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ISABEL

Improving the sustainability of the European Magnetic Field Laboratory

DESCRIPTION OF NOVEL JOINT ACCESS PROCEDURES

Start date of the project: 1st November 2020

Duration: 60 months

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2.0	Final version	03/07/2025	Inès DUPON-LAHITTE (page setting)

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DOCUMENT ABSTRACT

Within this task, discussions with research infrastructures providing access to neutrons, laser light and x-rays have been undertaken. The aim was to evaluate the possibility and advantages to set up joint-access modes with EMFL, find the optimum solution for proposal evaluation and define administrative procedures.
The details are described below.

Table of contents

1/ Pulsed field and Neutrons: LNCMI & ILL 3
2/ Pulsed field and Laser: LNCMI & LULI 2000 3
3/ DC field and pulsed laser: HFML & FELIX 3
4/ Pulsed field and Laser: HLD & ELBE 4
5/ Pulsed field & Laser: HLD & XFEL 4
6/ Pulsed field and Synchrotron: LNCMI & ESRF 4

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1/ Pulsed fields and neutrons: LNCMI & ILL

Proposal evaluation: In order to use the mobile pulsed-field installation at the ILL neutron source, user proposals will be evaluated by the appropriate selection committee at ILL. When submitting their proposal users will choose the IN22 sample environment on the proposal form. The equipment can only be used with support from LNCMI, who provides and operates the power supply. Therefore, an LNCMI scientist will be included in the proposal and experimental team. Users who wish to submit a proposal and use this equipment are strongly advised to contact the LNCMI scientist before the final submission in order to investigate the feasibility of the work.

Follow-up: the follow-up of the submitted and performed projects will be done at the end of each year. ILL will send the following information extracted from their database to EMFL via LNCMI: submitted proposals (acronym, list of proposers and affiliation, research area, evaluation, requested days, allocated days), performed proposals (acronym, experiment title, list of proposers and affiliation, research area, evaluation requested days, allocated days, experiment dates, number of pulses).

These data will be used by EMFL for reporting and statistics concerning the use of its high magnetic field installations.

Communication via ILL and EMFL Newsletter to users:
A pulsed horizontal field 40 T / 2 K cryomagnet developed by LNCMI Toulouse and the ILL is now available to ILL users. Experiments with this magnet can be performed on IN22 in collaboration with LNCMI who provides and operates the power supply. If you wish to submit a proposal and use this equipment, please contact Fabienne Duc (LNCMI, Grenoble, fabienne.duc@lncmi.cnrs.fr) before the final submission. The equipment can only be used with support from LNCMI. Therefore, an LNCMI person will be included in the proposal and experimental team. More information is available on: https://emfl.eu/find-experiment/neutrons/

2/ Pulsed fields and laser light: LNCMI & LULI 2000

Proposal evaluation: The optimum solution for the evaluation of the proposals is to go through the evaluation procedure at LULI 2000. The feasibility of the projects is determined by the local scientists of LULI and a research engineer of LNCMI.

Follow-up: The follow-up of the submitted and performed projects will be done at the end of each year. LNCMI will send a request to LULI, when the data are needed. LULI then communicates the following information to EMFL via LNCMI: submitted proposals (proposal, PI, evaluation), performed proposals (proposal, PI, evaluation, experiment dates, number of pulses). These data will be used by EMFL for reporting and statistics concerning the use of its high magnetic field installations.

3/ DC fields and free-electron lasers: HFML & FELIX

Scientists use already both facilities for joint high-field experiments with pulsed lasers by submitting proposals either through the FELIX user portal or via the EMFL proposal system. Within this task, the most appropriate solution has been defined.

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Proposal evaluation: The most appropriate solution for proposal submission and evaluation is to go through the FELIX evaluation procedure as the expertise already exists in the FELIX selection committee. A local contact of HFML will be assigned to each proposal using the combination of high magnetic fields and free-electron lasers. The deadlines of the bi-annual proposal submission are the same as for access to the EMFL facilities, which facilitates the scheduling of accepted joint experiments.

Follow-up: For the EMFL reporting and statistics about the use of high magnetic fields, the HFML-FELIX facility regularly communicates information about the submitted and performed proposals to EMFL (acronym, proposers and affiliation, evaluation, experiment dates, magnet hours delivered …). This is already the case, but has now been formalized within this task.

4/ Pulsed fields and free-electron lasers: HLD & ELBE

Proposal evaluation: Due to the high selectivity and relatively high rejection rate at the ELBE facility the procedure for joint access suggested is that the high-field facility of HLD accepts proposals, which have been positively ranked by the ELBE evaluation committee. Discussions within this task conclude that this is effectively the most appropriate procedure. A local contact of HLD will be assigned to each proposal using the combination of high magnetic fields and free-electron lasers.

Follow-up: The HLD facility will communicate information about submitted and performed joint-access proposals (acronym, proposers and affiliation, evaluation, experiment dates, magnet pulses delivered …) to the EMFL common database for the purpose of reporting and statistics concerning the use of high magnetic fields.

5/ Pulsed fields and x-ray laser: HLD & XFEL

The technical commissioning of the pulsed-field equipment for time-resolved x-ray scattering experiments at fields up to 60 T at the European XFEL (Schenefeld, Germany) has been completed in early 2024. A first scientific-community-based proposal has been approved by the XFEL beamtime committee and experiments have been performed at the end of 2024. At the present time, it is too early to establish a formalized joint-access scheme.

6/ Pulsed fields and synchrotron: LNCMI & ESRF

Currently, there are only very few experiments using the LNCMI pulsed-field set-up compared to all projects performed at ESRF. The set-up is also not officially part of the panel of possible measurement environments. Discussions of creating a combined access are, therefore, not appropriate at the moment.