

CREMLIN

Kick-off meeting

Catalin MIRON – ELI-DC AISBL

WP6 - Science cooperation with XCELS in the field of high power
laser research

WP Leader – ELI-DC (BE)

Participants: IAP – RAS (RU), CEA (FR)

ELI: FROM INITIAL VISION UNTIL TODAY

- ☼ The Extreme Light Infrastructure (ELI) was proposed by the scientific community as the world's first international user facility for laser-based research and applications
- ☼ It has been selected by **ESFRI** (European Strategy Forum on Research Infrastructures) to be part of Europe's Roadmap of new research infrastructures of pan-European interest since 2006
- ☼ Less than ten years later, while construction is nearly completed, ELI was proposed to be one of the **ESFRI Landmarks** "*for its role as reference project of scientific excellence and of competitiveness of the European Research Area (ERA)*"

What is ELI ?

European Union
European Regional
Development Fund



INVESTING IN YOUR FUTURE

INITIAL ELI “CONCEPT”

Developed during the EU-funded “Preparatory Phase”
2006-2010:

- Not one, but three (later: four) ELI research pillars
- Use “EU Structural Funds” for construction
- Operate as a single *international organization* after 2018: “ELI-ERIC” (European Research Infrastructure Consortium)
- Become the first international laser user facility
- Science case: the “ELI White Book”

European Union
European Regional
Development Fund



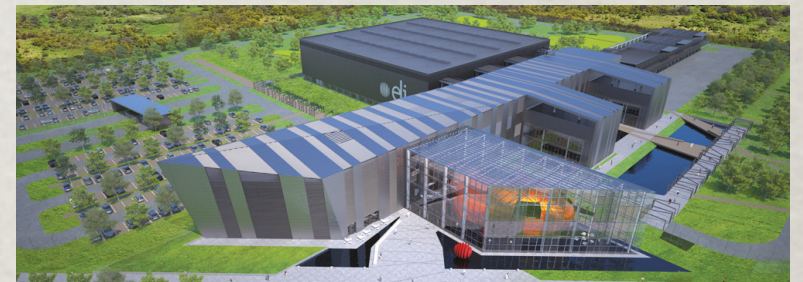
INVESTING IN YOUR FUTURE

IMPLEMENTING UNIQUE RESEARCH OPPORTUNITIES

☀ **Attosecond Laser Science:** ultrafast dynamics studies based on new regimes of time resolution at high repetition rates (ELI-ALPS, Szeged, HU)



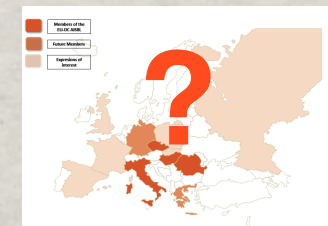
☀ **High-Energy Beam Facility:** development and application of ultra-short pulses of high-energy photons and charged particles (ELI-Beamlines, Prague, CZ)



☀ **Nuclear Physics Facility:** ultra-intense laser (2x10 PW) and brilliant gamma sources (up to 19.5 MeV) enabling novel photonuclear studies (ELI-NP, Bucharest-Măgurele, RO)



☀ **Ultrahigh Field Science:** focused on the direct physics of the unprecedented laser field strength (ELI 4, to be decided in the future)



WP6 - Science cooperation with XCELS in the field of high power laser research

1. Which are the concrete objectives of your WP?
(Including intermediate steps; mentioning of possible obstacles or special challenges and how to tackle them)
2. Who will be responsible for the milestones and deliverables, where and when to carry out workshops and meetings?
3. What is the current status of the EU-Russian cooperation in the scientific field of the respective WP?

WP6 - Which are the concrete objectives of your WP? (Including intermediate steps; mentioning of possible obstacles or special challenges and how to tackle them)

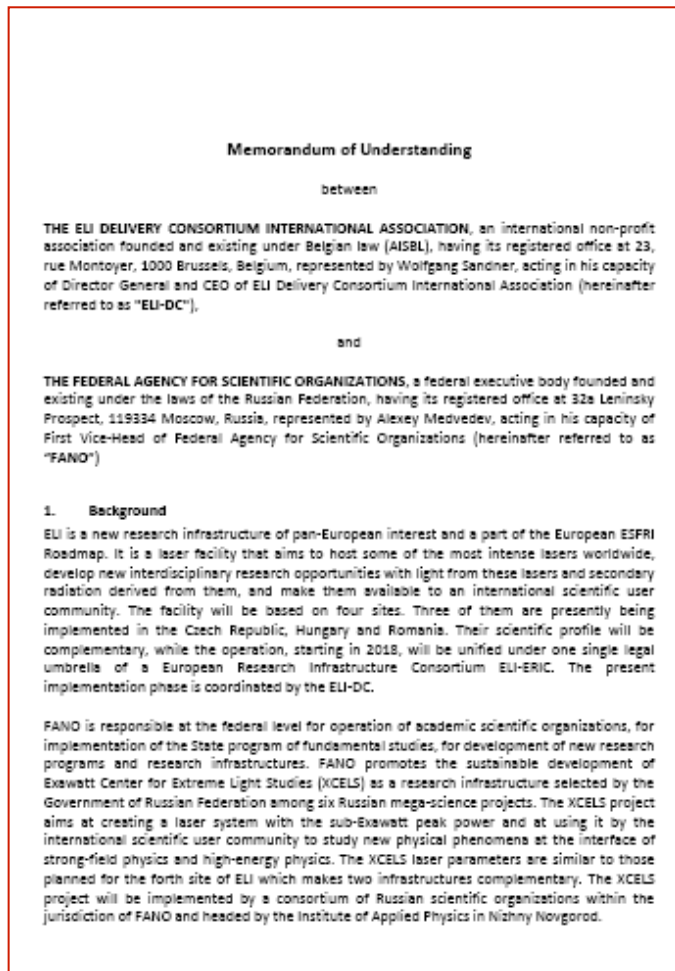
- Identify and map the research interests and needs of EU and Russian partners for scientific cooperation in the XCELS project;
- Work out measures and action plans to foster joint research projects towards the implementation of the project
- Jointly develop and refine international standards for access, user policy, and governance of future large laser facilities;
- Undertake, from a combined EU and Russian perspective, foresight activities to identify the scientific and technological opportunities, user needs and political support for future laser facilities of the 100PW class. This includes the identification of **synergies** and **complementarity** between XCELS and international laser facilities in order to sharpen their respective scientific profiles and uniqueness.
- Explore legal and practical models for the future operation of XCELS as an integral part of the fabric of large European laser infrastructures.

WP6 - Who will be responsible for the milestones and deliverables, where and when to carry out workshops and meetings?

- T6.1a&T6.2 – A workshop organized in Russia as a satellite of the conference Frontiers of Nonlinear Physics **end of July 2016** will explore both the new scientific opportunities (6.2) and identify key technological issues (6.1) on the construction and operation 100PW facilities (**IAP**). [D6.1: Report T0+18](#), [D6.2: Report T0+22](#)
- T6.1b – A workshop organized in France **end of 2016** will focus on key HP laser technologies (**CEA**). [D6.1: Report T0+18](#)
- T6.3 – Specialized workshop organized in a laser user facility on internationalization, access and user policy, governance summer 2017 (**ELI-DC**). [D6.3: Foresight document T0+24](#)
- T6.4 – Round table **in 2018** with key experts stakeholders and scientific policy makers (EU+RU) to discuss how XCELS could be considered in the ERA and the fabric of national and European laser RIs (**ELI-DC**). [D6.4: foresight document T0+33](#)
- T6.5 – A workshop will be organized **end of 2017** in France to explore further cooperation between XCELS and European companies (**CEA**). [D6.6: Analysis for the EC & MoU: T0+29](#)

WP6 - What is the current status of the EU-Russian cooperation in the scientific field of the respective WP?

MoU with ELI-DC to be (re)signed



MoU with THALES Optronique signed

