and offers an opportunity for students to interact directly with speakers and lectures, as well as ELI scientists and staff.



2.40 International Workshop on Proton-Boron Fusion (5-8 September 2022)

The second edition of the International [Workshop on Proton-Boron Fusion](#) was held in Catania and was organised by the INFN (Italian Institute for Nuclear Physics) and ELI-Beamlines. The Workshop main topics were related to the study of the proton-11B fusion reaction and its implications for energy production and medical applications. 71 researchers participated in the workshop, coming from 30 different countries. The event was organised with the support of the IMPULSE project.



2.41 First In-person Meeting of the IMPULSE Steering Board (StB), Work Package Leaders (WPLs), Task Leaders (TLs) and Project Management Team (PMT) (8 September 2022)

The [meeting](#) organised for the IMPULSE StB, WPLs, TLs and PMT at the ELI Beamlines facility was designed to allow discussions on the status, challenges and impacts of IMPULSE halfway through the implementation of the project with active participation from all key players responsible for IMPULSE's success. This was a first in-person meeting for some of the contributors in IMPULSE and it was clear to see that in-person contact is absolutely essential for exchange and discussion.



2.42 IBIC22 International Beam Instrumentation Conference, Krakow (Poland) 11-15 September 2022



The 11th International Beam Instrumentation Conference 2022, IBIC 2022, was held in Kraków, Poland between September 11th and 15th 2022. It was hosted by the SOLARIS National Synchrotron Radiation Centre, Jagiellonian University in Krakow, Poland, in collaboration with the GSI Helmholtzzentrum für Schwerionenforschung, Darmstadt, Germany. IBIC is a

fruitful and successful gathering of the world's beam instrumentation community and it is dedicated to exploring the physics and engineering challenges of beam diagnostic and measurement techniques for particle accelerators.

The IBIC 2022 conference included overall 38 invited and contributed talks, 2 tutorials, 118 posters, and a 3 day long vendor exhibition with 21 exhibitors that could be visited during the conference. In total, 243 participants coming from 19 countries got together during the conference. WP4 participated in [IBIC2022](#) with an invited talk by Giada Petringa (INFN/LNS): "Acceleration, Transport and Diagnostic of Protons from Laser-Matter Interaction".

2.43 SPIE Laser Damage (18-21 September 2022)

[SPIE Laser Damage](#) is the specialised meeting for laser damage materials and thin films used with high-power, high-energy lasers. Participants can join the community to hear the latest advances in durability, properties modeling, testing, and component fabrication. Daniel Kramer from IMPULSE WP4 presented during the programme, while Gabriel Bleotu from ELI Beamlines contributed to the event with a scientific poster.



Daniel Kramer's opening slide from the conference

2.44 ICUIL 2022 - 9th Conference of The International Committee on Ultrahigh Intensity Lasers (19-23 September 2022)

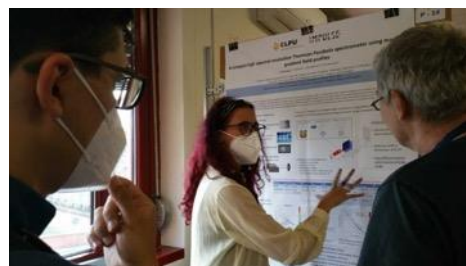
The 9th [International Conference on Ultrahigh Intensity Lasers](#) (ICUIL 2022) was held in the Jeju island, Korea from Sep. 18th to 23rd in 2022. ICUIL is an important community event and critical outreach activity for ELI. Find a detailed description in Deliverable 7.6.

2.45 New Vistas in Photon Physics in Heavy-Ion Collisions (19-22 September 2022)

The workshop [New Vistas in Photon Physics in Heavy-Ion Collisions](#) was hosted by the Institute of Nuclear Physics Polish Academy of Sciences and AGH University of Science and Technology, Krakow, Poland. This event focused on aspects of photo-induced processes, as well as on real and virtual photo-emission in heavy-ion collisions at the energies of RHIC and the LHC. Gabriele Grittani from ELI Beamlines gave a talk titled "Photon physics at ELI-Beamlines user facility".

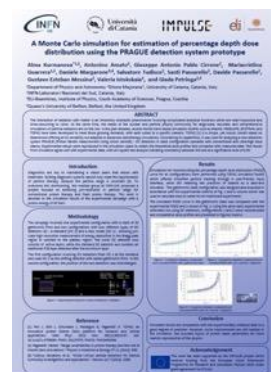
2.46 36th European Conference on Laser Interaction with Matter (19-23 September 2022)

ECLIM is the most important European congress on laser-matter interaction and laser-driven inertial confinement nuclear fusion. The event provided an excellent meeting opportunity for the scientific community of inertial confinement fusion. Subhendu Kahaly from ELI ALPS, Daniel Ursescu from ELI-NP, and Antonia Morabito and Michael Ehret from CLPU were present representing ELI and the IMPULSE project.



2.47 47th Annual Meeting of the European Radiation Research Society (21-24 September 2022)

ERRS is a conference focused on biological damage, simulations and devices used in clinical practice. This year's event was held at the of September in Catania, Italy. IMPULSE project partner INFN was participating in the programme with a talk from Maria Cristina Guarrera, while a poster titled 'A Monte Carlo simulation for estimation of percentage depth dose distribution using the PRAGUE detection system prototype' was also presented by Alma Kurmanova.



Poster presented at the annual ERRS meeting by INFN

2.48 Extreme light brunch, ELI Beamlines, 22 Sep 2022

Informal meeting arranged to bring together commerce executives, representatives of embassies and commercial chambers, and SMEs as the highly important target group for ELI activities.

2.49 Interdisciplinary Initiative for Pencil and Micro X-ray Beam Applications Workshop (22-23 September 2022)

The **workshop** aims to gather interested researchers from both science and industry to define possible applications for pencil and micro beams and their required beam parameters, and also to gain an overview of ongoing or planned research projects towards sources that could deliver such pencil beams with high efficiency. The “kHz laser-driven X-ray source at ELI-Beamlines” was presented by Gabriele Grittani.

2.50 Science and Technical caravan (24-25 September 2022)



The caravan's team made this year the biggest event dedicated to science with approx. 15000 participants. Among the more than 100 exhibitors present at the National Library of Romania, the ELI-NP team was also counted. Hundreds of young people, eager to learn as much as possible about the institute's field of activity, had the opportunity to enter the experimental rooms of ELI NP and observe the path of a high-power beam, through virtual reality tools.

2.51 ElectroMagnetic Pulses (EMPs) generated by laser-matter interaction meeting (26 September 2022)

The EMPs event was held as a satellite meeting of ECLIM2022 Conference in Frascati, Italy on 26 September 2022. Michael Ehret from IMPULSE project partner CLPU contributed with an



invited talk to the programme about the electromagnetic pollution measurements, using different types of targets in laser-plasma interactions.

2.52 66th General Conference of IAEA (26-30 September)

The [General Conference](#) consists of representatives from the International Atomic Energy Agency Member States. Their annual meeting is held in each September with the aim to consider and approve the IAEA's budget and to decide on other issues raised by the Board of Governors, the Director General and Member States. At this year's meeting, Giada Petringa and Pablo Cirrone were participating as delegates from IMPULSE project partner INFN, and presented a poster reporting on the activity of tasks within the project, as well as some experimental results obtained with their detector prototype.

2.53 European Researchers' Night (30 September 2022)

All three ELI facilities joined the event series of this year's Researchers' Night. This initiative is a Europe-wide public event, which displays the diversity of science and its impact on citizens' daily lives in fun and inspiring ways. Attracting more than 1500 visitors altogether with on-the-spot experiments, insightful lectures, games, VR experiences, and lab visits. The activities were supported by the IMPULSE project.



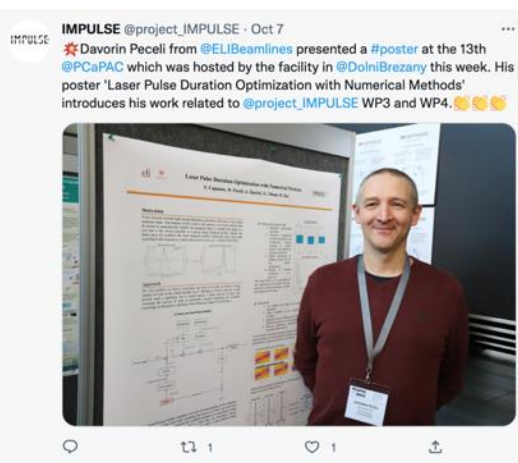
Researchers' Night events at ELI ALPS and ELI Beamlines

2.54 PCaPAC 2022 (4-7 October 2022)

The 13th International Workshop on Emerging Technologies and Scientific Facilities Controls (formerly *Personal Computers and Particle Accelerator Controls*) continued a series of workshops with a focus on low-cost control systems using PC technology for control & data acquisition systems and emerging technologies with an event hosted by ELI Beamlines. The topics discussed included Control Systems, User Interfaces and Tools, Hardware Technologies and Component Integration, and Data Acquisition and Data Storage amongst many others.



Group photo from the PCaPAC event



Davorin Peceli presenting his poster

2.55 Big Science Business Forum (4-7 October 2022)

[BSBF 2022](#) is a business oriented congress which congregates the main European Research Infrastructures, focused on technology and with the aim to be the main meeting point between Research Infrastructures and industry. ELI ERIC and the ELI facilities were representing the infrastructure with an IMPULSE booth.



The IMPULSE booth at BSBF 2022

2.56 iSAP Hamamatsu (11 -13 October)

ELI ALPS Scientific Advisor, Dimitris Charalambidis was an invited speaker to the iSAP Hamamatsu conference in Hamamatsu City, Japan. The conference theme was on “Next frontiers to be explored by advanced light source facilities” and Charalambidis talk was titled “S&T frontiers at ELI-ALPS and partner laboratories”. The report and presentation are available on the [symposium website](#).



This symposium included an introductory talk, five invited lectures, and nine poster presentations. Around forty researchers gathered in person at the symposium after 2-year postponement due to COVID-19. Rich and dynamic discussions were exchanged among the attendees during the symposium, which made the symposium productive and fruitful for the development of advanced light source facilities which explores the next frontiers in science and technology.

2.57 ICRI 2022 (19- 21 October 2022)

The International Conference for Research Infrastructure, ICRI 2022, took place in Brno (Czech Republic) on 19 – 21 October 2022. Several side and satellite activities were organised in relation to the main conference because the conference gathered key stakeholders from Europe and worldwide and is an important event to raise awareness about ELI ERIC and update the stakeholder community about recent progress and news. This activity is also described in detail in Deliverable 7.6 but many of the activities should be considered as outreach to users, stakeholders and general public.



2.57.1 Vida After Dark event (18 October 2022)

The VIDA Science Centre hosted a VIDA! After Dark featuring a talk on Big Lasers. Big Science by Allen Weeks, Director General of the Extreme Light Infrastructure (ELI ERIC) and Andrew Harrison, incoming Director of Science at ELI ERIC. The talk featured an introduction to how lasers work and how they are applied in big science research facilities like ELI.

The VIDA Science Centre offers hands on activities related to science which explain how the world around us works. Special exhibits were tailored to feature lasers, including a laser maze and laser themed activities. ELI ERIC also exhibited a model of the one of the laser system, a laser piano, as well as a virtual reality experience. More than 450 persons participated in the evening programme.



ELI's presentation at the Vida After Dark event



2.57.2 ELI ERIC / Landscape Dinner – 19 October 2022

ELI ERIC and Laserlab-Europe co-hosted an event in celebration of European Laser Science and Technology at the Brno Observatory. Stakeholders from the scientific community and policy-makers gathered for an overview of the European laser science landscape. The evening was organised as a side event to the International Conference for Research Infrastructures (ICRI 2022) on 19 October 2022 from 19:00-23:00.



ELI ERIC and Laserlab-Europe are cooperating on the development of a joint report on the European Laser Science and Technology which is being developed within Task 7.5. The aim of the report is to quantify and qualify the European laser community broadly for a better understanding of the user needs and requirements while also analysing the current offer of laser research facilities in Europe. The ambition is to develop an approach for future alignment, complementarity of the community and effective use of European laser facilities.



The evening at the Observatory featured a preview of the first results from the a recent survey of users and facilities with a joint presentation by Sylvie Jacquemot, Coordinator of the Laserlab-Europe project and Allen Weeks, ELI ERIC Director General and IMPULSE Project Coordinator. The survey and forthcoming report is funded and developed within the framework of the Horizon 2020 projects IMPULSE and Laserlab-Europe. The forthcoming joint report is in development and expected to be published in Spring 2023. With a better understanding of the user needs and requirements and an overview of the current offer of the operational facilities it will be possible to identify main challenges for the community and define high-level objectives to achieve sustainability for the future of the European laser community.



2.57.3 ENRIITC & CzechInvest: Infrastructures and industry engagement – enabling European innovation

Improving RI-industry cooperation is key to boosting the global innovation ecosystem, creating jobs and addressing societal challenges while getting a better return on investment on the high cost/high risk of R&D in fundamental sciences. To celebrate the Czech Presidency of the EU Council, the ENRIITC EU-project together with CzechInvest are organising a joint afterwork to discuss infrastructures and industry engagement as a leverage for European innovation.



Ales Hala, IMPULSE WP6 Leader presented on how ELI engages with industry.

2.57.4 ELI Beamlines Visit (17/21 October)

As a satellite event ELI ERIC offered a visit to ELI Beamlines and to the HiLASE Centre facilities located in Dolní Břežany near Prague for all in-person participants of ICRI 2022. The offer of the visit will include a bus transfer from Prague Airport or Prague Central Station to ELI Beamlines followed by a bus transfer to Brno. The visit programme will include an introductory presentation of ELI ERIC followed by a guided tour of the facility and hands on activities to explore the world of laser science.



2.57.5 Interview with Euractiv

During the ICRI conference, Allen Weeks, ELI ERIC Director General, was interviewed by a journalist from Eurative.Cz which resulted in a published news article.

(<https://euractiv.cz/section/prumysl-a-technologie/interview/nejsilnejsi-lasery-na-svete-se-nachazeji-v-cr-evropa-je-diky-nim-svetovou-spickou-rika-reditel-laseroveho-konsorcia/>)



3 Publications

Scientific publications is another key activity to disseminate scientific progress. As work progresses in the technical WPs of IMPULSE (WP3, 4 and 5) more publications are being published as a result. These publications acknowledge IMPULSE funding and are listed in the Communications and Dissemination overview for the project.

4 Tracking and Evaluation

To ensure effective implementation of the defined objectives, all activities will be tracked and evaluated in order to measure the impact of the activity and to ensure the effectiveness of the activity. This will be achieved through the collection of both qualitative and quantitative information about the specific activities such as, for example, by way of feedback and evaluation forms shared with participants of events, tracking of statistics of the activity (ex. number of participants, reach of measure, etc.). This information helps inform summary reports.

5 Annex

Annex 1: Deliverable 7.2 Project – Communications and Dissemination Strategy

Annex 2: Milestone 70 – IMPULSE Communications Plan

Annex 3: Deliverable 7.6 – Annual Report on activities to engage new members and strategic

Annex 4: Communications and Dissemination Overview REPA 4