

SP Meeting

1

25th November 2016- U Hasselt

Participants: ISIB (Isabelle Gerardy, Caroline Licour, Sophie Gachot), U Hasselt (Sonja Schreurs, Wouter Schroeyers), NTUA (Marios Anagnostakis), FHAachen (Frieder Hoyler,) UNIBO (Domiziano Mostacci)



Erasmus+

Agenda:

- ▶ E-learning platform : all members
 - ▶ each leader of one of the 6 modules presents the state of the art of each module in 5 min (ppt + demo)
 - ▶ Discussion on next steps
- ▶ Training schools : Isabelle Gerardy
 - ▶ Dates and programs of remaining training schools
 - ▶ Evaluation of past training schools
- ▶ Administrative and finalisation aspects : Sophie Gachot – Isabelle Gerardy
- ▶ Future new projects
 - ▶ 2017 : Domiziano / Ulrich ?
 - ▶ 2018 : Train the trainer : RPE vs RPO ?
- ▶ Varia

Intellectual outputs: deliverable proposed

- O1: Analysis of the present situation in radiation protection and radioecology within the European countries
- O2: Implementation of course modules on an e-learning platform
- O3: Training in Radiation Protection and Radioecology

For each output, we have defined

- A leading institution
- Partners, regarding skills of each participant

Project Deliverables

- Database/report on the market needs
- E-learning platform (including internship platform)
- Mobility trainings
- Certifications (Europass Certificate Supplement for professionals, Europass Certificate Supplement and ECTS for students) in the radiation protection field that can be recognized by the national authorities of the partner institutions.
- One partner (UNIBO) will be responsible of the global assessment of the deliverables

O1: Analysis of the present situation in radiation protection and radioecology within the European countries

- Leader: U Hasselt
- Aim:
 - Evaluation of the present situation
 - Evaluation of the need of the labour market in terms of skills and competences
- Deliverable:
 - Report was presented during the CHERNE annual workshop and has been published on the european website

O2: Implementation of course modules on an e-learning platform

- Leader: EEAE (Greek Energy Atomic Commission) (organizing the platform)
- Coordinator of contents: NTUA (Technical University of Athens)
- Leader of each module have to coordinate the contents with Athens
- Aim:
 - Accessibility for workers
 - Pre-requisite for training modules
- Deliverable:
 - 6 e-learning modules of 2 ECTS each
 - Uploaded on a Moodle platform; power point, small web film and on-line exercises
 - First modules 1, 2, and 5 are in a finalization phase
 - Module 4 is on the way: proposal of Pepe
 - Module 3 (SURO) and Module 6 (Medical Application): to be done

E-learning modules (1)

| Title | Basics nuclear and radiation physics | Basics of measurement and dosimetry | Radiation protection |
|--------------|---|--|--|
| Subject | <ul style="list-style-type: none"> • Radioactivity, radionuclides and ionizing radiations • Nuclear reactions • Applied nuclear physics • Interaction between radiation and matter • Description of a radiation beam | <ul style="list-style-type: none"> • Measurement of gamma, neutron,... • Spectrometry • Dosimetry | <ul style="list-style-type: none"> • Basic principles of radiation protection • EU legislation • Shielding evaluation • ALARA principles |
| Participants | SURO, Coimbra | Athens, CTU | UPV, EEAE |
| Leader | CTU | FHAachen | SURO |

E-learning modules (2)

| Title | General safety principles | Basics radiochemistry | Medical applications |
|--------------|--|---|---|
| Subject | <ul style="list-style-type: none"> • European legislation • Risk related to industry (chemistry, electricity, biology) • Risk assessment: methodology | <ul style="list-style-type: none"> • Introduction (principles, industrial applications of radionuclides) • radiochemical working techniques • decontamination techniques | <ul style="list-style-type: none"> • Medical techniques for diagnostics and therapy • Quality assurance • R P for workers and public • R P for patients |
| Participants | ISIB | FHAachen, U Hasselt | Athens, (Unibo, FH Aachen) EEAE |
| Leader | UPV | ISIB | Coimbra |



E-learning on General Safety Principles.

Proposition of Pepe

- ▶ E-learning module
 - ▶ To introduce the principles of Risk Assessment (S. Martorell)
 - ▶ To develop case studies of application of Risk Assessment (probabilistic if applicable) to areas in scope of the program
 - ▶ Nuclear Safety. Level 1 PSA (I. Martón)
 - ▶ Nuclear Safety. Level 2 PSA (A. Peeters)
 - ▶ Risk Assessment in NORM industries (W. Schroeyers)
 - ▶ Risk Assessment of workers exposed to ionizing radiation (others than NORM) (?)
 - ▶ Others ... (?)
 - ▶ Open to new proposals (if any ???)

Discussion of the day

- ▶ The modules 1 and 2 nearly finished and implemented
- ▶ Module 5 is on the way; some ppt were already implemented (mainly related to the Marawas training course)
- ▶ Module 3: Suro is the leading institution but there is nothing in it. Lenka will discuss with Ales; Isabelle can also discuss during the Sara course in Prague
- ▶ Module 4: Pepe has send a proposal. The partners present in the meeting think that it is still important to have some elements of classical safety; for instance, in Belgium; it is needed also to have some knowledge in non nuclear safety in the RPE/RPO regulation. Isabelle can take the lead of this part since she already gives lectures in ISIB on that subject
- ▶ Module 6: Coimbra is the leader but there is a lack of communication with Isabel Lopes. Isabelle contact her and ask her to give some overview of the module. Other partner like Lenka, Marios and Frieder say they can help to fill the module when the topics are defined

O3: Training in Radiation Protection and Radioecology

- ▶ Mobility training will consist in **5 days of experimental work on real devices.**
- ▶ The training modules will involve **student mobility** and **staff mobility (from academic and non-academic partners).**
- ▶ The **institutions where the different modules will take place, will also be in charge of the development of each module.**
 - ▶ These institutions have been chosen according to the experimental devices they can give access to.
 - ▶ But other partners can of course contribute to the development or the implementation of a part of the module.
- ▶ A total number of **16 students/module is foreseen.**
 - ▶ The student selection is based on their knowledge in **nuclear and radiation physics** (developed in the distance learning module) and in **English**

O3: Training in Radiation Protection and Radioecology

- Leader: CTU
- Aim:
 - Real mobility
 - Uses of large specific devices
- Deliverable: 6 training modules of 2 ECTS each
- A coordinator for each training activity have been defined
- Recognition
 - ECTS certificate to be used in the own institution
 - Europass Certificate Supplement delivered to increase participant employability.

Training modules (1)

| Title | probability risk assessment. | Environmental measurements | Safe industrial applications of radiation and radionuclides |
|--------------|---|--|---|
| Subject | <ul style="list-style-type: none"> • Principle of risk assessment • Applications in nuclear industry. • Exercises on software for specific cases | <ul style="list-style-type: none"> • Introductory lectures • Field trip and sampling • Analyze of samples in the laboratory | <ul style="list-style-type: none"> • Introductory lectures • Radiation protection in industry: real manipulation on large devices • (ALARA workshop) |
| Participants | ISIB | ISIB, SURO, NTUA | SURO, Coimbra, NTUA, FH Aachen |
| Leader | UPV (13-17/2/2017) | Uhasselet (19-26/04-2017) | CTU (5-9/12/2016) |

Training modules (2)

| Title | Radiochemistry | Radioactive waste management | Practical radiation protection in medical field |
|--------------|---|--|--|
| Subject | <ul style="list-style-type: none"> • Radiochemical techniques • Safe handling of radionuclides • Tracer applications • Decontamination techniques | <ul style="list-style-type: none"> • Identification of radioisotopes: • Evaluation of the activity, energy and efficiency calibration (experimental and/or MC calculation, Activity measurement in real samples) | <ul style="list-style-type: none"> • R P of the workers, patients and public • Practical cases • Measurement of doses • Calculation of shielding |
| Participants | EEAE, UPV | ISIB | Coimbra, CUT, EEAE |
| Leader | ISIB FHAachen, (12-16/09/2016) | FHAachen, Uhassele (21-25/11/2016) | Unibo (13- 17/03/ 2017) |

Training on Risk Assessment

Proposal of Pepe

- ▶ Extended scope to use probabilistic and non-probabilistic methods
- ▶ Extended participation covering Risk Assessment fundamentals and applications (similar to the E-learning module)
 - ▶ To introduce the principles of Risk Assessment
 - ▶ To develop case studies of application of Risk Assessment (probabilistic if applicable) to areas in scope of the program
- ▶ Tentative date (Feb 13-17, 2017)
- ▶ Tentative hours Monday to Friday (9:00-11:15, 11:30-13:30, 15:00-17:15)
- ▶ Tentative Professors (S. Martorell, I. Martón, A. Peeters, W. Schroeyers, ...)
- ▶ Program still open to new participants (until Dec 2nd)
- ▶ Detailed program prepared and released after that date.
- ▶ Call for participation Dec 5th (tentative)
- ▶ Registration: Before Dec 22nd

Discussion of the day

- ▶ **For Europass certificate: Isabelle and Sophie present a document from the European Agency. They will make a proposal to fill this document. Each student will receive one at the end of the SP taking into account the skills he acquired during the different Training modules he attempt. Each organizer of a training module will be asked to list the specific skills of their own module. This certificate can also be adapted to be delivered to doctoral students who help to organize of the modules**
- ▶ **It is interesting to include the materials of the training modules on the platform**
- ▶ **Domiziano propose to organize the training module on Medical applications in the week of the 13th March 2017.**

Future new projects and future meetings

- ▶ Nothing important was said about new project due to a lack of time
 - ▶ Sonja just said that for the project of Uhaselt for 2018 « training the trainees » it will be important to include soft computing students of partner institutions if the idea is to develop an mobile application
- ▶ Next meeting during the Cherne meeting in May (Portugal); session restricted to the partner of the SP
 - ▶ To present the actualisation of the e-learning module. The presence of Konstantinos is important; Isabelle will send him an official invitation when the first announcement of the workshop will be released
- ▶ A session of the Cherne meeting have also to be dedicated to present the deliverables of the project to all the participant. Isabelle will ask Sandra for that purpose