



# MULTI-DOMAIN ADVANCED ROBOTIC SYSTEMS CONFERENCE

17 - 19 October 2018, Prague, Czech Republic

Specialized Partners:



**Chairman:**  
**LTC Jan Mazal, Ph.D.**  
Doctrine Education and Training Branch Chief, NATO  
Modelling & Simulation Centre of Excellence in Roma, NATO

**Preamble:**

We stay on the edge of another scientific and technological revolution, which will have almost certainly dramatic impact on the development of global society, which outperform all previous milestones of human progress.

This factor is caused by the significant advances in the development on the field of artificial intelligence, robotics and industrial automation, the impact of this phenomenon can no longer be easily predicted, even in the short term.

There are already a sufficient amount of proves that clearly indicate a very early start of trends (in term of up to 5 years), which fundamentally changes the nature of security, communications, transport, labour market, social environment and interactions with machines.

Conference MARS (Multi-domain Advanced Robotic Systems) is focused on discussion and presentation of the main aspects of the mentioned topics, that in that context provides an ideal platform for sharing the "current information" (the last achieved results in the field of research, development and experimentation) across all domains affected by this scientific and technical progress.

The MARS conference presents another FFF contribution in implementation of robotics and artificial intelligence including harmonization of current/future needs, legal aspects and technological capabilities.

**The Conference will focus on the following topics:**

**Discussion Forum/PLENARY – Topics at Strategic Level**

- UAVs/DRONES – POTENTIAL OF THE FUTURE; CIVIL – MILITARY COOPERATION
- ARTIFICIAL INTELLIGENCE – PROS & CONS
- REGULATORY PROCESSES – IMPLEMENTATION, EFFECTIVITY, ENFORCEMENT
- ETHICAL, MORAL AND LEGAL ASPECTS OF USING UAVs/DRONES

**THEMATIC SESSIONS – Topics at Operational Level**

- Unmanned Systems (JAV, UGV, USV) – Potential of the Future vs. Threats
- Autonomous and Robotics Systems – Implementation in the Security Forces
- Advanced Robotics Projects and Artificial Intelligence (AI) – Command and Control
- Cyber Resistance of the Robotic & Autonomous Systems (RAS)
- Capability Development according DOTMLP (Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities and Policy)
- Bio Robotics
- Modelling and Simulation for Autonomous Systems

**Discussion Forum Panelists**



**Prof. Ronald C. Arkin**  
Regents Professor & Director of the Mobile Robot Laboratory, Associate Dean for Research & Space Planning, College of Computing, Georgia Institute of Technology, USA



**Prof. Agostino Bruzzone**  
President of Simulation Team & MIPET Full Professor, DIME, University of Genova, ITA



**Dr. Thomas H. Killion**  
Chief Scientist NATO Science and Technology Organization, NATO



**Mr. Paul D. Rogers, Ph.D**  
Director, U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC), USA



**LTG Jiří Baloun, Ph.D., M.Sc.**  
First Deputy Chief of the General Staff, Armed Forces, CZE



**CAPT(N) Vincenzo Milano**  
Director, NATO Modelling and Simulation Centre of Excellence (M & S COE), NATO

Endorsed by:



**Air Navigation Services of the Czech Republic**



General R & D Partner:



## CONFERENCE PROGRAMME COMMITTEE



**LTC Jan Mazal, Ph.D.**  
 Doctrine Education and Training  
 Branch Chief, NATO  
 Modelling & Simulation Centre  
 of Excellence in Roma, NATO  
**Chairman**



**Mr. Milan Rollo, Ph.D.**  
 Researcher, Czech Technical  
 University in Prague, CZE  
**Vice-chairman**

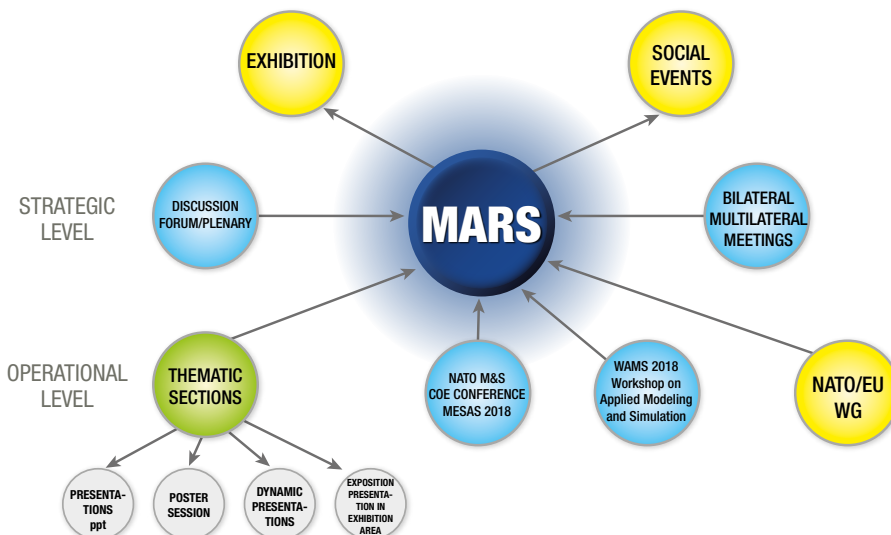


**Mr. Daniel Košťoval, M.Sc.**  
 Deputy Minister – Head of the  
 Armaments and Acquisition Division,  
 Ministry of Defence, CZE  
**Honorary Chairman**

## Members (in alphabetical order)

Prof. Karol Balog, Dipl. Eng., Ph.D. – Director – Institute of Safety, Environment and Quality (MTF), Slovak University of Technology in Bratislava, SVK  
 LTC Paolo di Bella – Doctrine & Standards Section Chief, NATO Modelling & Simulation Centre of Excellence, ITA  
 Dr. Yves Bergeon, Ph.D. – Écoles de Saint Cyr de Coetquidan, FRA  
 LTC (A) Marco Biagini – Concept Development and Experimentation (CD & E) Branch Chief at NATO Modelling & Simulation Centre of Excellence, ITA  
 COL Robert Bielený – International Staff, NATO Headquarters, NATO  
 MAJ Fabio Corona, Ph.D. – Concepts Development Section Chief, NATO Modelling & Simulation Centre of Excellence, ITA  
 Mr. Jan Faigl, Assoc. Prof., Dipl. Eng., Ph.D. – Faculty of Electrical Engineering, Czech Technical University in Prague, CZE  
 Mr. Vítězslav Hezký, Dipl. Eng. – Director of Aeronautical Operations Division, Civil Aviation Authority, CZE  
 Mr. Jiří Hlinka, Assoc. Prof., Dipl. Eng., Ph.D. – Vice-Dean for Outer Relations, Collaboration with Industry, Brno University of Technology, CZE  
 Prof. Dr. Jan Holub, Dipl. Eng. – Czech Technical University in Prague, Faculty of Electrical Engineering, Dept. of Measurement, CZE  
 Mr. Jaroslav Hrdina, Assoc. Prof., Dipl. Eng., Ph.D. – Department of Algebra and Discrete mathematics of Faculty of Mechanical Engineering, Brno University of Technology, CZE  
 LTC Marek Hütter, Dipl. Eng. – Fire Rescue Service of the Czech Republic, CZE  
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 Prof. Tomáš Loveček, Dipl. Eng., Ph.D. – Head of Department of Security and Safety Research, Faculty of Security Engineering, University of Žilina, SVK  
 Mr. Pavel Mikunda, Dipl. Eng. – Director of the Research and Development Center, VOP CZ s.e., CZE  
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 Prof. Petr Novák, Ph.D. – Head of Department of Robotics, Faculty of Mechanical Engineering, VŠB - Technical University of Ostrava, CZE  
 Prof. Dr. Michal Pěchouček, M.Sc. – Head of Agent Technology Center, Czech Technical University in Prague, CZE  
 Mr. Robert Popela, Dipl. Eng., Ph.D. – Institute of Aerospace Engineering, Faculty of Mechanical Engineering, Brno University of Technology, CZE  
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 Dr. Libor Přeučil – Head, Intelligent and Mobile Robotics & Head, Center for Advanced Field Robotics, Czech Technical University in Prague, CZE  
 Mr. Tomáš Pustina, M.Sc. – Department of Civil Aviation, Ministry of Transport, CZE  
 Dr. Jan Roháč, Assoc. Prof., Dipl. Eng. – Czech Technical University in Prague, Faculty of Electrical Engineering, Dept. of Measurement, CZE  
 Dr. Martin Saska, Dipl. Eng. – Head of Multi-Robot Systems Group at Department of Cybernetics, Czech Technical University in Prague, CZE  
 Dr. Marcin Sosnowski, Dipl. Eng. – Institute of Technical Education and Safety, The Faculty of Mathematics and Natural Sciences, Jan Długosz University in Częstochowa, POL  
 Mrs. Julie M. Stark, Ph.D. – Deputy Research and Development Director, NSWC - Carderock, Combatant Craft Division, Virginia Beach, VA, USA  
 Assoc. Prof. Radomír Ščurek, Ph.D. – Head of the Department of Security Services, VŠB - Technical University of Ostrava, CZE  
 LTC Petr Šnajdárek – Reconnaissance and Electronic Warfare Branch, General Staff of ACR, CZE  
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 Prof. Luděk Žalud Dipl. Eng., Ph.D. – Department of Control and Instrumentation, Brno University of Technology, CZE

## MULTI-DOMAIN ADVANCED ROBOTIC SYSTEMS CONFERENCE (MARS)



## CONFERENCE

**Date:** 17-19 October 2018  
**Venue:** PVA EXPO PRAHA, Beranových 667, Prague, Czech Republic  
**Type of Event:** Non-Classified

### Preliminary Programme

#### Day 1 Wednesday, 17 October 2018

10.00 - 13.15 MARS Registration  
13.30 - 14.00 Conference Opening  
14.00 - 16.00 **Discussion Forum/Plenary**

#### Strategic Level Topics:

- UAVs/Drones – Potential of the Future; Civil-Military Cooperation
- Artificial Intelligence – Pros & Cons
- Regulatory Processes – Implementation, Effectivity, Enforcement
- Ethical, Moral and Legal Aspects of Using UAVs/Drones

16.00 - 17.00 Future Forces Exhibition Tour

#### Day 2 Thursday, 18 October 2018

08.30 - 09.15 Registration  
09.30 - 09.45 **2<sup>nd</sup> Conference Day Opening**  
09.45 - 11.30 Thematic Session (Audio-visual Presentations, Interactive Presentations)  
11.30 - 12.15 Poster Session  
12.15 - 12.45 Lunch & Networking  
12.45 - 13.30 Exposition Presentation in Exhibition Area  
13.30 - 16.00 Thematic Session (Audio-visual Presentations, Interactive Presentations)  
16.00 - 17.00 Social Event for Speakers

#### Day 3 Friday, 19 October 2018

08.30 - 09.15 Registration  
09.30 - 09.45 **3<sup>rd</sup> Conference Day Opening**  
09.45 - 11.30 Thematic Session (Audio-visual Presentations, Interactive Presentations)  
11.30 - 16.00 Future Forces Exhibition Tour, Networking

### Proceedings:

The Conference proceedings will be in English. All papers and reference documents will be accessible within 21 days after the Conference. **Access to the FTP (File Transfer Protocol) site is included in the delegate registration.**

## CONTACTS



**Contact for Participants**  
**Mr. Jiří Štirba**, Programme Director  
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**Contact for Participants**  
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**Contact for Exhibition and Partnership**  
**Mr. Adam Drnek**, Executive Director  
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**Accommodation and Transportation**  
**Mrs. Pavla Šebestová**  
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## OTHER IMPORTANT INFORMATION

### Conditions for Participants

For on-line registration and more information please visit  
[www.future-forces-forum.org](http://www.future-forces-forum.org)

### Speakers/Poster Presenters

#### Presentation – speech, live demo, poster within the Official Expert Programme

- GOVERNMENT, MILITARY, WAR VETERANS, POLICE, FIREFIGHTERS, PRISON SERVICE, CUSTOMS SERVICE, ACADEMIA, STUDENTS **FREE OF CHARGE**
- Industry Starting from **440 EUR**

*Presentations are subject to availability and acceptance by the Programme Committee.*

*Prices exclude VAT.*

### Visitors

- GOVERNMENT, MILITARY, WAR VETERANS, POLICE, FIREFIGHTERS, PRISON SERVICE, CUSTOMS SERVICE, ACADEMIA, STUDENTS, SPEAKERS, VIP GUESTS **FREE OF CHARGE**
- Industry Starting from **70 EUR**

*All admission fees include VAT.*

### Partnership

- International and national governmental bodies **FREE OF CHARGE**
- Industry, Academia Starting from **2000 EUR**

*Prices exclude VAT.*

### Exhibition

- International and national governmental bodies **FREE OF CHARGE** (up to 12 sqm)
- Industry Starting from **2500 EUR**
- Academia Starting from **2000 EUR**

*Prices exclude VAT.*

### Admission Policy

- Admission is limited to professional and business visitors only
- Business casual or service dress is required
- Visitors under 18 years will not be admitted to the exhibition and expert events
- Identity checks will be conducted as a condition of entry
- Badges are to be collected at the registration desk at PVA EXPO PRAHA, starting at 08.30
- Badges will only be issued to registered delegates

### Important Dates/Deadlines

Abstract Submission Deadline	On an individual basis
Notification of Acceptance	In due time
Full Paper Submission	21 SEPTEMBER 2018
On-line Registration of Participants	30 SEPTEMBER 2018

## Other Events Organized within the FUTURE FORCES FORUM 2018:

- Future Forces Exhibition
- MESAS 2018 - Modelling & Simulation for Autonomous Systems Conference
- WAMS 2018 - Workshop on Applied Modeling and Simulation
- Future Forces Individual Systems Congress – International Industry Day
- Integration of the Exoskeleton in the Battlefield Workshop
- World CBRN & Medical Congress
- Geospatial, Hydrometeorological and GNSS Conference
- Logistics Capability Conference
- BIOMETRICS Conference
- Future of Cyber Conference - Smart Cyber Defence Workshops & Live Hacking Zone





**Keynote Speakers (in alphabetical order)**



**Discussion Forum Panelist**  
**Prof. Dr. Michal Pěchouček M.Sc.**  
Head of Agent Technology Center,  
Czech Technical University in Prague,  
CZE



**Dr. Earl W. Powers**  
Research Fellow, Potomac Institute  
for Policy Studies Center for  
Emerging Threats and Opportunities  
(CETO), USA



**Mr. Christoph Sulzbachner**  
Senior Research Engineer,  
Autonomous Systems Center for  
Vision, Automation & Control,  
Austrian Institute of Technology, AUT



**Ms. Ina Wanca**  
Adjunct Professor, John Jay College  
of Criminal Justice, New York;  
Director of Cybercrime Prevention,  
Crime Commission of NYC, USA



**COL Ondřej Suchý**  
Technical Institute of Fire Protection  
in Prague, CZE



**MESAS Conference Speaker**  
**Mr. Pavel Doleček**  
Deputy Minister, Research and  
Higher Education section, Ministry  
of Education, Youth and Sports, CZE

**Supporting Organizations:**

- Armed Forces of the Czech Republic
- Association of Research Organizations
- Customs Administration of the Czech Republic
- Czech Academy of Science
- Czech Technical University in Prague
- Defence and Security Industry Association of the Czech Republic
- European Defence Agency (EDA)
- Fire Rescue Service of the Czech Republic
- Military Police
- Ministry of Defence of the Czech Republic
- Ministry of the Environment of the Czech Republic
- Ministry of Foreign Affairs of the Czech Republic
- Ministry of Industry and Trade of the Czech Republic
- Military Office of the President of the Republic
- North Atlantic Treaty Organization (NATO)
  - NATO Science and Technology Organization
  - NATO Army Armaments Group (NAAG) Land Capability Group Dismounted Soldier Systems and its following Sub groups:
    - Combat Clothing, Individual Equipment and Protection Subgroup
    - Joint Non-lethal Weapons Capability Group
    - Power Team of Experts
    - Weapon & Sensor Subgroup
    - SG1 Small Arms Ammunition Interchangeability
    - C4I System Architecture
  - NATO Centres of Excellence
- Police Presidium of the Czech Republic
- Prison Service of the Czech Republic

**Media Partners:**

UAV Professional Directory, Military Technology, Defence Procurement International, Europäische Sicherheit (European Security and Defence), A-report, Army.cz, SoldierMod.com, Global Military Communications Magazine, Safety & Security International, Al Defaiya, CDIS Review, Military Systems & Technology, Copybook.com/military, DefenseConference.com, Defence Suppliers, ConferenceLocate.com, Asian Military Review, Armada International, Fuerzas Militares del Mundo (Military World), Defence and Security of India, Advances in Military Technology, Defence and Security Alert, Special OPS, Defence Suppliers **(for more details please visit [www.future-forces-forum.org](http://www.future-forces-forum.org))**

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