Medical Physicists
Improving treatments, saving lives

EFOMP presentation to the ICARO-2 Conference

The Role of professional societies and international organizations

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Membership (NMOs)

Austria (AT): Belgium (BE): Bulgaria (BG): Croatia (HR): Cyprus (CY):
United Kingdom (UK)

New Entry (2016): Republic of Moldova

Company Members

PTW Freiburg
Standard Imaging
Scandidos
Varian Medical Systems
Elekta
RTI

> 8000 physicists and engineers working in medical physics

![Bar Chart](chart.png)
Mission
• to harmonize and advance medical physics throughout Europe,
• to strengthen the activities of the National Member Organisations (NMO)
  – bringing about and maintaining systematic exchange of professional and scientific information,
  – the formulation of common policies, and
  – promoting education and training programmes.
Objectives

- coordination activities with NMOs
- **collaborating with other international organisations**, particularly the IOMP
- disseminating information through publications and meetings
- **encouraging scholarship and the exchange of Medical Physicists between countries**
- guidelines for education, training and accreditation programmes
- recommendations on the appropriate responsibilities, organisational relationships and roles of workers in Medical Physics
- encouraging the formation of Organisations for Medical Physics where such organisations do not exist.
Collaborating with other international organisations

HOW DOES EFOMP RELATE TO EUROPEAN SOCIETIES REPRESENTING MEDICAL SPECIALTIES?

- ESR
- EANM
- ESTRO

Sign Memorandum of Understanding

Involve them in EFOMP activities

Support the physics groups in these societies
Collaborating with other international organisations

Relationship with other societies

We have signed Memoranda of Understanding:

- EANM
- ESTRO (renewal 2017)
- ESMRMB
- MELODI (2014)
- EFRS (2015)
- ESR (2015)
- AAPM (2015)
- COCIR (2017)

We support the Physics Committees:

- ECR
- EANM
- ESTRO
Collaborating with other international organisations

Relationship with AAPM

• Joint publications

Reviewed by EFOMP (December 2015)

‘Digital imaging and communications in Medicine (DICOM) Supplement 191: Patient Radiation Dose Reporting
The final document will be ready by December 2016

• Joint Task Groups

EFOMP- AAPM Task Group No. 282
Development of a new universal breast dosimetry method
Collaborating with other international organisations

Relationship with IAEA

Active participation in IAEA conferences:

• Int. Conf. On Clinical PET and Molecular Imaging (5-9 Oct, 2015)

• Meeting to discuss the current status of dosimetry in NM and assess the need and possible content of a publication (2-6 Nov, 2015)

• Workshop ‘Development of harmonized QC protocols for DR’ (18-22 April, 2016)

• Publication on ‘Setting up of a Radiology facility’ (2016)
Collaborating with other international organisations

Relationship with ICTP

Joint ICTP-IAEA Workshop on Computed Tomography: Quality Control, Dosimetry and Optimization | (smr 2853)

School on Medical Physics for Radiation Therapy: Dosimetry and Treatment Planning for Basic and Advanced Applications | (smr 2694)

April 2017
Collaborating with other international organisations

Relationship with HERCA

Multi-stakeholder meeting on justification and optimization in the medical field (March 10, 2016)

3rd HERCA MSM on CT Optimisation (March 6 2017)
Collaborating with other international organisations

Relationship with IOMP

International Day of Medical Physics
An Initiative of the International Organization of Medical Physics

November 7th, 2016
EDUCATION IN MEDICAL PHYSICS: THE KEY TO SUCCESS

IOMP Book on ‘Non-ionizing Radiation Protection in Medical Environments’
Education, training and accreditation programmes

ESMPE
7th edition 2017 - 26-28 Jan 2017

Imaging in Radiotherapy

Advanced structural imaging for radiotherapy simulation and planning - 4DCT and MRI imaging for simulation and planning. Technological requirements, protocol optimization for radiotherapy applications, imaging issues, Quality Assurance.

Advanced quantitative imaging for radiotherapy planning - PET and fMRI imaging for radiotherapy planning. Methods for automatic functional volume segmentation with clinical examples. MRI diffusion and perfusion techniques for target volume definition and response to treatment assessment

Advanced imaging for treatment adaptation - MRI Image guided radiotherapy. Applications of quantitative imaging provided by PET and MRI in treatment adaptation according to early response.

Imaging for treatment guide and verification - IGRT, CBCT, Ultrasound, EPID and fluoroscopy, Optical surface imaging: Devices, practices, Quality assurance, clinical examples.

Cone beam CT - Acceptance testing and Quality controls, dosimetry, use of CBCT in adaptive radiotherapy, motion management

Tools for image integration in the radiotherapy workflow - Overview of image registration methods, deformable image registration, clinical application of DIR, ROI propagation in adaptive radiotherapy, atlas based segmentation, practical demonstrations.
Encouraging scholarship: Imaging in RT

The school has been attended by 46 Medical Physicists

Low income countries have had a subsidized fee from EFOMP

The school was recommended by ESTRO

The school has been organized in conjunction with the Czech NMO

Subsidized fees 14
Females: 21 (46% gender balanced)
Mean Age: 38 Years (young audience) (range: 24-56 y)
Quality control in cone-beam computed tomography (CBCT)
EFOMP-ESTRO-IAEA protocol

EFOMP CBCT working group set up in December 2013

Unification of quality controls in CBCT for dental, Angiography and Radiotherapy applications

- to develop a practical, unifying protocol for image quality control (and dose) of CBCT
- using contrast: noise ratio and Fourier measures

Progress (2016)
Approved From IAEA
Waiting from approval from ESTRO

- Image quality factors
- Phantoms
- Software
- Dosimetry
The EBAMP will accredit medical physics education and training events. Initially its work will be limited to allocating CPD credits depending on the number of hours of education and hands-on training required of participants.

For the first Board only, board positions were advertised and the candidates were evaluated by the EFOMP Board of Directors and their appointment were ratified by the EFOMP Council.

The EBAMP will function independently from EFOMP.
Education, training and accreditation programmes

EUROPEAN EXAMINATION BOARD (EEB)

The EEB will have the responsibility for two types of assessment:

It will award a:
European Diploma of Medical Physics (EDMP) as recognition that that the holder is qualified to Master's degree level and has at least 2 years equivalent clinical training in the field of medical physics.

It will also examine candidates against the criteria set by RP 174 and award the European Attestation Certificate to those who have reached the level of the Medical Physics Expert (EACMPE).

First Round of Examination: Prague 6-8 July 2017

http://www.efomp.org/index.php/eeb
Education, training and accreditation programmes

EUTEMPE - RO

• ESTRO and EFOMP have formed a joint working party to develop a suitable application for Europe–wide funding

• Several t-conf. There is an H2020 EURATOM NFRP 12 call

• EUTEMPE-RO project proposal: in progress

Modules

Professional Development and Leadership
Advanced Dosimetry and Dose verification
Dose Modelling in Treatment Planning Systems
Advanced Treatment Planning and Optimisation
Advanced Imaging in Radiotherapy
Advanced Brachytherapy
Particle Therapy
Radiobiological Modelling
Radiation Protection
Radiotherapy Equipment and IT management
Clinical Risk Management
Research in Radiation Oncology physics
1st European Congress of Medical Physics

Athens
September 1-4 2016

Bringing Medical Physicists Together
European Congress of Medical Physics

23 - 25 August 2018
Copenhagen - Denmark

Bridging knowledge across specialities

Organized by

Hosted by

Congress venue

ecmp2018.org