



LEAPS Holds its First Plenary Meeting

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To cite this article: Tutti Johansson Falk & Ana Belén Martínez (2019) LEAPS Holds its First Plenary Meeting, Synchrotron Radiation News, 32:1, 18-19, DOI: [10.1080/08940886.2019.1559596](https://doi.org/10.1080/08940886.2019.1559596)

To link to this article: <https://doi.org/10.1080/08940886.2019.1559596>



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Published online: 07 Feb 2019.



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LEAPS Holds its First Plenary Meeting



DESY hosted the First Plenary Meeting of LEAPS, attracting more than 150 representatives from the 16 member facilities. (Credit: Marta Mayer, DESY).

On November 12 and 13, 2018, the League of European Accelerator-based Photon Sources (LEAPS) celebrated its first Plenary Meeting at DESY in Hamburg, Germany, where 13 pilot research projects were presented by the spokespersons of the different collaborations. More than 150 representatives from the 16 member facilities of LEAPS, representing 10 different countries, attended the meeting. Philippe Froissard (Deputy Head of the Research Infrastructure Unit of the directorate on Open Innovation & Open Science of the European Commission) and representatives from national funding agencies also contributed to explore different possibilities for funding common research projects.

LEAPS is a strategic consortium initiated by the Directors of the Synchrotron Radiation and Free Electron Laser (FEL) user facilities in Europe. Its primary goal is to actively and constructively ensure and promote the quality and impact of the fundamental, applied, and industrial research carried out at their respective facilities to the greater benefit of Euro-

pean science and society. It also aims to play an integrating role for countries with less developed communities and infrastructure for research and innovation, in Europe and beyond.

The LEAPS meeting demonstrated the great progress of the collaboration in the last few months. Helmut Dosch and Caterina Biscari, chair and vice chair of LEAPS, opened the session, summarizing the activities undertaken by the consortium that are giving service to 25,000 users in Europe.

Helmut Dosch noted his pleasure that “LEAPS has developed into a powerful European consortium with a robust organization, transparent processes, and with European-wide expert groups in key areas of science and technology. LEAPS is a new voice in Europe shaping the landscape of accelerator-based photon sources and devising future roadmaps.” LEAPS members have organized themselves into six different working groups, three related to new technology developments and three focusing on academic and industrial services and outreach.

A roundtable session, with the participation of members and directors from different facilities, discussed the goal of promoting common development projects that will implement smart specialization and will also enable more efficient management, as well as the need to avoid overlapping activities in favour of collaborative initiatives.

In the plenary sessions, a first landscape document was presented describing the current status of facilities, as well as their future plans. This document, which will be periodically updated, will become an essential tool for the roadmaps to be developed within LEAPS. The strategy groups gave impressive insights into the grand challenges the consortium faces in key areas ranging from health and energy to food security, engineering and manufacturing, and cultural heritage, and into the relevant fundamental science to be carried out at LEAPS facilities to meet these challenges.

The meeting also discussed the impact of H2020 RI Pathways, which aims to develop a model reflecting the socio-economic impact

of research infrastructures (RIs) and their related financial investments. The model is to be developed in a modular manner, adapting it to a broad range of scientific domains and types of RIs. The project outcomes are expected to contribute to a common approach at the international level and facilitate investments in RIs by funding agencies and other stakeholders. The project activities will take into account the results from the Working Group of Socio-Economic Impact of Research Infrastructures established by the OECD Global Science Forum and involve key international players in this domain. In preparation for one of the final calls of H2020, dedicated to pilot activities, proposals for pilot projects were prepared and presented on the second day of the meeting.

Eight of these proposals tackle technological and scientific needs, including the development of:

- superflat mirrors that will explore basic limits of mirror correction, will propose new metrology tools, and will implement adequate processes for industrial manufacture;
- next-generation X-ray gratings with increased flexibility for soft X-ray optical devices;
- a spectroscopy germanium detector for X-ray absorption experiments with huge impact on the environment and catalysis;
- a detectors' toolbox to facilitate the adaptability of these instruments to new requirements, interfaces, and data acquisition systems;
- experiment environmental improvements, such as new positioning and scanning systems, as well as a common standard for room-temperature structural research microcrystals;
- data reduction and compression technologies that will cope with the needs of storing higher amount of data, resulting in smarter and more efficient systems;
- a strategic blueprint regarding the future needs of information technology in FELs and storage rings;
- cheaper insertion devices to better adapt to FELs and to increase photon energy,

improve polarization control and radiation hardness of insertion devices.

Five pilot projects were highlighted to attract and promote new academic and industrial users:

- innovation process for better industrial engagement, including beamtime service, technology valorization, and outreach;
- specific activities devoted to SMEs services, enabling a central entry point for all LEAPS members;
- impact assessment methodology, continuing with the work being done in the H2020 RI Pathways project;
- a user-friendly e-infrastructure to provide a standardized instrumentation catalogue of European light sources, following the task done in CALIPSO-plus¹;
- creating scientific focal points for new users' communities in countries where FELs or storage ring light sources are not present.

Representatives from eight of the 10 national funding agencies, together with Philippe Froissard, participated in a roundtable about the funding possibilities of the LEAPS project. They strongly supported the new LEAPS network, which they also consider to be a role model for other scientific communities. Giorgio Rossi, Chair of the European Strategy Forum on Research Infrastructures, ESFRI, pointed out the importance of coordination between research infrastructures to enhance the outcome of the developments at RIs and the science performed there.

¹CALIPSOplus aims to remove barriers for access to world-class accelerator-based light sources in Europe and the Middle East. To this end, more than 82,500 hours of trans-national access are provided to these research infrastructures, and specific programs are in place to teach new users how to successfully use synchrotrons and FELs. Dissemination activities targeting industry are complemented by tailor-made support and access programs for this user group. In parallel, the consortium is collaborating on developing technology to keep these facilities at the cutting edge of research.



Rolf Heuer (left), Chair of the SESAME Council, together with Helmut Dosch (right), Chairman of the DESY Board of Directors and Chairman of LEAPS, mark the signing in which SESAME became the first LEAPS associate member. (Credit: Marta Mayer, DESY).

The event finished with a signing ceremony in which the SESAME light source became LEAPS' first associate member. Rolf Heuer, Chair of the SESAME Council, joined LEAPS Chairman Helmut Dosch in the signing ceremony. In the evening, a festive reception was organized by the Free and Hanseatic City of Hamburg in the atrium of the State Library, hosted by state secretary Dr. Eva Gumbel. ■

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