

Agenda for the Third Technical Meeting on Radiation Detection Instrument for Nuclear Security: Trends, Challenges and Opportunities

Vienna, Austria
14 – 18 August, 2023

Monday, 14 August 2023

Time	Room	Session	Speaker	Country/Organization
8:00 - 9:00	M1 PLENARY ROOM	Registration		
9:00 - 9:30		Welcome and Opening Session		
		Welcome and Opening Remarks	Itimad Soufi Section Head Of Material Out of Regulatory Control	MORC/NSNS/IAEA
		Message from Co-Chairs of the Meeting	Alina Smyslova Deputy Program Director of Sustainability	USA/Office of Nuclear Smuggling Detection & Deterrence, National Nuclear Security Administration, United States Department of Energy
		Message and TM Overview from Scientific Secretary	May Ong Bee Leng Director for Chemical, Biological, Radiological Nuclear and Explosives (CBRNE)	Singapore/CBRNE Centre of Expertise, Capability Development, Home Team Science and Technology Agency/Singapore
			Charles Massey Detection Science and Technology Team Lead (DST)	MORC/NSNS/IAEA
9:30 - 10:00		Past, Present and Future of Radiation Detection Equipment: The Candle to The Light	David Makharadze	IAEA Consultant
10:00 - 10:30		Emerging Technologies for the Detection of Security Sensitive Materials	May Ong Bee Leng	Singapore
10:30 - 11:00	<i>Coffee Break</i>			
11:00 - 11:30	M1 PLENARY ROOM	Plenary: 1.0 Current Status from Member State Perspectives	Track Chair - Ung Eang Rapporteur - Seng Sovath	Cambodia Cambodia
		1.0.1 Advancing Radiation Alarm Assessment and Anomaly Detection with IAEA TRACE Desktop Tool at Laem Chabang Seaport	Yanapan Hao	Thailand
11:30 - 12:00		1.0.2 Tunisian Customs Experience in Detection and Combatting Radioactive Sources	Jendli Baghidadi	Tunisia
12:00 - 12:30		1.0.3 Challenges in the Development of Radiation Detection Instrumentation in Indonesia as an Archipelago Country	Sihana Sihana	Indonesia
12:30 - 14:00	<i>Lunch</i>			
14:00 - 14:30	M1 PLENARY ROOM	1.0.4 Challenges and Opportunities Presented by Emerging Threats and Technologies	Paul Johns	USA
14:30 - 15:30		Panel Discussion: Planting the Technical Seeds	Charles Massey (Moderator) Lloyd Firth (Rapporteur) May Ong Bee Leng Ung Eang David Makharadze	DST Team Leader/IAEA USA Singapore Cambodia IAEA Consultant

Time	Room	Session	Speaker	Country/Organization
			Jean Galy Arome Kingsley Sihana Sihana	EC IAEA Indonesia
15:30 - 16:30		Vendor Brief Introduction		
16:30		Reception by IAEA		

Tuesday, 15 August 2023

Time	Room	Session	Speaker	Country/Organization
9:00 - 9:10	M1 PLENARY ROOM	Summary of Day 1/Day 2 Program and Introduction of Track Chairs and Plenary Speakers	Alina Smyslova	Co-Chair
		Plenary: 2.0 MS Experience and Current Status of Radiation Detection Instrument	Track Chair - Yanapan Hao Rapporteur - Mona Abdelghany	Thailand Egypt
9:15 - 9:45		2.0.1 ITDB	Wilhelm Mandl	INMA/NSNS/IAEA
		2.0.2 IAEA Activities Related to The Management of Exposure due to the Presence of Radionuclides in Non-Food Commodities	Danila Carrijo Da Silva Dias	NSRW/IAEA
9:45 - 10:15		2.0.3 Front Line Officers'(FLOs) Challenges in the Use Of Handheld Radiation Detection Equipment	Dritan Prifti	Albania
		Introduction of Topical Sessions and Session Chairs	Track Chair - Yanapan Hao	Thailand
10:15 - 10:45		<i>Coffee Break</i>		
10:45 - 12:00		Topical Session: MS Experience and Current Status of Radiation Detection Instrument		
	PRESS ROOM	2.1 Border Detection - Trade Facilitation	<i>Session Chair - Chonlargan Iamsumang</i>	Thailand
10:45 - 11:00		2.1.1 Use of RPMs Alarm Assessment Process to Ensure Safe and Secure Trade: Experiences of Chittagong Sea Port, Bangladesh	<i>Rapporteur - Mathapelo Silase</i>	Lesotho
11:00 - 11:15		2.1.2. Botswana Experience in the Strengthening Border Security using Detection Instruments	AKM Saiful Islam Bhuian	Bangladesh
11:15 - 11:30		2.1.3. Cambodia's Experiences in the Detection of Nuclear and Other Radioactive Material Out of Regulatory Control	Modise Tladi	Botswana
11:30 - 11:45		2.1.4. Emergency Management of Nuclear and Radiological Events in Slovakia	Seng Sovath	Cambodia
11:45 - 12:00		Q&A and Discussion	Klara Richtarechova	Slovakia
	M4	2.2 Experience with Radiation Detection Instrument - The Use and Sustainability	<i>Session Chair - Jendli Baghidadi</i>	<i>Tunisia</i>
10:45 - 11:00		2.2.1. Current Status of Radiation Detection Instruments: A Case Study of Radiation Portal Monitors	<i>Rapporteur - Syaza Amira Zulkeplee</i>	<i>Malaysia</i>
11:00 - 11:15		2.2.2 Uganda's Experiences with the Detection of Nuclear and Other Radioactive Material during the Response to Management of Major Public Event	James Phiri	Zambia
11:15 - 11:30		2.2.3 Virtual Radiation Source Simulation System	John Kisaakye	Uganda
11:30 - 11:45		2.2.4. Advancing Radiation Detection Equipment for Detecting Nuclear and Other Radioactive Material out of Regulatory Control	Karoly Bodor	Hungary
11:45 - 12:00		Q&A and Discussion	Nadia Helal	Egypt
	M6	2.3 Handheld and Secondary Inspections - SOP	<i>Session Chair - Dritan Prifti</i>	Albania
10:45 - 11:00		2.3.1.Spectroscopic Limitations of Hand-Held γ -Spectrometers		Greece
11:00 - 11:15		2.3.2. Radiation Detection Instruments and Use	Aleksandra Stojanova	North Macedonia

Time	Room	Session	Speaker	Country/Organization
11:15 - 11:30	M6	2.3.3. Gamma Spectrometric Methods for Uranium Isotopic Enrichment Analysis and Implication of Peak Interference for SNM Categorization in RIIDs	Haluk Yücel	Turkey
11:30 - 11:45		2.3.4. Knowledge Sharing from Congo on the Use of Detection Equipment.	Aimé Mouamba Ngabikina	Congo
11:45 - 12:00		Q&A and Discussion		
12:00 - 13:30	<i>Lunch</i>			
Plenary: 3.0 Emerging Technologies and Threats			Track Chair - Paul Johns	USA
			Rapporteur - Kristedjo Kurnianto	Indonesia
Introduction of Plenary speakers			Track Chair - Paul Johns	USA
13:30 - 13:50	M1 PLENARY ROOM	3.0.1 Use of Uncrewed Aerial Systems (UAVs) for Radiation Detection and Surveillance	Lucie Fiserova	Czech Republic
13:50 - 14:10		3.0.2 Emerging Technology Policy Issues: How to be Influential	George Moore	USA
14:10 - 14:30		3.0.3 Nuclear Security Implications for Artificial Intelligence (AI) and Machine Learning (ML)	Charles Massey	IAEA
Introduction of Topical Sessions and Session Chairs			Track Chair - Paul Johns	USA
Topical Session: Emerging Technologies and Threats				
14:30 14:45	PRESS ROOM	3.1 Emerging Technologies and Threats I - UAV Tech	<i>Session Chair - Louise Bien</i>	France
14:45 - 15:00		3.1.1 Challenges with Transport of Radiation Detection Instruments and UAV's	<i>Rapporteur - Remy Bana</i>	Rwanda
15:00 - 15:15		3.1.2 Field Experiments of Autonomous Radiation Mapping with Mobile Robot in Malaysian Nuclear Agency	Louise Bien	France
15:15 - 15:30		3.1.3 Coded Aperture g-Camera for Characterization and Localization of Radioactive Hot-Spots: A Wannabe Passenger for Uncrewed Aerial Vehicles	Nur Aira Abd Rahman	Malaysia
15:00 - 15:15		3.1.4 Development and Performance of Airborne gamma-Ray Spectrometry Based on Unmanned Aerial Vehicles in KAERI	Ioannis Kaisas	Greece
15:15 - 15:30			Yong-Yong Ji	Republic of Korea
3.2 Emerging Technologies and Threats II - CFSI & Other Challenges			<i>Session Chair - Md. Dulal Hossain</i>	Bangladesh
			<i>Rapporteur - Austin Hammer</i>	IAEA
14:30 14:45	M4	3.2.1 Nuclear Security Risk Governance of CFSI within Supply Chain in the Perspective of Bangladesh: Trends, Challenges, and Opportunities	Md. Dulal Hossain	Bangladesh
14:45 - 15:00		3.2.2 Procurement Process in the Light of Nuclear Security Implications of CFSIs	Mirjana Cujic	Republic of Serbia
15:00 - 15:15		3.2.3 Mitigation of Counterfeit and Suspect Radioactive Material during Its Circulation	Amany Arafa	Egypt
15:15 - 15:30		3.2.4 Security Regime for Transport of Sealed Radioactive Sources	Nadia Mostafa Mohamed Nawwar	Egypt
3.3 Emerging Technologies and Threats III - Deployment and Country Challenges			<i>Session Chair - Ritah Chimusibe</i>	Zimbabwe
			<i>Rapporteur - Ovidiu-Teodor Matica</i>	Romania
14:30 14:45	M6	3.3.1 Challenges and Opportunities Presented by Emerging Threats and Technologies	Ritah Chimusibe	Zimbabwe
14:45 - 15:00		3.3.2 Fortifying National Nuclear Security: Empowering Tanzania's Response to Nuclear Threats and Incidences	Remigius Ambrose Kawala	Tanzania
15:00 - 15:15		3.3.3 Deployment of Technologically Advanced Radiation Detection Instruments for Controlled Movement of Nuclear and Other Radioactive Materials Out of Regulatory Control across Nigeria's Land Borders for Optimized Nuclear Security: Challenges and Opportunities.	Ifeanyi James Okonkwo	Nigeria
15:15 - 15:30		3.3.4 Enhancing Nuclear Security in Nigeria: Current Trends, Challenges, and Opportunities in Radiation Detection Instruments	Chinonso Nwagboso	Nigeria

Time	Room	Session	Speaker	Country/Organization
15:30 - 16:00		<i>Coffee Break</i>		
16:00 - 16:50		Group Discussions: Identify 5 Gaps (Priority Order) and IAEA Activities (CRP, Webinar, Technical Meeting, ..., with Specific Title) for the Session Topics.	Facilitator	Rapporteur
	M0E100	1. Use and Threats of Uncrewed Systems	Louise Bien (France)	Remy Bana (Rwanda)
	M0E79	2. Uncrewed System Sensors	Lucie Fiserova (Czech Republic)	Ovidiu-Teodor Matica (Romania)
	M0E7	3. CFSI	Amany Arafa (Egypt)	Austin Hammer (IAEA)
	M6	4. AI & ML for Passive NSDA Systems (e.g. RPM Profile Signature Analysis)	David Makharadze (IAEA Consultant)	Paul Johns (USA)
	M0E5	5. AI & ML for Active NSDA Systems (e.g. X-Ray Image Analysis)	Dan Weidinger (USA)	Mike Demboski (USA)
	M0E3	6. Policy and Regulatory Gaps	George Moore (USA)	Dianne Lalla-Rodrigues (Antigua and Barbuda)
17:00 - 17:30	M1 PLENARY ROOM	Group Out Briefings Moderated by Track Chair Mr Johns, Rapporteur - - Eran Vax Presentations by session facilitator or rapporteur		
		1. Use and Threats of Uncrewed Systems 2. Uncrewed System Sensors 3. CFSI 4. AI & ML for Passive NSDA Systems (e.g. RPM Profile Signature Analysis) 5. AI & ML for Active NSDA Systems (e.g. X-Ray Image Analysis) 6. Policy and Regulatory Gaps		
17:30-17:40		Paul Johns, Track Chair, Concluding Remarks		
17:45		Poster Session and Reception		
		P1: Real-Time Environmental Radiation Monitoring Based on Locally Developed Low-Cost Device and Unmanned Aerial Vehicle	Folifack Signing, Vitrice Ruben	Cameroon
		P2: Structural Analysis and Performance Evaluation of Li ₂ O-Al ₂ O ₃ -B ₂ O ₃ Matrix for Immobilizing Radioactive Waste: Insights from Tin Slag Compositions and Al ₂ O ₃ Content	Nor Ezzaty Ahmad	Malaysia
		P3: Evaluation of The Reliability and Performance of Detection Equipment Before and After Calibration under Lab and Field Conditions	Kwame Appiah	Ghana
		P4: Radioecological Baseline Study and Assessment of Iodine-131 Presence in the Environment of Sidi Thabet, Tunisia : Pre- and Post-Fukushima Analysis	Ben Tekaya Malik	Tunisia
		P5: Mauritania's Experience in Managing and Maintaining the Radiation Detection Instruments	Mohamed Mahmoud Elmounja	Mautitania
		P6: Present State, Obstacles and Forthcoming Prerequisites for The First Locally-Developed Survey Meter in Malaysia	Nur Aira Abd Rahman	Malaysia
		D1: NSDD Tool		USA
		D2: Radiation Simulator Demo		Hungary
		D3: Alarm Assessment Applications - TRACE mobile and PAAT		IAEA

Wednesday, 16 August 2023

Time	Room	Session	Speaker	Country/Organization
9:00 - 9:15	M1 PLENARY ROOM	Summary of Day 2/Day 3 Program and Introduction of Track Chairs and Plenary Speakers	May Ong Bee Leng	Co-Chair
		Plenary: 4.0 Challenges and Opportunities on Network and Communication Systems for Radiation Detection Instruments	Track Chair - Kwame Appiah Rapporteur - Mike Demboski	Ghana USA
9:15 - 9:25	M1 PLENARY ROOM	Opening comments with Network & Comm TM Brief	Jenkins Kelly	IAEA
9:25 - 9:55		4.0.1 Pigeon to Starlink	David Makharadze	IAEA Consultant
9:55 - 10:15		4.0.2 Opportunities and Challenges in Implementing Networking and Communication Systems for Nuclear Security Detection Instruments in Ghana	Kwame Appiah	Ghana

Time	Room	Session	Speaker	Country/Organization
10:15 - 10:45	<i>Coffee Break</i>			
Topical Sessions: Challenges and Opportunities on Network and Communication Systems for Radiation Detection Instruments				
10:45 - 11:00	PRESS ROOM	4.1 Experiences, Lessons Learned, and Considerations for Network & Communication Systems for Nuclear Security	<i>Session Chair - Gani Demiraj</i>	Albania
11:00-11:15		4.1.1 Accuracy of Mobile phones GPS Coordinates for Dose Rate Mapping for Nuclear Security	<i>Rapporteur - Ngoc-Thiem Le</i>	Vietnam
11:15-11:30		4.1.2 Operational Deployment of M-INSN in Thailand	Dritan Prifti	Albania
11:40-12:00		4.1.3 Current Status, Research and Development for Networking and Communication of Radiation Monitoring Equipment Systems in Vietnam	Chonlagarn Iamsumang	Thailand
10:40 - 11:00	M4	4.2 Developing Network & Communication Systems for Nuclear Security & Safety Applications	<i>Session Chair - Yong Li</i>	China
11:00-11:20		4.2.1 Development of an IoT Monitoring System for the Radiation Portal Monitors (RPMs) at the CENM Exit/Entrance	<i>Rapporteur - Arumugam Palanisamy</i>	India
11:20-11:40		4.2.2 Environmental Radiological Monitoring Network using Digimesh and MQTT Protocols at the RACSO-IPEN Nuclear Center	Aziz Benahmed	Morocco
11:40-12:00		4.2.3 Developing a Smart Low-Cost Radiation Monitor Based on The Internet of Things (IoT)	Renzo Chan	Peru
10:40 - 11:00	M6	4.3 Computer Security & Communications for RDI Use for Nuclear Security	<i>Session Chair - Nadia Mostafa Mohamed Nawwar</i>	Egypt
11:00-11:20		4.3.1 Development of IoT Device for Enhancing PRD Data Transmission	<i>Rapporteur - William Johnson</i>	USA
11:20-11:40		4.3.2 Improve Computer Security of Radiation Detection Systems	Suparerak Janjarasjitt	Thailand
11:40-12:00		4.3.3 Design a Secure Radiation Monitoring and Tracking System the Radioactive Material During Transportation	Nelson Kodzotse Agbemava	Ghana
12:00 - 13:30	<i>Lunch</i>			
Plenary: 5. Tools for data analysis, display, and assessment			<i>Track Chair - Nadia Helal</i>	Egypt
			<i>Rapporteur - Klara Richtarechova</i>	Slovakia
13:30 - 14:00	M1 PLENARY ROOM	5.0.1 Radiation Data Analysis with InterSpec	William Johnson	USA/NSDD
14:00 - 14:30		5.0.2 MPE Deployment Experience using IAEA Tool	Nigel Tottie	IAEA
14:30 - 15:00		5.0.3 Utilization of Minimum Detectable Quantity Alarm Threshold Evaluation Tool (MDQ-ATET) to Enable Improvement of Nuclear Security Detection Operation at Laem Chabang Seaport	Chonlagarn Iamsumang	Thailand
15:00 - 15:30	<i>Coffee Break</i>			
Topical Sessions: Tools (Rotation)				
15:30 - 16:00	PRESS ROOM	1. M-INSN	Jenkins	
	M4	2. TRACE Mobile/PAAT	Piyawan/Nadeera	
	M6	3. TRACE Desktop	Robert/Chon	
	M0E100	4. MDQ	Giang	
16:00 - 16:30	PRESS ROOM	1. M-INSN	Jenkins	
	M4	2. TRACE Mobile/PAAT	Piyawan/Nadeera	
	M6	3. TRACE Desktop	Robert/Chon	
	M0E100	4. MDQ	Giang	
16:30 - 17:00	PRESS ROOM	1. M-INSN	Jenkins	
	M4	2. TRACE Mobile/PAAT	Piyawan/Nadeera	
	M6	3. TRACE Desktop	Robert/Chon	

Time	Room	Session	Speaker	Country/Organization
	MOE100	4. MDQ	Giang	
17:00 - 17:30	PRESS ROOM	1. M-INSN	Jenkins	
	M4	2. TRACE Mobile/PAAT	Piyawan/Nadeera	
	M6	3. TRACE Desktop	Robert/Chon	
	MOE100	4. MDQ	Giang	
Reception (Vendor)				

Thursday, 17 August 2023

Time	Room	Session	Speaker	Country/Organization
9:00 - 9:10	M1 PLENARY ROOM	Summary of Day 3/Day 4 Program and Introduction of Track chairs and Plenary Speakers	May Ong Bee Leng	Co-chair
Plenary: 6.0 Research and Development			Track Chair - George Moore	USA
			Rapporteur - Lloyd Firth	USA
9:10 - 9:40	M1 PLENARY ROOM	6.0.1 Summary of CWMD Technology Development Activities in Chem, Bio, and Rad/Nuc Detection Mission Space	Julian Hill	US-DHS
9:40 - 10:10		6.0.2 Detecting Special Nuclear Material with Active Interrogation Methods	Olaf Schumann;	Germany
10:10 - 10:40		6.0.3 Advantage of Multi-layer Neutron Detector to Homeland Security Scenarios	Ilan Cohen Zada	Israel
10:40 - 11:00	<i>Coffee break</i>			
Topical Session: R&D				
11:00 - 11:15	PRESS ROOM	6.1 Novel source search & mapping techniques	<i>Session Chair - Alexandra Ioannidou</i>	Greece
11:15 - 11:30		6.1.1 Development of Mutli-Platform Nuclear Radiation Detector Terminal	<i>Rapporteur - Ioannis Kaisas</i>	Greece
11:30 - 11:45		6.1.2 Detection and Localization of Radioactive Materials using Wireless Sensor Networks	Biao Wang	China
11:45 - 12:00		6.1.3 Intelligent Search and Location System for Nuclear and Radioactive Material Out of Regulatory Control	Imbaby Mahmoud	Egypt
12:00 - 12:30		6.1.4 Developments of a Nuclear and Radioactive Material Survey System for Major Public Events	Yong Li	China
11:00 - 11:15	M4	6.2.1 Enhancing Calibration of Radiation Detectors for Security Purposes: A New Device for Calibrating Ionizing Radiation Detectors	Mitsuo Koizumi	Japan
11:15 - 11:30		6.2.2 Source-Activity Measurement with Scintillation Crystal Based Detectors under Conditions		
11:30 - 11:45		6.2.3 Prospects on Applying of Machine Learning and Digital Signal Processing Techniques to Develop Radiation Portal Monitor Systems	Leila Ounalli Mejri	Tunisia
11:45 - 12:00		6.2.4 Detectors Sizes and Performance Differences of Albania Radiation Portal Monitors	Attila Gulyás	Hungary
12:00 - 12:30		Q&A and Discussion	Dinh Tien Hung	Viet Nam
11:00 - 11:15	M6	6.3 Detectors and active interrogation	<i>Session Chair - Theo Koeble</i>	Germany
11:15 - 11:30		6.3.1 Development of Real-time Radioluminescence Sensors for Security Applications	<i>Rapporteur - Mona Abdelghany</i>	Egypt
11:30 - 11:45		6.3.2 Improved Real-Time Directional γ -Detector Based on Mutual-Shielding	Hafiz Mohd Zin	Malaysia
11:45 - 12:00		6.3.3 Integrating Radiometrics and Microphotonics via Artificial Intelligence for Direct Rapid Detection and Attributive Characterization of Nuclear Security Events	Eran Vax	Israel
		6.3.4 Progress in Setting up an Educational System for Delayed Neutrons Counting at IAEA NSIL	Hudson Angeyo Kalambuka	Kenya
			Francois Bolariwon Ayodele Idjiwole	Benin

Time	Room	Session	Speaker	Country/Organization
12:00 - 12:30		Q&A and Discussion		
12:30 - 14:00		<i>Lunch</i>		
		Plenary: 7. Technical and functional specifications for radiation detection equipment	Track Chair - Julian Hill	USA
			Rapporteur - Daniel Weidinger	USA
14:00 - 14:20	M1 PLENARY ROOM	Overview of NSS 1	Charles Massey	IAEA
14:20 - 14:40		7.0.1 Current Challenges in the Use of Hand-held and Body-worn Spectrometric Radiation Detectors	Lucie Fiserova	Czech Republic
14:40 - 15:00		7.0.2 Performance Evaluation of Portable Radiation Detectors for Nuclear Security using Open-Source Software	Kristedjo Kurnianto	Indonesia
15:00 - 15:30		<i>Coffee break</i>		
15:30 - 15:50	M1 PLENARY ROOM	7.0.3 Testing is National Security: Motivations and Practices for Evaluating Radiation Detection Systems	Rapporteur - Lucie Fiserova Paul Johns	USA
15:50 - 16:10		7.0.4 Characterization of Radiation Detection Systems by the U.S. Office of Nuclear Smuggling Detection and Deterrence	Mike Demboski	USA
16:10 - 16:30		7.0.5 Neutron Survey Meter for Nuclear Security: Design, Fabrication, and Verification	Ngoc-Thiem Le	Viet Nam
16:30 - 16:50		7.0.6 Counter WMD Testing and Evaluation	Daniel Weidinger	USA
16:50 - 17:20		Q&A and Discussion		

Friday 18 August 2023

Time	Room	Session	Speaker	Country/Organization
09:00 - 10:00	M1 PLENARY ROOM	Reports from Track chairs (about 10 min for each)	Track Chairs	
10:00 - 10:30		ICON 2024	Sara Mroz	IAEA
10:30 - 11:00		<i>Coffee break</i>		
11:00 - 12:00	M1 PLENARY ROOM	Panel Discussion	Charles Massey (Moderator)	IAEA
			Alina Smyslova	USA
			Ung Eang	Cambodia
			David Makharadze	Georgia
			Jean Galy	EC
			Ritah Chimusibe	Zimbabwe
			Jendli Baghidadi	Tunisia
12:00 - 13:30		<i>Lunch</i>		
13:30 - 14:00	M1 PLENARY ROOM	Summary and Way forward	May Ong Bee Leng	Co-Chair
15:00 - 15:15		Closing Remarks	May Ong Bee Leng	Co-Chair
			Alina Smyslova	Co-Chair
16:00		<i>Meeting Adjourned</i>		