Social network tools and procedures for developing entrepreneurial skills in PhD programmes

D5.1 (WP5): Definition of the demonstration actions

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EXECUTIVE SUMMARY

The objective of this document is to describe the tasks carried out in task 5.1 of prodPhD project, which is devoted to design the demonstration actions to be carried out on the prodPhD Online Training Environment. The document first introduces briefly the content and organization of the training modules in the training environment. Then, it presents the supervising team, introduces the procedure for selection of candidates for the demonstration actions, the pre-demonstration training sessions, the technical support and feedback mechanism and the monitoring and post-demonstration feedback mechanisms. Finally, the development of the demonstration actions is described.

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1. INTRODUCTION

The main objective of the prodPhD project is to implement innovative social network-based methodologies for teaching and learning entrepreneurship in PhD programmes. The multidisciplinary teaching and learning methodologies to be developed will allow introducing entrepreneurship education in any PhD programme of a higher education institution, providing PhD candidates with the knowledge, skills and motivation to engage in entrepreneurial activities. The methodology will be conceived to develop experiential knowledge, involving academics, entrepreneurship experts and mentors in its development and implementation, by taking advantage of the use of customized collaborative social network tools. Besides, the exchange of experiences, competences and approaches facilitated by social networking will allow crowdsourcing new ideas, improving training methodologies and stimulating entrepreneurial skills of academics.

In particular, the prodPhD project will deliver and demonstrate through different pilot actions a social network-based training methodology, which will include the necessary teaching guidelines and specific "learning by doing" materials for entrepreneurship training, as well as the required prodPhD Online Training Environment, integrating customized collaborative work and social network solutions. Task 5.1 of prodPhD project is devoted to design those demonstration actions and the outcome of this task is presented in this document.

Those demonstration actions will be implemented by using the customized social network and collaborative work tools developed in the project (such as working groups and discussion fora, internal messaging, documents library, online collaborative edition tools, personal and community profiles, project site, etc.). The 'learning by doing approach' will be demonstrated through a combined use of these different tools, according to a specific plan designed.

This document introduces the social network tools and procedures that will be carried out to develop the demonstration actions, describing the contents and organization of the training module selected for this purpose. Some other important considerations have been made, such as the selection of the supervising team, the selection of the participants for the demonstration actions, the technical support to help participants in all aspects of the platform's functionality and to collect suggest improvements.

Key Performance Indicators (KPIs) have been defined to monitor and evaluate the demonstration actions. These KPIs, with a survey that will be made to the participants during the demonstration actions, will give detailed information about the success of the actions.

In summary, this document describes the set of actions and tasks that will be implemented to develop the demonstration actions.

2. CONTENTS AND ORGANIZATION OF THE TRAINING MODULES

The rationale of the contents and basic organization of a complete course on entrepreneurship is discussed in deliverable D3.1 'Guidelines of the training methodology and teaching and mentoring procedures'. It proposes the split of the course in 20 modules with a duration adapted to the estimated availability of the PhD candidates (according to the outcome of D2.1 'Report on the needs and requirement analysis') and which can be selected, depending of their interests. The detailed description of the 20 modules is available in above mentioned deliverable D3.1.

Among those modules, the so-called "Digital Economy" has been selected for the demonstration actions for two reasons:

- According to the analysis of the surveys and interviews carried out throughout WP2 to identify the needs and interests of the PhD candidate, this module is aligned with the majority interest.
- Their contents make it especially indicated for demonstration the 'learning by doing' proposed in the project.

The specific contents of this module to be used in the demonstration actions are currently under elaboration and will be deliver in D3.2 'Training materials for the demonstration actions' due by M18 of the project (and not available at the moment of writing this document). Therefore, the discussion presented in this document is based on the proposed contents of this module.

2.1. Digital Economy module

This module aims to provide students with key concepts about digital economy, emphasizing on the information and communication technologies (ICT) impacts. This training course aims to provide some skill and abilities to the students to reinforce their strengths and reduce their weakness in order to exploit the opportunities to run their entrepreneurial activities based on digital technologies.

The duration of this demonstrator is 4 hours. The Digital Economy module is composed by 4 chapters:

- Digital Economy
- Artificial Intelligence & Blockchain
- Digital technologies
- Big Data Analytics

All the chapters are made up by:

- Theoretical contents presented through videos, documents and references.
- Quizzes, to test the knowledge learned.
- Practical activities to strengthen knowledge.

The training module includes case studies available in the corresponding chapters. The case studies are practical activities that the students must solve collaboratively. For this purpose, demonstration action will be implemented by using the ProdPhD Online Training Environment developed during the works of WP4. The ProdPhD Online Training Environment provides a customized social network and collaborative work environment offering working groups, discussion forum, internal messaging, documents libraries and repositories, online collaborative edition tools, personal and community profiles, etc. The students must take advantage of these collaborative tools to expose their opinion, discuss with the other students and arrive to common solutions in order to be presented to the training courses mentor.

2.2. Online Training Environment

The training module will be developed and available in the Online Training Environment, through the ProdPhD main portal (https://www.scipedia.com?microsite_guid=246560).
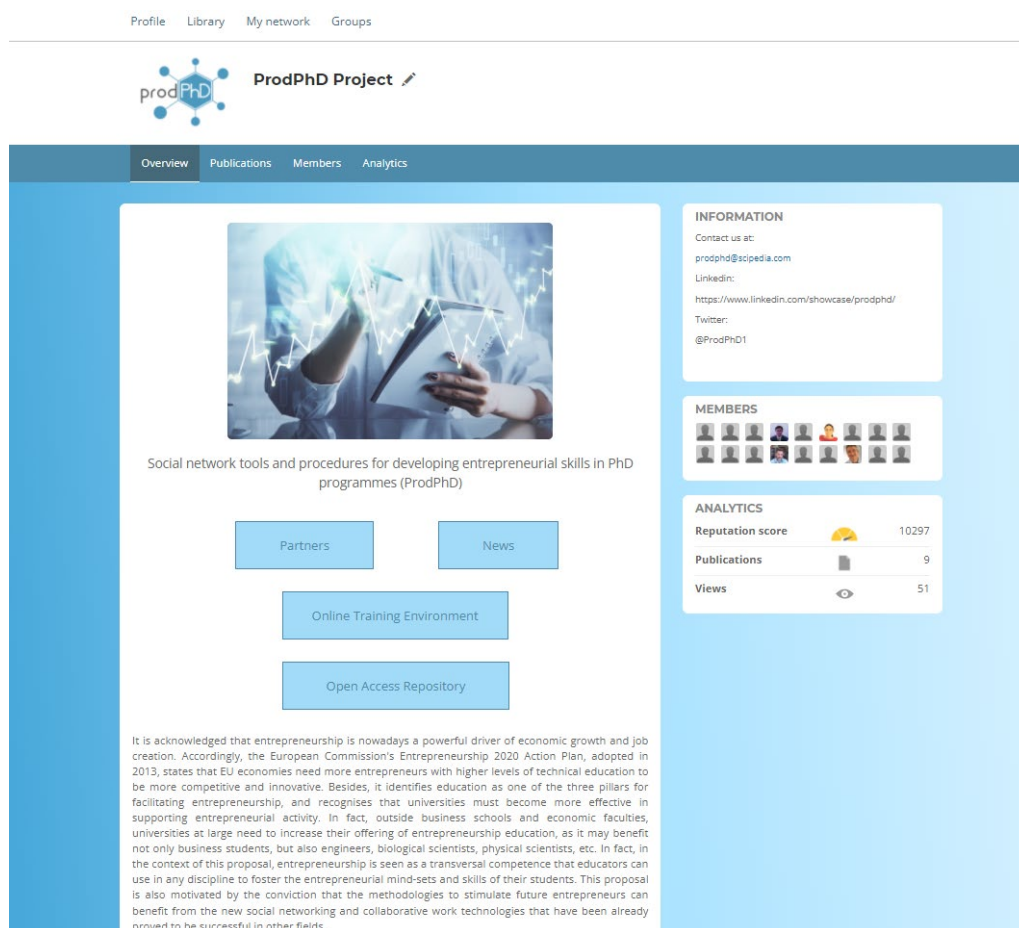

Figure 1: Main page of the prodPhD website

The main portal provides an entrance to the content of the project including the overview and scope of the project, the contact and social media project information and the access to the Online Training Environment, among others:

- Open access repositories of the project.
- Training material, documents and data.
- News's page.
- Profiles of the different researchers.
- Analytics and statistics of the activity of the participants on the different actions.

Figure 2: Online Training Environment entry page

The Online Training Environment gives students access to the training materials selected to demonstrate the entrepreneurship learning in PhD programmes.

2.3. Training module organization

The course is internally organized in chapters so that each chapter includes videos, documents, quizzes and user cases. In a first step, the students will acquire the fundamentals of the chapter contents from a theoretical perspective. Once the students have understood the nature and the role of the different concepts presented in the chapter, they can strengthen the knowledge through quizzes. From this moment the students are ready to carry out the case studies related to each chapter. The cases studies are expected to improve the participants' abilities by playing roles in experimental situations related with the taught topics. The demonstrator participants must debate and discuss among themselves to carry out the practical activities in a collaborative way. To achieve this task:

- A description of the experimental situations and the proposed questions and activities will be presented to the students.
- Discussion groups will be available in order to provide an online environment to share ideas and proposals to solve the experimental situations.
- Collaborative edition tools will allow fulfilling the solution to the practical activities including text, references, links, videos with the participants explaining the outcomes of the activity, etc.
- A professor, expert in entrepreneurship, will supervise and will resolve any doubts that may arise during the development of the activity.
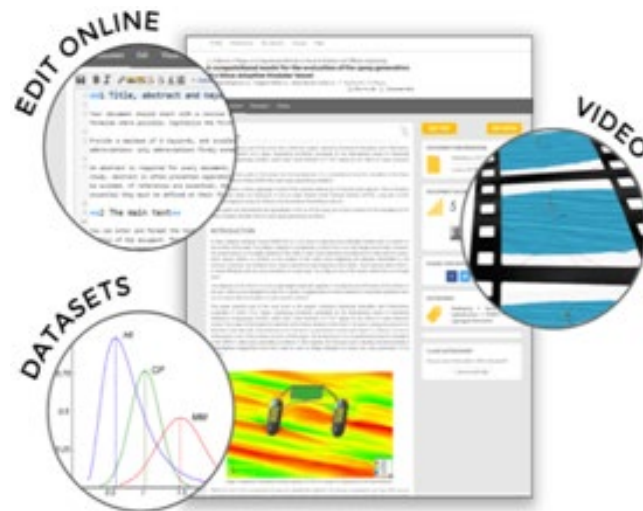

Figure 3: Collaborative edition capabilities

Figure 4: Collaborative edition document

All training outcomes have a revision history. The historical information of the collaborative documents shows all changes made by the participants involved in the activity to provide a global context of the carried out tasks.

3. PREVIOUS CONSIDERATIONS

3.1. Selection of the supervising team

A supervising team will be assigned to each demonstration action. This team will be composed of:

- A mentor: A teacher of the business school participating in the project (IPAG), which will supervise the work of the participants and will answer any question arisen in relation to the content of the training module.
- An observer: A member of any of the other organizations participating in the project (UC3M, CIMNE or WEGEMT) which will follow the evolution of the demonstration actions, trying to identify potential ways to improve their development.
- A support technician: A member of the organization responsible of the implementation of the training environment (CIMNE-SCIPEDIA) which will be in charge of answering any technical questions raised within 24 hours.

A list of people has been defined to cover those roles. The assignment of these people to each of the demonstration actions will be done prior to their start.

Professors	BaoDiep
Observers	Elías Sanz, Cecilia Soriano, Julio García, Ioannis Ergas
Support technicians:	Clara García, Jesús Sánchez

3.2. Selection of candidates for the demonstration actions

By month 18 it is planned to organize a call for PhD candidates to participate in the demonstration actions of the project. This call will be done in collaboration with those institutions that already had shown their interest for it (mainly WEGEMT associates and other project's collaborating universities). These calls will be open to all the fields of PhD programmes of those universities. The selection of the PhD candidates will be based on their experiences, interests and field of studies (looking for some diversity), and need of new knowledge in the applied content. Among the candidates, between 1 and 3 groups of 3-4 participants each will be selected from the candidates.

3.3. Pre-demonstration training sessions

The development of the demonstration actions will be preceded by different training sessions specifically addressed to the participants (trainers and PhD candidates) of the organizations involved in the pilot activities. These training sessions will be developed by video-conference and will have an approximate duration of 3 hours. The content of those training sessions will include a brief introduction to the content of the training modules, with specific emphasis in the development of the collaborative use cases and a review of the online environment and its communication tools. The training sessions will be completed with a presentation of the prodPhD project paying special attention to the goals of the demonstration actions.

3.4. Technical support and feedback mechanism

The training platform will offer a user feedback mechanism allowing participants in the demonstration to ask for technical support, leave input on the functioning of the platform and, in particular, suggest improvements. This mechanism will be based on a form, which will be accessible through a link from the main page of the discussion group and the course menu. During the development of the demonstration actions, a person from the technical team will be assigned to follow their evolution and who will be in charge of answering any technical questions raised within 24 hours.

The outcome of the demonstration phase will be used to review the methodology, training materials and software tools, according to the feedback received and the assessment to be carried out based on the key performance indicators that will be established. In particular, an analysis of the networking interactions during the execution of the demonstration actions will be performed. For this purpose, different interventions will be designed to help to build towards the objectives set out and, in particular to encourage the participants in the demonstrations to share their experiences with their colleagues throughout the development of the action. Throughout this approach, different adaptations of the methodology and software environment will be proposed.

3.5. Monitoring KPIS and post-demonstration surveys

For monitoring and evaluating the demonstration actions, different Key Performance Indicators (KPIs) have been defined. The goals defined in those KPIs will be used to evaluate the success of the demonstration actions. However, in order to more detailed information on the development of these actions, a survey could be made among the participants in the demonstration actions. This survey could be complemented with some personal interviews.

4. COMMUNICATION TOOLS

As stated above, one of the key aspects of prodPhD project is to take advantage of social network-communication tools for the development of online entrepreneurship training courses for PhD candidates. For this purpose, the prodPhD Online Training Environment will offer different communication tools:

- **Discussion groups**.
  Each chapter of the training module will have a dedicated discussion group. All the demonstrator participants will be members of the discussion groups in order to have a framework to share their thoughts, comments and opinions. The discussion groups are especially relevant for the success of the case studies proposed in the demonstrators.
  The discussion groups allows creating new discussion topics, making all the communication thread available for the members during the whole training duration.
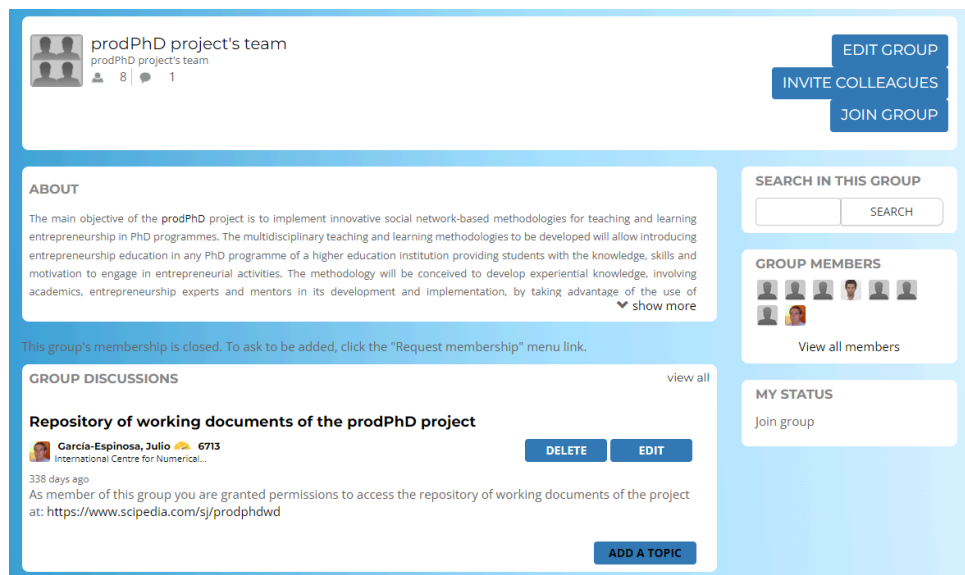

Figure 5: Example of discussion groups

- **Internal messaging**.
  Internal messaging is a quick way to communicate and collaborate with coworkers. All the members of the demonstrators, both students and mentor, can communicate through the internal messaging.
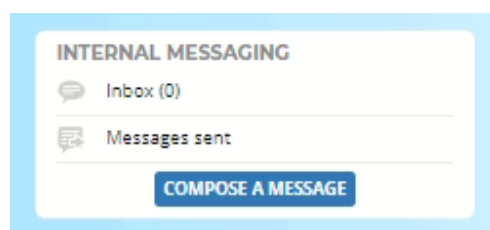

Figure 6: Internal messaging tool

- **Discussion fora.**
  All the individual contents of the training module chapters have a discussion forum available as a framework for all the actors of the demonstrator to contribute with their expertise, ideas or opinions. The discussion forum aims to engage students in the exchange of knowledge and to strengthen the "learning by doing" methodology.
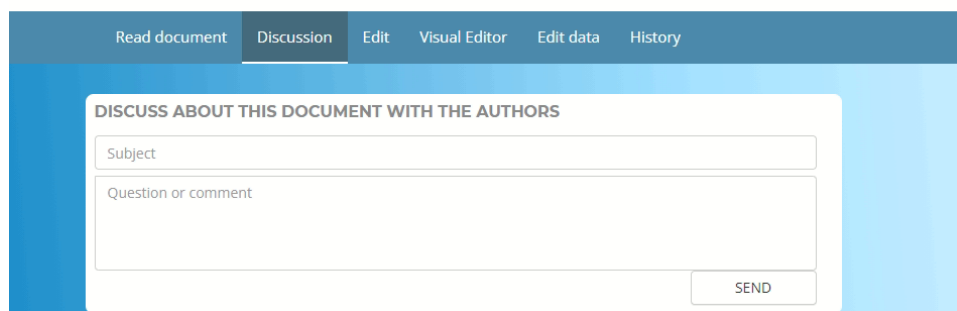

Figure 7: Example of discussion forum

- **Videoconference room**. The group of PhD candidates will have an open videoconference room, which can be used for internal discussions among them, as well as to resolve issues with the assigned tutor. Besides the videoconference room, participants in the demonstration will be offered the use of a telephone and video call tool for one-to-one communications. For these purposes, external services (Zoom and Skype) will be used.

5. DEVELOPMENT OF THE DEMONSTRATION ACTIONS

This section describes the conceived procedure for development of the demonstration actions.

1. After the candidate selection process, between 1 and 3 groups of participants will be selected and assigned to so many demonstration actions. Each group will consist of 3-4 of participants.

2. The different demonstration actions will be planned between months 18 and 20 of the project. The potential participants will be informed on the schedule of the demonstration actions to confirm their interest in participating.

3. Once the participants have been selected, they will be invited to register in the Online Training Environment. All the participants will receive an email notification with the link to the platform register site where they can configure their personal information such as user and password, contact details, etc.

4. The development of the demonstration actions will be preceded by an online training session addressed to all the participants in the pilot activities, trainers and PhD students. The online session will include:

   a. Presentation of the project site and Online Training Environment.

   b. Description of the training course organization, contents and materials.

   c. Introduction to the social network and collaborative work tools developed in the project (such as working groups, discussion fora, internal messaging and videoconference room).

   d. Presentation of personal and community profiles.

   e. Presentation of the collaborative edition tools and main capabilities (text edition, embedded pdf, images, worksheets, videos, etc).

   f. Introduction of the "learning by doing" approach and description of the methodology to carry out the collaborative activities defined in the training course.

5. All the participants in the demonstration actions will be part of the discussion groups corresponding to the chapters of the training course. These working groups will be previously created and available from the Online Training Environment interface. The discussion groups will be the framework for the coworking of the students and their interaction with the teacher.

6. After the demonstrator training session, before the start of the training course, the participants of the demonstration action will be notified with the kick-off information. The participants will receive an email including a summary and key items of the training session and a link to the recorded session.
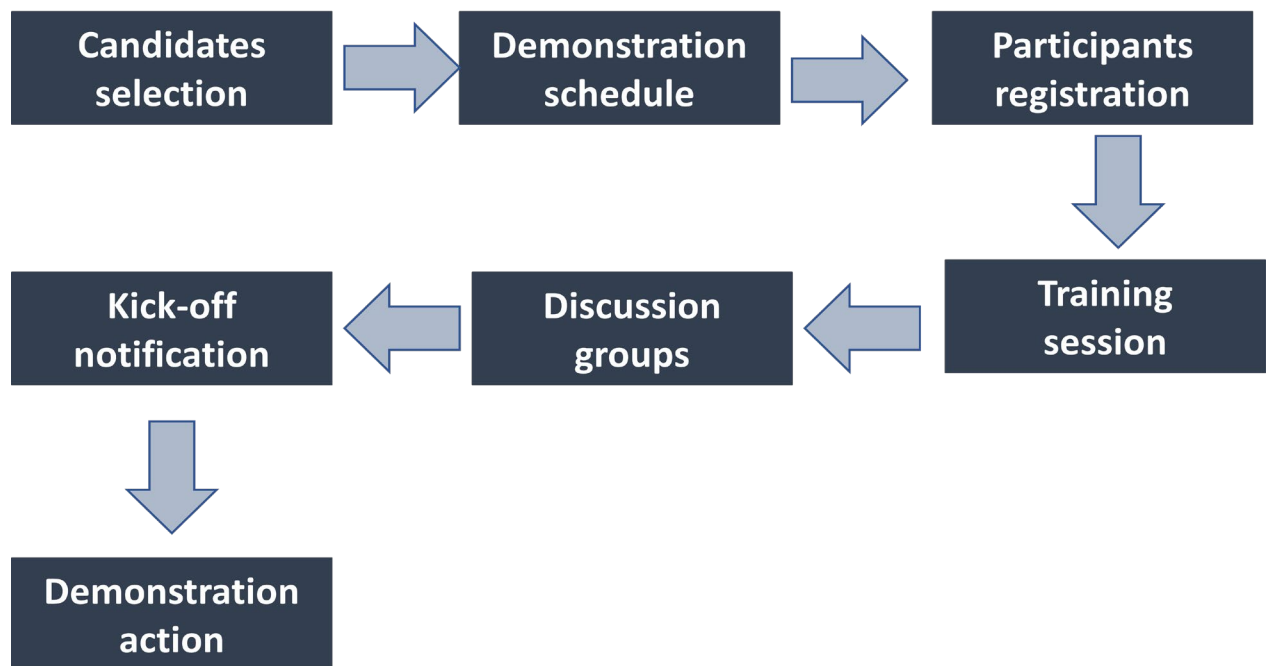
Figure 8: Demonstration action workflow

7. Development of the training course.

   a. The course will be accessible from 00:00 (CET) on the day selected for its start.

   b. As stated above, each course will be organized into chapters and subtopics that can be freely navigated through hyperlinks and next/prev buttons. The course will have a main page where all the contents will be easily accessed.

   c. Each subtopic will include different videos of a maximum duration of 5 minutes, and auxiliary (written) documentation in pdf format. The subtopics will be presented on a single webpage (URL) that can be navigated by vertical scrolling. Each of these pages will have a forum where students can direct their questions to their assigned mentor. The questions and answers will be visible to all participants.

   d. At the end of each subtopic there will be a quiz about its contents. The quiz will also have a forum with the assigned mentor.

   e. Throughout the development of the demonstration action, the participants will develop a number of use cases collaboratively. For the development of these use cases there will be a template that the participants will have to complete. In addition, they will be asked to submit (optionally) an explanatory video of their work. The use-cases will also have a forum with the mentor. This will follow the

development of the work and will have to give its approval before moving on to the next chapter of the course.

f. Thoughout the development of the demostration, the participants will have an easy technical support. This mechanism will be based on a form, which will be accessible through a link from the main page of the discussion group and the course menu. During the development of the demonstration actions, a person from the technical team will be assigned to follow their evolution and who will be in charge of answering any technical questions raised within 24 hours.

The maximum duration of each demo action will be two weeks.

6. CONCLUSIONS

The ProdPhD Online Training Environment offers an innovative framework for PhD students looking for the knowledge, skills, and motivation to engage in entrepreneurial activities, turning an initial business idea into a viable business project and evaluating the business opportunity.

This document describes the tasks carried out in task 5.1 of prodPhD project, which is devoted to design the demonstration actions to be carried out on the prodPhD Online Training Environment. The document has introduced the content and organization of the training modules and proposed a procedure to implement the demonstration actions.

This procedure could be revisited once the specific content of the modules to be used in the demonstration actions are delivered within D3.2 'Training materials for the demonstration actions' due by M18 of the project (and therefore not available at the moment of writing this document).