

Project information

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Midterm report on LEAPS-INNOV co-creation actions

Work package 9 - “CO-CREATION - Innovation by Cocreation towards Global Challenges“

Lead Beneficiary: ULUND

Objectives

The objectives of this WP, as stated in the DoA are:

The LEAPS-INNOV-Co-creation programme aims to extend the existing collaborations of the LEAPS partners towards areas of excellent science as applied to innovation and societal needs. New communities will engage as partners in science innovation, creating programmes, methods and technologies at LEAPS facilities. The needs of large European research initiatives such as European Partnerships will move research at LEAPS facilities closer to the end user, thus allowing addressing more directly the societal challenges, HE missions, creating innovation, and sustainability.

The LEAPS consortium is predestined as a partner for European clusters addressing grand challenges, industry R&D needs and curiosity driven basic research. LEAPS-INNOV aims to establish co-creation structures allowing for joint development of key technologies, typically transversal to several scientific applications and missions, and continuous promotion and development of the user community, including joint development of novel science instruments.

In order to meet these objectives, WP9 will

- *Establish a network of high-impact science consortia in Europe to identify new-areas for co-creation, develop a co-creation advisory forum and create a whitepaper “co-creation strategy” for LEAPS*
- *Launch a small number of co-creation implementation studies addressing technology challenges collaboratively*
- *Organise events addressing emergent science fields and addressing co-creation opportunities in these fields.*

Task 9.1: Establish a European map of LEAPS-INNOV co-creation in action

Task 9.1 is progressing successfully and engages more and more scientists at LEAPS-INNOV partners as well as academic user constellations as new activities are being organized. A delay in comparison to the initial timeline was experienced due to the limitations posed on us by the COVID pandemic, now



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the task is well on track again. Most of the activities envisioned at the time of proposal writing were relying on in-person meetings that are thought to be the most efficient way of promoting collaboration and establishing links; nevertheless, WP9 smoothly adapted to the current circumstances and organized online meetings paying special attention to their setup (to guarantee they allow a discussion among participants, not only a “passive” attendance of presentations). The work package leader (ULUND) aims at accelerating processes to guarantee completion of activities as planned.

The work within the task progresses based on three main activities: (I) mapping of facility experts in three overarching fields (energy, environment and health), mandatory to have the right source of information for next steps in the WP. All LEAPS-INNOV beneficiaries provided information for the mapping. Once this step was completed, (II) topic-focused online workshops gathering facility contacts were organised by ULUND (LEAPS-INNOV-Health workshop took place on 13 September 2022; LEAPS-INNOV-Energy workshop took place on 15 September 2022; LEAPS-INNOV-Environment workshop took place on 17 January 2023). An average of 15 participants from the different LEAPS facilities joined the meetings and provided an overview of the science and user community related to the topic of interest. A discussion followed to jointly comment on the scientific challenges, technological improvements needed and users’ connection to relevant networks active on European level. The meetings resulted in identification of common scientific and technical achievements and challenges, providing valuable knowledge exchange and an overall agreement that special effort needs to be put into training of future generations of facility users and staff. The outcome of these workshops constitutes Deliverable 9.1, the co-creation catalogue (submitted as planned in M18, complemented and updated regularly), a valuable tool for presenting current status and achieved goals.

In parallel, (III) a first online roundtable with a network took place in May 2022 organized by ULUND. Representatives of Treesearch (<https://treesearch.se/en/>, an initiative where the academic and industrial sectors work together with private foundations and the Swedish government to create a world-leading open research environment for the future bioeconomy) presented the network, its current interaction with LEAPS facilities as users and as collaborators to the participants from several LEAPS-INNOV beneficiaries and discussed how to improve collaboration. The meeting confirmed the completion of Milestone 37 in month 14 (two months delay compared to the predicted delivery in month 12, as result of the attempt to avoid holding the meeting in an online setup (put in place during the COVID pandemic)).

The second online roundtable was organized by ULUND for January 2023 with the network BATTERY2030+. The network has been chosen due to the extremely lively battery research currently performed in Europe (already supported by LEAPS facilities, but lacking better coordination on consortium level) and the establishment of the BATT4EU Partnership. The roundtable was an opportunity to discuss improvement of service to better meet the network needs and to consider possible setups for closer future collaboration in joint projects.





Figure1: Overview of Work Package 9 activities.

Task 9.2: Co-creation implementation studies developing science instruments to approach sustainable development goals in the context of HE missions

Implementation studies are a new form of collaboration between LEAPS-INNOV members and external partners identified in task 9.1 and linked to relevant networks. These propose initiatives that fund the joint development by LEAPS-INNOV partners and the user community. These technical improvements can be designs or prototypes for science instruments at LEAPS beamlines, or commonly developed access modes, etc., to address current limitations related to societal challenges. The start of the work towards the development of implementation studies in task 9.2 was planned for month 13. As the co-creation work in WP9 is transversal, the discussions about the possible implementation studies took place during all the activities performed in WP9 (mentioned above in the context of task 9.1). Discussions involving collaborators from WP8 (to guarantee industry involvement and interest in the work developed) and WP5 (to involve technical experts from sample environment) are helping to shape the form of the call for proposals for these studies.

To guarantee a transparent process which will allow the consideration of competitive ideas, a call for proposals, developed by ULUND and DESY, has been prepared and launched in October 2022, <https://www.leaps-innov.eu/wp9-call> broadening the request to the whole LEAPS-INNOV community and beyond. The call describes requirements for the proposed implementation studies (involvement of more than one LEAPS-INNOV member and representatives of the user community, potential active involvement of industry, etc.) and evaluation criteria. The call dissemination has been broadly shared, besides posting it on the project webpage, through advertisement on other webpages and newsletters (e.g. www.lightsources.org), on individual facility webpages (e.g. <https://www.maxiv.lu.se/article/leaps-innov-project-offers-funding-for-collaborative-projects/>) on social media (e.g. Twitter, LinkedIn) and through mailing among partners.

During the open call, in total 10 proposals have been submitted to the call coordinator. Of these proposals 9 were for collaborative technology developments and 1 for the project type of development



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of targeted challenge driven access modes. All proposals fulfilled the eligibility criteria. Each proposal was reviewed by 3 independent experts of the respective research field after confirming that there are no conflicts of interest. The proposals got reviewed against the following selection criteria, which all were weighted the same:

- Complementarity of the consortia partners, contribution of the user institution
- Benefit for a larger part of the user community
- Alignment with the LEAPS strategy (Link: https://leaps-initiative.eu/wp-content/uploads/2022/05/LEAPS-ESAPS-Broschure_final-20052022-3.pdf)
- Contribution to LEAPS efforts to link to EU Horizon Europe missions and/or EU partnerships

For the grading, the following scale was applied:

7	Outstanding	Exceptionally strong application with negligible weaknesses
6	Excellent	Very strong application with negligible weaknesses
5	Very good to excellent	Very strong application with minor weaknesses
4	Very good	Strong application with minor weaknesses
3	Good	Some strengths, but also moderate weaknesses
2	Weak	A few strengths, but also at least one major weakness or several minor weaknesses
1	Poor	Very few strengths, and numerous major weaknesses

Table 1: Grading scale (The grading scale was defined based on the grading scale of the Swedish research council: Criteria and grading scales - Vetenskapsrådet (vr.se))

For confirming the ranking which resulted from the independent evaluations, a meeting with all reviewers was organized on 19 January 2023. The agreed ranking was shared with the LEAPS-INNOV governing board for approval (20 approve, 2 abstain, 0 do not approve). As the availing funding is in total 321.000€ (without overhead), funding could be offered to the top 3 ranked proposals. In the table below the top 3 ranked proposals are listed as approved call result. Requested budget amounts do not include overheads.

Main Applicant	Affiliation	Title	Project partners	Total grade	Requested Budget
Virginie Chamard	Fresnel CNRS-AMU	EASYBRAGG - Implementation of user-friendly 3D Bragg ptychography at synchrotron sources	ESRF, Diamond, MAX IV	24,67/28	113.000€



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apl. Prof. Oliver Rader	HZB	STRAQTECH - Strategic access for quantum technology	SOLEIL, Katholieke Universiteit Leuven	24,00/28	100.000€
Dr. Jonas Sellberg	KTH Royal Institute of Technology	AFX - Acoustofluidic crystallography	DESY, MAX IV	23,67/28	86.000€

Following the approval by the GB, the PIs of the top 3 ranked proposals got contacted by the call coordinator to start the implementing activities. Based on the discussion with the project coordinator and the PIs of the projects, the conclusion was that for the budget transfer with the projects, the best suitable way is to include CNRS and KTH as beneficiaries to the LEAPS-INNOV consortium. This adjustment of the consortium got approved by the LEAPS-INNOV GB (17 approve, 5 abstain, 0 did not approve) and the respective project amendment is being prepared in collaboration with the project coordinator. With this amendment and the projects, including their tasks and deliverables will be included in the WP9 activities. The starts of the projects is expected for Q2 2023.

This implies that the milestone MS39 will be achieved with a delay of about 5 months. The projects will still be completed within the duration of the LEAPS-INNOV project. This delay relates to the timeline of activities performed in Task 9.1. It was deemed more efficient and impactful to launch the work in Task 9.2. after some initial discussions had taken place within the consortium and with external collaborators to ensure the proposals then included among the pilot ones are the most excellent ones and beneficial for the facilities and the user communities. The completion of MS39 is partly depending on the result of a Project Amendment request addressing the need to include two new partners as project beneficiaries for them to be able perform the proposed work. Thus MS39 is expected to be completed by April 2023 with the start of the STRAQTECH pilot project (led by HZB) and the other two ones will start as soon as their inclusion in the consortium is completed.

The milestone MS40 (End of co-creation implementation studies for science instrumentations, Nov 24) is not affected by this delay and can still be achieved as planned.

Task 9.3: LEAPS co-creation forums

Co-creation Forums are envisioned as an outcome of discussions led during meetings organised within task 9.1. The Forums are events which are expected to be organised in a conference-like format, with a duration of 1-2 days, parallel sessions and an approximate number of attendees in the range of 100 people. The target audience will be broad and inclusive, participation is expected by the user community (including researchers from both academia and industry, with special attention to involve not only experts but also young researchers) and LEAPS-INNOV members, to guarantee fruitful discussions and networking.

The work developed in this context so far has been dedicated to discussions on the adequate format and topics to be addressed. Milestone 38 with deadline in month 16 was completed by preparing a



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detailed protocol for the organisation of Forums that are planned for 2023 and 2024 (we will aim to choose date and location based on bigger events already planned in the field, independent from LEAPS-INNOV, to link to them and rely on the fact that community representatives will already travel to attend those) and a tentative agenda for what concerns the topics of interest. The field of energy-related science will be the first one to be addressed as the community is already now very active and interested in deepening the collaboration with the LEAPS-INNOV consortium and in finding new ways of collaboration. Within the energy-workshop and the roundtable with BATTERY2030+ network specific topics of interest got identified to be represented and discussed at the forum. To adapt the forum in the best possible way to the needs of the different interest groups, a working group for planning the forum has been formed with participants of the workshop and roundtable. Relying on the momentum found in this field, a Forum planned in autumn 2023 will bring together all interested parties and place solid grounds for further collaboration by setting concrete goals. A satellite event related to the mentioned Forum in Autumn 2023, will be held in June 2023 in a smaller-scale format. This satellite will have the same focus topic but targeting primarily industry interested in this field and being set as a roundtable discussion involving selected participants from the LEAPS current and future industrial users communities. As described, the task is progressing well within the planned timeline.

Outlook for WP9

Task 9.1 is now completed in relation to its initially planned content. The activities were considered to be very successful and engaging for the participating actors. Follow up online meetings will be planned to deepen started discussions further and build upon the momentum achieved.

In relation to task 9.2, the selected pilot implementation studies will be launched and developed. The Amendment for the LEAPS-INNOV project to include two new project partners will be requested to enable a successful implementation of the selected projects.

In regard to task 9.3, a first Co-creation Forum on energy-related science is planned for autumn 2023, aiming to address topics with special interest identified throughout the previous WP9 activities. As the target group of this forum is quite heterogeneous, a working group for planning the forum got installed, containing representatives of different interest groups. A date for the forum will be defined soon. A second forum will be organized in form of an emerging science conference similar to the framework of the “LEAPS meets Science” conference series. The topic will be defined based on the discussion in relation to tasks in 9.1 and 9.2.

Deliverables and Milestones WP9

Deliverables Period 1

Deliverable Number	Deliverable Title	Due Date (in months)	Delivery (in months)	Status
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D9.1	Co-creation inventory / catalogue	M18	M18	submitted
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Milestones Period 1

Milestones Number	Milestones Title	<i>Due Date (in months)</i>	<i>Delivery (in months)</i>	<i>Status</i>
MS37	First LEAPS co-creation roundtable held	M12	M14	achieved
MS38	First draft of timetable for LEAPS co-creation forum events	M16	M16	achieved
MS39	Start of co-creation implementation studies for science instrumentations	M20		Not achieved; planned for M25

