



### Motivation

'EC Call'

Topic Fission-2013-5.1.1: Euratom Fission Training Schemes (EFTS) in 'Nuclear Fission, Safety and Radiation Protection':

'... Aligned with the above principles of the 'European Credit system for Vocational Education and Training' (ECVET), an EFTS should address the challenges of **borderless mobility and lifelong learning in specific domains**. This implies: (i) **modularity of courses** and **common qualification criteria**, (ii) common **mutual recognition** system, (iii) facilitation of **mobility** for trainers and trainees across the EU, and (iv) **feedback** from the 'employers' from public or private sectors. For this purpose, wherever justified, a *European Passport* ("individual transcript of record") should be developed in each EFTS, based on learning outcomes (knowledge, skills and attitudes). Proposals should be submitted by **networks of organisations** of pan-European **relevance** consisting of education and training organisations as well as industry, aiming at setting up ECVET partnerships. ...'

'Guidelines for the MPE project'

- The Medical Physics Expert (MPE) is a Medical Physicist (MP) who has developed his expertise to **expert level**, i.e. to the highest level (EQF 8)
- An MP becomes an MPE after **advanced experience and CPD** at EQF level 8
- EFOMP: 'We **urgently** need to set up an **agreed programme of education and training** that would lead an MP to MPE in each particular specialty as specified in the 'Guidelines on the MPE' document and at level 8 of the EQF.'

### Situation

- Most EC member states **don't have the capability** to offer courses in medical physics in radiology up to EQF level 8
- A successful training and education program needs a proper environment:
  - excellent teachers, teaching tools & quality monitored teaching
  - high end X-ray systems (for practical training)
  - hospital environment (esp. for colleagues in industry & authorities)
  - high end applications (ex. automated dose monitoring, ...)
  - think tanks of promising future applications (ex. virtual clinical trials)
  - prototype / preclinical systems (ex. phase contrast)
  - specific software platforms (ex. Monte Carlo tools)
  - standards
- Sharing is most efficient !

### Solution

EC Supported EFTS

### Learners

- The MP in radiology and interventional radiology (hospitals)
- The MP or scientist in medical device industry
- The MP in regulatory authorities
- PhD students

### Purpose

Create a possibility for the medical physicist to reach EQF level 8

### Objectives

- To create a **network of excellent teaching centers** in medical physics of diagnostic and interventional radiology and to prepare courses at EQF level 8
- To set up a multicampus **Educational and Training platform** (for course material, online teaching activities, databases...)
- To get the course either accredited or serve as an example in as many as possible Member States → Sustainability!



### Project partners (network of excellence)

- Prof. Hilde Bosmans & Prof. Wim Van Petegem
- Dr. Virginia Tsapaki & Dr. Carmel Caruana
- Prof. Eliseo Vano
- Prof. Andrea Ottolenghi
- Dr. Josep Sempau
- Prof. Mauro Gambaccini & Dr. Angelo Taibi
- Dr. Kristina Bilznakova, Assoc. Prof. Ivan Buliev & Prof. Jenia Vassileva
- Prof. Kenneth Young & Alistair Mackenzie
- Prof. Francis Verdun & Dr. Pascal Monnin
- Ruben van Engen & Dr. Wouter Veldkamp
- Prof. John Damilakis
- Dr. Renato Padovani
- Dr. Markus Borowski & Prof. Martin Fiebich

NUMBER	COURSE MODULE (provisional titles)	ORGANISERS
1	Developments of the profession and the challenges of the MPE: Legal aspects, professional matters, communication and risk assessment, incidents and accidents. Raising the public profile of the profession.	EFOMP & Servicio Madrileño de Salud, ES
2	Radiation biology for medical physicists in radiology	University of Pavia, IT
3	Basics of Monte Carlo simulation	Polytechnic University of Catalunya, ES
4	Fundamental physics of X-rays: energy, absorption and phase effects	University of Ferrara, IT
5	Antropomorphic phantoms to assess clinical effectiveness	Technical University of Varna, BG
6	From routine Quality Assurance (QA) of X-ray systems to advanced QA	Catholic University of Leuven, BE
7	Advanced measurements of the performance of X-ray imaging systems	Royal Surrey County Hospital, UK
8	CT imaging and patient dose optimized with objective means	University Hospital of Lausanne, CH
9	Achieving quality in breast cancer screening and diagnosis	Nat. Expert & Training Centre f. Breast Cancer Screening, NL
10	High dose X-ray procedures in Interventional radiology and cardiology	Azienda Osp. Univ. S. Maria della Misericordia, IT & Serv. Madrileño de Salud, ES
11	Dosimetry, from conceptus to the adolescent	University of Crete, GE
12	Personnel dosimetry, including techniques to communicate practical results to the users (RPE)	Klinikum Braunschweig University of Giessen, DE



### E-LEARNING

- Use **different media** to educate: audio, video lectures, video demonstrations, simulations, animations...
- Online **communication and feedback** between teacher and learner
- Interactive **self-assessment tests**
- Interactive **exercises**
- **Activate the learner** prior to the face-to-face contact moments
- Creation of **databases** of material
- Effective **sharing** of material and knowledge
- **Cooperation** between the course modules