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

### Vienna, Austria. 02-04 April 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 by Dr Roger Howsley, WINS Executive Director

**09:30 – 10:00**  Participants introductions and expectations (Julian Powe, 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 (USA)

**11:30 – 12:30**  **Discussion** on best practices for assessing and anticipating threats involving advanced technologies.

**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 – 14:15**  **Brief Review of** *Remotely Operated and Autonomous Systems for Security* by WINS

**14:15 – 15:00**  **Presentation** on *A global approach to critical infrastructure protection* by Paul Reither from Diamond Advisory (Slovakia)

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| 15:00 – 15:15 | Coffee break |
| 15:15 – 15:45 | **Presentation** on *The aviation sector advanced security technologies* by Marie-Caroline Laurent from Lam Lha (France) |
| 15:45 – 16:15 | **Panel discussion** on the impact of emerging technologies on the security strategies |
| 16:15 – 17:30 | **Discussion on** main decision-making criteria for the deployment of advanced security technologies in nuclear facilities |
| 17:30 | **Workshop cocktail** |

## DAY 2: WEDNESDAY 3ʳᵈ APRIL 2019

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| 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?

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| 09:30 – 10:00 | **Presentation** on *Biometric and Face Recognition Technology* by Martin Kovar and Ondrej Svec 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* by Richard Gill from Drone Defence Services (UK) |
| 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. Risks and opportunities.** |
| | ▪ What are the risks and opportunities for UAVs? |
| | ▪ What should be licensees and regulators be thinking about in the next five years? |
| 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 | **Table discussion** to review available technologies, assess their contribution to nuclear security, and identify prerequisites to their deployment, including justifying the return on investment |
| 16:15 – 17:00 | **Presentation** on *Securing the Development Lifecycle in Productions Systems Engineering* by Edgar Weippl from SBA Research (Austria) |

**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.**

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**    **Presentation** on *Regulation of unmanned aerial vehicles* by Swen Göring from the Ministry for Transport, Innovation and Technology (Austria)

**09:45 – 10:15**    **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**    **Table discussion** on additional legal and ethical considerations

**10:30 – 10:45**    Coffee break

**10:45 – 12:15**    **Establishing a business case:** Investing in new security technology

## CONCLUSION SESSION

**12:15 – 12:45**    **Way Forward**
- ▪ What attitude should nuclear corporations adopt? What mind-set and organisational changes might be required?
- ▪ What is the role of the other stakeholders in facilitating the adoption of new technologies?
- ▪ What are the usual barriers to adopting new technologies and how can we overcome them?
- ▪ What have we learnt?
- ▪ What are the opportunities for improvement and remaining challenges?

**12:45 – 13:00**    **Workshop evaluation and closing remarks**

**13:00**    **End of the workshop**