



# CALIPSO

**Coordinated Access to Lightsources to Promote  
Standards and Optimization**

Cecilia Blasetti

Deputy Project Manager & *wayforlight* Coordinator

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European User Office Meeting



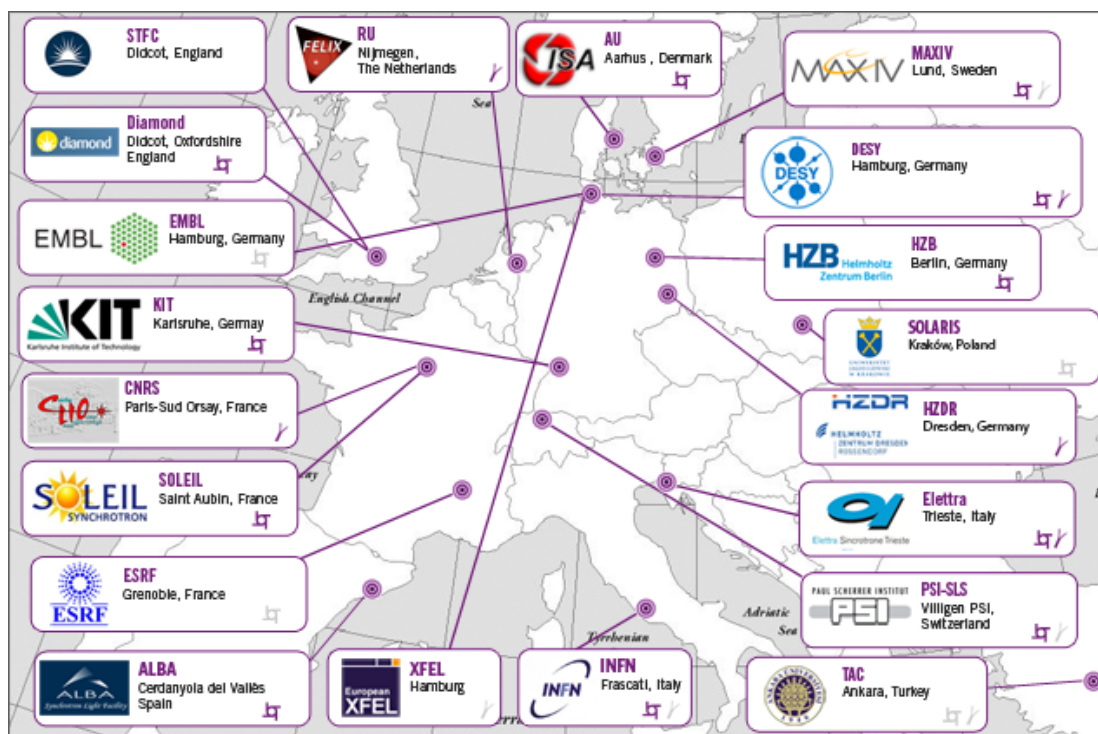
# A pan-European initiative

## CALIPSO

[www.calipso.wayforlight.eu](http://www.calipso.wayforlight.eu)

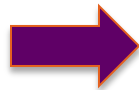
Coordinator	Elettra
Partners	20
Duration	01/06/12 – 31/05/15
TOT EC contribution	7.5M€

- 18 running facilities (13 SR, 5 FELs)
- 4 in commissioning
- 11 EU member and associated countries
- 25.000 users base



# Why *wayforlight* ?

Wanna get support for a multidisciplinary I3 ?

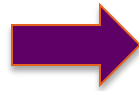


Demonstrate the  
WHOLE synchrotrons  
and FELs network is  
committed to

standardization  
optimization



EC 1<sup>st</sup> idea: single  
European review panel  
and procedure



*wayforlight* portal:  
user-friendly single entry point



*wayforlight* is a  
**compromise**  
between:

➤ EC constraints

➤ Facilities' will to improve their services

➤ Users' feedback

## Nanospectroscopy @ Elettra

The **Nanospectroscopy beamline** at Elettra operates the Spectroscopic and low energy electron microscope (**SPELEEM**), a state-of-the-art **photoemission electron microscopy (XPEEM)** providing a wide range of complementary methods with structural, chemical and magnetic sensitivity. The lateral resolution of the microscope approaches **20 nm** in **PEEM** and **10 nm** in **LEEM**. The **SPELEEM** is coupled to a high photon flux beamline, which can deliver elliptically polarised photons in the range 50 eV to 1000 eV. **Research applications** are targeted to Surface and Materials Sciences, addressing issues related to chemical and magnetic characterization of surfaces, interfaces, thin films, and nanostructures.

<b>Beamline energy resolution</b>	$2.5 \times 10^{-4}$ @ 400 [eV]
<b>Beamline resolving power</b>	$4 \times 10^3$ @ 400 [eV]
<b>Energy Range</b>	Min = 10 Max = 1000 [eV]
<b>Max Flux On Sample</b>	$1.5 \times 10^{13}$ [Ph/s] @ 150 [eV]
<b>Spot Size On Sample Hor</b>	Min = 20 Max = 50 [ $\mu$ m]
<b>Spot Size On Sample Vert</b>	Min = 3 Max = 8 [ $\mu$ m]
<b>Angle of incidence light on sample value</b>	Min = 16 Max = 16 [mrad]

[Nanospectroscopy website »](#)

## TECHNIQUES



### Photoelectron emission

- XPS
- UPS
- Angular Resolved PES

### Imaging

- X-ray microscopy
- Photoemission EM

### Absorption

- NEXAFS
- XMCD
- Time-resolved studies

## CONTROL/DATA ANALYSIS



### Control Software Type

Java

### Data Output Type

images, spectra

### Data Output Format

tiff 16 bit, ascii


### Softwares For Data Analysis

image suite based on Wavemetrics Igor Pro 6



## 2. Standardized Proposal Format


### find your beamline



### write your standardized proposal

#### Top Stories

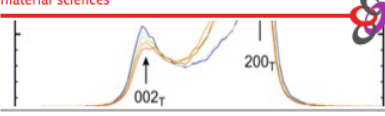
##### humanities



**Beyond the Great Wall: Gold of the Silk Roads and the First Empire of the Steppes**

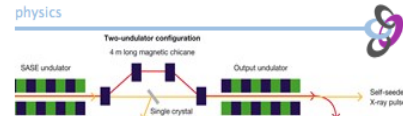
Defining the trade routes of ancient civilizations is of particular importance when no written sources are available. The fragility, rarity, and preciousness of ancient gold work require the use of nondestructive techniques like X-ray fluorescence at BAMline at BESSY II.

##### material sciences



**Pump-probe powder diffraction on**


#### physics



**Better pictures from the nanoworld**


In 2010, researchers from European XFEL and Deutsches Elektronen-Synchrotron predicted a dramatic improvement in the already remarkable features of X-ray free-electron lasers by placing a special crystal into the path of the radiation while rerouting the electron beam around the crystal. In 2012, their colleagues from the Linac Coherent Light Source (LCLS) in the US and the Technological Institute for Superhard and Novel Carbon Materials in Russia implemented the proposed setting and confirmed superior beam quality.

#### earth sciences & environment



#### Browse by technique

- Photoelectron Spectroscopy
- Imaging
- Scattering
- Emission or Reflection
- Absorption
- Diffraction
- Lithography
- Ion Spectroscopy



**standard proposal form info**

#### How to write a successful proposal

SPF page

INFO page

# Why SPF on *wayforlight* ?

## ADVANTAGES

- ✓ Available to **ALL users**
- ✓ Being implemented by **ALL\*** operating SR and FELs in Europe (14)
- ✓ **Same SPF output** can be used for **submission at various** facilities
- ✓ Standardization effort **just started** → more improvements to come

\*Apart ESRF by now




# SPF workflow

- o SPF to be filled on *wayforlight*
- o Output (XML/PDF) to be uploaded/sent to chosen facility for proposal finalization
- o Special case: submit 2 complementary experiments proposals to 2 facilities



# How to proceed – 1

Optional: Umbrella login

 umbrella login

## C. Technical part

### Technical part

Sample n. 1

#### Substance

This field is required, max 100 characters ( 100 left )

#### Chemical formula

#### Physical state

Solid 

#### Size [mm3]

0 

#### Mass [mg]

0 

#### Risk in sample or equipment

Radioactive

☐ Yes ☐ No

Oxidising

☐ Yes ☐ No

Corrosive

☐ Yes ☐ No

Contaminant

☐ Yes ☐ No

Combustive

☐ Yes ☐ No

Biological hazard

☐ Yes ☐ No

Carcinogenic / Mutagenic / Teratogenic

☐ Yes ☐ No



# How to proceed – 2

Download XML on your computer → move to step 2

1. Write your proposal

2. Submit to facility(ies)

## 2. Submit to facility(ies)

Select the facility(ies) you want to apply for.

### Warning!

The only available facilities at the moment are **Elettra** and **Felix**

Synchrotrons ▼

Fels ▼

IR Fels ▼



# How to proceed – 3

## Finalize submission at chosen facility(ies)

a) Facility with Web-based User Office

e.g. Elettra: through VUO

1. Upload XML
2. Complete proposal

3. Submit on VUO

Diamond Light Source

Elettra

Standardized Proposal Form submission is now available at Elettra !

Online user office: <https://vuo.elettra.trieste.it/pls/vuo>

Feedback from a user: cool & easy to use

b) Facility without WUO

e.g. FELIX: PDF

1. conversion on *wayforlight*
2. sent via email
3. (additional form)

Call for proposals:

September 15<sup>th</sup>, 2014 for proposals eligible for the user period starting from January 1<sup>st</sup> 2015 to June 30<sup>th</sup> 2015;

March 17<sup>th</sup>: for proposals eligible for the user period starting from July 1<sup>st</sup> to December 31<sup>st</sup>.

European Synchrotron Radiation Facility



# Autumn calls overview

Facility	Call deadline	XML/PDF	Feedback
BESSY II	Sept 1 <sup>st</sup>	PDF	0 proposals
FLASH	Sept 1 <sup>st</sup>	PDF	0 proposals
Elettra	Sept 15 <sup>th</sup>	XML	27 proposals
SLS	Sept 15 <sup>th</sup>	PDF	1 proposal
SOLEIL	Sept 15 <sup>th</sup>	PDF	0 proposals (not implemented yet)
Diamond	Oct 1 <sup>st</sup>	PDF	? (missing figure)
MAX-lab	Oct 6 <sup>th</sup>	XML	2 proposals

## PROBLEMS

- ✓ Only 1 set of call deadlines corresponding to CALIPSO support
- ✓ XML not implemented yet at many facilities: lack of HR/ no strong commitment
- ✓ Lack of dissemination → NO complementary experiments proposals



# Next to come

Facility	Call deadline	XML/PDF	Note
PETRA III	Nov 3 <sup>rd</sup>	PDF	Only call for 2015 time
FELBE	Nov 4 <sup>th</sup>	XML	
ASTRID 2	Nov 15 <sup>th</sup>	PDF	
CLIO	Jan 6 <sup>th</sup>	PDF	
ANKA	Jan 15 <sup>th</sup>	PDF	
FELIX	Jan 15 <sup>th</sup>	PDF	
DAFNE-L	Jan 15 <sup>th</sup>	PDF	
ALBA	Early 2015	XML	Deadline to be defined

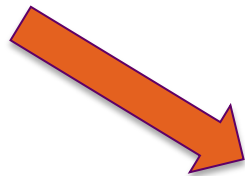
Spring 2015 calls: no CALIPSO support but still taking place within CALIPSO time frame !  
e.g. BESSY II will implement full XML way and offer it to its users, SOLEIL as well



# 31/05/2015: CALIPSO will end ☹

**Wayforlight** is important for facilities because...

1. **Users** can benefit from it by easily information access



## Our biggest achievements

*in the first four years*

Discussions of photon science related problems on the European level

Prerequisite for integration and necessary specialization of national light sources

Standardization of beam line sheets and proposals

Important means to balance supply and demand on the European level

2. It represents an unprecedented **joint effort**
  - Best practice **sharing**
  - **Benchmark** for single facilities

# Dissemination

o To get a complete feedback, all 25.000 users should **know** about *wayforlight*

8  
FELs

13  
synchrotrons

+300  
beamlines

1  
website



the European lightsources  
single entry point

[www.wayforlight.eu](http://www.wayforlight.eu)

# To keep *wayforlight* **ALIVE** means

- Backup and basic IT assistance
- Update **beamlines datasheets**
- Keep **SPF running** and ameliorating it
- Update scientific stories
- Inform **users** about it !

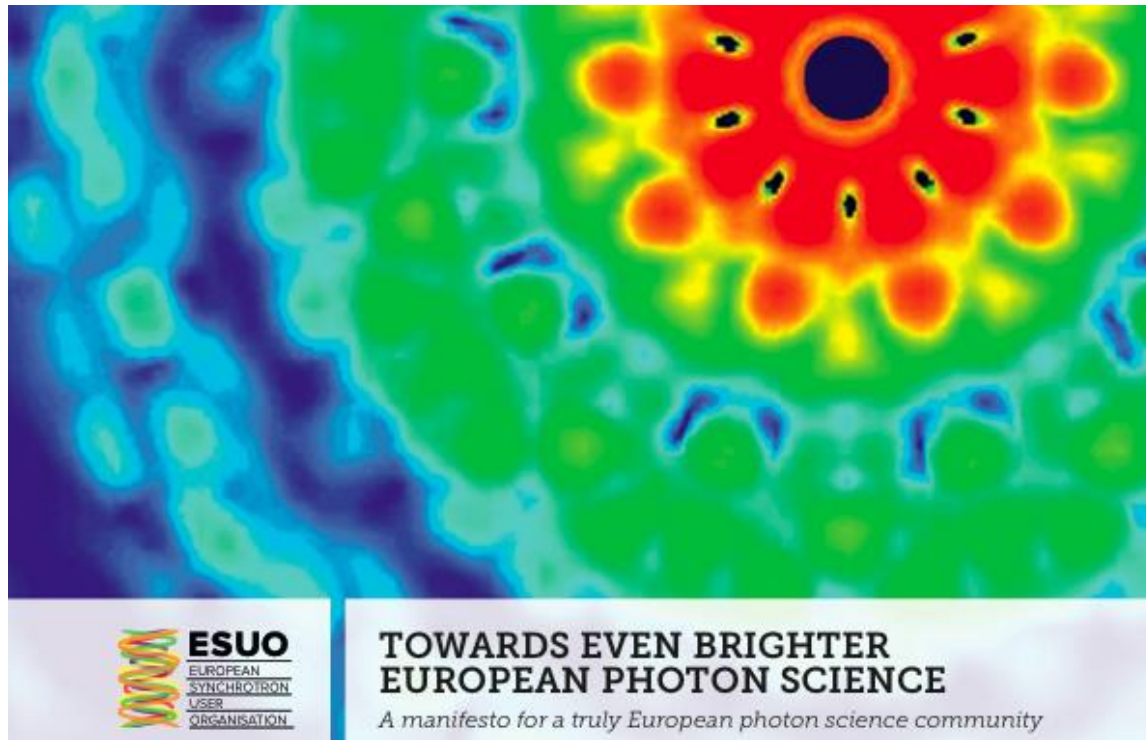
→ *Coordinate all the above*



- *MoU ?*
  - *Future projects ?*
- To be discussed at  
CALIPSO meeting*

# Ongoing actions

## European Synchrotron User Organisation



- ESUO brochure
- Lobbying for EC funding 2016-2017
- TNA, +NAs, but also
- Wayforlight* developments

**Thank you for your attention!**  
**[www.wayforlight.eu](http://www.wayforlight.eu)**

Questions welcome