

# CSCM – World Congress on CBRNe Science & Consequence Management

Cavtat, Croatia  
23 - 27 October 2023

## Saturday 21 October 2023 Workshops (only) Registration

Hotel Croatia Lobby

- **13:00 – 18:00 Congress Registration including workshops - New Technologies for Critical Infrastructure Protection against CBRNe Threats Workshop and INL/NNSA Workshop**

## Sunday 22 October 2023 & Wednesday 25 October 2023 Live Exercise

### New Technologies for Critical Infrastructure Protection against CBRNe Threats Workshop

- **09:00-13.20 Workshop - New Technologies for Critical Infrastructure Protection against CBRNe Threats - Part I** – Chairman: Prof. Roberto Mugavero

#### Keynote Speech

1. **09:00-09:20 Prof. Roberto Mugavero**, European Centre for Disaster Medicine, Unirsm, Osdife, Unitov, Italy

#### Speakers

2. **09:20-09:40 Dr. Mark Foster**, *New Technologies, Protecting Critical Infrastructure from CBRN Threats, Symetrica*
  3. **09:40-10:00 Mr. Torkom Pailevanian**, *Use of Robotics and Autonomy in CBRNe Detection and Disposal, RedaraLabs*
  4. **10:00-10:20 Mr. Gordan Pešić**, *UGV CBRNe as a new technology to protect critical infrastructure against CBRNe threats, Dok-Ing*
  5. **10:20-10:40 Willy Kaye, Ph.D.** *High fidelity visualization of radiation, H3D*
- **10:40-11:00** – Coffee Break
    1. **11:00-11:20 Dr. Ante Bakić**, *Robotics in crisis management, Faculty of Mes*
    2. **11:20-11:40 Dr. Rafael Arruga, Mr. Jakov Mihaljević**, *Technological solutions for remote control with a decontamination device on the example of UGV MVFD-5, HispanoVema*
    3. **11:40-12:00 Mr. Chris Carpita**, *Area Monitoring for Next-Generation Chemical Warfare and Pharmaceutical-Based Agents, 908 Devices*
    4. **12:00-12:20 Mr. David Brandtner**, *Handheld Raman spectroscopy for identification of hazardous material, Rigaku*

5. **12:20-12:40 Mr. Heino Teifel**, *Cutting edge handheld Threat Assessment Tools, DetectaChem*
  6. **12:40-13:00 Mr. Schauer Harald, Mr. Andreas Zeller**, *CBRN RSS Chemical, Biological, Radiological and Nuclear Reconnaissance and Surveillance System, Rosenbauer*
  7. **13:00-13:20 Prof. Roberto Mugavero**, Closing remarks Session I
- **13:30-14:30** – Lunch
  - **14:30-17.10 Workshop - New Technologies for Critical Infrastructure Protection against CBRNe Threats - Part I** – Chairman: Prof. Roberto Mugavero

#### **Speakers**

8. **14:30-14:50 Mr. Giacomo Mangiagalli**, *RadHawk: a smart UAV for radioactivity hunting, CAEN S.p.A*
9. **14:50-15:10 Mr. Sinisa Klecar**, *"Croatian civil protection intervention unit - the first unit in the EU with UGV for technical and CBRNe disasters: preparedness and experiences," CPD of the Republic of Croatia*
10. **15:10-15:30 Mr. Pavel Bělohradský**, *Use and methods of protection by ibipc safety elements in CBRN incidents against the background of the Ukrainian conflict, Trusted Alliance*
11. **15:30-15:50 Mr. Thomas Xu**, *CONFOAM, FEVDI Nuclear Decontamination*
12. **15:50-16:10 Dr. Peter Kaiser**, *Mitigating Emergency Response Disruption Triggered by Disinformation Produced by Generative Artificial Intelligence, IAEA*
13. **16:10-16:30 Dr. Sophie Allain Ioos**, *"Biosecurity and Health Security Protection Unit, Epidemic and Pandemic Preparedness and Prevention Department, WHO Health Emergencies Programme"*
14. **16:30-16:50 Mr. João Simões**, *CBRN & Explosives EUROPOL Activities, EUROPOL - European Counter Terrorism Centre*
15. **16:50-17:10 Dr. Zvonko Orehovec, Prof. Roberto Mugavero**, Discussion and Workshop Conclusion

## **Sunday 22 October 2023 – Tuesday 24 October & 25 October 2023 Live Exercise**

### **INL/NNSA Workshop**

## **Sunday 22 October 2023 Main Conference Agenda**

### **Hotel Croatia Lobby**

- **13:00-19:00 Congress Registration**

# Monday 23 October 2023

## Hotel Croatia – Ragusa Conference Hall

- **07:30-10:00 Congress Registration**

### Congress Opening

- **08:45-13:00 Introduction, Official Welcome and Congress Opening, Keynote Address and First Session**

**Congress Chair: Dr. Peter Leitner, USA; Co-chair Ms. Jennifer Turnage, USA**

- **08:45-10:45**

#### *Introduction*

1. **Damir Trut, Jeffrey D. Allen, Roberto Mugavero, Zvonko Orehovec, Slavko Bokan, Mason Soule, Stef Stienstra**, Executive Directors, **CSCM Congress**

#### *Official Welcome and Congress Opening*

2. **Ph.D. Damir Trut**, CSCM 2023 Congress Honorary Director, **Directorate of Civil Protection, Ministry of Internal Affairs, Croatia**
3. **Croatian Government** TBD
4. **Vili Beroš, Ph.D. MD**, Minister of Health, **Croatia**
5. **Amb. Constantin-Mihail Grigorie**, Director, **RACVIAC - Centre for Security Cooperation**

#### *Keynote Address - I*

6. **Gen. Mirko Sundov (ret)** Former Chief of Staff Croatian Army
7. **Amb. Sergio Piazzi**, Secretary General, **Parliamentary Assembly of the Mediterranean**
8. **Brig. Gen. Chris McKinney**, Deputy J5, **European Command, USA**
9. **COL John Sandefur**, CST Program Chief, **National Guard Bureau, USA**
10. **Dr. Edward P. Locke**, Combatant Command Representative US European Command Defense Threat Reduction Agency, **DTRA USA**

- **10:45-11:15** – Coffee Break

- **11:15-13:00**

#### *Keynote Address – II*

11. **Mr. Matija Matokovic**, Acting Head of Unit, Innovation Unit Emerging Security Callenges Division, **NATO HQ** (online)

12. **Dr. Antonella Cavallo**, Lead, rescEU CBRN, Directorate-General for European Civil Protection and Humanitarian Aid Operations, **European Commission**
13. **Mr. Krzysztof Zyman**, EUR-OPA Executive Secretary, **Council of Europe**
14. **Dr. Sophie Allain Ioos**, "Biosecurity and Health Security Protection Unit, Epidemic and Pandemic Preparedness and Prevention Department, WHO Health Emergencies Programme "
15. **Mr. Peter Kaiser**, Crisis Communication Adviser, Incident and Emergency Centre (IEC), Department of Nuclear Safety and Security, **International Atomic Energy Agency (IAEA)**

- **13:00-14:00** – Lunch

### **Hotel Croatia - Ragusa Conference Hall**

- **14:00-17:30 Opening Session**
- **14:00-15:30 State of the Art and Future of Asymmetric Threats – Session I**
  - Common, Comprehensive, Integrated and Multidimensional Approach for Non-Conventional Events Management
- 16. **Mr. Talgat Toleubayev**, Regional Coordinator - South East and Eastern Europe, CBRN Risk Mitigation and Security Governance Programme, **United Nations Interregional Crime and Justice Research Institute (UNICRI)**
- 17. **Dr. Daniel Donachie**, Programme Manager, Preparedness and Resilience Department, **World Organisation for Animal Health (WOAH-OIE)**
- 18. **Mr. João Simões**, Acting Head of CBRN & Explosives, **EUROPOL - European Counter Terrorism Centre**
- 19. **Mr. Kenneth L. Deal Jr**, Chief, CBRN Operational Response Division, US Department of State – "Foreign Consequence Management challenges and programs" (66)
- **15:30-16:00** – Coffee Break
- **16:00-17:30 State of the Art and Future of Asymmetric Threats – Session II**
  - Conflicts and Consequence Mitigation: Cooperative Action and Initiatives
  - Civil and Military Cooperation in Protecting People and Critical Infrastructures
  - Research and Innovation: Strategies, Tactics, Methodologies, Technologies and Resources to Prevent, Manage, and Mitigate Infrastructural, Territorial, Social and Economic Impacts and Consequences of Crisis Emergencies, Disasters and Terrorism

20. **Mgr. Pavel Belohradsky**, CEO, Institute of Blast & Impact Proof Concrete, Czech Republic - "Perspective on the blast protection industry on the backdrop of the Ukrainian conflict"
21. **Capt. (ret. USPHS) Kenneth F. Martinez**, Idaho National Laboratory, Infrastructure Security, PO Box 1625, MS 3545, Idaho Falls, ID 183415, USA - "Convergence of Deliberate Threats and Emerging Infectious Diseases Advancing Biosurveillance Awareness" (72)
22. **LTC Giancarlo Romana (OF-4), ITA-A**, PROT Course Director & Instructor Protection Department Director - NATO School

▪ **18:00-19:00 Welcome and Networking Reception**

## Tuesday 24 October 2023

### Hotel Croatia - Ragusa Conference Hall

#### 09:00-17:30 Congress Sessions

#### **09:00-10:45 Sector 1: CBRNe Emerging Threats and Critical Infrastructure Protection: Innovation and Technology for Preparedness, Response and Consequence Mitigation**

**Chair: Doc. dr. sci. Marinko Artuković MD**

**Co-Chair: Asish Mohapatra**

**Introduction:** This session will explore the next generation of threats that have not been presented as plausible because of the lack of technology as we know it today to bring them to fruition. What will possibly be the threat from Artificial Intelligence (AI) in all sectors of society? How will it be used for nefarious purposes? How will government's, military, companies, and public works protect critical infrastructure and if they fail how will they respond?

- a) Trends in science and technology
- b) Nanotechnology (Promises/Risks)
- c) Countering CBRNe IED threat
- d) Research and Industry
- e) CBRNe Protection
- f) Artificial Intelligence

#### **Sector 1 CBRNe Emerging Threats and Critical Infrastructure Protection: Innovation and Technology for Preparedness, Response and Consequence Mitigation - Session I**

**Chair: Doc. dr. sci. Marinko Artuković MD; Co-Chair: Capt. (ret. USPHS) Kenneth F. Martinez**

#### **Speakers**

1. **Mr. Sinisa Klecar**, CPD of the Republic of Croatia - "Croatian Civil protection intervention unit - the first unit in the EU with UGV for technical and CBRNe disasters: preparedness and experiences"
2. **Ph.D. Marinko Artuković MD**, Director of the Special Hospital for Lung Diseases Zagreb - "New technologies in public health challenges" (51)

3. **Mr. Steven Buntman**, Program Manager, International Operations, Office of Nuclear Incident Policy and Cooperation, Department of Energy, National Nuclear Security Administration, USA – “US DOE’s Office of Counterterrorism and Counterproliferation (CTCP)” (69)
4. **Dr. Arkadiusz Trzos**, Jagiellonian University Medical College, Faculty of Medicine, Chair of Anaesthesiology and Intensive Care, Department of Disaster Medicine and Emergency Care, Poland - 'Specialist CBRNe medicine training for medical personnel - Polish experience" (42)
5. **Dr. Zorica Topić Omaljev**, LL.M., Faculty of Law, University of Zagreb, Croatia - “The AI ACT awaiting” (59)
6. **Asish Mohapatra**, Regional Health Risk Assessment and Toxicology Specialist, Environmental Health Program, Health Canada, Calgary, Alberta – “Human Health Risk Assessments (HHRAs) and Climate Change Considerations in Contaminated Sites” (60)

- **10:45-11:15** – Coffee Break

### **11:15-17:00 Sector 2: Chemical Threats**

**Chair: Dr. Shahriar Khateri; Co-Chair: Dr. Zdravko Lovrić**

Introduction: Chemical warfare is the use of toxic properties of chemicals substances to kill, injure or incapacitate an enemy in warfare and associated military operation. This sessions will focus on the four types of chemical warfare agents but also will explore Toxic Industrial Chemicals (TICs) and Toxic Industrial Materials (TIMs) hazard and how they have become the weapon of choice to attack civilian populace and critical infrastructure.

- a) Threats, Doctrine & Policy
- b) Consequence Management and Countermeasures
- c) Detection and identification
- d) Protection and Decontamination
- e) Medical (health risk assessments)

### **11:15-13:00 Sector 2: Chemical Threats - Session I**

**Chair: Dr. Todd Myers; Co-Chair: Dr. Maja Knepr Šegina**

#### **Speakers**

1. **Dr. Zdravko Lovrić**, Head of the Risk Assessment Department, Croatian Institute of Public Health, Croatia – “Legislation on Chemical Safety Management” (64)
2. **Maja Knepr Šegina mag. edu. biol. et mag. biol.**, Head of Section, Division for Toxicology at Croatian Institute of Public Health, Croatia - “Education on protection and decontamination of the general population in cases of CBRN Mass Casualties Events” (32)
3. **Dr. Todd Myers**, United States Army Medical Research Institute of Chemical Defense, USA - “The Göttingen Minipig for Medical Countermeasure Development: Benefits and Capabilities” (29)
4. **Dr. Laura Cochrane**, Vice President Global Government Procurement, Emergent BioSolutions - “Evaluation of Decontamination Efficacy of the RSDL<sup>®</sup> Kit against Incapacitating Agents [Pepper Spray (OC), MACE<sup>™</sup> (CN), And CS]” (40)
5. **Prof. Ashish Bhalla**, Department of Internal Medicine, Post Graduate Institute of Medical Education and Research, India - “Lessons learnt from chemical disasters during COVID-19 pandemic” (43)

- **13:00-14:00** – Lunch

**14:00-17:00 Sector 2: Chemical Threats - Session II**  
**Chair: Dr. Shahriar Khateri; Co-Chair: Mr. Robert Malone**

**Speakers**

1. **Dr. Faraidoun Moradi**, School of Public Health and Community Medicine, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Sweden - "Respiratory function 34 years after sulfur mustard exposure in survivors in Sweden" (16)
2. **Dr. Shahriar Khateri**, MD, Ph.D, Medical Toxicologist, W. Nikan Hospital, Tehran-Iran - "Are we prepared? Medical response to incidents involving toxic chemicals; The OPCW and strengthening preparedness and response capacity of its member states" (12)
3. **Dr. Laura Cochran**, Vice President Global Government Procurement, Emergent BioSolutions - "Analytical Estimation of Novichok Exposure Risk and Economic Consequences Using an SCR Vertex Mathematical Model" (41)
4. **Dr. Ondrej Soukup**, University of Defence, Faculty of Military Health Sciences, Department of Toxicology and Military Pharmacy, Czech Republic - "The cytotoxicity and reactivation efficacy of oxime reactivators against Novichok inhibited acetylcholinesterase" (21)

▪ **15:30-16:00 – Coffee Break**

5. **Prof. Jaroslav Pejcha**, University of Defence, Faculty of Military Health Sciences, Department of Toxicology and Military Pharmacy, Czech Republic - "Evaluation of new modified bisquaternary pyridinium oximes K1651–K1654" (44)
6. **Mr. Robert J. Malone**, US Army Futures Command DEVCOM Chemical Biological Center, Aberdeen Proving Ground, MD, USA - "Compact Rapid Chemical Agent Neutralization System: A Rapidly Deployable Method for Large Scale Chemical Agent Destruction" (28)
7. **Donna Vadjla**, Ministry of Defense, Battalion for nuclear-biological-chemical defense, Croatia - "Remote controlled systems for first responds" (48)

**09:00-17:00 Sector 3: Poster**

**Chair: LTC. (ret) Dr. Slavko Bokan, MD; Co-Chair: Mr. Mason Soule**

**Introduction:** The poster session allows participants to present their work on any of the sessions that will be discussed during the Congress.

- a) Chemical Session
  - b) Biological Session
  - c) Radiological Session
  - d) Asymmetric Threats Session
  - e) Emerging Threats Session
  - f) Consequence Management Session
1. **LTC. (ret) Dr. Slavko Bokan, MD**, Croatia - "Developments in the field of science and technology related to the Biological Weapons Convention" (23)
  2. **Prof. Zvonko Orehovec**, University of Zagreb, Croatia - "UGV in the Protection of Critical Infrastructure and Facilities of Special Importance for Security and Defence" (63)
  3. **Aleksandra Nakonieczna**, Military Institute of Hygiene and Epidemiology, Biological Threats Identification and Countermeasure Center, Bacteriophage Laboratory Poland – "New bacteriophage lysins, LysJ and LysF, effective in killing anthrax bacteria in vitro" (57)

4. **Ms. DeAnna Sutphin**, National Intelligence University, School of Strategic Intelligence, Roberdeau Hall, Washington, USA - "Countering foreign threats in the United States food supply chain" (31)
5. **Dr. Alessandro Previero**, Belgian Defence Laboratories, DLD - "Non-destructive decontamination and modified methods to process CBRN-contaminated forensic evidence in the laboratory" (37)
6. **Prof. Neslihan Kulahlioglu**, University of Health Sciences, Department of Medical CBRN Defense, Ankara, Türkiye - "EDULAB: A New Generation CBRN Training Platform under the Innovative Digital Technologies" (39)
7. **Ms. Morine Ngumi**, Institute: National Crime Research Centre, 1st Ngong Avenue, Off Bishops Road, Nairobi, Kenya Department: Research - "CBRN Early Warning Systems for Critical Infrastructure (African Context)" (14)
8. **Dr. Pavel Rehulka**, Faculty of Military Health Sciences, University of Defence, Department of Molecular Biology and Pathology, Czech Republic - "Proteomic Identification of Radiation Biomarkers in Blood Plasma of Total Body Irradiated Leukemia Patients" (50)
9. **Dr. Helena Rehulkova**, Faculty of Military Health Sciences, Department of Toxicology and Military Pharmacy, Czech Republic - "Effect of antidotal therapy on sarin intoxication" (49)
10. **Dr. Matthias Berger**, Bundeswehr Research Institute for Protective Technologies and CBRN Protection, Chemistry Department, Germany - "Analysis of VX and its degradation products in conjunction with plasma decontamination" (54)
11. **Maria Hemme**, *Bundeswehr* Research Institute for Protective Technologies and CBRN Protection, Department: CBRN Decontamination, Germany – "Automated CBRN Decontamination with a collaborative robotic arm" (58)
12. **Bela Mihalik**, IDEAS Science Ltd. Oroszvár street 5, Budapest H-1172 Hungary - "Towards Comprehensive Biological Agent Detection: Introducing the HoloZcan Multi-Modular System" (74)

- **19:00-21:30 Official Congress Dinner**

## Wednesday 25 October 2023

**Hotel Croatia - Ragusa Conference Hall**

### **Consequence Management, Rad-Nuke Threats and Critical Infrastructure Protection Day**

**08:00-18:00 Congress Sessions followed by Live Demo and Exercise**

#### **08:00-09:30 Sector 4: Radiological-Nuclear Threats**

**Chair: COL. Lien Senchak MD; Co-Chair: Dr. Stela Popovic MD**

**Introduction:** This session will explore the Radiological/Nuclear material safety and security state-of-the-art and future scenarios. The use of Tactical Nuclear Weapons (TNW) versus the ease of deployment of a Radiological Dispersal Devices (RDD) (Weapon of Mass Chaos). The use of an RDD will achieve the same effects: Lose of Critical Infrastructure, Area denial although much smaller than a TNW, Psychological effects on the populace and economic impact, RDD potential use and the Tactics, Techniques and Procedures (TTPs) to mitigate this threat and recover:



- a) Threats, Doctrine & Policy
- b) Detection, Identification & Dosimeter
- c) Active Interrogation Technologies
- d) Protection and Decontamination
- e) Medical (health risk assessments)

**08:00-09:30 Sector 4: Radiological-Nuclear Threats - Session I**

**Chair: Mr. Nick Mann; Co-Chair: Dr. Marija Surić Mihić**

**Speakers**

1. **Mr. Nick Mann**, Emergency Response & Readiness, National and Homeland Security - Defense Systems, Idaho National Laboratory, USA - "Radiological contamination: historical uses and novel isotope development for emergency response training and testing" (20)
2. **Mr. John Giles**, Idaho National Laboratory, 2525 N. Fremont Ave., Idaho Falls, ID, USA – "Consequence Management Training in a "Live" Radiological Environment" (69)
3. **Dr. Marija Surić Mihić**, Ministry of the Interior, Civil Protection Directorate, Radiological and Nuclear Safety Sector, Zagreb, Croatia - "Radiological protection education and training in Croatia" (19)
4. **COL. Lien Senchak MD**, AFRRRI US, Armed Forces Radiobiology Research Institute Uniformed Services University of the Health Sciences - "Testing Technologies for Personnel Dry Decontamination of Radiological Contaminant in Extreme Cold Environments to Increase Human Survivability" (13)
5. **Dr. Ivica Prlić**, Institute for Medical Research and Occupational Health, Croatia - "Naturally Occurring Radioactive Materials - NORM waste in security of gas in oil industry" (18)

- **09:30-10:00** – Coffee Break

**10:00-11:30 Sector 5: Crisis - Consequence Management**

**Chair: Dr. Ed Locke; Co-Chair: COL. Valentina Kljucaric**

**Introduction:** If crisis management measures fail, then you be prepared to respond to the consequences of an incident or terrorist attack involving CBRN agents. Consequence management includes activities to contain the damage, treat victims, restore essential services, initiate clean-up, and provide relief.

- a) Doctrine of CBRNe Defense (Civil Defense, Defense Support to Civil Authorities)
- b) CBRN Teams and HAZMAT Technologies
- c) Crisis Communications and Evacuation
- d) Incident response (including emergency, disaster and crisis management)
- e) The Threat Spectrum to Consequence Management
- f) Safety and Security (Civil safety and security companies and CBRN threat, education of civil population)

**10:00-11:30 Sector 5: Crisis - Consequence Management - Session I**

**Chair: Dr. Ed Locke; Co-Chair: Dr. Isabel Radgen-Morvant**

**Speakers**

1. **LTC Samuel Roberts, Georgia National Guard, USA (...)**

2. **Dr. Isabel Radgen-Morvant**, School of Criminal Justice, University of Lausanne, Lausanne, Switzerland - "Impact of Chemical and Biological agent decontamination on traces recovery" (30)
3. **Prof. Otakar Jiří Mika**, Department of Crisis Management, Faculty of Security Management, Police Academy, Czech Republic - "CBRNe prevention, preparedness & protection in the Czech Republic" (27)
4. **Dr. Yannick Saintigny**, CEA, Institut de Biologie François Jacob, Fontenay aux Roses, France – "RESILIENCE: European strategic alliance for research, development and innovation on medical countermeasures against CBRN threats" (71)
5. **CPT Kevin Caspary, MPH**, Georgia National Guard 4<sup>th</sup> Weapons of Mass Destruction Civil Support Team, USA – "Connecting the dots: Concept of operation for field-deployed sequencing and data analysis" (73)

- **11:30-12:30** - Lunch
- **13:00** Departure to Live Exercise Venue
- **13:30-18:00 Joint Multinational Exercise Responding to CBRNe Threats**

The live exercise will be conducted as a joint operation between the United States Idaho National Laboratory, National Nuclear Security Administration, Armed Forces Radiobiology Research Institute, Bundeswehr Special Operations Command CBRN Defense Platoon, Croatian Anti-Terrorism Team, Croatian military NBC team, Multiple NATO NBC military members and the Croatian Civil Protection Directorate. During the Congress, attendees will receive daily intelligence updates on the possibility of an imminent attack on the Croatian territory of Dubrovnik. The intelligence updates are to help you understand crisis management by governments and intelligence agencies. This information will allow participants to get an understanding of how first responders, police and military units coordinate their efforts to respond to such a threat and attack.

The exercise will be multi-dimensional with the use of radiological dispersive device (RDD), chemical and biological agents. We are using this scenario of multiple WMD weapon threats in order to demonstrate the ability to detect, identify and mitigate such threats. This exercise is intended to show how the efforts of academia, scientists, engineers, and industry have been instrumental in the development of the technology that will be demonstrated during this event.

At the conclusion of the exercise, participants will have the opportunity to interact with and view the equipment that was utilized during the exercise. This will allow you to have a better understanding of the tactics, techniques and procedures you saw being performed during the exercise. You will also receive a capabilities brief by each participating agency. We also will have an opportunity to receive briefing and demonstrations from companies that are participating in Congress activities and displaying equipment. We will also integrate into the exercise new technology that was presented during the Congress, (Robotics, UGV, UAV, sensor and mapping technology, detectors, sampling, analyzers, new building materials for critical infrastructure, communications equipment that provides redundancies, and decontamination both dry and wet methods).

Idaho National Laboratory (INL) is one of the U.S. Department of Energy's 17 national laboratories. With roughly 4,000 scientists, engineers and support personnel, the lab also stands as one of Idaho's largest employers. At INL's three primary facility areas – the Advanced Test Reactor Complex, Materials and Fuels Complex, and Research and Education Campus – researchers perform work in support of DOE's mission to "discover the solutions to power and

secure America's future." More specifically, INL is the nation's leading center of nuclear energy research and development. Day-to-day management and operation of the laboratory is the responsibility of Battelle Energy Alliance.

The NNSA's Office of Counterterrorism and Counterproliferation (CTCP) is integral to the U.S. Government's layered defense against nuclear terrorism and nuclear proliferation. CTCP's scientific capabilities help provide early threat indications and inform the security of nuclear materials worldwide. Its operational assets are used to locate and defeat terrorist nuclear devices and mitigate the effects of radiological incidents around the globe. This "**defense-in-depth**" strategy requires adversaries to defeat multiple layers of security to obtain and detonate a nuclear device.

NNSA's nuclear counterterrorism, counterproliferation, and incident response missions harness the Department's unparalleled command of nuclear science to understand and contend with nuclear threats. CTCP performs three core functions:

- Preparing for nuclear and radiological incidents and accidents through planning, training, and exercises
- Countering adversary efforts to acquire and use nuclear capabilities
- Responding to nuclear and radiological incidents and accidents worldwide.

The Civil Protection Directorate of the Republic of Croatia is in the process of establishing robotic RescEU units for the needs of the Union Civil Protection Mechanism, the first such unit in the world. The unit will be composed of remotely controlled ground and air systems (UGV and UAV) for defense against CBRN threats, capable of operating in extreme CBRN conditions where operating with manned assets and equipment is impossible. The congress exercise will demonstrate the capabilities and advantages of UGV and UAV systems in CBRNe defense, as well as other modern technologies that enable CBRNe and TIM detection, sampling, data collection, and processing, C-IED/EOD tasks, the fight against terrorism, and more.

Sessions include a live demonstration of tactics, techniques and procedures for RDD response. Commentary will be by **Mr. Bryon Marsh-USA** , **Mr. Nick Mann-USA** , and **COL. (ret) Dr. Zvonko Orehovec-Croatia**

#### **Exercise participants:**

- Croatian RescEU unit for CBRNe defense
- Croatian Anti-Terrorist Police Unit
- Idaho National Laboratory, USA National Nuclear Security Administration, Armed Forces Radiobiology Research Institute, US and NATO military members
- Radiological and nuclear safety sector of the Civil Protection of the Republic of Croatia
- US military CBRNe experts, and multiple NATO military CBRNe experts
- Explosive Ordnance Disposal team
- Industries

#### **▪ 17:00-18:00 Lectures**

1. **Senior Representative, Croatian Anti-Terrorist Police Unit**
2. **Senior Representative, Idaho National Laboratory, USA**
3. **Senior Representative, Croatian Civil Protection**

**18:00** Departure to Hotel Croatia

## Thursday 26 October 2023

Hotel Croatia – Ragusa Conference Hall

08:00-17:00 Congress Sessions

**08:00-09:15 Sector 4: Radiological-Nuclear Threats - Session II**

**Chair: Chair: Dr. Giacomo Mangiagalli; Co-Chair: Dr. Ivica Prlić**

### Speakers

1. **Dr. Giacomo Mangiagalli**, CAEN SpA, Spectroscopy Division, Italy - "Fast detection of Nuclear threats and weapon grade material with realtime identification of Gamma and (n,alpha) radiological emission in realistic scenarios" (33)
2. **Dr. Ivica Prlić**, Institute for Medical Research and Occupational Health, Croatia - "A citizen monitoring network - a pilot project proposal and subject for discussion" (17)
3. **Dr. Stela Popovic MD**, Ministry of the Interior, Civil Protection Directorate, Civil Protection Operations Centre, Unit for Radiological and Nuclear Emergency, Zagreb, Croatia – "Illicit trafficking attempt at Croatian border crossing" (25)
4. **Dr. sci. Valentina Ključarić**, CBRN Defense Colonel, Ministry of Defense of the Republic of Croatia – "Radiation-Enhanced Nuclear Missiles (Tactical Nuclear Weapons)" (56)

- **9:15-09:45** – Coffee Break

**09:45-11:15 Sector 5: Crisis - Consequence Management - Session II**

**Chair: Prof. Otakar Jiří Mika; Co-Chair: Mr. Yannick Saintigny**

### Speakers

1. **Ms. Mari Lursmanashvili**, State Security Service of Georgia, Head of CBRN Regional Secretariat for SEEE Region - "Georgia's experience in national coordination and building resilience towards emerging CBRN threats" (10)
2. **Prof. Otakar Jiří Mika**, Department of Crisis Management, Faculty of Security Management, Police Academy, Czech Republic - "Missing National CBRNe Strategy and National CBRNe Action Plan" (26)
3. **Dr. Yannick Saintigny**, CEA, Institut de Biologie François Jacob, Fontenay aux Roses, France - "COUNTERACT: European agile network for medical countermeasures against CBRN treats" (72)
4. **Matevž Ferjančič**, CEO Mil Sistemika, Slovenia – "Low Cost Smart Sensor Networks" (70)

**11:15-15:00 Sector 6: Biological Threats**

**Chair: Dr. Krunoslav Capak, MD; Co-Chair: Dr. Stef Stienstra**

**Introduction:** Senior policy makers globally are in agreement that within the next 5-10 years we will experience a new pandemic and/or a major biological attack due to the continued proliferation of dual-use technologies and the lack of biosafety/biosecurity measures. The biological session will explore present day biological threats and what will be future threats on the horizon:

- a) Biosafety and Biosecurity globally
- b) Management of biosafety and biosecurity risks
- c) Codes of conduct and responsibilities of scientists
- d) Legal and ethical relevance of dual-use science and biosecurity
- e) Dual-use biosecurity dilemma in life science
- f) Medical (health risk assessments)

### **11:15-12:30 Sector 6: Biological Threats - Session I**

**Chair: Dr. Mzia Kutateladze; Co-Chair: Dr. Pavle Jeličić**

#### **Speakers**

1. **Dr. Krunoslav Capak, MD**, Director for the Croatian Institute for Public Health, Croatia - "Infodemic in the COVID-19 pandemic" (52)
2. **Dr. Pavle Jeličić, MD, MHM, PhD**, Epidemiology and environmental health specialist, Croatian Institute for Public Health, Croatia - "Croatian experience in health crisis management" (47)
3. **Cdr. (ret.) Dr. Stef Stienstra**, Active Technology Transfer Europe, Beek-Ubbergen, The Netherlands - "Emerging biological threats disrupt both society and military operations" (24)
4. **Dr. Mzia Kutateladze**, Director, G. Eliava Institute of Bacteriophages, Microbiology and Virology, Republic of Georgia - "Future Biological Threats – Re-examining the role of Bacteriophages in Modern Biological Event Response" (11)

- **12:30-13:30** – Lunch

### **13:30-15:00 Sector 6: Biological Threats - Session II**

**Chair: Mr. Dave Trudil; Co-Chair: Prof. CPT Kenneth Martinez, INL**

#### **Speakers**

1. **COL. (ret) Dr. Zvonko Orehovec et al**, University of Zagreb, Croatia - "Biological defense through the Civil Protection system: analysis and suggestions from the perspective of CBRN defense doctrine" (62)
2. **Mr. Bryon Marsh, MPH**, Idaho National Laboratory, USA - "Reducing Biological Risk in the Built Environment: Biodefense Research Capability and Testbed Development" (67)
3. **Capt. (ret. USPHS) Kenneth F. Martinez**, Senior Critical Infrastructure Analyst, Infrastructure Security - "Amerithrax 22 Years Later – The Case for Environmental Surveillance for Intentional Releases of Infectious Agents and Emerging Infectious Diseases" (55)
4. **Dr. János Pálhalmi**, DataSenseLabs Ltd., Budapest, Hungary - "Cross-validation based approach to develop and evaluate an AI-supported microscopy platform to detect and classify airborne biothreat" (53)
5. **David Trudil**, New Horizons Diagnostics Corp., Baltimore, MD. USA – "Determination of Immune Status by Detection of Mucosal Immune Antibodies in Saliva" (61)
6. **Dr. Mohammed Gh. Al-Gburi**, Iraqi Ministry of Science & Technology, Iraq - "Biorisk Management Network" (77)

- **15:00-15:15** – Break

### **15:15-16:30 Sector 7: Asymmetric Threats - Intelligence - Counter-Terrorism**

**Chair: Mr. Mason Soule; Co-Chair Mr. Bobby R. Baker**

**Introduction:** The proliferation of weapons of mass destruction, terrorism, financial crime, and cyber-attacks are examples of asymmetric warfare, and some of the leading global security

challenges of the 21<sup>st</sup> century. In this session we will explore the consequences inflicted on governments, personnel, and critical infrastructure. How will Intelligence agencies adapt and respond to the new threats and what role will counterterrorism assets play?

- a) CBRNe and WMD Indications & Warning
- b) CBRNe and WMD Scientific & Technical Intelligence (CBRNe S&T)
- c) CBRNe and WMD Threat Assessment
- d) CBRNe and WMD Target Intelligence

### **Speakers**

1. **Prof. Roberto Mugavero**, European Centre for Disaster Medicine, Unirsm, Osdife, Unitov, Italy - "AI, CBRNe Intel and Info sharing" (35)
2. **Prof. Peter Leitner**, National Intelligence University, USA - "Strategic dispersal of CBRN Defense materials for the protection of civilian populations: reviving Civil Defense thinking" (38)
3. **Mr. Mason Soule**, Senior Fellow, Civil Council for Defense and Security, Tblisi, Republic of Georgia - "Introduction to PISCES-INTL, A Cybersecurity Partnership Among Academic Institutions and Under-Served Community Organizations" (36)
4. **Mr. Bobby R. Baker, Jr** B.A.Sc., M.P.S. Principal Training Specialist, Counter-Terrorism Division, Mission Support and Test Services – "Technology and Talent: The Synergistic Combination needed to Protect Critical Infrastructure" (65)

### **16:30-17:00 Congress Closing Remarks**

**Friday 27 October 2023**

- **From 05:00** - Transfers to Dubrovnik Airport