

Training and mobility in EU projects EURAD and PREDIS

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Received: 13 April 2022 / Received in final form: 8 August 2022 / Accepted: 16 September 2022

Abstract. Knowledge management (KM) is critical to ensure safe and sustainable radioactive waste management. The European Commission is encouraging KM through the Waste Directive. EURAD and PREDIS are projects funded by the European Commission, including work packages devoted to Knowledge Management. EURAD has set up a “School of RWM”, launched in 2020. To establish a portfolio of training courses, currently existing training initiatives in the field of RWM were mapped. A gap analysis was carried out to detect current unfulfilled needs for courses on specific topics. The School of RWM has already organized two training courses responding to the perceived needs. Besides training courses, both projects regularly organize topical webinars, which are related to RWM & Predisposal-related themes. Both projects launched a dedicated mobility program, allowing their beneficiaries to perform technical visits to infrastructures, undertake internships and set up exchange programs between institutions within EURAD/PREDIS. In addition, PREDIS also financially supports participation in training courses and events. Finally, both projects support their respective student communities, including masters, Ph.D. students, and postdocs. In order to improve their efficiency, EURAD and PREDIS KM will be merged in the proposed upcoming EURAD-2 program.

1 Introduction

Knowledge management (KM) is critical to ensure safe and sustainable radioactive waste management throughout the lifecycle. Moreover, KM is recognized as a key part of the Radioactive Waste (RW) implementation process and has gained interest in the last few years.

The European Commission is encouraging KM, through the Waste Directive, in order to improve the progress of EU Member States’ implementation of their national RW disposal programs. KM is crucial for implementing an RW disposal facility (licensing, constructing, operating, closing processes, and post-closure activities). Each individual phase of an RW management program, from waste generation through processing, disposal, and repository closure, will require continuous RD&D development with improved process understanding (inventory, handling, treatment, geoscience, disposal/material development, chemical, and physical interactions, long-term safety assessment, . . .). These developments will form the knowledge base needed for waste processing, packaging, and storage during the pre-disposal phase. Finally, this knowledge base will be used by, for example, waste management organizations, technical support organizations, regulators, and civil society, for obtaining the disposal

construction, operation, closure licenses, and post-closure activities (e.g. monitoring). There is a high motivation for logical and sustainable KM structures populated with publicly available, consistent, transparent, and up-to-date evidence-based state of knowledge. These KM structures are necessary to evaluate the waste disposability and predict the behavior of a disposal facility and RW with relatively small uncertainties on time scales of 10^5 – 10^6 years.

The European Joint Programme on Radioactive Waste Management (EURAD; 2019–2024; grant agreement N° 847593) gathers European Waste Management Organizations, Technical Support Organizations, and Research Entities working in the field of radioactive waste management (RWM). The main goal of EURAD is to achieve a step change in the European collaboration towards safe RWM through developing a robust and sustained science, technology and KM program. Such a step change means a new era via more effective and efficient public RD&D and KM funding in Europe and deep cooperation between the Member States. The aim is to implement a joint Strategic Program of research and KM activities at the European level, which brings together and complements the EU Member State programs to ensure cutting-edge knowledge creation and preservation to deliver safe, sustainable, and publicly acceptable solutions for the management of RW across Europe, now and in the future.

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The main activities of EURAD consist of research, development and demonstration activities, strategic studies, and KM, including access to existing knowledge, guidance for less advanced RWM programs, and developing a training and mobility program for EURAD end-users. The EURAD KM program is led by three distinct work packages (WPs): (i) WP11-State of Knowledge, which will gather the current state-of-the-art knowledge on RWM, (ii) WP12-Guidance, which will develop guidance documents that can be used by the Member States at the early stage of developing a national RWM program, and (iii) WP13-Training and Mobility. The “Training and Mobility” WP supports its activities through the “School of Radioactive Waste Management”, launched in 2020. In the first phase, this School focused on Training and Mobility. Later, we integrated actions to promote and support the EURAD Ph.D. student community and provide a panoramic overview of all disciplines and activities associated with a safe and sustainable RWM program. The latter is done via a diverse portfolio of training and mobility offers as well as via linking all the School’s activities to the EURAD Roadmap (*in progress*). Together these integrated actions form the four main pillars (i.e. (i) training courses/webinars, (ii) the Mobility Programme, (iii) providing a panoramic overview, and (iv) supporting the Ph.D. community of the School of RWM).

The “Pre-Disposal Management of Radioactive Waste” project (PREDIS; 2020–2024; grant agreement N° 945098) focuses on the development and implementation of activities for predisposal treatment of RW streams other than nuclear fuel and high-level RW. Like EURAD, PREDIS’ main activities consist of research, development, and demonstration activities and KM. All KM activities are coordinated by one WP. The main objective of this WP is to provide the PREDIS participants and the European pre-disposal community access to existing and newly formed knowledge in a systematic and structured way. The PREDIS KM work package focuses on developing a KM program, collecting State of Knowledge documents, and developing a training and mobility program.

The EURAD and PREDIS Training and Mobility WPs are closely interlinked and complementary. This is reflected in the EURAD-PREDIS Joint Statement on Knowledge Management, which summarized the KM approach of both projects and their collaboration [1]. This paper presents the Mobility and Training program developed by both projects as well as bi-directional support, collaboration in training activities, learning from experiences in both projects, etc.

KM is challenging to implement, however, both EURAD and PREDIS projects have a great potential for success and have access to experts with many years of experience and knowledge in the fields of RWM and KM.

2 Training program

2.1 Objectives

The School of RWM and the PREDIS KM WP act as the coordinating structures managing the entirety of the

training activities of EURAD and PREDIS. Their end-users are defined as professionals and potential new professionals at graduated and post-graduated levels for EU and non-EU countries (via International Atomic Energy Agency (IAEA) and Nuclear Energy Agency (NEA) programs) and, in particular, the next generation of experts.

To facilitate the development of the training program, the training portfolio will be linked to the EURAD Roadmap. This represents a generic RWM program that allows end-users to access existing knowledge in RWM. The content of the Roadmap is focused on which knowledge and competencies are considered most critical for implementing an RWM program (for more information: <https://www.ejp-eurad.eu/roadmap>). The School of RWM and the PREDIS training program pay attention to the best-fitted training format and ensure that the scientific state-of-the-art is guaranteed by enlisting EURAD/PREDIS subject matter experts as lecturers for their training courses.

2.2 Setting up the training program

The training programs of EURAD and PREDIS were set up following the same methodology but focused on their own target topics (RWM and predisposal of RW, respectively). Firstly, it was important to identify the specific training needs that were present in the RW community. Complementary to this, a mapping of existing training initiatives needed to be conducted.

By combining these two inputs, the School of RWM and PREDIS KM WP could draft a priority list of training courses, which helps implement the training courses and related activities such as webinars. All information related to the available activities is gathered on their own dedicated web pages (<https://euradschool.eu/> and <https://predis-h2020.eu/knowledge-management/>).

2.2.1 Identification of training needs

EURAD and PREDIS launched a “survey on training initiatives” in their respective communities [2,3]. The aim was to get a clear overview of the training needs and the currently existing training courses in the field of RWM and predisposition.

The EURAD survey was answered by 80 respondents, identifying a total of 363 training needs. Respondents categorized 262 topics as “difficult to find”. The identified existing training courses cover most of the topics within RWM, however, an analysis of the training needs indicated that there were still several gaps identified within the EURAD community (e.g. uncertainty management and safety case development and review).

Thirty-three organizations provided feedback through the survey distributed among the PREDIS partners and its end-user group. The PREDIS community identified several topics for which training is needed but is currently not available (to their knowledge) among the commonly offered training courses. It is important to highlight that about 80% of the proposed topics (e.g. geopolymer matrices, characterization, life cycle analysis, decontamination processes) can be covered by PREDIS partners.

The survey also included questions related to the preferred format of courses organized by PREDIS. These were included to help understand partners' preferences with regard to training formats and design. Based on that feedback, courses should be mainly focused on the needs of Ph.D. students, postdocs, and junior professionals. Furthermore, the respondents indicated that the preferred duration is 1–2 days or one week.

2.2.2 Mapping of existing training courses

The available training courses (in Europe) in the field of RWM were mapped up to the year 2021. This task was done in close collaboration between the EURAD and PREDIS Training and Mobility WPs. Over 150 courses were identified [4]. A comparison between the mapped courses and the training needs from the EURAD/PREDIS community confirmed a lack of courses in specific themes. An example is the lack of available training on uncertainty management in RWM: this was a topic that was identified as an urgent training need, and the mapping showed that currently, there are no training courses available to cover this gap. This provided a good way for the School of RWM and the PREDIS Training and Mobility Programme to develop their training courses and thus fill the identified gaps.

2.2.3 Implementation of training courses

For the newly developed training courses in the frame of EURAD, the School of RWM considers the Systematic Approach to Training [5]. This approach consists of cycled implementation containing the following steps:

1. analysis of the required competencies (knowledge, skills, and attitudes).
2. Design of a training program based on a translation of competencies into learning outcomes and objectives.
3. Development of training materials to meet the predefined learning objectives.
4. Implementation of the training.
5. Evaluation of the training effectiveness, which serves as feedback to step 1 "Analysis".

Based on the Systematic Approach to Training, EURAD developed quality criteria by which the newly developed training courses will be appreciated [6]. This also includes evaluation, which can be performed on several levels (e.g. learner satisfaction, knowledge/skills gained). Furthermore, these criteria also ensure uniform quality of the School of RWM's training courses.

PREDIS is currently developing its strategy for the training course program, but general lines are presented in Deliverable 3.4 [3].

In addition to implementing training courses, the School of RWM and the PREDIS KM Program also host online webinars. These are short and informal sessions providing information on a specific topic to a broad audience. They are recorded and made publicly available online.

2.2.4 Developing a dedicated webpage

All information on the activities of the School of RWM is collected and organized on a dedicated webpage:

<https://euradschool.eu/>. The aim is to make this webpage a centralized place where people, from both in- and outside of EURAD, can find all relevant information on the four main pillars of the School of RWM: training courses (including webinars), the Mobility Programme, panorama (providing an overview and insight into all aspects involved in RWM), and the EURAD Ph.D. community. Furthermore, the website also includes a discussion forum to bring together all members of the EURAD community. In addition, the webpage contains information about the outcome of the Mobility program, related publications, and a link to the EURAD Roadmap.

Similarly, PREDIS developed a specific section within its project webpage devoted to Knowledge Management Activities, including all the information related to the Training and Mobility Programme. In this section, the PREDIS community and the general public have access to the materials developed by PREDIS and all existing training material identified as relevant for the PREDIS community.

2.2.5 Engaging the Ph.D. community

Both projects actively support their respective student communities. Note that this is not limited to Ph.D. students but includes Master's students, Postdocs, and the next generation working in the radioactive waste management sector. They are the future key figures in the field of RWM, and as such, they benefit from the possibility to network with their peers and established senior RWM experts early on in their careers.

To this end, an overview of all Ph.D. students working within EURAD and PREDIS is collected. In the case of EURAD, this overview is made publicly available via the School of RWM's website. This allows the Ph.D. students to easily find each other's contact data and be informed about the research topics of their peers. PREDIS uploads the updated overview of students at their internal system of document sharing, and all students have access to it.

The following actions are done to improve the students' integration within the project community and improvement of their knowledge and experience in the field; as well as enhance their networking:

- a list of events that are of special interest to Ph.D. students are available for them, not only training courses but also interesting conferences, summer schools, workshops . . . in the field of RWM;
- publications made by Ph.D. students are gathered and published. This way, the scientific achievements of the Ph.D. community can easily be tracked by both the EURAD/PREDIS community and the general public;
- organization of Ph.D. student events;
- "Ph.D. corner" in the EURAD newsletters to highlight the work done by the Ph.D. students.

Finally, the School of RWM also hosts an open, interactive forum, which is available through the School of RWM webpage. The primary aim of this forum is to improve the cohesion and interaction between participants in the EURAD community. As such, it provides an ideal platform for students and junior researchers, senior experts,

civil society members, etc., to discuss diverse topics in the field of RWM.

3 Mobility programme

3.1 Objectives

With the organization and coordination of a Mobility Programme, the projects allow its beneficiaries to perform technical visits to dedicated infrastructures associated with the EURAD/PREDIS partner organizations, undertake internships, and set up exchange programs between institutions within the project. In addition, it also offers Mobility actions to attend a course or a conference.

These activities serve as enhanced training as well as collaboration between all members of the EURAD/PREDIS community. The mobility actions can complement a training program and/or be part of a Continuous Professional Development program of experienced personnel involved in RWM.

3.2 Setting up the mobility programme

The School of RWM hosts the EURAD Mobility Programme. It was developed to complement existing initiatives (e.g. ENEN+ Mobility Fund). The intention is to financially support junior and senior professionals as well as Ph.D. students and postdocs from EURAD beneficiaries to:

- visit dedicated infrastructures from EURAD partner institutions;
- undertake internships and/or exchange programs between EURAD partner institutions.

EURAD opted for a tiered approach in developing its Mobility Programme. The Mobility Programme can evolve to include students (M.Sc and B.Sc) and support their mobility actions. Based on the performance of the Mobility Programme and end-user feedback, it will be extended regularly throughout the EURAD lifetime. Currently, the EURAD Mobility Programme operates at Stage II of its predefined stages. A proposal was submitted in April 2022 to extend the Mobility Programme to allow financial support for attending training courses and conferences.

For PREDIS end-users, knowledge transfer through mobility actions is a priority. As such, the Mobility Programme is intended for those who want to improve their knowledge and skills in the field of predisposal treatment of RW streams, other than nuclear fuel and high-level radioactive waste. The PREDIS Mobility Programme mostly targets Ph.D. students, postdocs, and junior scientists out of PREDIS beneficiaries. It will support them to:

- visit partners institutes or industrial partners;
- perform internships and/or exchange programs;
- participate in (inter)national training courses;
- attend events (e.g. conferences, workshops).

Both Mobility Programmes are open to all partner institutions affiliated with EURAD or PREDIS who would like to improve their knowledge and skills in the field of RWM and predisposition to RW. Moreover, they follow a similar methodology as PREDIS takes to profit from the previous experience of EURAD.

The application process is as follows:

1. applications submission to an online portal (<https://pro.evalato.com/2185> or <https://pro.evalato.com/3346> for EURAD and PREDIS, respectively).
2. Evaluation of the applications: the evaluation depends on the type of mobility action. On the one hand, there are internal WP mobility actions. In this case, the WP Leader, together with two members of either the EURAD WP Board or the PREDIS WP3, will perform the evaluation. On the other hand, there is cross-WP mobility. In this case, the application will be evaluated by an Evaluation Committee. The evaluation itself applies predefined criteria.
3. Acceptance of the Mobility action: based on the scores, a ranking will be made, and applicants will be selected.
4. Reporting: upon completion of the mobility actions, beneficiaries are asked to submit a detailed mission report, which will be assessed on the completeness, language, and compliance with the proposed mobility action. These mission reports will be stored and made available online as they are valuable outputs from the Mobility Programme. They also allow for evaluating the success and effectiveness of the performed mobility actions.

To successful applicants, a mobility grant will be provided, which is intended exclusively to cover mobility-related costs (i.e. travel, daily allowance, and accommodation). In the case of PREDIS, the registration fee for a conference or training is also covered. The grants will be provided as lump sums.

Applicants' practical information (e.g. how to apply, deadlines, lump sums) is summarized in a "Mobility manual" document elaborated by each project [7,8].

4 Current achievements of the EURAD School of Radioactive Waste Management and PREDIS Training and Mobility programme

4.1 Launch of the webpages

On December 21st 2020, the webpage of the School of RWM (<https://euradschool.eu/>) was launched. The landing page allows for easy navigation between information on courses, mobility, Ph.D. students, webinars, and general information about the School of RWM (Fig. 1). Additionally, it allows access to the discussion forum and a list of publications by the EURAD Training and Mobility work package. Furthermore, it contains news items and a calendar of upcoming events.



Fig. 1. Home page of the School of Radioactive Waste Management’s webpage (<https://euradschool.eu/>). The home page allows navigating between information on courses, mobility, Ph.D. students, webinars, and general information on the School of RWM. Additionally, it allows access to the discussion forum and a list of publications by the EURAD Training and Mobility work package.

As of March 31st 2022, 2322 new users have visited the webpage. Eight thousand seven hundred and two page views were registered. The most viewed pages are (i) the home page (1343 views), (ii) the upcoming events page (1084 views), (iii) Mobility Application guidelines (493 views), and the (iv) list of EURAD partner infrastructures (434 views).

In June 2021, the discussion forum was launched, accessible through the School of RWM’s webpage. The aim is to foster discussions, ask questions, and network with all EURAD partners. In order to create posts, registration is required. It contains sub-forums to support discussions concerning the School of RWM and the EURAD Roadmap.

The PREDIS webpage was launched on September 1st 2020. It includes a section focused on KM activities. The team is now working to implement a new design to improve the interaction of the beneficiaries and the general public with the relevant information.

4.2 Organization of training courses and webinars

Currently, the School of RWM has organized two training courses: a training on multi-physical couplings in geomechanics, in collaboration with EURAD WPs 6 and 7, and an introductory training on EURAD and RWM.

The EURAD Training on “Multiphysical couplings in geomechanics” was organized from January 22nd 2020 to January 24th 2020, at the University of Liège (Belgium). The course allowed the 70 participants to improve their understanding of heat transfers, water and gas migration, stress, and strain evolution in a repository. It addressed both experimental and numerical investigations at small (lab) and large (in situ) scales. In the end, participants obtained a broad view of the state-of-the-art and the challenges related to EURAD WP 6 and 7. They met several

key researchers in the field, fostering information exchange and cooperation within the geomechanics community.

On September 14th 2020, the “Introductory course to EURAD and radioactive waste management” was organized. The aim was to give a comprehensive overview of the activities of EURAD, as well as an overview of the state-of-the-art in RWM. The target audience was primarily Ph.D. students, postdocs, and young professionals in the field of RWM, but the training course was open to all EURAD partners as well as people from outside EURAD. Two hundred sixty participants attended (at least part) of the training course. This course was organized online, and the lectures were recorded. The recordings of lectures are available online (https://www.youtube.com/playlist?list=PLahXOQn-bremYbn7GA8H9YN_m8A1VHCz1) and were viewed 587 times as of March 31st 2022. Some presentations are also available online on the general EURAD website (<https://www.ejp-eurad.eu/publications>).

The School of RWM is planning three more courses for 2022: one on uncertainty management, one on the EURAD Roadmap Domain Insights and the State of Knowledge, and one on safety case production and review. PREDIS will organize its first training course in May 2022.

As of February 28th 2022, the School of RWM has organized twelve webinars, all part of the EURAD Lunch & Learn sessions. These are short and informal sessions, 30 min of presentation followed by 30 min of discussion, providing information on a specific topic to a broad audience. All Lunch & Learn sessions are open to all and free of registration costs. The recordings of these webinars are made available online afterwards (<https://www.youtube.com/playlist?list=PLahXOQn-bremN911IEEnOw8yAzQyuUR3ky>). Table 1 provides a brief overview of the hosted webinars.

PREDIS launched its program of webinars in 2021. Webinars are a good opportunity for people to learn and

Table 1. Overview of webinars hosted by the School of Radioactive Waste Management.

Title	Date	# attendees	# views (YouTube)*
Synergies of EURAD with the PREDIS project addressing pre-disposal waste treatment	28/10/2020	30	62
News from the German Site Selection Procedure	25/11/2020	19	77
Celebrating 20 years of the IGSC	27/01/2021	45	34
Knowledge Management in Nuclear Organizations	24/02/2021	22	23
The IGD-TP: European waste management organizations coordinating international R&D activities	31/03/2021	19	57
The next-generation scientific research for the safe management of radwaste – EURADSCIENCE	28/04/2021	75	9
Steps for Sharing (ERDO Association)	26/05/2021	44	18
The SITEX.Network	30/06/2021	53	16
EC-JRC activities on RWM and decommissioning	29/09/2021	51	11
US Nuclear Waste Management and Disposal Strategies	06/10/2021	107	17
News on the siting process in Italy	27/10/2021	57	10
Methods of information and knowledge transfer regarding final disposal of radwaste	23/02/2022	133	5

(*)As of March 31st 2022.

discuss various topics related to predisposal. They are open to partners and stakeholders, have a duration of 3 hours, and are organized every 2 months, approximately.

As of March 1st 2022, 11 webinars have been organized. The number of attendees varied between 70 and 120. Approximately half of the attendees in each event came from outside the PREDIS community. The webinar topics were aligned with the subjects of the PREDIS work packages, covering both strategic and technical WPs. The topics are summarized in Table 2.

Videos and summary memos are available on the PREDIS webpage (<https://predis-h2020.eu/events/>).

4.3 Organization of Ph.D. events

Three events were organized specifically for the about 60 Ph.D. EURAD students: the EURAD Ph.D. Event N° 1 and a specific Ph.D. session during the first and second EURAD Annual Event.

The EURAD Ph.D. Event N° 1 was organized on September 15th 2020, adjoining the “Introductory course on EURAD and RWM”. For this event, all Ph.D. students contributing to EURAD were invited to present themselves and their research to the wider EURAD community. This event was the first opportunity for EURAD Ph.D. students to get to know each other and network with other Ph.D. students as well as experts in the field. During this event, 22 Ph.D. students presented their work.

In a follow-up to the EURAD Ph.D. Event N° 1 a specific session highlighting Ph.D. research in EURAD was organized during the first EURAD Annual Event

on March 17th 2021. During this half-day online session, six Ph.D. students presented the Ph.D. research (including their own) performed in their technical EURAD WP. These presentations were followed by a short debate during which EURAD experts could discuss the work that was performed with the Ph.D. students directly.

Recently, during the second EURAD Annual Event (March 30th 2022), there was also a Ph.D. student session. This was a hybrid session in which 15 EURAD and 3 PREDIS Ph.D. students presented themselves and their research to the wider EURAD community. These presentations were followed by an informal networking event where the students had the opportunity to discuss amongst themselves and experts in the field of RWM. For the online attendees, an online networking platform was provided.

Up to now, more than 30 students have joined the PREDIS students’ community. Three events have been organized up to March 2022. At the PREDIS 2nd Consortium meeting, held online in May 2021, most students introduced themselves and gave summaries of the technical work they are undertaking within PREDIS.

The first student workshop was held in October 2021. The workshop aimed to discuss with the students how they could organize themselves, gather their expectations from the KM work package, obtain ideas on how to organize their participation in future workshops, and ask for their views on the best communication tools to use in order to reach their generation.

The second student workshop was held virtually in February 2022. The meeting started with an update on WP3 activities and a presentation on new students. It was followed by an ice-breaker session to talk about issues

Table 2. Overview of webinars hosted by the PREDIS EU project.

Title	Date	# registrants	# attendees*	# views (YouTube)
Innovations in cemented waste package monitoring and storage	Jan, 2021	127	135	
Innovations in metallic material treatment and conditioning	Feb, 2021	138	106	10**
Innovations in solid organic waste treatment and conditioning	Mar, 2021	168	113	8**
Innovations in liquid organic waste treatment and conditioning	Mar, 2021	205	124	3**
Waste Acceptance Criteria (WAC) 1 – information and resources	Apr, 2021	208	177	20**
Waste Acceptance Criteria (WAC) 2 – needs, challenges, and opportunities	May, 2021	173	119	19**
Gap Analysis and defining the baseline Strategic Research Agenda	Sep, 2021	>100	96	
Metallic and organic waste characterization (together with CHANCE project)	Oct, 2021	120	106	7**
Development of geopolymers for pre-disposal waste management	Oct, 2021	129	99	
Knowledge Management	Nov, 2021	126	86	
Digital Twins for Waste Management	Feb, 2022	150	147	

(*) At maximum, not necessarily for full webinar. (**) At date 10th March 2022.

not related to PREDIS, i.e., the festivities in the period December 2021–January 2022. Three students gave a presentation, one of them on his work within the project and the other two on their mobility actions.

4.4 Launch of the Mobility Programme

The EURAD and PREDIS Mobility Programmes were officially launched on April 8th 2020, and September 1st 2021, respectively.

Applications are filed in an online platform, allowing easy application and evaluation (see <https://pro.evalato.com/2185> and <https://app.evalato.com/program/3346/>). As of March 31st 2022, eight applications have been approved in EURAD (one is still under review) and nine in PREDIS. In the case of EURAD, two mobility actions have been completed. Unfortunately, due to COVID-19, both Mobility Programmes have not been exploited to the expected extent.

To support the Mobility Programme and to encourage potential applicants, a list of available infrastructures at EURAD partner organizations was published on the School of RWM website (<https://euradschool.eu/infrastructures/>). This list aims to provide an overview of the available infrastructures and associated expertise within EURAD, which should facilitate applying for the Mobility Programme.

5 Conclusions

Adequate and effective Knowledge Management is crucial to ensure safe and sustainable radioactive waste management from pre-disposal disposal to the post-closure period. Therefore, KM is also an essential part of the PREDIS and EURAD projects, which both dedicate several training and mobility initiatives to enhance KM and competence building, as described in this paper.

The EURAD School of Radiation Waste Management was successfully launched in December 2020, and the Knowledge Management Team of PREDIS started in September 2021.

Their main deliverables are:

- (i) to compose a diverse portfolio of tailored basic and specialized training courses for the end-users within EURAD and PREDIS, taking stock of and building upon already existing courses and creating new courses to bridge the identified gaps, and
- (ii) to organize a mobility program that provides access to dedicated infrastructures associated with the Mandated Actors/Linked Third Parties/End-Users within the projects. These mobility actions can be seen either as a complementary action after one or more training course(s) (enabling hands-on training related to the experimental program executed within EURAD and PREDIS) or can be part of the Continuous

Professional Development (CPD) of experienced personnel involved in RWM and predisposal of RW.

Furthermore, actions towards students and junior researchers, being the future workforce and management in the PREDIS and EURAD communities, enhancing networking and integration in and between their respective communities, are given great attention. Public websites providing easily accessible information are set up and serve as a general entry point for further guidance.

As such, EURAD and PREDIS assist their end-users, students, and partners in acquiring, developing, disseminating, using, sharing, and preserving knowledge and skills. Its initiatives are based on their needs to assure effective knowledge transfer and competence building. As its initiatives are needs-driven, the scope of both programs is dynamic and can be broadened in the future based on the changing needs. These similar initiatives and harmonized approaches in both projects will facilitate future common actions. In the future EURAD-2 proposal, PREDIS will be taken up in the European Joint Programme EURAD, and thus all training and mobility activities in the field of RWM will become unified. Finally, both projects could focus more on online courses and content. This allows them to reach more learners and spread knowledge more efficiently for training activities.

Conflict of interests

The authors declare that they have no competing interests to report.

Funding

EURAD has received funding from the European union's horizon 2020 research and innovation program 2014–2018 under grant agreement n° 847593. PREDIS project has received funding from the EURATOM research and training program 2019–2020 under grant agreement n° 945098.

Data availability statement

This article has no associated data generated and/or analysed.

Author contribution statement

NB, AV, and VH wrote and reviewed the manuscript. MC reviewed the manuscript. All authors agree on the publication of this manuscript.

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Cite this article as: Niels Belmans, Michèle Coeck, Vaclava Havlova, and Alba Valls. Training and mobility in EU projects EURAD and PREDIS, EPJ Nuclear Sci. Technol. 8, 26 (2022)