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Strengthening Radiation Protection in EU Through Boosting Strategic Innovation and Promoting Technological Sovereignty

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Presented by: ONNED Greece, CSJ Luxembourg

Supported by: CDJA Netherlands, Jong CD&V Belgium, MHDZ Croatia, NNGG Spain, NEDISY Cyprus, MUF Sweden, JU Germany, Junge ÖVP Austria, Junge Mitte Switzerland

Having regard to:

- The International Commission on Radiation Units and Measurements (ICRU) Report 95 (2020), Operational Quantities for External Radiation Exposure[1];
- The Strategic Agenda for Medical Ionizing Radiation Applications (SAMIRA) Action Plan of the European Union[2];
- The World Health Organization (WHO) guidelines (2024) Enhancing Radiation Safety Culture in Health Care: Guidance for Health Care Providers[3];
- The Commission Communication of 28 June 2021 entitled EU Strategic Framework on Health and Safety at Work 2021–2027 – Occupational Safety and Health in a Changing World of Work;
- The EU Framework Programme for Research and Innovation 2021–2027 (Horizon Europe) and the dedicated Horizon Europe Mission on Cancer;
- The EU Basic Safety Standards Directive (Council Directive 2013/59/Euratom).
- The Regulation (EU) 2024/795 establishing the Strategic Technologies for Europe Platform;

Recognising that:

- Medicine accounts for up to 50% of total radiation exposure for EU citizens and over 90% of man-made radiation exposure, [4] with the remainder coming from energy and defense sectors.Radiologic technologists and physicians, particularly in high-dose areas like nuclear medicine and interventional radiology, are among the most exposed groups. In France, healthcare workers contribute to over 50% of man-made radiation exposure, with nuclear medicine departments being the most exposed[5].
- Healthcare workers are routinely exposed to ionizing radiation through diagnostic and therapeutic procedures such as X-rays, CT scans, and nuclear medicine. This occupational

[1] https://www.icrp.org/publication.asp?id=ICRU%20Report%2095
[2] https://energy.ec.europa.eu/system/files/2021-02/swd_strategic_agenda_for_medical_ionising_radiation_applications_samira_0.pdf
[3] https://www.who.int/publications/i/item/9789240091115
[4] https://energy.ec.europa.eu/topics/nuclear-energy/radiological-and-nuclear-technology-health/medical-uses-radiation_en
[5] https://pmc.ncbi.nlm.nih.gov/articles/PMC10326158/

exposure poses significant health risks, which have become increasingly concerning as the use of medical imaging grows worldwide. It is estimated that CT scans alone could account for 5%[6] of all cancer cases annually.

- Healthcare workers exposed to radiation have on average a cancer rate nearly 40% higher than those not routinely exposed. Chronic exposure can lead to various cancers, including breast, thyroid, brain, colon, rectal, leukemia, and skin cancers. Female healthcare workers, especially in interventional radiology, orthopedics, cardiology, and surgery, face a significantly higher risk of breast cancer, with some studies reporting nearly a fourfold increase compared to the general female population. For some groups, the likelihood of occurrence of one of the above illnesess can exceed 200 % compared to baseline levels[7].

Acknowledging that:

- The vast majority of hospitals currently use outdated dosimeter technologies that provide only cumulative exposure measurements over time (passive, on-demand readings), resulting in significant delays in identifying the final exposure. The lack of strong direction&commitmenet for technological improvements in the sector slows the integration of new advancements, impacting lives and increasing operational costs.
- The majority of the tech currently used by EU hospitals are **non-European**, this also raises serious concerns about **data openess, protection** and **compliance with GDPR** requirements for sensitive health data.
- Leading organizations, including the ICRU, IAEA, IOMP, IRPA, and WHO, advocate for the adoption of **real-time active dosimeters** to enhance worker safety. The global trend toward **more stringent radiation safety standards** is emerging, emphasizing the need for immediate action. Prevention remains the most effective way to protect workers from radiation risks, and real-time monitoring enables immediate corrective actions, minimizing exposure before it reaches harmful levels.
- The European Commision is continiusly working on the protection of workers from the cancers risks related to exposure to radiation by adjusting the limits and promoting the use of radiation shielding ie Directive 2022/431 an Amendment of Directive 2004/37/EC [8] , and Strategic Agenda for Medical Ionising Radiation Applications (SAMIRA) (2021).
- The European Commission has recognized advanced radiation sensing as a strategic technology for the European platform (STEP) to support the adoption and development of European solutions for critical technologies[9].
- The EU has research, products, and services available for European real-time radiation monitoring solutions that should be further supported to scale up - open new markets, contributing to tech sovereignty and the creation of jobs.

YEPP Calls on:

1. The European Commision to update Directive 2013/59/Euratom to include the mandatory use of real-time active dosimeters for healthcare workers and other occupationally exposed groups.

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6 https://www.ucsf.edu/news/2025/04/429791/popular-ct-scans-could-account-5-all-cancer-cases-year
7 https://pmc.ncbi.nlm.nih.gov/articles/PMC10093411/#B13-cancers-15-02045
8 https://www.europarl.europa.eu/doceo/document/TA-9-2022-0068_EN.html
9 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C_202403209&qid=1716028818483

2. The European Commision to define minimum performance standards for real-time radiation monitoring devices, including alert systems for dose rate and cumulative exposure thresholds.
3. The European Commission should ensure that real-time monitoring data are protected under GDPR, guaranteeing secure storage, access rights for workers, and transparency of exposure records, contributing to the EU Health Data Space and fueling AI-driven analysis and detection. This would help shorten treatment periods and reduce healthcare workers' exposure by identifying illnesses at their earliest stages.
4. The European Commision to support the harmonized certification and private-sector-led market introduction of reliable real-time dosimetry technologies across Member States, ensuring fair competition and opening opportunities for European businesses.
5. The European Commision to promote & fund European innovation on radiation protection/monitoring under EIC, EIT, EIB and Horizon Europe R&I, including pilot initiatives integrating real-time monitoring in healthcare and energy sectors.
6. The European Commision to strengthen the monitoring and enforcement mechanisms to ensure that radiation protection standards keep pace with technological and scientific developments.
7. The European Commision to collaborate with international bodies, such as the WHO, to align EU standards with the global best practices on radiation safety culture.
8. The European People’s Party (EPP) to adopt and actively promote the resolution.