Technical Meeting on the Application of Artificial Intelligence for Nuclear Security

Monday 20 October 2025 - Friday 24 October 2025

Vienna International Centre

Scientific Programme

This Technical Meeting will address the following key topics:

AI for Threat Detection and Anomaly Analysis

Exploration of machine learning techniques for detecting anomalies and identifying threats in nuclear security data, sensor fusion, radiation detection, and predictive analytics to enhance real-time threat detection and material control. This includes case studies on operationalizing AI/ML tools, including lessons learned from pilot projects.

Risk Mitigation in AI Implementation

Examination of issues such as algorithmic bias in training datasets, adversarial attacks on AI models, overreliance on automated decision-making in high-stakes scenarios, and ethical frameworks for the adoption of AI technologies.

AI in Computer Security for Nuclear Systems

Discussion on enhancing computer security measures using AI tools for continuous monitoring, intrusion detection, and automated threat response systems.

AI for Physical Protection Systems in Nuclear Facilities

Analysis of AI-driven solutions for physical security, such as computer vision in surveillance systems, access control, and incident response mechanisms.

International Collaboration in AI for Nuclear Security

Strategies for strengthening international partnerships to harmonize AI/ML regulatory frameworks, improve data-sharing mechanisms, and address dual-use concerns.