6th EUTERP Workshop 2015

Legislative change in Europe: the implications for training in radiation protection - rising to the challenge.

From 30 September to 2 October 2015 in Athens, Greece

Capacity building and transfer of know-how in radiation protection. Dissemination of ENETRAP projects results

Authors: **C Llorente**[1], M Marco[1], M Schouwenburg[2], H van Elsäcker-Degenaar[3], P Livolsi[4], P Massiot[4], M Coeck[5]

[1]CIEMAT, Madrid, Spain [2]TUDelft, Delft, The Netherlands [3]NRG Consultancy & Services, Petten, The Netherlands [4]CEA-INSTN, Grenoble, France [5] SCK•CEN, Brussels, Belgium

Disclaimer: *The content of this document/text reflects only the author's views. The European Union is not liable for any use that may be made of the information contained therein.*

Introduction

In the last years there have been an increment in the use of the IR:
- medicine,
- industry,
- research

CHALLENGE FOR SOCIETY

Maintain an adequate level of knowledge, skills &competencies in PR
- through education and training
- to protect EWs, the public and the environment from the potential risks involved in IR

The EU has been founded the projects:

**ENETRAP & ENETRAP II-III
(European Network for Education and
Training in Radiation Protection**

Introduction

The ENETRAP projects, since the stating of the first edition in 2005 till nowadays, ENETRAP III, always have had **the objective**:

- to maintain a **high level of competence in radiation protection (RP)**,
- assuring the continued development of suitable **well-trained personnel**
- adequate **knowledge management**.

This objective is crucial to ensure future **safe use of ionizing radiation** and the **development of new technologies in a safe way** in line with EU policies on Education & Capacity Building.

Introduction

The ENETRAP III-WP5 commitment is:

➢ the dissemination of the activities and results of the series of projects ENETRAP, via:

- • **(i) a website** and
- • **(ii) a project event**.

In order **to bring together the information that is currently spread** over several websites and other carriers, and **promote the EUTERP community** improving the **EUTERP website** to become a *capacity building and transfer of know-how in RP*-tool.

Task 1. Improving the EUTERP WEBSITE

Task 2. Organization of an open project workshop

Objectives

The first WP5 objective is to contribute to improve the EUTERP website:

✓ Electronic platform where all relevant information on E&T in RP could be found: **to preserve the results of ENETRAP projects**

✓ Increase awareness & visibility of existing E&T resources for RP: ↑ **the efficiency of RP initiatives**

✓ Providing a better understanding on where & which E&T actions are currently missing: **opens the door for new opportunities**.

✓ To enable access to learning materials & useful information around E&T: **entry to a big amount of knowledge**.

✓ Providing support to E&T providers to improve the quality & increase the visibility of their courses: **data base of RP E&T events and providers**

✓ Combine all relevant available information on E&T in RP and offer them to the stakeholders in **one coherent way: Complete source of information on E&T in PR**

EUTERP website will become a *capacity building and transfer of know-how in RP tool*

Objectives

The second WP5 objective is: to organize an **open project workshop**

Events related to E&T in radiation protection:

- 2015: 30 September – 2 October, EUTERP Workshop: "Legislative change in Europe: the implications for training in RP- Rising to the challenge"

- **2016: ENETRAP III dissemination event**

- 2017: ETRAP international conference

WORKSHOP

- **2016-MADRID.** Organization of an open project workshop:

  - To present the obtained project results and

  - To identify potential future initiatives involving all parties concerned.

EUTERP
EUROPEAN TRAINING AND EDUCATION IN RADIATION PROTECTION FOUNDATION

ENETRAP III

European Network on Education and
Training in Radiological Protection

EURATOM

Capacity building &transfer of know-how in RP- tool: STARTING POINT.

With the aim of identify the main aspects must be included in the proposal of design for **the EUTERP Capacity Building platform**, the next tasks has been done:

- Revision of the ENETRAP & ENETRAP II **projects results** and the **expected results** for ENETRAP III.

- Search & analysis of the structure of different **transparency platforms delivering a capacity building strategy,** belonging of entities of recognized prestige.

Capacity Building (CB) in ENETRAP context

CB is an strategy based on a consensus on common needs, the vision and instruments for research and training in RP matters.

- ➷ to create and transfer **knowledge**

And to develop

- ➷ **skills and**

- ➷ **competencies**

This approach is in line with the Europe 2020 strategy

- Of the individuals, organizations and countries,

- to protect workers, the public and the environment from the potential risks of ionizing radiation, today and in the future.

This strategy must consider different aspects:
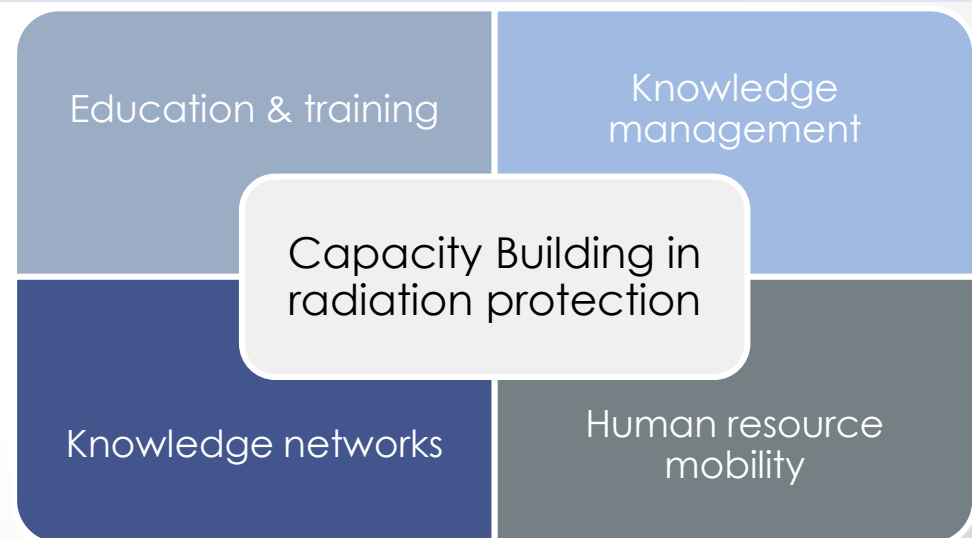
Capacity Building remains a major support **to safety improvement**.

Education & training	Knowledge management
Knowledge networks	Human resource mobility

Capacity Building in radiation protection

Capacity building in ENETRAP: Pillars

Education and training (E&T): is the **critical** element to **create capacities** & prevent the decline in expertise to meet the future demands. Is the main pillar of ENETRAP-projects.

Knowledge Management (KM): deals with the **process** of creation, organization, storage, preservation, transference & utilization of **knowledge**.

Knowledge Networks (KN): are related with the **social interaction** between the **actors** involved in the **RP Knowledge** (**experts, regulators, E&T providers, students, young & senior professionals, stakeholders,..**) to have communication, share ideas, participate in constructive debates to lead to a better understanding on where & which E&T actions are currently missing.

Human Resource Mobility (HRM): easiness of the exchange of workers across the national borders, developing a **common high-level safety & RP culture**, supported by the EU training policy. The instruments for borderless mobility are the **lifelong learning** strategy and the **mutual recognition** of the RPE status between Member States.

Capacity building in RP

E&T   **KM**   **KN**   **HRM**
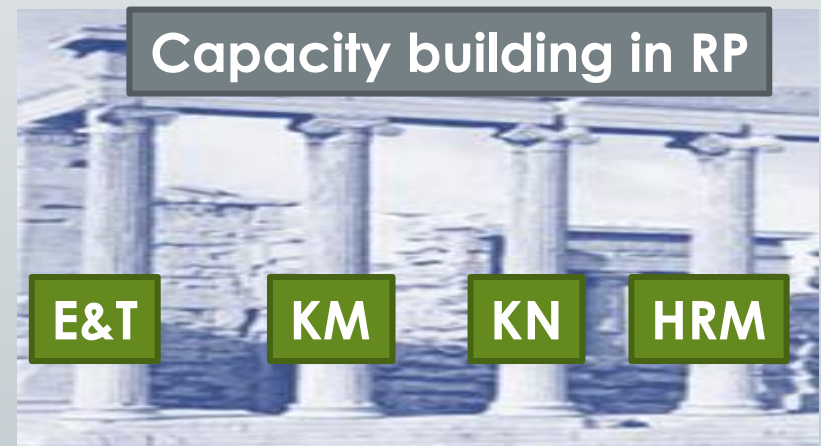
Revision of the ENETRAP-projects results

ENETRAP RESULTS

Deliverable	Title	WP
WD.011	Composition and working procedure of the ENETRAP-SC	WP1.Implementation and co-ordination of ENETRAP
WD.02	Proposal of the ERASMUS Universities Consortium	WP8.Establishment of an Erasmus Universities Consortium for developing an European Master in Radiation Protection (EMRP)
WD.03	IAEA, EU and local requirements for RP E&T	WP6.Review of the scientific content of adjustment to European requirements
WD.04	Report on Training needs and capabilities	WP2.Assessment of training needs Member, the New Member States and the
WD.05	Report on the lessons learnt from On the Job Training	WP4.On-the-Job Training (OJT) program
WD.06	Table of contents of the Pilot Session in RP Training	WP7.Validation of the ERPC and run of one of
WD.07	Recognition of the RP Training : Recommendations to EU	WP3.Recognition of con
WD.08	Report on available tools for RP Training	WP5.New concepts and
WD.09[1]	Report on the first pilot session in RP Training	WP7.Validation of the ERPC and run of one of

ENETRAP II RESULTS

WP&WD	Title
WP1[1]	Co-ordination of the project
WD1.1	Organisation of kick-off meeting and project presentation
WD1.2	Establishment of the Advisory Board
WD1.3	Project reports
WD1.4	Project website structure
WD1.5	Regular updates of the website
WP2	Define requirements and methodology for recognition of RPEs
WD2.1	Report on requirements for RPE
WD2.2	Methodology for recognition of RPE
WP3	Define requirements for RPO competencies and establish guidance for appropriate RPO training
WD3.1	Report on requirements for the RPOs
WD3.2	Report on European reference standards for RPO training
WP4	Establish the reference standard for RPE training
WD4.1	Statement of initial and refresher training requirements for RPE
WD4.2	Reference standards for RPE training
WP5	Development and apply mechanisms for the evaluation of training material, events and providers
WD5.1	Methodology and quality assurance protocol for comparison and evaluation of training material
WD5.2	Methodology and quality assurance protocol for comparison and of training events
WD5.3	Methodology and quality assurance protocol for comparison and evaluation of training providers
WD5.4	Application of the defined mechanisms to some examples of training material, providers and events
WP6	Create a database of training events and training providers (including OJT) conforming to the agreed standard
WD6.1	Report on training events and training providers conforming to the agreed standard
WD6.2	EU wide Data Base of training events and training providers on RP
WP7	Develop of some course material examples (text book, e-learning modules, ...)
WD7.1	Accompanying text for at least one module of the RPE or the RPO training scheme.
WD7.2	Development of modern learning tools (e-learning) for the RPE or RPO training.
WP8	Organise pilot sessions, test proposed methodologies and monitor the training scheme effectiveness
WD8.1	Organisation of pilot sessions
WD8.2	Report on effectiveness of the training scheme or module
WP9[2]	Introduction of the training passport and mutual recognition system of RPEs
WD9.1	Framework and procedure for mutual recognition of RPE qualification
WD9.2	Report on the test phase of the mutual recognition procedure
WD9.3	Prototype of European Training Passport and report on its acceptance by stakeholders in the EU
WP10[2]	Collaboration for building new innovative generations of specialists in radiation protection
WD10	Report on national initiatives and European approach to attract early-stage radiation protection researchers

EXPECTED ENETRAP III RESULTS

Nº	Deliverable name
WP1	Project coordination
D 1.1	Organising kick-off and subsequent Steering Committee meetings, preparing the agenda and writing the minutes of the meetings
D 1.2	Establishment of a Steering Committee and describing working program
D 1.3	Setting up a Consortium Agreement
D 1.4	Writing the Project Presentation
D 1.5	Writing the Communication Action Plan
D 1.6	Project reporting: intermediate project report, final report
D 1.7	Launch of project website
WP2	Organisation of "think-tank" activities and establishment of partnerships ensuring feedback from stakeholders
D 2.1	Establishment of a Consultancy Group consisting of representatives of relevant stakeholders in E&T in RP, and describing the working programme (= tasks of the CG, composition and setting up meeting schedule)
D 2.2	Organisation of information exchange and CG meetings
WP3	Establishment of three specialized training modules for RPE and implementation of pilot sessions
D 3.1	For each module: determine the learning outcomes, develop the programme and the course requirements
D 3.2	Organise a pilot session of the specialized module for RPE in geological disposal
D 3.3	Organise a pilot session of the specialized module for RPE in NPP
D 3.4	Organise a pilot session of the specialized module for RPE in medical
D 3.5	Report on effectiveness of the training, the endorsement process and the feedback from the stakeholders
WP4	Development of a train-the-trainer (TTT) strategy and organisation of a TTT training event
D 4.1	Development of the curriculum and course material
D 4.2	Organisation of pilot session
D 4.3	Evaluation of the pilot sessions and proposal of the final TTT event
WP5	Dissemination of project results and contribution to a website for capacity building and transfer of know-how in radiation protection
D 5.1	Report on website structure, requisites and functional analysis
D 5.2	Set up website structure and launch
D 5.3	Organisation of an open project workshop
WP6	Testing of methodologies for RPE recognition and mutual recognition in practice
D 6.1	Report documenting the outcome of liaison with HERCA with respect to the proposed methodologies
D 6.4	Report on the outcome of the trial of national RPE Recognition Scheme
D 6.5	Report on the outcome of the trial of Mutual Recognition of RPEs
WP7	Writing of guidance to support the implementation of E&T requirements for RPE and RPO as defined in the EURATOM BSS
D 7.1	Guidance document to support the implementation of E&T requirements for RPE
D 7.2	Guidance document to support the implementation of E&T requirements for RPO

ENETRAP

Analysis of the structure of different platforms of transparency delivering a CB strategy

NAME	DESCRIPTION
Spanish Ionizing Radiation Portal	A CIEMAT initiative of the past. The main objective of this portal is to be a **point of reference in the field of ionizing radiation** (Applications, measurement, Radiation effects, RP and radioactive waste). Is aimed at researchers and industry experts, stakeholders: industry, political, media and people who need seek some type of information. The information included: courses information, providers, legislation, news, calls, workshops, I+D projects, publications, links… http://www.ionizantes.ciemat.es/
IRELP	Acronym of IRENA (International Renewable Energy Agency) Renewable Energy Learning Partnership. There is a critical shortage of skilled personnel to develop, design, finance, build, operate and maintain renewable energy projects. This shortage represents one of the greatest barriers to the wider diffusion of renewable energy technologies. **Developing a robust and highly skilled labour pool is the central motivator behind IRELP**. http://irelp.irena.org/home
ENEN	European Nuclear Education Network. **The mission of ENEN is the preservation and the further development of expertise in the nuclear fields** by higher Education and Training through the co-operation between universities, research organisations, regulatory bodies, the industry and any others involved in the application of nuclear science and ionising radiation. http://www.enen-assoc.org/
CEIDEN	Spanish Nuclear Fission Energy Technology Platform. Aims to coordinate different Spanish organizations of all fields of nuclear R&D to participate in different plans, national R & D and international programs, seeking guidance consistently efforts the entities involved. http://ceiden.com/
MAGHRENOV	**EU and Maghreb working together on capacity building and business innovation in sustainable energy**. MAGHRENOV aims to support innovation in the Renewable Energy & Energy Efficiency (RE&EE) sector in the Mediterranean basin. The Consortium brings together partners from Europe and MAGHREB countries, whose shared goal is to establish a common Euro-Mediterranean innovation space. Http://Maghrenov.Eu/

Current EUTERP website.

http://www.euterp.eu


- **Recently remodeled (2014)!!**
- This web already includes some of the ideas of the WP5
  - Basic information of the ENTRAP projects
  - Links to the most important networks & projects
  - Including a small database of E&T events
  - Including information and links to the most important E&T workshops
  - Including resources (Relevant legislation, qualification framework, paper and presentation and glossary)
- Including a newsletter
- National Contact Points//National Pages

Current EUTERP website.

About EUTERP
- Background of EUTERP
- Board
- Newsletters
- Contact
- Subscribe to newsletter

Associated members
- Current associates
- Benefits
- How to join

National information
- National Pages
- National Contact Points

Resources
- Relevant legislation
- Qualification framework
- Papers and presentations
- Glossary

Linked projects &networks
- Enetrap projects
- Other projects
- Related Networks

Events and courses
- EUTERP Workshops
- ETRAP Conferences
- Related Events
- Courses in Radiation Protection
- Related courses

EUTERP
EUROPEAN TRAINING AND EDUCATION IN RADIATION PROTECTION FOUNDATION

ENETRAP III

European Network on Education and
Training in Radiological Protection

EURATOM

WP5 proposal for EUTERP Capacity Building platform.

PROPOSAL: to organize the information of the website around **3 concepts**
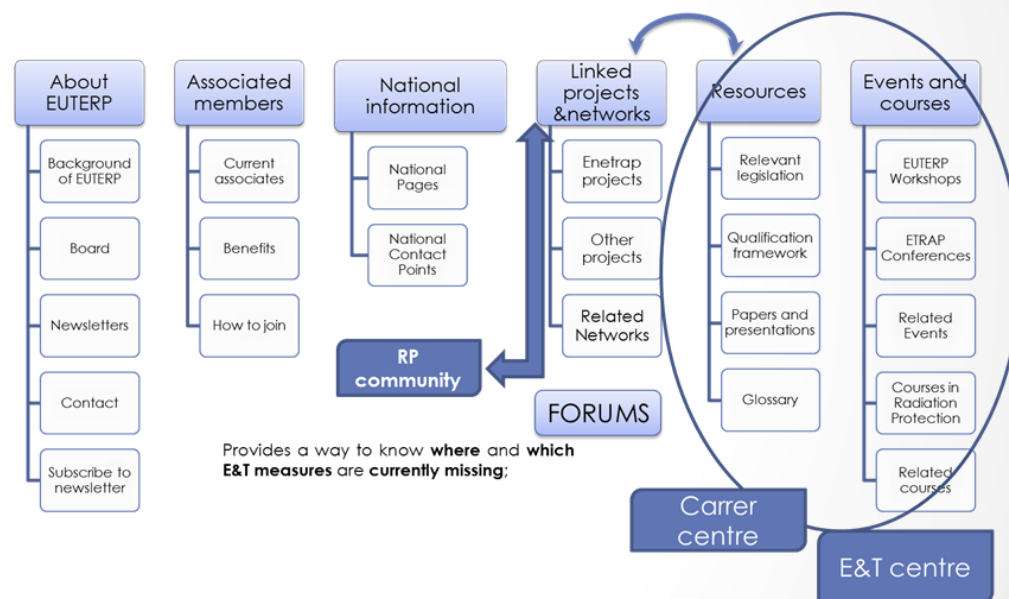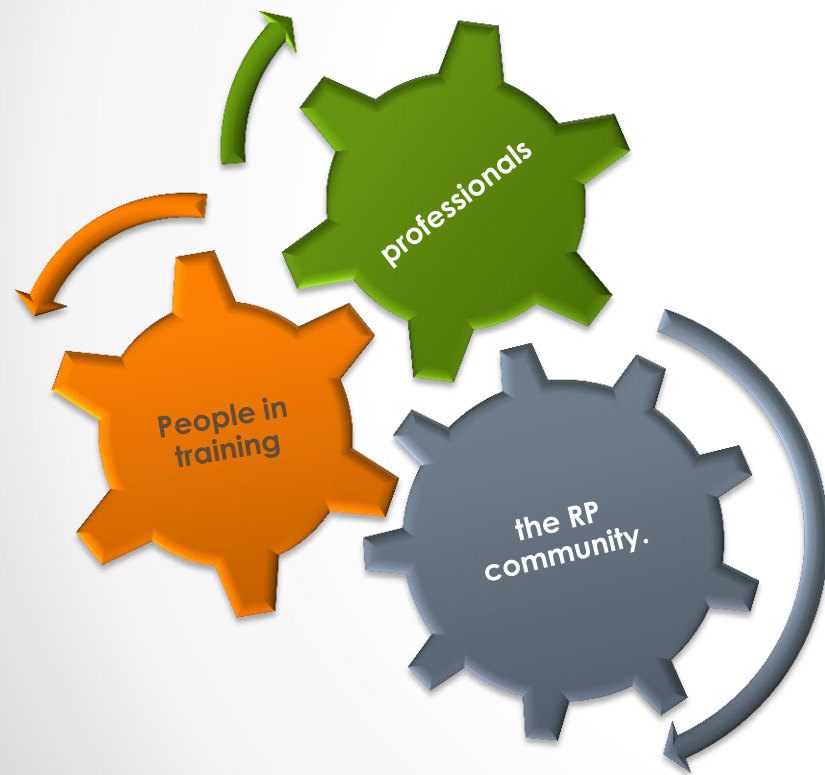
"Resources"	→	"Carrer centre"
"Events and courses"	→	"Education & Training centre"
"Linked projects & networks"	→	"Radiation Protection Community"

EUTERP
EUROPEAN TRAINING AND EDUCATION IN RADIATION PROTECTION FOUNDATION

ENETRAP III

European Network on Education and
Training in Radiological Protection

EURATOM

WP5 proposal for EUTERP Capacity Building platform.

About EUTERP
- Background of EUTERP
- Board
- Newsletters
- Contact
- Subscribe to newsletter

Associated members
- Current associates
- Benefits
- How to join

National information
- National Pages
- National Contact Points

Career centre
- Relevant legislation
- Qualification framework
- Professional workshops, conferences
- Opportunities

E&T Centre
- E&T Data base
- Resources for educators: TTT
- Training guides & manuals
- Library

RP community
- Enetrap projects
- Other projects
- Related Networks
- Glossary
- FORUMS

professionals

People in training

the RP community.

Functional analysis: **1.CAREER CENTER**

This block is envisaged containing all the information related with the professionals of RP and its career.

1.Relevant Legislation

2.European Qualification Framework

- ECVET
- EQF
- EQAVET
- ECTS
- CAREER PROFILES

3.Professional workshops, meetings &conferences

- EUTERP workshops
- ETRAP conferences
- RP conferences.
- Presentations& papers

4.Opportunities

- On the Job Training
- Internships
- Job opportunities

Functional analysis: **1.CAREER CENTER**
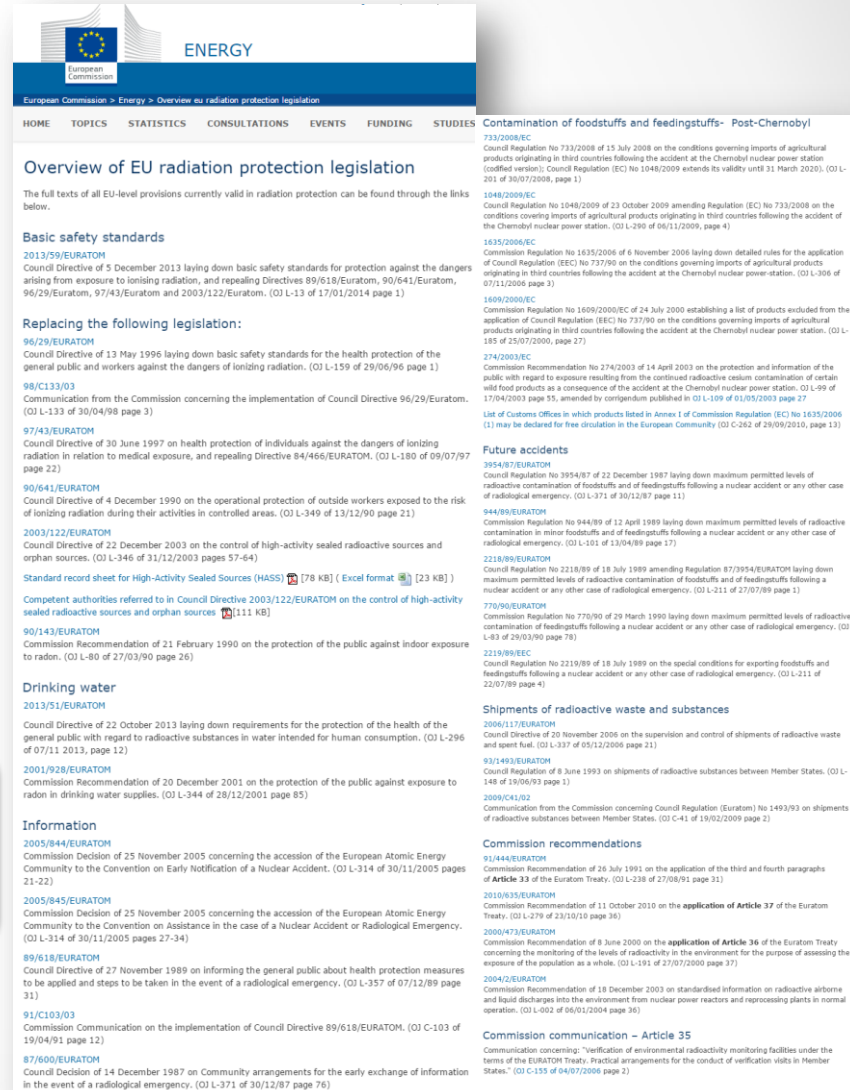
1. Relevant Legislation

European Union:
- Euratom Basic Safety Standards: Council Directive 2013/59/EURATOM
- All the legislation of the EU related with the RP is grouped in the web of the EC: https://ec.europa.eu/energy/node/1219.

International Atomic Energy Agency:
- 2014."International Basic Safety Standards"

Functional analysis: **1.CAREER CENTER**

2. European Qualification Framework

- **ECVET:** European Credit system for Vocational Education and Training
- **EQF:** European Qualifications Framework
- **EQAVET:** European Quality Assurance in Vocational Education and Training
- **ECTS:** European Credit Transfer and Accumulation System
- **CAREER PROFILES**

PROPOSAL: extend this block with **"Career profiles"**

This item can be completed with more information later. For the moment it is proposed to include all the information already available, related with the different **RP career profiles**:

1. RP Career profiles in the EU legislation
2. RP Career profiles in ENETRAP; RPE & RPO:
3. Career profile of the MPE & the medical professionals involved with the IR.
4. Career profile in the Nuclear Sector
5. Promotion of RP culture between the RP professionals

Functional analysis: **1.CAREER CENTER**

3. Professional workshops, meetings &conferences

- Reorganization and extension of "EUTERP workshops" & "ETRAP conferences" items.

  - links to the portals of the events and to the relevant **presentations** or to the "**proceedings**".

  - A section for **EUTERP presentations and papers**, included the current section "Papers and presentations"

4. Opportunities

Under this title, are proposed to include:

- On the Job Training (OJT),

- Internships and

- Job opportunities.

These items can be connected with the database, and completed by the organizations and entities who want to offer their "**opportunities**".

Functional analysis: **2. E&T CENTER**

This block is envisaged containing all the information related with the students at all stages and young professionals in training, as well as resources for trainers.

1. Education& Training database

- E&T courses
- Degrees
- PhD topics
- Masters
- E&T Providers

2. Resources for educators TTT

3. Training guides& manuals

4. Library

Functional analysis: **2. E&T CENTER**

1. Education& Training database

- The current database on the EUTERP website is being extended to be a working, quite complete and easy to use database.

- This DB will be connected with the IAEA new development database "Integrated database for nuclear education and training"
  - **https://nucleareducationdb.org/**

- E&T courses
- Degrees
- PhD topics
- Masters
- E&T Providers

Oriented for the RPE, RPO and the EW, initial, retraining and specialization in any kind of areas of RP.

Functional analysis: **2. E&T CENTER**

2. Resources for educators TTT

Related with the **competence and suitability of the RP trainers**.
- ENETRAP III is *developing a train-the-trainer (TTT) strategy and a TTT event,*
- Promoting the ECVET concepts and
- Giving attention to the challenges involved in teaching topics that have a significant societal impact.

3. Training guides& manuals

Information & documentation related with syllabus, recommendations, as well as teaching material usable by students, teachers,...

Include information of reference text books used for E&T in RP:

- Ex: "**European Radiation Protection Course: Basics**" *Authors*: P. Massiot and C. Jimonet, developed in the framework of ENETRAP II.
https://books.google.es/books?id=o2n0AwAAQBAJ&hl=es&source=gbs_slider_cls_metadata_9_mylibrary

4. Library

Google books

Functional analysis: **3. RP COMMUNITY**

This block is envisaged containing information & utilities to create an active **virtual community**, where the interchange of ideas provides a better understanding on where &which E&T actions are currently missing

1. ENETRAP projects

2. Other projects & related networks
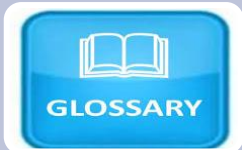
3. Glossary

4. Forums
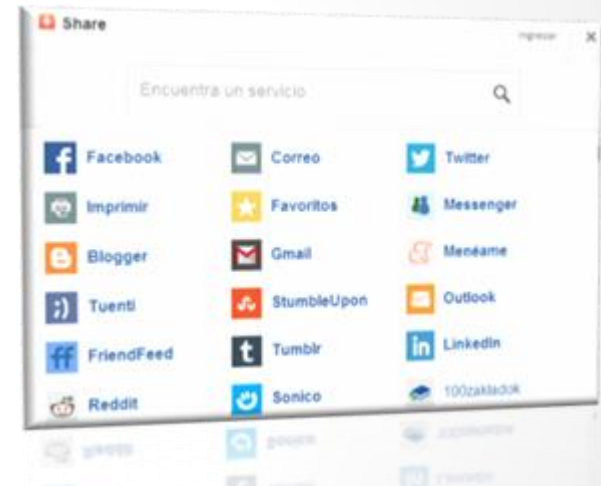
"Share-icon": Transversal functionality of all the web portal, in order to promote the visibility of the information included inside.

Functional analysis: **3. RP COMMUNITY**

ENETRAP RESULTS

ENETRAP II RESULTS

EXPECTED ENETRAP III RESULTS

1. ENETRAP projects

It is proposed to extend the current information (one section/project) with the **tables of results** including **links to the documents in pdf**.

2. Other projects & related networks

Description of different **projects** financed by the EU & **networks**, mainly European, which work in different aspects and applications of IR.

Projects:	Related Networks:
• EUTEMPE-RX	• IRPA
• TRASNUSAFE	• ENEN Association
• NUSHARE	• MELODI
• PETRUS	• NERIS
• GENTLE	• ALLIANCE
• CINCH	• EURADOS
• MEDRAPET	• EAN
	• EMAN
	• EFOMP

Functional analysis: **3. RP COMMUNITY**
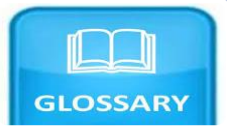
3. Glossary

- Alphabetical list of **terms** & **acronyms** with their explanations, appearing in the site.
- Are related with the RP, the E&T and the concepts introduced by the European framework for the Vocational E&T.
- It is proposed to maintain the current information and actualize it with the new definitions that can appear.

4. Forums

- A features of the first EUTERP portal that was chosen to let it out for that moment.
- With the **new concept for the EUTERP portal as transparency platform of knowledge**, this subject <u>can be assessed again</u>
- to provide a tool for the community to **open & participate in discussions** about the RP matters.

Conclusions.

- A big effort & lot of work has been done in the **10 years of ENETRAP projects,** including the new definitions for **RPE, RPO & MPE** in the EURATOM-BSS**.**

- The MISSION of the ENETRAP III-WP5 is **to preserve & disseminate** the results of the 3 projects, **bring together** valuable information dispersed, & **promote the EUTERP community**.

- The INSTRUMENTS to achieve the WP5 objectives are:
  - to improve the **EUTERP website** to become a transparency platforms, delivering a RP capacity building strategy and
  - to organize an **open project workshop** (Madrid-2016)

- The DESIGN of the EUTERP CB platform structure has been done after:
  - A deep **reflection** on EURATOM research, innovation & education strategy that supports the H2020 program.
  - A **study of other webs** of entities of recognize prestige delivering a CB strategy (strengths and weakness)
  - The revision of the **ENETRAP project results**.

- The portal FUNCTIONAL DESIGN encompass all the information around 3 concepts:
  - **the professionals, the people in training & the RP community**.

- At this moment the technical developments are being done.

Suggestions, comments, questions…. Thank you