

GENERAL PROGRAMME
for the
INTERNATIONAL CONFERENCE on MILITARY COMMUNICATION
and **INFORMATION SYSTEMS (ICMCIS 2022)**

Udine, Italy
17-18 May 2022

Tuesday 17 th May 2022	
8:00am-8:40am	Registration (Palazzo Antivari Kechler)
8.40am-8.50am	Opening / Welcome
8.50am-9.20am Keynote Speech	John-Mikal Stordal, Director of the CSO
Session I: Communication & Networking - Secure Communication and Protocols Chair: Peter Lenk	
9.20am-11.00am Oral Presentations	<p>Roberto Fronteddu, Alessandro Morelli and Niranjan Suri. <i>Enhancing Network Link State Estimation by Incorporating Passive Packet Pair Measurement into the Mockets Transport Protocol]</i></p> <p>Alexander Hamilton, Amy-Mae Hobbs, Jack Barnett, Konstantinos Pelekanakis, Roberto Petroccia, Ivor Nissen and Dennis Galsdorf. <i>Towards Secure and Interoperable Underwater Acoustic Communications: Current Activities in NATO IST-174 Research Task Group</i></p> <p>Niccolò Cecchinato, Andrea Toma, Carlo Drioli, Giuseppe Oliva, Gianluigi Sechi and Gian Luca Foresti. <i>A Secure Real-time Multimedia Streaming through Robust and Lightweight AES Encryption in UAV Networks for Operational Scenarios in Military Domain</i></p> <p>Benjamin Campbell, Andrew Coyle and Gupta Amar. <i>RDMST- A Novel Distributed Topology Control Algorithm for Low Probability of Detection Mobile Communication Networks</i></p> <p>Yann Maret, Mohsin Raza, Franck Legendre, Junyuan Wang, Nik Bessis and Jean-Frédéric Wagen. <i>Investigation of a GNN approach to mitigate congestion in a realistic MANET scenario</i></p>
11.00am-11.20am	Coffee Break
Session II: Scene Analysis, Object Detection and Tracking, Condition Monitoring Chair: Bob Madahar	
11.20am-1.00pm Oral Presentations	<p>Andrea Toma, Niccolò Cecchinato, Carlo Drioli, Giuseppe Oliva, Giovanni Ferrin, Gianluigi Sechi and Gian Luca Foresti. <i>Onboard Audio and Video Processing for Secure Detection, Localization, and Tracking in Counter-UAV Applications</i></p> <p>Felix Govaers and Wolfgang Koch. <i>Distributed Sequential Likelihood Ratio Test for Track Confirmation in Non-Linear Scenarios</i></p> <p>Raffaele Galliera and Niranjan Suri. <i>Object Detection at the Edge: Off-the-shelf Deep Learning Capable Devices and Accelerators</i></p>

	<p>Jonas J. Schöttler, Claus C. Otto, Willi Großmann and Oliver Niggemann. <i>Opportunities of AI for maritime forces in an in- and outward-looking view</i> Alessia Cornaggia-Urrigshardt, Fahrettin Gökğöz, Frank Kurth, Hans-Christian Schmitz and Kevin Wilkinghoff. <i>Speech Recognition Lab</i></p>
1.00 pm - 2.20 pm	Lunch Break
Session III: Communication & Networking - Communication Strategies in Distributed and Mobile Networks Chair: Marek Amanowicz	
<p>2.20pm-4.00pm Oral Presentations</p>	<p>Niranjan Suri, Ronald In T Velt, Maggie Breedy, Eelco Cramer, Jan Nilsson, Kelvin Marcus, Alessandro Morelli and Roberto Fronteddu. <i>To Forward or not to Forward: Considerations on and Experiments with Network Layer Forwarding in Combination with Middleware Services for Group Communications</i> Lotte Konings, Titia Kuipers and Sanne Thepass. <i>Applying the Agent-Based Modelling Method to Evaluate Future Communication Strategies in Dispersed Operations in a Complex Environment</i> Michael Rupa, Erlend Larsen, Bugra Saglam, Sami Peltotalo, Julian Savin and Berk Gurdil. <i>Scenarios for BLOS Connectivity</i> Agnius Birutis and Anders Mykkeltveit. <i>Practical Jamming of a Commercial 5G Radio System at 3.6 GHz</i> Paweł Skokowski, Jan M. Kelner, Krzysztof Malon, Krzysztof Maślanka, Agnius Birutis, Miguel A. Vazquez, Souradip Saha, Warren Low, Agnieszka Czapiewska, Jarosław Magiera, Piotr Rajchowski and Sławomir Ambroziak. <i>Jamming and Jamming Mitigation for Selected 5G Military Scenarios</i></p>
4.00pm-4.20pm	Coffee Break
Session IV: Data Management & AI for Data and Document Analysis Chair: Michael Gerz	
<p>4.20pm-6.00pm Oral Presentations</p>	<p>Arvid Kok, Anouk van Wingerden, Adelica Ndoni and Michael Street. <i>Carbon-dating Articles with Transformer Series</i> Michael Street, Ivana Ilic Mestric, Riccardo D'Ercole, Giavid Valiyev and Peter Lenk. <i>Classifying news articles in multiple languages: leveraging context aware models</i> Jessica Campbell, Anthony Isenor and Martha Dais Ferreira. <i>Detection of Invalid AIS Messages using Machine Learning Techniques</i> Piotr Pyda, Michał Przywuski, Tomasz Dalecki and Joanna Śliwa. <i>Efficiency of Virtual Machine Replication in the Data Center</i> Michael Street, Ivana Ilic Mestric, Adelica Ndoni, Peter Lenk, John Teufert and Nuno Figuredo. <i>Data driven decision support during COVID</i></p>
6:00pm	End of Day 1
8:00pm	Gala Dinner at Astoria Hotel, Piazza XX Settembre, Udine

Wednesday 18 th May 2022	
8:30am-8:50am	Opening
8.50am-9.20am Keynote Speech	Wolfgang ROHRIG, Head of Unit Information Superiority at European Defence Agency
Session V: Communication & Networking - Robust Channel Models and Ad-hoc Networks Chair: Jerzy Lopatka	
9.20am-11.00am Oral Presentations	<p>Christophe Le Martret, Jerzy Lopatka, Tuomas Paso, Raphaël Massin and Xavier Leturc. <i>Multi Band Efficient Networks for ad hoc Communications</i></p> <p>Stefan Couturier, Ali Yilmaz Yildirim, Konstantin Schwalm, Marc Adrat, Christiane Antweiler and Peter Jax. <i>Spectrum Monitoring Based on Error Vector Magnitude and Received Signal Strength Indicator</i></p> <p>Miika Vuorenmaa, Mikko Heino, Matias Turunen and Taneli Riihonen. <i>RF Self-interference Canceller Prototype for 100-W Full-Duplex Operation at 225-400 MHz</i></p> <p>Erlend Larsen, Håkon Vågsether and Lars Landmark. <i>Freezing Unicast Paths in Sensor Swarms</i></p> <p>Jimmi Grönkvist, Anders Hansson, Kristoffer Hägglund, Arwid Komulainen and Mattias Sköld. <i>Low-altitude UAVs for significantly increased data rate in tactical ad hoc networks</i></p>
11.00am-11.20am	Coffee Break
Session VI: Support to Decision Making and Tactical networks Chair: Michael Street	
11.20am-1.00pm Oral Presentations	<p>Jacques Perry <i>A Machine Learning Approach to the Determination of Value of Information to Operators and Applications on the Tactical Edge</i></p> <p>Mariann Hauge, Martin Asprusten, Tore J Berg and André J. Bøhm. <i>A Cloud-based Experimentation and Analysis Framework for Services at the Tactical Edge</i></p> <p>Wouter ten Brink, Bogdan Vasilache, Konrad Wrona and Niranjani Suri. <i>Towards Integration of Command and Control Systems with Internet of Things</i></p> <p>Thorsten Aurisch. <i>Training of cyber defense agents in tactical inter-organizational networks by using federated learning</i></p> <p>Johannes Franz Loevenich, Paulo Henrique Lopes Rettore and Roberto Rigolin Ferreira Lopes. <i>A Bayesian Inference Model for Dynamic Neighbour Discovery in Tactical Networks</i></p>
1.00 pm - 2.15 pm	Lunch Break
Industrial Session Chair: Gian Luca Foresti	
2.30pm-3.00pm Keynote Speech	<p>Paolo Proietti (Leonardo CTO Electronics Division) <i>Promote Defence oriented Open Innovation initiatives to speed up the uptake of Emerging and Disruptive Technologies</i></p> <p>Pierluigi Lazzareschi (Leonardo Cyber Security Division) <i>Leonardo introduction with focus on Cyber Security Division</i></p>
3.00pm-4.30pm Oral Presentations	<p>Mario Adimari (Leonardo Chief Commercial Officer Department). <i>5G in military communications: a new role for the System Integrator</i></p> <p>Elisabetta Zuanelli (University of Rome "Tor Vergata"). <i>Cybersecurity ontology and defence solutions: the POC platform</i></p>

	<p>Massimiliano Amirfeiz (Leonardo Electronics Division). <i>Data Centric Security: from Network Centric Warfare to Data Centric Warfare</i></p> <p>Aleandro Agarinis (Clyverinext). <i>The fundamental role of Chain of Trust to guarantee cybersecurity</i></p> <p>Luca Degano (beanTech). <i>Analytic, Reactive and Proactive AI in Industrial Applications</i></p> <p>Luca Cistriani (Leonardo Electronics Division). <i>Agent-Oriented Distributed Simulation of C3I Systems with RIACE</i></p>
4.30pm-4.50pm	Coffee Break
<p>Poster Session Chair: Carlo Drioli</p>	
<p>4.30pm-5.50pm Posters</p>	<p>Philipp Zißner, Paulo Rettore, Johannes Loevenich and Roberto Rigolin F. Lopes. <i>A Data Fusion Framework Supporting Urban Military Operations</i></p> <p>Johannes Loevenich, Paulo Rettore, Sharath M. Eswarappa and Roberto Rigolin F. Lopes. <i>Learning Metrics in Mobile Ad Hoc Networks: A Short Survey</i></p> <p>Georgi Nikolov, Thibault Debatty and Wim Mees. <i>Benefits in deploying and testing the Multi-agent anomaly-based Advanced Persistent Threat detection framework in a Cyber Range</i></p> <p>Arvid Kok, Antonio Carvalho, Adelica Ndoni and Michael Street. <i>Top-Down Hierarchical GMM and Distribution Trending</i></p> <p>Daniel Eames, Amy Baldwin, Alex Borghraef, Matthew Cox, John Dabolt IV, Rob Dekker, Andrew Foreman, Max Geljon, Alexander Hamilton, Douglas McDonald, Paul Pellegrino, David David, Nikola Serafimovski, Michael Wardlaw and Harald Haas. <i>Free Space Optical Communications Networks</i></p> <p>Joanna Śliwa and Marek Suchański. <i>5G access network security threats and basic countermeasures</i></p> <p>Lars Landmark and Erlend Larsen. <i>Starvation and UAV-congestion in a UAV relayed network</i></p> <p>Warren Low, Souradip Saha and Beniamino di Martino. <i>Future Trends in Applications of 5G and Related Technologies for Sustainment of Military Operations</i></p> <p>Ayoub Toubi and Abdelmajid Hajami. <i>Network attacks contribution in battery energy efficiency impact on wireless sensor networks and Proposed solutions</i></p> <p>Alejandro Guerra-Manzanares and Urmaz Ruoto. <i>Cyber Threat Modeling of a Mobile Edge Computing (MEC) Application: A Military Use Case</i></p> <p>Stefano Bistarelli, Emanuele Bosimini and Francesco Santini. <i>On Identifying Repeated Patterns of OT Attacks with LOGistICS</i></p>
5.50pm-6.00pm	Awards and ICMCIS Closing remarks
6.00pm	Greetings / End of Day 2



**SCIENCE AND TECHNOLOGY ORGANIZATION
INFORMATION SYSTEMS TECHNOLOGY PANEL**

