

Meeting of the MSFD Common Implementation Strategy Technical Group on Underwater Noise (TG-NOISE)

30 September – 01 October 2015, ICES, Copenhagen

(30 September: Joint Meeting of the MSFD Common Implementation Strategy Technical Group on Underwater Noise (TG-NOISE), OSPAR Intersessional Correspondence Group on Underwater Noise (ICG-Noise) and HELCOM Expert Network on Underwater Noise (HELCOM EN-Noise))

Final Minutes

Wednesday, 30th September 2015

Participants: TG Noise, ICG-Noise, HELCOM EN-Noise

Venue: ICES, Copenhagen

Chairs: René Dekeling (Items 30-2 – 30-6) Mark Tasker (Items 30-3 – 30-5)

Item 30-1 Welcome and Introduction

Mark Tasker welcomed the group on behalf of ICES followed by round-table introduction of participants. The meeting was chaired by TG Noise chairs. A list of participants is provided in Annex 1. The presentations and documents for the meeting are listed in Annex 2.

Item 30-2 Development of OSPAR/[HELCOM] Impulsive Noise Register

a. Update of work by ICES Data Centre for the OSPAR Noise Register

Neil Holdsworth (ICES Head of Data and Information) gave a presentation about the work carried out by ICES as outlined in the OSPAR report *ICES response to request: A costed proposal to act as custodians of a new OSPAR impulsive noise register to support the implementation of the OSPAR Common D11 indicator*. The report was circulated by email to the participants after the meeting (and is available on the OSPAR website).

Following the presentation, the following were discussed:

- Aspects of OSPAR Noise register (international register and indicator assembly provision). The register is a system that can be accessed via a web interface, in order to upload data on impulsive noise events from national systems, or to query the contents of the database, visualize the results and download the noise events in the OSPAR format (adapted from TG NOISE).
- The input to the register will be either as a simple Excel workbook, or via an XML schema for direct database to database exchange. The CPs have therefore 2 options to provide data
- Regarding the format for reporting process and the Excel workbook a decision needs to be made so that the system is tested and in place by ICES in January 2016. It has been proposed that the reporting mechanism used within the national system, and to the international database, should be as similar as possible, but nationally CPs can use another system if in place. The OSPAR noise register does not replace the national databases and data files.
- After EIHA 2015 a decision was taken by the HODs of OSPAR CPs to follow a German proposal of inclusion of mitigation measures in the OSPAR noise register. The German proposal on technical specifications to predict for mitigation measures needs further discussion. Hence it was agreed to clarify on the required modifications on a short term base to make sure needs that the database can be used for the Intermediate assessment.
- OSPAR ICG Noise will give priority to getting agreement on a proposal for the draft assessment

OSPAR Timeline:

- Mid-March 2016: Draft intermediate assessment ready to use (CPs to confirm when they will be ready to submit the data);
- April 2016: EIHA Committee meeting 11-15th April to discuss intermediate assessment
- Summer 2016: Post-EIHA revisions to be made e.g. to refine the assessment and collection and progress submission of data
- Spring 2017 : the initial assessment sheets by CPs submitted to OSPAR noise register;
- Summer 2017: final intermediate assessment

b. Update by Contracting Parties on Implementation of impulsive noise monitoring and compatibility with OSPAR/ICES noise register

UK (by Tetrienne Box): The UK noise register is almost ready to be used, and some data are ready to be uploaded. Those data should be available for the OSPAR register when it is ready. However data that will be available will not represent all activities. The information is being gathered by dates of events and locations based on licence conditions and in cooperation with regulators. As ICES work was based on the UK format, UK input will be compatible with the OSPAR noise register and will include all necessary fields. The UK register will be open-access to the public on request

Netherlands (Roelant Snoek): The national template has been discussed with stakeholders, but concerns about sensitive information and confidentiality have been raised. Arcadis, under contract with the Dutch Ministry is building the data repository, based on ICES template. Data will be inserted to test the register soon and no delays are expected. It is important that the issue of mitigation measures is concluded soon.

Germany (by Jörg Bründel): Developments and testing are ongoing; first data ready to use will be available in January 2016, and all the data by mid-2016.

France (by Florian Expert): The national register is being developed and is expected to be operational in 2017. Data will not be collected before mid-2016.

Sweden (by Mathias Andersson): The process is ongoing but is slightly different that in other CPs. A consultancy has been contracted to start the work. However there will be constraints to meet the deadlines up to the reporting at EIHA, but there will be efforts to speed up the process.

Denmark (by Jakob Tougaard): Similar situation ongoing as in Sweden, but should be possible to catch up delay. Some pressure at higher level from the Marine Directors may help to get a greater priority for this work.

Ireland (by Donal Cronin): The national register won't be ready before mid-2016. However some data may be available for submission before that in excel format.

The Group noted that these timelines would be too late to make use of the register for an assessment in IA2017 and therefore this will be raised at the meeting of the OSPAR Coordination Group (11-12th Nov).

c. Use of the register for the OSPAR Intermediate Assessment 2017 and HELCOM HOLAS

John Mouat (OSPAR Secretariat) provided an overview of the process and recalled the timeline for the OSPAR Intermediate Assessment by 2017 (see item 30-2 a. above). The process and requirements for this intermediate assessment will be done in two-levels: a first level assessment of information note (2 page) for policy-makers and an extended version for technical purposes. The extended version will provide links to the background data used in the assessment, and all information will be available at the online tool. There will be guidance on how to fill in the assessment sheets, and information about the visualisation of the indicator.

Proposed Actions:

Two dedicated groups of experts will be organized to address pending issues. These will have the representation from CPs and the lists of participants are under development.

The actions will include the planning of technical (web) meetings to be organized by mid –October and coordinated by UK. These meetings will address:

1. Technical discussions about the impulsive noise indicator register collection of data and how to include the proposal for mitigation measures (by Germany); and
2. To address the use of the register for the intermediate assessment, including visualisation tools

Lena Avellan (HELCOM Secretariat) described the HELCOM second holistic assessment that is running until the end of 2018 in the HOLAS II project. In June 2015, new indicators and targets were agreed, including an ambient noise indicator that was agreed as pre-core indicator. There is still more work needed on impulsive noise indicators, currently further development has been agreed to be linked to the development of a registry to define the assessment protocols. A new HELCOM Expert Network on Underwater Noise has been organized and the planning will be discussed at the 3rd meeting of the Working Group on Reduction of Pressures from the Baltic Sea Catchment Area (7-9th Oct.).

The overall timeline for the second holistic assessment is as follows:

- End 2016 : agreements on protocols;
- Mid 2017 : 1st version of the holistic assessment, to be used for national consultation processes;
- Mid 2018: update of the holistic assessment using latest available data (aim to use 2010-2016) and input from national consultation processes, the final updated version to be used by HELCOM members that are also EU Member States as a roof report in the 2018 reporting on Article 8 of the MSFD.

Item 30-3 Update of new initiatives in the Regional Seas

The presentation was sent to participants after the meeting and is available upon request.

“Mediterranean Strategy on Underwater Noise monitoring” A basin-wide monitoring project for enhancing cetaceans conservation in the Mediterranean and Black Seas. ACCOBAMS presentation by Alessio Maglio and Florence Descroix-Comanducci

Highlights and discussion:

- Overview of noise hotspots in the Mediterranean (part of the ACCOBAMS WP 2014-2016);
- The ACCOBAMS initiative is a proposal for discussion (and hopefully adoption) in February 2016 at the next COP meeting.
- There is progress being made in the Mediterranean countries. This has been confirmed by Monika Peterlin regarding Slovenia. There the assessment reporting in line with the recommendations of the TG Noise guidance is under preparation. However more cooperation among the Regional seas and TG Noise for implementation in comparable ways would help. As far, frequencies are concerned, Slovenia is using the ones agreed by TG Noise guidance.

Updates on other new initiatives:

HELCOM informed on Baltic BOOST "Best Practices for Action Plans to Develop Integrated, Regional Monitoring Programmes, Coordinated Programmes of Measures and Addressing Data and Knowledge Gaps in Coastal and Marine Waters", a recently EU co-funded project coordinated by HELCOM. The project includes a WP on underwater noise, aiming at reviewing existing knowledge on impact of noise in the Baltic Sea, explore the possibility to determine acceptable levels of underwater noise for marine species, and survey possible measures to manage and mitigate relevant impacts on the Baltic Sea.

Item 30-4 Update on ongoing initiatives and projects

All presentations were sent to participants after the meeting and are available upon request.

- *Marine Renewables Vibrations, Electromagnetic emissions and Noise* MARVEN project presentation by Mathias Andersson

The project was completed end of September, final reports will be online soon at the SETIS web site <http://setis.ec.europa.eu/>

- *Baltic Sea Information on the Acoustic Soundscape* BIAS project progress update, by Mathias Andersson and Jukka Pajala

The project runs until the end of 2016, however lessons can be learned from the work undertaken so far. In particular, the key need for quality assurance; including the design of a survey failure report (very useful to learn about what can go wrong, and take measures to avoid failure); as well as regular measurements and specification analysis protocol information.

- *Suppression of Underwater Noise Induced by Captivation* SONIC project update by Michael Ainslie

Michael Ainslie presented a summary of the SONIC Noise Footprint and Mapping Tool, which produces noise footprints of individual ships and sound maps from multiple ships. A “noise footprint” is a property of a ship, independent of the properties of the propagation medium, and is intended to facilitate like-with-like comparisons between individual ships, for example by classification bureaus. A “sound map” provides a visualisation of the expected distribution of SPL vs latitude and longitude and. The sound maps can be either frequency-weighted or depth-weighted or both. The frequency weighting reflects the hearing sensitivity of selected groups of fish or mammal species. The depth-weighting reflects their probability distribution in depth.

- *Achieve Quieter Oceans by vessel noise reduction a brief overview focusing on evaluating possible reduction scenarios at basin scale.* AQUO project update by Michel André and Thomas Folegot

Item 30-5 Discussion on ambient noise monitoring

a. Update on joint ambient noise monitoring proposals:

- i. A Joint program for Ocean Noise in the Atlantic Seas JONAS proposal, by Thomas Folegot
Joint participation of France, UK, Portugal, Spain, and Ireland
Will address monitoring and modelling for MSFD indicator 11.2.1; project area based on OSPAR regions, III, IV and V
Project idea and concept built on BIAS experience with development of techniques for the challenges of the Atlantic Arc: large-scale, diverse oceanography; open boundaries
- ii. Joint monitoring initiative in the North Sea, by Roelant Snoek
Coordinated approach under development between different initiatives JONAS / MEDMA
Present status is setting up proposal and ongoing discussion on subtasks
Potentially to be submitted to the first stage proposal for the North Sea Region INTERREG programme (50% co-funding) deadline mid-February 2016.

The meeting noted a gap covering the English Channel / La Manche. This is the world’s busiest shipping lane and therefore key for monitoring of shipping noise. This should be monitored as a priority for ambient noise within OSPAR. Both projects need to consider monitoring this area, and coordinate between the projects to ensure that projects leave no gaps.

Action: Early 2016, the Netherlands proposes to host a physical meeting to coordinate the efforts among these initiatives. Proposal for meeting will follow soon (*Note: in the WebEx of 22 October it was suggested that this should happen in the 2nd week of January (11-15 Jan.)*)

Item 30-6 Report of the meeting

b. Conclusions of the day

There were no major conclusions however this was a very useful meeting to align efforts at regional seas level and very inspiring lessons learned from projects and initiatives. There is a good degree of realism of what is possible to achieve by research and cooperation through projects. There is good progress with the impulsive noise register but there is still work to be done towards OSPAR's Intermediate and HOLAS Intermediate Assessment reports.



The participants of the Joint Meeting of the MSFD Common Implementation Strategy Technical Group on Underwater Noise (EU TG-NOISE), OSPAR Intersessional Correspondence Group on Underwater Noise (ICG-Noise) and HELCOM Expert Network on Underwater Noise (HELCOM EN-Noise) 30 September, ICES, Copenhagen.

Meeting of the MSFD Common Implementation Strategy Technical Group on Underwater Noise (TG-NOISE)

1 October 2015, ICES, Copenhagen

Thursday, 01 October 2015

Participants: TG Noise

Venue: ICES, Copenhagen

Item 01-2 Update MSFD Common Implementation Strategy

a. MSFD Common Implementation Strategy update

Lydia Martin-Roumegas (EC DG ENV) provided a brief presentation (circulated to all participants) of the relevant steps in the MSFD Common Implementation Strategy and the new cycle in 2018. Key points:

- There are no major changes to Descriptor11 in the draft revised Commission Decision;
- Progress and work plan of TG Noise will be briefly presented at WG GES meeting (5-6th Oct. Brussels);
- the Annex III of the Directive has been revised by WG GES but not adopted yet, will be discussed next week and then proposed to the Marine Directors;
- The contribution of TG Noise to the MSFD requirements can be to ensure that underwater noise register (form, outputs) are shaped in a coordinated manner (linked with RSC work, in particular OSPAR, Barcelona Convention and HELCOM), and
- TG Noise should help in the preparation of MS future assessments, targets, current State and GES by 2016, 2017;
- Work on evaluation and assessment of the impacts of underwater noise on marine fauna is expected (using existing and new monitoring efforts has started and including examples of impact mitigation measures¹).

Item 01-3 Review of TG Noise Work Plan for 2015

a. Progress on standardization, summary by Michael Ainslie (and Stephen Robinson)

Brief presentation by Michael Ainslie, prepared in coordination with Stephen Robinson (who regretfully could not attend the meeting). The full presentation and additional information was provided the participants. The work on ISO standard definition is ongoing and under development and a timeline was presented (see presentation).

The topics discussed included:

- The review of ANNEX III of the MSFD: in the ISO group definitions of ambient noise and ambient sound are discussed. In theory, it could be necessary to replace the term “ambient noise” by “ambient sound”: TG Noise will follow this topic and advise if relevant,
- TG Noise discussed the need for further advice to the interpretation of averaging times. It was agreed that TG Noise will gather views on averaging times and assess whether further guidance on interpretation is needed.

Proposed actions / conclusions:

Michael Ainslie will follow-up to address the averaging time issue, possibly writing a discussion paper. Other members of TG Noise agree to contribute to the follow up of the document to be prepared: Michel André, Thomas Folegot, Jukka Pajala, Mathias Andersson, Nathan Merchant, and Andreas Müller.

¹ Information about mitigation measures is, for example, available at the BOEM Manuals: OCS Study BOEM 2012-015 Seismic Survey Mitigation Measures and Marine Mammal Observer Reports U.S. Department of the Interior www.data.boem.gov/PI/PDFImages/ESPIS/5/5177.pdf

In addition, M. Ainslie will consider the role of offers for project managers by Kathy Vigness-Raposa (suggested by John Young) and Albert Willemsen to lead a new work item on standardisation of ambient noise monitoring. TG supported the scope of work on standardisation.

b. Priorities for the remainder of 2015

See conclusions of the discussions under agenda item 01-5.

René Dekeling introduced a quick overview of the ToR in 2015 and what was actually done by TG Noise:

- Advice was provided for review of the Commission Decision;
 - A discussion document was made by TG Noise with a rationale for deciding on new criteria. This document (including the Annex 'Criteria for the selection of new GES criteria') was sent to Commission and WG GES, it was presented at WG GES October 2014 as it had implications and value for the MSFD process outside TG Noise. It is not clear whether this advice was actually noted by WG GES or used outside TG Noise;
 - TG Noise supported the work led by ICES in the MCC4GES, and provided specific input for the advice document delivered by ICES to the Commission for the review of the CD. TG Noise assessed the present indicators and suggested improved description where needed. In line with the 2014 progress report sent to MSCG and Marine Directors, and the above-mentioned criteria document, TG Noise advised that no new indicators were needed, and that implementation of the present indicators should get priority. The advice of TG Noise was sent to ICES in accordance with the work plan of the MCC4GES
 - TG Noise advised that no new indicators were needed, and that implementation of the present indicators should get priority;
- TG Noise assessed DG ENV's inventory of progress in implementation of monitoring, provided advice on obstacles/way forward
- TG Noise members provided support and cooperated with ISO, and participated in a workshop by BSH (Germany) spring 2015, and TG Noise notes that a first ISO draft international standard on terminology is now available (2015), enabled by financial support by limited number of MS
- An inventory was made between TG Noise members on what was perceived to be the main priority for the future. There was agreement that TG Noise should start to focus more on (assessment of) impact of underwater noise, noting that this is in the terms of reference but little work has been done on this topic.

Item 01-4 Update Membership & Future role of TG Noise

a. TG membership guidelines, introduction by Lydia Martin-Roumegas, (EC DG ENV)

Currently, permanent MS Representatives on MSCG nominate national members to TG Noise. Guidelines are needed by the group's chairs how to reply to enquiries from individuals that are not nominated by Member States. The chairs have been asking for such guidance for a long time, and the information is urgently needed to enable the chairs ensuring consistent composition of the group.

DG ENV gives explanation on the composition of TGs. It is agreed that further guidelines on the future TGs composition will be discussed between TGs co-chairs and Commission.

b. Proposal for ToR of TG Noise 2016

- Work to progress based on present terms of reference
- Support MS/RSC's in implementation of operational monitoring programmes
 - Continued active coordination between new initiatives in different regions to ensure coherence and complementarity
- Enable coherent interpretation of results of monitoring between MS/RSC
 - TG Noise will organize a thematic workshop in spring 2016 to gain coherent understanding on existing evidence base of impacts of underwater noise on marine life. MSFD 2018 preparation work and assessment methodologies, e.g. linking IA 2017, HOLAS-II, Mediterranean
 - Location was not decided during the meeting, but the chairs will consider a Mediterranean MS to ensure balanced participation north-south EU

- The content, date and exact location will be defined soon and taking account the timelines of the various groups

Actions: thematic workshop preparation

- Maria Ferreira will look into possible dates and conflicts.
- René Dekeling and Mark Tasker will discuss appropriate timing with respect to OSPAR (and other RSC) process.
- TG Noise chairs, together with the Commission will decide on location, upon the proposals received.
- René Dekeling, Mark Tasker will discuss and refine the purpose and expected outputs and consequently the set-up of the workshop with Michael Ainslie, Donal Cronin, Michel André, Mathias Andersson, Nathan Merchant, Monica Peterlin, and Stefanie Werner.

Item 01-5 Advice to WG-GES and MSCG

a. Agree on/draft contents progress report

Progress report to be submitted for WG-GES 5-6th October (*see presentation prepared by TG Noise Chairs*)

b. Advice on implementation of monitoring/main issues (in addition to the points outlined under 01-4 c.)

- Assistance to MS/RSC's on implementation of operational monitoring and assessment frameworks: advice to the decision-making process management frameworks
- Support the process of standardization, including the interpretation of averaging times

Main priorities are:

- For future assessment and target setting, but actual implementation of monitoring essential
- For impulsive noise monitoring data repository for joint use now available at ICES, but concern that for number of MS data will be delivered too late to enable use for IA 2017
- For ambient noise opportunity to set up joint monitoring programmes from onset, concrete proposals now being developed, but availability of resources still uncertain- investigating use of EU Funding programmes in the North Sea, Atlantic Area

c. Agree on actions needed to finalise

- TG Noise will continue to work using the present ToR and will consider a proposal for update of ToR 1st half of 2016 to report MSCG meeting in 2016.
- Concrete advice to MS for future steps.

13:00 End of plenary meeting

The chairs thanked the hosts at ICES and all participants, for their presence and lively contributions and closed the meeting.

ANNEX 1 - LIST OF PARTICIPANTS

Joint Meeting of the EU Technical Group on Underwater Noise (EU TG-NOISE), OSPAR Intersessional Correspondence Group on Underwater Noise (ICG-Noise) and HELCOM Expert Network on Underwater Noise (HELCOM EN-Noise)

Name		Organization	30 th Sep.	1 st Oct.
René	Dekeling (TG Noise chair)	Ministry of Infrastructure and the Environment, The Hague, The Netherlands (OSPAR ICG-Noise and TG Noise MS representation)	✓	✓
Mark	Tasker (TG Noise chair)	Joint Nature Conservation Committee, Aberdeen, United Kingdom (TG Noise MS representation)	✓	✓
Michael	Ainslie	TNO, The Hague, The Netherlands (TG Noise Member)	✓	✓
Mathias	Andersson	Swedish Defence Research Agency, Stockholm, Sweden (HELCOM CP and TG Noise MS representation)	✓	✓
Michel	André	Universitat Politècnica de Catalunya, Barcelona, Spain (TG Noise MS representation)	✓	✓
Jukka	Pajala	Finnish Environment Institute, Helsinki, Finland (HELCOM CP and TG Noise MS representation)	✓	✓
Fabrizio	Borsani	ISPRA, Italy (TG Noise MS representation)	✓	✓
John	Young	International Association of Oil and Gas Producers, London, United Kingdom (TG Noise Member)	✓	✓
Tetrienne	Box	Joint Nature Conservation Committee, Aberdeen, United Kingdom (OSPAR ICG Noise and TG Noise MS representation)	✓	✓
Donal	Cronin	Department of Environment, Community & Local Gov., Ireland (OSPAR ICG-Noise and TG Noise MS representation)	✓	✓
Thomas	Folegot	Quiet Oceans, Plouzane, France (TG Noise MS representation)	✓	✓
Andreas	Müller	Müller-BBM GmbH, Germany (TG Noise MS representation)	✓	✓
Stefanie	Werner	Federal Environment Agency, Dessau-Roßlau, Germany (TG Noise MS representation)	✓	✓
Monika	Peterlin	Institute for Water of the Republic of Slovenia (TG Noise MS representation)	✓	✓
Yann	Stephan	French National Hydrographic Service (SHOM), France (TG Noise MS representation)	✓	✓
Florence	Descroix-Comanducci	ACCOBAMS	✓	✓
Alessio	Maglio	SINAY (ACCOBAMS)	✓	✓
Nathan	Merchant	Centre for Environment, Fisheries & Aquaculture Science, United Kingdom (OSPAR ICG-Noise and TG Noise MS representation)	✓	✓
Jan	Stenløkk	Norwegian Petroleum Directorate, Norway (TG Noise Member)	✓	✓

**Joint Meeting of the EU Technical Group on Underwater Noise (EU TG-NOISE), OSPAR
Intersessional Correspondence Group on Underwater Noise (ICG-Noise) and HELCOM Expert
Network on Underwater Noise (HELCOM EN-Noise)**

Name		Organization	30 th Sep.	1 st Oct.
Florian	Expert	Ministry of Ecology, Sustainable development and Energy, France (OSPAR ICG- Noise)	✓	x
Sarah	Dolman	Whale & Dolphin Conservation (WDC) (TG Noise Member)	✓	✓
Jens-Georg	Fischer	BSH, Germany (TG Noise MS representation)	✓	✓
Lydia	Martin-Roumegas	EC DG Environment	✓	✓
Maria	Ferreira	Coastal & Marine Union (EUCC), The Netherlands (TG-Noise Support Team coordinator)	✓	✓
Roelant	Snoek	ARCADIS, The Netherlands (OSPAR ICG-Noise Dutch Delegation)	✓	x
Wouter	Gotjé	ARCADIS, The Netherlands (OSPAR ICG - Noise Dutch Delegation)	✓	x
John	Mouat	OSPAR Secretariat	✓	x
Ian	Davies	Marine Scotland Science , Scottish Government (OSPAR ICG- Noise)	✓	x
Lars	Sonesten	Swedish University of Agricultural Sciences (HELCOM PRESSURE Chairman)	✓	x
Aleksander	Klauson	Department of Mechanics, Faculty of Civil Engineering, Tallinn University of Technology, Estonia (HELCOM Estonia and TG Noise MS representation)	✓	x
Lena	Avellan	HELCOM Secretariat	✓	x
Marta	Ruiz	HELCOM Secretariat	✓	x
Jakob	Tougaard	DCE/Aarhus University, Denmark (OSPAR ICG- Noise)	✓	x
Joerg	Bruendel	Bundesamt fuer Seeschifffahrt und Hydrographie (BSH) (TG Noise MS representation)	✓	x
Noelia	Ortega	Technological Naval Centre, Spain (OSPAR ICG- Noise)	✓	x
Niel	Holdsworth	ICES	✓	x
Carlos	Pinto	ICES	✓	x

ANNEX 2 – List of documents and presentations

List of documents:

- Final agenda, and list of participants
- TG Noise ToR and Work plan 2015
- Discussion item 30-2 01 Assessment Sheet Guidance
- Discussion item 30-2 02 Completed Example Assessment Sheet
- Discussion item 30-2 03 Impulsive Noise Register Proposal (*ICES response to request: A costed proposal to act as custodians of a new OSPAR impulsive noise register to support the implementation of the OSPAR Common D11 indicator*)

List of presentations:

- *Improving assessment of GES Way forward* Presentation by Lydia Martin-Roumegas, DG Environment, Marine Environment and Water Industry Unit.
- *“Mediterranean Strategy on Underwater Noise monitoring” A basin-wide monitoring project for enhancing cetacean’s conservation in the Mediterranean and Black Seas.* ACCOBAMS presentation by Alessio Maglio and Florence Descroix-Comanducci
- *Marine Renewables Vibrations, Electromagnetic emissions and Noise* MARVEN project presentation by Mathias Andersson
- *Baltic Sea Information on the Acoustic Soundscape* BIAS project progress update, by Mathias Andersson and Jukka Pajala
- *Suppression of Underwater Noise Induced by Captivation* SONIC project update by Michael Ainslie
- *Achieve Quieter Oceans by vessel noise reduction a brief overview focusing on evaluating possible reduction scenarios at basin scale.* AQUO project update by Michel André and Thomas Folegot
- *A Joint program for Ocean Noise in the Atlantic Seas* JONAS proposal, by Thomas Folegot
- *Joint monitoring initiative in the North Sea*, by Roelant Snoek