



# Co-UDlabs

Building Collaborative Urban Drainage  
research Labs communities

## 5.2. Report on evaluation procedure 1st call

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## Background: about the Co-UDlabs Project

Co-UDlabs is an EU-funded project aiming to integrate research and innovation activities in the field of Urban Drainage Systems (UDS) to address pressing public health, flood risks and environmental challenges.

Bringing together 17 unique research facilities, Co-UDlabs offers training and free access to a wide range of high-level scientific instruments, smart monitoring technologies and digital water analysis tools for advancing knowledge and innovation in Urban drainage systems.

Co-UDlabs aims to create a urban drainage large-scale facilities network to provide opportunities for monitoring water quality, UDS performance and smart and open data approaches.

The main objective of the project is to provide a transnational multidisciplinary collaborative research infrastructure that will allow stakeholders, academic researchers, and innovators in the urban drainage water sector to come together, share ideas, co-produce project concepts and then benefit from access to top-class research infrastructures to develop, improve and demonstrate those concepts, thereby building a collaborative European Urban Drainage innovation community.

The initiative will facilitate the uptake of innovation in traditional buried pipe systems and newer green-blue infrastructure, with a focus on increasing the understanding of asset deterioration and improving system resilience.

## List of acronyms

Acronym / Abbreviation	Meaning / Full text
EPP	External Evaluation Panel
TA	Transnational Access
UDS	Urban Drainage Systems
WP	Work Package

## Executive summary

This document is a deliverable of the Co-UDlabs project, funded under the European Union’s Horizon 2020 research and innovation programme under grant agreement No 101008626. The Deliverable is included in Work Package 5, “Management of the Transnational Access”. The lead beneficiary of the Work Package is the University of A Coruña (Universidade da Coruña, UDC). UDC is the main author of this Deliverable.

The aim of this document is to provide a report of the evaluation procedure and results of the first call of the Co-UDlabs Transnational Access program. The call was opened on 30 October 2021 and received 15 project proposals led by institutions in 11 countries, reaching a total of 100 users from 60 different institutions from 19 different countries. After a review of the proposals by the project partners and an independent evaluation by an External Evaluation Panel, 13 proposals were finally awarded with transnational access with projects to be developed at the facilities offered by Co-UDlabs until July 2023.

## 1. Introduction

Within the Transnational Access program of Co-UDlabs, this First Call for Proposals is an invitation to all eligible user groups to submit a proposal for research projects to be carried out before July 2023 accessing Co-UDlabs unique facilities, with financial, logistical, technological and scientific support from Co-UDlabs. Transnational Access will be provided to selected “user groups” (i.e., teams formed by different researchers and institutions) led by a “user group leader”. The partner providing access is named ‘provider’.

The facilities are based at 4 Universities (University of A Coruña (Spain), University of Sheffield (UK), INSA Lyon (France) and Aalborg University (Denmark)) with world-class urban water research groups, combined with 3 leading national research institutes: Deltares (Netherlands), EAWAG (Switzerland) and IKT (Germany)). The experimental facilities are designed for research across a range of applications, including urban flooding, runoff pollution, physico-chemical and biological in-sewer process, sustainable urban drainage systems (SuDS), performance analysis of urban assets (including SUDS), real time control and asset deterioration. New digital water technologies and solutions for the monitoring and evaluation of these processes are also analysed in the framework of the project. There are two modalities of access depending on the facility: i) In-Person Access where the presence of at least one member of the user group is expected during the whole period of the access complemented by punctual visits from other researchers, and ii) Partially Remote Access where the presence of the user group is only required at some stage of the access period (e.g. installing and un-installing user’s equipment or configuring the facility).

It is possible to apply from all over the world, but user groups where all or most users work in third countries (defined as not EU or Associated country according to EU H2020 rules) can be supported as far as the cumulative access provided to them is below 20% of the total amount of days of access provided under the grant. In addition, some other limitations were set up on the Call’s rules and procedure: i) researchers from the Co-UDlabs partners may not exceed 1/3 in any user group, ii) both the user group leader and the majority of the user group members must work in country other than the country where the facility is located, iii) user groups must be allowed to disseminate the results they have generated under the action may benefit from the access (SMEs are exceptions), and iv) and the user group members should normally not have access to a similar facility.

In the following, the information related to the dissemination of the first call for proposals of the Co-UDlabs Transnational Access, the evaluation of the proposals received, and the final results of the call are detailed described. A second call for proposals is scheduled in October 2023.

## 2. Call for proposals

The first call for proposals of the Co-UDlabs Transnational Access was officially launched on October 31, 2021. The deadline for the submission of proposals was set on January 31, 2022. Several events have been organized and detailed documentation has been produced to inform the urban drainage community about the call, to highlight the possibilities of the unique facilities offered and to explain the application procedure, the rules of the call and the evaluation criteria established:

- On October 13, 2021, Co-UDlabs held an Introductory Webinar in which the scope, goals, and research infrastructure of the project were presented with a particular focus on the details of the Co-UDlabs

Transnational Access programme and the description of the 17 facilities offered. The event was quite successful as it gathered over 150 registrations and a peak of just over 100 participants in attendance at the Webinar. The video recording of the Webinar was made available online on Co-UDlabs website and youtube channel.

- A complete TA Call Reference Manual (Deliverable 5.1) was published and made openly available on CoUDlabs website (co-udlabs.eu) with detailed information for potential users of the Co-UDlabs TA program, including the call selection and application procedures with a description of the facilities and access provided.
- On November 3 and 4, 2021, Co-UDlabs held an Online Workshop on Urban Drainage Practice and Research Needs, a two-day event to identify valuable good practices and research for the optimisation of UD assets' performance and improve their resilience to climate change and sustainability. The Workshop was a great venue to introduce Co-UDlabs' open Trans-National Access (TA) call to a predominantly non-academic audience.
- On November 23 and 25, 2021, Co-UDlabs organised a global 'Hackathon' event to meet with researchers and practitioners from a number of scientific and technology fields. The main goal was to present this audience with the core challenges that urban drainage systems are facing today: climate change, extreme weather conditions, infrastructural stress and asset deterioration, among many others and discuss with Co-UDlabs facility providers how projects to be developed in the facilities can be used to address those issues. 12 participants contributed with 14 project idea presentations and were warmly invited to build on their ideas and transform them into full-fledged proposals for Co-UDlabs' Transnational Access call, leading to several projects that have finally been granted in this first call. The results of the Hackathon were used to create a Co-UDlabs Ideas Marketplace in which the people of our community can exchange propositions, ideas, contacts and methods that may lead to Transnational Access project proposals.
- All the information and documentation related with the call was published online on Co-UDlabs website (co-udlabs.eu). The call was announced on Co-UDlabs social media, on the first issue of the Co-UDlabs newsletter, which has been released on November 2, 2021, on JCUD newsletter and on IAHR newflash, among others. Additionally, Co-UDlabs partners used their professional networks and contacts for more direct and personal contact with potentially interested users and stakeholders.

In this first call, all Co-UDlabs facilities were offered for Transnational Access. The total estimated projects and minimum access days per project for the two Transnational Access calls are included in Table 1 together with the type of access which corresponds to each facility. Everyone contemplating to submit a proposal in this call was highly recommended to submit a draft proposal to the corresponding facility provider at least 4 weeks before the deadline. In this way, providers were able to advise on issues like technical constraints, feasibility or eligibility conditions or could provide additional information after which the proposers could improve their final proposal. This turned out to work very well and has led to many relatively high-quality proposals.

**Table 1. Minimum access days to be provided per project and estimated number of projects available for each facility within the full Transnational Access program of Co-UDlabs.**

Provider	Facility	Type of Access	Estimated number of projects	Min. access days to be provided per project
UDC	STREET	In-person	2	40
	BLOCK	In-person	2	60
	BENS	In-person	2	60
USFD	RTC RIG	In-person	1	60
	BURIED INF.	In-person	1	60
	ANNULAR	In-person	2	60
	A/B FLUME	In-person	2	60
Deltares	B-LOOP	In-person	1	40
	A-LOOP	In-person	1	40
EAWAG	HALL	In-person	2	40
	UWO	Partially remote	3	20
IKT gGmbH	IKT LTF	In-person	2	40
	IKT TEST	In-person	2	15
INSA LYON	OTHU DRB	Partially remote	1	10
	OTHU SuDS	Partially remote	2	10
	GROOF	Partially remote	2	10
AAU	FREJLEV	Partially remote	1	20

### 3. Proposals received

A total of 15 project proposals were received on the first call of the Co-UDlabs TA program. The user groups were led by institutions in 11 countries and included members and researchers from a total of 19 different countries (Figure 1). 100 users from 60 different institutions were part of the teams that submitted their proposals. The call was successful in mobilising interest and participation outside of university: 45% of staff involved in the proposals came from non-academic institutions and partners. 25% of all users are female, a low but growing figure which will have to be the focus of more innovative and inclusive recruiting in the future. Junior researchers were also involved in the project proposals with at least 8 PhD students already included in the user groups and several open positions were planned in user-group institutions because of their participation in the TA.

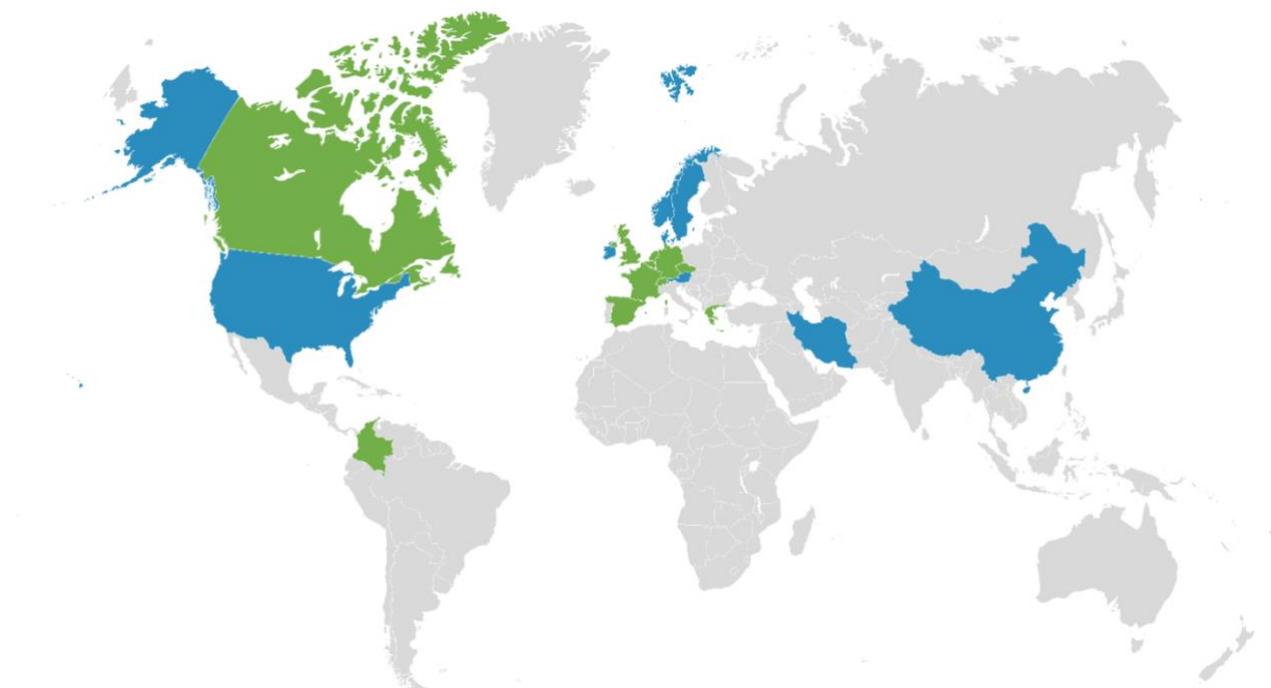


Figure 1. Countries of user-group leading institutions highlighted in green; countries of user-group members in blue.

## 4. User selection procedure

### 4.1. Common evaluation procedure

The facility providers, participating in Co-UDlabs, have agreed a single common User Selection Procedure that were made available during the call. This procedure was communicated to the External Evaluation Panel (EEP) consisting of independent experts from the fields covered by the research facilities of Co-UDlabs.

In summary, this common User Selection procedure includes the following:

- The applying user groups are given the possibility to submit a preliminary proposal 4 weeks before the deadline, which then can be improved based on the remarks of the facility manager.
- Before proposals are ranked, they must meet two essential selection criteria, which are judged by facility providers: the user group must be eligible according to EU rules and the project must be practically feasible within the access period timescale. The eligibility of the proposals received were checked first by Co-UDlabs management team. The eligibility conditions were included in the User Selection Procedure document available on TA call website and the TA call Reference Manual (Deliverable 5.1). Then, the provider of the facility requested in each proposal assessed its feasibility considering the logistics of the facility, the access period timescale and the resources and budget available. If one of these conditions is not met, the proposal will not be ranked by the EEP and is rejected. Feasibility reports were made by facility provider and shared a posteriori with granted and non-granted user groups in order to serve as feedback and refine project proposals for the TA Access, or for the second TA call in case of rejection-.
- The independent panel of experts evaluated all eligible and feasible project proposals, using pre-described selection and ranking criteria. Each proposal was in-depth evaluated by two members of the EEP. This

evaluation consisted in comments and numeric scores regarding the excellence of the proposal, the impact of expected results and the potential for academic or industrial innovation. It is being ensured that the experts do not have any involvement whatsoever in the proposals reviewed. The common selection and ranking criteria was sent to the User Selection Panel members before they received the proposals.

- In a common session of the EEP each proposal was discussed and its acceptance was based on the majority agreement of the EEP members. The in-depth evaluations were previously sent to all EEP members participating in the session to ensure their knowledge about each proposal reviewed. Facility providers were in the session only to provide additional information of the corresponding facility to the panel where necessary. In those facilities with remaining TA slots and proposals with an average score less than 13 points, which was established as the minimum score to be awarded, the EPP has given the opportunity to user groups member to revise and improve the proposal according to the evaluators' comments and resubmit it. This ensured awarding only high-quality project proposals.
- The User Selection Panel drafted a short-list of User Groups to be granted, which were informed (by the end of April) from Co-UDlabs team. In case of non-acceptance, the applicant was informed by email with a summary of the comments made by the EEP and their rank and scores. Where appropriate, the report also include recommendations and suggestions for improvement and resubmission of a new proposal for the second call for projects scheduled for 2023. Resubmission for the second call will however not give any preference or priority in the user selection procedure.

## 4.2. External Evaluation Panel

An independent panel of experts was assigned to evaluate all received proposals using pre-described selection and ranking criteria. The External Evaluation Panel consisted of 12 members of academia and no academia members and with diversity in nationalities, institutions and field of expertise. It is being ensured that no conflict of interest exists between External Evaluation Panel members and the proposals to be reviewed or Co-UDlabs facility providers. The following table includes the composition of Co-UDlabs EEP.

*Table 2. Composition of Co-UDlabs External Evaluation Panel, included affiliation and corresponding country.*

Name	Affiliation	Country
Arthur Scott	Heriot Watt University (Edinburgh)	UK
Ángel Villanueva	Agbar Group (Veolia) / AEAS	Spain
Antonio Lastra	Canal Isabel II	Spain
Caroline Wadsworth	Isle Utilities Ltd.	UK
Emmanuel Berthier	CEREMA	France
Frank Blumensaat	Landesdirektion Sachsen	Germany
Franz Tscheikner-Gratl	NTNU	Norway
Johan Van Assel	Aquafin	Belgium
Maria Viklander	Luleå Tekiska Universitet	Sweden
Marie-Christine Gromaire	Ecole des Ponts ParisTech / Leesu	France
Philipp Staufer	Canton Solothurn, Environment Office	Switzerland
Sophie Duchesne	INRS	Canada

### 4.3. Selection criteria

A common evaluation procedure was used to assess the scores from the selection and ranking criteria fairly and objectively. The EEP members were responsible for independent evaluation of the access projects using the following selection criteria:

- Confirmation of Feasibility and Eligibility (yes/no)
- Excellence of the proposal (weak: 0 – outstanding: 10)
- Impact (weak: 0 – outstanding: 5)
- Potential for academic or industrial innovation (weak: 0 – outstanding: 5).

Proposals that meet the essential criteria (eligibility and feasibility) were then judged on their scientific merit. The final score of the proposal was the sum of the scores obtained in the three criteria established. During the evaluation of the first criteria, user groups composed of members from a wide range of institutions, different eligible countries, and with the presence of non-academic sector are positively considered. If two proposals have the same rating, the number of first-time users, users that are working in countries where no equivalent research infrastructure exists and the number of female users are considered when making the final selection (in conformity to EC objectives).

## 5. External Evaluation Panel meeting

The EEP-Co-UDlabs meeting for the final assessment and ranking of the proposals submitted to the first TA call was held on March 24, 2022. During the meeting, 14 eligible and feasible proposals were evaluated to access 11 of the facilities offered by Co-UDlabs. All proposals were detailedly evaluated first by two EEP members and the reports and scores were sent to all EEP members before the meeting. The meeting was attended by 5 EEP members in charge of rank and select the granted proposals and the facility providers whose role was only to provide additional information of the corresponding facility to the panel where necessary. The decisions agreed upon during the EEP-Co-UDlabs meeting were:

- All proposals above the cut-off threshold of 13 points, as stated by the TA regulations in Co-UDlabs' Grant Agreement with the European Commission, and that applied for a facility that only received one proposal was granted access to the facility.
- When two eligible proposals with a score higher than 13 are applying for the same facility, both were accepted as long as the budget and timescale are appropriate to facility providers.
- The user groups of the three feasible proposals that have not met the scoring requirement at the first attempt (FJDC University, DUTH, Hidrostack) were recommended to revise, improve and re-submit their proposals according to the evaluators and facility providers comments, so that the proposal can provide a new evaluation. The EEP agreed to grant these proposals in case they were over the cut-off threshold of 13 points after the evaluation of the revised proposal by the EEP members.

Therefore, the EEP finally proposed 13 user groups from leading institutions from 10 countries to be granted with Transnational Access to 10 of the facilities offered by Co-UDlabs in this first call, which are provided by 5 different partners. In the following table (Table 3), all project proposals granted in this first call are listed. Annex 1 includes the scores received for each submitted proposal and the final decision of the EEP.

**Table 3. Selected proposal by the External Evaluation Panel to be awarded with Transnational Access.**

Host Co-UDlabs Institution	Facility	Awarded Proposal	Group leader institution	Country	Number of granted acces days
Universidade da Coruña	BENS	Evaluation of new flow and quality monitoring devices for sewers	Photrack	Switzerland	60
Universidade da Coruña	BLOCK	Methodology to determine the potential resuspension load of heavy metals from road sediments associated with surface runoff	Francisco José de Caldas University	Colombia	60
Universidade da Coruña	STREET	Urban Flooding: Houses as reservoir (UF-HOUR)	Democritus University of Thrace	Greece	40
University of Sheffield	A/B	Pollutant Transport in Urban Floodwaters	Fluid Mechanics and Acoustics Laboratory (LMFA-INSA)	France	60
University of Sheffield	ANNULAR	Temperature time series analysis for predicting sedimentation in sewer systems	Universidade da Coruña	Spain	60
University of Sheffield	ANNULAR	Annular Flume studies to test the effect on Antibiotic Resistant Genes and Use of CRISPR- Cas in E. coli from sediments affected by sewage pollution	Universitat Politècnica de Catalunya	Spain	60
University of Sheffield	BURIED	Hydraulic Analyses of the Toronto Exfiltration System (TES)	Ryerson University	Canada	60
EAWAG	HALL	Non-contact assessment of TSS and COD concentrations in wastewater with hyperspectral imaging	Czech Technical University in Prague	Czech Republic	40
EAWAG	HALL	Characterization of thermal properties in drainage systems with temperature probes	Delft University of Technology	The Netherlands	40
EAWAG	UWO	A Probabilistic Machine Learning-based Framework to Improve Urban Drainage Modeling Reliability	Technical University of Kaiserslautern	Germany	20
IKT	IKT-LTF	Assessment of Inspection tools for Rising Mains (AIR)	Stichting RIONED	The Netherlands	40
IKT	IKT-LTF	Investigation of the rehabilitated waste water pressure pipes in response to pressure surges in operation	VLARIO	Belgium	40
INSA Lyon	OTHU GROOF	In-situ SUDS modelling	Institut für technisch-wissenschaftliche Hydrologie	Germany	20

## 6. Conclusions

The first call of the Co-UDlabs TA program received 15 project proposals led by institutions in 11 countries, reaching a total of 100 users from 60 different institutions from 19 different countries. The call was successful in mobilising interest and participation outside of university, showing effectivity in promoting team building and the establishment of multidisciplinary partnerships that brought various sectors and scientific approaches together. TA user groups included junior researchers, students and new vacancies, showing that it is also a good opportunity for these collectives to be actively involved in high-level, interdisciplinary innovative activities in an international context. Prior communication between facility providers and user groups within the scope of the events and contact possibilities given during the call for proposals has been identified as key to achieve high quality and feasible proposals.

An External Evaluation Panel of international experts evaluate the proposals, based on the common user selection and evaluation procedure agreed by Co-UDlabs partners. Each eligible and feasible proposal, checked by Co-UDlabs management team and facility providers respectively, was evaluated in-depth by two members of the EEP. The EEP discussed these reports in a joint meeting and finally decided to select 13 project proposals to be granted with TA

access to Co-UDlabs facilities. This gave a success rate of 87%. Co-UDlabs wanted to thank all the EEP members for their very valuable contribution and for the time and effort they devoted to the evaluation process.

The results achieved in this first call of proposals showed that dissemination of the call, application of proposal process, and evaluation procedure were effective, and the participation is seen very positive, especially considering that Co-UDlabs is a starting community. Co-UDlabs will try to continue working on this line and reinforce the procedure for the second call for TA proposals scheduled for October 2023.

## Annex 1. Score and final decision on proposals received

Table A.1: Evaluation of project proposals for the Co-UDlabs 1<sup>st</sup> Transnational Access call.

PROJECT PROPOSAL	TITLE	Group leader institution	Excellence		Impact		Potential		Total	Average Score	Evaluation outcome
EAWAG-01-HALL-Bares	Non-contact assessment of TSS and COD concentrations in wastewater with hyperspectral imaging	CTU Prague	8	9	4	4	4	5	34	17.0	Granted
EAWAG-02-HALL-Langeveld	Characterization of thermal properties in drainage systems with temperature probes	TU Delft	8	8	5	5	5	2	33	16.5	Granted
EAWAG-03-UWO-Dittmer	A Probabilistic Machine Learning-based Framework to Improve Urban Drainage Modeling Reliability	TU Kaiserslautern	8	8	3	4	4	5	32	16.0	Granted
IKT-01-LTF-Verhulst	Investigation of the rehabilitated wastewater pressure pipes in response to pressure surges in operation	VLARIO	6	7	4	4	3	3	27	13.5	Granted
IKT-02-LTF-Beenen	Assessment of Inspection tools for Rising Mains (AIR)	RIONED	7	10	5	5	3	4	34	17.0	Granted
IKT-03-TEST-Ayesa	Efficiency on Microplastics and sediments removal on Stormwater by Hydrodynamic Separators	Hidrostantk	4	5	4	3	4	3	23	11.5	Not granted*
INSA-01-OTHU-Fuchs	In-situ SUDS modelling	ITWH	9	9	5	5	5	5	38	19.0	Granted
UDC-01-BENS-Pena	Evaluation of new flow and quality monitoring devices for sewers	Photrack	8	8	4	4	5	5	34	17.0	Granted
UDC-02-BLOCK-Zafra	Methodology to determine the potential resuspension load of heavy metals from road sediments associated with surface runoff	Fº J. De Caldas University	7	7	4	4	3	4	29	14.5	Granted*
UDC-03-STREET-Bellos	Urban Flooding: Houses as reservoir (UF-HOUR)	DUTH	7	8	3	4	3	3	28	14.0	Granted*
USFD-01-ABFLUME-Mignot	Pollutant Transport in Urban Floodwaters	LMFA-INSA	8	7	5	4	4	4	32	16.0	Granted
USFD-02-ANNULAR-Regueiro	Temperature time series analysis for predicting sedimentation in sewer systems	UDC	7	7	3	4	3	4	28	14.0	Granted
USFD-03-ANNULAR-Morato	Annular Flume studies to test the effect on Antibiotic Resistant Genes and Use of CRISPR- Cas in <i>E. coli</i> from sediments affected by sewage pollution	UPC	7	8	3	3	2	3	26	13.0	Granted
USFD-04-BURIED-Li	Hydraulic Analyses of the Toronto Exfiltration System (TES)	Ryerson University	8	9	3	5	3	4	32	16.0	Granted
USFD-05-BURIED-Abbas	A novel manhole design for separate sewer systems	Liverpool John Moores University	Not eligible (group leader is from the facility's country)								

\*Score and decision after revision and reevaluation of the proposal