

IOD – INDUSTRIAL OPPORTUNITY DAYS

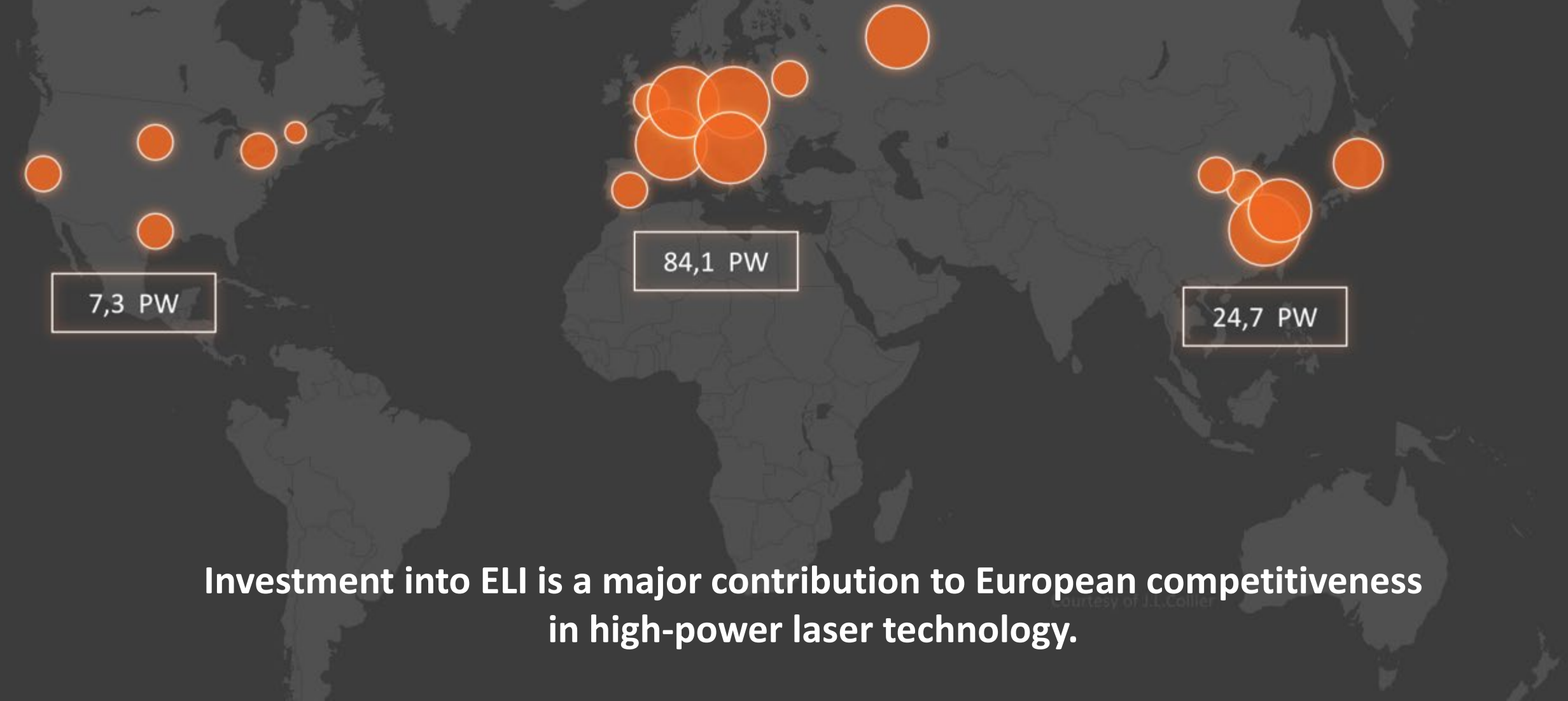
Torino, 12 – 13 giugno 2025

ELI ERIC: opportunities for Italian industry

Aleš Hála
Innovation Office, ELI ERIC

World laser capacities

Europe leads the world in laser production and installation, especially state-of-the-art systems.



Investment into ELI is a major contribution to European competitiveness in high-power laser technology.

ELI ERIC

Distributed research infrastructure using high power diode pumped lasers with ultrashort (fs) pulses duration

- Facilities: **Czech Rep. & Hungary**
- Total investment: **1 billion EUR**
- In operation: **2019**
- Legal form: **ERIC**
- Budget: **77 mil. EUR**
- Employees: **650+**
- ILO network: **Paolo Acunzo (Italy)**





ELI Attosecond Laser Pulse Sources

Szeged, Hungary

ELI ALPS is a world-class centre for :

- Ultrafast physical dynamics
- Chemical, medical and materials science analysis
- Biological imaging technologies, Artificial photosynthesis, Nanoscience
- 270 international staff
- Area 30,000 m²



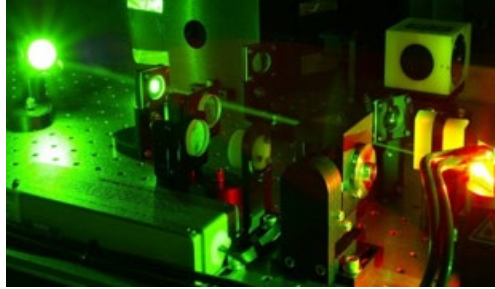
ELI Beamlines

Dolní Břežany, Czech Republic

ELI Beamlines is the world's most versatile laser facility, covering the broadest range of energy and frequency under one roof. We explore light-matter interactions at intensities 10 times higher than previously achievable.

- Cancer treatment with laser-driven particles, Imaging for medicine and materials research
- Extreme physics experiments, Fusion energy research for clean energy solutions
- 300+ international staff
- Area 31 000m²

Science at the ELI facilities



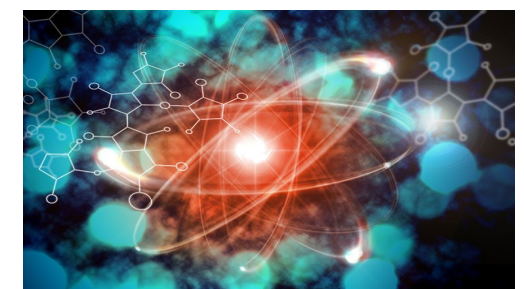
Laser research



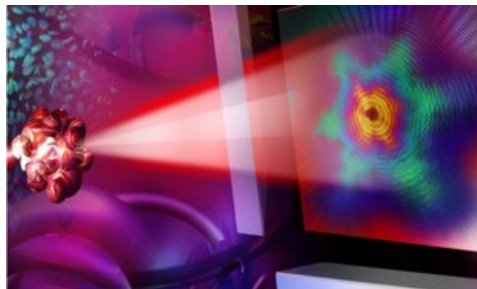
**Radiation Physics and
Acceleration**
Soft to hard x-rays,
GeV electrons



Particle Acceleration
250 MeV Ions
Acceleration by lasers



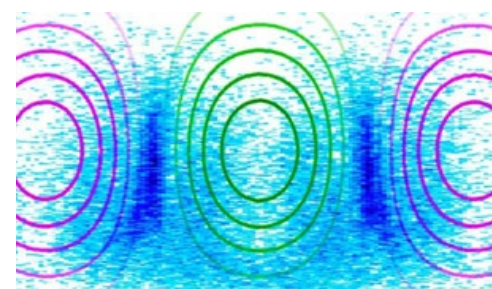
**Nuclear Physics and
Photonics**



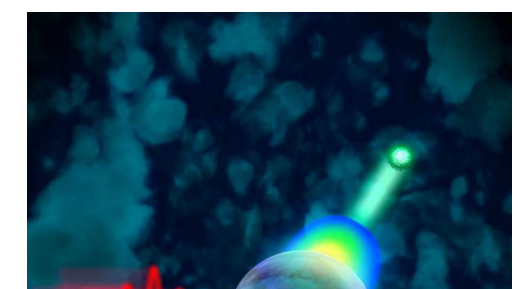
**Material Science and
Biology**



**Plasma Physics and
High Energy Density,
Astrophysics**

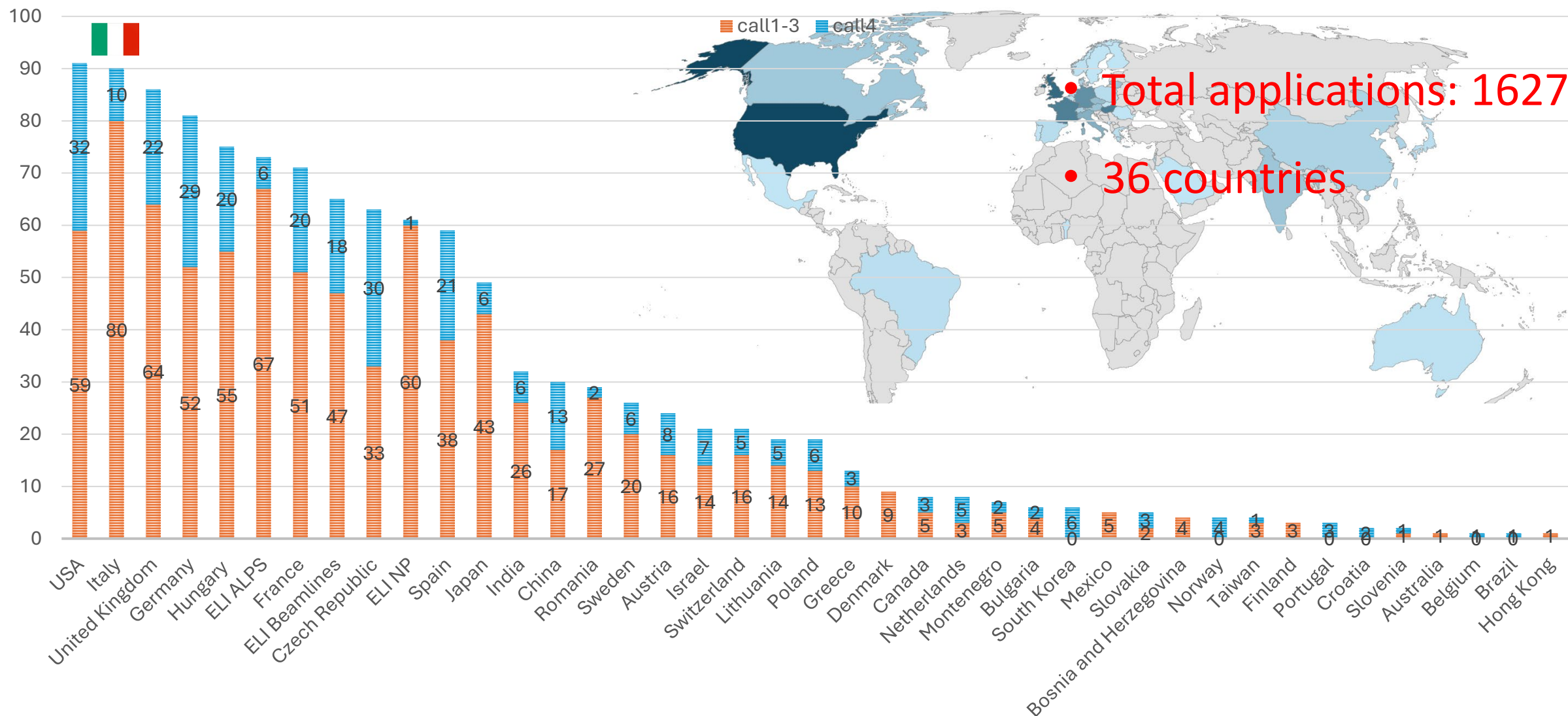


**Ultra High Intensity
Interactions**
High-field physics and
theory



**Ultrafast,
attosecond
dynamics**

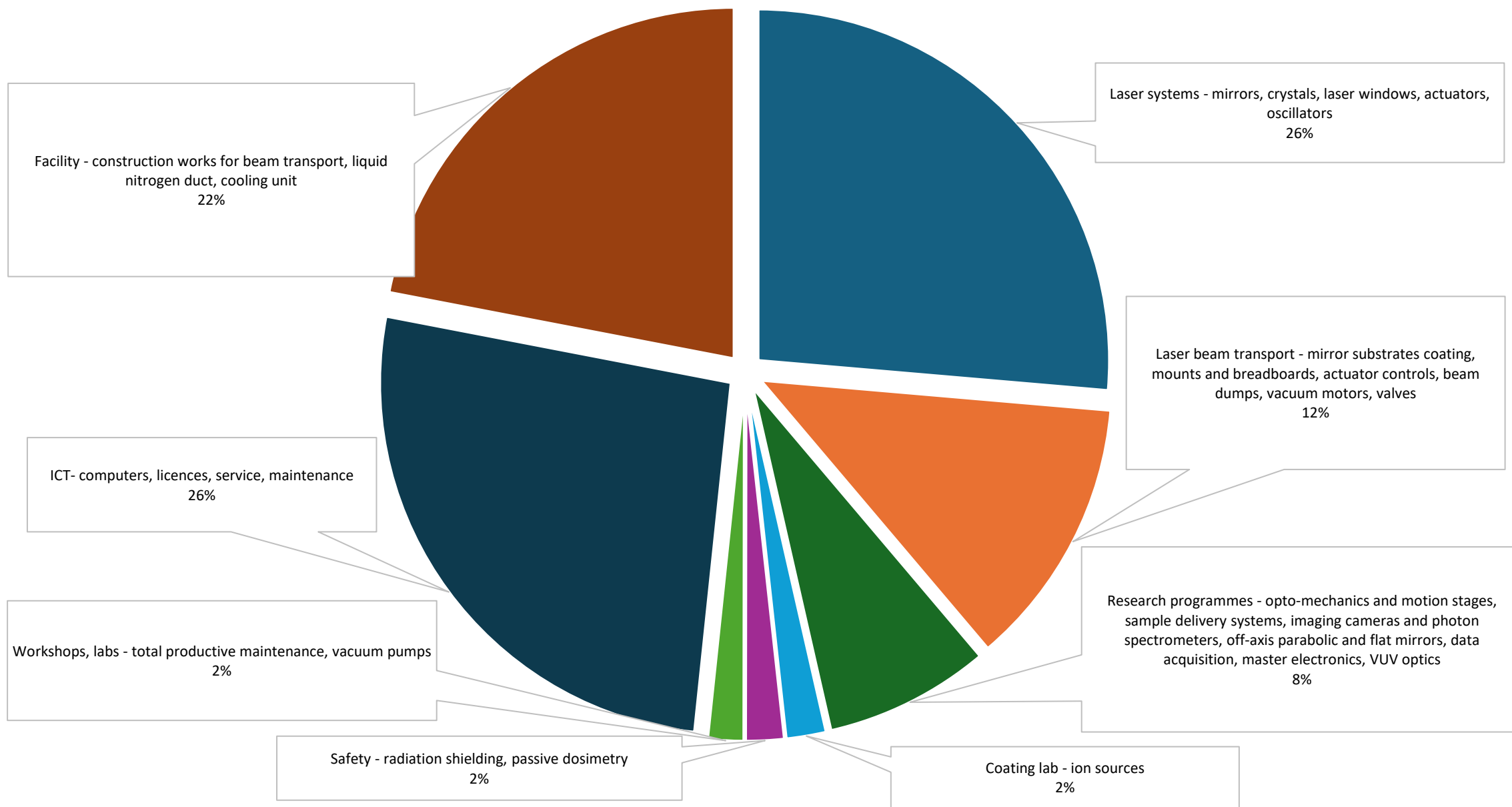
User calls: applicants by country





Strategic procurement areas

2012 – 2025



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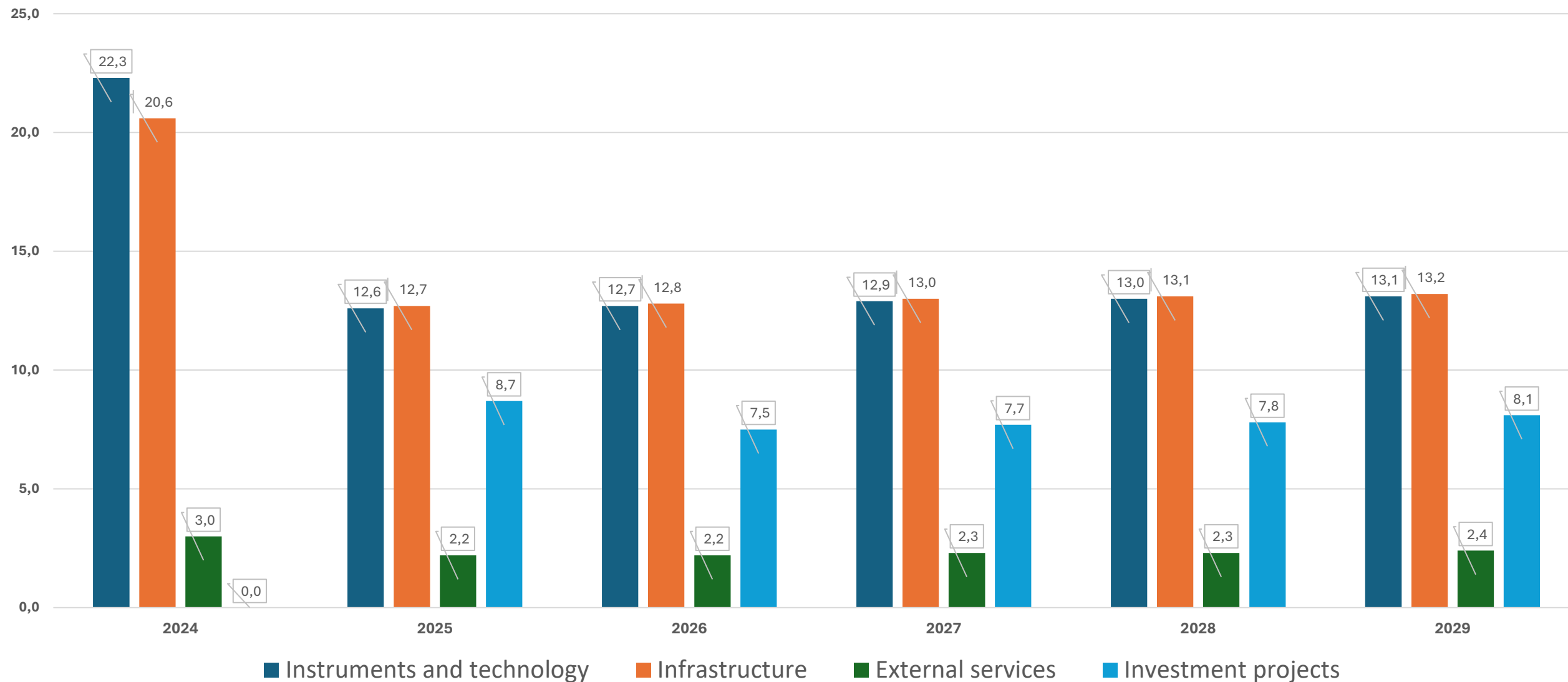
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Planned investments

2024 – 2029

Million EUR



Strategic procurement areas

- Optical and opto-mechanical components
- Optics coating
- Detectors
- Electronics
- Data infrastructure
- Cyber security infrastructure
- Vacuum infrastructure
 - Vessels, valves, bellows



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www.eli-laser.eu/procurement

www.eli-laser.eu/procurement/ongoing-and-finished-procurements/

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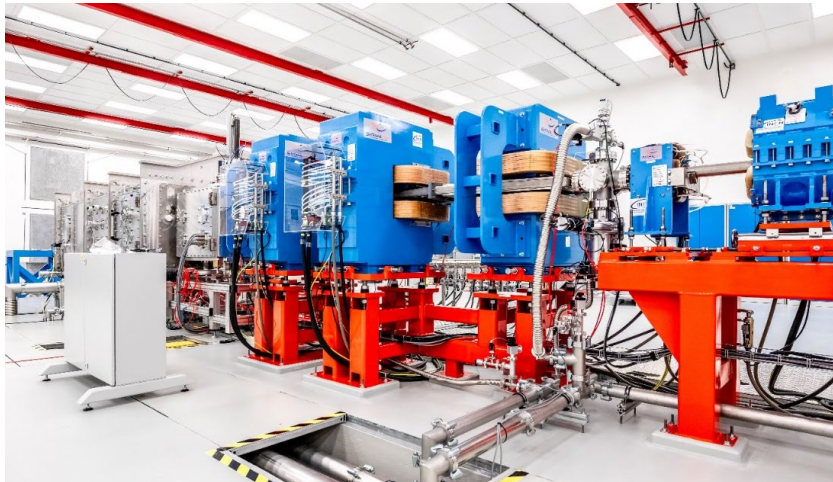


REGIONE
PIEMONTE



Contracted total value: 3 800 000 EUR

Photonics & Experimental stations



Vacuum systems & Components



Non Evaporable Getter pumps

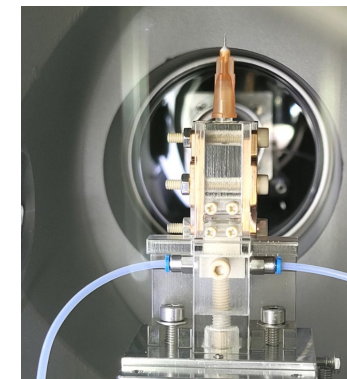
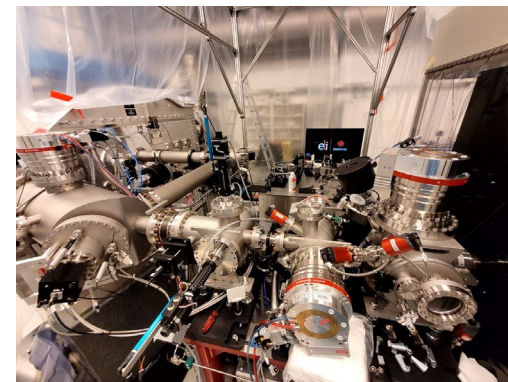


EuPRAXIA 2nd site selection – LUIS beamline at ELI Beamlines facility (CZ)

high quality LWFA electron beams for FEL

LUIS undulator-based (LWFA) beamline

- R&D platform for high-quality LWFA acceleration and undulator radiation
- Biomolecular imaging with fs, EUV-FEL ultrashort pulses
- Imaging with “water window” FEL

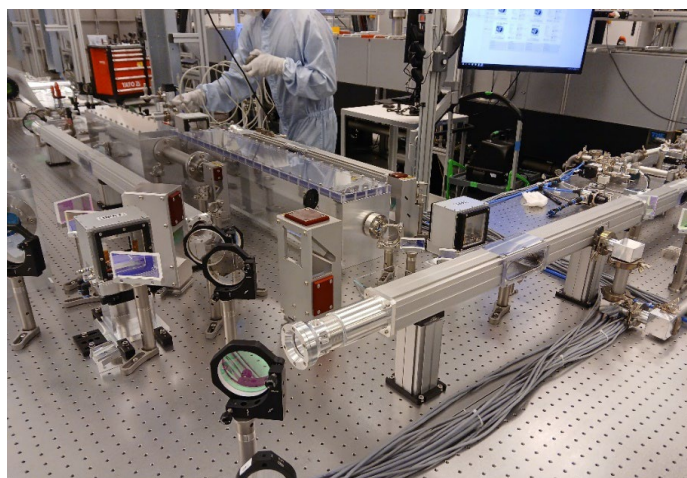


*Gas-filled capillary in the
LUIS target chamber*



L2-DUHA Laser

- 3J / 25fs (> 100TW) @50Hz (100Hz)
- Pump laser uses diode-pumped Yb:YAG slabs
- OPCPA short-pulse chain
- Auxiliary MID-IR (2.2 μm) beam @ 2kHz



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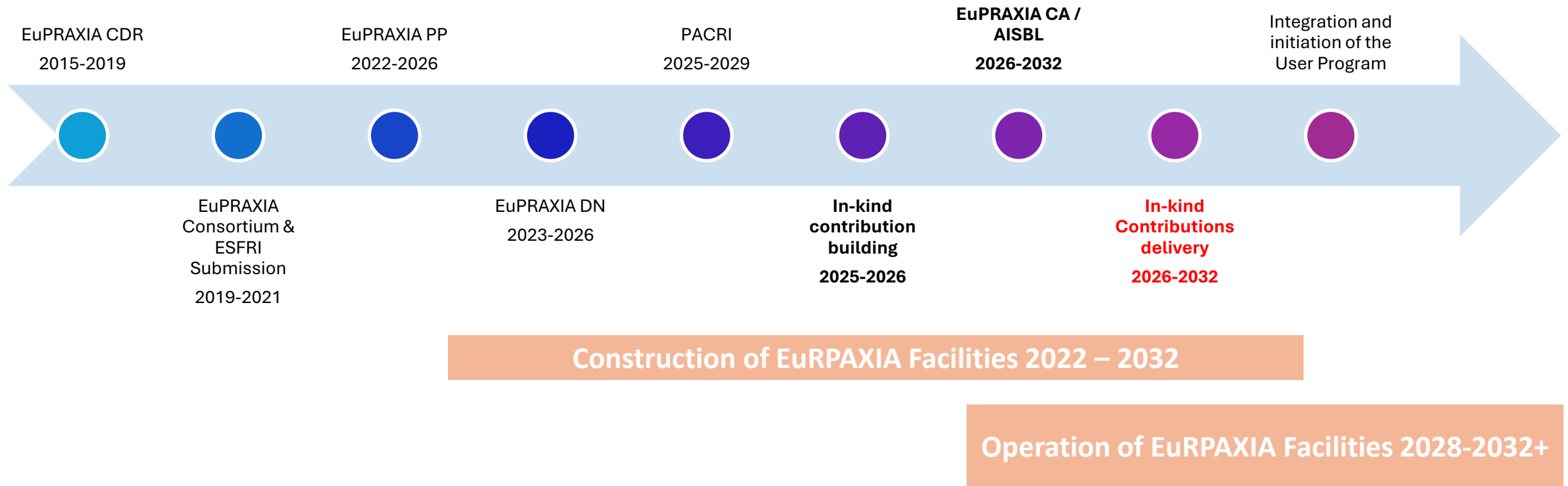


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Grazie per la vostra cortese attenzione!

Aleš Hála

Head of ELI Innovation Office

ales.hala@eli-beams.eu

www.eli-laser.eu