22NRM07 GuideRadPROS

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Harmonisation, update and implementation of standards related to radiation protection dosimeters for photon radiation

EUROPEAN PARTNERSHIP — Co-funded by the European Union

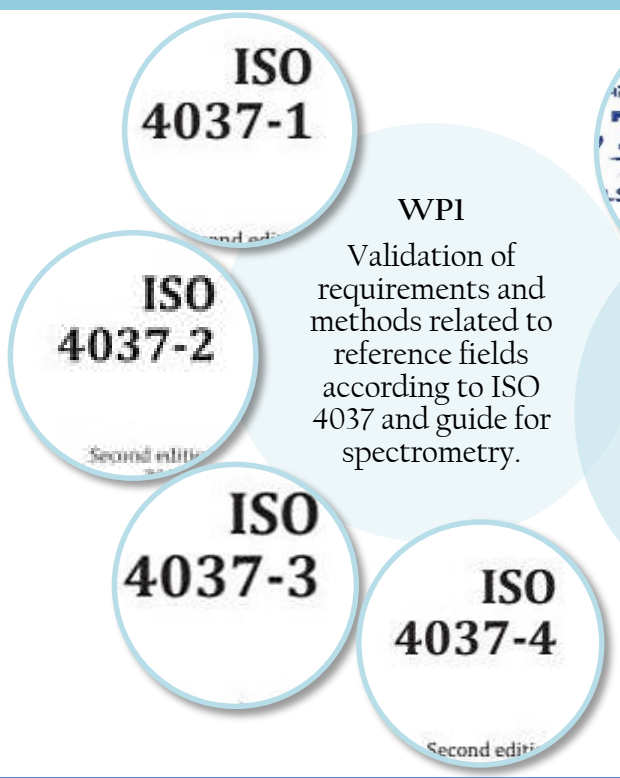
METROLOGY PARTNERSHIP — EURAMET

NEED

The reference calibration X-ray and gamma-ray radiation fields for radiation protection are defined in the ISO 4037 standard. Its implementation needs a coordinated effort to help smaller and emerging calibration laboratories. Moreover, there are deficiencies in the data.

The IEC standards give conflicting requirements for the dosimeters, and the standards need to be harmonized and future standardization needs must be analysed. New radiation protection quantities are proposed in ICRU 95 report. This requires a complete revision of the type test standards and characterization of existing dosimeters to analyse what modifications are necessary.

OBJECTIVES



WP1

Validation of requirements and methods related to reference fields according to ISO 4037 and guide for spectrometry.

WP2

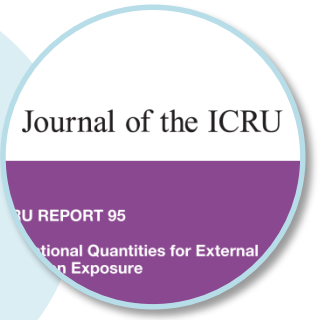
Training on requirements of ISO 4037 and calibration in reference fields.

WP3

Harmonisation and update of type testing standards.

WP4

New technologies and quantities.



IMPACT

For **standardization bodies** more comprehensive standards, wider implementation, harmonization of type testing standards and analysis of future harmonization needs.

For **laboratories** implementation of ISO 4037 standards and more comprehensive data for radiation dosimetry. Reduced calibration uncertainties resulting in more reliable services and happy customers.

For **industry** harmonized type testing standards, analysis of changes that are needed to implement new quantities introduced by ICRU 95. Foster the competitiveness of European manufacturers.

For **research and development** more accurately specified radiation fields and new documented spectroscopic methods.

For **regulators** basic data and methods to update the legal dose limits and the Basic Safety Standard 2013/59/Euratom.

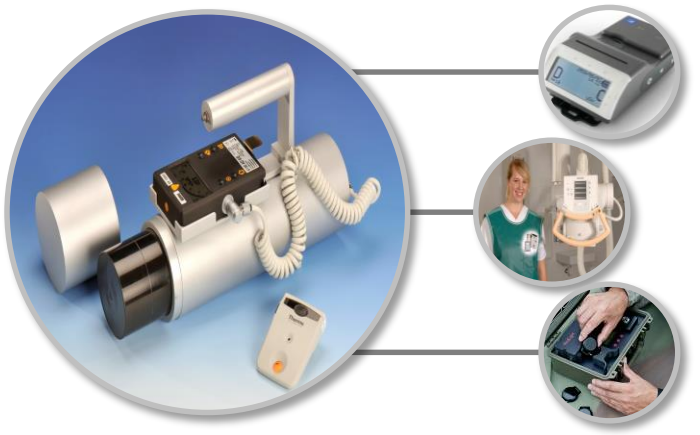
For **society** more reliable estimates of occupational and population doses, also in case of large scale radiological or nuclear events to foster the trust in authorities.

PROGRESS BEYOND STATE OF THE ART

New methods are developed and disseminated to implement and update the ISO 4037 standard family. More accurate reference beams are established.

Regulators, manufacturers and standardization bodies are provided with information how to implement new quantities and what are future needs for the standards.

- **A comprehensive overhaul of radiation protection dosimetry**



JRP 22NRM07 GuideRadPROS Consortium

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The project 22NRM07 GuideRadPROS has received funding from the European Partnership on Metrology, co-financed from the European Union's Horizon Europe Research and Innovation Programme and by the Participating States.
Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EURAMET. Neither the European Union nor the granting authority can be held responsible for them.

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