



Royal Military Academy of Brussels



National Engineering
School of Sousse

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8th IARP Workshop

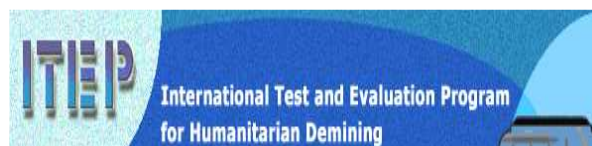
**Robotics and Mechanical assistance in
Humanitarian De-mining
and
Similar risky interventions**

HUDEM'2010

10-12 May, 2010

**National Engineering School of Sousse
Tunisia**

PROGRAM



10 March 2010, Monday		
08.00H-09.15H	WELCOME - REGISTRATION	
09.15H-10.00H	Opening - Introduction	President of Sousse University and Director of the National Engineering School of Sousse
10.00H-10.30H	HUDEM introduction	Prof Valery Gradetsky Co-Chairman IARP WS HUDEM
10.30H-11.00H	COFFEE BREAK	
SESSION 1-3 and Round Table 10 March 2010, Monday		
Session 1. ROBOT DESIGN		
Chairman : Prof. Lotfi ROMDHANE (ENISO - Tunisia)		
11.00H-11.30H	Mobility and stability of robots on rough and soft terrain: Modeling and control	Faïz Ben Amar ISIR Institut des Systèmes Intelligents et de Robotique Université Pierre et Marie Curie UPMC - FRANCE
11.30H-12.00H	About a new design of a pneumatic walking robot	Imededdine SIALA Amr BENKHALIFA Military Academy Fondouk Jedid - TUNISIA
12.00H-12.30H	A new concept of fast mobile rover with improved stability on tough terrain	Jean-Christophe Fauroux J. Dakhallah, B.C. Bouzgarrou Clermont University, French Institute for Advanced Mechanics (IFMA), CLERMONT- FERRAND, France
12.30H-14.00H	Collective Photo and Lunch	
Session 2. ROBOT – DATA PROCESSING, CONTROL and SIMULATION		
Chairman: Prof. Munsung KIM (Korea Institute of Science and Technology – Korea)		
14.00H-14.30H	Design of the W-AntNetSec Routing Protocol for Robot WSN Platforms	Ilhem Lengliz, Achraf Karbich, Semeh Ben Salem Military Academy Fondouk Jedid - TUNISIA
14.30H-15.00H	e-Training in RISE and HUDEM	Andrzej MASLOWSKI ^{1,2} ¹ Warsaw University of Technology, Faculty of Mechatronics, Warsaw, Poland ² Institute of Mathematical Machines, Warsaw, Poland
15.00H-15.30H	About Evaluation of Electromagnetic Perturbations Generated by Electronic Converters in Robotics	Taoufik ZOUAGHI T. Zouaghi ^{1,3} , I.Mzoughi ² , A. Mhamdi ² ¹ Military Academy - Tunisia, e-mail: t.zouaghi@enit.rnu.tn / zouaghitaoufik@yahoo.fr ² Aviation School of BorjElamri, Tunisia ³ Research Laboratory SICISI, ESSTT, 5, Av. T. Hussein, 1008, Tunis, Tunisia

15.30H-16.00H	COFFEE BREAK	
Session 3. ROBOTICS FUNCTIONS		
Chairman: Prof. Andrzej MASLOWSKI (Faculty of Mechatronics, Warsaw, Poland)		
16.00H-16.30H	Logical solution for design, implementation and manufacture of automated production technology for organic fruits and vegetables for fresh consumption in open and closed areas and Robotic Complexes for demining of minefields	Marin Grudev MIDILEV BULGARIA
16.30H-17.00H	Chemical Explosive Detection for Robotic Demining Application	Sungjun Lee ¹ , Junghoon Lee ^{1,2} , and Munsang Kim ³ ¹ School of Mechanical and Aerospace Engineering, Seoul National University, Korea ² Interdisciplinary Program of Bioengineering, Seoul National University, Korea ³ Center for Intelligent Robotics, 21C Frontier Intelligent Robotics Program, Korea Institute of Science and Technology
17.00H-17.30H	New technologies to face CBRN-threats	Yvan BAUDOIN and Geert De Cubber Royal Military Academy, Dept Mechanical Engineering – MB07 R&D Team, Brussels-Belgium
17.30H-18.00H	ROUND TABLE on ROBOTS and SENSORS for Humanitarian De-mining	

SESSION 4-8 and Round Table 11 May 2010, Tuesday		
Session 4. ROBOT – DATA PROCESSING, CONTROL and SIMULATION		
Chairman: Prof Valery GRADETSKY (Institute for Problems in Mechanics - Russian Federation)		
09.00H-09.30H	Design of Robot's Adaptive Motors Controller Based on Fuzzy Logic using Microcontroller	Adel CHANGUEL Ecole Préparatoire aux Académies Militaire de Sousse - TUNISIE
09.30H-10.00H	Field Robot Teleoperation via Vibrotactile User Interface	Gi-Hun YANG, Woosub Lee, Sungchul Kang and Munsang Kim Center for Cognitive Robotics Research Korea Institute of Science and Technology, Seoul, Korea
10.00H-10.30H	A robot controlled remotely for area radioactivity topography	Mounir Zrafi, Mohamed Hèdi Bedoui . UR-08-27-TMI: Technology and Medical Imaging Laboratory of Biophysics Faculty of Medicine, Monastir University, Tunisia
10.30H-11.00H	COFFEE-BREAK	
Session 5. ROBOTICS FUNCTIONS		
Chairman : Prof. Mohamed Hedi BEDOUI (FMM - Tunisia)		
11.00H-11.30H	Multi-functional Surveillance Wallclimbing Machine	Prof Valery Gradetsky, M.M.Knyazkov The A.Yu.Ishlinsky Institute for Problems in Mechanics of Russian Academy of Sciences - Russia

11.30H-12.00H	Towards a Human-like voice command of robots	Zied Chtourou, Sahbi Mazlout Military Academy Fondouk Jedid - TUNISIA
12.00H-12.30H	Multi-robot collaboration and coordination in a high risk transportation scenario	Daniela DOROFTEI Royal Military Academy, Dept Mechanical Engineering – MB07 R&D Team, Brussels-Belgium
12.30H-14.00H	LUNCH	
Session 6. ROBOT – DATA PROCESSING, CONTROL and SIMULATION		
Chairman : Prof. Mohamed Hedi BEDOUI (FMM - Tunisia)		
14.00H-14.30H	Basic autonomous robot navigation	Ali BHAR*, Yvan BAUDOIN** *Military Academy Fondouk Jedid – TUNISIA ** Royal Military Academy, Dept Mechanical Engineering – MB07 R&D Team, Brussels-Belgium
14.30H-15.00H	An autonomous vehicle localisation system based on multisensor data fusion	Mounir MANSOUR Ecole Préparatoire aux Académies Militaire de Sousse - TUNISIE
15.00H-15.30H	COFFEE-BREAK	
Session 7. ROBOT DESIGN		
Chairman : Prof. Munsang KIM (Korea Institute of Science and Technology – Korea)		
15.30H-16.00H	Modules for ROBOTICS Systems for Humanitarian De-mining: IARP WG HUDEM Contributions	Yvan Baudoin**, Maki K Habib*, Al** and Geert De Cubber** *American University of Cairo ** Royal Military Academy, Dept Mechanical Engineering – MB07 R&D Team, Brussels-Belgium
16.00H-16.30H	A new design for in-pipe inspection robot	Houbeb ABID ⁽¹⁾ Abdelfattah MLIKA ⁽²⁾ Lotfi ROMDHANE ⁽²⁾ ⁽¹⁾ Institut Supérieur aux Etudes Technologiques de Sousse ⁽²⁾ Ecole Nationale d'Ingénieurs de Sousse
16.30H-17.00H	COFFEE-BREAK	
Session 8. CLOSURE		
Chairman: Prof Valery GRADETSKY (Institute for Problems in Mechanics - Russian Federation)		
17.00H-18.00H	IARP WS'HUDEM'2011 OBJECTIVES HUDEM' 2010 Workshop Farewell	

Wednesday 12 May, 2010	
SOCIAL PROGRAM	
08.00H-12.00H	Touristic visit to KAIROUAN
12.00H-13.00H	BACK TO SOUSSE
13.15H-14.45H	LUNCH – (SOUSSE)