|  |  |  |
| --- | --- | --- |
|  | INTERNATIONAL TELECOMMUNICATION UNION**TELECOMMUNICATIONSTANDARDIZATION SECTOR**STUDY PERIOD 2022-2024 | FG-AI4H-Q-034 |
| **ITU-T Focus Group on AI for Health** |
| **Original: English** |
| **WG(s):** | Plenary | Douala, 6-9 December 2022 |
| **DOCUMENT** |
| **Source:** | IAEA |
| **Title:** | The IAEA Coordinated Research Project (CRP) E33046: ELAISA: The potential of E-Learning interventions for AI-assisted contouring Skills in radiotherapy |
| **Contact:** | Kamal Akbarov, IAEAAustria | Tel: +436602110404Email: k.akbarov@iaea  |
| **Contact:** | Matteo Barbarino,IAEAAustria | Tel: +436602110404Email: m.barbarino@iaea.org |
| **Contact:** | Jesper Grau EricksenAarhus University / ESTRODenmark | Email: jesper@oncology.dk |

|  |  |
| --- | --- |
| **Abstract:** | In recent years, AI-algorithms, namely deep learning-based algorithms, have improved auto-segmentation drastically. It is believed that AI-tools lower variation and increase the accuracy and compliance of plans, which improves the chance of cure. AI-tools may also make care more cost effective by reducing the human capacity required, which is important in our overstretched health systems. A wide palette of commercial deep learning-based auto-segmentation solutions are emerging with the promise of leveraging the aforementioned benefits. The selection and contouring of target volumes and organs-at-risk (OARs) has become a key step in modern radiation oncology. Concepts and terms for definition of gross tumor volume, clinical target volume and OARs have been continuously evolving and have become widely disseminated and accepted by the European and international radiation oncology community. From previous research is clear that instructor-led guideline workshops are effective in reducing the inter-observer variation, however, it is unknown if and how the introduction the auto-segmentation modifies this causation. |

**Primary objective:**

Investigating changes in inter-observer variation and bias after E-Learning in delineation guidelines and the use of deep learning-based auto-segmentation of OARs in head-and-neck cancer

**Secondary objectives:**

To evaluate the consequences of introducing AI assisted contouring without prior training and education

To evaluate how does training and education affect AI assisted contouring skills

To evaluate how the effects of AI assistance on contouring skills retained in the long term

**Participants:** 23 Countries, 24 Radiotherapy Centers, 102 participants.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_