PIANOFORTE Travel Grant Activity Report

Participant: Mara-Georgiana Popovici | Location: Sarajevo, Bosnia and Herzegovina | Dates: 28 September - 2 October 2026

Activity: EURADOS Training Course “Radiation Protection Dosimetry and Accreditation of IMS: Secrets & Solutions”

Summary of the Work Performed

I participated in the EURADOS training course Radiation Protection Dosimetry and Accreditation of IMS: Secrets & Solutions, held in Sarajevo, Bosnia and Herzegovina, from 28 September to 2 October 2026. The five-day course focused on the technical, metrological and quality-management requirements applicable to individual monitoring services (IMS), with particular emphasis on European Commission Radiation Protection No. 160 (RP 160) and ISO/IEC 17025.

The initial sessions addressed the scope of RP 160, the distinction between certification, accreditation and approval, the framework for individual monitoring, and fundamental dosimetry concepts, including radiation protection and operational quantities. Particular attention was given to the new operational quantities introduced in ICRU Report 95 and their relationship with the quantities currently used in radiation protection monitoring.

The programme then covered individual monitoring procedures and radiation detection methods, including solid-state, track-etch, film and active detectors, alongside dedicated discussions on neutron dosimetry and eye-lens dosimetry. These topics were directly relevant to the photon and neutron individual monitoring activities carried out at the ELI-NP Dosimetry Laboratory, including the BeOSL and PADC-based monitoring systems.

A substantial part of the training concerned measurement accuracy, calibration, type testing and metrological traceability, as well as uncertainty evaluation using the concepts and formulation stages of the Guide to the Expression of Uncertainty in Measurement (GUM). Practical exercises addressed both type testing and uncertainty evaluation, providing an opportunity to consider how these principles can be applied to routine dosimetry measurements, quality control and the interpretation of results.

The final sessions focused on ISO/IEC 17025 requirements, internal audits and practical accreditation exercises, including a simulated auditor activity. The course also addressed intercomparisons, special cases encountered in individual monitoring and the experience of other dosimetry services. Group tasks, round-table discussions and exchanges with lecturers and other participants provided a forum for discussing technical and organisational challenges associated with reliable, traceable and accredited dosimetry services.

Impact on Knowledge, Skills, and Professional Development

This mobility strengthened my understanding of the practical implementation of RP 160 and ISO/IEC 17025 in an individual monitoring service. It was particularly valuable for my responsibilities in coordinating dosimetry laboratory activities at ELI-NP, including quality assurance, the development and review of procedures, measurement uncertainty evaluation, type-testing considerations and preparation for accreditation-related activities.

The training also provided useful perspectives on harmonising individual monitoring practices, demonstrating metrological traceability and using intercomparison results to assess laboratory performance. The discussions on neutron dosimetry and track-etch detection were especially relevant to the ongoing development and quality improvement of our PADC-based neutron dosimetry service. The knowledge gained can support further improvements in data evaluation, reporting and the laboratory quality-management system.

Conclusion

Participation in the EURADOS training course in Sarajevo was an important opportunity to consolidate technical and quality-management competencies in radiation protection dosimetry, exchange experience with international experts and identify practical approaches for strengthening individual monitoring services. The activity was closely aligned with the objectives of PIANOFORTE concerning competence building, harmonisation and quality assurance in radiation protection, and will support the continued development of dosimetry services at ELI-NP.