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Title:

Improving standardization in radiation protection dosimetry and supporting reference laboratories in the European Partnership Project GuideRadPROS

Authors:

Steffen Ketelhut[1], Hayo Zutz[1], Oliver Hupe[1], Teemu Siiskonen[2], Argyro Boziari[3], Miloš Živanović[4], Nikola Kržanović[4], Olivier Van Hoey[5], Amra Šabeta[6]

Affiliation and complete address:

[1] *Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany*

[2] *Radiation and Nuclear Safety Authority (STUK), Finland*

[3] *Greek Atomic Energy Commission (EEAE), Greece*

[4] *Vinca Institute of Nuclear Sciences - National Institute of the Republic of Serbia, University of Belgrade (VINS), Serbia*

[5] *Belgian Nuclear Research Centre (SCK CEN), Belgium*

[6] *Institute of Metrology of Bosnia and Herzegovina (IMBiH), Bosnia and Herzegovina*

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Introduction
Calibration laboratories and industrial enterprises involved in radiation protection dosimetry face significant challenges following the recent update of the ISO 4037 in conjunction with the new radiation protection quantities introduced in ICRU Report 95, the gaps and contradictions in the standards that set photon dosimeter requirements, and the lack of standards for upcoming and new technologies.

Methods
The European Partnership Project 23NRM07 GuideRadPROS launched in June 2023 will address these issues over the next three years. The project objectives are:

- to develop harmonized X-ray spectrometry in accordance with the ISO 4037 standard series, evaluate discrepancies between measured and calculated half value layer of X-ray spectra, and produce data to update requirements for reference fields.
- to develop guidance and training material for the calibration of dosimeters.
- to produce guidance on validated procedures for harmonized type testing based on IEC standards.
- to investigate new and upcoming technologies and assess future standardization needs and to produce a guidance document for the implementation of the new operational quantities of ICRU Report 95 into standards and regulations.
- to collaborate with ISO and IEC and users of their dosimetry standards to ensure that project outputs align with their needs.

Results & Conclusions
GuideRadPROS will improve the confidence in radiation protection dosimetry, both by promoting the implementation of the ISO 4037 standard series and by assessing the impact of the operational quantities of the ICRU Report 95 on daily measurements in radiation protection. Furthermore, the outcome of this project will lead to improved and comparable procedures in calibration and type testing within Europe.

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.

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