Meeting Report

7th GloBal TestNet Forum

14th to 15th March 2016
International Civil Aviation Organization
999 Robert-Bourassa Boulevard
Montréal
Canada

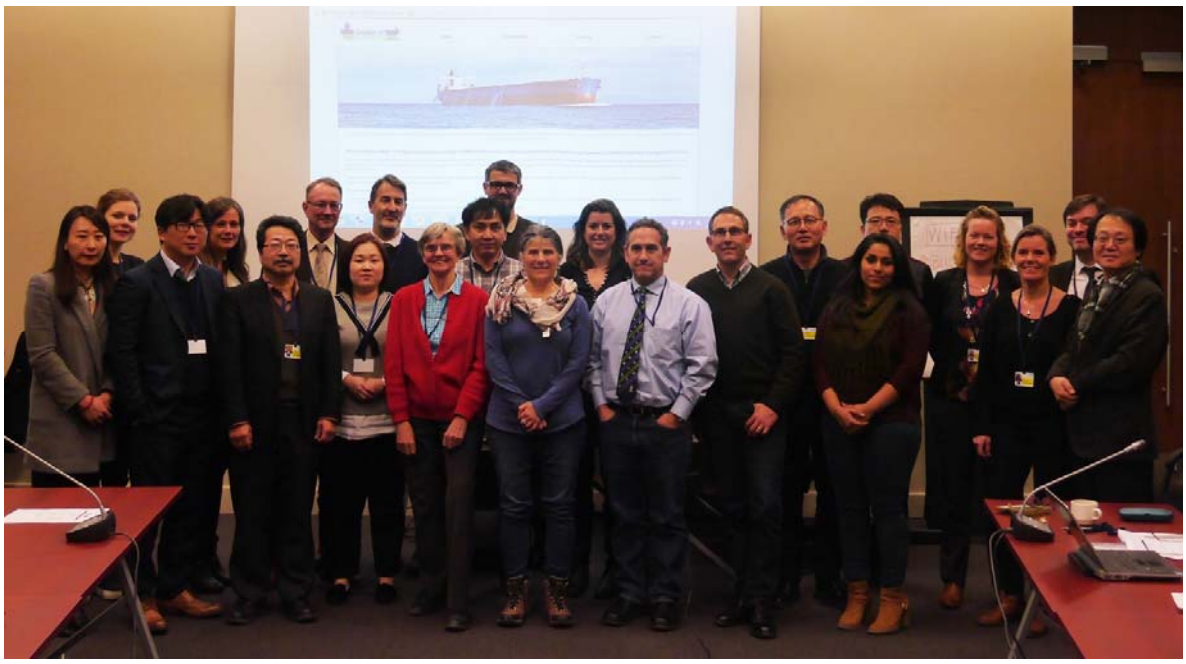

Figure 1: GloBal TestNet Members and Observers at 7th Annual GloBal TestNet Forum in Montreal.

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Day1 - Monday 14th March 2016

1. Introduction

A total of 23 people representing 12 of the test facilities or individuals that signed the MOU in Busan were present at the meeting. Allegra Cangelosi (GSI), Chair, opened the meeting with introductions, housekeeping information and a review of the agenda. Meeting participants are listed below:

Table 1: GloBal TestNet Members Present

Name	Representing	
Gitte Ingelise Petersen	DHI-Denmark	
Guillaume Drillet	DHI-Singapore	
Christaline George	DHI-Singapore	
Yasuwo Fukuyo	Japan	GloBal TestNet Steering Committee
Rich Muller	GBF	
Mario Tamburri	MERC	
Allegra Cangelosi	GSI	GloBal TestNet Steering Committee Chair
Kelsey Prihoda	GSI	
Tim Fileman	The Ballast Water Centre, PML Applications Ltd	Secretary GloBal TestNet
Isabel van der Star	MEA-NL	
Cato Tjabbes	MEA-NL	
Youngsoo Kim	KOMERI	
Sooyeon Lim	KOMERI	
Kyungsoon Shin	KIOST	
Keunhyung Choi	Chungnam National University/KIOST	
Pung-Guk Jang	KIOST	
Stephanie Delacroix	NIVA	

Note: Apologies were sent from Stephan Gollasch (the third member of the GloBal TestNet Steering Committee) who could not be present as he was attending the ICES Working Group on Ballast and Other Ship Vectors mentioned later in these minutes.

Table 2: GloBal TestNet Observers Present

Name	Representing
Antoine Blonce	GloBallast
Kitae RHIE	GESAMP-BWWG, KH Univ
Jan Linders	GESAMP-BWWG
Carolyn Junemann	MARAD
Sun Ok Lee	Busan Techno Park
Shon Myung-Baek	Korean Register of Shipping
Marte Rusten	DNV GL AS

2. Opening Remarks

Antoine Blonce (IMO) provided an update on the IMO Convention's impending entry-into-force and the GloBallast Programme activities, including a video of Globallast Programme Port

State Control Training in Turkey, and outlook. The IMO Convention's entry-into-force is impending and expected in 2016-2017. The Globallast Programme ends, with final products, in June, 2017. The final Ballast Water Technology R & D Forum was the conference that followed immediately after the GloBal TestNet (GBTN) meeting. Antoine suggested that 2016 was a crucial year for GBTN; it has a healthy set of accomplishments so far, including 7 meetings, a website, and workshops. Antoine strongly encouraged GBTN to continue because it is needed by all stakeholders.

The group discussed the implications of this news for GBTN. So far, the GBTN has co-timed meetings with the GloBallast Programme events, and enjoyed the support of the GloBallast Programme event planners in doing so. GBTN will now have to plan and hold meetings on its own. Points of discussion:

- Should all GBTN members be required to be approved by USCG as IL sub-labs? Doing so would mean those facilities whose mission is status testing could not be members. It was agreed that GBTN members do not need to be an IL to the USCG to be a member of GBTN. Because it is not an obligation for GBTN members to test for USCG this would mean that we would have to change the MoU and this was not acceptable.
- Should GBTN have delegate/NGO status at IMO? This is a possibility, though GBTN needs to investigate the requirements for doing so.
- Who can help GBTN make sure meetings continue? Can GBTN link itself to another established IMO delegate?
- Can IMO help pay for GBTN support? Probably not.

GBTN - No Objections Raised

3. Old Business

Tim Fileman (GBTN Secretary) reviewed minutes from the last (6th) meeting in Plymouth, and related GBTN actions, outstanding actions and follow-up:

- There was general agreement that GBTN would maintain the current GBTN approach to inducting new signatories as stated in the GBTN MoU. It was agreed that this was separate from voting rights. An approach for this is being considered by the Steering Committee.
- Recommendations from GloBal TestNet were sent following the correspondence group discussions on G8 revisions. Next MEPC will discuss wording of G8; the following one will seek adoption of revised G8 guidelines.
- A major topic extensively discussed at the 6th meeting was how to take a representative sample of discharged water during land-based and shipboard tests. **Action (outstanding) was that a short document about this sampling would be drawn up and circulated to members.**

- Sharing of SOPs was discussed with the outcome that GBTN should consider holding methods workshops and ring tests.

Discussions:

1. One member of the GBTN intervened to stress the importance of not changing wording of GBTN written products once agreed by the group. It was requested that we draft an operating procedure that allows sufficient time for review of proposed GBTN written products whilst not allowing undue delays in progress through members not replying. **Action: Steering Committee**
2. In addition, there was interest in more proactive follow-up on GBTN recommendations so that the group can:
    a. Better understand the impact of its actions
    b. Become a recognized expert voice in IMO and ETV discussions

4. Review of MoU

The group reviewed goals, objectives and tools for GBTN. They included:

- Information exchange and communication avenues among signatories of the MoU and between test facilities and regulators
- Gap and issue identification and clarification with the goal of improving accuracy, representativeness and comparability of testing
- Encourage high levels of testing quality across facilities
- Promote transparency in methodologies
- Encourage greater IMO-USCG testing consistency
- Harmonize testing approaches and concepts
- Pool data for mutual benefit, as well as benefit of vendors and parties to convention
- Develop benchmarks (based on ring tests, and paper analyses) for testing quality
- Facilitate cooperation with scientific research to move the bar on BW and its relationship to the environmental protection.

5. New Business

- Website: Tim Fileman walked-through the new GloBal TestNet website to great popular acclaim (www.globaltestnet.org). Possible additions/uses:
    1. Ship test conditions data sharing

2. Posting meeting minutes and lists (This has been done)
3. Supporting a member communications network via LinkedIn, private
4. Uploading pictures
5. Showing global map with land-based testing locations
6. **Discussion/Actions:** Group members agreed to:
    - *Include links to the GBTN website on their respective websites*
    - *Review the website annually*

- Organizational format moving forward: A range of possible organizational format proposals were discussed at the meeting with the main goal of having a voice at IMO, and a capacity to meet administrative needs. Options that were discussed were:
    1. An informal group that gathers and discusses the "BWT testing business" and produces valuable information for policy bodies;
    2. A formal but not independent group in the form of an autonomous body nested in an established organization, such as a ship-owner related group (as a key customer of our products) or science-based international organization that will provide a source of administrative support and a legal structure;
    3. A stand-alone NGO.

  Discussion/Actions: Antoine Blonce (GloBallast Programme) agreed to help us investigate an application for IMO observer/NGO status. GSI, MERC and other volunteer organizations will undertake an Organizational Format Option investigation.
- Agreed concrete objectives for GBTN in the next five years included:
    1. Process/Organization-related:
        - Terms of Reference (ToR) for preparation and submission of white papers
        - A seat at IMO to participate in discussions
        - Consensus recommendations for IMO G8 and ETV revisions
        - Information Sharing/Research-Related: Establishment of an active shared database on challenge conditions in world shipping harbors **(ACTION: GSI Lead)**
    2. Consistency-Related ideas that were discussed:
        - Shared SOPs;
        - Workshops in association with meetings to improve quality of testing;
        - Ring Tests to improve quality of testing;
        - Comparing BWTS performance under amended conditions (involving cultured organisms, spiked chemistry conditions) versus natural ambient conditions meeting challenge requirements **(ACTION: NIVA lead)**;

- Comparing differing approaches to plankton sizing, sorting live/dead determination and analysis **(ACTION: MEA lead);**
- Standardizing TRO source water assessment methods **(ACTION: DNV GL lead)**;
- Benchmarks for testing quality

3. Outreach Related ideas that were discussed:
    - White Papers that share data on relevant issues with IMO/USCG.
    - Hosting R and D Forum after GloBallast Programme retirement.

Day2 - Tuesday 15th March 2016

6. Welcome & Review Agenda Allegra Cangelosi, GloBal TestNet Chair

7. Short introduction of the GESAMP-BWWG (Ballast Water Working Group) to GloBal TestNet:

Jan Linders, Chair, GESAMP BWWG

Jan Linders presented a short introduction of the GESAMP-BWWG to GloBal TestNet. He highlighted a main concern of GESAMP-BWW that is with the new proposals of G8 is the formation of disinfection by-products (DBP) in all its aspects. The formation is clearly time dependent if we look at all the data presented in submissions of BWMS. Many DBP may reach their maximum level even after 5 days holding time, but for practical reasons GESAMP-BWWG can stick to 5 days. As the tank holding time (THT) may now be less than 5 days according the decision MEPC, it should be stressed that generally these 5 days are not sufficient for DBP to reach their maximum. Therefore, the GESAMP-BWWG would be in favour of having a measurement of DBP available at 5 days. MEPC also accommodated this wish. A shorter time would give a real underestimation of the DBP. GESAMP-BWWG would like to discuss this item with the members of GloBal TestNet as they are generally in charge of carrying out the tests related to G8 and G9.

Jan Linders asked whether GloBal TestNet could come up with a standard method to store the small amount of water that would be needed for the G9 evaluation in similar ways across test facilities. This could be done for additional storage time after discharge and just for GESAMP.

ACTION: No action plan has been made but it was agreed that this could be a task for the GloBal TestNet in the future.

8. Teleconference with ICES WGBOSV (International Council for the Exploration of the Sea - Working Group on Ballast and Other Ship Vectors)

Sarah Bailey, Chair ICES WGBOSV & Allegra Cangelosi, Chair, GloBal TestNet

Allegra Cangelosi introduced the GloBal TestNet membership to the ICES meeting participants, and quickly summarized the history, purpose and status of the GloBal TestNet. The group has self-organized (informally, at present) to raise capacity of all

BWMS test facilities and activities to deliver test results representative and predictive of real-world performance of BWMS on ships in global trade. She indicated that the GloBal TestNet was in a transitional stage in that the group is determining whether it will be a formal stand-alone organization or seek a partner to which it could affiliate. She pointed out that in any case, a direct relationship with the ICES WGBOSV would be synergistic for both organizations, and expressed the GloBal TestNet commitment to help craft such a relationship. In particular, the two groups will avoid conflicts in meeting timing to allow those participants in both groups to fully participate in both meetings.

***Taken from ICES WGBOSV Minutes**: "WGBOSV connected with the GloBal TestNet organization (a consortium of ballast water treatment system testing organizations working together to standardize test procedures) by videoconference to review objectives of each group, and to identify areas of coordination and collaboration. Very few WGBOSV members are involved in such testing, and all of these are members in the GloBal TestNet. As a result, the broader WGBOSV relies on outside information to learn how ballast water management systems are developing, and to identify any scientific concerns related to biological efficacy or toxicity. Both Groups expressed interest to improve communication by coordinating meeting schedules and contributing to, or disseminating, each other's meeting reports. Given that WGBOSV already meets jointly with WGITMO, it would be difficult to arrange a joint meeting with Global TestNet, however, it was recommended that scientific interaction could be augmented through a theme session at a future ICES Annual Science Conference. The Chairs of WGBOSV and GloBal TestNet agreed to contact each other directly to facilitate future interactions of the groups".*

9. G-8 and USCG Consistent Challenge Conditions:

- ETV protocol Review Process and Tech Panel Deliberations: Mario Tamburri, MERC, presented a summary of outcomes of the ETV Protocol Review Process and Tech Panel deliberations in the USA. The USCG regulations which prescribe USCG certification testing requirements references an Environmental Technology Verification (ETV) Protocol which was crafted based on expert input, including advice from a "Tech Panel". Since its publication many test facilities have implemented tests using the Protocol, and opportunities for improvement became evident. The Tech Panel was called back together to advise on ETV Protocol revisions. ETV Tech Panel decisions included recommendation that no salinity adjustments (e.g., addition of brine or freshwater) be used to meet the required three salinity challenge conditions and no additions of single strains/species of cultured organism be allowed to challenge water (although some small additions of concentrated ambient communities could be possible). The resulting revised Protocol publication is planned for 2016.

- Intake Challenge Conditions for Protists - Issues and Recommendations: Allegra Cangelosi, GSI, discussed an ETV Protocol implementation issue shared by several BWMS testing facilities which is detracting from testing quality. The issue is the constraints associated with strict adherence to the nominal size classes of planktonic organisms required in intake challenge conditions for ETV Land Based (and Shipboard) Tests. In particular, for GSI, the lower bound of the 10-50 µm size class regarding intake challenge exclusively is unnecessarily constraining in the Land-Based context. The regulatory plankton size classes were roughed out early on to correspond with analytical methods of, and volumes for, sample assessment. The larger size class (>50 µm) was intended to capture relatively sparse larger organisms, analysed by the cubic meter, and well suited for counting with a dissecting and/or compound microscope and examined for movement in a live/dead assessment. The smaller size class (10-50 µm) was intended to capture much more numerous protist species that are best assessed by the mL using live/dead staining methods and fluorescent microscopy due to absence of internal or external movement in many cases. The lower bound of this smaller size class serves to exclude ultra-numerous picoplankton and bacteria, the latter of which is assessed using standard culturing methods. The problem for GSI and other BWMS test source systems, is the lower bound of this size class is set too high to capture many cells, even those of the same species as qualifying cells, for purposes of characterizing intake challenge. Vegetative reproduction results in a wide size range in many protists species' cells. Cells of other important species, like Microcystis, could be greatly influence intake challenge but are not considered a relevant intake challenge condition, due to their cell sizes falling below the 10 µm threshold. The result is smaller diversity and abundance of individuals comprising this challenge condition in tests. The result is reduced a range of exercises by BWMS test facilities to artificially boost numbers of live cells in the ordained size class to meet intake density requirements. These consequences, rather than improve the test, decrease test power or predictiveness, while adding costs. The solution is simple from a logic standpoint: a lower bound of 5 or even 7 µm, just 3-5 µm lower than the current one, for purposes of meeting intake challenge conditions would increase the scope of organisms captured in the BWMS vetting exercise, allow GSI and likely other facilities to reduce artefacts from unnatural concentration or enhancement measures, while reducing testing costs and leaving discharge assessments against regulatory size classes intact. However, such a change may be difficult in the near term from a process standpoint. Therefore, GSI recommends that the approach to sizing for intake challenge assessment purposes only, be made more flexible to allow inclusion of cells 10 µm in any dimension, or cells within species whose cells range >10 µm in minimum dimension for purposes of these land-based (and ship board) test intake conditions. In any case, assessments of discharge densities of live organisms in the >10 - <50 µm size class from control and treated discharge should remain the same as is currently directed in regulation with only cells actually >10 being counted toward the test outcomes.

10. G-8 and USCG Consistent Challenge Conditions vs Testing Realities: GloBal TestNet Recommendations

- G8/ETV Revision Discussion Topics: Stephanie Delacroix presented and led discussions.

- Organism Analysis Methods: Time for a GloBal TestNet Ring Test?: Isabel van der Star presented and led discussions. Many of the GloBal TestNet members are certified or work according to ISO 17025. Every method which is described in the scope of our accreditation should be validated. Further, a first, second and third line control is also needed. This problem can be solved without having a ring test when not available. However, as all of us will have the same problem when discussing the size class of ≥50 µm. A comparison between the different test facilities in GloBal TestNet would be a useful exercise.

  In the Netherlands there is an independent institute that performs ring tests in relation to flow cytometry for example (live/dead determination of bacteria) and who would be willing to set up a ring test when there are enough parties interested. A fixed sample with several common organisms (e.g. copepods and some others) would be sent to everybody who is interested and a comparison done on quantification (counting), qualification (taxonomy) and, if possible, size class.

  GloBal TestNet members are asked to respond if interested in this opportunity. However, clarity on the details of how the ring test will be conducted and how results will be used was requested. When enough parties sign up we will inform the independent party (KWR Water-cycle Research Institute www.kwrwater.nl). **Action: Isabel van der Star**

11. Concluding Discussion (GloBal TestNet only)

- Next Meeting: Following the structure that has been used until now, the next GTN meeting should be carried out in Asia. The Asian partners will discuss among themselves and propose a place and date. However, other alternative could be to meet prior or after MEPC 71 in spring 2017. The discussion is left open.
- Election of New Chair & Secretary:

  A new steering committee was elected as follows:
  - Guillaume Drillet - Asia, Singapore (GloBal TestNet Chairman)
  - Mario Tamburri - North America
  - Gitte Petersen – Europe
  - Tim Fileman will remain as your secretary for a further year.

Appendix 1: Agenda for 7th GloBal TestNet Meeting in Montreal

7th GloBal TestNet Meeting Agenda

March 14 &15, 2016

Headquarters of the International Civil Aviation Organization (ICAO)

999 Robert-Bourassa Boulevard

Montréal, Quebec H3C 5H7, Canada

Day1 - Monday 14th March 2016

13.00	Welcome, Introductions and review of Agenda	Allegra Cangelosi, GloBal TestNet Chair
13.30	IMO & USCG Update	Antoine Blonce (IMO) & USCG Representative
14:30	Old Business: • Review of minutes from last meeting • GloBal TestNet 2015 actions and outcomes • Other Old Business	Allegra Cangelosi, GloBal TestNet Chair & Bill Davidson, Chair of Previous Meeting in Plymouth
15:15	***Tea/Coffee Break***	
15:30	Review of MoU	Allegra Cangelosi, GloBal TestNet Chair
16:15	New Business: • Membership Action • Walk-through the new GloBal TestNet website (http://globaltestnet.org)	Tim Fileman, GloBal TestNet Secretary
17:00	***Adjourn Day 1***	

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Day 2 - Tuesday 15th March 2016

08:30	Welcome & Review Agenda	Allegra Cangelosi, GloBal TestNet Chair
09.00	Communications with GESAMP BWWG for G9 evaluation: • DBPs production by additives • THT for G8 and 5days period for G9 • Temperature control during 5days periods and ecotoxicity testing	Jan Linders, GESAMP BWWG
10.15	Coffee Break	
10:30	Teleconference with ICES BWGSOV • Report on Each Group's Mission, Objectives and Meeting ToRs • Group Discussion: Opportunities for Collaboration and Mutual Support	Sarah Bailey, Chair ICES BWGSOV & Allegra Cangelosi, Chair, GloBal TestNet
12:30	***Lunch***	
13:30	G-8 and USCG Consistent Challenge Conditions: ETV Protocol Review and Testing Realities: • ETV protocol Review Process and Tech Panel Deliberations • Intake Challenge Conditions for Protists: Issues and Recommendations • Other, TBD	 Mario Tamburri, MERC Allegra Cangelosi, GSI
14:30	G-8 and USCG Consistent Challenge Conditions vs Testing Realities: GloBal TestNet Recommendations • G8/ETV Revision Discussion Topics • Organism Analysis Methods: Time of a GloBal TestNet Ring Test	 Stephanie Delacroix Isabel van der Star
16:00	***Coffee Break***	
16:15	Concluding Discussion (GloBal TestNet only) • Next Meeting • Election of New Chair & Secretary	
17:30	***Summary and Conclusions - Adjourn Day 2***	

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