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Dissemination level		
PU	Public	x
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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1 INTRODUCTION

The **3rd CADDY Workshop** was organized as a part of the **EMRA'16 - Workshop on EU-funded Marine Robotics and Applications**, which took place at Newcastle University, UK, from 14-15 June, 2015. This event followed on from the previous successful events held in Rome 2014 (CNR) and Lisbon 2016 (IST) and followed a similar format to these events.

The EMRA 2016 workshop presented the latest developments from EU FP7 and H2020 projects on marine robotics and provided a platform for marine stakeholders to share and discuss current technological challenges and achievements. Together with speakers/delegates from European industry and end users, future directions and challenges were highlighted. Through group and individual discussions, potential collaborations were identified and the need for closer industry-academic was highlighted.

The workshop brought together a total of 19 speakers from academia, industry and research institutes covering a wide range of topics in subsea robotic technology together with applications in marine science and industry, including deep sea mining, oceanography, geological surveying and oil & gas.

EMRA 2016 summary:

- **19** speakers
- **10** FP7 and H2020 projects represented
- Approximately **70** participants from across Europe and as far away as China.

Date: 14-15 June 2016

Location: Newcastle University, Newcastle, UK.

Website: <http://conferences.ncl.ac.uk/emra2016/index.html>



Workshop on EU funded
MARINE ROBOTICS AND APPLICATIONS

2. REPORT ORGANIZATION

The first part of the report describes the EMRA'16 organization, including the work program. This is followed by Appendix I (Collection of presentations -slides).

3. EMRA 2016 ORGANIZATION

3.1 WORK PROGRAM

Day 1 (14th June 2016)

8:30	Registration open	Coffee and other refreshments served in breakout area.
9:30	Welcome	Jeff Neasham, School of electrical & Electronic Engineering, Newcastle University
9:45	Opening address	Nick Wright, Pro Vice Chancellor of Research, Newcastle University
10:00	CADDY Year 2: What we learned from first validation trials	Nikola Miskovic, Laboratory for Underwater Systems and Technologies, University of Zagreb
10:30	3D Survey of Areas with Strong Relief Using Hovering Capable AUVs	Pere Ridaó, Vision and Robotics Research Institute, University of Girona
11:00	Break	Coffee and other refreshments served in breakout area.
11:30	DexROV: dexterous ROV interventions operated from an onshore control center	Jeremi Gancet, Space Applications Services NV/SA
12:00	Seismic exploration with a swarm of 16 AUVs: from the system design to the first survey at sea	Alessio Turetta, Graal Tech s.r.l
12:30	Lunch	Buffet lunch served in break out area
13:30	Subcultron: a learning, self-regulating, self-sustaining underwater society/culture of robots	Ronald Thenius, Artificial Life Lab - University of Graz
14:00	Flow sensors for robotics and environmental monitoring	Maarja Kruusmaa, Centre for Biorobotics, Tallinn University of Technology
14:30	Towards bio-inpiration for underwater vehicles	Maryam Haroutunian, School of Marine Science and Technology, Newcastle University
15:00	Break	Coffee and other refreshments served in breakout area.
15:30	Underwater mining	Eduardo Silva, ISEP / INESC TEC
16:00	OceanRINGS: Current State of Development and Future Work	Edin Omerdic, Mobile & Marine Robotics Research Centre, University of Limerick
16:30	DexROV: enabling effective dexterous ROV operations in presence of communication latencies	Guiseppe Casalino, University of Genova (ISME)
17:00	Reception	Wine, soft drinks and canape served in break out area
18:00	Close	

Day 2 (15th June 2016)

9:00	Arrival	Coffee and other refreshments served in breakout area.
9:30	Marine Autonomous Systems development at NOC: an overview	Maaten Furlong, National Oceanography Centre
10:00	The Scottish Marine Robotics Facility: Marine observation spanning atmosphere, ocean and ice	Fraser Macdonald, Scottish Association for Marine Science
10:30	Water surface height determination with a GPS Wave Glider: A demonstration in Loch Ness, Scotland	Miguel Morales Maqueda, School of Marine Science and Technology, Newcastle University
11:00	Break	Coffee and other refreshments served in breakout area.
11:30	ROBUST: Robotic subsea exploration technologies	Giuseppe Casalino, University of Genova (ISME)
12:00	The WiMUST H2020 project: Widely scalable Mobile Underwater Sonar Technology	Giovanni Indiveri, University of Salento (ISME)
12:30	Lunch	Buffet lunch served in break out area
13:30	Low power and low cost underwater acoustic communication & positioning	Jeff Neasham, School of Electrical & Electronic Engineering, Newcastle University
14:00	ROBOCADEMY ITN: What's Hot and So What - Building Links to Relevant EU Projects	David Lane, Ocean Systems Laboratory, Heriot-Watt University
14:30	Pushing the state of the art through competitions and high level educational programmes	Fausto Ferreira, NATO STO CMRE
15:00	Break	Coffee and other refreshments served in breakout area.
15:30	Open discussion - future directions and opportunities in marine robotics	
16:45	Closing address	Jeff Neasham, School of electrical & Electronic Engineering, Newcastle University
17:00	Reception	Wine, soft drinks and canape served in break out area
18:00	Close	

3.2 PROGRAM COMMITTEE

List of programme committee members:

- Jeff Neasham, *Newcastle University, UK* (chair)
- Nikola Mišković, *University of Zagreb, Croatia* – CADDY project coordinator
- Massimo Caccia, *CNR, Italy*
- Antonio Pascoal, *Instituto Superior Técnico (IST), Lisbon, Portugal*

3.3 ORGANIZING COMMITTEE

List of organizing committee members, all from Newcastle University, UK:

- Jeff Neasham (Chair)
- Gerry Goodfellow
- David Graham

3.4 WORKSHOP SECRETARIAT

List of secretariat members, all from Newcastle University, UK:

- Susan Lawson
- Sarah Hunt
- Claire Dougherty