5th GloBal TestNet Forum

21-22 October 2013
Busan, Republic of Korea

Mission Report

Contents

Monday October 21, 2013, KIOST, Geoje Island, Busan, Republic of Korea

1. Opening

The meeting was chaired by Kyoungsoon Shin (Ballast Water Center, KIOST), Chairman of the Global TestNet for the year 2013. The agenda of the meeting is attached as Annex 1.

A video clip introducing KIOST was followed by an introduction of all 41 participants (List of Participants attached as Annex 2).

A welcoming address was delivered by Dr. Dong-Lim Choi,Director of South Sea Research Institute (SSRI), which is a part of KIOST and home to the Ballast Water Center. Dr. Choi stressed the close relationship between the participants in combatting invasive species recognized by the international scientific community. He welcomed the cooperation of various institutions in their efforts to protect marine resources. KIOST and the Republic of Korea were happy to host this GloBal TestNet meeting and he hoped to increase the cooperation further. Finally, he wishes the participants would enjoy their short stay in the Republic of Korea.

This was then followed by a welcoming address of IMO delivered, on behalf of Dandu Pughiuc (Senior Deputy Director, IMO), by Jose Matheickal (Chief Technical Adviser, GEF-UNDP-IMO GloBallast Partnerships Programme).

He updated the meeting on the latest ratification of the BWM Convention by Switzerland and that the Convention is falling short of only less than 5% of the world's tonnage to meet the entry into force criteria. At the moment, 33 Ballast Water Management Systems (BWMS) got their type approval indicating that solid progress was made in this field. He stressed the common goals of the Test Facilities (TFs) and how important it was for them to meet and harmonize the testing procedures and protocols. More standardization in complex environmental testing was needed and is still needed. He expressed his congratulations for the achievements so far but emphasized that more work still had to be done and it would be great if the TFs could collaborate under the framework of a as a stand-alone entity such as Global TestNet.

Opening remarks are enclosed to this report as Annex 3.

2. Signing of MoU

The GloBal TestNet Memorandum of Understanding (MoU) which was drafted during the previous GloBal TestNet meetings and finalized during the last meeting in Singapore in 2012 was signed on 21 October 2013 by (in alphabetical order): Busan Techno Park (Republic of Korea), DHI Denmark, DHI Singapore, Fuyo Ocean Development & Engineering Co. Ltd. (Japan), GoConsult (Germany), Golden Bear Facility (USA), GSI (USA), KIOST (Republic of Korea), KOMERI (Republic of Korea), Laboratory of Aquatic Science Consultant Co. Ltd. (Japan), Marine Biological Research Institute of Japan Co. Ltd. (Japan), MEA-NL (The Netherlands), MERC (USA), NIOZ (The Netherlands), NIVA (Norway) and the Plymouth Maritime Laboratory (PML, UK).

The Chairman therefore concluded that 16 testing organizations were able to sign the MoU, which was considered a great achievement by all participants.

The signed MoU is enclosed as Annex 6. The GloBallast Project and IMO took the initiative of a press release (see Annex 4) announcing the signing of the MoU. As this was signed in Busan, the GloBal TestNet MoU will be now referred to as the Busan MoU.

Although the TF IMARES (The Netherlands) could not attend due to unforeseen reasons, it informed the meeting that it will also able to sign the MoU at the next meeting of the GloBal TestNet.

3. Plenary Lectures

The session was chaired by Kitae Rhie. The first presentation was made by Jan Linders (Chairman of the GESAMP Ballast Water Working Group - BWWG) on "Testing and Evaluation with Reliability" and on GESAMP itself, the Group of Experts on the Scientific Aspects of Marine Environmental Protection.

Allegra Cangelosi (GSI) and Mario Tamburri (MERC) then presented the GSI/MERC-led collaborative effort to assemble existing harbor water quality data into a common database. The purpose of this project is to provide general environmental condition in the real world that would be encountered for treatment of ballast water on board.

4. Practical Harmonization I: Practicability and reliability of Testing in RoK and Japan

The session was chaired by Prof. Kitae Rhie.

Several presentations by Keun-Hyung Choi (KIOST), Young-Soo Kim (KOMERI), Myung-Baek Shon (MEI) and Lee (KTR) were useful to understand the situation regarding practicability and reliability of testing being conducted in the Republic of Korea.

An introduction to Testing System for the Republic of Korea and Type Approval/Biological Testing in the Republic of Korea was also made.

Finally, Yasuwo Fukuyo introduced the Test Facilities in Japan.

Tuesday October 22, 2013, Nurimaru, Busan, Republic of Korea

5. Practical Harmonization II: Sharing Experiences and Proposals on Practicability for Testing

The session was chaired by Kitae Rhie. Three discussion topics were prepared:

Topic 1: discussion that shared methods, analyses, procedures and protocols used to support certification testing and provide insight and lessons learned, to help improve the overall quality and efficiency of BWMS testing;

Topic 2: work together toward consensus on standardization, to the extent possible, of test and analytical methods and approaches, to increase the comparability and accuracy of results among tests; and

Topic 3: planning cross-training and inter-calibration among the Members to increase comparability and consistency within GloBal TestNet.

The discussion was not limited to the topics mentioned but dealt with a variety of items that could be taken on board for the next inter-sessional period.

It was proposed to focus on scientific topics in the discussion and on items that were acceptable for all, like minimal quality, focus on valuable items to share, harbor characteristics, standards of performance, products to be prepared in 1 year, trying to be practical, analyzing differences in QA/QC, formatting G8-reports or even level of detail.

Often the reporting format is dictated by the Administration, but this could be indicated as a subject to change. Also, discussing and exchanging Standard Operating Procedure (SOPs) was considered an important topic as the secrecy of the SOPs is already behind the members of the GloBal TestNet. Therefore, helping each other by sharing, developing communication tools, selecting specific methods to focus on for harmonization and using standardized methods could overcome the hesitation to share SOPs under the agreement on interpretation of minimum requirements.

The following approach was agreed by the meeting:

To develop a co-project to support the network that will aim at:

.1 Sharing SOPs as required by ISO-system, dissolving the differences through communications, and writing a short report in the name of GloBal TestNet;

.2 Posting SOPs on each member's own webpage (i.e. MERC, GSI) to be available for members and the public; this should be an action separately from the potential availability of such SOPs. Making them actively available would send a strong message of cooperation;

.3 Focusing on simple protocols using 5 types of organisms;

.4 Focusing on general and more common issue rather than controversial issues that members may not agree with: e.g. working together on supporting data for IMO test conditions (e.g. harbor characterization);

.5 Using a generalized format of reporting;

.6 Working on an environmental characterization of world major harbors; and

.7 Creating a comparison matrix of SOPs, electing a secretariat and finding a volunteer who will compare SOPs among members on behalf of GloBal TestNet.

Necessity of communicating tools among members:

.1 Using e-mail or utilizing dedicated webpage/interactive communication network;

.2 Nominating a Representative of Global TestNet at MEPC for the interest of TestNet forum.

As a final result it was agreed that 16 (all) TFs are willing to share the SOPS for the >50 micron group or all 5 types of organisms. In addition, it was decided that only for the group of organisms >50 micron, the sharing would take place for the land-based and ship-board

tests. As the deadline was indicated 1 December 1 2013 with the understanding that an explanatory note should be prepared by the Steering Committee.

The goals of sharing of SOPs were defined:

.1 Publishing the SOPs,
.2 Consolidating communalities and differences,
.3 Recommending validation.

6. Session III – Next steps for GloBal TestNet

The session was chaired by Kyoungsoon Shin (KIOST).

The GloBallast's suggestion to nominate KIOST as the Depositary of the Busan MoU was accepted. As the GloBallast Project will come to an end in September 2016 and to plan for the long term for the GloBal TestNet, it was decided there should be a Permanent Secretariat for the group with clearly defined roles and responsibilities.

The GloBallast's suggestion to designate KIOST as the Interim Secretariat was then accepted. In addition, it was also suggested to develop Terms of Reference (ToR) in order to define the exact role of the Permanent Secretariat of the GloBal TestNet. This will have to be developed in the inter-sessional period by the Steering Committee, which was accepted as well. The Chairman and the Steering Committee would oversee the work of the Secretariat..

As the two previous meetings of GloBal TestNet were held in Asia (Republic of Korea and Singapore), and the ones before were held in Europe (Sweden and Turkey), it was suggested to hold the next meeting of the TFs (the 6th GloBal TestNet Meeting) in the USA in 2014 in order to have a rotation between the hosting continents. It was decided that, as a stand-alone event, the meeting could be organized combined by GSI and MERC (Washington DC and Baltimore). It would fit into schedule of IMO if the meeting were held in the last quarter of 2014; exact dates and venue would still need to be confirmed by the Steering Committee.

The next Chairman of the GloBal TestNet was expected to come from Europe as the other continents had their turn already. The presidium was determined to act as follows for the coming year: Chairman Europe: Etienne Brûtel de la Rivière; vice-chairs: Asia, Martin Andersen; USA: Bill Davidson. Election was done by a general round of applause of the GloBal TestNet members.

7. Closing session

The session was chaired by Etienne Brûtel de la Rivière, new Chairman of GloBal TestNet for the year 2014.

Under "Other Business", no items were discussed under this agenda point.

No other TFs were identified to become member of the GloBal TestNet.

The 5th meeting of the GloBal TestNet was considered successful. The signing of the MoU by all 16 testing organizations was a very strong signal sent to the worldwide shipping community on the willingness of the initiative to work on harmonization and standardization

of testing aspects related to BWMS. All representatives of the TFs joined in the acceptance of the MoU in a cooperative atmosphere that could lead in the near future to joint efforts in the further development of strategies and science to work to a global improvement of discharge of ballast water.

As this meeting was organized back-to-back with the 5th Global Ballast Water Management R&D Forum and Exhibition, being held in Busan, Republic of Korea, from 23 to 25 October 2013, it was a great opportunity to advertise the GloBal TestNet successful signing of the MoU to the ballast water global community.

Jan Linders, IMO-GloBallast Consultant, wrapped up the discussions and closed the meeting by thanking Dr Shin, Chairman for the year 2013, KIOST and the Republic of Korea for a very good organization and hosting of this meeting on behalf of all GloBal TestNet members and IMO-GloBallast. Mr Linders also prepared this report, reviewed by IMO-GloBallast and KIOST.

Pictures of the meeting can be found in Annex 5.

8. Annexes

1. Agenda
2. List of Participants
3. Opening Remarks
4. IMO Press Release
5. Pictures
6. Signed MoU

Annex 1: Agenda

5th GloBal TestNet Forum

Monday October 21, 2013
KIOST, Geoje Island, Busan, Republic of Korea

Bus leaves Hotel Grand for KIOST Registration / Coffee / Tea	09:00 10:30 – 11:00
<Opening for WS1> -Opening 11:00-11:15 Introduction to KIOST (Video clip) 11:15-11:22 Welcoming Address by KIOST 11:22-11:30 Welcoming Address by Dandu Pughiuc (IMO) 11:30-12:10 Adoption of Agenda and Signing of MoU 12:10-12:20 Group Photo Time	11:00 – 13:00
Tour of R/V Onnuri and LUNCH BREAK	12:20 – 14:00
<Plenary Lectures> 14:00-15:00 Jan Linders (Chair, GESAMP_BWWG) Testing and Evaluation with Reliability 15:00-16:00 Allegra Cangelosi/Mario Tamburri (GSI/MERC)- The GSI/MERC-led collaborative effort to assemble existing harbor water quality data into a common database	14:00 – 16:00
COFFEE BREAK	16:00 – 16:30
<Practical Harmonization I> ***- Session I – Practicability and reliability of Testing in RoK*** 16:30-17:20 Introduction to Testing System for Korea Type Approval 17:20-18:00 Practicing Test Facility	16:30 – 18:00
Reception 18:00-20:00 Reception and BBQ (KIOST)	18:00 – 20:00
Translocation 20:00-21:30 Depart KIOST to Hotel by Shuttles	20:00 – 21:30

Tuesday October 22, 2013
Nurimaru, Busan, Republic of Korea

<Registration> 08:30-09:00 Registration (Specify Trip to BWMS Manufacturer after WS2) <Coffee & Tea with Breads and Cookies>	08:30-09:00
<Practical Harmonization II> ***- Session II – Sharing Experiences and Proposals on Practicability for Testing*** - Topic 1: discuss or share methods, analyses, procedures and protocols used to support certification testing, and provide insight and lessons learned, to help improve the overall quality and efficiency of BWMS testing - Topic 2: work together toward consensus on standardization, to the extent possible, of test and analytical methods and approaches, to increase the comparability and accuracy of results among tests - Topic 3: planning cross-training and inter-calibration among the Members to increase comparability and consistency within GloBal TestNet	09:00 – 11:00
COFFEE BREAK	11:00 – 11:20
11:20-12:00 ***- Session II Continues*** ***- Session III – Next steps for GloBal-TestNet*** 12:00-12:40- Discussion on Next Step of GloBal TestNet - Depositary of the MoU - Designation of an Interim Secretariat - Venue and date of the 6th GloBal TestNet Meeting (2014) - Election of Chairman and Vice-chairs 12:40-12:50 Other Business 12:50-13:00 Conclusion	11:20 – 13:00
LUNCH BREAK	13:00 – 14:30
<Experiencing BWMS Factories> 14:30-16:00 Field Trip to BWMS factories – leave from Nurimaru (or Lunch place) by shuttle for 3 – 4 different types of BWMS Facilities (total 100 to 150 people - about 30~ 50 people for each BWMS Factory) 16:30-18:00 Experiencing BWMSs Facility (Demo Operation of BWMS at their own Barge or Land-based Facility)	14:30 – 18:00
Reception 18:00-20:00 Reception by each Manufacturer 20:00- Return to Hotel by shuttle	18:00 – 20:00

Annex 2: List of Participants

5th GloBal TestNet Forum
21-22 October 2013, Busan, Republic of Korea

Busan Techno-Park (BTP)

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Annex 3: Opening Remarks

5th GloBal TestNet Meeting
21-22 October 2013, Busan, Republic of Korea

Delivered by Dong-Lim Choi
General Director, South Sea Research Institute
Korea Institute of Ocean Science and Technology (KIOST)

Honorable Chairman, Distinguished colleagues and fellows,

Unwanted introduction of aquatic and marine non-indigenous species is a global problem, affecting many aquatic ecosystems, jeopardizing marine biodiversity, and inflicting billions of dollars on world economy.

Especially ship's ballast water and hull fouling have been recognized as key vectors spreading numerous harmful and invasive marine and aquatic species across the continents beyond the reach they can make by natural movements.

The global community recognized this issue and adopted Ballast Water Management Convention in 2004. A key element of the convention is to bring in the state of art technology for treating organisms being carried alive in ships ballast water.

Testing the efficacy of ballast water treatment system will require harmonization and cooperation of testing institutions for setting up standardized methods to evaluate treatment systems and cross-recognize them.

KIOST is dedicated to enhancing ocean conservation and protecting marine resources. We have been engaged in ballast water research for over ten years, surveying organisms in ports, monitoring ships ballast water, and analyzing risks associated with the introductions and dispersal of harmful and non-indigenous organisms.

Now we have extended our efforts, with government supports, to build land based test facility at our own site. The facility is now commissioned to practice for Korea's Type Approval of BWMS. In recent, USCG announced US Type Approval, which is another challenge to meet the test criteria. To provide access to BWMS makers, our institute is seeking to become US Coast Guard recognized Independent Laboratory.

Today, world renowned institutions engaged in testing ballast water treatment systems gathered here at KIOST, Korea's designated test facility, to discuss ways to further improve comparability and reliability of testing among members.

I am really glad that GloBal Test Network meeting is being held at our own facility, and I hope this meeting bears fruits in the end of meeting with better outlook for collaboration among members for setting up objective and independent criteria for evaluating treatment technology

Please enjoy your short visit with us.

Thank you.

5th GloBal TestNet Meeting
21-22 October 2013, Busan, Republic of Korea

Delivered by Jose Matheickal, Senior Technical Officer
On behalf of Dandu Pughiuc, Senior Deputy Director
Marine Environment Division, IMO

Ladies and gentlemen,

It is a great pleasure for me to welcome you in Busan this time for the 5th GloBal TestNet Meeting on behalf of the International Maritime Organization. It is even a greater pleasure to be back in the GloBal TestNet family which was founded almost four years ago in Malmo. Some of you may recall that I missed the 4th meeting, hence my joy to recognize many familiar faces and friends.

Allow me to begin by thanking the Government of the Republic of Korea and the Korean Institute of Ocean Science and Technology for hosting this workshop. I would like also to thank the GloBallast Partnerships Programme for supporting Institute in the organization of this activity.

Dear Participants,

The recent ratification of the Ballast Water Management Convention by Switzerland brought the number of States to have ratified the Convention to 38, which exceeds the first criterion for entry into force of thirty countries and represents a bit more than 30% of the world's merchant shipping gross tonnage. This means that less than 5% of the world tonnage is now needed to fulfill the other entry-into-force criterion of 35%. It is therefore now widely anticipated that the Convention may enter into force in the very near future, which I believe is encouraging for Global TestNet and is music for the ears' of ballast water treatment developers.

It is beyond any doubt that the technology solutions that have emerged in the last five years have contributed to the decision-making process taken by Governments to ratify the Convention. As you may be aware, thirty-three systems have now received their type approvals and as you all know several more are being developed as we speak. The increasing number of applications being submitted to IMO for approval of technologies is a clear indication that solid progress continues to be made in this field.

I am pleased to report that BLG 17, which met in February this year, finalized the draft Ballast Water Management Circular on Guidance on ballast water sampling and analysis for trial use, which was approved by MEPC 65 and is now available on the IMO website under the symbol BWM.2/Circ.42. This circular contains the current state-of-the-art science with respect to sampling and analysis of ballast water and the trial period will start once the Convention enters into force. The goal at the end of the trial period would be to have a series of accepted procedures that can be used for sampling and analyzing ballast water in a globally consistent way. As this circular is of particular relevance for your work, I am sure that you have already scrutinized the various methodologies and approaches to analyze ballast water discharges, and I would like to encourage you to provide your comments on their effectiveness to IMO and share your experience and findings with the other stakeholders involved in ballast water management and control.

I would also like to report that during the last session of the Marine Environment Protection Committee, which was held last May at IMO, the Committee approved a draft IMO Assembly resolution on the application of regulation B-3 of the Ballast Water Management Convention, to ease and facilitate the smooth implementation of the Convention. The draft resolution recommends that ships constructed before the entry into force of the Convention should not be required to comply with regulation D-2 (which is the ballast water performance standard) until their first renewal survey following the date of entry into force of the Convention. The aim of this draft resolution is to relax the application schedule stipulated in regulation B-3 of the Convention while providing a practical way forward and avoiding any undesirable legal uncertainties.

It may be concluded that MEPC 65 took several important decisions that will smooth the implementation of the Ballast Water Management Convention and that have removed most of the remaining barriers towards ratification and entry into force.

Dear colleagues,

You have been handed over a booklet containing all the reports from the previous GloBal TestNet meetings. This is reflecting the already long and rather intense history of the GloBal TestNet, of which you have been the main players. Your determination led to the agreement reached last year in Singapore regarding a Memorandum of Understanding which summarizes your common goals and provides a platform for future collaboration. I understand that several Test Facilities will actually be signing this MoU today and I wish to congratulate them for that.

This landmark MoU has been the result of four years of intense discussions and several meetings under the auspices of the Global Industry Alliance (GIA), established within the framework of the GloBallast Partnerships Programme. Through this MoU, you formalized the first ever “group” of test facilities with the main objective to bring more standardization, transparency and openness to the process of technology approvals and thus to raise the quality control and quality assurance of such a complex testing process. This MoU marks an important milestone in global effort to address the problem of the invasive species transferred through ships’ ballast water and, responds to the concerns within the shipping industry about a perceived lack of standardization and harmonization during test facilities.
I would like therefore, to extend my congratulations to all of you for this great achievement but in the meantime, I would like also to emphasize the fact that this is just the beginning of your success story and more work still needs to be done. I believe that it is now time for the GloBal TestNet to become a standalone entity. One of the main objectives of the coming two days should be to establish yourselves as a self-sufficient and independent group and I look forward to seeing you growing as a recognized organization aspiring to have its own voice in IMO and the international arena.

I thank you all again for attending this important meeting and I wish you all very fruitful discussions during this workshop.

Annex 4: IMO Press Release

5th GloBal TestNet Meeting
21-22 October 2013, Busan, Republic of Korea

INTERNATIONAL MARITIME ORGANIZATION

Media Briefing

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***Hyperlinks to our Social Media sites, and photo gallery*:**

Briefing 46/2013
22 October 2013

Ballast water treatment system test organizations launch GloBal TestNet group

A new formal group of organizations involved in testing for the certification of ballast water treatment systems has been set up, known as the "GloBal TestNet", to facilitate increased standardization and harmonization of test procedures and information exchange.

The move is expected to benefit test facility clients as well as the end-users of ballast water treatment technologies: the ship owners who need cost-effective and environmentally-friendly systems to meet the requirements of the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention), 2004.

A Memorandum of Understanding (MoU) establishing the GloBal TestNet was signed on 21 October 2013 by representatives of 16 ballast water treatment system testing

organizations, during a pre-conference event held as part of the 5th Global Ballast Water Management R&D Forum and Exhibition, being held in Busan, Republic of Korea, from 23 to 25 October 2013.

The R&D Forum, with a theme of “Meeting the demands of the BWM Convention: R&D in the context of catalysing innovative technologies”, was jointly organized by the Global Environment Facility (GEF)-United Nations Development Programme (UNDP)-International Maritime Organization (IMO) GloBallast Partnerships Programme and the Government of the Republic of Korea.

The signing of the GloBal TestNet MoU follows four years of discussion among testing organizations, which have met several times under the auspices of the Global Industry Alliance (GIA), established within the framework of the GloBallast Partnerships Programme.

It is expected that other testing organizations worldwide may join the GloBal TestNet in the future. The GloBal TestNet is open to any organization involved in the generation of data from land-based and/or shipboard testing for the certification of ballast water management systems, under the 2004 BWM Convention and relevant Guidelines or other test protocols.

“I am very encouraged to see that the testing organizations have signed such an MoU and that the GIA and the GEF-UNDP-IMO GloBallast Partnerships Programme catalyzed such a collaborative process. This initiative could play a major role in addressing some of the concerns related to harmonization of technology testing and approval process and thereby accelerate the availability of approved treatment systems to meet the needs of the industry,” said Mr. Shaj U Thayil, Vice President, APL Co. Pte. Ltd, and Chairman of the GIA.

The GloBal TestNet aims to achieve greater levels of standardization, transparency and openness in the process of technology approvals and thus raise the standards of quality control and quality assurance, in what can be a complex testing process. The signing marks an important milestone in the global effort to address the problem of invasive species transferred through ships’ ballast water and addresses concerns within the shipping industry about a perceived lack of standardization and harmonization among ballast water treatment technology test organizations.

The BWM Convention was adopted to prevent the spread of invasive aquatic organisms from one region to another, by establishing standards and procedures for the management and control of ships' ballast water and sediments. Once it enters into force, the treaty will require all ships to implement a Ballast Water and Sediments Management Plan. All ships will have to carry a Ballast Water Record Book and will be required to carry out ballast water management procedures to a given standard.

Guidelines on approval of ballast water management systems have been adopted by IMO. Reliability and consistency of the test methodologies used is seen as extremely important, in order to meet ship owners' expectations that technologies approved and installed on ships have global acceptance, irrespective of the testing organizations used to test and approve them.

The GloBal TestNet will provide a neutral platform for information sharing and help ensure that all testing is comparable and in conformity, while delivering to the end users of the treatment technologies a greater level of transparency and provide tools for meaningful assessment and comparison of the different systems available on the market.

This is also expected to contribute to the timely implementation and ratification of the Ballast Water Management Convention, which has, to date, been ratified by 38 Parties, representing 30.38 per cent of world merchant shipping tonnage. It will enter into force 12 months after ratification by at least 30 States, representing 35 per cent of world merchant shipping tonnage.

IMO – the International Maritime Organization – is the United Nations specialized agency with responsibility for the safety and security of shipping and the prevention of marine pollution by ships.

Web site: www.imo.org

GEF-UNDP-IMO GloBallast Partnerships Programme: http://globallast.imo.org/

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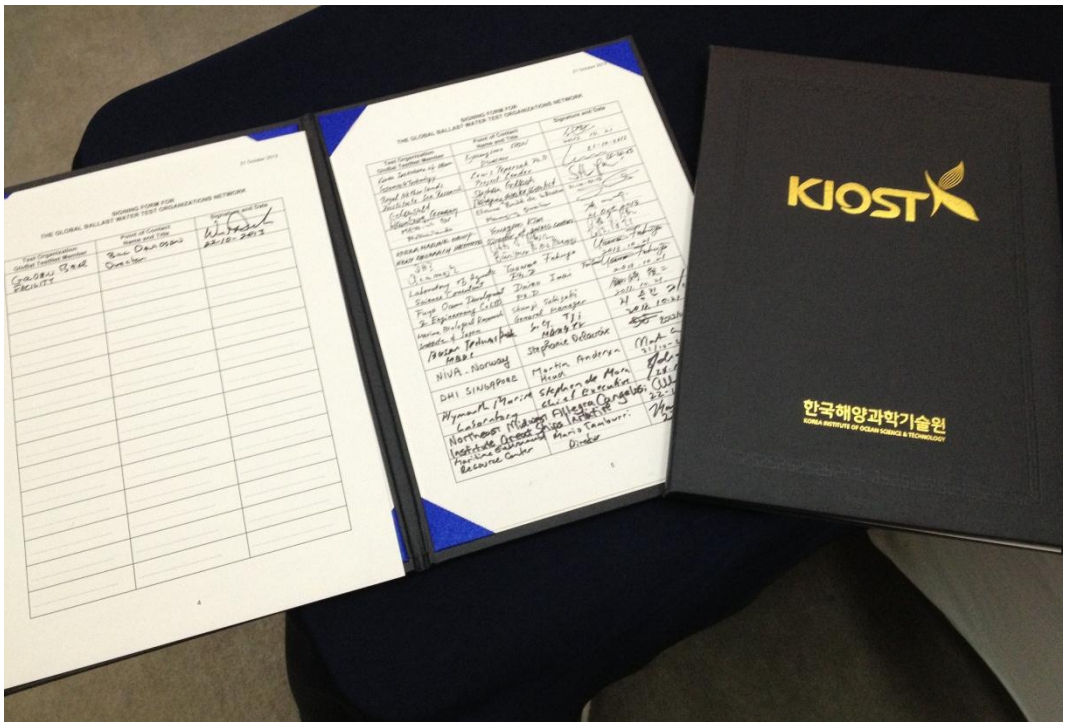
Annex 5: Pictures

5th GloBal TestNet Meeting
21-22 October 2013, Busan, Republic of Korea


5th Global R&D Forum and GloBal TestNet Workshop
21-25 October 2013 Busan, Korea
Photographed by Shon


KIOST
한국해양과학기술원
KOREA INSTITUTE OF OCEAN SCIENCE & TECHNOLOGY

Annex 6: Signed MoU

5th GloBal TestNet Meeting
21-22 October 2013, Busan, Republic of Korea

MEMORANDUM OF UNDERSTANDING ON

THE GLOBAL BALLAST WATER TEST ORGANIZATIONS NETWORK

"GloBal TestNet"

Establishing a Global Ballast Water Test Organizations Network

1 There is a need for the development of effective and environmentally friendly ballast water management systems, as required by the 2004 International Convention for the Control and Management of Ships Ballast Water and Sediments (The Ballast Water Management Convention). Driven by this need, the technology development community is actively designing and constructing various ballast water management systems ("BWMS") to cater to the emerging ballast water treatment market. Such treatment technologies are required to undergo rigorous testing and thorough approval processes, as per the 2004 IMO Ballast Water Management Convention.

2 Having met on several occasions, a number of organizations involved in the land-based and shipboard testing of BWMS (hereinafter called "the Members"), agree that it would be mutually beneficial to establish a global network to promote co-operation, comparability and accuracy of test results.

3 This Memorandum of Understanding (hereinafter called 'the MoU') is made between the Members for the establishment of a Global Ballast Water Test Organizations Network (hereinafter called 'GloBal TestNet').

Mission and functions

4 GloBal TestNet's mission is:

"To promote comparable and accurate test results on the performance of ballast water management systems for certification, through an open exchange of information, transparency in methodologies and advancing the science of testing".

5 The Members agree to:

5.1 discuss or share methods, analyses, procedures and protocols used to support certification testing, and provide insight and lessons learned, to help improve the overall quality and efficiency of BWMS testing by:

5.1.1 participation in quarterly correspondence by each Member via website, email list, conference call, etc.; and

5.1.2 participation in annual meetings by each Member, but representatives do not need to attend in person.

5.2. build awareness of, and coordinate where appropriate with, various Member testing activities;

5.3 work together toward consensus on standardization, to the extent possible, of test and analytical methods and approaches, to increase the comparability and accuracy of results among tests;

5.4 when possible, participate in cross-training and inter-calibration among the Members to increase comparability and consistency within GloBal TestNet;

5.5 when appropriate, assist in vetting or validation of new testing methods and analyses;

5.6 encouraging diverse input from scientific experts, including those outside the ballast water testing community;

Membership

6 The Network is open to any organization involved in the generation of data from land-based and/or shipboard testing for the certification of BWMS under 2004 IMO Ballast Water Management Convention and relevant Guidelines or other test protocols.

7 To be included as a Member of GloBal TestNet, testing organizations should be committed to the mission and have a quality plan and a no conflict of interest policy.

8 An organization fulfilling the criteria set out in Articles 6 and 7 may become a GloBal TestNet Member by applying to the Secretariat. In their application, they must provide a description of facilities and capabilities. The Secretariat will then circulate the intention of the applicant organization to all current Members.

Observers and advisers

9 GloBal TestNet welcomes outside expertise to their meetings and encourages scientific/ engineering input from all related disciplines. The Steering Committee will invite observers and advisers from all stakeholders to meetings on a regular basis. Interested stakeholders can apply to the Steering Committee to take part in meetings.

Financial arrangements

10 Each Member is responsible for its own costs associated with activities under this MoU.

Organization

11 GloBal TestNet will be led and coordinated by a Steering Committee, which will be established. At least three continents shall be represented in the Steering Committee (North America, Asia and Europe, as of the initial drafting of this MoU). GloBal TestNet will be led and coordinated by a Steering Committee, which shall include at least representatives from three continents of North America, Asia and Europe

12 The representatives from the test facilities of each continent will elect their representative on the steering committee by two-thirds majority, using a procedure of their choice, by the end of November of each year for the following calendar year.

13 The members of the Steering Committee elect their chair unanimously by correspondence. If no unanimous decision can be reached, the position of chair rotates.

14 The Steering Committee should meet quarterly, in person or by teleconference, and the minutes of the meeting should be circulated to all other Members. Steering Committee meetings are open to all Members.

Withdrawal from the MoU by a Member

15 Any Member can withdraw from the MoU upon written notice served the Steering Committee and, upon receipt of such notice, will cease to be a party to this MoU.

Miscellaneous

16 Except as expressly provided, nothing in this MoU is intended to, or shall be deemed to, establish any partnership, collaboration, or joint venture between the Members or other parties, constitute either Member the agent of another, nor authorize a Member to make or enter into any commitments for or on behalf of any other Member.

SIGNING FORM FOR THE GLOBAL BALLAST WATER TEST ORGANIZATIONS NETWORK

Test Organization GloBal TestNet Member	Point of Contact Name and Title	Signature and Date
Korea Institute of Ocean Science & Technology	Kyoungsoon Shin Director	[signature] 2013. 10. 21
Royal Netherlands Institute Sea Research	Louis Peperzak Ph.D. Project Leader	[signature] 21-10-2013
GoConsult Hamburg, Germany	Stephan Gollasch Managing director, scientist	[signature] 21/10/13
MEA-nl BV Netherlands	Etienne Brutel de la Rivière Man. Director	21-10-2013 [signature]
Korea Marine Equipment Research Institute	Youngsoo Kim Director	[signature] 21 Oct 2013
DHI Denmark	[illegible] Business Area Manager	[signature] 2013.10.21
Laboratory of Aquatic Science Consultant	Yasuwo Fukuyo Dr.	[signature] 2013.10.21
Fuyo Ocean Development & Engineering Co. LTD	Daizo Imai Dr.	for Imai [signature] 2013.10.21
Marine Biological Research Institute of Japan	Shunji Sukizaki General Manager	鈴崎 俊二 2013. 10. 21
Busan Techno Park MBDC	S. G Tsi Manager	[signature] 2013. 10. 21
DHI SINGAPORE	Martin Andersen Head	[signature] 21/10-2013
NIVA Norway	Stephanie Delacroix	[signature] 2013/10/21
Plymouth Marine Laboratory	Stephen de Mora Chief Executive	[signature] 21. 10. 2013
Maritime Environmental Resource Center	Mario Tamburri Director	[signature] 22/10/2013
NEMWI Great Ships Initiative	Allegra Cangelosi Director	Allegra Cangelosi 22/10/2013

SIGNING FORM FOR
THE GLOBAL BALLAST WATER TEST ORGANIZATIONS NETWORK

Test Organization GloBal TestNet Member	Point of Contact Name and Title	Signature and Date
GOLDEN BEAR FACILITY	BILL DAWSON DIRECTOR	22/10/2013
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