

MESAS 2019 Scientific Conference Program

MESAS19 Day 1 - 29 OCT 2019

Start time	Duration	Activity/Presentation	Presenter/Author(s)
8:00	1:30	Registration	
9:30	0:10	Welcoming speech	Director NATO MS COE
9:40	0:10	MESAS19 Chairman's message	Adriano FAGOLINI
9:50	0:20	NATO ACT Autonomy Program	Federic Darloso
10:10	0:15	Coffee Break	
Session 1 - Chair: Petr Gabrlík, Tomas Jilek			
10:25	0:20	Deep Learning Algorithms for Vehicle Detection on UAV Platforms: First Investigations on the Effects of Synthetic Training	Michael Krump, Martin Ruß, Peter Stüetz
10:45	0:20	High-Fidelity Physics-Based Modeling and Simulation for Training and Testing Convolutional Neural Networks for UGV Systems	Justin Carrillo, Jeremy Davis, Javier Osorio, Chris Goodin, Phillip Durst
11:05	0:20	BUILDING A GENERIC SIMULATION MODEL FOR ANALYSING FEASIBILITY OF MULTI-ROBOT TASK ALLOCATION(MRTA) PROBLEMS	Savaş Öztürk, Ahmet Emin Kuzucuoğlu
11:25	0:20	Combined PSO methods for UAVs swarm modelling and simulation	Stanisław Skrzypecki, Zbigniew Tarapata, Dariusz Pierzchala
11:45	0:20	Terrain Learning using Time Series of Ground Unit Traversal Cost	Milos Pragr, Jan Faigl
12:05	1:00	Lunch	
Session 2 - Chair: Jan Nohel			
13:05	0:20	Model of Observation Posts Deployment in Tactical Decision Support System	Petr Stodola, Jan Drozd, Jan Nohel, Karel Michenka
13:25	0:20	ASAT Weapons: Enhancing NATO's operational capabilities in the emerging Space dependent Era	Antonio Carlo, Nikolaos Veazoglou
13:45	0:20	PERSISTENCE THROUGH COLLABORATION AT SEA FOR OFF-SHORE AND COASTAL OPERATIONS	Agostino Bruzzone, Marina Massie, Kirill Sinelshchikov, Leonardo Baviera, Giuliano Fabbrini, Marco Gotelli, Josef PROCHAZKA, Libor Kutej, Radomir Scurek
14:05	0:20	SIMULATION OF THE GUIDANCE AND CONTROL SYSTEM FOR UNDERACTUATED VESSELS	Silvia Donnarumma, Massimo Figari, Michele Martelli, Raphael Zaccone
14:25	0:20	Maneuver control system CZ	Jan Nohel, Zdeněk Flasar,
14:45	0:20	Aspects of air defence units C2 system modelling and simulation	Vadim Stary, Jan Farlik
15:05	0:20	Coffee Break	
Session 3 - Chair: Caterina Grillo			
15:25	0:20	AUTOMATIC TAKE OFF AND LANDING FOR UAS FLYING IN TURBULENT AIR - AN EKF BASED PROCEDURE	Caterina Grillo, Fernando Montano
15:45	0:20	Simulation of UAS-based Radiation Mapping on a Building Surface	Tomas Lazna, Petr Gabrlík, Tomas Jilek, Frantisek Burian
16:05	0:20	Muitiple Carrier-Vehicle Travelling Salesman Problem	Tigran Fahradyan, Nicolas Bono Rossello, Emanuele Garone
16:25	0:20	Practical comparison of communication technologies suitable for field robotics	Matous Hybl, Luděk Žalud, Tomas Jilek
16:45	0:20	Utilization of modeling and simulation in the design of air defense	Jan Farlik, Vlastimil Hujer, Miroslav Kratky
17:05	0:30	NATO HQ SACT/MS COE WORKSHOP - SESSION 1: TEAM BUILDING	Claudio Zamponi
17:35	0:05	Discussion and closing remarks	Adriano FAGIOLINI
19:00	2:00	Social Dinner - NON Hosted, Location TBD	

MESAS19 Day 2 - 30 OCT 2019

9:00	2:00	NATO HQ SACT/MS COE WORKSHOP - SESSION 2: ACTIVITY BLOCK Introducing the activity, explaining ground rules and techniques Brainstorming (techniques and structure: TBD) Preparation of presentations (findings and take-aways)	Frederic Dalorso, Claudio Zamponi, Fabio Corona
11:00	0:20	Coffee Break	
11:20	0:20	NATO HQ SACT/MS COE WORKSHOP - SESSION 3: CLOSING BLOCK Presentation of findings Q&A and discussions	Frederic Dalorso, Claudio Zamponi, Fabio Corona
Session 4 - Chair: Jakub Fucik			
11:40	0:20	Legality and Legitimacy of the Autonomous Weapons Systems	Jakub Fucik, Libor Frank, Richard Stojar
12:00	0:20	Virtual Reality and Autonomous Systems to Enhance Underwater Situational and Spatial Awareness	Alberto Tremori, Arnau Carrera Vinas, David Solarna, Pilar Caamaño Sobrino, Sasha B. Godfrey
12:20	0:20	AI powered Lethal Autonomous Weapon Systems in defence transformation. Impact and Challenges.	Walter David, Paolo Pappalepore, Andreea Sarbu, Alexandra Stefanova
12:40	1:00	Lunch	
Session 5 - Chair: Massimo Cossentino			
13:40	0:20	Design of an Active-Reliable Grasping Mechanism for Autonomous Unmanned Aerial Vehicles	Ashwin Suresh Nedungadi, Martin Saska
14:00	0:20	Analysis and Optimization of the Resilience Enhancement Circle via Data Farming	Mario Dally, Sebastian Jahnen, Stefan Pickl
14:20	0:20	Machine Learning-Based Open Framework For Multiresolution Multiagent Simulation	Dariusz Pierzchala, Przemysław Czuba
14:40	0:20	Smartness and Autonomy for Shipboard Power Systems Reconfiguration	Massimo Cossentino, Salvatore Lopes, Giovanni Renda, Luca Sabatucci, Flavia Zaffora
15:00	0:10	Discussion and closing remarks	Adriano FAGOLINI
15:10	3:00	City tour	

MESAS19 Day 3 - 31 OCT 2019

Session 6 - Chair: Petr Vasik

9:00	0:20	Kinematic model of a specific robotic manipulator	Jana Vechetová
9:20	0:20	The possibilities and usage of missile path mathematical modelling for the utilization in future autonomous air defence systems simulators	Josef Časar, Jan Farlik
9:40	0:20	Inverse kinematics for the industrial robot IRB4400 based on conformal geometric algebra	Radek Tichy
10:00	0:20	Speeded Up Elevation Map for Exploration of Large-Scale Subterranean Environments	Jan Bayer, Jan Faigl
10:20	0:20	Remark on volumetric errors in kinematic chain of MCV 754 quick	Jiří Novák
10:40	0:15	Coffee Break / Poster session	

Session 7 - Chair: Fabio Corona

10:55	0:20	DARPA Subterranean Challenge: Multi-robotic exploration of underground environments	Tomáš Rouček, Martin Pecka, Petr Cizek, Tomas Petricek, Jan Bayer, Vojtech Salansky, Daniel Hert, Matej Petrlik, Tomas Baca, Vojtech Spurny, Vladimir Kubelka, Francois Pomerleau, Martin Saska, Jan Faigl, Karel Zimmermann, Tomas Svoboda, Tomas Krajnik
11:15	0:20	Aerial Reconnaissance and Ground Robot Terrain Learning in Traversal Cost Assessment	Milos Pragr, Petr Váňa, Jan Faigl
11:35	0:20	Modular rover design for exploration and analytical tasks	Robert Pastor, Aleš Vysocký, Daniel Huczala, Petr Oščádal, Jakub Mlotek, Dominik Heczko, Zdeněk Zeman, Petr Široký
11:55	0:20	C2SIM Operationalization extended to Autonomous Systems	Fabio Corona, Marco Biagini
12:15	0:15	Closing remarks, Discussion and MESAS20 way ahead considerations - End of the MESAS19 Conference	

Poster

Modelling and simulation paradigms to support autonomous system operationalization	Jan Hodicky, Dalibor Procházka
Low-Cost RGB-D-SLAM Experimental Results for Real Building Interior Mapping	Jean Motsch, Yves Bergeon, Vaclav Krivanek
Notes on Clifford Algebra Neural Networks	Petr Velan
The weighted core of games based on tactical decisions	Jaroslav Hrdina, Petr Vasik, Josef PROCHAZKA, Libor Kutej, Radomir Scurek