



International CBRNE Institute

ISMCR 2018

21th International Symposium on
Measurement and Control in Robotics
26-28 September 2018 – International
CBRNE Institute, MONS, Belgium

ROBOTICS FOR THE CHANGING WORLD



BEMEKO

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European Society for Defense	Hainaut Sécurité	Belgian Royal Higher Institute of Defense	Climbing and Walking Robots Association	

PRE-PROGRAM

SESSION 1. WELCOME and INTRODUCTION TO THE MOBILE ROBOTICS **26 September (Room 1)**

CHAIR: Professor L.Van Biesen (VUB/BEMEKO)n Prof Dr Ir Dehombreux (FPMs) Dr Zafar Taqvi (Srt IMEKO/TC17)

10.00-10.30H	Welcome, Military Robotics, ELROB Status, ICI aims	Col Ph.Staquet (Director Hainaut Sécurité), Prof Y.Baudoin (ICI, RMA, Belgium), Dr F.Schneider (Fraunhofer, Germany), Y.Dubucq (Director ICI), Prof dr Ir H. Christensen,
10.30-11.00H	KEY-NOTE Autonomous Robot for Gas and Oil Sites (ARGOS): Total's Lessons Learnt and Next Steps	Kris KYDD Head of Robotics Total ARGOS Challenge
11.00-11.30H	KEY-NOTE Robotics and civilian emergency response : how lessons learned empower Incident command systems organization	LtCol JP Monet (BDFRD, France), Maj E.Rodriguez (BDFRD), Capt S.Mozziconacci (BDFRD), E.Dombre (Emeritus CNRS Research Director, Montpellier University
<i>11.30-12.00H</i>	<i>Robotics for facing CBRNE risks</i>	<i>Dr J.Galatas (KEMEA, Greece, CBRN-KC)</i> <i>Y.Baudoin (E-KC)</i>
13.30-17.00H	Robotics competition and Exhibition	(ELROB, ICI)

SESSION 2/1 IMPROVEMENT of ROBOTICS **27 September (Room 1)**

CHAIR : Professor EM Y.Baudoin (ICI/RMA)

09.30-10.00H	KEY-NOTE ARIMA and CERMA: research centers for industrial improvement of Automation techniques	Prof JG Fontaine (STO-CMRE, France)
10.00-10.30H	KEY-NOTE Unmanned vehicle systems in unstructured environments : challenges and current status	Prof V.Gradetsky (IPMNET, Moscou, Russia)
<i>10.30-10.50H</i>	<i>IMU based gesture recognition for mobile robot control using Online Lazy Neighborhood Graph search</i>	<i>Padmaja Kulkarni (Fraunhofer-Institute, Germany), B. Illing, B. Gaspers, B. Brüggemann, D. Schulz</i>
<i>10.50-11.10H</i>	<i>Novel Data Architecture A for Fusion Unmanned Vehicles</i>	<i>I. L. Ermolov, Institute for Problems in Mechanics of the Russian Academy of Sciences, Russia.</i>
<i>11.10-11.30H</i>	<i>Coverage Path Planning by swarm;- of UAV by swarm of UGV for traversability analysis</i>	<i>L. Cantelli, D.C. Guastella, D. Longo, C.D. Melita, G. Muscato University of Catania</i>
<i>11.30-11.50H</i>	<i>Compliance Control Rotation Angle of Crawler Mobile Robot for</i>	<i>Ayaka Watanabe, Hiroyasu Miura, Masayuki Okugawa, Aichi Institute</i>

	<i>Sub-crawler</i>	<i>of Technology</i>
<i>11.50-12.10H</i>	<i>Robot control based on human motion analysis with IMU measurements</i>	<i>Robin Pellois, Laura Joris and Olivier Bruls Multibody and Mechatronic Systems Laboratory University of Liege, Belgium</i>
<i>12.10-12.30H</i>	<i>Development of the Modular Platform for Educational Robotics.</i>	<i>A.G. Semenyaka, Moscow State Technological University "STANKIN"</i>

SESSION 2/2 MEASUREMENT and CONTROL in ROBOTICS
27 September (Room 2)

CHAIR: Professor B. Kiss (BME/Hungary)

<i>09.30-10.00H</i>	KEY-NOTE: JIZAI Body Design of ultra-body fit for super smart society	Prof Masahiko Inami, (Japan)
<i>10.00-10.20H</i>	<i>Enhancing Bodily Expression and communication Capacity of Tele-existence Robot with augmented reality</i>	<i>Yasuyuki Inoue (University of Tokyo, MHD YamenSaraiji (Keio University, Japan), Fumihiro Kato and Susumu Tachi (University of Tokyo)</i>
<i>10.20-10.40H</i>	<i>Semantic Grid Mapping based on Surface Classification with Supervised Learning</i>	<i>Torsten Engler (Universität der Bundeswehr München Institut für Technik Autonomer Systeme (TAS)</i>
<i>10.40-11.00H</i>	<i>Pre-filter to robustify the exact linearization based tracking controller of a SCARA type robot</i>	<i>Na Wang, Balint Kiss Budapest University of Technology and Economics, (Hungary)</i>
<i>11.00-11.20H</i>	<i>Robot coordination system based on ROS and LabVIEW</i>	<i>Agnieszka Węsierska, Mateusz Kujawiński, Grzegorz Granosik Lodz University of Technology, Institute of Automatic Control</i>
<i>11.20-11.40H</i>	<i>Feedforward command computation of a3D flexible robot</i>	<i>Arthur Lismonde and Olivier Bruls Department of Aerospace and Mechanical Engineering, University of Liege, Belgium</i>
<i>11.40-12.00H</i>	<i>Effectiveness test of simulator for e-training in carrying out missions with use of tele-operated vehicles</i>	<i>Igor Ostrowski, Andrzej Masłowski NASK Governmental Research Institute Digital Mobile Robotics Department Warsaw, Poland</i>
<i>12.00-12.20H</i>	<i>Training of robots' operators with use of multirobot simulators</i>	<i>Marek Kacprzak, IMMSF, Warsaw, Poland</i>

SESSION 3/1 ROBOTICS for DEFENSE and CBRNE RISKS - STATUS
27 septembre (Room 1)

CHAIR: Professor Y.Baudoin (ICI-RMA) – Dr Ir F.Schneider (Fraunhofer)

13.15-13.40H	KEY NOTE: UGV-UAV Growing Market for the Defense	Prof EM Y.Baudoin (ICI/RMA)
13.40-14.00H	<i>Challenges of development of UAV for Chemical detection & Sampling - Polimaster & HZS Solution</i>	<i>DrYaugen Ryzhykau (Hotzonesolutions, The Netherlands)</i>
14.00-16.00H	<i>Competition/Exhibition EOD/IED trials</i>	

SESSION 3/2. CONTROL and SENSOR SYSTEMS in ROBOTICS
27 September (Room 2)

CHAIR: Prof A.Maslowski (NASK/Poland)

13.30-14.00H	KEY NOTE: Measurement and Control in Robotics: the challenge.	Dr Zafar Taqvin Scientific Secretary IMEKO TC 17 (USA)
14.00 -14.20H	<i>Challenges of development of UAV for Chemical detection & Sampling - Polimaster & HZS Solution</i>	<i>DrYaugen Ryzhykau (Hotzonesolutions, The Netherlands)</i>
14.20-14.40H	<i>Dedicated simulator for e-training of demining robot “Dromader” operators.</i>	<i>Igor Ostrowski, Andrzej Masłowski NASK Governmental Research Institute Digital Mobile Robotics Department Warsaw, Poland</i>
14.40-15.00H	<i>In-flight launch of unmanned aerial vehicles</i>	<i>Niels Nauwynck, ,Haris Balta, Geert De Cubber, Hichem Sahli, VUB/RMA - Belgium</i>
15.00 -15.20H	<i>An active beacon-based Tracking System to be used for Mobile Robot Convoying</i>	<i>Stanislaw Goll, <u>Elena Zakharova</u>, LLC KB Avrora/Ryazan State radio Engineering University, Ryazan, Russia</i>
15.20-15.40H	<i>Qualitative and quantitative validation of drone detection systems</i>	<i>Daniela Doroftei, Geert De Cubber (RMA, Belgium)</i>
15.40-16.00H	<i>RADAR-based Through-Wall Mapping</i>	<i>Sedat Dogru, Lino Marques, ISR-University Coimbra, Portugal</i>
16.00-16.20H	<i>Ultrasonic Rangefinder with submillimeter resolution as part of the Rescue Robot’s sensor system</i>	<i>Stanislaw Goll, <u>Julia Maximova</u>, LLC KB Avrora/Ryazan State radio Engineering University, Ryazan, Russia</i>

SESSION 4. TECHNICAL PRESENTATIONS and MODELING**26-27 September (Exhibition Site)****Demos in competition 24-27 Sep****IMEKO TC17 meeting****And Room 1 (schedule later adapted, depending on the scenarios)****CHAIRS: Dr F.Schneider (Fraunhofer/Germany), Dr Z.Taqvi, Y.Baudoin****In RED: exhibitors (updated 15 July)**

14.00-14.20H	<i>ELROB 2018. Convoy and Mule of Team MuCAR</i>	<i>Thorsten Luettel, University of the Bunderswehr, Munich, Germany F. Ebert, P. Berthold, P. Burger, T. Engler, A. Frericks, B. C. Heinrich, J. Kallwies, M. Kusenbach, K. Metzger, M. Michaelis, B. Naujoks, A. Sticht, and H.-J. Wuensche</i>
14.20- 14.40H	<i>Standard Test Methods for Mobile Robots</i>	<i>Andreas Ciossek, Produkt Manager, TELEROB, Germany</i>
14.40-15.00H	<i>Automated Magnetic Field reproducing Stand for Debugging Algorithms Navigation of Mobile Robots.which use on board Magnetometer Sensor</i>	<i>Stanislaw Goll, <u>Alexander Borisov</u>, LLC KB Avrora/Ryazan State radio Engineering University, Ryazan, Russia</i>
15.00-15.20H	<i>Robsim Software for Mobile Robots modeling</i>	<i>O.P. Goidin, S.A. Sobolnikov FSUE VNIIA, Moscow</i>
10.00-17.00H	The ZEUS robot	Steve Wisbey NIC Instruments Ltd
15.30H MEETING IMEKO TC17		
10.00-17.00H	The MSAS vehicle	Janusz Bedkowski, Manadal, Poland
10.00-17.00H	Telexmax PRO, Hybrid, PLUS	Andreas Ciossek, Telerob, Germany
10.00-17.00H	The Mörri robot	Antti Tikanmäki, BISG Oulu , University of Oulu Finland
10.00-17.00H	The SR-120D System	Patrik Bylin, Brokk AB, Sweden
10.00-17.00H	The Packbot 510 EOD/Kobra 710	Colin Weiss, ELP GmbH, Germany
10.00-17.00H	Tulf/StrAsRob, smart military vehicles	Dr Alexander Wolf, Diehl Defense GmbH, Germany
10.00-17.00H	Milrem THEMIS	Dr Alexandre Wolf, Diehl Defense GmbH&CoKG
10.00-17.00H	Patria AMV, SLO-IFV	Matti Saarikko, Patria land Systems Oy, Finland
10.00-17.00H	The Wombat Leader-Wombatt Follower	Gol Stanislav, LLC KB Avrora, Russia
10.00-17.00H	The robot LongCross	Bastian Gaspers, Fraunhofer, Germany
10.00-17.00H	TAUT	Reinhard stocker, Guenther Trating, Austria