

Summary of the Working Group on AI for Nuclear Security

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Technical Meeting on Artificial Intelligence for Nuclear Technology and Applications
#AI4Atoms Virtual Event
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Artificial Intelligence (AI) in Nuclear Security (NS)



- WG-AI4NS (AI 4 Nuclear Security) held 25, 27 & 28 October, 2021
 - Presentations from 16 MS Experts discussing:
 - Opportunities for AI and related technologies in NS
 - On-going research and case studies
 - Challenges for development, use, and regulation
 - Risks introduced through use of AI
 - Participants from 10+ Member States

Key Points from MS Discussion



- More research is required on the impact and implications of AI in NS
 - How utilization of AI may affect NS
 - Improve operations by reducing nuisance alarms, providing operational recommendations, autonomous control, anomaly detection, etc.
 - Adversarial use: pattern detection; identification of unknown NS vulnerabilities; additional threat of cyber attacks against AI models and supply chains, etc.
 - Infrastructure & data demands
 - Computational requirements
 - Technological limits
 - Too much information vs. not enough
 - Limitations of AI
 - Challenges it should *not* solve (e.g., ethics implications and privacy issues)
 - Vulnerabilities to NS introduced vs. benefits provided
 - Data sharing and accessibility
- Need collaboration and information exchange

Accelerating Progress—IAEA's Role



- Facilitating further information exchange between MSs (webinars and technical meetings) on AI and NS
- Support possible Coordinated Research Projects to:
 - Conduct research into specific AI applications for MS identified NS topical areas to understand issues with use, limitations, benefits, and vulnerabilities
 - Generate information for information exchange
- Develop guidance on terminology and developing, training, testing, implementing, and regulating AI capabilities for NS purposes

Thank you!

