

Memorandum of Understanding (MoU)

by and between

Deutsches Elektronen-Synchrotron (DESY), D-22607 Hamburg

Sincrotrone Trieste S.C.p.A. (Elettra), I-34149 Basovizza, Trieste

European XFEL GmbH, D-22761 Hamburg

Helmholtz- Zentrum Berlin für Materialien und Energie GmbH (HZB),

D-14109 Berlin

Istituto Nazionale di Fisica Nucleare (INFN), I-00044 Frascati

MAX IV Laboratory, SE-223 63 Lund

Paul Scherrer Institut (PSI), CH 5232 Villigen PSI

SOLEIL, F-91192 Gif sur Yvette

Science and Technology Facilities Council, Swindon SN2 1SZ, UK

National Centre for Nuclear Research, PL 05-400 Otwock

(hereinafter referred to individually as the Party or
collectively as the **Parties**)

**regarding the establishment of a Collaboration of European FEL and SPS
Facilities**

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Preamble

RECOGNIZING

- That the Parties are operating and developing short pulse soft and hard X-ray Free Electron Laser (FEL) facilities and advanced short-pulse and coherent light sources (SPS) based on accelerator technologies;
- That the driving force for these developments is given by a number of challenges in fundamental and applied sciences and employing analytical techniques, such as in needed for developing alternative energy sources, synthesizing complex functional drugs or designing better and low-energy-consumption electronics;
- That Europe and the European Research Area (ERA) need to address these challenges by having the capability to develop a detailed understanding of the structural and dynamical behavior of matter and its fundamental building blocks on a whole range of length and time scales going as short as Angstroms and attoseconds;
- That ultrafast phenomena play a crucial role in science; therefore ultrafast technologies are developed and used in many fields of research in a highly interdisciplinary approach. It is expected that the above mentioned facilities will have a revolutionary impact onto science and technology of tomorrow;

BEING UNDERSTOOD

- That a close cooperation between all the FEL and SPS facilities in Europe is needed, in order to meet the technological and scientific challenges of these novel and rapidly developing technologies and to fully exploit the potential of these unique accelerator based short-pulse light sources;
- That these facilities should be open to scientific users based on scientific quality, evaluated by an international peer review, while access for training or proprietary research can be provided, not interfering with the peer reviewed access;

WHEREAS a European collaboration in research and development of free electron lasers has been ongoing and has taken a further step in the

EUROFEL Design Study which was funded under FP6 and included all interested stakeholders;

WHEREAS the importance of free electron lasers for research and innovation in Europe has been recognized and therefore two FEL projects were included in the ESFRI Roadmap 2006 in the context of the construction of the ERA, the European XFEL as an international facility proposed by Germany and IRUVX-FEL proposed in a first MOU between several national laboratories as an European consortium of national facilities;

WHEREAS remarkable results have been achieved during the preparatory phase of these two ESFRI Roadmap projects, PRE-XFEL and IRUVX-PP, which were supported by the European Commission and ended 30th June 2011 and 30th March 2011, respectively;

Therefore the Parties have agreed the following MoU:

1. Purpose

The Purpose of this MoU is:

To establish, based on the vast experience gained by the Parties in different collaborative projects, an efficient long-term European Collaboration of Free Electron Laser Facilities (FEL) and other advanced accelerator based short-pulse and coherent light sources (SPS) in order to promote FEL science and technology in Europe and to provide the experimental conditions needed by a large, multi-disciplinary user community.

The MoU shall make optimal use of the resources and knowhow available in Europe and maintain the EU's technological and scientific infrastructure at a world-class level.

The Parties agree that this MoU is neither legally nor financially binding but reflects the spirit of co-operation between them. Any financial obligation will be subject of separate collaboration agreements to be agreed between interested parties.

The preamble and appendices 1, and 2 are an integral part of the present MoU.

2. Main Areas of Activity

The main areas, in which the Parties wish to collaborate, include:

1. Promote the development, construction and operation of complementary, world-class FEL and short-pulse facilities for multidisciplinary research with open access.
2. Efficient interaction with and optimum support of users.
3. Technical developments and technology demonstrators.
4. Training and education.
5. Efficient communication, both external and internal.
6. Representation of European FEL and SPS science and technology.

Detailed joint activities are listed in Appendix 1. In order to support the organization of meetings and communication activities the Parties agree to provide the necessary resources.

3. Governance

It is understood that this MoU provides the framework for the Collaboration.

In order to reach the objectives the Parties shall establish a Steering Committee (SC) consisting of the facility directors or their delegates who should be empowered for at least two years. The SC elects a chair who is responsible for the overall coordination and who represents the Collaboration to the outside. The first chair is elected for a term of three years unless the Parties mutually decide for a premature termination. The following chairs are elected for two year terms; the chair should rotate between the parties.

The Steering Committee shall decide its own calendar of meetings, but it shall meet at least once in the year, to discuss the status, the progress and new strategic objectives.

The delegates representing the Parties in the SC will be nominated by each Party together with the signing of the MoU.

4. Common Understanding

The Parties agree to cooperate and communicate in the most effective way in order to carry out the activities of the Collaboration.

In their cooperation the Parties will share information and technology in a way that respects and preserves intellectual property rights, according to the articles given in the Appendix 2.

The Parties or any subgroup of Parties will agree on specific common activities under this MoU. The exact scope and the development, as well as the contributions (in kind and/or financial) of a specific activity will be defined in specific agreements between the interested Parties.

According to Appendix 3, a subgroup of Parties can proceed on the setting-up of a Consortium, which may take the shape of a legal entity.

5. New Parties

The Collaboration is open to other Parties, who wish to contribute to the common scope. The entry of new Parties will be approved by consensus of all Parties.

6. Duration and Modifications

This MoU shall become effective upon the date of last signature of the Parties and will remain valid for a period of 6 years, unless terminated earlier by all the Parties by written notice with a period of 6 months before the ending date.

Discussions between the Parties to extend it should begin at least 6 months prior to the expiration of the period of validity.

Any change of this MOU shall be made by written amendment approved by authorized officials of all the Parties.

Appendix 1

Joint Activities

- 1. Promote the development, construction and operation of complementary, world-class FEL or short-pulse facilities for multidisciplinary research with open access**
 - a. Promote the development and construction of state-of-the-art FEL and SPS facilities requested by a multidisciplinary user community
 - b. Ensure state-of-the-art operation of all FEL and SPS facilities by regular exchange of experiences and best practices

- 2. Ensure efficient interaction with and optimum support of users**
 - a. Offer a common information and guidance portal for the FEL user community
 - b. Coordinate and harmonise application and information on proposals at the participating infrastructures
 - c. Provide a platform for joint coaching and training of new users
 - d. Develop a common user strategy and outreach to users

- 3. Coordinate technical developments**
 - a. Develop a strategy for & coordinate future technical developments
 - b. Initiate and support expert groups, centers of excellence and the exchange of staff
 - c. Support coordinated use of test facilities
 - d. Support collaboration with neighboring communities and industry

- 4. Coordinate training and education**
 - a. Promote and coordinate training of technical and supporting staff
 - b. Promote and coordinate training of students and early career staff and summer schools

- c. Support the attraction and exchange of staff

5. Ensure efficient communication, external and internal

- a. Communication with funding agencies, policy-makers, media and the general public on the EU level
- b. Communication with industry
- c. Communication with related technical and scientific communities

6. Represent European FEL science and technology

- a. Provide scientific and technical expertise and expert opinions
- b. Initiate and respond to policy initiatives

The activities 1. and 6. will be organized by the Chair of the FEL Collaboration Steering Committee in consensus with the Steering Committee. If a program for one of the activities 2 to 5 is decided by the Steering Committee this will be organized by an "activity board" to which each Party may send one representative and which is coordinated by an activity spokesperson selected by the board members and approved by the Steering Committee. The work load will be considered as in kind contribution.

Appendix 2

1. Exchange of Knowledge

(1) Information disclosed under this MoU by one Party to another Party shall not create any proprietary right in respect of such information for the receiving Party.

(2) Subject to such restrictions as may apply and if the intellectual property is needed/requested for collaborative actions under this MoU, each Party shall make available to other Parties, free of charge, in writing or in any other appropriate form, its existing intellectual property, whether protected or not, for the exclusive purpose of its use, by other Parties only, under this MoU.

(3) Title in intellectual property developed by a Party in the framework of this MoU shall be vested in that Party, who shall grant a free, non-exclusive license to such intellectual property to other Parties, for the exclusive purpose of its use, by another Party only, under this MoU, as well as for the latter's internal research purposes.

(4) Where intellectual property is jointly vested in the Parties, they shall agree on ways of protecting, and of making available to third parties outside of the Collaboration, such intellectual property, provided that in any event, they shall grant to each other a free, non-exclusive license to such intellectual property for the exclusive purpose of its use, by the receiving Party only, under this MoU, as well as for the latter's internal research purposes.

(5) The providing Party provides no warranty, including but not limited to those of fitness for purpose and non-infringement of intellectual property rights held by third parties, in respect of intellectual property made available by it to other Parties under this MoU, and the receiving Parties shall hold the providing Party free and harmless from any liability

arising from its use (including, if permitted, any sub-licensing) of such intellectual property.

2. Confidentiality

(1) The Parties agree that the open exchange of information shall honor the following principles:

The Parties shall treat any information, which is appropriately designated as such, unless otherwise agreed in writing, for the duration of this agreement and for a period of five (5) years thereafter, strictly confidential. The Parties shall take all appropriate steps to safeguard the confidential information. Accordingly, the receiving Parties shall not use any such information for any purpose other than in accordance with the terms of the MoU and the receiving Parties shall not disclose any such confidential information to any third party, and such information shall neither be reproduced nor duplicated in any form.

(2) The aforementioned shall not apply to information for which the receiving Parties can prove that it had a public nature prior to its communication by the disclosing Party or fell within the public domain after such communication but through not fault of its own; was already in its possession at the time of signature of this MoU; is received from a third party without any obligation to keep it confidential; is developed by the receiving Parties independently outside the scope of this MoU; is disclosed due to a lawfully issued governmental order, order of a court of competent jurisdiction or other legal requirement to produce or disclose information.

3. Property Rights

Inventions belong to the Party whose personnel have made them. Joint inventions belong to Parties who have to agree in each case on the sharing and the joint exploitation.

4. Publications

In accordance with the principle of providing open access to information, the Parties strive to jointly publish the results of the cooperation

In so far as the Parties do not publish the work results together, publications by one Party involving results developed by the other Parties shall be subject to the latter's prior written consent. Such consent shall not unreasonably be withheld.

All publications presenting results achieved under this MoU shall acknowledge the collaboration between the Parties, including, if so requested by a Party, the persons having taken part in the development of the results, which form the object of the publication.

5. Exchange of Personnel

(1) Parties can send personnel to other parties for collaborative actions. Such personnel shall during their association with the other Party remain employed by the sending Party. The sending Party shall be exclusively responsible for health, accident insurance and general liability insurance for such personnel. The sending Party shall hold the receiving Party free and harmless from any liability, including as may arise in case of failure to keep any part of the insurance cover defined above in place during the association.

(2) The receiving Party provides assistance in finding adequate housing.

(3) During their association the personnel shall be subject to the safety and other regulations in effect at the receiving Party. The receiving Party shall be entitled to refuse access or remove from its site any personnel which fail to comply with applicable regulations or whose presence is otherwise deemed undesirable.

6. Exchange of Equipment

Equipment sent by one Party to another Party for the purpose of the collaboration shall remain the property of the sending Party unless otherwise agreed. Cost of transportation shall, unless otherwise agreed, be borne by the receiving Party. The receiving Party shall act as importer and be responsible for all formalities, including customs, import excise tax etc. More details will be agreed upon in the specific agreements.

7. Liability

(1) Except in case of gross negligence or willful misconduct or as may result from the application of Article 1 or Article 2 of this Appendix, each Party shall bear its own loss and damage in connection with this MoU. It is understood however that except as may result from the application of Articles 1 or 2 of this Appendix, no Party shall be liable to another Party for any indirect or consequential loss or damage.

(2) Notwithstanding anything stated in this Article, each Party shall hold other Parties free and harmless from any liability for loss or damage caused by the former Party to third parties.

8. Disputes

The Parties shall do their utmost to settle amicably any differences and difficulties which may arise during the collaboration.

Appendix 3


Setting up a European Consortium of FEL and SPS facilities

In view of the prominent European role of this collaboration and with the goal of further strengthening the contribution to the European Research Area, the following Parties intend to create a EuroFEL consortium, or other European legal entity, based on the indications emerging from the EU-funded IRUVX-PP preparatory phase:

- Istituto Nazionale di Fisica Nucleare
- MAX IV Laboratory
- National Centre for Nuclear Research-Poland
- Paul Scherrer Institut
- Science and Technology Facilities Council
- Sincrotrone Trieste S.C.p.A.
- SOLEIL

Collaboration of European FEL and SPS Facilities

Deutsches Elektronen-Synchrotron DESY



.....

Prof. Dr. Helmut Dosch
(Director)



.....

Prof. Dr. E. Weckert
(Director)

Collaboration of European FEL and SPS Facilities

Sincrotrone Trieste S.C.p.A.



.....
Prof. Dr. C. Rizzuto

(President)

Collaboration of European FEL and SPS Facilities

European XFEL GmbH



Prof. Dr. M. Altarelli

(Director)

Collaboration of European FEL and SPS Facilities

Helmholtz-Zentrum Berlin für Materialien und Energie GmbH (HZB)



Prof. Dr. A. R. Kaysser-Pyzalla

Prof. Dr. Ing. Anke Kaysser-Pyzalla
Scientific Director/Chief Executive



Thomas Frederking,

Thomas Frederking
Executive Director Finance
and Administration

Collaboration of European FEL and SPS Facilities

Istituto Nazionale di Fisica Nucleare

Al

.....
Prof. Fernando Ferroni

(President of INFN)



25 MAG. 2012

Collaboration of European FEL and SPS Facilities

MAX IV-Laboratory

A handwritten signature in blue ink that reads "Sine Larsen". The signature is written over a light grey rectangular background. Below the signature is a horizontal dotted line.

Prof. Dr. S. Larsen
(Director)

Collaboration of European FEL and SPS Facilities

Paul Scherrer Institut

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Prof. Dr. J. Mesot

(Director)

Collaboration of European FEL and SPS Facilities

SOLEIL

po SP. CAMINADE



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Prof. Dr. J. Daillant

(Director)

Collaboration of European FEL and SPS Facilities

Science and Technology Facilities Council



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Prof. Dr. J. Womersley

(CEO)

Collaboration of European FEL and SPS Facilities

National Centre for Nuclear Research



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Prof. Dr. G. Wrochna

(Director)