



PREDIS

Deliverable D3.5 Implementing specialized training courses (WP3)

Date 31.10.2022 Version 1.0

Dissemination level: Public

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This project has received funding from the Euratom research and training programme 2019-2020 under grant agreement No 945098.

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|---|---|---|
| Project acronym PREDIS | Project title PRE-DISposal management of radioactive waste | Grant agreement No. 945098 |
| Deliverable No. D3.5 | Deliverable title Implementing specialised training actions (WP3) | Version 1.0 |
| Type Report | Dissemination level Public | Due date M24→M26 |
| Lead beneficiary Amphos 21 | | WP No. 3 |
| Main author Valls, A. Amphos 21 | Reviewed by Carbol, P., JRC EC, WP3 leader Erika Holt, VTT, WP1 quality manager | Accepted by Oksa, M., VTT, Coordinator |
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Abstract

The development of the PREDIS training program is the third task of the Knowledge Management Work Package (WP3, Task 3.3). The aim of this task is to organize training activities to transfer the existing knowledge on pre-disposal activities to the next generation of engineers and scientists. The training program consists of five types of activities: public webinars, topical tailored short courses, student workshops, roadmap domain insights (written documents) and e-learning self-study materials.

This deliverable focuses on describing the methodology followed for the implementation of specialized training actions in the PREDIS project.

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Acknowledgement
 This project has received funding from the Euratom research and training programme 2019-2020 under grant agreement No 945098.

HISTORY OF CHANGES

| Date | Version | Author | Comments |
|------------|---------|-----------|--|
| 28-10-2022 | draft | Valls, A. | Original |
| 31-10-2021 | 1.0 | Valls, A. | Addressed suggestions from WP1 and WP3 leaders |

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1 Introduction

Work Package (WP) 3 Knowledge Management (KM) in PREDIS includes different activities, resources and tools, all dedicated to allocating, developing and transferring of knowledge bases, focused on pre-disposal. One of the key activities to be delivered by WP3 is training. The importance of this activity is supported by the feedback received during the December 2021 Consortium meeting (Figure 1). This deliverable (D3.5) is focused on presenting the actions related with the implementation of specialized training.



Figure 1: Feedback from the Consortium meeting held on 3rd December 2021. Question answered by 13 attendees: “What do you expect from WP3 & KM?”

The planning for KM activities was defined in Deliverable 3.4 [1] and it is shown in Figure 2. The figure shows a preliminary schedule expected for all activities in 2022, with a similar schedule anticipated for the future years of the project duration, which can be adjusted based on the feedback.

- 5 webinars will be organized during the year.
- 4 topics will be covered in both on-site and virtual courses.
- Students will meet three time per year to share their experiences, increase the networking and gain knowledge.
- 6 domain insights documents within Theme 2 and the associated lectures will be produced.
- 4 lectures on topics of interest for the project will be prepared.

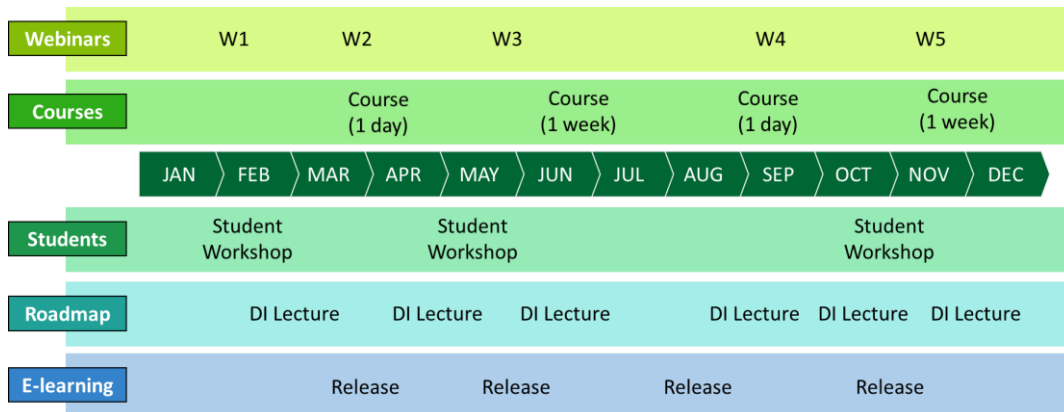


Figure 2: Preliminary schedule for all training activities.

This deliverable is focused on the courses, and it is divided into two different sections; the first part is dedicated to explaining the process followed to organize a training course and the criteria for approving the thematic, participants, etc. The second part lists the trainings already organized and those that are planned or could be planned in the following years.

2 Summary of previous activities

During the first year of the PREDIS project different activities were done in order to be able to design the PREDIS training program. These activities are explained in a previous deliverable [1] and were presented to the PREDIS community at several events (webinar and project workshops).

- Identification of training needs of the PREDIS community: two surveys and interaction with attendees at the Consortium Meeting virtually held in May 2021 provides information on the topics identified as required by the community as well as the type of training they would prefer (virtual, face-to-face, duration, target audience...)
- Mapping of existing courses: a collaboration with EURAD project was done to identify the list of courses that was held during the last 5 years on subjects related at some point to predisposal activities. About 70 courses organized at different education levels were identified.

3 Training Course Implementation

The organization of a training course is a process that starts with the selection of the topic and the organizers and finalizes with the analysis course performance, once it has been completed. The following parts explain the methodology that will be followed by PREDIS to implement training courses and is presented in Figure 3.



Figure 3: Training implementation methodology.

It is important to highlight that it is a “living” methodology, so that, it can be modified if required after analysing the performance of the course and the received feedback.

3.1 Topic and organizers

During the first year of the project, we focused on mapping the existing courses and identifying the need of the PREDIS partners and stakeholders. That outcome is used by the PREDIS Management Team to decide upon next course topics to be addressed and organized by PREDIS.

Once the topic is selected, Management Team members discussed on the best candidates to organize the course due to their experience in the field. WP3 leaders contact the selected organization, and the course begins to be organized (see next section).

A second option to develop a course is that a partner or end-user organization offers themselves to organize a course. In that case, the Management Team will decide whether the topic fits in the PREDIS community training needs.

3.2 Design of the course

The design of the course is conducted by the host organization with the support of the WP3 leaders. During this stage, answers to the following questions should be discussed:

- **Training objective:** the topic the course will be dealing with which should be aligned with the training needs and be in alignment with the PREDIS Roadmap

- **Format of the course:** duration and location of the course as well as type of lectures or practical sessions that should be organized to fulfil the objectives and provide a good training to the participants. It will also include the maximum number of participants the course can hold.
- **Type of audience:** to define to whom is addressed the course and if there are any pre-requisites on background knowledge and/or skills necessary to follow the course.
- **Training contents:** detailed program of the contents that will contain the course.
- **Schedule:** dates when the course will be announced, the registration opened and closed, etc.
- **Budget:** estimation of the cost that should be covered by the project.

Once the abovementioned information is discussed and decided upon, a document must be created containing the following information. A template was created and is sent by WP3 leaders to the course organizers.

- Title of the course
- Date
- Location (in case of face-to-face courses)
- Audience
- Objective of the course
- Cost
- Registration details
- Contact
- Format of the course
- Preliminary agenda/schedule
- Important dates

3.3 Application & Selections of participants

The registration period is announced via email, social media and the PREDIS webpage. A registration form is prepared by VTT and the link included both in the document prepared in the previous step and on the webpage. The registration period should be, at least, of 1 month long.

Once the registration period ends, the list of applicants is checked. If the number of applicants exceed the maximum participants the training can hold, the selection is based on the target audience, both the background knowledge requirements and the category of applicants. If no specifications are included, the following priority is considered by default:

- i. PREDIS Students
- ii. PREDIS Partners
- iii. PREDIS Stakeholders
- iv. EURAD Students

3.4 Development of training materials

Each organization prepares and develops the training materials needed to conduct the training course. They can ask WP3 leaders for support.

3.5 Performance of the course

The following actions are taken during the performance of the course:

- Few days before the course starts, the organizer or WP3 leaders inform selected participants on practicalities.
- The last session of the course is devoted to test the knowledge of participants and to discuss on the topics learned during the course.
- After the course, a questionnaire (see next chapter) is sent to obtain feedback of the performance of the course. The feedback form is developed by VTT, with the input of WP3 leaders.

3.6 Feedback

A generic questionnaire has been prepared with the following aspects that should be scored between 1-5, being 1 poor and 5 excellent.

- Communication before and during the training course
- Lectures, practical sessions. Each session is evaluated separately, in terms of topics selection, length of the lectures and overall punctuation on each lecture.
- Site visits. Each visit is evaluated separately, in terms of site selection, length of the visit and overall score on each visit.
- Overall performance of the course:
 - Did the training course increased your knowledge in *the course topic*?
 - Was the training useful for your work in PREDIS?
 - Did the training course fulfilled your expectations?
 - Overall evaluation of the training course
 - Would you recommend this course to your colleagues?
- At the end, a section for comments is included.

3.7 Reporting

A report summarizing the organization, performance and evaluation of the training course is prepared, including the final budget that will be charged to the PREDIS project. A template is prepared and will be sent by WP3 leaders to the course organizers to be filled in.

The report includes, besides the information provided in the document prepared in the training design phase, the information below:

- Short outcome explaining the training performance
- Photos
- Summary of the feedback received (direct feedback & answers to the questionnaire)
- Budget

4 Training courses in 2022

Three courses were planned to be organized in 2022, two of them have been already performed and the third one is scheduled by November 2022. Each of the trainings are shortly described in this chapter.

4.1 Introduction course

The first course organized in PREDIS was focused on providing an overview of the activities performed in the project. It was virtually held on 9-10th June, 2022, 9-12h.

The course was targeted for all the community interested in pre-disposal activities and it was attended by 81 participants.

The main objective of this course was to provide an overview of the work being undertaken in the European Commission (EC) PREDIS project, providing insights on the advances reached in each work package. It was a good event to understand, discuss and participate in the activities that are developed in the frame of pre-disposal of radioactive wastes.

Low feedback was received from this course, being 7 participants answering the questionnaire sent. Figure 4 shows the scoring received by each session as well as the communication before the training. All session received a punctuation above 4 out of 5. Less scores were received related to the communication before the

course. The questionnaire included some open questions such as the best session, the detail of information of the course, how to improve the course performance and their training needs for future trainings. All answers were very positive and providing good feedback. The main topic to be covered in future course the participants prefer is a course related with geopolymers under different conditions.

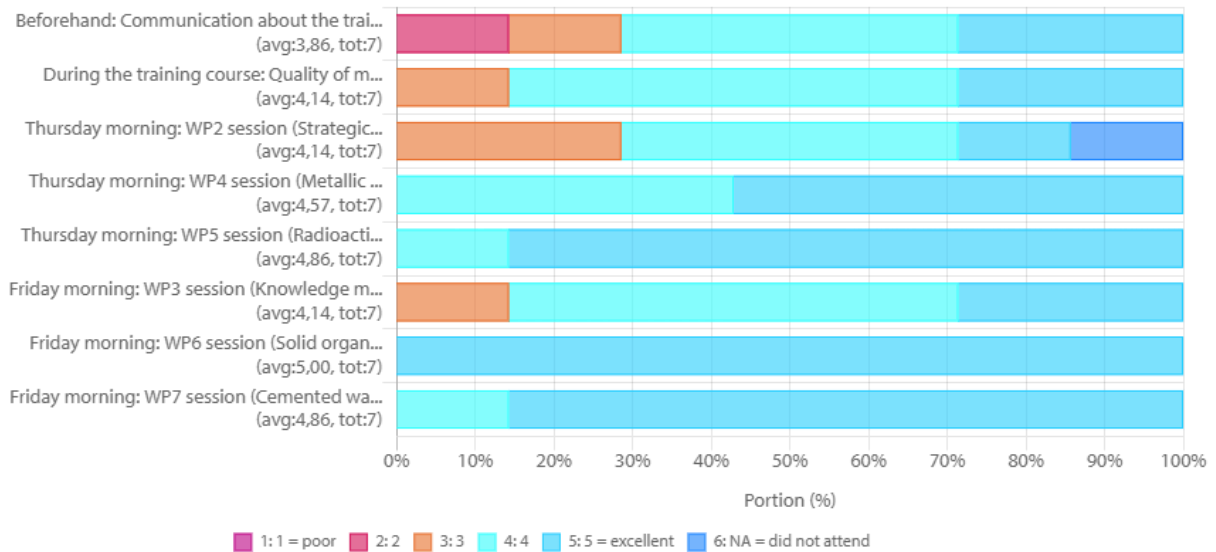


Figure 4: Scoring of the questions related to the training sessions.

4.2 LLW/ILW management

UJV organized the first face-to-face course on the management of low and intermediate level wastes. The course was held in UJV premises (Husinec, Czech Republic) on 7-9th September, 2022 and it was attended by 21 students (Figure 5).

The course aimed at presenting a general overview of radioactive waste management to the young specialists, just entering the field. It intended also to provide an entrance to some of the facilities, dedicated to radioactive waste management, that means UJV waste management centre and Laboratories of Fuel Cycle Chemistry department, supporting radioactive waste disposal in both LLW/ILW repositories. UJV specialists with a long time experience in RW management gave the training.



Figure 5: Group photo of participants, organizers and lecturers.

17 participants provide their feedback after the course finalization and the score to all questions were over 4 out of 5, with the exception of the communication before the training course that obtained a score of 3.7 out of

5. Figure 6 shows the scoring received in the section devoted to provide feedback on the overall performance of the training course.

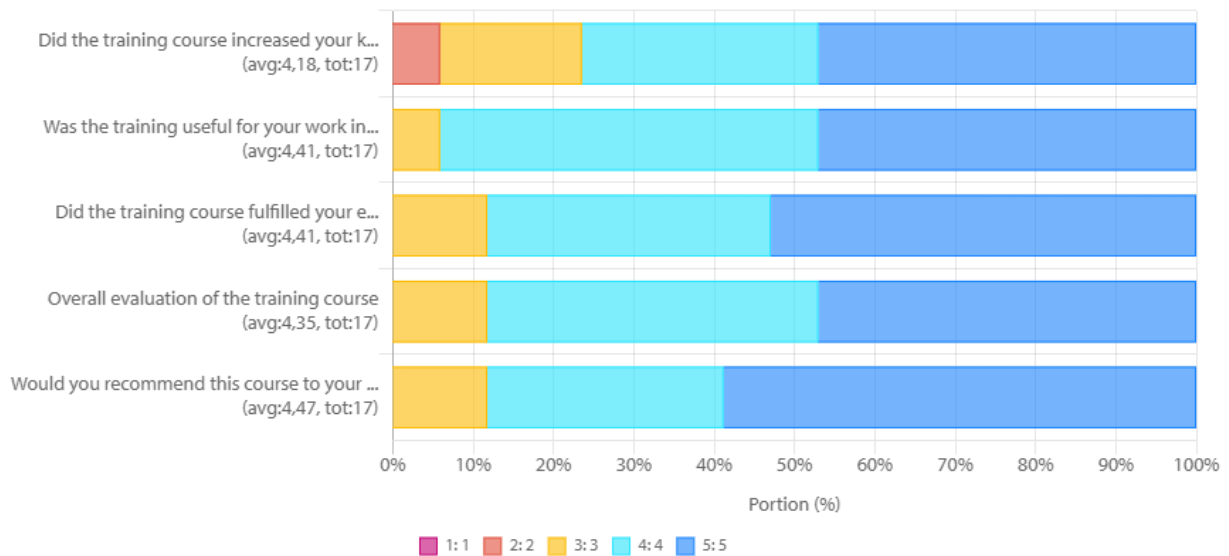


Figure 6: Scoring of the questions related with the overall performance of the course on LLW/ILW management.

4.3 Radwaste characterization

In November, a course on waste characterisation is organized by ENRESA at the José Cabrera nuclear power plant. The course will be held on 21-24th November, 2022 and is entitled “Practical-theoretical training session on GENIE 2k & ISOCS for waste characterization”. The planned number of participants was eight but presently there are 9 participants that will attend the course.

The main goal of the course is learning on the use of the Genie2K software for the management of ISOCS device. It is based on the gamma spectrometry for the characterization of waste packages, large items, walls, soils, etc. The subjects the course will deal with are: Gamma acquisition analysis, interactive peak location and area analysis. Energy and efficiency calibration, Minimum detectable Activity, Decision Threshold, Resolution, Detector characterization, Multi efficiency, Geometry Composer, Uncertainties, Quality Control, Case studies, Real Waste Measurements.

5 Further training courses (2023-2024)

As shown in Figure 2, 4 courses were planned for each year, at the beginning of the project. However, it was decided to reduce this number to 2-3 courses per year corresponding to the request from PREDIS participants that too many activities (webinars, WP workshops, project meetings, courses, etc.) were organized, thus the participants had not sufficient time to be dedicated to PREDIS experimental activities.

Based on that feedback, the PREDIS Management Team expect to hold two training courses in 2023 and one in 2024. The topics selected will be decided by the Management Team in December 2022, to be able to announce it to all interested parties, well in advance. It is important to highlight that the team will take into consideration both the feedback and the existing course, organized by other projects or organizations such as EURAD or IAEA. Additionally, collaboration with these organisations on course organization is also planned.

Two potential examples that are under discussion:

- Summer school in collaboration with EURAD project
- Training course on Geopolymers in collaboration with IAEA

References

[1] Valls, A. (2022) Design and Definition of PREDIS training program (WP3). Deliverable D3.4 of the PREDIS project. Grant agreement No 945098. https://predis-h2020.eu/wp-content/uploads/2022/02/PREDIS_D3.4-Training-programme_vFinal-31.1.2022.pdf