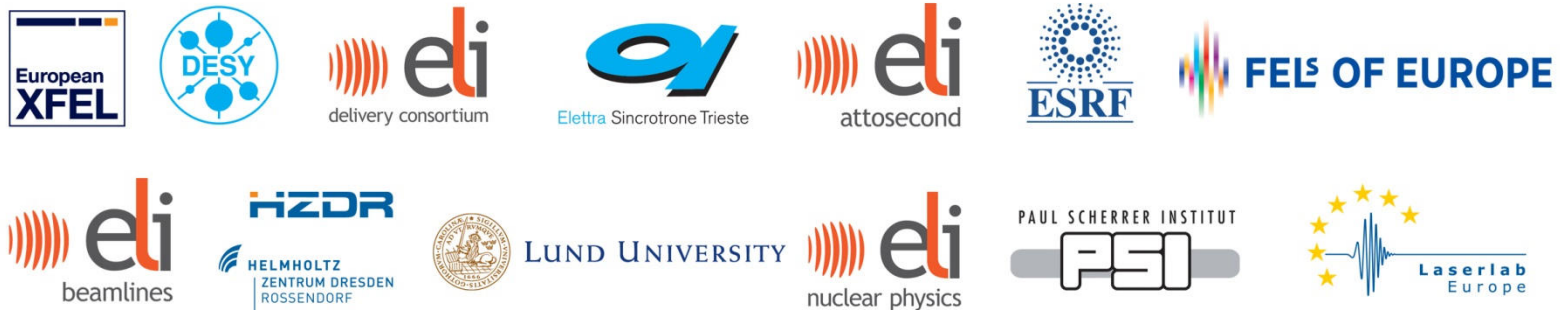


Innovation Potential of Advanced Laser Light Sources

Graham Appleby – European XFEL Facility



This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 654220

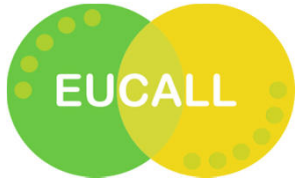


Light Sources in Europe

- Accelerator-based RIs (SR, FEL)
 - Successful and large user program
 - Increasing complexity (OLs, FELs, ...)
 - X-rays reach diffraction limit & non-linear regime
 - Optical laser methods applied

- Optical-laser based RIs (ELI, LLE faci.)
 - High power laser (HPL)
 - New and ramping up
 - HPLs as sources of UV and x-ray beams
 - UV/x-ray methods provided to users





European Cluster of Advanced Laser Light Sources

EUCALL is a network between large-scale user facilities for:

- free-electron laser (FEL) radiation
- synchrotron radiation (SR)
- optical laser radiation

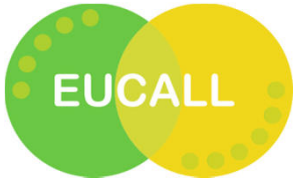
Under EUCALL, they work together on:

- common technologies and research opportunities
- tools to sustain this interaction in the future

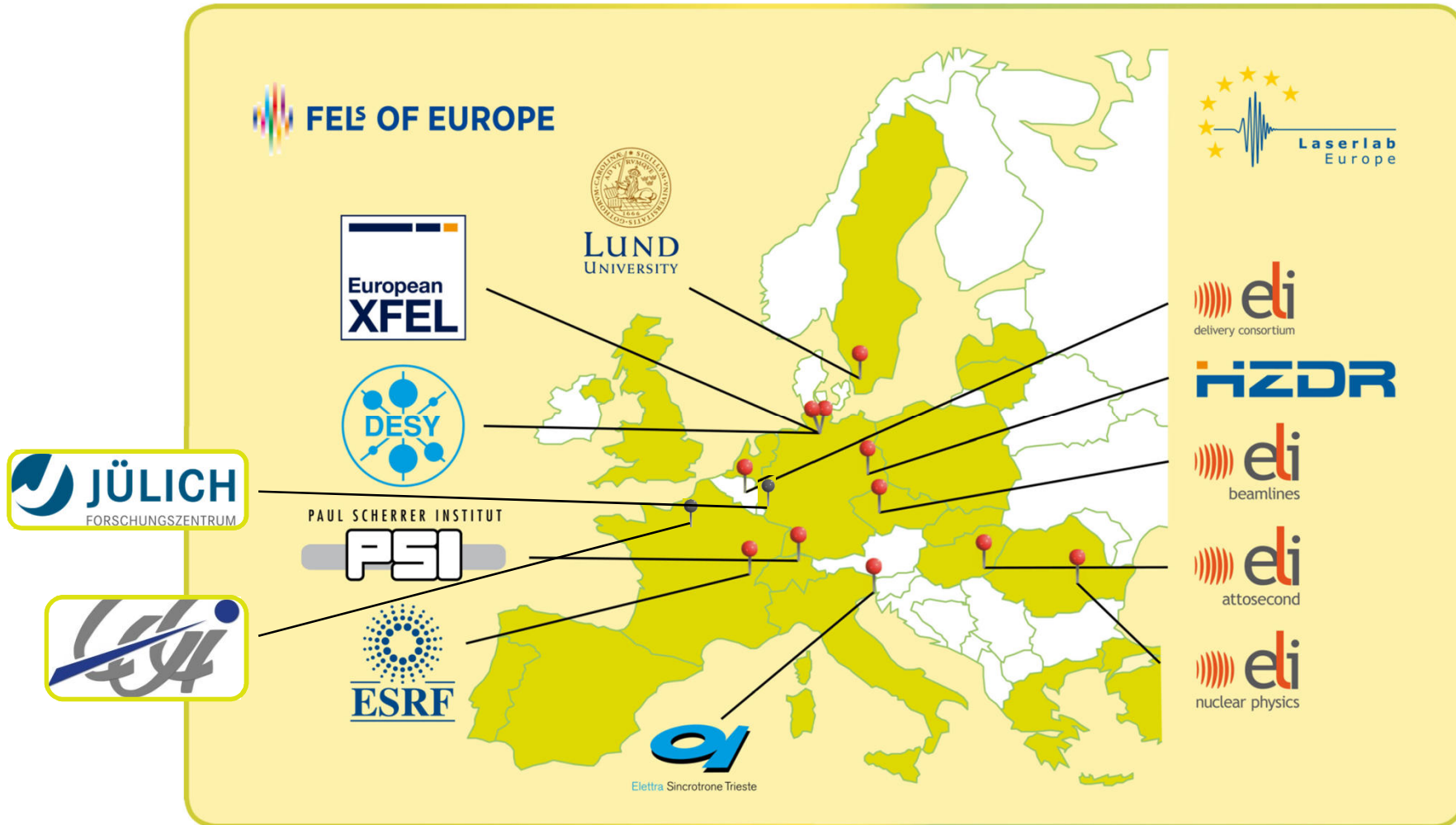
Facts and figures:

- 7M€ from Horizon 2020 for project period Oct 2015 - Oct 2018
- 11 partners from nine countries, two further clusters, two associate partners





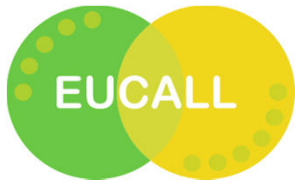
European Cluster of Advanced Laser Light Sources



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Graham Appleby, European XFEL, 15/11/2017
CALIPSOplus/SINE2020, Hotel Melia Sitges - Spain





EUCALL's Strategic Goals and Objectives

Goals

Develop & implement cross-cutting services for XFEL, ESRF and ELI

Optimize use of advanced laser light sources in Europe.

Stimulate & support common long-term strategies & research policies

Objectives

Analyze & promote efficient use of facilities

Identify & develop combined research potential

Analyze & promote innovation potential by the ensemble of facilities

Identify joint foresight topics in science & research policy

Develop & implement a simulation platform

Develop ultrafast data acquisition

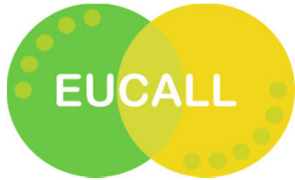
Develop ultrafast sample handling systems

Develop advanced beam diagnostics

WP 3

WP 4 - WP 7





WP3 – Innovation Potential of EUCALL

Topics of survey to Technology Transfer/Business Development/Industrial Liaison Office:

- Joint Development of Technology with Industry
- Protection and Commercialization of Intellectual Property
- Commercial Access to Advanced Laser Light Sources

Data collection: 05.2016 – 03.2017

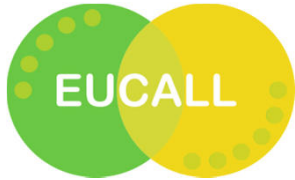
Analysis: 03.2017 – present

Deliverable: **Synergy and Innovation Potential of EUCALL – 31.03.2018**

Expected outcome:

- Analysis of the situation and innovation potential of the individual RIs
- Strategies for the exploitation of new opportunities arising from the cooperation between accelerator-based and laser-based RIs





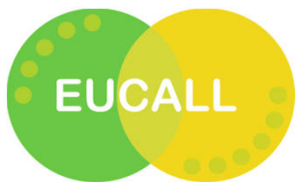
WP3 – Innovation Potential of EUCALL

- Questions asked to Technology Transfer groups at each RI

How is your RI used by SME/industry (or will be in future)?

1. Do you have concrete expectations by your funding bodies to provide your facility for SME/industry usage? If yes, what is the targeted ratio?
2. Have you targeted specific areas of industrial usage? Can you explain which ones?
3. Which level of support for SME/Industry do you provide? Have you installed a dedicated group or people for this support? If yes, how many. If not, how do you manage?
4. Access models
5. Do you have a cost model for industry access in place? If yes, can you explain?
6. Which measures you have in place to attract SME/industry users?
7. Can you provide any success stories of established long-term collaboration with an industrial user?
8. Can you provide any names of your industrial users, whom we may be able to contact for another survey?





WP3 – Innovation Potential of EUCALL

| Research Infrastructure | Type of RI | Percent of Beamtime sold to industrial users | Hourly cost for the beamtime (proprietary access, full costs) | Scientific/Non-scientific personnel of the ILO ² |
|--------------------------------|-----------------------|--|---|---|
| DESY | SR & FEL | | | |
| Diamond Light Source | SR | | | |
| Elettra | SR & FEL | | | |
| ELI-ALPS | HPL ¹ | | | |
| ELI-Beamlines | HPL ¹ | | | |
| ELI-NP | HPL ¹ | | | |
| ESRF | SR | | | |
| European XFEL | FEL ¹ | | | |
| HZDR ³ | HPL | | | |
| MAX IV Lab. | SR ¹ | | | |
| PSI | SR & FEL ¹ | | | |
| SOLEIL | SR | | | |
| Brookhaven National Laboratory | SR | | | |
| SPring-8 | SR & FEL | | | |

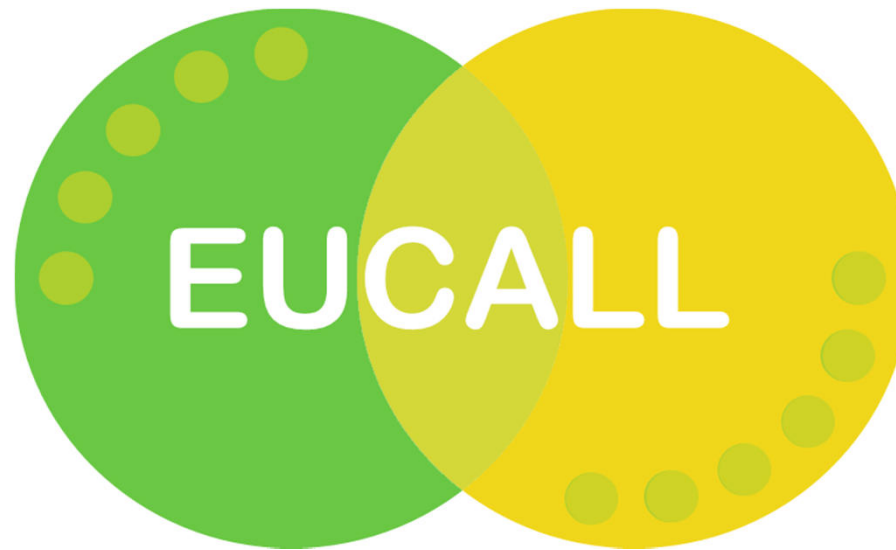
Full data to be published later



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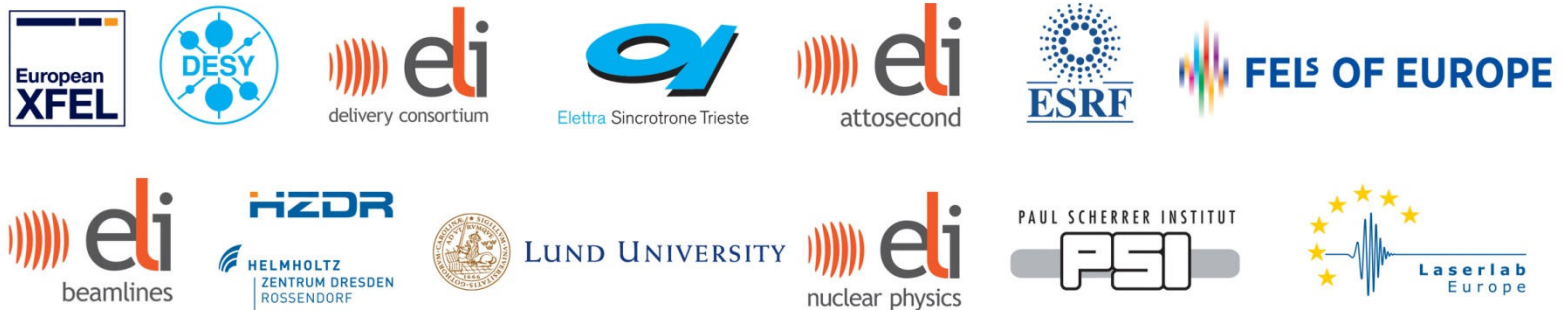
Graham Appleby, European XFEL, 15/11/2017
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Thank you for your attention

www.eucall.eu / contact@eucall.eu



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