


# Technologies for Defense and Security

## TORINO, ITALY / NOVEMBER 4-6, 2026

## [ FINAL PROGRAM ]

TECH DEFENSE

Technologies for Defense and Security

TORINO2026

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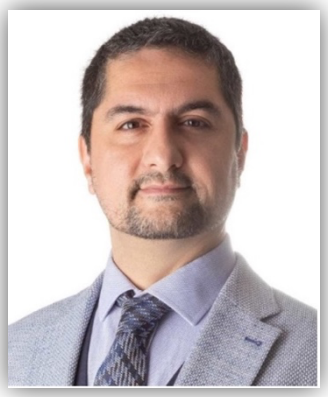
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# IEEE TechDefense 2026 Keynote Speakers

## Keynote Lecture - Wednesday November 4 - H 15:00



## Uncertainty-Aware AI for Trustworthy Sensing and Decision Support in Defense and Security

Shervin **Shirmohammadi**
*University of Ottawa, Canada*

## ABSTRACT

Artificial intelligence is increasingly embedded in defense and security technologies, including imaging and sensing, radar, sonar and acoustic signal processing, multisensor data fusion, marine and underwater systems, surveillance, transportation, and logistics. In these applications, measurements are used to train AI models, while AI models are used for indirect measurement, detection, classification, tracking, diagnosis, and prediction. For safety- and mission-critical systems, however, an AI output must be accompanied by an indication of its reliability. Measurements may be noisy, incomplete, corrupted, mutually inconsistent, or acquired under conditions that differ substantially from the training data. Uncertainty quantification is therefore essential for risk-aware decision making, robust sensor fusion, human–machine collaboration, and trustworthy deployment.

This talk examines uncertainty-aware AI for defense and security applications. It introduces the use of AI for indirect measurement and decision support in imaging, radar, sonar, acoustic, marine, underwater, surveillance, transportation, and logistics systems. We discuss uncertainty in AI regression, classification, and large language models. The talk presents a unified taxonomy from the perspective of both AI and measurement science. Finally, examples from the literature are used to show how uncertainty can support more reliable, resilient, interpretable, and trustworthy AI-enabled technologies for defense and security.

## SPEAKER BIOGRAPHY

**Shervin Shirmohammadi** received his Ph.D. in Electrical Engineering in 2000 from the University of Ottawa, Canada, and after spending 3 years in the industry as a senior architect and project manager, joined as Assistant Professor the same University, where since 2012 he has been a Full

Professor with the School of Electrical Engineering and Computer Science. He is Director of the Discover Laboratory, doing research in AI-assisted measurements and sensing systems, specifically fundamentals of AI in measurement, human behavior and activity sensing, multimedia systems and network measurements, IoT measurements, and biomedical measurements. The results of his research, funded by more than $28 million from public and private sectors, have led to over 450 publications, over 80 researchers trained at the postdoctoral, PhD, and Master's levels, 40 patents and technology transfers to the private sector, and five Best Paper awards. He was the Founding Editor-in-Chief of the IEEE Open Journal of Instrumentation and Measurement in 2022 and 2023, the Editor-in-Chief of the IEEE Transactions on Instrumentation and Measurement from 2017 to 2021, and the Associate Editor-in-Chief of IEEE Instrumentation and Measurement Magazine in 2014 and 2015, and is currently on the latter's editorial board.

He has been on the Administrative Committee (AdCom) of the IEEE Instrumentation and Measurement Society (IMS) since 2014, currently serves as IMS's President, and was a member of the IEEE I2MTC Board of Directors from 2014 to 2016.

Dr. Shirmohammadi is an IEEE Fellow "for contributions to multimedia systems and network measurements", and recipient of the 2019 George S. Glinski Award for Excellence in Research, the 2021 IEEE IMS Distinguished Service Award, and the 2023 IEEE IMS Technical Award "for contributions to the advancement of machine learning-assisted measurements".

## Keynote Lecture - Thursday November 5 - H 11:00



# The Space Economy and the Role of Human Skills

Claudio **Gabellini**
*Italian Air Force*

## ABSTRACT

The space economy represents the set of economic activities related to the exploration, development, and use of outer space. This sector includes the design and construction of satellites, launch vehicles, and space infrastructure, as well as the provision of space-based services, such as telecommunications, navigation, Earth observation, and environmental monitoring. Its growth has been driven by technological advances, collaboration between public and private entities, and the growing demand for innovative services.
In this context, human skills play a central role as creators, designers, researchers, and users of space technologies. Through the work of engineers, scientists, astronauts, technicians, and entrepreneurs, the Space Economy contributes to the production of knowledge, innovation, and improved quality of life.
The main benefits of space activities include natural resource management, climate change monitoring, natural disaster prevention, and support for global communications and navigation systems. Looking to the future, humans skill intervention will be crucial for the development of space tourism, the construction of permanent bases on the Moon, the exploration of Mars, and the sustainable use of extraterrestrial resources. The Space Economy is therefore a strategic sector in which human ingenuity and activity are the main drivers of innovation, growth, and development.

## SPEAKER BIOGRAPHY

Lieutenant General (Ret.) **Claudio Gabellini** served for more than forty years in the Italian Air Force, holding senior operational and leadership appointments at both national and international level. A fighter pilot with extensive experience on frontline jet aircraft, he also served as a Flight Instructor and Operational Tactics Instructor, accumulating over 2,700 flying hours on several aircraft types, including the MB-339, F-104S and Tornado. During his career, he took part in real-world operations in the Balkans and, in 1999, as Commander of the 102nd Squadron, in Operation Allied Force over Serbia and Kosovo, for which he was awarded the

honour of Knight of the Military Order of Italy. He subsequently held important operational and command appointments at both national and international level, developing solid expertise in Command and Control, as well as in the planning and execution of complex air operations. In 2011, he was involved in operations in Libya, first during Operation Odyssey Dawn aboard USS Mount Whitney, and later in Operation Unified Protector, where he served as Chief of the Targeting Directorate at the Combined Joint Task Force Headquarters in Bagnoli. For his service, he was awarded the Bronze Medal of Aeronautical Merit and the NATO Meritorious Service Medal. Among his most senior appointments, General Gabellini served as Commander of the Italian Air Force Combat Forces and later as Chief of Staff at NATO Allied Air Command Headquarters in Ramstein, becoming the first Italian officer to hold that position. From 2019 to 2024, he commanded the Italian Air Operations Command, later redesignated as the Aerospace Operations Command, personally leading activities of major strategic relevance, including the daily protection of national airspace, Operation Aquila Omnia for the evacuation of more than 3,000 Afghan citizens from Kabul, the direct management of complex crisis and emergency situations such as the air rescue response during the 2023 Emilia-Romagna floods, and the strengthening of national airspace protection during the G7 Summit in Borgo Egnazia. For his service during the COVID-19 pandemic, he was awarded the Silver Medal for Aeronautical Valour and, at the conclusion of his career, was appointed Commander of the Order of Merit of the Italian Republic. He holds a degree in Aeronautical Sciences, a second-level Master's degree in International Security Advanced Studies, and is fluent in English and French. His profile combines outstanding leadership, combat experience, command and control expertise, planning and execution of complex air operations, crisis and emergency management, and high-level international cooperation. He currently speaks and writes on topics such as the global geopolitical environment, the evolution of drones, artificial intelligence in modern operational contexts, integrated air and missile defence extended to the space domain, and the evolution of rules of engagement and accountability in the use of force in connection with emerging technologies and advanced weapons systems in contemporary conflicts.

## Keynote Lecture - Friday November 6 - H 11:30



# Advanced Functional Materials and Optical Spectroscopies for CBRNe Defense: From Threat Identification to Smart Mitigation

Chiara **Bisio**
*Università del Piemonte Orientale, Italy*

## ABSTRACT

The effective management of Chemical, Biological, Radiological, and Nuclear (CBRNe) threats require integrated technological strategies capable of bridging rapid on-site detection with sustainable, non-destructive mitigation.

Conventional decontamination procedures often rely on aggressive stoichiometric reagents or thermal degradation, which present severe operational limitations, high environmental impact, and potential damage to sensitive equipment, textiles, and personnel. This contribution presents a comprehensive overview of how optical spectroscopic techniques (such as FTIR, Raman, and luminescence techniques) can be seamlessly integrated with advanced functional nanomaterials to provide dual-action CBRNe defense platforms.

Special emphasis is placed on engineered porous frameworks and multi-element nanostructured architectures designed for real-time threat identification and active catalytic abatement under mild environmental conditions (room temperature and ambient pressure). By tailoring surface acidity, active redox sites, and interfacial properties, catalytic matrices achieve rapid and highly selective oxidative decomposition of toxic chemical targets, including sulphur mustard simulants and live chemical warfare agents, using environmentally benign oxidants. Furthermore, the strategic incorporation of optically active probe centres into the inorganic host yields bifunctional platforms capable of simultaneously promoting target degradation and signalling the reaction progress through real-time photoluminescence variations.

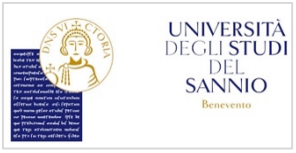
Finally, the translation of these smart nanostructured materials into field-deployable operational systems will be discussed. Case studies will illustrate hybrid solid-state formulations integrated into dry-spray delivery devices, active decontamination pads, and textile-compatible treatments. Validated through handheld field detectors and live agent testing, these advanced functional materials offer a versatile and eco-sustainable paradigm for next-generation CBRNe monitoring and resilience.

## SPEAKER BIOGRAPHY

**Chiara Bisio** is Associate Professor of Physical Chemistry at the Department of Sciences and Technological Innovation of the University of Piemonte Orientale (UPO). Since November 2024, she also serves as the Rector's Delegate for Orientation and Tutoring at UPO. She graduated cum laude with special mention in Chemistry from UPO in 2001 and obtained her PhD in Chemical Sciences in 2005 under a joint-supervision agreement between the University of Turin (Italy) and Pierre and Marie Curie University (Paris, France). She has maintained a strong long-term scientific collaboration with the CNR-SCITEC Institute of Chemical Sciences and Technologies in Milan, where she served as a Research Associate from 2009 to 2025. She is the Chair of the International Advisory Board for the International Symposium on Intercalation Compounds (ISIC), a member of the Scientific Committee of CRIMEDIM (Research Center in Emergency and Disaster Medicine), and member of the Joint Technical-Scientific Committee of the RisPA Center (Research and Development Centre for Environmental Remediation and Protection, established in 2024 in collaboration with Syensqo). Recently, she was elected Fellow of the Academy of Sciences of Turin. Her research interests focus on the synthesis, physico-chemical characterization, and functional tuning of porous and layered solids with controlled morphology, chemical composition, and surface properties. These functional materials are developed for environmental and energy applications, including heterogeneous catalysts for the degradation of toxic agents, emerging pollutants, and biological hazards. She authored over 120 publications, 3 book chapters, and 2 patents.

# IEEE TechDefense 2026 Patronages











































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# Program Schedule - Wednesday, November 4

| WEDNESDAY, NOVEMBER 4 | | | |
|---|---|---|---|
| | Salone delle Feste | Salone Quadrato | Saletta Barocca |
| 11:30 - 13:10 | S1.1 - General Session | S1.3 - Special Session #02: Cybersecurity and AI Technologies for Reliable and Efficient Critical Defense Systems | S1.3 - Special Session #12: Chemical and Biotechnological Innovations for Defense, Security and CBRNe Resilience |
| 13:10 - 14:30 | LUNCH | | |
| 14:30 - 15:00 | Salone delle Feste - Opening Ceremony - Welcome Addresses | | |
| 15:00 - 15:45 | Salone delle Feste - Keynote Lecture - Shervin Shirmohammadi<br>Uncertainty-Aware AI for Trustworthy Sensing and Decision Support in Defense and Security | | |
| 15:45 - 16:10 | COFFEE BREAK | | |
| | Salone delle Feste | Salone Quadrato | Saletta Barocca |
| 16:10 - 17:50 | S2.1 - Special Session #10: Artificial Intelligence for Military Knowledge, Information Analysis and Decision Support | S2.2 - Special Session #09: From Semiconductors to Systems: Advanced RF Circuits and Platform Integration for Space Defense Markets | S2.3 - General Session - PART II |
| | | | |
| 19:00 - 20:30 | WELCOME PARTY<br>Circolo Ufficiali Torino | | |

# Program Schedule - Thursday, November 5

| THURSDAY, NOVEMBER 5 | | | |
|---|---|---|---|
| | Salone delle Feste | Salone Quadrato | Saletta Barocca |
| 09:00 - 10:40 | S3.1 - Special Session #03: Innovation in Education, Leadership, Critical Thinking and Technology in Security and Defence - PART I | S3.2 - Special Session #07: Battlefield Operational Technology and IA for Secure CyberPhysical Systems | S3.3 - Special Session #01: Trusted Coordination and Bounded Autonomy for Agentic AI in Defense: Hardware and Software Perspectives |
| 10:40 - 11:00 | COFFEE BREAK | | |
| 11:00 - 11:45 | Salone delle Feste - Keynote Lecture - Claudio Gabellini<br>The Space Economy and the Role of Human Skills | | |
| 11:45 - 13:00 | Salone delle Feste - AFCEA Panel - The Human Factor in Space Mission Design: From Space Medicine to Astronaut Training on Earth | | |
| 13:00 - 14:30 | LUNCH | | |
| | Salone delle Feste | Salone Quadrato | Saletta Barocca |
| 14:30 - 15:50 | S4.1 - Special Session #03: Innovation in Education, Leadership, Critical Thinking and Technology in Security and Defence - PART II | S4.2 - Special Session #11: Digital Technologies, AI, GIS and Intelligent BIM for Defense Infrastructure Security Governance and Efficiency - PART I | S4.3 - Special Session #04: Modern Defense Technologies and Countermeasure Systems Against Contemporary Aerial Threats - PART I |
| 15:50 - 16:15 | COFFEE BREAK | | |
| 16:15 - 17:45 | Salone delle Feste - ROUND TABLE - Higher Education for Security and Defence: Innovation and International Collaboration | | |
| | | | |
| 19:30 - 22:00 | GALA DINNER<br>Circolo Ufficiali Torino | | |

# Program Schedule - Friday, November 6

| FRIDAY, NOVEMBER 6 | | | |
|---|---|---|---|
| | Salone delle Feste | Salone Quadrato | Saletta Barocca |
| 09:30 - 11:10 | S5.1 - Special Session #04: Modern Defense Technologies and Countermeasure Systems Against Contemporary Aerial Threats - PART II | S5.2 - Special Session #11: Digital Technologies, AI, GIS and Intelligent BIM for Defense Infrastructure Security Governance and Efficiency - PART II | S5.3 - Special Session #05: Methodologies to Optimise All-Terrain and UGV Vehicle Performance |
| 11:10 - 11:30 | COFFEE BREAK | | |
| 11:30 - 12:15 | Salone delle Feste - Keynote Lecture - Chiara Bisio<br>Advanced Functional Materials and Optical Spectroscopies for CBRNe Defense: From Threat Identification to Smart Mitigation | | |
| 12:15 - 13:30 | LUNCH | | |
| | Salone delle Feste | Salone Quadrato | Saletta Barocca |
| 13:30 - 15:10 | S6.1 - Special Session #04: Modern Defense Technologies and Countermeasure Systems Against Contemporary Aerial Threats - PART III | S6.2 - Special Session #11: Digital Technologies, AI, GIS and Intelligent BIM for Defense Infrastructure Security Governance and Efficiency - PART III | S6.3 - Special Session #06: Young Researchers' Activities in Technologies for Defense and Security |
| 15:10 - 15:30 | Salone delle Feste - Closing and Award Ceremony | | |

# Museum and Guided Tours

During the conference, participants can visit two Turin museums devoted to the city's military history, both located in the Citadel area. Guided tours of each museum are scheduled on specific dates and times; during all other opening hours, access is free. However, at the Pietro Micca Museum, the self-guided visit does not include access to the underground tunnels.

## GUIDED TOUR SCHEDULE

**Wednesday 4 November** - 10:00 - 11:00 - Pietro Micca Museum - **Up to 15 people**
**Thursday 5 November** - 14:30 - 15:30 - Artillery Museum
**Friday 6 November** - 13:30 - 14:30 - Pietro Micca Museum - **Up to 15 people**
**Friday 6 November** - 16:00 - 17:00 - Pietro Micca Museum - **Up to 15 people**

* Access is free during all other opening hours.

Pietro Picca Museum
Address: Via Generale Guido Amoretti 7a, Torino
Opening Hours - Tuesday – Saturday: 10:00 - 18:00
Monday and Sunday: Closed

Artillery Museum - Museo dell'Artiglieria
Address: Mastio della Cittadella, Corso Galileo Ferraris 2, Torino
Opening Hours - Monday – Thursday: 09:30 – 12:30 | 13:30 – 16:30
Friday: 09:30 – 12:30
Saturday and Sunday: Closed

# Technical Program - Wednesday, November 4

| | |
|---|---|
| *10:00 - 11:00* | *Museum and Guided Tour*<br>**PIETRO PICCA MUSEUM -** Meeting Point Registration Desk.<br>Up to 15 people |

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|---|---|
| *10:30 - 18:00* | *Circolo Ufficiali di Torino*<br>**REGISTRATIONS** |

| | |
|---|---|
| *11:30 - 12:50* | *Salone delle Feste*<br>**S1.1 - General Session**<br>**Chair:** Salvatore Ponte, *University of Campania L. Vanvitelli, Italy* |

**11:30** **Magnetically Tunable Čerenkov THz Sources Based on Graphene Confined Structures for Secure THz Communications**
Michela Longhi (Niccolò Cusano University, Italy); Davide Mencarelli (Università Politecnica Delle Marche, Italy); Alessandro Toscano (Roma Tre University, Italy); Luca Pierantoni (Universita Politecnica delle Marche, Italy)

**11:50** **Dynamic Replanning with a Hierarchical Deliberative Architecture for an Underwater Minehunting Application**
Rafael Bailon-Ruiz (ONERA, France); Matthieu Bauche (Thales DMS, France); Florian Digne (Thales Systemes Aéroportés & ENSTA Bretagne, France); Charles Lesire (ONERA, France); Ludovic Marchal and Bruno Quellec (Thales DMS, France)

**12:10** **Unmanned Vehicles in EU Navies: Core Missions and Regional Market Dynamics**
Paola Fratantoni (Zanasi & Partners, Italy)

**12:30** **Experimental Assessment of RIS-Aided Authentication Using the BRISC Dataset**
Mattia Piana, Anna Guglielmi and Stefano Tomasin (University of Padova, Italy)

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| *11:30 - 13:10* | *Salone Quadrato*<br>**S1.2 - Cybersecurity and AI Technologies for Reliable and Efficient Critical Defense Systems**<br>**Chair:** Alan Oliveira, *University of Lisbon, Portugal* |

**11:30** **Rapid Post-Attack Restoration of Damaged Industrial Control Systems via Resilient IPv6-over-LoRaWAN Emergency Infrastructure**
Emiliano Sisinni, Massimiliano Gaffurini, Alessandro Depari, Dennis Brandão and Paolo Ferrari (University of Brescia, Italy)

**11:50** **Developing Solar-Based Energy Resilience and Security - Case of Ukraine**
Olga Degtiareva (Odessa National Economic University, Ukraine); Stanislav Horbachenko (National University Odesa Low Academy, Ukraine); Volodymyr Hura

(National University Odesa Law Academy, Ukraine); Natalia Shyriaieva (National Technical University Kharkiv Polytechnic Institute, Ukraine); Tetiana Kuklinova (Odessa National Economic University, Ukraine); Oleksandr Zadereiko (National University Odesa Law Academy, Ukraine); Serhii Levchenko (International University, Ukraine)

**12:10** **AI-Specific Threat Scenario Modelling for Security Risk Assessment of Aviation Digital Assistants**
Domenico Pascarella (CIRA scpa, Italy); Gabriella Gigante (CIRA - Italian Aerospace Research Centre, Italy)

**12:30** **Gradient-Based Defensive Poisoning Against System Identification Attacks on Cyber-Physical Systems**
Gonçalo Fernandes (LASIGE, Universidade de Lisboa, Portugal); José Cecílio (University of Lisbon / Lasige, Portugal); Victor Mattos (Federal University of Rio de Janeiro, Brazil); Daniel Sadoc Menasche (Federal University of Rio de Janeiro (UFRJ), Brazil); Amit Bhaya (Federal University of Rio de Janeiro & COPPE, Brazil); Alan Oliveira (University of Lisbon, Portugal)

*11:30 - 12:50* *Saletta Barocca*
**S1.3 - Chemical and Biotechnological Innovations for Defense, Security and CBRNe Resilience**
**Chairs:** Giuseppe Ferrauto, *University of Torino, Italy*
Enza Di Gregorio, *University of Torino, Italy*

**11:30** **From the Bench to the Battlefield: A Practical Perspective on Biological and Chemical Warfare by Non-State Actors. the AI Case Study**
Andrea Beccaro (University of Turin, Italy); Giuseppe Ferrauto (University of Torino, Italy); Angelo Scarciglia and Diletta Isabella Zanin Venturini (University of Turin, Italy)

**11:50** **From CBRN Threat Perception to Civil Preparedness: Risk Awareness, Trust and Civil Resilience**
Enza Di Gregorio, Anastasia Toti, Giuseppe Petrolo and Giuseppe Ferrauto (University of Torino, Italy)

**12:10** **Supramolecular Nanosystems for CBRNe Defense: A Fit-for-Purpose Operational Selectivity Framework for Detection, Protection, and Remediation**
Enza Di Gregorio (University of Torino, Italy); Angelo Scarciglia (University of Turin, Italy); Giuseppe Ferrauto (University of Torino, Italy)

**12:30** **Decoding Alzheimer's Onset: Entropic Dynamics, Topological Knots, and Hybrid Markov-LSTM Models**
Alfonso Farina (Leonardo Company Consultant, Italy); Giovanni B. Palmerini (Sapienza Università di Roma, Italy); Salvatore Ponte (University of Campania 'L. Vanvitelli', Italy); Francesco De Angelis (Sapienza Università di Roma, Italy); Stefano Carletta (Sapienza University of Rome, Italy); Francesco C Morabito and Luigi Bibbo (University Mediterranea of Reggio Calabria, Italy); Amir Hussain (Kinf Fahd University of Petroleum and Minerals (KFUPM), Saudi Arabia)

| | |
|---|---|
| *13:00 - 14:30* | *Circolo Ufficiali di Torino*<br>**LUNCH** |

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| *14:30 - 15:00* | *Salone delle Feste*<br>**OPENING CEREMONY - WELCOME ADDRESSES** |

| | |
|---|---|
| *15:00 - 15:45* | *Salone delle Feste*<br>**KEYNOTE LECTURE**<br>**Chair:** Luca De Vito, *University of Sannio, Italy* |

## Uncertainty-Aware AI for Trustworthy Sensing and Decision Support in Defense and Security

Shervin Shirmohammadi, *University of Ottawa, Canada*

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| *15:45 - 16:10* | *Circolo Ufficiali di Torino*<br>**COFFEE BRAK** |

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| *16:10 - 17:30* | *Salone delle Feste*<br>**S2.1 - Artificial Intelligence for Military Knowledge, Information Analysis and Decision Support**<br>**Chairs:** Mario Linares-Vásquez, *Universidad de los Andes, Colombia*<br>Alexandra Zabala López, *Colombian Aerospace Force, Colombia* |

**16:10** **Human-AI Teaming for Human Factors Analysis in Military Aviation Safety Events**
Marco Gajetti (Politecnico di Torino, Italy & Sirio Airlines Spa , AIMAS association of Italian aeronautical/aerospace medicine, Italy); Laura Piccardi (Università la Sapienza Roma, Italy); Paola Verde and Luca Spera (Colonel Italian Air Force, Italy); Paolo Maggiore (Politecnico di Torino, Italy)

**16:30** **Bridging ADCs and Environments: Investigating Test-Time Training and CORAL for Radar SEI**
Ryan H White and Matthew Ritchie (University College London, United Kingdom (Great Britain)); Adam Hosford (DSTL, United Kingdom (Great Britain))

**16:50** **Responsible Military AI in the Italian Legal Order: Meaningful Human Control Beyond Biometric Verifiability**
Giorgio Volta, Federico Valletta, Giacomo Longo and Alessio Merlo (CASD - School of Advanced Defense Studies, Italy)

**17:10** **Channel-Based Physical Layer Authentication with Spiking Neural Networks and RIS**
Cesare Bidini, Mattia Piana and Stefano Tomasin (University of Padova, Italy)

*16:10 - 17:50* *Salone Quadrato*

**S2.2 - From Semiconductors to Systems: Advanced RF Circuits and Platform Integration for Space Defense Markets**

**Chairs:** Alessandro Fonte, *SIAE Microelettronica*
Luigi Boccia, *University of Calabria, Italy*

**16:10** **Microelectronics for Strategic Sovereignty: The Role of Fondazione Chips-IT in Empowering the Space and Defense Industry**
Carlo Reita (Fondazione Chips-IT, Italy)

**16:30** **An Integrated SAR Payload and on-Board Processor for NewSpace Earth Observation Missions**
Antonio Traversa (Aresys, Italy); Paolo Falcone (Aresys srl, Italy); Simone Mancon and Letizia Lubrano (Aresys Srl, Italy)

**16:50** **Gallium Nitride Single-Chip Front Ends for Spaceborne SAR: RF Tradeoffs and Payload Integration**
Patrick Ettore Longhi (University of Roma Tor Vergata, Italy); Ernesto Limiti (University of Rome Tor Vergata, Italy)

**17:10** **From Switched-Beam Architectures to mm-Wave Integration: Practical Design Insights for Highly Integrated SatCom Terminals**
Luigi Boccia (University of Calabria, Italy); Francesco Greco (Antecnica Srls, Italy); Emilio Arnieri (University of Calabria, Italy); Giandomenico Amendola (University of Calabria, USA)

**17:30** **A 49-dBm Dual-Band GaN High-Power Amplifier with Conjugate Intermediate Matching**
Puyuan Deng, Anna Piacibello and Vittorio Camarchia (Politecnico di Torino, Italy)

*16:10 - 17:50* *Saletta Barocca*

**S2.3 - General Session - PART II**

**Chair:** Pasquale Daponte, *University of Sannio, Italy*

**16:10** **Co-Radar, ISAC, and ISAC at Integrated Systems Level: A Review**
Alfonso Farina (Leonardo Company Consultant, Italy); Salvatore Ponte (University of Campania 'L. Vanvitelli', Italy); Carmine Clemente (University of Strathclyde, United Kingdom (Great Britain)); Salvatore Celentano (Leonardo spa, Italy)

**16:30** **Reconfigurable Antennas for Beam Steering and Polarization Switching**
Lucia Teodorani (Fondazione LINKS, Italy); Giorgio Giordanengo (LINKS Foundation, Italy); Marcello Zucchi (Fondazione LINKS, Italy); Shaghayegh Samadzadehghezelghayeh (Politecnico di Torino, Italy); Rossella Gaffoglio (Fondazione LINKS, Italy); Giuseppe Vecchi (Politecnico di Torino, Italy)

**16:70** **On the Capabilities and Limitations of Vortex (OAM) Radar: A Simulation-Based Study**
Łukasz Maślikowski (Warsaw University of Technology, Poland); Rossella Gaffoglio (Fondazione LINKS, Italy); Giuseppe Vecchi (Politecnico di Torino, Italy); Alberto Lupidi (CNIT & RaSS, Italy)

**17:10** **Digital Sidelobe Canceller for Range Ambiguity Suppression in Small-Satellite SAR**
Stefania Belvedere and Andrea Quirini (Sapienza University of Rome, Italy); Pierfrancesco Lombardo (University of Rome La Sapienza, Italy)

**17:30** **Validation of Online Pattern-Learning Predictive Perception Action Cycle Radar Under Power-Varying Interference**
Rikki Masson and Matthew Ritchie (University College London, United Kingdom (Great Britain))

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| *19:00 - 20:30* | *Circolo Ufficiali di Torino*<br>**WELCOME PARTY** |

# Technical Program - Thursday, November 5

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| *08:30 - 18:00* | *Circolo Ufficiali di Torino*<br>**REGISTRATIONS** |

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| *09:00 - 10:00* | *Salone delle Feste*<br>**S3.1 - Innovation in Education, Leadership, Critical Thinking and Technology in Security and Defence - PART I**<br>**Chairs:** Cristian-Emil Moldoveanu, *Military Technical Academy Ferdinand I of Bucharest, Romania*<br>Andrada Livia Cirneanu, *Military Technical Academy Ferdinand I of Bucharest, Romania* |

**09:00** **Scenario-Based Mathematical Modelling in Security and Defence Education: Students' Perceptions of Engagement, Skills Development and Interest in Mathematics**
Alice Barana, Giulia Boetti, Cecilia Fissore, Marina Marchisio Conte and Fabio Roman (University of Turin, Italy)

**09:20** **Developing Multi-Domain Decision-Making Through Progressive Cyber-Social Security Education: A Challenge-Based Learning Framework**
Vita Santa Barletta (University of Bari, Italy); Danilo Caivano (Università di Bari, Italy); Gabriel Cellammare (IMT Lucca, Italy); Samuele del Vescovo (IMT School for Advanced Studies Lucca, Italy); Rebecca Margiotta (University of Bari Aldo Moro, Italy); Davide Pio Posa (SER&P Spin-off Università di Bari, Italy)

**09:40** **The European Common Technical Semester as a Model for International Competence Development**
Cristian-Emil Moldoveanu (Military Technical Academy Ferdinad I, Romania); Andrada Livia Cirneanu and Alin Constantin Sava (Military Technical Academy Ferdinand I, Romania)

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| *09:00 - 10:20* | *Salone Quadrato*<br>**S3.2 - Battlefield Operational Technology and IA for Secure CyberPhysical Systems**<br>**Chair:** Antonio Mario Caruso, *University of Salento, Italy* |

**09:00** **Understanding the Adversarial Machine Learning Risk in Multi-Domain Operations: The Sign-OPT Attack on Tactical Autonomous Vehicles**
Vita Santa Barletta (University of Bari, Italy); Danilo Caivano (Università di Bari, Italy); Christian Catalano (University of Bari Aldo Moro, Italy); Samuele del Vescovo (IMT

School for Advanced Studies Lucca, Italy); Massimiliano Morga (SER&P - Spin-off of University of Bari Aldo Moro, Italy); Antonio Piccinno (University of Bari, Italy)

**09:20** **Managing Inherent Risk: On the Conceptualization of Risk in Defense Systems**
Niklas Braun, Leon J Brettin, Marvin Loba and Markus Maurer (Technische Universität Braunschweig, Germany)

**09:40** **Drone Interception for Critical Infrastructure Defense: Formal Modeling, Optimization, and Dynamic Matching**
Antonio Mario Caruso (University of Salento, Italy); Stefano Chessa (Universita' di Pisa, Italy); Camilla Poggianti (University of Pisa, Italy)

**10:00** **High-Resolution Short-Data Formant Estimation via Gold-Fourier Kaluri Method**
Venkata Rangarao Kaluri (Ohio State University, USA)

*09:00 - 10:40* *Saletta Barocca*
**S3.3 - Trusted Coordination and Bounded Autonomy for Agentic AI in Defense: Hardware and Software Perspectives**
**Chair:** Uwe M. Borghoff, *University of the Bundeswehr Munich, Germany*

**09:00** **Hardware-Enforced Semantic Coordination for Safety-Critical Real-Time Autonomous Systems**
Uwe Borghoff (University of the Bundeswehr Munich, Germany); Paolo Bottoni (Sapienza - University of Rome, Italy); Remo Pareschi (University of Molise, Italy)

**09:20** **Trusted Coordination Boundaries for Agentic AI in Defense: Capability, Assurance, and Authority**
Michael Romei de Socio (CASD - School of Advanced Defense Studies & University of Turin); Gian Luca Pozzato (Università di Torino, Italy); Alessio Merlo (CASD - School of Advanced Defense Studies, Italy)

**09:40** **Beyond Measurement: Cybersecurity Assessment of Modern Laboratory Instrumentation**
Ettore Ermes Pennucci (University of Sannio, Italy); Francesco Picariello (Universitas Mercatorum, Italy); Eulalia Balestrieri, Pasquale Daponte, Luca De Vito, Enrico Picariello, Sergio Rapuano and Ioan Tudosa (University of Sannio, Italy)

**10:00** **Evaluating LLMs for Source Fidelity in Testimony-Based Intelligence Analysis**
Pietro Baroni, Federico Cerutti, Massimiliano Giacomin, Andrea Loreggia and Enrico Scala (University of Brescia, Italy)

**10:20** **Crypto-Agile Post-Quantum Blockchain: Architecture and Experimental Validation of Multi-Algorithm Migration**
Everaldo Alves (CASNAV, Brazil); Carlos Magno Oliveira de Abreu (Instituto de Pesquisas da Marinha, Brazil); Augusto Parisot (Universidade Federal Fluminense, Brazil); Rafael da Silva Oliveira (Centro de Análises de Sistemas Navais (CASNAV), Brazil)

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| *10:40 - 11:00* | *Circolo Ufficiali di Torino*<br>**COFFEE BRAK** |

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| *11:00 - 11:45* | *Salone delle Feste*<br>**KEYNOTE LECTURE**<br>**Chair:** Giovanni Savoldelli Pedrocchi, *AFCEA Chapter of Naples* |

## The Space Economy and the Role of Human Skills

Claudio Gabellini, *Italian Air Force*

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| *11:45 - 13:15* | *Salone delle Feste*<br>**AFCEA PANEL**<br>**Moderator:** Giovanni Savoldelli Pedrocchi, *AFCEA Chapter of Naples* |

## The Human Factor in Space Mission Design: From Space Medicine to Astronaut Training on Earth

**PANELLISTS**

Lieutenant General (Ret.) Claudio Gabellini - *Italian Air Force*
**The space economy and the human skills**

Eng. Pasquale Dell'Aversana and Arturo Moccia - *Lead Tech*
**An Expandable Home on the Moon**

Col. Paola Verde - *Comando Logistico, Italian Air Force*
**Moon: defying human physiology**

Dr Alessandro Stronati - *Università Sacro Cuore Roma- Istituto per la medicina d'emergenza in montagna (EURAC) Bolzano*
**Hibernation: from torpor to space travel**

Eng. Francesco Santoro - *Digisky*
**Space Habitat Medical Demonstrator: developing a structured pathway for the design, selection, integration, testing and accreditation of medical modules for astronauts health care in isolated austere and remote environment**

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| *13:15 - 14:30* | *Circolo Ufficiali di Torino*<br>**LUNCH** |

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| *14:30 - 15:30* | *Museum and Guided Tour*<br>**ARTILLERY MUSEUM -** Meeting Point Registration Desk. |

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| *14:30 - 15:50* | *Salone delle Feste*<br>**S4.1 - Innovation in Education, Leadership, Critical Thinking and Technology in Security and Defence - PART II**<br>**Chairs:** Enrico Spinello, *Italian Army Officers School, Italy*<br>Marina Marchisio Conte, *University of Turin, Italy* |

**14:30** **AI-Enabled Robotic Systems as a Training Framework for Critical Thinking and Human-in-the-Loop Decision-Making in Defence Education**
Andrada Livia Cirneanu (Military Technical Academy Ferdinand I, Romania); Cristian-Emil Moldoveanu (Military Technical Academy Ferdinad I, Romania); Alin Constantin Sava (Military Technical Academy Ferdinand I, Romania)

**14:50** **SPIRAL Model Based Design of a Microcredential on Moodle Use in Security and Defence Education**
Francesco Floris and Marina Marchisio Conte (University of Turin, Italy); Enrico Spinello (It-Army Officers School, Italy); Gianluca Torbidone (Italian Army Officers School, Italy)

**15:10** **From Learning to Research: An AI-Supported Framework for Enhancing Military Students' Research Engagement Through International Scientific Conferences**
Andrada Livia Cirneanu (Military Technical Academy Ferdinand I, Romania); Cristian-Emil Moldoveanu (Military Technical Academy Ferdinad I, Romania); Alin Constantin Sava (Military Technical Academy Ferdinand I, Romania); Małgorzata Grzelak (Military University of Technology, Warsaw, Poland); Marina Marchisio Conte (University of Turin, Italy); Enrico Spinello (It-Army Officers School, Italy); Linko Nikolov (National Military University Shumen, Bulgaria)

**15:30** **Scenario-Based Learning in Blended Intensive Programmes: Preparing Students for Future Careers in Security and Defence**
Alice Barana and Giulia Boetti (University of Turin, Italy); Antonino Cambria (University of Turin and High Defence Study Centre, Ireland); Marina Marchisio Conte (University of Turin, Italy); Enrico Spinello (It-Army Officers School, Italy)

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| *14:30 - 16:10* | *Salone Quadrato*<br>**S4.2 - Digital Technologies, AI, GIS and Intelligent BIM for Defense Infrastructure Security Governance and Efficiency - PART I**<br>**Chairs:** Donatella Rita Fiorino, *University of Cagliari, Italy*<br>Gianni Fenu, *University of Cagliari, Italy*<br>Roberto Tonelli, *University of Cagliari, Italy* |

**14:30** Introduction - Mario Sciandra (Gen. Isp., Direttore della Direzione Generale dei Lavori del Ministero della Difesa) - Gianni Fenu (Prorettore Vicario dell'Università degli Studi di Cagliari)

**14:50** **GENIOSISM Project: Methods and Tools for Seismic Risk Management of Defense Real Estate Assets**
Rosario Gigliotti (Sapienza University of Rome, Italy); Michele D'Amato (Basilicata University Potenza, Italy); Lorenzo Audisio, Raffaele Laguardia and Annarita Palmiotta (Sapienza University of Rome, Italy); Roselena Sulla (University of Basilicata, Italy); Matteo Tatangelo (Sapienza University of Rome, Italy); Francesca Mattei, Silvia Caprili and Walter Salvatore (University of Pisa, Italy); Franco Braga (Sapienza University of Rome, Italy); Domenico Filitti and Carmine Schiavone (TAB Consulting Srl, Italy)

**15:10** **From Digital Survey to Joint-Check: The IMASS-CHAIN Project for Intelligent Governance of Historical Defence Infrastructure**
Giovanna Concu, Donatella Rita Fiorino and Daniel Meloni (University of Cagliari, Italy); Simona Peroncini (Leonardo Company, Italy); Elisa Pilia and Emanuele Reccia (University of Cagliari, Italy); Vacca Giuseppina (Università degli Studi di Cagliari, Italy); Enrica Vecchi (University of Cagliari, Italy)

**15:30** **Architectural Conservation and Digital Governance of Military-Industrial Heritage: The Former Fuze Factory in Torre Annunziata, Italy**
Renata Picone (Università degli Studi di Napoli Federico II, Italy); Ersilia Fiore (University of Naples Federico II, Italy)

**15:50** **MIRRAAL Project: Design Methods and Technologies for Rapid Assembly of Modular Steel Buildings**
Rosario Gigliotti (Sapienza University of Rome, Italy); Michele D'Amato (Basilicata University Potenza, Italy); Lorenzo Audisio and Annarita Palmiotta (Sapienza University of Rome, Italy); Roselena Sulla (University of Basilicata, Italy); Matteo Tatangelo (Sapienza University of Rome, Italy)

*14:30 - 15:50* *Saletta Barocca*
**S4.3 - Modern Defense Technologies and Countermeasure Systems Against Contemporary Aerial Threats - PART I**
**Chairs:** Adam Kawalec, *Military University of Technology, Poland*
Witold Bużantowicz, *Military University of Technology, Poland*

**14:30** **Impact of Chirp Modulation Linearity on Range Estimation Accuracy in Low-Cost FMCW Radar for Counter-UAS Applications**
Arkadiusz Rolka, Stanisław Adam Grzywiński and Stanisław Żygadło (Military University of Technology, Poland)

**14:50** **Low-Cost Passive UAV Direction Finding Using Patch Antenna Arrays and SDR Platforms**
Aurelia Adamczak, Stanisław Adam Grzywiński, Marcin Wysocki and Wojciech Jakubik (Military University of Technology, Poland)

**15:10** **System-Driven Design and Experimental Validation of 10 GHz Microstrip Patch Arrays for Low-Cost Radar-Assisted UAV Tracking**
Marcin Wysocki, Stanisław Adam Grzywiński, Aurelia Adamczak and Wojciech Jakubik (Military University of Technology, Poland)

**15:30** **Requirements-Led Development of AI-Enabled Counter-UAS Capabilities: Linking Operational Needs, Experimentation, and Adoption**
Matteo Pallotti (University of Turin, Italy); Michael Romei de Socio (Centro Alti Studi Difesa - Scuola Superiore Universitaria & Università di Torino, Italy); Paolo Meridiani (University of Turin, Italy)

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| *15:50 - 16:15* | *Circolo Ufficiali di Torino*<br>**COFFEE BRAK** |

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| *16:15 - 17:45* | *Salone delle Feste*<br>**ROUND TABLE**<br>**Moderator:** Marina Marchisio Conte, *University of Torino, Italy* |

## Higher Education for Security and Defence: Innovation and International Collaboration

**PANELLISTS**
Olga Degtiareva, Antonio Del Gaudio, Sofia Menezes, Cristian Moldoveanu, Enrico Spinello

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| *19:30* | *Circolo Ufficiali di Torino*<br>**GALA DINNER** |

# Technical Program - Friday, November 6

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| *09:00 - 14:00* | *Circolo Ufficiali di Torino*<br>**REGISTRATIONS** |

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| *09:30 - 11:10* | *Salone delle Feste*<br>**S5.1 - Modern Defense Technologies and Countermeasure Systems Against Contemporary Aerial Threats - PART II**<br>**Chairs:** Adam Kawalec, *Military University of Technology, Poland*<br>Witold Bużantowicz, *Military University of Technology, Poland* |

**09:30** **Modelling the Informational Content of Thermal Image Data as a Function of UAV Flight Parameters**
Wojciech Łożyński and Dariusz Rodzik (Military University of Technology, Poland)

**09:50** **General Requirements for AI-Based Tools Used in Air Defense Strategic Analysis and Simulations**
Ksawery A Krenc, Andrzej Piątkowski and Witold Bużantowicz (Military University of Technology, Poland)

**10:10** **Symmetry-Based Stabilization System for a Canard-Controlled Counter-Drone Missile**
Witold Bużantowicz, Aurelia Adamczak and Jakub Dyjak (Military University of Technology, Poland)

**10:30** **ŚWIATOWID: A Time-Synchronized Distributed Research Infrastructure for GNSS/ADS-B Interference Monitoring and Threat Detection**
Paweł Nogaś (Space Research Centre Polish Academy of Sciences (CBK PAN), Poland); Jerzy Nawrocki (Space Research Centre - Polish Academy of Sciences, Poland); Piotr Dunst (Space Research Centre, Polish Academy of Sciences, Poland); Grzegorz Kaczmarek (Space Research Centre, Polish Academy of Sciences (CBK PAN), Poland); Adam Jankowiak (Space Research Centre, Polish Academy of Sciences, Poland); Raimundas Tuminauskas and Maksymilian Furmann (Poznań Supercomputing and Networking Center (PCSS), Poland); Zbigniew Piotrowski, Ryszard Szplet, Paweł Dąbal and Dominik Sondej (Military University of Technology, Poland); Edoardo Detoma (Detoma Edoardo, Consulting, Italy); Bartosz Belter (Poznan Supercomputing and Networking Center (PCSS), Poland)

**10:50** **Analysis of the Influence of UAV Material Models on RCS and Target Detection Probability**
Dawid Szczotka, Jakub Dyjak, Marta Walenczykowska and Adam Kawalec (Military University of Technology, Poland)

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| *09:30 - 10:50* | *Salone Quadrato*<br>**S5.2 - Digital Technologies, AI, GIS and Intelligent BIM for Defense Infrastructure Security Governance and Efficiency - PART II**<br>**Chairs:** Donatella Rita Fiorino, *University of Cagliari, Italy*<br>Gianni Fenu, *University of Cagliari, Italy*<br>Roberto Tonelli, *University of Cagliari, Italy* |

**09:30** **An Explainable Rule-Based Compliance Verification Engine for Decision Support in Defense Infrastructure Governance**
Gavina Baralla and Roberto Tonelli (University of Cagliari, Italy); Marco Di Francesco (Fosslab, Italy); Gianni Fenu (University of Cagliari, Italy)

**09:50** **Confidentiality by Design in Defense Buildings: An openBIM Digital Twin Integrating Physical, Informational and Acoustic Privacy Indicators**
Costantino Mastino and Andrea Frattolillo (University of Cagliari, Italy); Luigi Romano (Comitato Anti Mafie, Italy); Emanuela Quaquero (University of Cagliari, Italy); Eleonora Congiu (Università degli Studi di Cagliari, Italy); Gavina Baralla (University of Cagliari, Italy)

**10:10** **NURV: A Man-Portable Multimodal Railway Inspection Tool for Defense, Security, and Infrastructure Resilience**
Riccardo Arciulo (4Spark, Italy); Fabio Leccese ("Roma Tre" University, Italy)

**10:30** **Archive-Based Management of Military Historic Buildings: From Document Analysis to Digitally Informed Decision-Making**
Donatella Rita Fiorino (University of Cagliari, Italy); Mariangela R Rapetti (Università degli Studi di Cagliari, Italy); Andrea Carlomagno (Leonardo Compagny, Italy); Alice Agus and Stella Barbarossa (Italy)

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| *09:30 - 11:10* | *Saletta Barocca*<br>**S5.3 - Methodologies to Optimise All-Terrain and UGV Vehicle Performance**<br>**Chairs:** Mauro Velardocchia, *Politecnico di Torino, Italy*<br>Luca Dimauro, *Politecnico di Torino, Italy* |

**09:30** **Multibody Assessment of Track Chain Tension in Skid Steering Manoeuvres of a Tracked Vehicle**
Luca Dimauro (Politecnico of Torino, Italy); Antonio Tota, Enrico Galvagno and Giuseppe Pepe (Politecnico di Torino, Italy); Lorenzo Lamberti and Giacomo Mannino (Centro Polifunzionale di Sperimentazione dell'Esercito, Italy); Mauro Velardocchia (Politecnico di Torino, Italy)

**09:50** **Design and Characterization of a Segmented Airless Wheel Tread Based on Multi-Material Pads Produced via Additive Manufacturing**
Davide Crisafulli, Antonio Tota, Valeria Mazza and Mauro Velardocchia (Politecnico di Torino, Italy)

**10:10** **Design of a Modular Experimental Test Bench for the Characterization of Non-Pneumatic Wheels**
Davide Crisafulli, Valeria Mazza, Antonio Tota, Enrico Galvagno and Mauro Velardocchia (Politecnico di Torino, Italy)

**10:30** **Design Assessment of Driver for High Power Pulsed Loads Applications**
Vincenzo Barba (Leonardo S.p.A., Italy); Chiara Terrone, Sofia Caggese, Alberto Testera and Gianluca Ferrara (Leonardo, Italy); Grazia Accardo (Leonardo SpA, Italy)

**10:50** **An Enhanced Algorithm for the Forecasting of the Charge and Discharge of the Battery of an Autonomous Vehicle**
Vito Antonio Nardi and Filippo Ruffa (University Mediterranea of Reggio Calabria, Italy); Valerio Scordamaglia (University of Reggio Calabria, Italy); Mariacarla Lugarà (University Mediterranea of Reggio Calabria, Italy); Claudio De Capua (University of Reggio Calabria, Italy)

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| *11:10 - 11:30* | *Circolo Ufficiali di Torino*<br>**COFFEE BREAK** |

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| *11:30 - 12:15* | *Salone delle Feste*<br>**KEYNOTE LECTURE**<br>**Chair:** Marina Marchisio Conte, *University of Turin* |

## Advanced Functional Materials and Optical Spectroscopies for CBRNe Defense: From Threat Identification to Smart Mitigation

Chiara Bisio, *Università del Piemonte Orientale, Italy*

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| *12:15 - 13:30* | *Circolo Ufficiali di Torino*<br>**LUNCH** |

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| *13:30 - 14:30* | *Museum and Guided Tour*<br>**PIETRO PICCA MUSEUM -** Meeting Point Registration Desk.<br>Up to 15 people |

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| *13:30 - 15:10* | *Salone delle Feste*<br>**S6.1 - Modern Defense Technologies and Countermeasure Systems Against Contemporary Aerial Threats - PART III**<br>**Chairs:** Adam Kawalec, *Military University of Technology, Poland*<br>Witold Bużantowicz, *Military University of Technology, Poland* |

**13:30** **Advanced Shells for Object Protection and Radar Signature Management: Properties, Performance, and Modeling**

Marta Walenczykowska, Natalia Daniel, Anna Łapińska, Witold Bużantowicz, Paweł Płatek and Adam Kawalec (Military University of Technology, Poland)

**13:50** **Drone Propeller Features Extraction by mmWave Radar Data Processing**
Michela Raimondi, Gianluca Ciattaglia, Susanna Spinsante and Antonio Nocera (Università Politecnica Delle Marche, Italy); Alessandro Crescenzi, Sara Mattioli and Francesco Parasassi (Leonardo S.p.A., Italy); Ennio Gambi (Universita' Politecnica Delle Marche, Italy)

**14:10** **X-Band Characterization of Single and Twin Micro-UAV Radar Returns for Swarm-Based Decoy Applications**
Fausta Mattei (University of Study of Naples Federico II, Italy); Giona Ragnoli and Francesco Laurenzi (Italian Air Force, Italy); Vittorio Calligaris (Sapienza University of Rome, Italy & Italian Air Force, Italy); Claudia Conte (University of Naples Federico II, Italy); Domenico Accardo (Università degli Studi di Napoli FEDERICO II, Italy)

**14:30** **Predicting Jamming Performance in Urban Environments Through Propagation Modeling**
Radouane Karli (Royal Military Academy, Belgium); Mathias Becquaert (Royal Military Academy (RMA), Belgium)

**14:50** **MPC-Based Collision Avoidance for a Formation of Quadrotors**
Luciano Blasi (Università degli Studi della Campania L. Vanvitelli, Italy); Egidio D'Amato (University of Naples Parthenope, Italy); Immacolata Notaro (University of Campania Luigi Vanvitelli, Italy); Valerio Scordamaglia (University of Reggio Calabria, Italy)

*13:30 - 15:10* *Salone Quadrato*
**S6.2 - Digital Technologies, AI, GIS and Intelligent BIM for Defense Infrastructure Security Governance and Efficiency - PART III**
**Chairs:** Donatella Rita Fiorino, *University of Cagliari, Italy*
Gianni Fenu, *University of Cagliari, Italy*
Roberto Tonelli, *University of Cagliari, Italy*

**13:30** **Enhancing Terrain Trafficability on the Modern Battlefield Through Deployable Trackway Systems**
Jaroslav Kompan and Lucia Figuli (Armed Forces Academy of General Milan Rastislav Štefánik, Slovakia); Vladimír Kadlub and Štefan Krivjansky (Armed Forces Academy of General M. R. Štefánik, Slovakia)

**13:50** **Assessing Bridge Readiness for Military Mobility on NATO's Eastern Flank: Slovakia Towards 2030**
Lucia Figuli and Jaroslav Kompan (Armed Forces Academy of General Milan Rastislav Štefánik, Slovakia); Petra Bujňáková (University of Zilina, Slovakia)

**14:10** **Discrete Multi-Layer Rupture Sensing (DMRS): A Novel Approach for Ballistic Impact Analysis in Composite Armor Systems**
Khac Nhat Nam Nguyen (VinUniversity, Vietnam)

**14:30** **EMINS: Embedded Muon Integration System for Passive Underwater Object Detection**
Doğa Veske and M. Akif Korkmaz (Middle East Technical University, Turkey); Bilge Demirköz (METU-IVMER, Turkey)

**14:50** **ATHENA: A Robotic near-Field Measurement System for the Electromagnetic Characterization of Installed Antennas on Large Platforms**
Marco Righero and Giorgio Giordanengo (LINKS Foundation, Italy); Giuseppe Musacchio Adorisio (Fondazione LINKS, Italy); Daniele Ferrante (Ministry of Defence, Italy); Ettore De Maio, William Napolitano and Gianluca D'Agnolo (Italian Army, Italy); Giuseppe Vecchi (Politecnico di Torino, Italy)

*13:30 - 14:50* *Saletta Barocca*
**S6.3 - Young Researchers' Activities in Technologies for Defense and Security**
**Chairs:** Alberto Villani, *University of Siena, Italy*
Aurora Manfredi, *Italian Air Force, Italy*

**13:30** **A Comparative Study of RAG Versus Fine Tuning for Answering Aerospace Military Doctrinal and Regulatory Questions**
Kalia Angelica Gonzalez (Ande's University, Colombia); Juan Diego Ortega-Medina, Nicolás Díaz, Mario Linares-Vásquez and Rubén Manrique (Universidad de los Andes, Colombia); Alexandra Zabala-López (Colombian Aerospace Force, Colombia)

**13:50** **Using LLMs to Generate Data for Benchmarks for LEO Constellation Task Scheduling**
Miguel Angel Herrera Cruz (Universidad de Los Andes, Colombia); Mario Linares-Vásquez (Universidad de los Andes, Colombia)

**14:10** **A VST-Based Hardware-in-the-Loop Testbed for Cross-Eye Jamming Emulation**
Aurora Manfredi (Italian Air Force, Italy); Massimo Rosamilia (University of Naples Federico II, Italy); Alessio Balleri (Cranfield University, United Kingdom (Great Britain))

**14:30** **Federated Edge-Based Intrusion Detection for Critical IoT and IIoT Infrastructure**
Nicolás Rozo Fajardo (Universidad de los Andes, Colombia); Juan Andrés Ariza Gacharná (Universidad de Los Andes, Colombia); Luis Fernando Ruiz Ortega (Universidad de los Andes, Colombia); Carlos Andres Lozano-Garzon (Universidad de Los Andes, Colombia)

*15:10 - 15:30* *Salone delle Feste*
**CLOSING AND AWARD CEREMONY**

*16:00 - 17:00* *Museum and Guided Tour*
**PIETRO PICCA MUSEUM -** Meeting Point Registration Desk.
Up to 15 people

