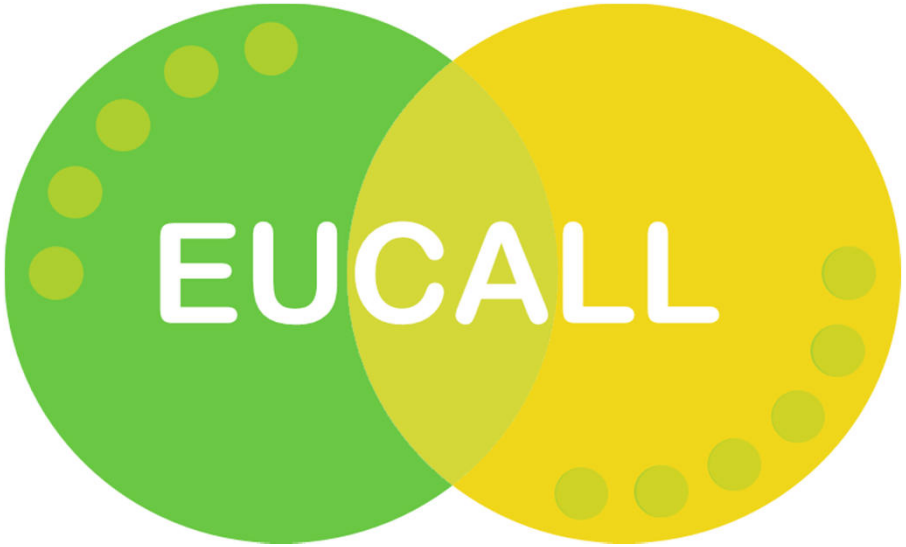

EUCALL – wayforlight database expansion

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

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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

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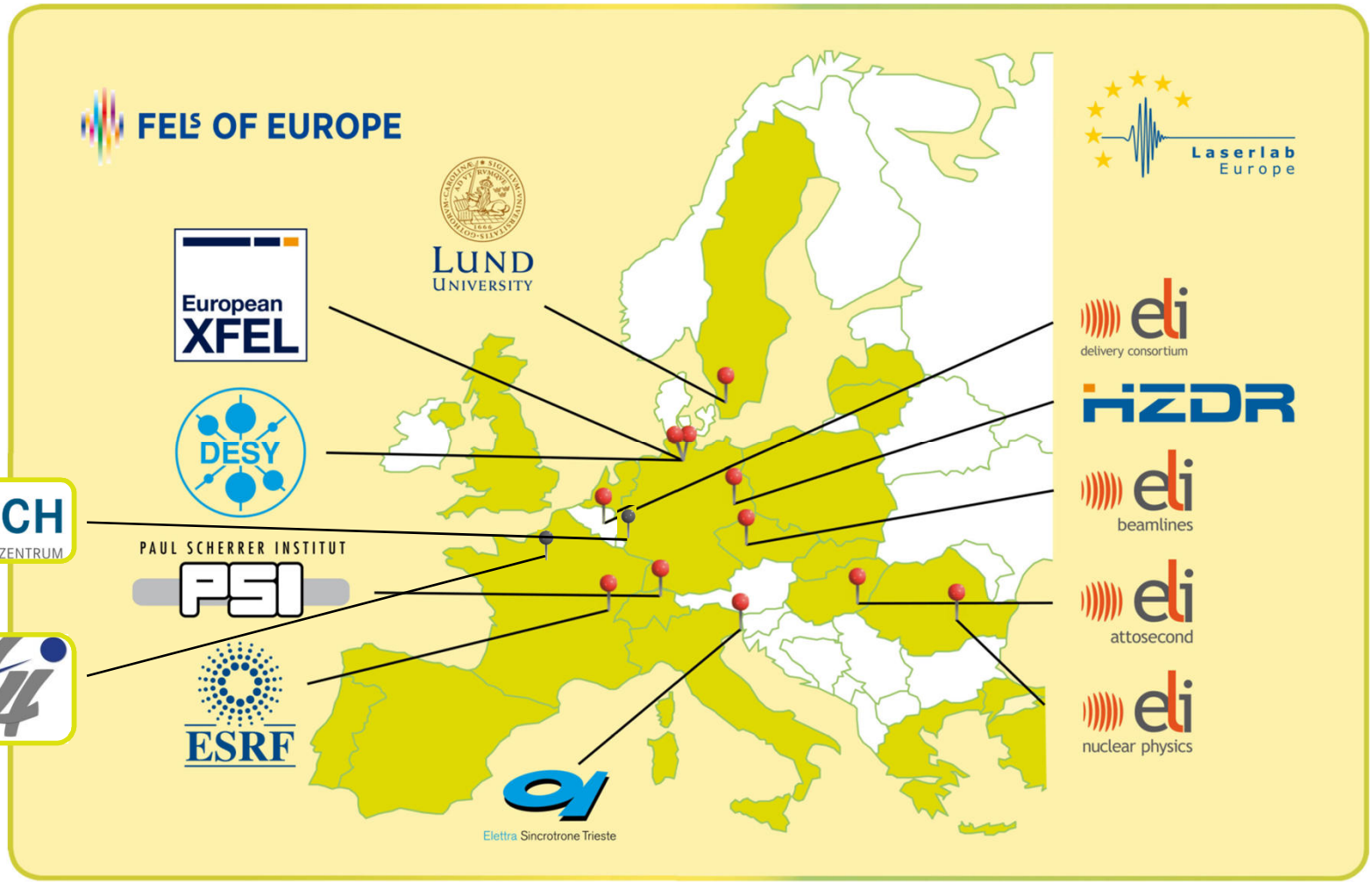
European Cluster of Advanced Laser Light Sources



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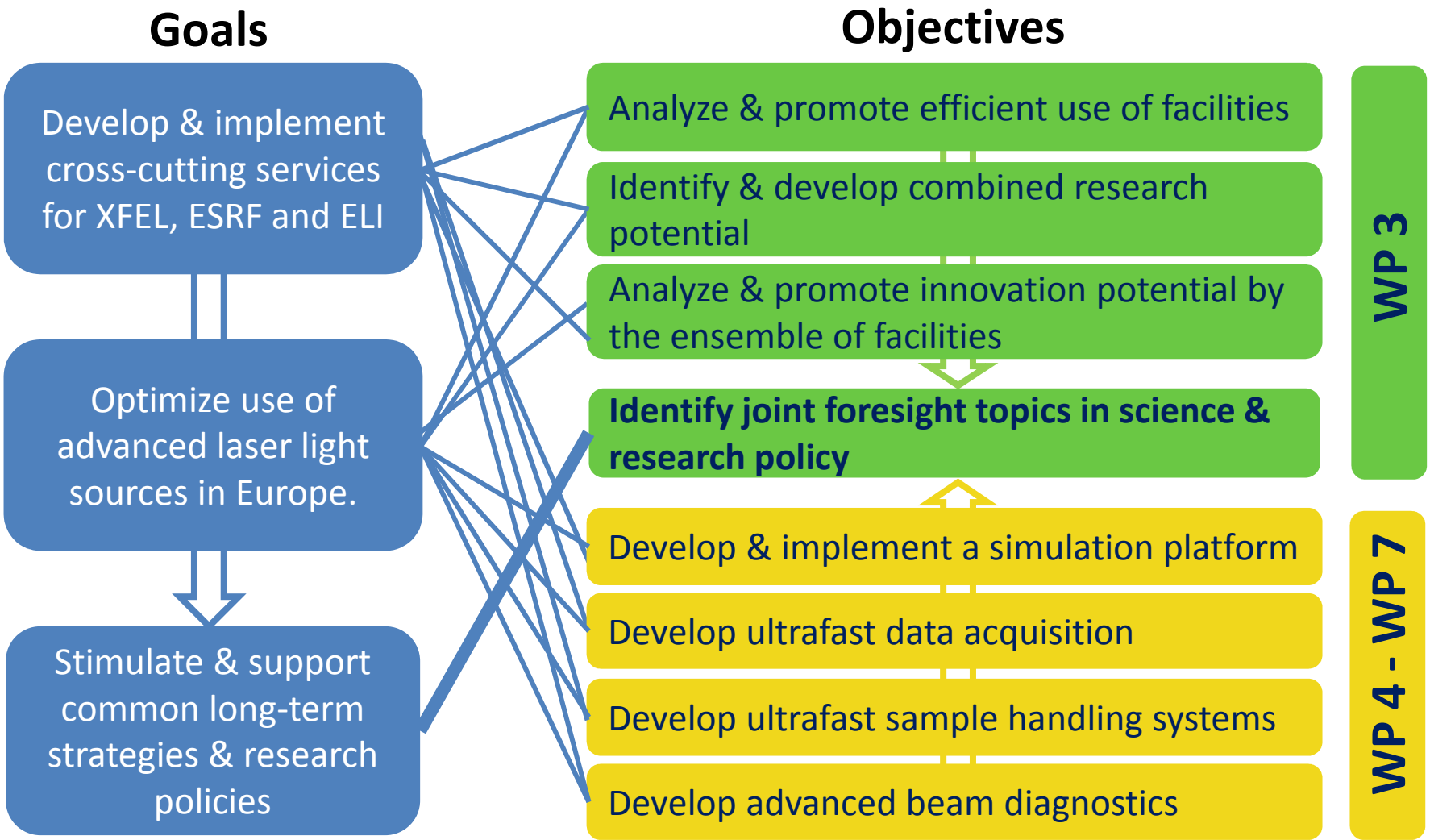
EUCALL's Strategic Goals and Objectives



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EUCALL's recent highlights

30 September 2017 (24/36 Months) → 4 Deliverables, 4 Milestones completed on this date

- First example simulation (WP4 - SIMEX)
- Simulations interoperable (WP4 - SIMEX)
- Performance evaluation of data transfer and injection algorithms (WP5 - UFDAC)
- Construction of prototype XGM finished (WP7 - PUCCA)
- 2nd EUCALL Annual Meeting (WP1 - Management)
- Interoperability of simulation workflows (WP4 - SIMEX)
- Generation of simulated coherent scattering data from plasma and non-plasma samples (WP4 - SIMEX)
- EMP-compatible stages (WP6 - HIREP)

In total: 19 Deliverables and 20 Milestones completed on time until Oct 2017

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WP3 – www.wayforlight.eu

EUCALL spreadsheet "Instrumentation at Advanced Laser Light Sources"

	RI operational RI in preparation													
			Instrument details	Properties of generated X-ray/UV photons E range, spot size, time resolution etc			Properties of associated laser source E range, rep. rate, time res, Energy per pulse etc			Experiemental Support Labs, Data acquistion, suppor		
Type	Facilitiy	Land										
FELs	European XFEL	DE	FXE	...	...	...	...	...	...	...	...	...
			...	...	...	...	...	...	...	...	...	...
	FLASH	DE	FL1	...	...	...	...	...	...	...	...	...
			...	...	...	...	...	...	...	...	...	...
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	...	...	...	...	...	...	...	...	...	...	...	...
			...	...	...	...	...	...	...	...	...	...
Synchrotrons	PETRA III	DE	P01	...	...	...	...	...	...	...	...	...
			...	...	...	...	...	...	...	...	...	...
	ESRF	FR	ID01	...	...	...	...	...	...	...	...	...
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			...	...	...	...	...	...	...	...	...	...
	...	...	...	...	...	...	...	...	...	...	...	...
			...	...	...	...	...	...	...	...	...	...
	ELI Beamlines	CZ	PXS	...	...	...	...	...	...	...	...	...

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WP3 – www.wayforlight.eu

EUCALL spreadsheet "Instrumentation at Advanced Laser Light Sources"

Goal:

- allowing the identification and analysis of duplications and missing elements
- new research opportunities arising from the combination of offers by different RIs
- Include international RIs for an assessment of the international scientific competitiveness of the Europe in this field.
  - Comprehensive list of EUCALL facilities and their application areas
  - x-ray, laser(-like) [pump-probe, coherence, fs-scale, etc]
  - 124 facilities/beamlines with each 22 properties
  - ~2700 entries

New goal: EUCALL's SAC recommended to make the spreadsheet into a searchable database available for external users. WP3 now extends to Elettra and the www.wayforlight.eu database [include ELI, LLE facilities]

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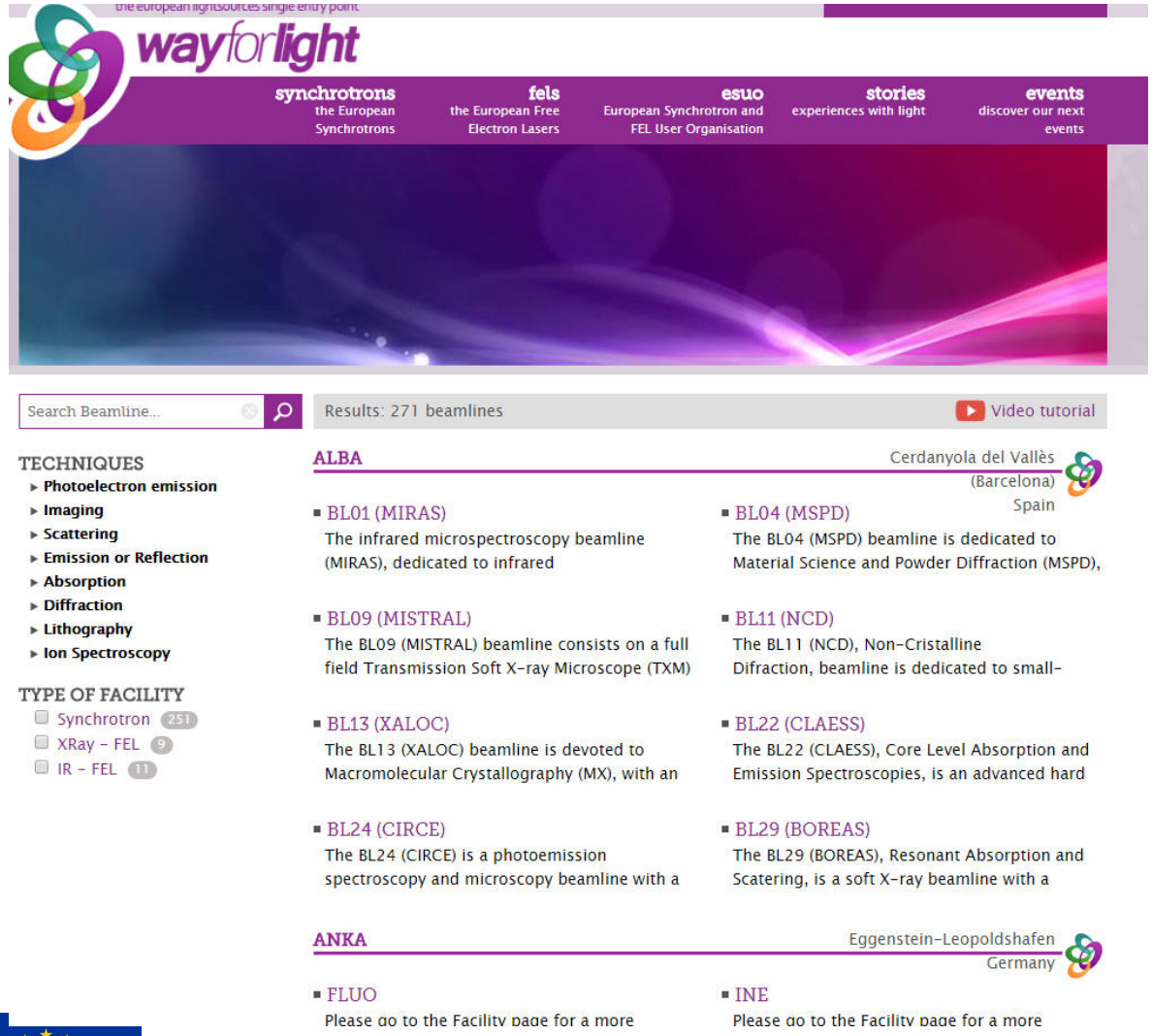
WP3 – www.wayforlight.eu



EUCALL expansion:

- Include ELI and selected Laserlab-Europe instruments
- Improve visibility of optical lasers at SR/FEL instruments
- Improve interface for beamline scientist to keep data up-to-date
- Demonstrate prototype for EUCALL RIs in 2018

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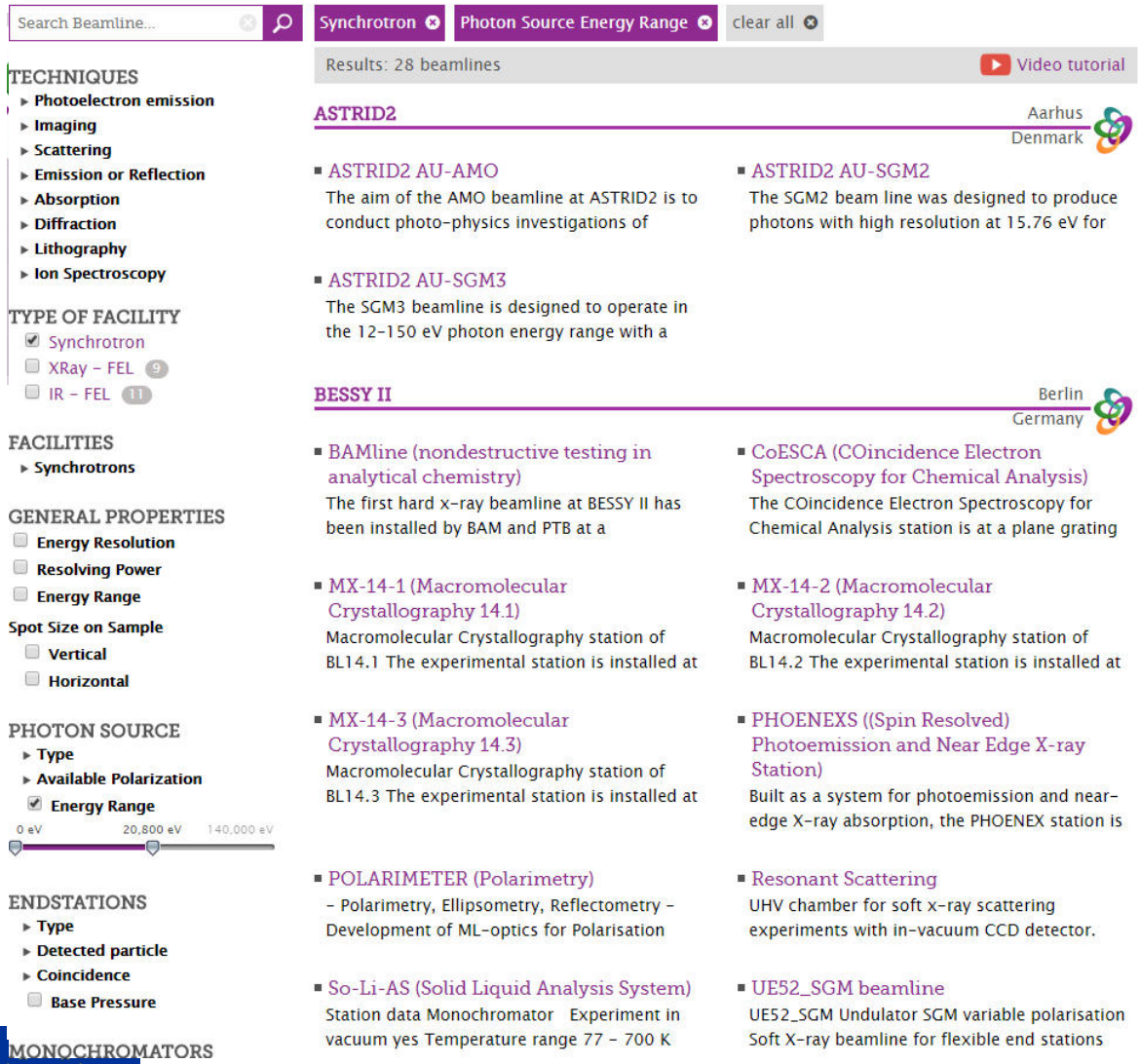
WP3 – www.wayforlight.eu



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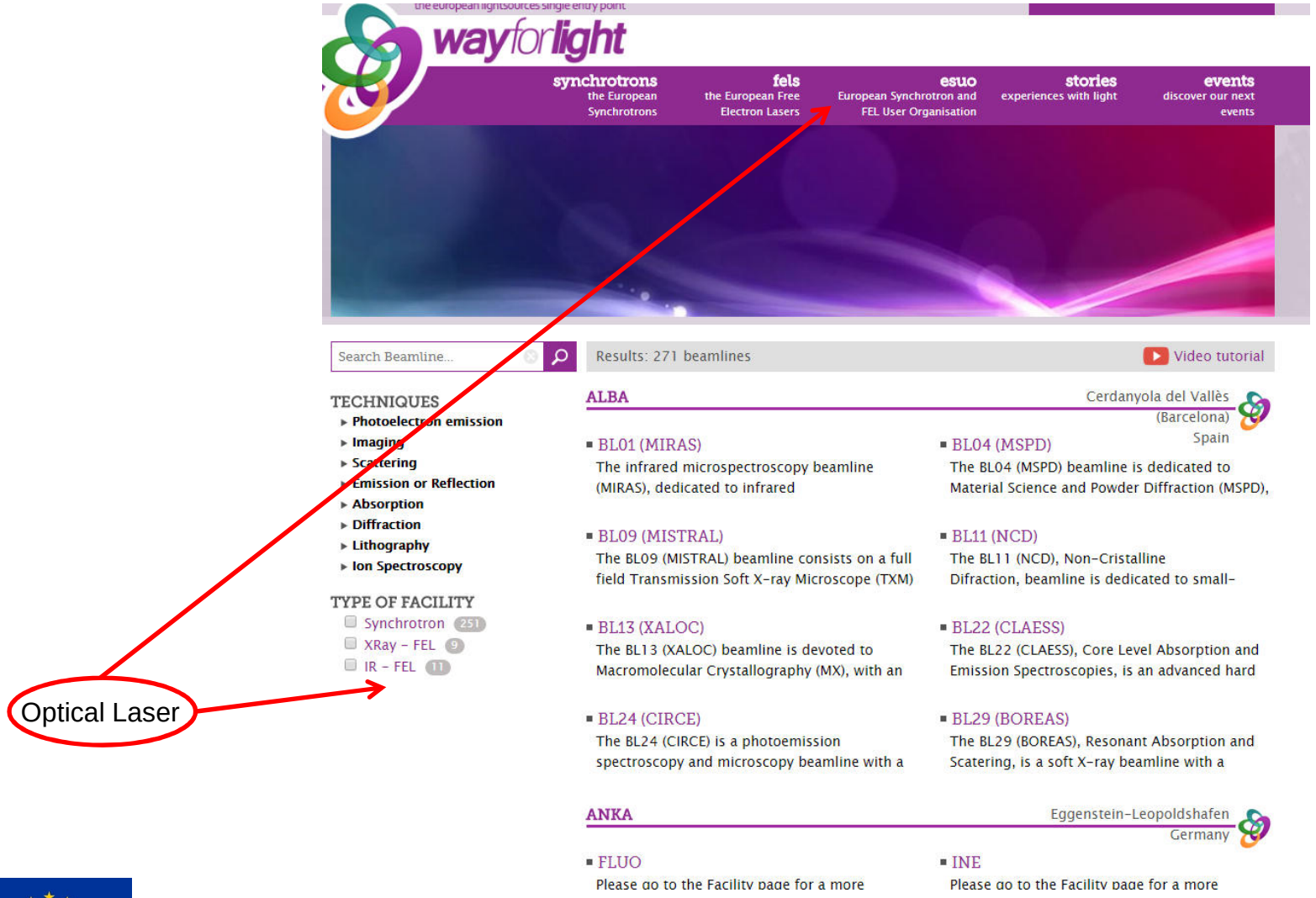
WP3 – www.wayforlight.eu



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WP3 – www.wayforlight.eu

Optical Laser

You are in: Home / FELs / FLASH / BL1

FLASH

BL1

general | optics | endstations

This beamline delivers non-monochromatic FEL photons and is currently being retrofitted with KB focusing optics that will provide a focal spot of ~3 µm x 4 µm. After the retrofit, which is expected to be finished in mid-2014, the CAMP endstation [1] will be installed as a permanent user endstation at BL1. CAMP is a multi-purpose instrument that provides two sets of large-area, fast-readout pnCCD photon detectors (1 Megapixel, 75 µm pixel size, ~ 8 cm x 8 cm active area, 120 Hz frame rate), several velocity map imaging (VMI) and COLTRIMS-style electron-ion spectrometers, and a supersonic gas jet. A wide range of user-provided spectrometers, sample injectors, and sample holders can also be implemented. Colinear incoupling optics for the FLASH femtosecond-laser to perform laser-FEL pump-probe experiments are available. A split-and-delay unit for XUV pump - XUV probe experiments is under development and is expected to be available for the next proposal cycle.

[1] L. Strüder et al., Nucl. Instr. Meth. A 614, 483 (2010).

FLASH BL Beamlines »

You are in: Home / Synchrotrons / PETRA III / P02

PETRA III

P02

general

P02 is the hard X-ray diffraction beamline at PETRA III. The beamline focuses on harvesting very brilliant X-ray beam of PETRA III to conduct diffraction experiments at relative high energies on both single crystal and powders and extreme conditions of high/low temperatures as well as high pressures and simultaneous high/low temperatures. The high brilliance in combination with fast area detectors enables furthermore time resolved diffraction experiments at the ms time scale.

Need improved interface to motivate RI operators to keep info up to date

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

WP3 – www.wayforlight.eu

- Beam-scientists also don't keep their own RI website up-to-date!
- Not easy to convince them to keep info on TWO databases up-to-date

EUCALL concept for updated wayforlight capabilities:

- Improve interface for beamline scientist to keep data up-to-date
  - Beamline scientist enters data to wayforlight datasheet
  - Data automatically displayed on wayforlight page for that instrument
  - Data can also be automatically displayed on scientist's own RI site

- Demonstrate prototype for EUCALL RIs in 2018

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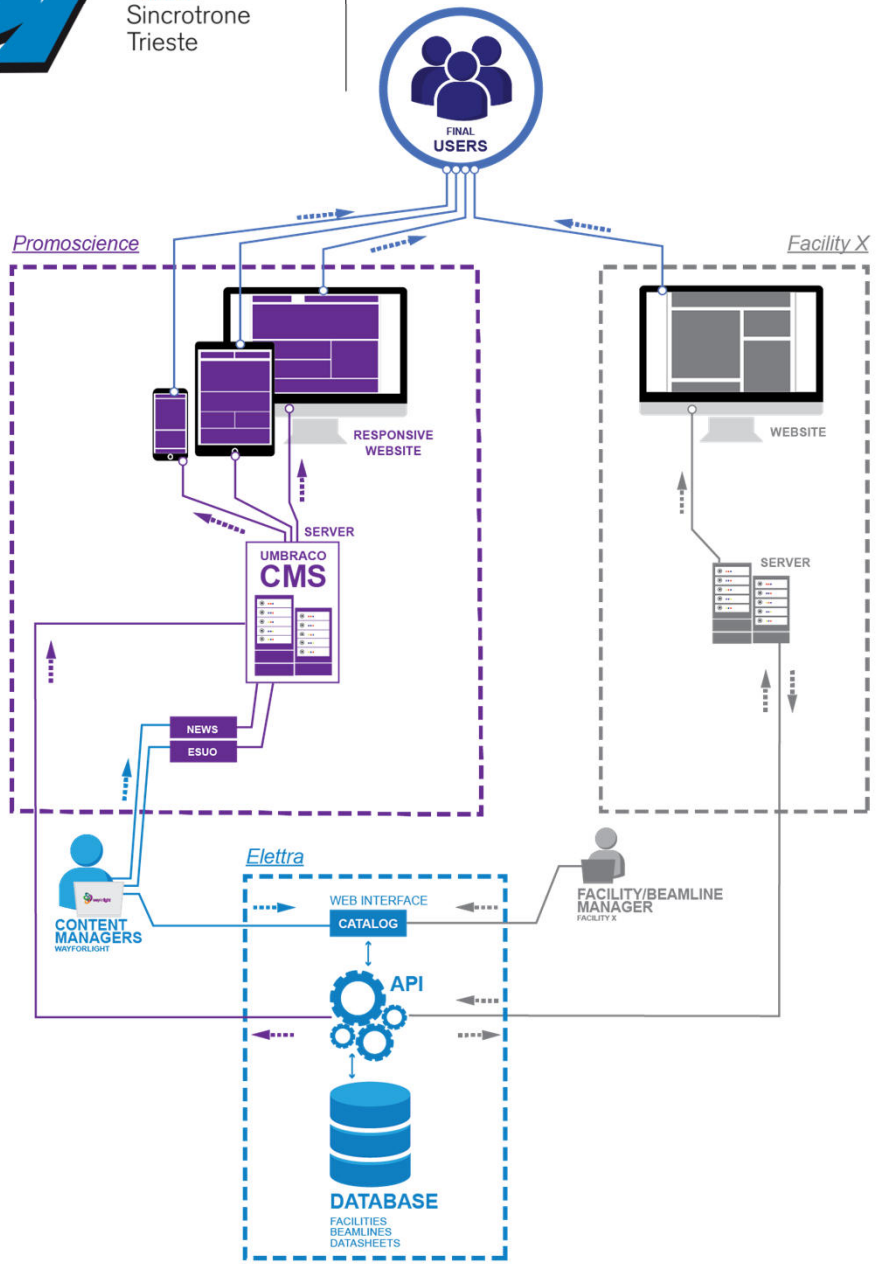
Proposed workflow

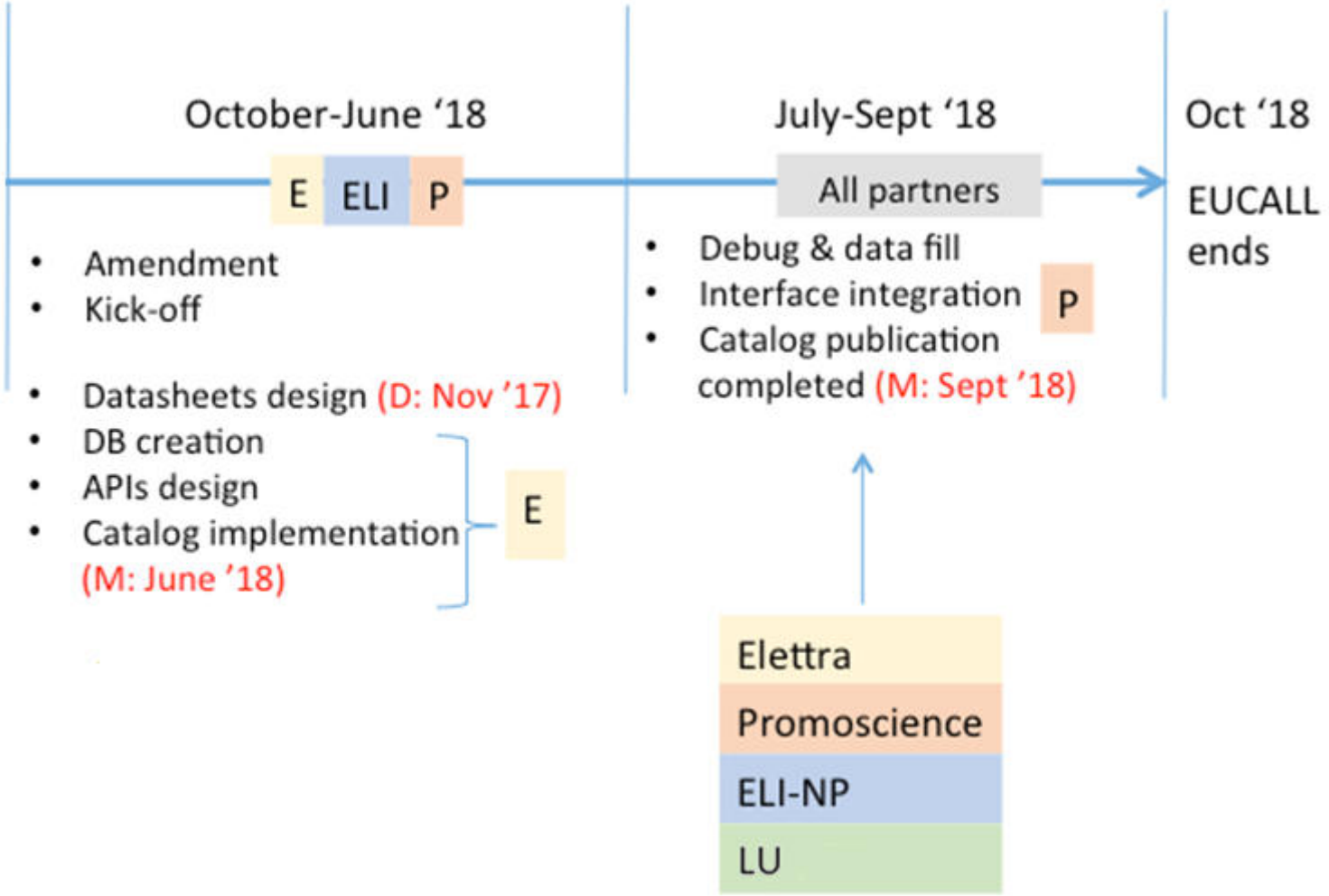


The beamline scientist will enter the technical data into the new wayforlight database interface ("CATALOG" in our scheme); this is the catalog to be developed by Elettra in the first half of 2018.
Automatic display of the datasheet:
1) the display into the wayforlight website will be automatically implemented from June 2018 onwards

2) automatic display to RI's website needs some in-kind work at the facility which is not included the EUCALL task.

Even at Elettra the beamline datasheets are presently displayed as text tables, and the EUCALL developments will not cover the necessary implementation to automatically display Elettra's beamline datasheets in wayforlight on Elettra's website.

WP3 – www.wayforlight.eu



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WP3 – Synergy / Workshops

EUCALL WP3 workshops for 2017/2018:

- User Access at ALLs (for staff of new facilities such as ELI) [21-22.09.17]
- Technology Transfer and Innovation at RIs (for staff of new facilities such as ELI, European XFEL) [14-16.11.17]
- Biology at Advanced Laser Light Sources [30.11-01.12.17]

- Theory, Simulation and Computing at RIs [tba 2018]
- Societal Challenges at Advanced Laser Light Sources [26.04.18]
- Building a Target Delivery Network for European Laser RIs [27.05.18]
- Future strategies for RI operators and policy makers [06.09.18]

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Summary

- EUCALL brings together synchrotron, FEL and optical laser RIs
- EUCALL aims to promote efficient use of facilities
- Modified www.wayforlight.eu database will include optical laser RIs (ELI, Laserlab-Europe)
- Delivered prototype will have enhanced capability to keep info up-to-date with RI's own website data

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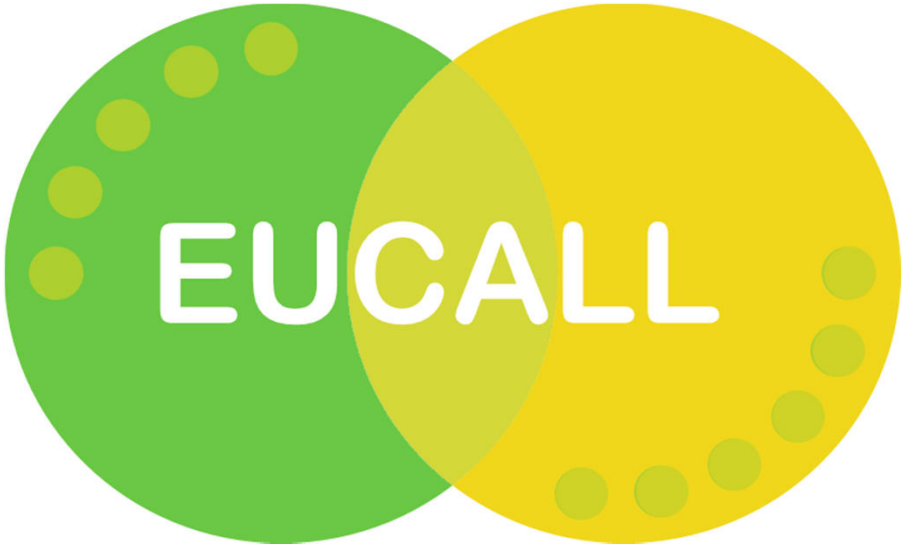

Thank you for your attention

www.eucall.eu / contact@eucall.eu

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