

# AUTONOMOUS AND REMOTELY OPERATED SYSTEMS: BENEFITS AND CHALLENGES TO NUCLEAR SECURITY

Vienna, Austria. 02-04 April 2019

Preliminary Programme – As of 19 March 2019

## DAY 1: TUESDAY 02 APRIL 2019

08:30 – 09:00 Registration / Coffee & Tea

### OPENING SESSION

09:00 – 09:30 Welcome remarks and objectives of the workshop (WINS)

09:30 – 10:00 Participants introductions and expectations (Facilitator)

10:00 – 10:30 **Keynote presentation** on *Keeping Pace with Security Risks and Opportunities* by Edward O'Neil from Duke Energy (USA)

10:30 – 10:45 **Discussion** to develop a common understanding and terminology

10:45 – 11:00 Coffee break

### SESSION 1: **THE EVOLVING THREAT LANDSCAPE AND THE INTERSECTION BETWEEN THREATS AND TECHNOLOGIES**

Key issues:

- ✓ What changes can we expect in the threat landscape?
- ✓ How have technological advances influenced adversary capabilities and strategies?
- ✓ How will technological changes in the next 10 years influence the threat and security protective measures?

11:00 – 11:30 **Remote presentation** on *Emerging technologies and CBRN terrorism* by Zachary Kallenborn from Cadmus Group (USA)

11:30 – 12:00 **Case study** on the use of advanced technologies for terrorist and other malicious purpose

12:00 – 12:30 **Discussion** on best practices for assessing and anticipating long-term threats

12:30 – 13:30 Lunch

### SESSION 2: **ADVANCED TECHNOLOGIES – INTRODUCTION TO AUTONOMOUS AND REMOTELY OPERATED SYSTEMS RELEVANT TO NUCLEAR SECURITY**

Key issues:

- ✓ What do we mean by *advanced technologies for security*? What are the different types of autonomous and remotely operated systems?
- ✓ What are the main applications of advanced technologies in the nuclear industry? When should an advanced technology be implemented in the nuclear industry?
- ✓ What are the relevant decision-making criteria when deploying advanced security technologies? Will any of these technologies become a game-changer for risk management?

13:30 – 14:00 **Overview** of advanced technologies for offense and defence

14:00 – 14:30 **Discussion** on the impact of emerging technologies on the security strategies

14:30 – 15:15 **Remote presentation** on *identifying and assessing the benefits and risks of an emerging technology* by Bill McGlennon from Sellafield (UK)

15:15 – 15:30 Coffee break

- 15:30 – 16:15**     **Discussion** to share practical experiences on the deployment of advance technologies and to identify best practices for keeping pace with innovation risks and opportunities
- 16:15 – 17:15**     **Learning from other sectors**
- Presentation on *The aviation sector advanced security technologies* by Marie-Caroline Laurent from Lam Lha (France)
  - Presentation on *A global approach to critical infrastructure protection*
- 17:15 – 17:30**     **Review of the day** (facilitator)
- 17:30**             **Workshop cocktail**

## **DAY 2: WEDNESDAY 3<sup>rd</sup> APRIL 2019**

**09:00 – 09:30**   **Key findings of Day 1 and objectives of Day 2** (Facilitator)

### **SESSION 3:    A COMPREHENSIVE REVIEW OF AUTONOMOUS AND REMOTELY OPERATED SYSTEMS FOR SECURITY**

Key issues:

- ✓ What kind of autonomous and remotely operated systems already exist?
- ✓ How do we ensure the cybersecurity of advanced technologies?
- ✓ Are they an opportunity or a threat to nuclear security?
- ✓ What prerequisites are necessary for their deployment? What can we learn from past experiences?

- 09:30 – 10:00**   **Presentation** on *Biometric and Face Recognition Technology* by Tomas Tunega from Cogniware (Czech Republic)
- 10:00 – 10:30**   **Discussion** to reflect experiences in the room and share perspectives
- 10:30 – 10:45**   Coffee break
- 10:45 – 11:15**   **Presentation** on *How nuclear operators can respond to the threat from drones, and what can be done about them*
- 11:15 – 11:45**   **Presentation** on *UAV detection systems in Chinese NPPs* by Yuan Zhe from SNERDI (China)
- 11:45 – 12:30**   **Panel discussion on UAV. Risk, Opportunities and Regulation.**
- What are the risks and opportunities for UAVs?
  - How should regulators address the implementation of autonomous and remotely operated systems and components?
  - What are the legal barriers for the deployment of these technologies?
  - How could authorities help prevent the use of these technologies for malicious purposes?
- 12:30 – 13:30**   Lunch
- 13:30 – 14:30**   **Presentation** on *Modelling the use of remotely operated weapons* by Robert Scott from Ares Security (USA)
- 14:30 – 15:00**   **Discussion** reducing the cost of security through technology advancements.
- What is the rationale for deploying ROWs?
  - What prerequisites are necessary for their deployment?
  - What can we learn from past experiences?
- 15:00 – 15:15**   Coffee break
- 15:15 – 15:45**   **Presentation** on *The use of robots in case of emergencies* by Matthias Biegl from Taurob (Austria)

- 15:45– 16:15**     **Presentation** on *Securing the Development Lifecycle in Productions Systems Engineering* by Edgar Weippl from SBA Research (Austria)
- 16:15 – 17:00**     **Break-out groups** to review available technologies, assess their contribution to nuclear security, and identify prerequisites to their deployment, including justifying the return on investment
- 17:00 – 17:15**     **Review of the day** (facilitator)
- 17:15**             **End of Day 2**

### **DAY 3: THURSDAY 4TH APRIL 2019**

- 09:00 – 09:15**     Key findings of Day 2 and objectives of Day 3 (Facilitator)

#### **SESSION 4: BROADER CONSIDERATIONS TO ADOPTING ADVANCED TECHNOLOGIES. IMPLEMENTING A BUSINESS CASE FOR SECURITY**

Key issues:

- ✓ What are the principles for adopting advanced technologies in nuclear facilities?
- ✓ Are there regulatory challenges associated with the use of advanced technologies?
- ✓ What are the ethical and legal considerations—including the potential impact on staff—when deploying advanced technologies?

- 09:15 – 09:45**     **How to decide whether to adopt a new technology**

- 09:15 – 09:45**     **Presentation** on *Ethical and legal considerations associated with the use of advanced technologies* by Meghan Claire Hammond from Pillsbury Law (USA)

- 10:15 – 10:30**     Coffee Break

- 10:30 – 12:30**     **Establishing a business case:** Implementing advanced security technologies in nuclear facilities
- What are the most effective ways of developing a convincing business case for security investment?
  - What are the most effective communication methods with the Executive Team and the Board?
  - How do we keep this dialogue going and what do we need to consider next?

#### **CONCLUSION SESSION**

- 12:30 – 12:45**     **Way Forward**
- What are the key lessons that have arisen from this workshop?
  - What questions and challenges remain to be addressed?
  - How can we ensure a follow-up to the key findings?
- 12:45 – 13:00**     **Workshop evaluation and closing remarks**
- 13:00**             **End of the workshop**