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**European Seas Observatory Network**

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Simao, N., Escartin, J., Goslin, J., Haxel, J., Cannat, M., Dziak, R.P., **2010**. Regional seismicity of the Mid-Atlantic Ridge: observations from autonomous hydrophone arrays, *Geophys. J. Int.*, 183 : 1559-157, doi: 10.1111/j.1365-246X.2010.04815.x..

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D'Eu, J.-F., C. Brachet, J. Goslin, J.-Y. Royer & P. Tarits. Geophysical instrumentation for marine investigation: from electromagnetic to hydroacoustic instruments, toward permanent observatories. *MTS/IEEE KOBE-TECHNO-OCEAN, Kobe, Japan, 8-11 Apr. 2008.*

D'Eu, J.-F., C. Brachet, J. Goslin, J.-Y. Royer & J. Ammann. Autonomous hydrophone array for long-term acoustic monitoring in the open ocean (19-23 April 2009) *EGU General Assembly*, Vienna, Austria.

Goslin, J., J.-F. D'Eu, C. Brachet, J. Perrot & J.-Y. Royer. Listening to the Sounds of the Ocean: Results and Perspectives. *SeaTech Week – Brest, 13 – 17 October 2008.*

Goslin J., N. Lourenço, J. Luis, R. P. Dziak, J.-Y. Royer, J. Perrot, C. Brachet, N. Simão, A. Balanche, J. Haxel, H. Matsumoto : Acoustic Monitoring of the Mid-Atlantic Ridge in the MOMAR Area: Preliminary Results of the "MARCHE" Experiment. *AGU Fall Meeting – San Francisco, CA USA – 15-19 Dec 2008.*

Goslin, J., J. Perrot, J.-Y. Royer, C. Guennou, J.-F. D'Eu & C. Brachet. Autonomous hydroacoustic arrays: a powerful tool for long-term monitoring of active processes along spreading ridges and deforming areas at regional scales (11-12 February 2010) *NERIES-ESONET OBS-Marine Seismology workshop*, Paris, France.

Guennou, C., Balanche, A., Goslin, J. & Perrot, J. (2010). Le plancher océanique: générateur d'ondes hydroacoustiques. 10ème Congrès Français d'Acoustique. Lyon, 12-16 avril 2010 (extended abstract).

Ritt, B., J. Sarrazin, J.-C. Caprais, P. Noel, O. Gauthier, C. Pierre, P. Henry and D. Desbruyères (2010) First insights into the structure and environmental setting of cold-seep communities in the Marmara Sea, *Deep-Sea Res. Part I*, **57**, 1120-1136.

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## Website

Observatory projects at CNRS-IUEM: <http://www-iuem.univ-brest.fr/observation/fond-de-mer>.

## Master dissertation

Cevatoglu, M. (2010). Analyse de la sismicité de la Dorsale Médio-Atlantique et son apport dans la compréhension des processus d'accrétion: expérience MARCHE 3. Mémoire de Master2 "Géosciences Océan". Université de Bretagne Occidentale. (Perrot as supervisor)

## CNRS-LOV

### +2010-2011

## Articles

Picheral, M., L. Guidi, L. Stemmann, D. M. Karl, G. Iddaoud, and G. Gorsky. 2010. The Underwater Vision Profiler 5: An advanced instrument for high spatial resolution studies of particle size spectra and zooplankton. *Limnol. Oceanogr. Meth.* **8**: 462–473.

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- Guidi, L., L. Stemmann, G. A. Jackson, F. Ibanez, H. Claustre, L. Legendre, M. Picheral, and G. Gorsky. 2009. Effects of phytoplankton community on production, size, and export of large aggregates: A world-ocean analysis. *Limnol. Oceanogr.* **54**: 1951-1963.
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- Stemmann, L., M. Youngbluth, K. Robert, A. Hosia, M. Picheral, H. Paterson, F. Ibanez, L. Guidi, F. Lombard, and G. Gorsky. 2008c. Global zoogeography of fragile macrozooplankton in the upper 100-1000 m inferred from the underwater video profiler. *ICES J. Mar. Sci.* **65**: 433-442.

**KDM-AWI**

**+2008-2009**

**Articles**

Bauerfeind, E., Nöthig, E.- M., Beszczynska, A., Fahl, K., Kaleschke, L., Kreker, K., Klages, M., Soltwedel, T., Lorenzen, C., Wegner, J.(2009).Variations in vertical particle flux in the Eastern Fram Strait ( $79^{\circ}\text{N}/4^{\circ}\text{E}$ ) during 2000-2005. Results from the Deep-Sea Long-Term observatory HAUSGARTEN. *Deep Sea Research I*. 56, 1471-1487, 2009

Bergmann, M., Dannheim, J., Bauerfeind, E., Klages, M.(2009).Trophic relationships along a bathymetric gradient at the deep-sea observatory HAUSGARTEN, *Deep Sea Research I*, 56(3), 408–424.

Soltwedel, T., Jaekisch, N., Ritter, N., Bergmann, M., Klages, M.(2009).Bathymetric patterns of megafauna assemblages at the arctic deep-sea long-term observatory HAUSGARTEN, *Deep-Sea Research I* Volume 56, Issue 10, October 2009, Pages 1856-1872, doi:10.1016/j.dsr.2009.05.012

## Conference talks

Bauerfeind, E., Bergmann, M., Hasemann, C., Fahl, K., Nöthig, E. -M., Klages, M., Schewe, I., Soltwedel, T.(2010).The Arctic deep-sea observatory HAUSGARTEN - Results of multidisciplinary investigations since 1999, 42nd International Liège Colloquium on Ocean Dynamics, Liège, Belgium, 26.-30.04.2010.

Bergmann, M., Ontrup, J., Nattkemper, T. W., Soltwedel, T., Klages, M.(2010).Longer-term dynamics of megafaunal assemblages from HAUSGARTEN, Deep-Sea Biology Symposium, 7-11 June 2010, Reykjavík ( Iceland).

Bluhm, B., Ambrose, W. G., Clough, L., Hasemann, C., Iken, K., Klages, M., McDonald, I. R., Renaud, P., Soltwedel, T.(2010).Biodiversity of Arctic deep-sea benthos, Arctic Frontiers Conference 2010, Tromsø, Norway, 24.-29.01.2010

Boetius, A., Jacob, M., Bienhold, C., Ramette, A., Bergmann, M., Soltwedel, T., Klages, M.(2010).Linking climate change in the Arctic with the fate of deep-sea life, International Society for Microbial Ecology, ISME-13, Seattle, USA, 22.-27.08.2010

Boetius, A., Jacob, M., Bienhold, C., Bergmann, M., Bracher, A., Nöthig, E. -M., Ramette, A., Schewe, I., Soltwedel, T., Klages, M.(2010).Observing microbial biodiversity shifts related to Climate Change in the Arctic Ocean, ASLO Aquatic Sciences Meeting, San Juan, Puerto Rico, 13.-18.02.2011.

Boetius, A., Wenzhöfer, F., Ramette, A., Janssen, F., de Beer, D., Soltwedel, T., Klages, M., Waldmann, C., Pfannkuche, O.(2011).Observing deep-sea ecosystem shifts related to global change, EGU General Assembly 2011, Vienna, Austria, 03.-08. April 2011.

Gasperini L., Polonia A., Ferrante V., Bortoluzzi G., Bellucci L. G., submarine paleoseismology and the Marmara Sea Case study: A novel approach to the assessment of seismic hazard 84. *Congresso Nazionale della Società Geologica Italiana, Sassari, 15-17 Settembre 2008*.

M. Klages & T. Soltwedel "A decade of change at HAUSGARTEN dep-sea observatory: causes and consequences". Keynote at *Arctic Frontiers Conference, Tromsoe, Norway, 18.-23.01.2009*.

Hasemann, C., Sablotny, B., Soltwedel, T.(2010).Impact of macrofauna bioturbation on small-scale distribution patterns of deep-sea meiofauna: an experimental approach, 12th Deep-Sea Biology Symposium, Reykjavik, Island, 07.-11.06.2010.

M. Klages "HAUSGARTEN deep-sea observatory west of Svalbard". *SIAEOS international workshop organised by the Research Council of Norway, Oslo, 04.-05.02.2009*.

Klages, M., Thiede, J., Boetius, A.(2010).HERMES - Hotspot Ecosystem Research on the Nordic Margins of European Seas during IPY, IPY Oslo Science Conference, 8. - 12. June 2010.

Jacob, M., Ramette, A., Soltwedel, T., Klages, M., Boetius, A.(2010).Spatial and temporal variations of deep-sea bacterial diversity at the Arctic long-term observatory HAUSGARTEN, 40th Anniversary Conference Gesellschaft für Ökologie, Gießen, 30.08.-03.09.2010.

Schewe, I., Freese, D., Soltwedel, T., Klages, M.(2010).Recolonization of experimental deployed sediments by meiobenthos organisms in an arctic deep-sea environment, 12th Deep-Sea Biology Symposium, Reykjavik, Island, 07.-11.06.2010.

Soltwedel, T., Bergmann, M., Hasemann, C., Kanzog, C., Lochthofen, N., Sauter, E., Schewe, I.(2010).Dropstones: Sources for habitat heterogeneity in the deep Arctic Ocean, 12th Deep-Sea Biology Symposium, Reykjavik, Island, 07.-11.06.2010

Soltwedel, T.(2011).HAUSGARTEN - Das Langzeit-Observatorium in der arktischen Tiefsee, Vortrag im Rahmen der Sonderausstellung "Tiefsee entdecken, erforschen, erleben" der Senckenberg Gesellschaft für Naturforschung, Dresden, 15.03.2011

Taviani, Marco; Angeletti, Lorenzo; Cagatay, Namik; Gasperini, Luca; Polonia, Alina; Wesselingh, Frank. Flooding of the late Pleistocene Gemlik Caspian-like water body (Marmara Sea) as documented by macrofaunal data International *Geological Congress, Abstracts Geologique International, Resumes, vol. 33, Abstract 1351845, August 2008.*

### **KDM-JUB**

#### **+2009-2010**

#### **Conferences and workshops**

ESONET annual workshop: presentation by Autun Purser

ESONET steering committee meetings: participation by Laurenz Thomsen

ESONET training workshop: organization by Laurenz Thomsen, Hannes Wagner, Sibila Pandoand Katsia Patbortsava

NEPTUNE Canada: presentation of ESONET: Laurenz Thomsen

## +2010-2011

### **Conference**

The following presentations and interviews have been made relating to ESONET:

L.Thomsen: NEPTUNE Canada Workshop, April 12-14, 2010

L. Thomsen: MEUST Workshop on EU deep water installations, November 8, -9, 2010

L. Thomsen: Forum for offshore monitoring; October 19 - 20 2010

L.Thomsen in interview with Technology report: 16.08.10

L.Thomsen and O. Pfannkuche in Focus magazine 27.9.2011

## KDM- MPIMM

### **Articles**

Felden J, Wenzhöfer F, Feseker T, Boetius A (2010) Transport and consumption of oxygen and methane in different habitats of the Hakon Mosby Mud Volcano (HMMV). Limnol. Oceanogr. 55(6): 2366-2380

Lichtschlag A, Felden J, Brüchert V, Boetius A, deBeer D (2010) Geochemical processes and chemosynthetic primary production in different thiotrophic mats of the Hakon Mosby Mud Volcano (Barents Sea). Limnol. Oceanogr. 55: 931-949

### **Workshops/Meetings**

Wenzhöfer F. Presentation of LOOME observatory design (11-12 June 2009) VISO workshop, Tromsoe, Norway.

De Beer D. Presentation of LOOME observatory deployment (05-07 October 2009) All Regions Workshop, Paris, France.

Dirk deBeer, "Microsensor workshop MPI (Germany) presentation on the deep-sea observatory LOOME at the HMMV" April 2010

Dirk deBeer May 2010 Sensenet workshop Southampton (UK) presentation on the HMMV long-term observatory and the use of sensors for physico-chemical monitoring ()

Antje Boetius - American Society of Microbiology, Opening lecture "Diving Deep - microbial Life in Extreme habitats" (May 2010)

Antje Boetius - Geoscience Darmstadt (Germany) Plenary Talk "Global Change and Marine Life: Challenges to geo- and biosciences" (October 2010)

Dirk deBeer - Sensenet Microsensor workshop at the MPI (Germany) presentation on the deep-sea observatory LOOME at the HMMV (August 2010)

Antje Boetius - Max Planck Symposium, presentation "Into the Deep - Microbiology of Extreme Ocean Ecosystems" (November 2010)

-Antje Boetius and Dirk deBeer.ESONET General Assembly, Marseille, presentation and poster on the recovery and first results of the long-term observatory LOOME at the HMMV (December 2010)

**KDM-IFM-GEOMAR**

**Conferences talks**

Karstensen J., Greinert J., Lampitt R., Grant F., Priede, I. (2010)MODOO: A modular and mobile deep ocean observatory and its application to the Porcupine Abyssal Plain, Liège Colloquium on Ocean Dynamics,Multiparametric observation and analysis of the Sea, 26 to 30 April 2010, Liege, Belgium (Oral presentation).

Karstensen J., Greinert J., Lampitt R., Grant F., Priede, I. (2010) MODOO: A modular and mobile deep ocean observatory and its application to the Porcupine Abyssal Plain, ESONET , 4 May, 2010, Vienna, Austria (poster presentation)

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**NERC-NOCs**

**Articles**

Bagley, PM, KL Smith, B Bett, IG Priede, G Rowe, J Clarke, A Walls, HA Ruhl, and DM Bailey, The DELOS project; long-term observatories in an oil field environment in the Tropical Atlantic Ocean, *Ocean Observatories* (book), ed. P. Favali et al., (submitted).

Glover, AG, AJ Gooday, DM Bailey, DSM Billett, P Chevaldonné, A Colaço, J Copley, D Cuvelier, D Desbruyères, V Kalogeropoulou, M Klages, N Lampadariou, C Lejeusne, NC Mestre, GLJ Paterson, T Perez, HA Ruhl, J Sarrazin, T Soltwedel, EH Soto, S Thatje, A Tselepides, S Van Gaever, and A Vanreusel, Climatic and geological drivers of long-term temporal change in deep-sea ecosystems, *Advances in Marine Biology*, [58, 1-95](#) (2010)

Ruhl Henry A., Johannes Karstensen, Louis Géli, Michel André,Laura Beranzoli, M. Namik Çağatay, Ana Colaço, Mathilde Cannat, Juanjo J. Dañobeitia, Paolo Favali, Michael Gillooly, Jens Greinert, Per O.J. Hall, Robert Huber, Richard S. Lampitt,Vasilios Lykousis, Jürgen Mienert, J. Miguel Miranda, Roland Person, Imants G. Priede, Ingrid Puillat, Laurenz Thomsen, Christoph Waldmann. “Societal need for improved understanding of climate change, anthropogenic impacts, and geo-hazard warning drive development of ocean observatories in European Seas” accepted Progress in Oceanography

Smith, KL, Jr., HA Ruhl, BJ Bett, DSM Billett, RS Lampitt, and RS Kaufmann, Climate and deep-sea communities (2009) *Proceedings of the National Academy of Sciences, USA*, Vol.106 Issue 46, p19211-19218.

**Conference talks**

Lampitt, RS, KE Larkin, and the EuroSITES Consortium. The EuroSITES network: Integrating and enhancing fixed-point open ocean observatories around Europe. (02-07 May 2010) EGU General Assembly, Vienna, Austria.

Lampitt, RS, Larkin, KE, Campbell, J., Pebody, C., Hartman, SE, Pagnani, M, Gkritzalis, A, Ruhl, HA, Gooday, AJ, Billett, DSM. Long-term time-series from the EuroSITES Porcupine Abyssal Plain (PAP) sustained observatory (26-30 April 2010) 42<sup>nd</sup> International Liege Colloquium on Ocean Dynamics, Liège, France.

Richard S. Lampitt, Kate E. Larkin, Jon Campbell, Corinne Pebody, Sue Hartman, Maureen Pagnani, Athanasios Gkritzalis, Henry Ruhl, Andrew Gooday, Brian Bett, David S.M. Billett, The Porcupine Abyssal Plain observatory: A key European open ocean time-series presented at 14th Biennial Challenger Conference for Marine Science; “Ocean Challenges in the 21st Century” NOCS, UK , September 6 - 9, 2010.

Larkin K, HA Ruhl, et al. Benthic biology time-series in the deep sea: Indicators of change (21-25 September 2009) OceanObs'09 white paper, Venice, Italy.

Ruhl H. "Ocean Observatories" Oral Presentation at *CAREX NoE meeting at the 2008 meeting in Spain*.

Ruhl H., "Climate Change and the Deep Sea". *2009 MarBEF (DEEPSETS) meeting in Gent, Belgium*.

Ruhl, HA. Climate Change in the Deep Sea (2009) Natural History Museum Seminar, London.

Ruhl, HA, L Géli, J Karstensen, A Colaço, RS Lampitt, J Greinert, O Phannkuche, and Y Auffret. Science Objectives and Design of the European Seas Observatory NETwork (ESONET) (19-24 April 2009) EGU General Assembly, Vienna, Austria.

Ruhl, HA. Ocean Observatories (10 May 2009) GEOSS Workshop XXVI – Understanding the Ocean Integrated Observation Systems Including Sub-surface Sensors, Bremen-Germany

H. Ruhl, European workshop on PAP activity, NOCS, UK, 2010

Ruhl HA, Hughes SJ, Boorman B, Alt C, Ross E and Billett DSM“Long-term variation in biodiversity and ecosystem function of abyssal megafauna. Deep-Sea Biology Symposium, Reykjavik, Iceland 6th June 2010

Vardaro, MF, K Smith, GT Rowe, IG Priede, P Bagley, B Bett, HA Ruhl, DM Bailey, B Bazika, A Walls, J Clarke. Preliminary Data from Deep Benthic Environmental Monitoring Platforms in an Oil Extraction Lease Block off the Coast of Angola (22-26 February 2010) Ocean Sciences meeting, Portland, USA.

### ***Poster Presentations***

"Science Objectives and Design of the European Seas Observatory NETwork (ESONET)".  
2009 *ASLO meeting in Nice, France.*

"Science Objectives and Design of the European Seas Observatory NETwork (ESONET)" .  
2009 *NEAMTWS meeting in Southampton, UK.*

### **Press releases**

NOCS conducted media outreach related to ocean observatory science objectives and deep-sea research including coverage by the BBC, United Press International, EurekAlert, and CORDIS. A new set of webpages are also under construction to consolidate information about ocean observatory science related to UK.11 and D13 regarding science objectives and modules, including the generic sensor module.

## **NIOZ**

### **Articles**

Mienis, F., de Stigter, H.C., White, M., Duineveld, G., de Haas, H., van Weering, T.C.E., 2007. Hydrodynamic controls on cold-water coral growth and carbonate-mound development at the SW and SE Rockall Trough Margin, NE Atlantic Ocean. *Deep Sea Research Part I: Oceanographic Research Papers*, 54: 1655-1674.

Mienis, F., de Stigter, H.C., de Haas, H., van Weering, T.C.E., Near-bed particle deposition and resuspension in a cold-water coral mound area at the Southwest Rockall Trough margin, NE Atlantic. Deep Sea Research Part I: Oceanographic Researchpapers Volume 56, Issue 6, June 2009, Pages 1026-1038, doi:10.1016/j.dsr.2009.01.006

Davies, Andrew J., Gerard Duineveld, Marc Lavaleye, Magda Bergman, Hans van Haren, and J. Murray Roberts. 2009. Downwelling and deep-water bottom currents as food supply mechanisms to the cold-water coral *Lophelia pertusa* (Scleractinia) at the Mingulay Reef Complex. *Limnol. Oceanogr.* 54: 620-629.

### **Thesis**

Mienis, F., 2008. Environmental Constraints on Cold-Water Coral Growth and Carbonate Mound Formation, *PhD thesis Vrije Universiteit, Amsterdam, 209 pp.*

## **CINTAL**

### **Articles**

N.E. MARTINS and S.M. JESUS, "Bayesian acoustic prediction assimilating oceanographic and acoustically inverted data" submitted to the Journal of Marine Systems, 2007

N. MARTINS, C. SOARES and S.M. JESUS, "Environmental and Acoustic Assessment: the AOB concept", Journal of Marine Systems, vol 69, pp. 114-125, January 200

A. SILVA, S.M. JESUS and J.P. GOMES, ``Generalization of Waveguide Invariants and Application to Passive Time Reversal", submitted to the Journal of the Acoustical Society of America, October 2007.

C. SOARES, S.M. JESUS and E. COELHO, ``Environmental Inversion Using High-Resolution Matched-Field Processing", Journal of the Acoustical Society of America, 2007 Dec;122(6):3391-404.

*C. SOARES, ``Broadband Matched-Field Tomography using simplified Acoustic Systems'', PhD thesis, University of Algarve, September 2007.*

### **Conference Proceedings**

P. FELISBERTO, S.M. JESUS and P. RELVAS ``Acoustic inversion of the cold water filaments off the Southwest coast of Portugal.", in Proc. OCEANS'07, Vancouver (BC, Canada), October 2007.

P. Felisberto, N. Martins, S. M. Jesus. Field Calibration a tool for acoustic noise prediction: The CALCOM'10 Data Set".IX-Encontro de Tecnologia em Acústica Submarina, IX ETAS, Arraial do Cabo,RJ,Brazil, 9-11 November 2010, ",

J.P. GOMES, A. SILVA and S. JESUS, ``Performance analysis of multichannel lattice equalization in coherent underwater communications", in Proc. OCEANS'07, Vancouver (BC, Canada), October 2007.

[Gomes et al 2008] J.P. GOMES, A. SILVA and S.M. JESUS, "Experimental assessment of time-reversed OFDM underwater communications", to appear Proc. ACOUSTICS'08, Paris, France, June 2008 (invited).

J.GOMES, A.SILVA and S.JESUS, ``Passive Time-Reversed UnderWater Acoustic Communication Using Multichannel Combining", submitted to the Journal of the Acoustical Society of America, March 2007.

S.M. JESUS, ``Active acoustic time-reversal for underwater acoustic barriers", 153rd Meeting of the ASA, vol. 121, No.5, Pt.2, pp.3204, Salt Lake City, USA, May 2007.

S.M. JESUS, A.J. SILVA and O. RODRÍGUEZ, "High frequency in underwater acoustics: theory, simulations and experiments", VII ETAS, Rio de Janeiro, Brasil, November 2007 (invited).

S.M. JESUS, J.-P. HERMAND and J.-C. LEGAC, "A buoy network system for acoustic monitoring", Rapid Environmental Assessment (REA) Conference, La Spezia, Italy, September 2007 (invited).

[Jesus et al 2007a] S.M. JESUS, C. MARTINS and F. ZABEL, ``Maritime Rapid Environmental Assessment / Blue Planet'07: Acoustic Oceanographic Buoys Data Report", Rep. 03/07, SiPLAB Report, University of Algarve, August 2007.

[Jesus et al 2007b] S.M. JESUS, J.-P. HERMAND and J.-C. LEGAC, "A buoy network system for acoustic monitoring", Rapid Environmental Assessment (REA) Conference, La Spezia, Italy, September 2007 (invited).

[Jesus et al 2007c] S.M. JESUS, C. SOARES, C. MARTINS and F. ZABEL, "Random Array of Drifting Acoustic Receivers (RADAR'07): Acoustic Oceanographic Buoys Data Report", Rep. 04/07, SiPLAB Report, University of Algarve, October 2007.

[Jesus et al, 2007d] S.M. JESUS, A. SILVA, C. MARTINS and F. ZABEL, "Underwater Acoustic Barrier 2007 (UAB'07) Experiment Data Report", Rep. 05/07, SiPLAB Report, University of Algarve, October 2007.

[Jesus et al 2008] S.M. JESUS, C. SOARES and N. MARTINS, "Water column tomographic inversion with a network of drifting buoys", to appear Proc. ACOUSTICS'08, Paris, France, June 2008 (invited).

[Legac et al 2008] J.C. LEGAC, J-P. HERMAND and S.M. JESUS, "Medium frequency (800-1600Hz) geoacoustic inversions with drifting sparse arrays during the MREA/BP'07 experiment", to appear Proc. ACOUSTICS'08, Paris, France, June (invited).

P.J. SANTOS, P. FELISBERTO and S.M. JESUS, "Estimating bottom properties with a Vector Sensor Array during the Makai 2005 experiment", Martech Conference, Barcelona, Spain, November 2007.

P.J. SANTOS, P. FELISBERTO and P. HURSKY, "Source localization with a Vector Sensor Array during the Makai Experiment", in Proc. Underwater Acoustic Measurements, pp. 985-990, Heraklion, Greece, (pdf), June.

A. SILVA, "Environmental-based Underwater Communications", submitted PhD thesis, Instituto Superior Técnico, Lisboa, July 2007.

A. SILVA, S. JESUS and J.P. GOMES "Physics-based passive time reversal equalizer using shallow water waveguide invariant properties", in Proc. OCEANS'07, Vancouver (BC, Canada), October 2007.

A.J. SILVA, S.M. JESUS and J.P. GOMES, "Acoustic array depth and range shift compensation by using a waveguide invariant property", in Proc. Underwater Acoustic Measurements, pp. 1315-1320, Heraklion, Greece, June 2007.

A.J. SILVA, S.M. JESUS and J.P. GOMES, "Passive Time Reversal Probe-Signal Capture Optimization for Underwater Communications", in Proc. Underwater Acoustic Measurements, pp. 1371-1376, Heraklion, Greece, June 2007.

A. SILVA, S.M. JESUS and J.P. GOMES, "Time-reversal Optimization for Underwater Communications", submitted to the Journal of the Acoustical Society of America, April 2007.

C. SOARES and S.M. JESUS, "Real-time environmental inversion using a network of light receiving systems", Martech Conference, Barcelona, Spain, (pdf), November.

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### **Website**

Seismic Laboratory has website since 2005 as <http://web.deu.edu.tr/seislab/>. ESONET is included as a project partner as in Turkish and English.

### **Press releases**

On 14th of March 2010, Prof.Gunay Cifci interviewed on Marmara Sea and it was pressed on a Turkish newspaper. The title of the article was “Gas and Liquid seeps in Marmara Sea were observed” in the frame of ESONET Project.

Prof.Gunay Cifci invited to a Turkish news program to give a talk on Expected Marmara Earthquake and last surveys in Marmara Sea. The program named as “One day with Ozge Ozsagman”, was on the 14th of April 2010.

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M. D. Tryon\*, M. N. Cagatay, P. Henry, T.A.C. Zitter, L. Geli, J.-L. Charlou and the Marnaut Scientific Party, Pore fluid chemistry of cold seeps in the Sea of Marmara, AGU Fall meeting, San Francisco, 10-14 December, 2008.

### **Conferences organized by ITU-EMCOL**

A *training workshop* on “Seafloor observation Techniques for Marine Geohazards Monitoring” was organized by ITU in Istanbul during 18-19 August 2009. More than 50 participants from different organizations in Turkey and Europe attended the workshop. This is an important deliverable of ESONET Marmara-DM project.

An “International Symposium on 10th Anniversary of the 17 August 1999 Izmit Earthquake: An overview of the research in the Sea of Marmara region over the last 10 years” was organized at ITU in Istanbul during 17 August 2009.

The reports of the above two events can be found at the Marmara-DM project web-site:  
<http://www.esonet.marmara-dm.itu.edu.tr>

**Press releases**ITU contributed to a press conference held at the French Consulate in Istanbul on 15 December, at the end of the Marmesonet cruise. Initial results of the cruise were presented and the need for seafloor observatories in the Sea of Marmara was stressed. The event was covered extensively by the Turkish press and TV media. Naci Görür and Namik Çağatay gave several interviews that were published in Turkish newspapers (Miliyet, Sabah, Hürriyet, Vatan) and broadcast on TV channels (CNN Turk, Kanal D, ATV, Show TV) from 16-18 December 2009. Nam

### **UAC**

### **Articles**

Colaço A.; M. Cannat , J. Blandin;P.M. Sarradin MoMAR-D- (2010) A technological challenge to monitor in realtime Lucky Strike hydrothermal vent field. ICES Journal of Marine Science *ICES J. Mar. Sci.* (2011) 68 (2): 416-424. doi: 10.1093/icesjms/fsq075

Cuvelier, D, Sarrazin J., Colaço A., Copley J. T., Glover A., Tyler P., Serrão Santos R., and Desbruyères D. Community dynamics over 14 years at the Eiffel Tower hydrothermal edifice on the Mid-Atlantic Ridge. *Journal of Limnology and Oceanography*. in press.

Cuvelier, D, Sarradin, PM. SarrazinJ, Colaço A., Copley J, Desbruyères D; Glover A, Serrão Santos R, Tyler P (2011) Hydrothermal faunal assemblages and habitat characterisation at the AtlanticEiffel Tower edifice (Lucky Strike vent field) *Marine Ecology*

Glover, A.G, Gooday, A.J., Bailey,D.M., Billett, D.S.M., Chevaldonné, P., Colaço, A., Copley, J., Cuvelier, D.,Desbruyères, D., Kalogeropoulou, V., Klages, M., Lampadariou, N., Lejeusne, C.,Mestre, N.C., Paterson, G.L.J., Perez, T., Ruhl, H., Sarrazin, J., Soltwedel,T., Soto, E.H., Thatje, S., Tselepides, A., Van Gaever, S., Vanreusel, A.(2010). Temporal Change in Deep-Sea Benthic Ecosystems: A Review of theEvidence From Recent Time-Series Studies *Advances in Marine Biology* 58 :1-95

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Henry A. Ruhl, Johannes Karstensen,Louis Géli, Michel André,Laura Beranzoli, M. Namik Çagatay, Ana Colaço,Mathilde Cannat, Juanjo J. Dañobeitia, Paolo Favalí, Michael Gillooly, JensGreinert, Per O.J. Hall, Robert Huber, Richard S. Lampitt,Vasilios Lykousis,Jürgen Mienert, J. Miguel Miranda, Roland Person, Imants G. Priede, IngridPuillat, Laurenz Thomsen, Christoph Waldmann (conditionally accepted). Societalneed for improved understanding of climate change, anthropogenic impacts, andgeo-hazard warning drive development of ocean observatories in European SeasProgress in Oceanography

Riou V., Bouillon S.; Serrão SantosR., Dehairs F., Colaço A (2010) Tracing carbon assimilation in endosymbioticdeep-sea hydrothermal vent Mytilid fatty acids by 13C-fingerprinting*Biogeosciences* 7, 3453–3475,

Riou, V.; Colaço, A., Bouillon S.,Khripounoff, A., Dando, P.; Mangion P., Chevalier, E.; Korntheuer M., SerrãoSantos, R., Dehairs , F. (2010). The mixotrophic side of the deep seahydrothermal, dual endosymbiotic, mytilid Bathymodiolus azoricus: assimilationof dissolved and particulate organic matter. *Marine Ecology Progress Series* 405:187-201.

## Conference

Barriga, F. & Colaço, A., 2007 Ciência e Tecnologia na Fronteira do Mar Profundo. Ciência 2007 - Encontro com os Laboratórios Associados 12 e 13 de Abril. Fundação Calouste Gulbenkian, Lisboa.

Colaço A., 2008. Redes tecnológicas para a exploração e monitorização interdisciplinar do mar profundo e oceano aberto Ciência – Encontro com a Ciência em Portugal; Fundação Calouste Gulbenkian, 2 - 4 de Julho, 2008.

Colaço, A. 2010. Long term biological research on hydrothermal vents. Ciência 2010 – Encontro com a Ciência e Tecnologia em Portugal. 4-7 Julho Lisboa, Portugal.

Colaço, A. 2010. «OSEA- Observatório para o Mar Profundo e Crista Média Atlântica» Projecto MaReS (Macaronesia Research Strategy) Sessão pública de apresentação 6 de Julho 2010, Madeira

Colaço, A. (2010) Oásis do Mar profundo. Encerramento das XV Olimpiadas do Ambiente. 8 de Maio, Horta, Faial. [invited talk].

Colaço, A.; Cannat, M.; Blandin, J.; Sarradin P.M. and the MoMAR-D partners (2009) MoMAR-D: A technological challenge to monitor the dynamics of the Lucky Strike vent ecosystem. ICES Symposium Issues Confronting the Deep Oceans: The Economic, Scientific, and Governance Challenges and Opportunities of Working in the Deep Sea Amor da Pátria Hall, Horta, Faial Island, Azores, Portugal April 27 – 30, 2009

Colaço, A.; Cannat, M.; Blandin, J.; Sarradin P.M. and the MoMAR-D partners. MoMAR-D: A technological challenge to monitor the dynamics of the Lucky Strike vent ecosystem (27-30 April 2009) ICES Symposium, Issues confronting the deep oceans: the economic, scientific, and governance challenges and opportunities of working in the deep sea, Azores-Portugal.

Colaço, A.; Bettencourt R.; Costa, V. ; Lopes, H. ; Martins, I. ; Pires, L. ; Prieto, C. ; Santos, R. S. (2009) Porque cheiram os mexilhões hidrotermais a ovos podres?. I Congresso dos Biólogos dos Açores 26 a 31 de Outubro de 2009, Lajes do Pico [invited talk].

Colaço Ana (IMAR/DOP-Uaç), M. Cannat (IPGP), J. Blandin (IFREMER), P.M. Sarradin (IFREMER) and the MoMAR-D partners. (2009). MoMAR-D: A technological challenge to monitor the dynamics of the Lucky Strike vent ecosystem. ESONET All region workshop- Paris- 5-7 October.

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Giacomello, E.; Colaço, A. and Menezes, G. Condor project: an observatory for studying and monitoring azorean seamount ecosystems. SCOR (16-18 September 2009) Workshop on Ocean Biology Observatories, Mestre-Italy.

Larkin, K.E., Ruhl, H.A., Bagley, P., Benn, A., Bett, B.J., Billett, D.S.M., Boetius A., Chevaldonné, P., Colaço, A., Copley, J., Danovaro, R., Escobar-Briones, E., Glover A., Gooday, A.J., Hughes, J.A., Kalogeropoulou, V., Kelly-Gerrey, B.A., Kitazato H., Klages, M., Lampadariou, N., Lejeusne, C., Perez, T., Priede, I.G., Rogers A., Sarradin, P.M., Sarrazin, J., Soltwedel, T., Soto, E.H., Thatje, S., Tselepidis, A., Tyler, P.A., van den Hove, S., Vanreusel, A., Wenzhöfer, F. Benthic biology time-series in the deep sea: Indicators of change. (2009) *OceanObs'09 benthic time-series white paper*

Serrão Santos, R. (2010). Os Campos Hidrotermais e a sua Biosfera- Congresso os Mares da Lusofonia October

Serrão Santos, R.; Bettencourt, R.; Colaço, A.; 2011. Os Campos Hidrotermais e a sua Biosfera- Congresso os Mares da Lusofonia- Proceedings Cascais October 2010

### **Seminars to Senior University students**

Tecnologia Marinha – Universidade Sénior da Horta "Mar dos Açores: caracterização, investigação, usos e conservação"

Diversidade de habitats - ambientes oceânicos – Universidade Sénior da Horta "Mar dos Açores: caracterização, investigação, usos e conservação" (1:30h)

### **Seminars to Master University students**

LabHorta- Estudos fisiológicos dos organismos hidrotermais. O mexilhão Bathymodiolus azoricus como modelo. Seminário alunos mestrado MEIO. (2:00h)

Lecture to High School teachers and Government technicians as part of the collaborative project "Ocean Exploration in the International Education Community" (EXPLORE) IMAR/DOP-UAZ, Oceanoscópio- Ocean Technology Foundation (USA) and the National Oceanic and Atmospheric Administration (USA)-" OÁSIS DO MAR PROFUNDO- Deep-Sea Oasis" at the workshop "Explorando o Oceano na Escola" (Exploring the Ocean in School)

### **TV programs**

Participation on the Daily show "Estação de Serviço- As fontes hidrotermais dos Açores" from the RTP Açores, where the general public, makes questions about the theme in discussion. 21 January 2011-01-25

Participation on the "Bom Dia" television programme, to talk about the MoMARSAT mission and the MoMAR-D project on the 30th September 2011 and the 18 October 2011.

Participation on the Pilot show of the program "Águas Vivas" about the MoMARSAT cruise

### **Press Articles**

Interview with the regional newspaper INCENTIVO related with the Observatories.

Interview with the Online Journal "Ciência Hoje" concerning the MoMAR-D project and the MoMARSAT mission.

### **ULB**

### **Article**

O. Carrière, J.-P. Hermand, and J. V. Candy. Inversion for time evolving sound-speed field in a shallow ocean by ensemble Kalman filtering (2008) Journal of the Acoustical Society of America Vol. 123 Issue 5, p3912.

Carrière O., J.-P. Hermand, and Y. Stephan, “A simulation study of shallow water tomography for coastal monitoring,” *J. Acoust. Soc. Amer.*, vol. 123, p. 3912: 5p AO2, June 2008.

Carrière O., J.-P. Hermand, J.-C. Le Gac, and M. Rixen. Full-field tomography and Kalman tracking of the range-dependent sound speed field in a coastal water environment (2009) *Journal of Marine Systems*, Vol. 78 Supplement 1, pS382-S392.  
[doi:10.1016/j.jmarsys.2009.01.036](https://doi.org/10.1016/j.jmarsys.2009.01.036)

### **Conference talks**

Hermand J-P., Geoacoustic characterization and tomographic observation of the shallow water environment: approaches, results and perspectives (25-27 November 2009) Eighth Underwater Acoustics Technology Meeting, Rio de Janeiro-Brazil

Carrière O. and J.-P. Hermand, “Dynamic estimation of the sound speed field in mediterranean coastal waters,” in Proceedings of *OCEANS '08 MTS / IEEE KOBE-TECHNO-OCEAN '08, IEEE, Apr. 2008.*

Carrière O., J.-P. Hermand. Fine-scale acoustic tomography of shallow water environments by Bayesian filtering (22-26 June 2009) 3rd International Conference & Exhibition: Underwater Acoustic Measurements – Technologies & Results, Nafplion-Greece.

Carrière O., J.-P. Hermand, and J. V. Candy, “Range-resolving shallow water acoustic tomography by ensemble Kalman filtering,” in Proceedings of *OCEANS 2008 MTS/IEEE Quebec - Oceans, Poles and Climate: Technological Challenges, IEEE, Sept. 2008.*

Carrière O., J.-P. Hermand, L. Calado, A. C. de Paula, and I. C. A. da Silveira, Feature-oriented acoustic tomography: Upwelling at Cabo Frio (Brazil) (26-29 October 2009) *OCEANS '09 MTS – IEEE Biloxi, Mississippi-USA*

Carrière O., J.-P. Hermand, and Y. Stephan, “Passive acoustic tomography of the Ushant front: A feasibility study,” in *PASSIVE '08 OCEANS Europe - New Trends for Environmental Monitoring using Passive Systems, IEEE, Oct. 2008.*

Carrière O., J.-P. Hermand, and Y. Stephan. Acoustic monitoring of the Ushant front: A feasibility study (11-14 May 2009) *OCEANS'09 IEEE, Bremen-Germany.*

Stephan Y., J.-P. Hermand, and O. Carrière. Operational feasibility of an acoustic passive monitoring of the Ushant front (22-26 June 2009) 3rd International Conference & Exhibition: Underwater Acoustic Measurements – Technologies & Results, Nafplion-Greece

### **CSIC**

### **Conference talks**

J.J. Dañobeitia “ Spanish Large Scale Marine & Polar Infrastructures” presented to Canada-Spain Arctic Ocean Workshop” December 14th, 2010

J.J. Dañobeitia and A. Manuel “OBSEA: a Labeled Test-Site of the European projects ESONET & EMSO”. European Science Open Forum, ESOF, Smart Oceans session: Discover the intelligent technologies monitoring European waters, Torino, Italy, July 2<sup>nd</sup>-7<sup>th</sup>, 2010

Piera J. “Sea floor permanent observatories. *Technological challenges and future research opportunities*”, 2008, Spain.

Piera, J., Dañobeitia, J., Mànuel, A. From small-scale turbulence to large-scale patterns: biological – physical coupling at different scales. ASLO Aquatic Sciences Meeting, Nice, France 2009

J. Piera, O.N. Ross, E. Torrecilla, S. Pons, I. F. Aymerich, J. J. Dañobeitia, R. Quesada, M. L. Artigasand E. Berdalet “Sampling strategies for multi-scale characterisation of biological and hydrodynamic interactions: the role of lothir observatories” 14<sup>th</sup> International Workshop on Physical Processes in Natural Waters (PPNW), University of Iceland, Reykjavík, Iceland, July 1<sup>st</sup>, 2010

Ies Rubió i Ors, Hospitalet, “Observing the sea: marine technology and its key role in the research of oceans”. Week of Science, Marine Technology Unit (CSIC) Barcelona, November, 2010

### **Newsletter**

J. del Rio<sup>1</sup>, T. O'Reilly<sup>3</sup>, D.M. Toma<sup>1</sup>, J. Sorribas<sup>2</sup>, E. Delory<sup>1</sup>, A. Manuel<sup>1</sup> “Interoperable data management and instrument control, plug-and-play concepts and sensor registry experiences at OBSEA” published in ESONEWS, publication from the ESONET Network of Excellence, Volum 4, Issue 1 and 2, Spring/summer 2010

### **UPC**

### **Articles**

Artero C., M. Nogueras, S. Shariat-Panahi, A. Mànuel, P. Santamaria. J. Cadena. O. Gualdo Diseño del sistema de control y adquisición de datos del Observatorio Submarino ExpAndible OBSEA. *SAAEI08 . Cartagena (Spain) September 9-11 de 2008*

Joaquin del Rio, Tom O'Reilly, Daniel Mihai Toma, Jordi Sorribas, Eric Delory, Antoni anuel, "Interoperable Data Management and Instrument Control, Plug and Play Concepts and Sensor Registry Experiences at OBSEA," ESONEWS, Volume 4, Issue 1 and 2, Summer 2010.

Joaquín del Rio and Eric Delory, "From Ocean Sensors to Traceable Knowledge by Harmonizing Ocean Observing Systems," EarthZine, September 14th, 2010, [www.earthzine.org](http://www.earthzine.org)

Joaquin del Rio, Tom O'Reilly, Daniel Mihai Toma, Antoni Manuel, Christoph Waldmann, Eric Delory, "Evaluation of Standards at Western Mediterranean Observatory, OBSEA" ESONEWS, Volume 4, Issue 1 and 2, Summer 2010.

T.C. O'Reilly, K. Headley, D.R. Edgington, C. Rueda, K. Lee, E. Song, J. Zedlitz, J. del Rio, D. Toma, A. Manuel, E. Delory, C. Waldmann, S. Fairgrieve, L. Bermudez, E. Bridger, P. Bogden, A. Amirault, "Excerpts from "Instrument Interface Standards for Interoperable Ocean Sensor Networks" " ESONEWS, Volume 4, Issue 1 and 2, Summer 2010

Sorribas Jordi, Joaquin del Río, Shahram Shariat-Panahi, Christoph Dickel, Antoni Mànuel, Enric Trullols. Development of a Synchronization Trigger for the Spanish Oceanographic Ships Based on an Embedded Real-time Java System. *IEEE Transactions on Instrumentation and Measurement*. Volume: 58 Issue:9 pp: 3323 – 3334 Sept. 2009 Doi : 10.1109/TIM.2009.2022387

Shariat Panahi S., S. Ventosa , J. Cadena, A. Mànuel-Làzaro, T. Bermudez, V. Sallares, J. Piera A Low Power Datalogger based on Compactflash memory for Ocean Bottom Seismometers (OBS).. *IEEE Transactions on Instrumentation and Measurement* . ISSN: 0018-9456 Volumen: 57 N° 10 Páginas, inicial: 2297 final:2300 Fecha: October 2008

S Shariat-Panahi, V Sallarès, F Corrêa Alegria, A Mànuel Lázaro and T Owen, "Stability of Seascans Clocks Used in Ocean Bottom Seismometers (OBS)", *IEEE Transactions on Instrumentation and Measurement*, (under review), December 2010.

Shariat-Panahi S., Alegria F., L'azaro A. "Design and Test of a High Resolution Acquisition System for Marine Seismology (2009) *Instrumentation and measurement magazine*, Vol. 12 Issue 2, p8-15.

Shariat-Panahi S., Alegria F., Manuel A., Serra A.C. IEEE 1057 Jitter "Test of Waveform recorders" (2009) *Instrumentation and measurement magazine*, Vol. 58 Issue 7, p2234-2244

Sorribas J., J. Del Río, S. Shariat-Panahi, C. Dickel, A. Mànuel, E. Trullols. Development of a Synchronization Trigger for the Spanish Oceanographic Ships Based on an Embedded Real-time Java System (2009) *Instrumentation and measurement magazine*, Vol. 58 Issue 9, p3323-3334.

## Conference talks

Aguazzi J., Costa C., Menesatti P, Manuel A., Del Rio J., Garcia J.A., Fujiwara Y., Iwase R. Potencial Applications of Automated video-image analysis in the pelagic and demersal environment including the deep-sea (19-20 November 2009) Internacionnal Workshop on Marine Technology, MarTech 2009, Vilanova i la Geltrú, Spain.

Aguazzi J., Costa C., Menesatti P, Manuel A., Del Rio J., Garcia J.A., Fujiwara Y., Iwase R. Potencial Applications of Automated video-image analysis in the pelagic and demersal environment including the deep-sea (19-20 November 2009) Internacionnal Workshop on Marine Technology, MarTech 2009, Vilanova i la Geltrú, Spain.

J. Antonijuan\*, J. Guillénb, M. Noguerasc, A. Mànuelc, A. Palanquesb, P. Puigb, "Monitoring sediment dynamics at the boundary between the coastal zone and the continental shelf," OCEANS 2011, SANTANDER, SPAIN, 6-9 JUNE, 2011 (under review)

Bermudez L., Delory E., O'Reilly T., Del Rio J. Ocean Observing Systems Demystified. (26-29 October 2009) OCEANS '09 MTS – IEEE Biloxi, Mississippi-USA

Del Río Joaquin, Daniel Toma, Antoni Mànuel. Advancing the Interoperability of Ocean Sensors. Workshop Demonstration at Ocean *Innovation 2008 Congress. Instrumentation ViewPoint ISSN: 1886-4864. N°7 Winter 2008 pp8-9*

Del Rio Joaquin, Daniel Toma, Antoni Mànuel, Helena Ramos Evaluation of IEEE1588 applied to synchronized acquisition in marine sensor networks (msn)., XIX IMEKO World Congress *Fundamental and Applied Metrology. September 6–11, 2009, Lisbon, Portugal.*

Del Río J., D. Toma, A. Mànuel. Evaluation of IEEE1588 applied to synchronized acquisition in marine sensor networks (MSN) (06-11 September 2009) IMEKO XIX World Congress, Lisbon-Portugal

Del Rio J., Auffret Y., Toma D.M., Shariat S., André X., Barbot S., Menut E., Lenault Y., Manuel A., Zein O.K., Champeau J., Kerjean D. Smart Sensor Interface for sea bottom observatories (19-20 November 2009) Internaciona Workshop on Marine Technology, MarTech 2009, Vilanova i la Geltrú, Spain.

J. del Río, D. Toma, T. O'Reilly, A. Mànuel, "Interoperable Data management and Instrument control experiences at OBSEA," OCEANS 2011, SANTANDER, SPAIN, 6-9 JUNE, 2011 (under review)

J. González, A. Arbós, I. Masmitja, G. Masmitja, J. Prat, S. Gomáriz, "Design and construction of the GUANAY-II Autonomous Underwater Vehicle," OCEANS 2011, SANTANDER, SPAIN, 6-9 JUNE, 2011 (under review)

Gomariz S., Prat J., Gaya P., Sole J. An autonomous vehicle development for submarine observation (2009) *Journal of maritime research. Vol.6 Issue 2, p23-36.*

Palou X., Nogueras M., Manuel A. Power Supply control of the obsea seafloor. (19-20 November 2009) Internaciona Workshop on Marine Technology, MarTech 2009, Vilanova i la Geltrú, Spain

Roset X., Carbonell M., Manuel A., Gomariz S. Sea seismometer coupling on the sediment (06-11 September 2009) IMEKO XIX World Congress, Lisbon-Portugal

Xavier Roset, Albert Garcia and Antoni Mànuel, "Calibration process of Geophones," OCEANS 2011, SANTANDER, SPAIN, 6-9 JUNE, 2011 (under review)

Santamaria J., Nogueras M., Manuel A. Cabling, Connectors ans Splices structure for the Obsea expandable subsea observatory (19-20 November 2009) Internaciona Workshop on Marine Technology, MarTech 2009, Vilanova i la Geltrú, Spain.

Sarrià D. Studying the behaviour of Norway lobster using RFID and Infrared Tracking technologies (11-14 May 2009) OCEANS'09 IEEE, Bremen-Germany

D.Sarriá, Antoni Mànuel, Joaquín del Río, Erik Molino, Francesc Sardà, Jacopo Aguzzi, Guiomar Rotllant, "Monitoring species using acoustic communications," OCEANS 2011, SANTANDER, SPAIN, 6-9 JUNE, 2011 (under review)

Shariat-Panahi S., A. Mànuel, A. Bermudez, M. Ambros, V. Sallares, E. Molino Ocean Bottom Seismometer (OBS): An Instrument for Marine Seismic Data Acquisition ? pp 1183-1186. *ISIE08 IEEE International Symposium on Industrial Electronics. 30June-2July 2008 Cambridge UK. ISBN 978-1-4244-1666-0.*

Shariat-Panahi S., A. Mànuel, F. Alegria, X. Roset, A. Bermúdez, V. Sallares, Design, Characterization and Calibration of a Short-Period Ocean Bottom Seismometer (OBS I2MTC 2008 – *IEEE Instrumentation and Measurement Technology Conference Victoria, Canada 12-15 May 2008.*

Shariat-Panahi S., Correa Alegria F., Manuel Lazaro A., Del Rio J. Time drift of ocean bottom seismometers (OBS) (06-11 September 2009) IMEKO XIX World Congress, Lisbon-Portugal

S. Shariat-Panahi, N. Carreras, C. Artero, A. Mànuel Lázaro, "Small and Robust Ocean Bottom Seismometer (OBS) for Long Period Active Seismology", OCEANS 2011, SANTANDER, SPAIN, 6-9 JUNE, 2011 (under review)

Sorribas J., A. Barba, E. Trullols, J. del Río, A. Mànuel M. de la Muela; Marine Sensor Networks and Ocean Observatories. A Policy Based Management Approach. The Third International Multi-Conference on Computing in the Global Information Technology. *IEEE Computer Society. August 2008.*

Daniel Mihai Toma, Tom O'Reilly, Joaquin del Rio, Kent Headley, Antoni Manuel, "Smart Sensors for Interoperable Smart Ocean Environment," OCEANS 2011, SANTANDER, SPAIN, 6-9 JUNE, 2011 (under review)

### **Poster presentation**

Nogueras M. Control and acquisition system design for an Expandable Seafloor Observatory (OBSEA) (11-14 May 2009) IEEE Conference & Exhibition OCEANS 2009, Bremen, Germany.

### **Press Release:**

- TV program "314": AWAC installation (from minute 14)  
[\(http://www.rtve.es/alacarta/#755090\)](http://www.rtve.es/alacarta/#755090)
- Diari de Vilanova, 21 de gener del 2011, pp 27. "S'amplia l'observatori marí per recollir noves dades"

2/12/10. EUROPA PRESS

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3/07/08 LE MONDE

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15/12/10. DIARIO BARCELONA  
15/12/10. DIARIO DE LEON  
15/12/10. DIARIO DE PONTEVEDRA  
15/12/10. EL IDEAL GALLEGO  
15/12/10. LA OPINION DE A CORUN?A  
15/12/10. QUE!  
16/12/10. ECODIARI  
16/12/10. SCIENCE DAILY  
17/12/10. AVUI  
18/12/08. ELMUNDO  
20/12/10. REGIO7  
22/12/08. ABC  
23/12/10. GLOBAL TALENT  
27/12/10. CO?RDOBA  
27/12/10. EL PERIODICO  
27/12/10. EL PERIODICO DE EXTREMADURA  
27/12/10. LACROIX  
29/12/10. PREVENCIO INTEGRAL  
30/12/10. LEVANTE

### **Magazine**

Instrumentation ViewPoint N9, issue Autumn 2010, ISSN 1886-4864, DL B-32814-2006

### **UGOT**

### **Conference talks**

Anders Tengberg et al. Oxygen dynamics in the ocean and long-term stable oxygen sensors suitable for observatories. ASLO conference in Nice, France 25-30 January 2009.

Per Hall :conference on research infrastructure at University of Gothenburg on 3 February 2011.

### **HCMR**

### **Articles**

Petihakis, G., Nittis, K., Ballas, D., Kassis, D., Pagonis, P., Perivoliotis, L. and P. Drakopoulos, 2010: The POSEIDON reference time-series stations of the Eastern Mediterranean Sea, in Proceedings of the "OceanObs'09: Sustained Ocean Observations and Information for Society", Hall, J., Harrison D.E. and Stammer, D., Eds., ESA Publication WPP-306.

C. Tsabarlis , D.L. Patiris, V. Lykousis. 2011. KATERINA: An in situ spectrometer for continuous monitoring of radon daughters in aquatic environment. Nuclear Instruments and Methods in Physics Research A 626-627: 142–144.

E. N. Anagnostou, M. N. Anagnostou, Jeff Nystuen, 2011. Passive Aquatic Listener: A state-of-art system employed in Atmospheric, Oceanic and Biological Sciences in the Marine Environment. Nuclear Instruments and Methods in Physics Research A 626-627: 94-98.

S. Stavrakakis and V.Lykousis, 2011. Interannual mass flux variations of settling particles in the NESTOR basins, SE. Ionian Sea (E.Mediterranean),Greece. Nuclear Instruments and Methods in Physics Research A 626-627:

H. Kontoyiannis, V. Lykousis. 2011. Was the East Mediterranean deep thermohaline cell weakening during 2006–2009, Nuclear and Methods in Physics A, 626-627:91-93.

### **Conference talks**

Petihakis G., K.Nittis, D.Ballas, D.Kassis, P.Pagonis, L.Perivoliotis, P.Drakopoulos. The POSEIDON reference time-series stations of the Eastern Mediterranean Sea (21-25 September 2009) OceanObs'09, Venice, Italy

Kassis D., D.Ballas, Nittis K., P. Pagonis, D.Georgopoulos. An integrated ocean observing system in the Ionian Sea (22-26 June 2009) 3rd International Conference & Exhibition: Underwater Acoustic Measurements – Technologies & Results, Nafplion-Greece

Anagnostou M., J.Nystuen, E.Anagnostou, A. Papadopoulos, D.Ballas, Nittis K., P. Pagonis, L.Perivoliotis, D.Georgopoulos. Measurements of spatially averaged ocean surface geophysical parameters using underwater sound integrated with the POSEIDON monitoring system (22-26 June 2009) 3rd International Conference & Exhibition: Underwater Acoustic Measurements – Technologies & Results, Nafplion-Greece

Tsabarlis C., D.L. Patiris, V. Lykousis. KATERINA: An in situ spectrometer for continuous monitoring of radon daughters in aquatic environment (13-15 October 2009) 4th International Workshop on a Very Large Volume Neutrino Telescope for the Mediterranean Sea, Athens-Greece

Anagnostou E.N., M. N. Anagnostou, Jeff Nystuen. Passive Aquatic Listener: A state-of-art system employed in Atmospheric, Oceanic and Biological Sciences in the Marine Environment (13-15 October 2009) 4th International Workshop on a Very Large Volume Neutrino Telescope for the Mediterranean Sea, Athens-Greece

### **TV film**

Presentation of the POSEIDON-Pylos deep-sea platform as part of the national marine operational monitoring system. Part of a TV film for HCMR & Greek Marine Research. Prepared for “Digital/Satellite ERT” targeting Greek audience in Greece and abroad.

### **Website**

The description and data from the POSEIDON-Pylos site of the Ionian Sea are made available through the web page of the POSEIDON system ([www.poseidon.hcmr.gr](http://www.poseidon.hcmr.gr)). The site provides,

among others, access to time-series from the seabed platform either as composite graphs of the last 15 days or as raw data through direct link to the data base.

## **FORTH**

### **Articles**

Skarsoulis E.K., G.S. Piperakis, Use of acoustic navigation signals for simultaneous localization and sound-speed estimation (2009) *Journal of the Acoustical Society of America*, Vol. 125 Issue 3, p1384-1393.

Skarsoulis E.K., B.D. Cornuelle, M.A. Dzieciuch. Travel-time sensitivity kernels in long-range propagation (2009) *Journal of the Acoustical Society of America*, Vol. 126 Issue 5, p2223-2233.

Taroudakis M. and Smaragdakis C.: "Tomographic and Bottom Geoacoustic Inversions, Using Genetic Algorithms and a Statistical Characterization of the Acoustic Signal" *Acta Acustica united with Acustica*, Vol 95, pp 814-822 (2009).

### **Conference talk**

Papadakis P, Smaragdakis C., Taroudakis M. and Toslstoy A. "Hybrid inversion techniques for geoacoustic inversion" Proceedings of the ECUA 2010 Conference, T. Akal ed. Vol 1, pp. 199-206 (2010).

Taroudakis M. : "Statistical characterization of an underwater acoustic signal with applications in ocean acoustic tomography and geoacoustic inversions" International Conference on Modern Mathematical Methods in Science and Technology (M3ST '09), Poros Greece, September 2009 also in International Conference on Theoretical and Computational Acoustics (ICTCA09), Dresden, Germany, September 2009.

Taroudakis M. "On the design of a mobile acoustic observatory for the monitoring of the ocean environment" Proceedings of the ECUA 2010 Conference, T. Akal ed. Vol 1, 207-208 (2010).

## **SOPAB**

### **Movies**

"ESONET presents: Ocean under observation" an ESONET movie available at <http://www.esonet-noe.org/Gallery/Movies>, 2009

"ESONET presents: Deep sea observatories, internet in the ocean" an ESONET movie available at <http://www.esonet-noe.org/Gallery/Movies>, 2010

Observing Europe's open ocean, seafloor and hotspots regions, Joint movie prepared by EuroSITES, Hermione and EMSO observatory projects available at <http://www.esonet-noe.org/Gallery/Movies>; 2010.

The “Listen to the Deep” website, realized by LIDO, was added in the permanent exhibit area of the Océanopolis Aquarium

### INGV

#### **Festival**

The *Festival della Scienza di Genova* (29 Oct -7 Nov. 2010) is a very popular and high level exhibition held yearly in Genova. Each year this exhibition is organised around a key-word. In 2010 the key-word was *Horizon*. INGV has thus mounted an exhibition with title '*Dynamic Mediterranean Sea*' and Seafloor observatory science experiment in the Mediterranean were presented.

The *Festival della Scienza 2011* was held in Rome 20-23 January 2011. The title was '*The end of the world-instruction for use*'. Some posters presenting hazardous events generated at sea, like tsunamis, were presented together with recent experiments addressing the early warning key issue. The LIDO and Marmara-D sea experiments outlines were presented.

### ISMAR

#### **Articles**

Chierici, F., L. Pignagnoli, D. Embriaco, MARINE SEISMOGENIC-TSUNAMIGENIC PRONE AREAS: THE GULF OF CADIZ JOURNAL OF GEOPHYSICAL RESEARCH, VOL. 115, C03015, 15 PP., 2010

Jorge Miguel Miranda, Luis Matias, Pedro Terrinha, Nevio Zitellini, Maria Ana Baptista, Francesco Chierici, Davide Embriaco, Giuditta Marinaro, Stephen Monna, Luca Pignagnoli, Springer Praxis Geophysical Books in press

Gasperini, L., Polonia, A., Bortoluzzi, G. Henry, P., Le Pichon, X., Tryon, M., Çagatay, M.N. Géli, L. How far did the surface rupture of the 1999 Izmit earthquake reach in Sea of Marmara? Tectonics. VOL. 30, TC1010, 11 PP., 2011 doi:10.1029/2010TC002726

Tryon MD, Henry P, Cagatay MN, Gasperini L., et al. .Pore fluid chemistry of the North Anatolian Fault Zone in the Sea of Marmara: A diversity of sources and processes. GEOCHEMISTRY GEOPHYSICS GEOSYSTEMS, 11 Q0AD03, 2010.

Cagatay, MN; Eris, K; Ryan, WBF; Sancar, U; Polonia, A; Akcer, S.; Biltekin, D; Gasperini, L.; Gorur, N.; Lericolais, G.; Bard, E. Late Pleistocene-Holocene evolution of the northern shelf of the Sea of Marmara, MARINE GEOLOGY, 265 (3-4): 87-100 SEP 15 2009

Geli L, Henry P, Zitter T, ...Gasperini L...et al. Gas emissions and active tectonics within the submerged section of the North Anatolian Fault zone in the Sea of Marmara EARTH AND PLANETARY SCIENCE LETTERS Volume: 274 Issue: 1-2 Pages: 34-39, 2008

#### **Conference Abstracts**

Luca Gasperini, Alina Polonia, Paolo Favali, Giuditta Marinaro, Giuseppe Etiope, M. Nam?k Çagatay, Pierre Henry, and Louis Geli. The entrance of the Izmit Gulf: a key site for

monitoring gas emissions and seismicity in the Sea of Marmara. Geophysical Research Abstracts Vol.12, EGU2010

Gasperini L., Polonia A. (2009). Geological slip rates of the North Anatolian Fault beneath the Sea of Marmara, 17 August 1999 Izmit Earthquake: 10th Anniversary meeting, Istanbul, 10-11.

Polonia, A., Bortoluzzi, G., Cagatay, M. N., Ferrante, V., Gasperini, L., & Sengor, A. M. C. (2009). displaced sedimentary features along middle and northern strands of the north anatolian fault in the marmara sea; implications for slip rates, styles of deformation and basin development; 62 Abstract of the Geological Congress of Turkey, 62, 50-51.

Marinaro G., Giuseppe Etiope, Paolo Favali, Laura Beranzoli, Luca Gasperini, Francesco Gasparoni, Flavio Furlan, Luis Geli, Pierre Henry & Namik Çağatay (2008) SN-4 seafloor observatory in Marmara Sea. RENDICONTI ONLINE SOC. GEOL. IT., VOL. 2 (2008), 1-3

Gasperini L., Bonatti E., Longo G. (2008). Tunguska 1908 a century after: a new hypothesis. RENDICONTI ONLINE SOC. GEOL. IT., VOL. 2 (2008), 1-3

Gasperini L., A. Polonia, V. Ferrante, G. Bortoluzzi & L.G. Bellucci (2008) Submarine Paleoseismology and the Marmara Sea case study: a novel approach to the assessment of seismic hazards. RENDICONTI ONLINE SOC. GEOL. IT., VOL. 2 (2008), 1-3

Gasperini L., Polonia, A., Favali P., Çağatay, M.N., Marinaro G., Etiope G. Selection of a suitable site for monitoring gas emissions and seismicity in the Sea of Marmara. *Geophysical Research Abstracts*, Vol. 12, EGU2010-12008, 2010, EGU General Assembly 2010, Vienna

Taviani, Marco; Angeletti, Lorenzo; Cagatay, Namik; Gasperini, Luca; Polonia, Alina; Wesselingh, Frank. (2009) Flooding of the late Pleistocene Gemlik Caspian-like water body (Marmara Sea) as documented by macrofaunal data Affiliation CNR, Istituto di Scienze Marine, ITA, (Italy) Affiliation Istanbul Technical University, Turkey (TUR); National Museum of Natural History, Netherlands (NLD) Monograph Title 33rd international geological congress; abstracts

Ozeren, M S; Cagatay, N; Sengor, A M C; Zitter, Tiphaine; Gorur, Naci; Henry, Pierre; Gasperini, Luca; Geli, Louis; Postacioglu, Nazmi; Eris, Kadir; Sultan, Nabil. Submarine landslide risk in the Sea of Marmara revisited after MARNAUT cruise. European Geosciences Union general assembly 2008

F. Chierici, L. Pignagnoli, D. Embriaco (2010), "Modelling of the hydro-acoustic signal and tsunami wave generated by sea floor motion including a porous seabed", Geophysical Research Abstract, Vol. 12, EGU2010-10842, Abstract of the contributions of the EGU General assembly Vienna, 3-8 May 2010

L. Pignagnoli, F. Chierici, D. Embriaco, (2010), "A new real time tsunami detection algorithm for bottom pressure measurements in open ocean: characterization and benchmarks", Geophysical Research Abstract, Vol. 12, EGU2010-10498, Abstract of the contributions of the EGU General assembly Vienna, 3-8 May 2010

D. Embriaco, M. André, N. Zitellini and The ESONET LIDO Demonstration Mission Team (2010), “ESONET LIDO Demonstration Mission: the Iberian Margin node”, Geophysical Research Abstract, Vol. 12, EGU2010-13129, Abstract of the contributions of the EGU General assembly Vienna, 3-8 May 2010

ABSTRACT submitted to 2011 EGU:

N. Zitellini and NEAREST Team (2011), “Development of a Tsunami EarlyWarning System (TEWS) Prototype based on the direct monitoring of a potential tsunamigenic structure located near the coasts of SW Iberia: Preliminary results of the EU Project NEAREST”, Geophysical Research Abstract, Vol. 13, EGU2011-3313, Submitted to EGU General assembly Vienna, 3-8 April 2010

F. Chierici, L. Pignagnoli, D. Embriaco, S. Monna (2011), " The tsumani detector prototype installed on board of SN1-cabled abyssal station.", Geophysical Research Abstract, Vol. 13, EGU2011-5680, Submitted to EGU General assembly Vienna, 3-8 April 2010

F. Chierici, L. Pignagnoli, D. Embriaco, S. Monna (2011), " The tsumani detector prototype deployed in the Gulf of Cadiz: data collection and functionality evaluation.", Geophysical Research Abstract, Vol. 13, EGU2011-5618, Submitted to EGU General assembly Vienna, 3-8 April 2010

### **Internal report**

Pignagnoli L., F. Chierici, P. Favali, L. Beranzoli, D. Embriaco, S. Monna, F. D’Oriano and N. Zitellini, (2010), “Tsunami Early Warning System: deep sea measurements in the source area”, submitted to *Volume MARE* del Dipartimento Terra e Ambiente del CNR.

### **DBSCALE**

**Articles**J. Del Rio and E. Delory . “From Ocean Sensors to Traceable Knowledge by Harmonizing Ocean Observing Systems” published on-line on IEEE ICEO Earthzine magazine <http://www.earthzine.org/2010/09/14/from-ocean-sensors-to-traceable-knowledge-by-harmonizing-ocean-observing-systems/>, sept. 2010

### **Esonews**

Participation to several ESONEWS articles on sensor interoperability special issue.  
Inclusion of ESONET standards and interoperability concepts in PLOCAN Observatory S&T plans.

## **2 Plan for Dissemination of knowledge**

### ***2. 1 Exploitable knowledge and its Use***

<b>Exploitable Knowledge (description)</b>	<b>Exploitable product(s) or measure(s)</b>	<b>Sector(s) of application</b>	<b>Timetable for commercial use</b>	<b>Patents or other IPR protection</b>	<b>Owner &amp; Other Partner(s) involved</b>
Background information on ESONET has been summarized in an outreach webpage to inform the public	Outreach Web-Page and computer terminals for aquaria, which introduce to ESONET	General public Schools ESONET community	none	none	All ESONET partners under leadership of KDM/JUB
The Underwater Vision Profiler is a new sensor providing data on 1) large particulate matter (>60 microns) distribution in time and space and 2) zooplankton (> 500 micron) distribution.	It is at 5 Hz frequency and can be connected to a CTD and other sensors. It allows to calculate instantaneous sedimentation rates and can be used on long term moorings. Its operational depth is 3000 m.	oceanography			CNRS-LOV
Development of an autonomous hydroacoustic data recorder	3 years of continuous recording of hydroacoustic data in the MOMAR area (2005-2008)	1. Seismic monitoring 2. Large sea mammals monitoring 3. Acoustic pollution	N/A		CNRS-IUEM J. Goslin CNRS-IUEM J.-F. D'Eu CNRS-IUEM J.-Y. Royer
Cabled deep sea-floor magnetic observatory		Magnetic field monitoring			CNRS-IUEM P. Tarits CNRS-IUEM J.-F. D'Eu
CTD-microcat SBE37 SMP	P,T,S	1.	2008-2009	ANTARES	CNRS-LMGEM COM, ANTARES
Optode O2 3830	O2	1.	2008-2009	ANTARES	CNRS-LMGEM COM, ANTARES

Exploitable Knowledge (description)	Exploitable product(s) or measure(s)	Sector(s) of application	Timetable for commercial use	Patents or other IPR protection	Owner & Other Partner(s) involved
HAUSGARTEN time series	HAUSGARTEN time series	Biology & Oceanography	actually no commercial use expected		KDM/AWI
Standard interfacing concepts for sensors and instruments	<i>Standard document like IEEE 1451 or an extension of that</i>	all ocean related disciplines	2010	No patents-but open, shared knowledge	KDM/UNIHB Ownership will be by all involved partners
Links from science priorities to the needed parameters, sensors, and infrastructures	Relational Database	All			NERC-NOCS
Long-rem record of CTD, optical, current and video data from a cold water coral site in the Gulf of Mexico	Time series	Oceanography, Sedimentology, Biology	-	-	Owner is NIOZ; cooperation with University Wilmington NC
Virtual Institute of Scientific Users of Deep Sea Observatories	Report and web site	1. Data 2. oceanography of all disciplines 3. Observatories	Indefinite		UiT
Outputs from LOOME DEMO mission	experiment report	1. Data 2. oceanography of all disciplines 3. Observatories	Indefinite		UiT and IFREMER
ESONET data and power connection point on Troll A offshore platform. Connection point is a cabled seabed junction box fitted with standard ROV stab connection points mounted beside the Troll A observation well/seabed observatory. Seabed around troll contains pockmarks and evidence of gas seepage, as well as cold water corals.	Infrastructure	1Geohazard and marine biology	2009 or early 2010 (awaiting offshore operations)	None	Energy company StatoilHydro. Connection point is designed and to be installed by NGI. Connection point is made available to ESONET
Knowledge of the performance of new sensors (new fast responding optodes and 2-D planar optodes for oxygen, pCO <sub>2</sub> sensors, current meters) has been gathered through deployments for a few weeks as well as vertical profiling and benthic chamber incubations in the Baltic Sea. Novel methods to compute sea-floor oxygen consumption have been developed and tested based in the obtained sensor results.					Dept. of Earth Sciences, UGOT; National Environmental Institute Denmark; Aanderaa Data Instruments, Norway; IFM-GEOMAR, Germany

<b>Exploitable Knowledge (description)</b>	<b>Exploitable product(s) or measure(s)</b>	<b>Sector(s) of application</b>	<b>Timetable for commercial use</b>	<b>Patents or other IPR protectio n</b>	<b>Owner &amp; Other Partner(s) involved</b>
Long-term multiparameter monitoring at seafloor	New time series in DMs sites	Geophysics, oceanography, geochemistry	Not applicable	Not applicable	LIDO and MARMARA partnership
Data from hydrophone instrument at obsea observatory	Time series	Oceanography	2009-2010		UPC
Data from CTD instrument at obsea observatory	Time series	Oceanography	2009-2010		UPC
Video streaming from obsea camera	Video images	Oceanography	2009-2010		UPC
Audio stream (east-Sicily, ANTARES, West Med)	Audio data, time series, stats	Bioacoustics	2010		UPC
Virtual Institute of Scientific Users of Deep Sea observatories	Report	1 Data 2 Oceanography of all discipline 3 Observatories	Indefinite		All partners and oil companies
New knowledge on operational oceanography and acoustic propagation in the fram strait	Observing systems for operational oceanography including acoustic sources and receivers	Oceanography, ocean acoustics, acoustic navigation	Parts of the ocean observing system are commercially available today and other parts are under development and may become commercial in the future		NERSC

<b>Exploitable Knowledge (description)</b>	<b>Exploitable product(s) or measure(s)</b>	<b>Sector(s) of application</b>	<b>Timetable for commercial use</b>	<b>Patents or other IPR protection</b>	<b>Owner &amp; Other Partner(s) involved</b>
Operation modes for the deployment of heavy equipment in the deep sea usind MODUS	Operational modes and conditions for equivalent stations like GEOSTAR	Deep sea technology	Whenever requested		BHT/INGV
Upgraded version of a multidisciplinary seafloor observatory with real-time or near real time communication	Detection of natural hazards (tsunami, earthquakes)	Oceanography, geophysics	2012		GEOASTAR consortium
Hydrothermal fluid and gas	chemical composition	oceanography, earth sciences	2011	n/a	Chavagnac and Boulart (LMTG) Sarradin (IFREMER)
Sensor implementation	Software link between sensors and acoustic modem	Oceanography	2010	-	NIOZ helped with implementing various sensors in the communications code of the Developics modem (ADCP, sediment trap, CT); Owner is Developics
SEAMON -OBS-PP	Seismometer and pressure probe	geophysics	2010		Ifremer IPGP
Know-how on sea water electrodes for current return in cabled observatories		cabled observatories	2011	public	

<b>Exploitable Knowledge (description)</b>	<b>Exploitable product(s) or measure(s)</b>	<b>Sector(s) of application</b>	<b>Timetable for commercial use</b>	<b>Patents or other IPR protection</b>	<b>Owner &amp; Other Partner(s) involved</b>
Iron sensor design in MOMAR-D		biogeochemistry	unknown		NERC
Acoustic observatory design in MODOO		physics, biogeochemistry and ecosystems	unknown		NERC
Gas hydrate obsevatory design in AOEM		biogeochemistry	unknown		NERC
New observing system for the ocean based on acoustic methods	Acoustic sources and receivers, gliders, new data on ocean temperature and ocean processes	Oceanography, ocean acoustics, navigation, data transmission	from 2012	IPR protection	NERSC, AWI, Scripps, Teledyne
tsunameter (seismometer+Absolute Pressure Gauge-APG)	time series	seismology	2013 (estimated)	IPR protection	INGV, ISMAR
magnetometers (scalar and 3-axis)	time series	geomagnetism	not applicable	not applicable	INGV
APG	time series	oceanography	not applicable	not applicable	INGV, ISMAR
Hydrophones	time series	seismology, bioacoustics	not applicable	IPR protection	INGV, INFN
Tsunameter	time series	Seismology	not applicable	not applicable	ISMAR
SN-4 Seafloor observatory	New long-term time series	Geophysics, Oceanography, geochemistry	not applicable	not applicable	LIDO and MARMARA Demo-mission partners
Broad and seismometeer developed with Guralp Limited System and IFREMER	Time series	Seismology	2010		Geoazur Guralp Ifremer Dt Insu

## **2.2 Dissemination of knowledge including articles in press and published**

<b>Planned/Actual Dates</b>	<b>Type*</b>	<b>Type of Audience**</b>	<b>Targeted Countries</b>	<b>Size of Audience</b>	<b>Partner responsible/Involved</b>
<b>Permanent</b>					
Permanent	Outreach Web-Page and computer terminals for aquaria, which introduce to ESONET	General public Schools ESONET community	any		KDM/JUB
Permanent	Exhibition	Visitors of aquaria	F, Po, G	visitors	KDM/JUB, HCMR, Uaç FFCUL, SOPABt
Permanent	ESONET general presentation Poster	Scientific	All	500	Ifremer
<b>2007-2008</b>					
	Press release(press/radio/TV)	General public	all	all	All WP7
	Project web-site	General public	all	all	All WP7
	Training Workshop	Training	From ESONET	Grad students and ingeneers	All WP7 led by KDM/JUB
	video Podcast	Internet comm..	all	internet	KDM/JUB
Jan 30 <sup>th</sup> , 2008	Radio	General public	Germany	20,000	KDM/MARUM
Jan 29th, 2008	Newspaper SPIEGEL-ONLINE	General public	Germany/Europe	1,000,000	KDM/MARUM
Jan 31 <sup>st</sup> , 2008	Newspaper Handelsblatt	General public	Germany	500,000	KDM/MARUM
April 2007	EGU Special session	Scientific	Europe	~60	KDM
June 2007	BONUS workshop	Scientific	Germany	~60	KDM
	MBARI session	Scientific, Engineers	USA	~60	KDM
Feb 2 <sup>nd</sup> , 2008	Newspaper Welt am Sonntag	General public	Germany	1,000,000	KDM/MARUM
Feb 15 <sup>th</sup> , 2008	Newspaper Westfälische Rundschau	General public	Germany	500,000	KDM/MARUM

<b>Planned/Actual Dates</b>	<b>Type*</b>	<b>Type of Audience**</b>	<b>Targeted Countries</b>	<b>Size of Audience</b>	<b>Partner responsible/Involved</b>
November, 2007	Conference MARTECH	Research	Europe	150	KDM/MARUM
October, 2007	Seminar at MBARI, Monterey, USA	Research	USA	150	KDM/MARUM
June 2007	Seminar at IOW, Warnemuende, Germany	Research	Scandinavia, Germany	200	KDM/MARUM
April, 2007	Seminar at Rosensteel School, Miami, USA	Research	USA	80	KDM/ MARUM
November, 2007	Scientific magazine SCIENCE	Research	Global	100,000	KDM/MARUM
3/08	Report (D1)	Research	EC	500	NOCS/INGV
6/07	Briefing	Politicians	UK	3	NOCS
2/08	Briefing	Senior Management	IE,UK	8	NOCS
	Conference	Research	Portugal	100	UAç
15-16	Conference	Research-Technological	International	200	CSIC
November 2007	MARTECH 2007	Development industry (marine technology, communications)	International	200	UPC
13/05/2007	Press: Newspaper "Vatan"	General public	Turkey	200,000	ITU-Ifremer-CNRS
13/05/2007	Press: Newspaper "Star"	General public	Turkey	200,000	ITU-Ifremer-CNRS
14/05/2007	Press: Newspaper "Milliyet"	General public	Turkey	500,000	ITU-Ifremer-CNRS
22/06/2007	Popular Science and Tecnology Magazine: Cumhuriyet Bilim Teknoloji"	General Public	Turkey	300,000	ITU-Ifremer-CNRS
	Video Victor 6000 on « Sarmineto de Gamboa »	All	All	All	CSIC-Ifremer
2008	Popular science magazine GEO	General Public	Turkey	10,000	ITU-Ifremer-CNRS
June 2008	Film/video	TV channels	Turkey	10,000	ITU-Ifremer-CNRS
	3 Publications of	Scientific Industry and		400	FFCUL

<b>Planned/Actual Dates</b>	<b>Type*</b>	<b>Type of Audience**</b>	<b>Targeted Countries</b>	<b>Size of Audience</b>	<b>Partner responsible/Involved</b>
	ESONEWS	Agencies			
May-July 2007 <sup>1</sup>	Open cruise on Polarstern	Teachers and Students	Germany		AWI
Barcelona Sept 2007	All Regions Workshop	ESONET NoE partners and research community	International	100s	CSIC/IMI
Barcelona Sept 2007	Opening address - Juanjo Dañobeitia and chairman of session 6	ESONET NoE partners and research community	International	100s	CSIC
Barcelona Sept 2007	Presentation Eulàlia Gràcia	ESONET NoE partners and research community	International	100s	CSIC
Barcelona Sept 2007	Presentation Michel André	ESONET NoE partners and research community	International	100s	UPC/CSIC
Barcelona Sept 2007	Poster exhibition	ESONET NoE partners and research community	International	100s	CSIC
Barcelona Sept 2007	DVD distributed	ESONET NoE partners and research community	International	100s	CSIC
Barcelona Sept 2007	Presentation – Mick Gillooly	ESONET NoE partners and research community	International	100s	IMI
Dublin 17th Oct 2007	Presentations and discussions	Policy advisors and funding agencies	Ireland	10	IMI
November 15 <sup>th</sup> -16 <sup>th</sup> 2007	International Workshop on Marine Technology	Research community	EU	50	UPC/CSIC
Galway 20th Nov 2007	Presentations and discussions	Deep Sea Research Community	Ireland & Northern Ireland	20	IMI
Dublin 3 Dec 2007	Presentation and questions/discussions	Higher Education Authority Forfas ESFRI delegates and other ESFRI project participants	Ireland	25	IMI

<sup>1</sup> AWI organized the RV "Polarstern" cruise ARK XXII/1a-c from end of May until mid July 2007 which did address scientific work at two ESONET sites, the Hakon Mosby Mud Volcano and the HAUSGARTEN observatory west off Svalbard. During the cruise teachers and pupils were onboard and got an insight into deep-sea research at European level.

<b>Planned/Actual Dates</b>	<b>Type*</b>	<b>Type of Audience**</b>	<b>Targeted Countries</b>	<b>Size of Audience</b>	<b>Partner responsible/Involved</b>
Dublin 12 Dec 2007	Presentation questions and	Enterprise Ireland Higher Education Authority Dr. Purificación Tejedor del Real (EU) National Delegate for Research Infrastructures in FP7	EU	50	IMI
Winter 2007	Article – ESONEWS and the ESONIM project	Various	International	100s	IMI
Bremen Jan 2008	Presentation – Jaume Piera	ESONET NoE partners and research community	International	100	CSIC
Bremen Jan 2008	Workshops and poster session	ESONET NoE partners and research students	EU	50	CSIC
Dublin 30 Jan 2008	Presentation – Ocean Sciences: At the Cutting Edge of an Environmental Renaissance	Royal Irish Academy – Prof. John Delaney Representatives from key funding agencies, government departments, Environmental Protection Agency, scientific researchers	International	100	IMI
Ireland 31 Jan 2008	Press article- Irish Times Article To the deepest depths for man's final frontier	General public, journalists	Ireland	>100000	IMI
Galway 31 Jan 2008	Presentation to members of the public on science and cabled observatories	Galway – Public presentation Songs of the Deep – Prof. John Delaney	Ireland	150	IMI
Galway 1 Feb 2008	Presentation to MI staff on the Neptune US and Canada cabled observatories and Celtnet.	Marine Institute – Prof. John Delaney	Ireland	75	IMI

<b>Planned/Actual Dates</b>	<b>Type*</b>	<b>Type of Audience**</b>	<b>Targeted Countries</b>	<b>Size of Audience</b>	<b>Partner responsible/Involved</b>
Month 18	Preparation of Educational programme	education	France, Sweden, Spain, England, Italy	1000	Océanopolis/ Universeum, Aquarium La Coruna, Aquarium Genova, Aquarium Plymouth
Month 6	Preparation of Exhibition	General public	France, Sweden, Spain, England, Italy	1 million	Océanopolis/ Universeum, Aquarium La Coruna, Aquarium Genova, Aquarium Plymouth
<b>2008-2009</b>					
May 2008	Conference	Higher education	China		IFREMER, Blandin
March 2008	Conference	Higher education	USA		IFREMER, Person
April 2008	Conference	Higher education	Japan		IFREMER, Person
March 2008	Conference	Higher education	Japan		IFREMER, Person
April 2008	Conference	Higher education	Austria		IFREMER, Puillat
April 2008	Conference	Higher education	France		IFREMER, Puillat
March 2008	Conference	Higher education	Germany		IFREMER, Delauney
March 2008	Conference	Higher education	Turkey		IFREMER, Géli
Sept. 2008	Conference	Higher education	Germany		IFREMER, Géli
Dec. 2008	Conference	Higher education	USA		IFREMER, Géli
Sept. 2008	Poster	Higher education	Belgium		IFREMER, Person
2008	Article	Higher education	-		IFREMER, Puillat
2008	Article	Higher education	-		IFREMER, Géli
2008	Article	Higher education	-		IFREMER, Géli
Sept. 2008	Conference	Higher education	Germany		CNRS-GEOAZUR, Zitter
Dec. 2008	Conference	Higher education	USA		CNRS-GEOAZUR, Zitter
Dec. 2008	Conference	Higher education	USA		CNRS-GEOAZUR, Deschamps
2008	Article	Higher education			CNRS-CEREGE, Bourry
2008	Article	Higher education			CNRS-CEREGE
March 2008	Conference	Higher education	Turkey	worldwide	CNRS-CEREGE, Henry
April 2008	Conference	Higher education	Austria		CNRS-CEREGE, Henry
Oct. 2008	Conference	Higher education	UK		CNRS-CEREGE, Henry
Dec. 2008	Conference	Higher education	USA		CNRS-CEREGE, Tary
2008	Conference	Higher education	-		CNRS-CEREGE, Burnard
Oct. 2008	Conference	Higher education	France		CNRS-CEREGE, Henry
2008	Book	Higher education			CNRS-CEREGE, Henry
2008	Conference	Public			CNRS-CEREGE, Henry

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2008	Book	Higher education			CNRS-CEREGE, Possemeyer
2008-2009	Project website	Higher education and General public	International	worldwide	CNRS CEREGE
8-11 April 2008	Conference	Higher Education & research, Research Industry	International		CNRS-IUEM, D'Eu et al.
13-17 Oct. 2008	Conference	Higher Education & research, Research Industry	France, Europe	1000	CNRS-IUEM, J. Goslin et al.
15-19 Dec. 2008	Conference	Higher Education & research	USA	17000	CNRS-IUEM, Goslin, Royer et al.
2008	Article	Higher Education & research	International		CNRS-IUEM, Goslin et al.
2008	Web-site	General public	France, International		CNRS-IUEM, Goslin, Royer, D'Eu, Tarits
ASLO - Jan'09	Conference	Higher Education	International	2500	CPPM, COM, ANTARES
2009	Article	Research	global		AWI, Bauerfeind
2009	Article	Research	global		AWI, Bergmann
2009	Article	Research	global		AWI, Soltwedel
Janv. 2009	Conference	Higher Education			AWI, M. Klages & T. Soltwedel
Feb. 2009	Conference	Higher Education			AWI, M. Klages
Feb. 2009	Workshop	Higher Education			KDM-MPIMM
October, 2008	Conference	Higher Education & research	global	50	KDM-UniHB
April 2008	Conference	Higher Education	International	Europe	INGV (P. Favali, L. Beranzoli, D. Embriaco)
Dec. 2008	Press release (TV)	Higher Education	Germany	General public	INGV (P. Favali) ISMAR (Zitellini)
Jan. 2009	Conference	Higher Education	International	World-wide	INGV (P. Favali)
Sept. 2008	Conference		Italy		ISMAR, Gasperini
Aug. 2008	Conference				ISMAR, Taviani
Dec. 2008	Poster & talk	Research	Europe	100	NOCS & Ifremer
Jan. 2009	Poster	Research	International	1000	NOCS & Ifremer
Sept. 2008	Poster	Research	Europe	50	NOCS & Ifremer
Feb. 2009	Conference	Research	Europe	30	NOCS

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2009	Articles /Conference	Research	All		FORTH
2008	Conference	Research	All		FORTH
2008	Articles	Research	All		FORTH
2008	Article	Research	All	World	NIOZ, Mienis
2008	Article	Research	All	World	NIOZ, Mienis
2008	Thesis	Research	All	World	NIOZ, Mienis
2009	Article	Research	All	World	NIOZ, Davies
3 March 2008	Conference	EC, Higher Education & Research Industry	EU	120	MI
20-21 March 2008	Workshop	ESONET Researchers	EU	15	MI/CSIC
15 <sup>th</sup> July 2008	Conference	Higher Education & Research Industry	Ireland	20	MI
21 Oct 2008	Conference	Higher Education & Research Industry	Ireland	20	MI
22-23 Oct. 2008	Conference	ESONET Researchers	EU	120	MI
12-13 Jan. 2009	Workshop	ESONET technicians, engineers & researchers	EU	15	MI
6 Feb 2009	Conference	EC, Higher Education & Research Industry	EU	120	MI
11 Feb 2009	Conference	Higher Education & Research Industry	Ireland	50	MI
July	Conference	General public; Higher Education	Portugal	100	UAc
25/02/2009	Press Release	General Public	Spain	2000000	CSIC
Jan. 2009	Conference	Higher Education	France		CSIC
April 2009	LIDO Project Website	General Public and Registered Users	National, European, International	Unlimited	LAB-UPC
Spring 2009	Article	Scientists	International		LAB-UPC
Fall 2008	Article	Scientists	International		LAB-UPC, IFREMER
Spring 2008	Conference	Scientists	International		LAB-UPC, IFREMER
Spring 2009	Conference	Scientists	European		LAB-UPC, LIDO Partners
Spring 2009	Conference	Scientists	European		LAB-UPC, INFN
Spring 2009	Conference	Scientists	European		LAB-UP
Spring 2009	Article	Scientists	International		LAB-UPC

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11-12 June 2009	Workshop-Flyer-Press-Report-Web site	Researchers-Press-Industry	Norway-Europe-Japan-USA	< 150	UiT is the organizer but all partners are participating
30 June 2008	Conference	Scientists	International	50	NERSC
22 Aug 2008	Workshop	Scientists	Norway	50	NERSC
2008	Conference	Scientists	Paris		NERSC, Sagen
2008	Conference	Scientists	Paris		NERSC, Skarsoulis
2009	Article	Scientists			ULB, Carrière
Oct. 2008	Conference	Higher Education			ULB, Carrière
Sept. 2008	Conference	Higher Education	Canada		ULB, Carrière
April 2008	Conference	Higher Education			ULB, Carrière
June 2008	Conference	Higher Education	USA		ULB, Carrière
Jan. 2009	Conference	Higher Education	France		UGOT, Tengberg
Jan. 2009	Conference	Higher Education	Chile		UGOT
16 June 2008	Press release	General public	Turkey	20-30 Millions	ITU, IFREMER,CNRS,ISMAR
11 July 2008	Popular sci.art.	General public	Turkey	5 Million	ITU
25 July 2008	Popular sci.art.	General public	Turkey	5 Million	ITU
23 June 2008	Radio	General Public	Turkey	3 Million	ITU
16 June 2008	TV	General Public	Turkey	30-40 Milion	ITU, IFREMER, CNRS, ISMAR
17 June 2008	TV	General PUBLİC	Turkey	20 Million	ITU
2008	Article	Higher Education			ITU, Eris
2008	Article	Higher Education			ITU, Irvali
2008	Article	Higher Education			ITU, Çağatay
2008	Article	Higher Education			ITU, Görür
2008	Article	Higher Education			ITU, Çağatay
2008	Book	Higher Education			ITU, Görür
March 2008	Conference	Higher Education	Turkey		ITU, Görür
March 2008	Conference	Higher Education	Turkey		ITU, Çağatay
April 2008	Conference	Higher Education	Austria		ITU, Çağatay
April 2008	Conference	Higher Education	Austria		ITU, Özeren
Dec. 2008	Conference	Higher Education	USA		ITU, Çağatay
2008	Article	Higher Education			DEU, Kim
2009	Article	Higher Education			DEU, Dondurur
April 2008	Conference	Higher Education	Turkey		DEU, Coskun
Sept. 2008	Conference	Higher Education	Germany		DEU, Dondurur
Sept. 2008	Conference	Higher Education	Germany		DEU, Dondurur

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Oct. 2008	Conference	Higher Education	Turkey		DEU, Gürçay
Nov. 2008	Conference	Higher Education	Turkey		DEU, Coskun
Nov. 2008	Conference	Higher Education	Turkey		DEU, Gürçay
Dec. 2008	Conference	Higher Education	USA		DEU, Cifci
Dec. 2008	Conference	Higher Education	USA		DEU, Cifci
Dec. 2008	Poster	Higher Education	USA		DEU, Cifci
Sept. 2008	Cruise report	Scientists			DEU, Selin
2005-2008	Website	Scientists			DEU
2008	Publication	Research Industry	EU	6000	SLR/FFCUL
2008	Conference	Marine Industry	Worldwide	20000	SLR/IFREMER
March 2009	Web site	ESONET partners	All	All partners	ALTRAN & UPC
Oct. 14-17 2008	Conference	Scientific	France	500	DBSCALE-KDM/Unihb/MARUM
Oct. 2008	Conference	Research, Industry	International	500	DBscale, Eric Delory
May 2008	Workshop	Higher Education	Portugal		Cintal
<b>2009-2010</b>					
30 June 2009	Publication	Research	International		CNRS-CEREGE
November 2009	Press releases	General	France and International		CNRS-CEREGE
November 2009	Video	General	France and Turkey		CNRS-CEREGE
August 2009	Conference	Research	International	50	CNRS-CEREGE
August 2009	Poster	Research	International	500	CNRS-CEREGE
3-7 May 2009	Conference	Higher education	International	15000	CNRS-IUEM D'Eu, Brachet, Goslin, Royer, Ammann
14-18 December 2009	Conference	Higher education	International	18000	CNRS-IUEM Perrot, Goslin, Royer
11-12 February 2010	Workshop	Higher education	International	80	CNRS-IUEM Goslin, Perrot, Royer, D'Eu, Brachet
December 2009	Scientific paper	Higher education	International		CNRS-IUEM Goslin
February 2010	Exhibition, web site	General public	Europe	1000	Océanopolis
Spring/Fall 2009	ESONET Newsletter	Researcher	Europe/US/Asia		KDM-MPIMM
June 2009	Poster	Researcher	Europe/US		KDM-MPIMM
November 2010	Press release	Public	USA	Large	NERC-NOCS H. Ruhl
November 2010	Press release	Public	Europe	Large	NERC-NOCS H. Ruhl
Nov-Dec 2010	Print/web news/radio	Public	International	Large	NERC-NOCS H. Ruhl
March-Dec. 2010	TV Film	General public	Greece	>10000	HCMR

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2009-2010	Web site	General public	International	400 000 user per month	HCMR	
5-7 October 2009	ESONET General Assembly	ESONET researchers	EU & international	120	IMI	
April 2009	ESFRI projects meeting	Roadmap update	Higher education, research & government	Ireland	20	IMI
14 January 2010	ESFRI projects meeting	Roadmap update	Higher education, research & government	Ireland	20	IMI
January 2010	Press release-shiptime & MODOO		General public	Ireland	10 000s	IMI
April	Conference		Higher education	International	100	UAC
September	Workshop		Higher education	International	100	UAC
May 2009	Web site		General public and registered users	International	Unlimited	SRATI-UPC
May 2009	Web site		Scientific community and registered users	International	Unlimited	SARTI-UPC
10 September 2009	Euronews futuris		General public	International	Unlimited	LAB-UPC
11-12 June 2009	Workshop flyer, press, report		Researcher, press, private companies and oil industry	Norway, Europe, Japan, USA	80	UIT organized the workshop but all partners participated
Spring/Fall 2009	ESONEWS 3, 2008 cruise report for LOOME		General public, researchers...	All		UIT, AWI, IFREMER, Marum, IFM-Geomar, MPIMM
Spring/Fall 2009	ESONEWS 3, debriefing of the VISO workshop		General public, researchers...	All		UIT
11-12 June 2009	Workshop VISO	Research industry	General	80	Host: University of Tromso	
21-29 June 2009	Conference	Research industry	General	40	FORTH/ICAM	
21-25 Sept. 2009	Conference	Research industry, operational agencies	General	600	ESA/OceanObs09	
October 2009	WS report	Research industry	All		UGOT, A. Tengberg	
21/12/2009	Media briefing (LA Mond)	General public	France	30-40 Millions	ITU, IFREMER, CEREGE, ISMAR, INGV	

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15/12/2009	Media briefing (CNN-Turk, NTV, ATV, TV8, KanalD, StarTV)	General public	Turkey	30-40 Millions	ITU, IFREMER, CEREGE, ISMAR
17/09/2009	Press release (Hurriyet, Milliyet, Sabah, Vatan)	General public	Turkey	20-30 Millions	ITU, IFREMER, CNRS, ISMAR, INGV
17/09/2009	Media briefing (CNN-Turk, NTV, ATV, TV8, KanalD, StarTV)	General public	Turkey	20-30 Millions	ITU, IFREMER, CNRS, ISMAR, INGV
11/11/2009	Press release (Hurriyet, Milliyet, Sabah, Vatan)	General public	Turkey	20-30 Millions	ITU, ISMAR
August 2009	Conference/talk	Research	International		BU. KOERI
10/02/2010	Sky TV	Agenda	Turkey	2 Millions	Gunay Cifci
April 2009	Ocean Business09	Equipment suppliers, services providers	EU/International	+1500	SLR
May 2009	Ocean09 exhibition	Equipment suppliers, services providers, scientists	EU	1000	SLR
May 2009	Ocean09 workshop	Equipment suppliers, services providers	EU	20	SLR/IFREMER
March 2010	LEE interface	ESONET partners	All	All partners	ALTRAN/UPC
October 2010	Ocean challenge publication	Research oceanography	UK	Medium size	UNIABDN
March 2010	Oceanology international 2010	Exhibition	Worldwide	Large	UNIABDN
09/02/2010	“PESOS news” a newsletter spread by Email	Companies delivering into the ocean observatory community	Europe, North-america	300	N.O'Neill, M. Miranda, C. Waldmann, JF. Rolin
12/09/2009	Presentation of ESONET WP2 and WP9 at GEO SIF meeting Washington DC report	GEO SIF	International	20	DBSCALE
10/05/2009	Presentation of OGC/OIE experiment at GEOSS Ocean workshop, Bremen,	Scientists	International	40	DBSCALE and UNIHB

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	IEEE Oceans conference				
March 2009	Presentation	Researchers, research institute	EU, US, Canada	>40	CINTAL
July 2009	Presentation	Management, researchers	Brazil	12	CINTAL
September 2010	Conference	Scientific community			CINTAL
October 2010	Article	General public			CINTAL
<b>2010-2011</b>					
17.04.2010	Press release	General public	Turkey	30 million	ITU
13.03.2010	Press release	General public	Turkey	30 million	ITU, DEU, INGV, IFREMER, CEREGE
September 14th, 2010	On-line article	Earth observation and general public	All	Not recorded	DBSCALE and UPC/SARTI
January 2011	LEE Web application	ESONET partners	All	All partners	IFREMER, ALTRAN, UPC
August 2010	Film	General Public	English and French speakers	Internet Aquaria Scientific institutions	Océanopolis/ Esonet, EuroSITES and Hermione partners
December 2010	Film	General Public	English and French speakers	Internet Aquaria Scientific institutions	Océanopolis / Esonet Partners
January 2011	Video Clip	General Public	English and French speakers	Internet Aquaria Scientific institutions	Océanopolis / CNRS
May 2010	TV film	General public	Greece-Cyprus	10-20000	HCMR
2010-2011	Web site (Poseidon)	General Public	International	500000 user sessions per month	HCMR
December 2010	Press	publication	France	PACA	COM
March 2010 - Feb 2011	ESONET Education and Outreach website	Main focus on the interested general public and 12-16 yr old school students	English speaking, plus partial website and teaching material translations to : French, German,	potentially high, numerous reciprocal links to other projects aimed at	KDM - JUB

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			Spanish, Swedish, Bulgarian, Portugese	increasing traffic to ESONET outreach site.	
Operation modes for the deployment of heavy equipment in the deep sea using MODUS	Operational modes and conditioins for equivalent stations like GEOSTAR	Deep Sea Technology	whenever requested	---	<b>INGV / BHT</b>
2010	Publication (MarmaraDM D1.3)	Research			CEREGE/SIO
2011 (in preparation)	Publication (MarmaraDM D1.2)	Research			CEREGE/SIO
2011 (submitted 2010)	Publication on HF modeling	Research			CEREGE
March 16, 2010	conference	High school teachers	France	40	CEREGE
April 2010	Oral presentation	Research	International (EGU Vienna)	50	CEREGE
April 2010	poster	Research	International (EGU Vienna)	50	CEREGE
04/2010	workshop	Researcher	Europe		KDM-MPI
05/2010	workshop	Researcher	Europe		KDM-MPI, NERC-NOC, UGOT, Ifremer
10/2010	conference	Researcher	US		KDM-MPI
08/2010	workshop	Researcher	Europe		KDM-MPI
11/2010	Symposium	Resaercher	Germany		KDM-MPI
12/2010	meeting	Researcher	Europe		all ESONET partner
04/2011	conference	Researcher	Europe/US		KDM-MPI
2010	paper	Researcher	Europe/US		KDM-MPI, KDM_IFM-GEOMAR

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2010  see publication list related to ESONET 1 PhD thesis 2 peer-reviewed articles 7 conference papers	paper	Researcher	Europe/US		KDM-MPIMM
	publication	high education	world		ULB
La Semaine du Son, 24-30 Jan 2011	press/radio/TV media briefing	general public	France, Belgium, Québec	100	ULB
Le Soir, page Sciences&Santé 22 Jan 2011	press/web documentary	general public	Belgium, France	1000	ULB
RTBF Musiq3, 24 Jan 2011	radio	general public	Belgium	>1000	ULB
RTBF Semences de curieux (émission scientifique sur la Première) 6 Feb 2011 (40') 13 Feb 2011 (40') 20 Feb 2011 (40') Podcasts available	radio	general public	Belgium	>1000	ULB
ESONET page on EHL web <a href="http://ehl.ulb.ac.be">http://ehl.ulb.ac.be</a> including flash animations	web	general public	world		ULB
November,2010	conference	research and industry	Brazil	40	CINTAL
December,2010	poster	research	Europe		CINTAL
June,2011	conference	research and	all		CINTAL
25.6.2010	workshop	SMEs	Germany	8	SEND
29.11.2010	workshop	SMEs	Germany	15	SEND
16 December 2010	Workshop, report	Researchers	Norway, Europe, USA	50	UiT organized the workshop in an auditorium booked by IFREMER. All partners participated
13 March 2010	Press Release	Genaral Public	Turkey	30 million	DEU, IFREMER, ITU,INGV,CEREGE
14 March 2010	Press	General Public	Turkey	40 million	DEU, IFREMER,

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					ITU,INGV,CEREGE
14 April 2010	TV	General Public	Turkey	40 million	DEU, IFREMER, ITU,INGV,CEREGE
www.noc.soton.ac.uk/doo	website	public	world	unknown	Ruhl
Open-Ocean Observatories in Europe	handout	science, policy, funding agency	UK	200+ researchers	Ruhl
National Geographic	TV	public	world	unknown	Lampitt
23 Feb 2010	Meetging	Total, Oil company	General	10	NERSC
11 March 2010	Workshop	research and industry	Norway, USA	20	NERSC
08 June 2010	Conference	research, industry	General, Arctic	? 2000	NERSC, AWI
May 2010	WebSite Access to continuous real-time data and historic archives	All General registered audience and Scientific Community	International	Unlimited	SARTI-UPC
21/01/2011	Press: "Diari de Vilanova"	All, General Public	National	Unlimited	SARTI-UPC
since Feb 2010 along the year	WEBSITE newspaper, tv, radio	General Public	International	Unlimited	LAB-UPC
Summer 2010	Scientific Papers	Higher education	Internat.		Colaço et al. (Goslin) Simao et al. (Goslin) Goslin et al. (Royer, Perrot)
April 2010	Conference	Higher education	National		Guennou et al. (Goslin)
3-8 April 2011	Conference	Higher education	Internat.	15 000	Royer et al. (Perrot, D'Eu, Brachet)
2011	Scientific article in press	Scientific community			NOCS, UGOT and many other
2011-12	Publications	Higher education, Research industry			UGOT, KDM-MARUM, AADI-ITT
29 Oct -7 Nov. 2010 (Genova)	exhibition	general public, low and medium education, Research	Italy, France	national dimension	INGV/CNR-ISMAR
20-23 Jan. 2011 (Roma)	exhibition	general public, low and medium education, Research	Italy	national dimension	INGV
Esonews	Newsletter	General Public Research	All	2000 (printed) By email	FFCUL

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		Industry			
December 14 <sup>th</sup> , 2010	Conference Arcticnet	Research community and industry	all	45	J.J. Dañobeitia (CSIC)
July 1 <sup>st</sup> , 2010	Conference PPNW	Scientific community	all	60	J. Piera (CSIC)
July 2-7, 2010	Conference ESOF	Scientific community	all	80	J.J. Dañobeitia (CSIC) and A. Manuel (UPC)
November, 2010	Conference	Higher education	Spain	75	J. Piera (CSIC)
Spring/Summer 2010	Newsletter	Research community and industry	ESONET partners	200	J. Sorribas (CSIC)
29 Oct -7 Nov. 2010	exhibition	general public, low and medium education, Research	Italy, France	national dimension	ISMAR/ INGV
20-23 Jan. 2011	exhibition	general public, low and medium education, Research	Italy	national dimension	ISMAR/ INGV
03/2011	Publication	Scientific	International		Geoazur