Introduction to the Role of Artificial Intelligence in Strengthening the Security of Nuclear Facilities

Vienna, Austria. 06 – 08 February 2024

Preliminary Agenda

Tuesday 06 February 2024

09:00-10:30   **Opening Session**

- Welcome remarks and workshop objectives
- Introduction of participants

Keynote on Artificial Intelligence (AI) – Myths and reality

Discussion on Setting the foundation
- Developing a common understanding of key terminology: (deep learning, machine learning, artificial neuronal networks, etc.)
- Identifying common misconceptions

10:30-10:45   **Coffee break**

10:45-12:30   **Session 1 on Artificial Intelligence applications in the nuclear sector**

Key issues:
- What are the current uses of AI in nuclear applications
- What are the lessons learned?
- What experience can we transfer to nuclear security matters?

Presentation on AI for Accelerating Nuclear Applications, Science, and Technology

Presentation on AI Integration in Nuclear Power Generation

Presentation on Nuclear Material Accounting and Control

Discussion to consolidate learning applicable to nuclear security

12:30-13:30   **Lunch**

13:30-15:00   **Session 2 on Artificial Intelligence applications in Nuclear Security**

Key issues:
- What are the current uses of AI in security? How can AI enhance nuclear security?
- What is currently under research and development?
- What are the security risks and opportunities associated with AI?

Introduction to Artificial Intelligence and Security

Presentation on General trends and examples of AI applications in nuclear security

Discussion on Benefits and security risks, including unintended consequences
- In what ways can AI become as a transformative force in advancing nuclear security?
- Are people already using AI without understanding the risk, such as releasing information unwittingly?
- Has AI the potential to amplify threat actor capabilities and sophistication of attacks? How may AI increase knowledge of adversaries?

15:00-15:15   **Coffee break**

15:15-16:45   **Session 3 on Artificial Intelligence Applications in Physical Security**

Key issues:

- In what manner is AI enhancing the functionalities and performance of security systems?
- What are opportunities and challenges for embedding AI into physical security?
- What kind of human, financial, and technical prerequisites are necessary for a successful adoption of AI?

Presentations and demonstration by vendors, researchers and academics on

- Video Surveillance and Monitoring
- Intrusion Detection
- Behavioural analysis

16:45-17:15   Wrap up and Summary of the Day

17:15-19:30   **Networking event** – Invited speaker on disinformation (deep fakes etc)

Wednesday 07 February 2024

09:00-09:30   Summary of Day 1 and introduction of Day 2

09:30-12:30   **Session 3 on Artificial Intelligence Applications in Physical Security (continued)**

Presentations and demonstration by vendors, researchers and academics on

- Combining drones and AI
- Support to incident detection, response and investigation
- Insider Threats
- Risk assessment methodology
- Open Source Intelligence

12:30-13:30   **Lunch**

13:30-15:00   **Learning from operators who are using AI for Physical Security**

Presentation by a nuclear operator

Presentation by a representative of another critical infrastructure

Discussion on lessons learned from embedding AI into existing security programmes

15:00-15:15   **Coffee break**

15:15-16:45   **Session 4 on Introduction to Artificial Intelligence and Cyber Security**

Key issues:

- What are the uses of AI in cyber security?
- What lessons learned can we transfer to physical security?
- How does AI impact physical and cyber security interface?

Presentation on AI applications in cyber security

Presentation on AI impact of the cyber security of physical security systems

Discussion on Good practices for learning from the experience of those using AI for cyber security

16:45-17:00   **Wrap up and Summary of Day 2**

Thursday 08 February 2024

09:00-09:30   Summary of Day 2 and introduction of Day 3

09:30-10:30   **Session 5 on Preparing for and facilitating AI implementation**

Key issues:

- What are the prerequisites to the successful adoption of AI?
- What are the regulatory, legal and ethical considerations for ensuring responsible AI use in nuclear security?
- What are the key challenges in preparing the nuclear security workforce to effectively implement AI in nuclear security?

Presentation on Regulating AI for nuclear security

Presentation on AI Policy in Industry – Legal and ethical matters

10:30-10:45   **Coffee break**

10:45-12:15   **Presentation** on Preparing the workforce for AI (re-skilling and up-skilling)

Break out groups on good practices for Preparing for and facilitating A.I implementation

- Impact of AI on the workforce? Will it reduce the need for humans? Will it redefine the tasks and the associated skills?
- Information security implications
- Emerging considerations – what could come next in terms of AI capabilities and how will it impact nuclear security?

12:15-13:00   **Conclusion session**

- ➢ Key findings and main take-aways
- ➢ Way forward and next steps
- ➢ Evaluation session
- ➢ Closing remarks

13:00   End of the workshop (Lunch available)