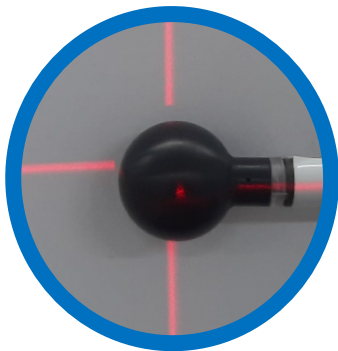




22NRM01 TraMeXI

Traceability in Medical X-ray Imaging Dosimetry

X-ray imaging, covering diagnostic and interventional examinations, saves countless lives but form the largest component of exposure to artificial ionizing radiation in Europe.



Accurate and consistent quantification of patient radiation exposure with calibrated dosimetry equipment is essential to ensure safety to patients.

TraMeXI project aims to harmonize and standardize calibration and measurement procedures to ensure traceability and accurate dosimetry in medical X-ray imaging.

CHALLENGE:

In X-ray imaging dosimetry, the assessment of patient exposure is incomplete.

OBJECTIVES

- Updated the calibration conditions so that they represent clinical needs.
- Investigate the performance of different commercially available dosimeter types to provide more specific requirements.
- Define a harmonized calibration and measurement procedure for X-ray multimeters (XMMs) commonly used in hospitals.
- Validate established and updated calibration procedures.



INPUT FOR UPDATE OF INTERNATIONAL DOCUMENTS:

IAEA TRS-457
IEC 61267 for radiation qualities
IEC 61674 for dosimeters
IEC 61676 for X-ray tube voltage

IMPACT

- The project will provide input for development of **standards, protocols and guidance documents**.
- Updated documents be referred in regulations by **regulators**.
- They are implemented by **calibration laboratories and medical physicists**.
- **Industry** will benefit from the improved demonstration of dosimeter performance.
 - Ultimate beneficiaries in a society are the **patients**.

OUTCOMES AND PROGRESS BEYOND STATE OF THE ART

- An increased knowledge that enables the **improvement of calibration services**.
- Better **understanding** of the **dosimeter performance** and measurement **uncertainty** involved.
- Greater accuracy in clinical X-ray dosimetry by performing **consistent and comparable measurements**.
- **Established traceability** for the results of quality control related parameters measured with XMMs.
- **Update of international standards and procedures** to cover all these improvements.

The outcome of the project forms a **new foundation for X-ray imaging dosimetry** and provides input for international implementation through **update of IEC standards and IAEA TRS-457**.

Traceability and accurate dosimetry in medical X-ray imaging are ensured.

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