Contribution ID: **97**   Type: **Panelist (Panel Session)**

IRAP: a new system for integrated analysis and visualization of multi-source safeguards data. Challenges and techniques

Tuesday, 6 November 2018 16:14 (7 minutes)

Unattended monitoring, video surveillance and automated review have become more and more important for nuclear safeguards over the last 20 years. An increasing number of such systems, providing a huge amount of information to inspectors, combined with the need to optimize human resources in operational units, made it necessary to develop an automated data review platform, supporting inspectors in their daily work.

The capacity to collect, store and transfer data has been growing rapidly, but the ability to analyse these huge quantities of data has developed at much lower speed. This has resulted in new challenges in the visualization and analysis process, as Nuclear Inspectors depend on information "available" in the data. IRAP the "Integrated Review and Analysis Package"is a software system for making unstructured raw data available to various data visualization and review tools. Raw data is collected from many different sources such as radiation monitors, electronic seals and surveillance systems.

The system is designed to structure and perform an interpretation of massive amounts of data based on the inspectors' judgement using means of visual representations in combination with advanced scientific methods (SCALE-ORIGEN, VFIM, FRAM, INCC, ⋯). A future approach combines data analysis techniques with image processing tools, the proposed method in combination with new reporting tools will enable extraction of the most relevant information from provided datasets.

This paper aims at providing an overview of challenges and techniques of the IRAP development based on a partnership agreement between EURATOM and the IAEA initiated in 2013. It describes the state-of-the-art and points to the most likely future challenges and development directions in the coming years.

Which "Key Question" does your Abstract address?

TEC2.5

Which alternative "Key Question" does your Abstract address? (if any)

TEC2.7

Topics

TEC2

Primary author: Dr SMEJKAL, Andreas (Euratom)

Co-authors: Mr ANGELO, Alessandrello (IAEA); Mr REGULA, Jim (IAEA); Mr LONGO, Joseph (IAEA); Mr LINNEBACH, Ralf (EURATOM); Mr BERTL, Stefan (IAEA)

Presenter: Dr SMEJKAL, Andreas (Euratom)

Session Classification: [TEC] Advancements in Instrumentation Data Processing and Analysis

Track Classification: Leveraging technological advancements for safeguards applications (TEC)