



International Advanced
Robotics Programme



TIRAMISU

Toolbox Implementation for Removal
of Anti-personnel Mines, Submunitions and Uxo



Version 16 march 2012

Dear IARP Workshop, TIRAMISU, Symposium Partners – authors/co-authors:

Thanks for your valuable contribution ! The following table includes the 10th IARP WS contributions. Depending on the topics, some papers have been inserted in the 9th HCR Symposium. This pre-programme may be revised: just follow it on <http://meatron.rma.ac.be>

1. It is strongly recommended to register as soon as possible and, for sure, if you need a VISA (www.ctro.hr)
2. All full papers have to be sent to Yann.Yvinec@rma.ac.be, Yvan.baudoin@rma.ac.be, nikola.pavkovic@ctro.hr and Sanja.vakula@ctro.hr by 15 April 2012 at the latest

THANKS,

Yvan

Paper N°	Title	Author, Co-authors
1	TIRAMISU: FP7 project developing a comprehensive toolbox for Removal of Anti-personnel Mines, submunitions and UXO	Vinciane Lacroix ¹ , et Al ² ¹ Royal Military Academy Brussels, Belgium ² TIRAMISU Partners
2	IARP, International Program sustaining the Robotics for Humanitarian demining and Risky interventions	Yvan Baudoin ¹ , Manuel Armada ² , Andrzej Maslowski ³ ¹ Royal Military Academy, Brussels, Belgium ² Centre for Automation and Robotics – CAR (CSIC-UPM), Madrid, Spain ³ Institute of Systems and Robotics, University of Coimbra, Portugal manuel.armada@csic.es

		a.maslowski@imm.org.pl
3	TriDem- A Wheeled Mobile Robot for Humanitarian Mine Clearance	Ioan Doroftei ¹ , Yvan Baudoin ² ¹ Technical university GH Agashi of Iasi, Romania ² Royal Military Academy, Brussels, Belgium idorofte@mec.tuiasi.ro
4	Bio-inspiration and Mine Detection	Maki K Habib, American university of Cairo, Egypt Maki@ieee.org
5	Motion Planning of Mobile Robots for Humanitarian demining	Marija Đakulović and Ivan Petrović University of Zagreb, Croatia marija.dakulovic@fer.hr ivan.petrovic@fer.hr
6	Extended Information Filtering and nonlinear control for cooperating robot harvesters	Gerasimos Rigatos Harper Adams University College grigat@ieee.org
7	A robust, simple, low-cost autonomy enhancement module for LOCOSTRA, a remotely controlled demining machine	Michał Przybylko, Emanuela Elisa Cepolina, Gianni Polentes ¹ and Matteo Zoppi ² ¹ Pierre Trattori snc, Silvano d'Orba, Italy ² University of Genoa, Italy mprzybylko@tlen.pl giovannipolentes@pierretra.com zoppi@dimec.unige.it patfordemining@gmail.com
8	State of the art review on Mobile Robots and Manipulators for humanitarian demining	L. Marques ¹ , A. T. de Almeida ¹ , M. Armada ² , R. Fernández ² , H. Montes ² , Y. Baudoin ³ ¹ University of Coimbra, Portugal ² Centre for Automation and Robotics – CAR (CSIC-UPM), Madrid, Spain ³ Royal Military Academy, Belgium lino@isr.uc.pt manuel.armada@csis.es roemi.fernandez@car.upm-csic.es hector.montes@csic.es adealmeida@isr.uc.pt
9	Qualitative Spatio-temporal Representation and Reasoning Framework for Risky Intervention mobile robot's operator training Design	Janusz Będkowski ¹ , Paweł Musiałik ¹ , Andrzej Masłowski ¹ , Yvan Baudoin ² ¹ Institute of Mathematical Machines, Warsaw, Poland ² Royal Military Academy, Brussels Janusz.bedkowski@gmail.com amaslowski@imm.org.pl
10	Identification and classification of tools and missions needing e-training of Humanitarian Demining staff with use of computer simulation	Andrzej Kaczmarczyk, Marek Kacprzak, Andrzej Masłowski m.kacprzak@imm.org.pl
11	Sensors for close-in detection of explosive devices – current status and future prospects	Lino Marques ¹ , Giovanni Muscato ² , Yann Yvinec ³ , Salvo Baglio ² ¹ University of Coimbra, Portugal ² University of Catania, Italy ³ Royal Military Academy, Belgium gmuscato@diees.unict.it

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12	Robotic Complexes of integrated systems for environmental demining of minefields	Marin Midilev Bulgaria midilev@abv.bg
13	Results of ESA's Space Assets for Demining Assistance Feasibility Studies	Michiel Kruijff¹, Daniel Eriksson³, Thomas Bouvet¹, Alexander Griffiths⁴, Matthew Craig, Hichem Sahli², Fernando Valcarce González-Rosón⁶, Amnon Ginati¹ ¹ ESA, Noordwijk, The Netherlands ² Vrije Universiteit Brussel, Belgium ³ GICHD, geneva, Switzerland ⁴ Swiss Foundation for Mine Action, Switzerland ⁵ Cranfield University, United Kingdom ⁶ INSA S.A., Madrid, Spain michiel.kruijff@esa.int d.eriksson@gichd.org Thomas.bouvet@esa.int geneva@fsd.ch m.p.s.craig@cranfield.ac.uk hichem.sahli@etro.vub.ac.be fvalcarce@insa.org Amnon.ginati@esa.int
14	Comparing different gradiometer configurations for underwater survey and demining	Yann Yvinec Royal Military Academy, Brussels, Belgium Yann.yvinec@rma.ac.be
15	Airborne wide area general assessment of the environment pollution due to the exploded ammunition storages	Milan Bajic Scientific Committee of Centre for testing, development and training Ltd., Zagreb, Croatia milan.bajic@zg.t-com.hr
16	Proposal for construction of demining machines and trailers for the transport of dangerous goods carried out within the project TIRAMISU	Marcin SZCZEPANIAK, PhD, Wiesław Jasiński WITI, Military Institute of Engineer Technology, Wrocław, Poland szczepaniak@witi.wroc.pl
17	First results: Robot mapping of sites contaminated by landmines and unexploded ordnance.	Kjeld Jensen¹, Leon B. Larsen¹, Kent S. Olsen¹, Jens Hansen², Rasmus N. Jørgensen¹ ¹ Institute of Chem-, Bio- and Environmental Technology, University of Southern Denmark Campusvej 55, 5230 Odense M, Denmark Phone: (+45) 27781926, email: kjen@kbm.sdu.dk ² Lynex, Aalsøvej 2, 8240 Risskov, Denmark
18	An overview of GIS-based Multi-Criteria Analysis of priority selection in humanitarian demining	Nenad Mladineo*, Snjezana Knezic* and Marko Mladineo** University of Split, Faculty of Civil Engineering, Architecture and Geodesy E-mail: mladineo@gradst.hr ** University of Split, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, E-mail: marko.mladineo@fesb.hr



INTERNATIONAL SYMPOSIUM
AND EQUIPMENT EXHIBITION
“HUMANITARIAN DEMINING 2012”

24 - 26 April 2012, Šibenik



PRE- PROGRAMME

Under the auspices of the President of the Republic of Croatia, Prof. Ivo Josipović, Ph.D.

PRELIMINARY AGENDA

MONDAY, 23 April 2012

- 14.00 – ARRIVAL AND REGISTRATION OF PARTICIPANTS
14.00 – SETTING UP OF POSTERS
15.00 – 18.00 SEEMACC MEETING
19.00 – WELCOME DRINK

TUESDAY, 24 April 2012

- 08.00 – ARRIVAL AND REGISTRATION OF PARTICIPANTS
08.00 – SETTING UP OF POSTERS
09.30 – 10.00 OPENING OF THE SYMPOSIUM
09.50-10.00 Vinciane Lacroix (Royal Military Academy, Brussels, Belgium): TIRAMISU FP7 Project: introduction

10.00 – 12.00 PLENARY SESSION – Part one
Moderators: Mirko Ivanušić, CROMAC; June Ishikawa, Tokyo Denki University; Nicole Neitzey, JMU

10.00 – 10.45 APPLICATION OF NEW GENERAL SURVEY TECHNOLOGIES – DEFINING THE SHA

10.00 – 10.15 **Milan Bajić** Three points of view on the deployment of the Advanced Intelligence Decision Support technology for assessment and reduction of a large mine suspected area –Promising tool of the EC Project TIRAMISU

10.15 – 10.30 **Michiel Kruijff, et Al (ESA, GICHD, VUB, SFM, CU-UK)** Results of ESA's Space Assets for Demining Assistance Feasibility Studies

10.30 – 10.45 **Davor Laura:** Croatian experiences in SHA reduction

10.45 – 11.00 **Nicole Neitzey:** Landmine aging study

11.00 – 11.45 UNDERWATER SURVEY AND DEMINING

11.00 – 11.15 **Veselin Mijajlović:** Standard operating procedures for humanitarian underwater demining

11.15 – 11.30 **Zvonko Gržetić:** Capabilities of hydrographic surveys and equipment for the detection and positioning of mines on and just below the seabed

11.30 – 11.45 **Ivan Babić:** Underwater removal of mines – special police experiences

11.45 – 12.00 **Yann Yvinec:** Comparing different gradiometer configurations for underwater survey and demining

12.00 – 12.15 COFFEE BREAK

12.15– 13.30 PLENARY SESSION – Part two
Moderators: Oto Jungwirth, GHR; Ashley Williams, MECHEM; Darvin Lisica, NPA-BiH

12.15 – 13.00 USE OF DEMINING MACHINES AND MINE PROTECTED VEHICLES IN DEMINING

12.15 – 12.30 **Dinko Mikulić:** Demining machine operator safety

12.30 – 12.45 **Steve Brown:** The use of small Multi-task Robotic Vehicles in Demining Operations

12.45 – 13.00 **Khalil Ahmad:** Application of Raptor demining machine in AT mined areas

13.00 – 13.15 **Ashley Williams:** Quality Assurance on commercial demining contracts

13.15 – 13.30 **Darvin Lisica:** Application of acquired knowledge in planning and implementation of evaluation to the Norwegian People's Aid Mine Action Program in BiH

13:30– 14:30 LUNCH

14.30 – 18.30 10th IARP WORKSHOP HUDEM'2012
Moderators: Yvan BAUDOIN (RMA),Andzej MASŁOWSKI IMM), Manuel ARMADA (CSIC)

14.30 – 14.45 **Andrzej Kaczmarczyk, Marek Kacprzak, Andrzej Masłowski:** Identification and classification of tools and missions needing e-training of Humanitarian Demining staff with use of computer simulation

14.45 – 15.00 **Maki K Habib:** Bio-inspiration and Mine Detection

15.00 – 15.15 **Marija Đakulović and Ivan Petrović:** Motion Planning of Mobile robots for Humanitarian demining

15.15 – 15.30 **Lino Marques:** Sensors for close-in detection of explosive devices – current status and future prospects

15.30 – 15.45 **Gerasimos G. Rigatos :** Extended Information Filtering and nonlinear control for cooperating robot harvesters

15.45 - 16.00 **Michal Przybylko, Emanuela Elisa Cepolina, Gianni Polentes and Matteo Zoppi:** A robust, simple, low-cost autonomy enhancement module for LOCOSTRA, a remotely controlled demining machine

16.00 - 16.15 **L. Marques, A. T. de Almeida, M. Armada, R. Fernández, H. Montes , Y.Baudoin:** State of the art review on Mobile Robots and Manipulators for humanitarian demining

16.00 PAUSE

16.30 – 16.45 **Kjeld Jensen¹, Leon B. Larsen, Kent S. Olsen¹, Jens Hansen, Rasmus N. Jørgensen**

First results: Robot mapping of sites contaminated by landmines and unexploded ordnance.

16.45 – 17.00 **Janusz Będkowski, Paweł Musiałik, Andrzej Masłowski, Yvan Baudoin:** Qualitative Spatio-Temporal Representation and Reasoning Framework for RISE mobile robot's operator training Design

17.00 – 17.15 **Y.Baudoin,I.Doroftei :** TriDem- A Wheeled Mobile Robot for Humanitarian Mine Clearance

17.15 - 17.30 **Marcin Szcepaniak:** Proposal for construction of demining machines and trailers for the transport of dangerous goods carried out within the project TIRAMISU

17.30 – 17.45 **Nenad Mladineo*, Snjezana Knezic* and Marko Mladineo:** An overview of GIS-based Multi-Criteria Analysis of priority selection in humanitarian demining

17.45 – 18.00 **Milan Bajic:** Airborne wide area general assessment of the environment pollution due to the exploded ammunition storages

18.00 – 18.15 **Marin Midilev:** Robotic Complexes of integrated systems for environmental demining of minefields

14.00 – 20.00 PRESENTATION OF MANUFACTURERS AND DEMINING EQUIPMENT

- Viewing of exhibited equipment and contacts with manufacturers
- 17,00-19,00 – special presentations by manufacturers

EXPECTED EXHIBITORS: DOK-ING d.o.o.; WAY INDUSTRY a.s.; ĐURO ĐAKOVIĆ Special Vehicles d.d.; BOROVO d.d.; MINOTEHNIKA d.o.o.; ŠESTAN-BUSCH d.o.o.; MINEWOLF SYSTEMS GmbH; VILPO d.o.o.; VALLON GmbH; CEIA SPA; DIGGER Foundation; ISTRAŽIVAČ d.o.o.; FAE Group SPA; ARMTRAC Ltd; EBINGER GmbH.

20.30 – DINNER HOSTED BY ORGANIZERS

WEDNESDAY, 25 April 2012

08.00 – 12.30 PRESENTATION OF MANUFACTURERS, DEMONSTRATION OF WORK OF MINE PROTECTED VEHICLES AND TECHNICAL SURVEY AND DEMINING EQUIPMENT

EXPECTED MACHINES: MV-4; MV-4 EKO; MV-10; BOŽENA-5+; RM-03, MINI MINE WOLF 240 ; MINE WOLF 370; DIGGER D-3; VF-001, VF-100, PT 300; PT 400; ARMTRAC 75t-230.

EXPECTED DETECTORS: CEIA; EBINGER; VALLON

14.30 – 16.30 DEMONSTRATION OF UNDERWATER SURVEY AND DEMINING (RCUD)

16.30 – 20.00 VIEWING OF EXHIBITED EQUIPMENT, CONTACTS WITH MANUFACTURERS, WORKSHOPS AND PRESENTATIONS

- manufacturers of demining machines, metal detectors, protective equipment UGVs,
- MDD training centres,
- testing and training centres.

THURSDAY, 26 April 2012

09.30 – 12.00 PLENARY SESSION
Moderators: Nikola Pavković, HCR-CTRO; Faiz Paktian, GICHD; Yvan Baudoin, RMA

09.30 – 10.00 Presentation of the project TIRAMISU (Vinciane Lacroix-RMA)

10.00 – 10.30 Report from the IARP Workshop (Yvan Baudoin)

10.30 – 11.30 Discussion of individual topics and presentations from the first session

11.30 – 12.00 COFFEE BREAK

12.00 – 13.00 CONCLUSIONS, WRAP UP AND ADJOURN

16.00 - 23.00 EXCURSION AND FISH DINNER COURTESY OF THE ORGANIZERS
Boat excursion around Šibenik archipelago

END OF SYMPOSIUM

GENERAL INFORMATION:

DEADLINES:

- 15 March 2012** - final deadline for submitting abstracts and final deadline for registering equipment manufacturers,
- 10 April 2012** - final deadline for registration of participants,
- 15 April 2012** - final deadline for accommodation booking

OFFICIAL LANGUAGE: Croatian and English will be official languages of the Symposium.

SYMPOSIUM FEE: Symposium fee will be 150€.

INSURANCE: The Organizing Committee recommends that attendees take care of their travel, medical and property insurance. Organizers will not be liable for injuries, damage or loss of participants' properties.

VISA/PASSPORT All participants from abroad shall have valid passports. All participants who may require visas are asked to contact the Croatian Embassy in their country. Information on the visa system in the Republic of Croatia may be found at the web site of the Ministry of Foreign and European Affairs at: www.mvep.hr.
Without a timely visa application (at least 3 weeks before the Symposium) submitted at a Croatian Embassy responsible for your country, it will not be possible to issue a visa.

ACCOMMODATION: Attendees will be accommodated in five four- points "Solaris" hotels with 1,500 rooms. The attendees should contact the hotel in order to book and pay for their accommodation. Information on the "Solaris" hotels may be found at www.solaris.hr
Final deadline for accommodation booking is 15th April 2012.

TRAVEL ARRANGEMENTS: Šibenik may be reached from Zagreb by car, train or bus. The most convenient airport is Split, but Zadar is also within an hour's drive. Flight information may be found at Internet pages: www.croatiaairlines.hr

ADDITIONAL INFORMATION:

Information on the international symposium entitled *Humanitarian Demining 2012* may be found at: www.ctro.hr or www.hcr.hr

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