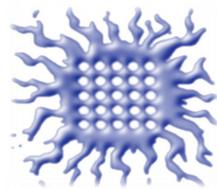


EMPIR PROJECT 19NETo4 MIRA

JOINT NETWORK PROJECT SIGNIFICANCE



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Introduction

- ❑ The European Association of National Metrology Institutes (EURAMET) is the Regional Metrology Organisation (RMO) of Europe, which has a goal to enhance benefits of metrology to the society by establishing a balanced European measurement infrastructure.
- ❑ The EMPIR programme enables collaboration of NMIs and DIs, industrial and medical organisations and academia in various fields including environment, health, energy, industry etc.
- ❑ Joint Network Projects are the projects which facilitate the process of establishing the European Metrology Networks (EMNs). Currently, there are seven established EMNs concerning the following areas: climate and ocean observation, energy gases, mathematics and statistics, quantum technologies, smart electricity grids, smart specialisation in northern Europe and traceability in laboratory medicine.

Project overview

- ❑ “19NETo4 MIRA, Support for a European Metrology Network on the medical use of ionising radiation” is a Joint Network Project from the 2019 Support for Networks call. The project participants are 10 NMIs and DIs from Europe, which will serve as the basis for the creation of the future EMN.
- ❑ Rapid constant development of medical imaging and radiotherapy techniques impacts IAEA protocols, metrology techniques, by increasing complexity of diagnostic and therapeutic procedures.
- ❑ Currently, the metrology of ionising radiation used in medicine is well represented in standardisation bodies such as International Organisation for Standardisation (ISO) and International Electrotechnic Commission (IEC), but not in more clinically oriented societies such as European Society for Radiotherapy (ESTRO) and European Alliance for Medical Radiation Protection Research (EURAMED).
- ❑ The Joint Network Project would introduce high-level coordination of the metrology community by establishing facilitated stakeholder communication and knowledge sharing via the future EMN. In this way research and development, training and accessibility of metrological infrastructure among EMN members on a European level would be supported.
- ❑ The specific objectives of the project would firstly be based on establishing constructive dialogue, workshops and similar, between the participating NMIs/DIs and the stakeholders which are involved in the medical applications of ionising radiation, where the communication would be primarily focused on the research and standardization.
- ❑ From the EMN point of view the stakeholders could be categorised into the following categories: (1) academic experts, (2) standards development organisations, (3) national and international bodies in the areas of radiation oncology and medical physics, (4) manufacturers of medical equipment, (5) medical staff and professionals.
- ❑ The knowledge sharing programme for the stakeholders would be initiated in order to facilitate and enhance the exchange of researchers between organisations, promote events which include metrology based workshops, various stakeholder targeted events and training courses. A web-based platform would be created in order to provide accessibility of this programme to the stakeholders. The platform developed under the scope of the project should be maintained by the future EMN.

Project impact

- ❑ Constructive stakeholder dialogue in priority areas in the field of medical use of ionising radiation would allow complete overview of the gaps and the needs among European countries, with the goal of aligning activities between metrology, research and medical communities.
- ❑ The EMN proposed under the framework of the 19NETo4 MIRA would have impact on the metrology community by improving the traceability of exposures during diagnostic, radiotherapy and radiobiology procedures.
- ❑ In order to improve traceability, the procedures used would need to be harmonised, supported by comparisons, and finally by studying correlations between radiation doses and potential biological effects.
- ❑ The results would lead to the development of new standards allowing safer efficient use of medical exposure modalities. Providing the stakeholders across Europe with improved dosimetry and radiobiology capabilities would facilitate the study of stochastic radiation induced biological effects, resulting in better understanding of the radiation induced secondary tumours.