

# Minutes

## Workshop on autonomous ship test areas Busan, Korea, November 7. 2018.

PERSON RESPONSIBLE / AUTHOR

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Workshop participants	X
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PROJECT NO./FILE CODE

DATE  
2018-11-07

CLASSIFICATION  
Public

### Location and time

The meeting took place at Centum Haeundae Hotel from 13:00 pm to 18:00 pm on November 7<sup>th</sup> 2018.  
The participants were:

Christopher Balls	Cayman Registry
Hans-Christoph Burmeister	Fraunhofer CML, DE
Dr. Rainer Henking	SCAS, DE
James Fanshawe	UKMA, UK
Hannu Karvonen	VTT, FI
Kun Yang	Super Radio, NO
Svein David Medhaug	NMA, NO
Ørnulf Jan Rødseth	NFAS, NO
S.K.Chou	SOIC, TW
Kwangil Lee	KMOU, KR
Ikroh Yoon	KIMST, KR
Jungsik Jeong	MMU, KR
Ann-Sofie Pauwelyn	VWW, BE
Shunichiro Namikawa	Navika, JP
Hana Lee	UIPA. KR

Hae Sook Jeon	ETRI, KRUpdate f
Sivasakthi Balan	Sri Sairam College of Engineering, IN
Muthuvel A	Sri Sairam College of Engineering, IN
Jarle Fosen	Gard, NO

The proposed and approved agenda was:

1. Welcome and presentations.
2. Those who want to give a brief presentation of their ideas for test area guidelines are welcome to use about 5-10 minutes for that.
3. Expectations from the IMO guidelines – what do we not need to/should not cover.
4. Going through the current draft INAS guidelines and discussing (draft is in annex):
  - a. Titles to remove/add
  - b. Is the brief description ok
5. What direction do we take: INAS paper, ISO standard, other – link to IMO work?
6. Further work – contributions – correspondence group
7. AOB

The background material for the meeting is available from <http://www.autonomous-ship.org/testarea.html>.

## 1 Welcome and presentations

Participants presented themselves.

## 2 Brief presentations

The following presentations were made:

- What is happening in Japan? (Shunichiro Namikawa)
- UK Update (James Fanshawe)
- The Caribbean for Autonomous Vessels trials and operation (Christopher Balls)

The presentations are available on:

<http://www.autonomous-ship.org/events/181107-bus/program.html>

## 3 Expectations from the IMO guidelines – what do we not need to/should not cover.

Discussions on the IMO guidelines resulted in the following conclusion: IMO is probably mostly interested in guidelines for doing specific trials with autonomous ships in international waters or in waters with international ship traffic rather than for test areas in general.

Test areas will typically be used to do technical trials with new types of sensors or control systems, often with people on board. Today, there is also extensive testing of USV (smaller vessels, not normally under IMO regulations).

This should ensure that any guidelines for test areas would be supplementary to any forthcoming IMO guidelines. However, there may be issues that should be coordinated between them.

#### **4 Going through the current draft INAS guidelines**

There was a lengthy discussion on the need for common guidelines at this stage. The conclusion was that it may be premature as the existing test areas are relatively few and very different in their approaches to how tests are performed.

However, the following issues were also raised, which could be the subject of cooperation between the respective test areas.

1. There may be a need for standards for physical (mooring, charging etc.) as well as digital (positioning, mooring system communication, VTS etc.) interfaces between autonomous ships and test area infrastructure.
2. There may also be a need for digital interfaces between autonomous ships and conventional ships.
3. Is it possible to define quantified test acceptance criteria, e.g. for anti-collision or for object detection?
4. Combination of simulations and real tests with scale model or full-size ships is a very interesting proposal. Here it may also be possible to share mission specifications and sensor data recording from different test areas.
5. Communication systems and cyber security are in many cases a common challenge for test areas.

One proposal was to create a user survey to see what issues are most important for the different prospective users or operators of test areas. The INAS Secretariat will have a look at this and we welcome any further input on this.

#### **5 Titles to remove/add**

See item 4: No action.

#### **6 Is the brief description ok?**

See item 4: No action.

#### **7 What direction do we take: INAS paper, ISO standard, other – link to IMO work?**

The main conclusions on this item are the following:

1. An ISO standard on standard terminology is already proposed and the deadline for voting on the proposed new work item is February 1<sup>st</sup> 2019 (ISO/NP 23860 - Ships and marine technology -- Terminology related to automation of Maritime Autonomous Surface Ships (MASS)). Those who want to participate should contact their local ISO member organization
2. The IMO work is expected to continue on the basis of developing guidelines for trials as discussed above. More information about this will be available after MSC 100 in first week of December.
3. We will continue to collect information on test areas on the INAS-pages and we will probably launch a survey to find out what users and operators may wish for in terms of common guidelines.

#### **8 Further work – contributions – correspondence group**

We will arrange a new meeting in conjunction with the MASRWG conference in London, January 17<sup>th</sup> to 18<sup>th</sup>. See previous section for other actions.

#### **9 AOB**

None.