



Royal Military Academy



TECHNOWATCH ON MOBILE ROBOTICS 2006

RISE 2006

**IARP Workshop on Risky Interventions and Environmental Surveillance
*Brussels, RMA, 19-21 June 2006***



[RISE'2006 \(June, 19-21 \)](#)

RISE'2006 is a IARP Workshop.

The Advanced Robotics Project was established by the Heads of State of G7 in 1982, recognizing the strategic role of robotics technologies in furthering economic and social development. A final report on this project was presented in the Tokyo Economic Summit in 1986. The **International Advanced Robotics Programme** was also established in 1986 to pursue the intent of the 1982 Economic Summit and, although it no longer reports to the Heads of State of the G7, it remains a government based activity, open to all countries. The objective of IARP is:

"To foster international cooperation toward the development of advanced robotic systems capable of eliminating or minimizing human exposure to difficult activities in harsh, demanding, dangerous conditions or environments".

Since its establishment, IARP has fostered and catalysed international cooperation in "hot research topics", as well as in application domains that encompass or use robotics and intelligent machines. It has also paved the way for the introduction of new promising research directions

In 1996, IARP generated a report assessing the status and the future impact of Robotics Research Technologies in practical applications. Industrial Robots were a typical example, integrating many technologies. At the end of 1995, the world total of industrial robots, primarily in manufacturing industries, was approximately 700,000 with a yearly growth rate averaging 30%.

Ever since, a new category of robots has emerged, namely service and intervention robots. Their number has outpaced industrial robots and they became an important market segment, with applications including:

- Materials handling and transportation, construction, sewer inspection and repair, etc.
- Field-based applications such as mining, forestry, agriculture, underwater and space.
- Public-oriented areas ranging from domestic and professional cleaning, handling dangerous substances, hotel and hospital catering, assistance to the disabled and the aging.
- Network based remote operations.
- Healthcare, surgical, and medical intervention.

The IARP workshops, with limited attendance, by invitation only, can be domain oriented, or directed to a specific scientific, engineering, or technical subject. Registration will be free to attendees and no other fee or consideration will be mandatory. Their aim is to assess particular problems, foster institutional actions and international cooperation, and help codify knowledge in important technical areas of Advanced Robotics.

[Programme 2006 and registration: enclosed annexe 1.](#)

ANNEXE 1. RISE'2006

19 JUNE		
SCHEDULE	TITLE	AUTHOR(s)
09.30 H	Welcome – IARP Scientific Research at the RMA	Col Dr Ir Dirickx Prof Y.Baudoin (RMA, Belgium)
ENVIRONMENTAL SURVEILLANCE		
10.30 – 11.00 H	A European Strategic Research Agenda for High Altitude Long Endurance Aircraft and Airships and their Applications	P.Hendrick (ULB-RMA, Belgium), A.Lavie (Israël)
11.00 - 11.30 H	Appropriate remote sensing tools for improving risk Management	M.Acheroy (RMA, Belgium)
11.30 – 12.00 H	RESSAC : autonomous inspection by unmanned helicopters	P.Fabiani (France)
LUNCH		
SECURITY		
13.30 – 14.00 H	PARADIS: a risk management system for mine action	S. Delhay, V.Lacroix (RMA, Belgium)
14.00 – 14.30 H	A HALE Solar Powered UAV for Earth Observation and Security	G.Romeo (Polytechnico de Torino, Italy)
14.30 – 15.00 H	Advanced Multi-Agent-System for Security applications	R.Granot (Univ. Haifa, Israël)
COFFEE BREAK		
15.30 – 16.00 H	Tele-robotics: Distributed Training-oriented Navigation Framework	Thomas Geerinck*, Eric Colon**, Sid Ahmed Berrabah*, Kenny Cauwerts*, Hichem Sahli* (RMA, VUB/ETRO, Belgium)
16.00 – 16.30 H	Simulation and synthesis of control algorithms for robotrain for motion under constrained conditions of complicated environments	V.E. Pavlovsky , N.V Petrovskaya, V.V.Evgrafov, V.V. Pavlovski (KIAM, Russia)
19.00 H GET TOGETHER Evening Paradis du Liban Merode, Av de Tervuren, 1000 Brussels		

20 JUNE		
SCHEDULE	TITLE	AUTHOR(s)
09.30-10.00 H	Coordinated deployment of aerial and ground robots	S.Lacroix, R. Alami, Th. Lemaire, S. Bosch, S. Joyeux, Th. Peynot (France)
SECURITY		
10.30 – 11.00 H	Development of a control architecture for the ROBUDEM outdoo mobile robot platform	D.Doroftei, E.Colon, Y.Baudoin (RMA, Belgium)

11.00 – 11.30 H	RAVON an autonomous Vehicle for Risky Intervention and surveillance	Bernd Helge Schäfer, K.Berns (Univ Kaiserslautern, Germany)
11.30 – 12.00 H	Path Planning control for Humanitarian De-mining	Svetlana Larionova,L.Marques, A.de Almeida (University of coimbra, Portugal)
LUNCH		
13.30 – 14.00 H	Control Motion of Miniature Robots in Unstructured Environments	V.Gradetzky (Inst for Problems in Mechanics, Russia)
14.00 – 14.30 H	Intervention Robotics – Experience in Poland	A.Maslowsky (PIAP, Poland)
14.30 – 15.00 H	Forest fire prevention by use of vision system	L.Vajta (BUTE, Hungary)
15.00 – 15.30 H	Approaches to the design of Humanitarian De-mining Sensor Heads	Ponticelli, Gonzalez de Santos, Armada, CSIC-IAI (Spain)
COFFEE BREAK		
16.00 – 17.00 H	Round Table	IARP

21 JUNE		
09.00 – 12.00 H Departure RMA: 08.00 H	On site MEERDAEL-LEUVEN IEDD Missions of SEDEE (Meerdael-Leuven) and IEDD Demonstration LADERO demonstration ROBUDEM demonstration – Discussion	G.Valentin, P.Merckx, M.Jacobs, et Al (DOVO, Belgium)
LUNCH		
13.30 H TECHNICAL VISIT (KUL – VUB) – Belgium Robotics		