

**Report of the IALA Meeting**

**on participation in the IHO S-100 Geospatial Information Registry**

**held at the IHO, Monaco**

**21 – 24 February, 2012**

**Executive Summary**

* 14 people attended this meeting, hosted by the IHO and held under the auspices of IALA’s e-NAV Committee (Participants are at ANNEX B);
* The meeting worked to an agenda, prepared by Dr Nick Ward, Vice Chairman of the IALA e-NAV Committee, as amended at the start of the meeting (ANNEX A);
* The meeting progressed by a succession of plenary and drafting group sessions;
* The meeting produced:
  + A report;
  + A working draft Guideline;
  + Working draft IALA IVEF Product Specification;
  + Working draft IALA AtoN Information Product Specification;
  + Working draft IALA AIS Product Specification;
  + A Liaison note to each IALA Committee on Product Specification and development;
  + A draft Liaison note to IHO;
  + A draft Impact Statement;
  + A draft Briefing Note;
  + A draft covering note for the IALA Council.
* Observations arising from IALA’s first use of the S-100 GI Registry are at ANNEX F.

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24 February, 2012

Report of the meeting to discuss IALA’s participation in the IHO S-100 Geospatial Information Registry

# General

The meeting was held from 21 – 24 February, 2012 at the IHO, with Nick Ward as Chairman. The Secretary for the meeting was Mike Hadley.

A list of participants is at ANNEX B

Apologies were received from:

|  |  |  |
| --- | --- | --- |
| **Name** | **Organisation** | **Country** |
| Bill Cairns | United States Coast Guard | USA |
| Phil Day | Northern Lighthouse Board | Scotland |
| Robert McCabe | Commissioners of Irish Lights | Ireland |
| Paul Mueller | Tideland Signal | USA |
| Robert Ward | IHO |  |
| Yung Ho Yu | Korea Maritime University |  |

# Introductions

Nick Ward began by thanking the IHO for hosting the meeting, noting that its first day was a public holiday in Monaco.

Tony Pharaoh provided an administration and safety brief.

The Chairman then asked everyone to introduce themselves. He then reviewed the purpose of the meeting, which was to organise IALA’s participation in the IHO’s S-100 GI Registry.

# Agenda

The draft agenda was reviewed and, following additions to agenda item 4, was adopted. (see ANNEX A).

# Organisation of the work

The indicative schedule, shown at the bottom of ANNEX A, although considered ambitious, was agreed. The meeting’s working hours were also agreed.

# IALA Guideline

Following earlier discussion, it had been accepted that four documents needed to be considered:

1. The proposed IALA Guideline on domain ownership and role as a submitting organisation.
2. An example of the applications necessary to be made to IHO.
3. A draft impact assessment.
4. Because of the complexity of the emerging draft Guideline, a briefing note for the IALA Council setting out the essential points of the Guideline.

## IALA Guideline

The discussion on this topic brought out the following points:

* It should be based, essentially, on S-99:
  + Information should, where feasible, be extracted and not just referenced;
  + The S-99 standard can be expected to change with increased usage and so it needs to be monitored and version control applied.

Action item

The e-NAV Committee is requested to monitor the IHO standard S-99.

* The Guideline is intended to inform IALA’s members and Secretariat on IALA’s interaction with the S-100 GI Registry.
* There was a query about the necessity for a Recommendation to sit above the Guideline. This question will be considered by the e-NAV Committee.

Action item

The e-NAV Committee is requested to consider the need for a Recommendation on IALA’s participation in the IHO’s S-100 GI Registry.

* Meeting the timing requirements for the management of S-100 may require rapid responses, which will mean operating outside the normal flow of IALA Committee work and IALA Council meeting times;

As an example, IHO have a requirement to turn round register requests within 30 days for all Register Managers. Responding organisations will incur tighter deadlines due to the need for consultation. These timing requirements need to be reflected in both the draft Guideline and the information paper.

* It will be important to stress that the activity applies across all IALA Committees;
* The workload for the ‘IALA Domain’ Co-ordinator, who will co-ordinate the inputs to IHO, needs to be assessed. There was consensus that the post should lie within the IALA Secretariat;
* The management of the interaction between products, recognised as being important, will need to be defined;
* IALA will need to play a role in the IMO Harmonisation Group on Data Management (HGDM), proposed at NAV57 (see WP6), if approved at MSC90. The work of this group could start as early as May 2012;
* The acceptance of the Common Maritime Data Structure (CMDS) paves the way for a new approach to updating the software of equipment currently tied to the type approval process;
* It was recognized that the Product Specification Register should consider owner domains, which are organisational in orientation, rather than functional domains, as in the other Registers; compare the draft Guideline, Table 1, for the envisaged IALA owned domains in the Registers of the IHO GI Registry.

This led to a discussion of the IHO’s SNPWG (Standardisation of Nautical Publications Working Group) approach to this issue and a proposal for it to be included in the draft Guideline.

* A strawman proposal was assembled to illustrate where IALA might be involved in the individual supplementary registers and was included in the draft Guideline;
* It was agreed that a ‘package’ will need to be compiled for eventual submission to the IALA Council and for the information of the IHO, consisting of:
  + A cover note;
  + The draft Guideline;
  + An information paper;
  + A Liaison note to the IHO;
  + Sample IHO application forms.

Action item

The e-NAV Committee is requested to monitor the need for a briefing ‘package’ for the IALA Council and IHO and its contents.

The Secretariat is requested to forward the draft Liaison Note to IHO, the draft Impact Assessment, the draft Briefing Note and the draft Cover Note for the IALA Council to e-NAV11 for further development.

## IHO Applications

It was recognised that example applications for both domain ownership and as a submitting organisation need to be produced.

## Policy paper

The need for a policy paper, to accompany an Information Paper for the IALA Council, together with the need for an impact statement was identified.

# Draft product Specifications

An example of a Product Specification (PS) is given in S-100 Annex 11. An existing PS for route exchange was provided as a guide. A model of the application in UML normally forms the core of the document. It was noted that there is already an XML schema for IVEF, which could be used in producing a UML model for the PS. The spreadsheet for the AtoN information application was provided to Tom Richardson, for conversion into a UML model.

It was noted that common, open-source software would be ideal, but inevitably different developers would use particular software. Enterprise Architect has been shown to be suitable, but may not be available to some authorities with strict control of IT. StarUML is freely available and may be an alternative.

Concern was expressed about the possible proliferation of PS and it was agreed that there was a need for a plan showing what PS may be needed (within IALA’s remit) and a strategy for PS development, to ensure that related products converge.

It was recognised that there would need to be an overall IALA stakeholder perspective and a hierarchy of PS for related products.

David Acland encouraged use of staged development to cope with additional complexity by generating new versions, with backward compatibility, or parallel use, rather than trying to include everything in one standard (like S-57), which would then be very difficult to change. S-100 provides flexibility, but this makes interaction with stakeholders essential.

There was some discussion about the advantages of a single identifier for an AtoN/station, versus separate identifiers for each feature (light, racon etc), with linking. It was accepted that it may not be possible, or necessary, to standardise this aspect. The two approaches could co-exist and would not prevent transfer of data between authorities.

It was noted that the identifier used is internationally standardised between hydrographic authorities. The identifier uses a letter to indicate a region of the world, followed by a whole number and decimals (up to 5).

It was accepted that the first step in generating a PS should be to define its purpose. In the case of AtoN information, it is for the exchange of information on AtoN between AtoN authorities and between AtoN authorities and hydrographic offices, which would also help them to organise their own data more effectively.

It was noted that the AtoN information could eventually include operational status, with the potential for providing MSI automatically (e.g. ENC updates and nautical publications).

## IVEF Product Specification

A drafting group was formed, with a view to starting the development of an example product specification.

## AtoN Information Product Specification

To avoid possible confusion between AtoN Metadata and the Metadata Register, it was decided to rename this product specification to AtoN Information Product Specification.

A drafting group was formed to start the development of this product specification.

## AIS Product Specification

A drafting group was formed to start the development of this product specification.

# Logistics

Spaces and facilities were kindly provided by the IHO for each of the drafting groups.

# Discussion of preliminary draft Output

A review of progress to date was held during the final session of 22 February and on 23 February.

## Draft Guideline

The draft Guideline was progressing, after several issues had been debated within the drafting group, and some IHO terminology adjusted to suit IALA’s needs. However, questions remained involving internal IALA organisation in relation to IHO’s requirements for Domain Ownership and being a Submitting Organisation.

The draft Guideline will, therefore, remain a working document needing further consideration by the meeting members before receiving wider circulation.

Observations made during the work on the draft Guideline are at ANNEX F.

## IVEF Product Specification

Although good progress was being made with developing this product specification it was quickly realised that some aspects of the IVEF specification need to be aligned with the S-100 standard before a product specification can be completed. It was agreed that the draft product specification should be taken forward as an example and that the drafting group would make as much progress as it could, in the time remaining, before forwarding the result to the VTS Committee for discussion.

Action items

The Secretariat is requested to forward the draft IVEF Product Specification to e-NAV11 and VTS34.

VTS34 is requested to continue the development of the working draft IVEF Product Specification.

In discussion, the question of the impact of any change to IALA Recommendation V-145 on users of the document was raised. It was agreed that this issue needed to be considered by manufacturers, service providers and Competent Authorities and should be further discussed by the VTS Committee before being opened to all IALA Committees.

Action item

The VTS Committee is requested to consider the impact of change to IALA Recommendation V-145 on service providers and Competent Authorities.

## AtoN Information Product Specification

Work was based on the application provided by AMSA in the form of a spreadsheet. The version used included comments from the IALA ANM Committee.

Although not as well developed as IVEF, it was agreed that the emerging document should also be taken forward as an example. The spreadsheet was converted to a UML model by an IHO expert using Enterprise Architect. Again the drafting group would make as much additional progress as time permitted before forwarding the result to the ANM and EEP Committees.

Action items

The Secretariat is requested to forward the working draft AtoN Information Product Specification to e-NAV11, EEP18 and ANM18.

EEP18 and ANM18 are requested to consider the draft AtoN Information Product Specification and continue its development, with the ANM Committee taking the lead.

## AIS

A UML model was created and, after further work, it was agreed that the result should be forwarded to the e-NAV Committee, for the attention of the AIS Working Group.

Action items

The Secretariat is requested to pass the draft AIS product Specification to e-NAV11, for the attention of the AIS Working Group.

e-NAV11 is requested to consider the working draft AIS Product Specification and continue its development.

# Approval procedures

The draft Guideline, together with the briefing note and Impact Assessment will be the subject of further work, prior to being forwarded to the e-NAV Committee for approval.

The need for the group to continue to meet, in advance of the formation of the IMO HGDM and in preparation for its first meeting, should be brought to the attention of the e-NAV Committee.

Action items

The Secretariat is requested to bring to the attention of the e-NAV Committee the possible need for the IHO / IALA group to meet in advance of the formation of the IMO HGDM and in preparation for its first meeting.

The e-NAV Committee is requested to consider whether the IHO / IALA group needs to hold further meetings.

It was agreed that the three working draft Product Specifications, referred to in section 7, would be forwarded to the relevant Committees, as detailed above, as working documents, pending completion of IALA internal procedures, which, when finalised, will be reflected in the Guideline.

Once the ANM, EEP or VTS Committee is content with a Product Specification it should notify the e-NAV Committee that it is now prepared to take ownership. Otherwise the Committee should seek further assistance from the e-NAV Committee.

Action item

The Secretariat is requested to advise each IALA Committee about taking ownership of Product Specifications.

# Actions

The actions arising are collated at ANNEX E.

# Conclusions

The meeting has shown that it is possible to set up an ‘IALA Domain’ and to develop Product Specifications within the S-100 framework for IALA applications. However, it is recognised that participation in the IHO GI Registry is a complex process, requiring careful consideration and planning as well as extensive testing of the proposed entries before submitting.

It was also recognised that the potential formation of the IMO HGDM will have an impact on both IHO and IALA.

# Any Other Business

There was a discussion about the likelihood of there being other bodies with a potential interest in the IHO GI Registry. The meteorological, oceanographic, customs, military, Search & Rescue and security communities were mentioned as possible examples.

The question of progress with the Development Mode for the testing of proposed Registry entries was raised. The UKHO said that action is being taken and that an update would be issued shortly.

Action item

The UKHO is requested to provide an update on progress with the Development Mode.

There was a discussion on the concept of unique identifiers, which was not concluded. It was considered that this subject needs to be investigated further.

# Review of session report

The draft report of the meeting was reviewed and approved by the meeting; further comment can be made to [mike.hadley@iala-aism](mailto:mike.hadley@iala-aism) until 9 March 2012. The finalised version will be input to e-NAV11 as e-NAV11/14/5.

Action item

The Secretariat is requested to forward the finalised report of the meeting to each of the IALA Committees and the PAP, to note.

# Date and venue of next meeting

The need for further meetings was discussed under agenda item 8 and will subject to consideration by the e-NAV Committee.

# Closing of the meeting

The Chairman again thanked the IHB for its kind hospitality and the participants for their hard work during the previous four days, before wishing everyone a safe journey home. He then declared the meeting closed.

# List of Annexes to the report

1. Agenda

A copy of the agenda is at ANNEX A.

1. Participants

A list of participants is at ANNEX B.

1. Drafting Groups – List of participants

A list of working group participants is at ANNEX C.

1. Output Papers

A list of output papers is at ANNEX D.

1. Action Items

A list of action items is at ANNEX E.

1. Observations

A compilation of observations is at ANNEX F.

1. Agenda

1. Introductions
2. Approval of agenda
3. Organisation of work
4. Documentation
   1. IALA Guideline - Domain Ownership & Role as Submitting Organisation
   2. Impact Assessment
   3. Liaison Note to IHO
   4. Sample applications
5. Draft Product Specifications
   1. IVEF
   2. AtoN Information
   3. AIS
6. Logistics (co-ordinators, rooms, timing)
7. Discussion of preliminary draft PS
   1. IALA Guideline
   2. IVEF PS
   3. AtoN Information PS
   4. AIS PS
8. Approval procedure
9. Actions
10. Conclusions

Indicative schedule:

Items 1-4 21 Feb

Item 5 22 Feb

Items 7-10 23 Feb

Further development of draft PS (if required) 24 Feb

1. Participants

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1. Drafting GROUP PARTICIPANTS

Draft Guideline

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| --- | --- | --- |
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|  | Antony Pharaoh | IHO |
|  | Mike Hadley | IALA |
|  | Nick Ward | GLA / UK |

IVEF Product Specification

|  |  |  |
| --- | --- | --- |
|  | **Name** | **Organization / Country** |
|  | René Hogendoorn | HITT Traffic / The Netherlands |
|  | Peter Hooijmans | The Netherlands Ministry of Infrastructure and for the Environment |
|  | Eivind Eik Mong | Jeppesen / Canada |
|  | Geir Jegstad | Kongsberg Norcontrol IT , Norway |
|  | Michael Braun | Signalis / Germany |
|  | Nick Ward | GLA / UK |

AtoN Information Product Specification

|  |  |  |
| --- | --- | --- |
|  | **Members** | **Organization / Country** |
|  | Tom Richardson | UK HO |
|  | Dave Lewald | USCG |
|  | Ómar Frits Eriksson | DMA |
|  | Nick Ward | GLA / UK |

AIS Product Specification

|  |  |  |
| --- | --- | --- |
|  | **Members** | **Organization / Country** |
|  | Ole Borup | Danish Maritime Administration |
|  | Tom Richardson | UK HO |
|  | Nick Ward | GLA / UK |

1. LIST OF OUTPUT PAPERS

| Title | Status |
| --- | --- |
| Draft report | Open for comment until 9 March 2012. |
| Working draft Guideline | Remain with the meeting group. |
| Working draft IVEF Product Specification | Forward to e-NAV11, for information.  Forward to VTS34 for further development. |
| Working draft AtoN Information Product Specification | Forward to e-NAV11, for information  Forward to EEP18 & ANM18 for further development.  ANM has the lead. |
| Working draft AIS Product Specification | Forward to e-NAV11, for the attention of WG3 and further development. |
| Liaison Note on PS ownership | Forward to VTS34, e-NAV11, EEP18 & ANM18 |
| Draft Liaison Note to IHO | Forward to e-NAV 11 for further development |
| Draft Impact Assessment | Forward to e-NAV 11 for further development |
| Draft Briefing Note | Forward to e-NAV 11 for further development |
| Draft Covering Note to Council | Forward to e-NAV 11 for further development |
|  |  |

1. ACTION ITEMS

Action Items for the IALA Secretariat

1. The e-NAV Committee is requested to monitor the IHO standard S-99. 4
2. The e-NAV Committee is requested to consider the need for a Recommendation on IALA’s participation in the IHO’s S-100 GI Registry. 4
3. The e-NAV Committee is requested to monitor the need for a briefing ‘package’ for the IALA Council and IHO and its contents. 5
4. The Secretariat is requested to forward the draft Liaison Note to IHO, the draft Impact Assessment, the draft Briefing Note and the draft Cover Note for the IALA Council to e-NAV11 for further development. 5
5. The Secretariat is requested to forward the draft IVEF Product Specification to e-NAV11 and VTS34. 6
6. VTS34 is requested to continue the development of the working draft IVEF Product Specification. 7
7. The VTS Committee is requested to consider the impact of change to IALA Recommendation V-145 on service providers and Competent Authorities. 7
8. The Secretariat is requested to forward the working draft AtoN Information Product Specification to e-NAV11, EEP18 and ANM18. 7
9. EEP18 and ANM18 are requested to consider the draft AtoN Information Product Specification and continue its development, with the ANM Committee taking the lead. 7
10. The Secretariat is requested to pass the draft AIS product Specification to e-NAV11, for the attention of the AIS Working Group. 7
11. e-NAV11 is requested to consider the working draft AIS Product Specification and continue its development. 7
12. The Secretariat is requested to bring to the attention of the e-NAV Committee the possible need for the IHO / IALA group to meet in advance of the formation of the IMO HGDM and in preparation for its first meeting. 7
13. The e-NAV Committee is requested to consider whether the IHO / IALA group needs to hold further meetings. 7
14. The Secretariat is requested to advise each IALA Committee about taking ownership of Product Specifications. 8
15. The UKHO is requested to provide an update on progress with the Development Mode. 8
16. The Secretariat is requested to forward the finalised report of the meeting to each of the IALA Committees and the PAP, to note. 8
17. Observations

The following changes are proposed for consideration by IHO, with a view to improving the usefulness of the IHO’s S-100 and S-99 standards and enhance their role in e-Navigation. These observations may form an annex to a Liaison Note for the IMO/IHO High-level Group on Data Modelling, once it is established. The body of the note would report progress made by IALA in developing procedures for participation in the IHO GI Registry and in developing Product Specifications within the S-100 framework for IALA applications.

1. Transform the notion of the ‘Main and Supplementary Register’ from the sub-division of the Registers to a tag at each of the entry item

Rationale:

* That distinction adds unnecessary complexity.
* The discriminator given at present is whether or not an item supports IMO mandatory carriage requirements. This is a relevant attribute. But by the very same token it could be represented as such in e.g. a tag.

1. Separate the ‘Product Specification Registry’ conceptually from the body of the GI Registry:

Rationale: The ‘Product Specification Registry’ is of a different kind; it is organisational in orientation as opposed to the other Registers, which are functional in orientation.

1. Evolve the “Product Specification Registry” into THE root list for any and all products in the maritime domain, by including also references and metadata to non-S-100-based products.

Rationale:

* The product specification root list would be referenced from the IMO intended generic MSP concept.
* There will be product specification which are essentially not electronic, but which need to be pointed at, such as operational service descriptions.
* There will be legacy non-S-100- products to be pointed at from one single product reference list.
* The position of IHO in the e-Navigation domain could be aggregated from a strategic point of view.

1. Transform the “Producer Code Registry” at S-100 GI Registry into metadata.

Rationale: The “Producer Code Registry was created due to a S-57 legacy consideration.

It is required to study how the data contained in the “Producer Code Registry” presently may be better stored in the other Registers of the GI Registry, e.g. using the Metadata Register.

1. Evolve the “Producer Codes Registry”, in consultation with other international manufacturer / producer organisations, into an international root table of producer codes.

Rationale:

* A producer code is needed, in particular due to the harmonization intended by e-Navigation.
* At present, there have developed producer codes for shipboard devices, which are even exchanged by the AIS VHF data link. The appropriate list of producer codes is maintained by NMEA.
* At present, the producer codes for ENC data are maintained by IHO.
* It is foreseen, that with the implementation of e-Navigation there will be an increased usage of software modules (“apps”), the producers of which would need to be identified.
* The different historical strands of producer codes therefore need to be harmonized internationally to cater for any kind of product.

1. Review the definitions involved with the S-100 GI Registry and collate them in a readily available place.

Rationale: Searching for definitions and terms in the documentation already involved with the S-100 GI Registry and included in the draft Guideline on Participation in the S-100 GI registry proved difficult and in some cases impossible.

1. There is a need to discuss the mechanism to model dynamic data exchanges.

Rationale: In preparing a data model for the IVEF product Specification it appeared that modelling dynamic data exchanges seems to be insufficiently supported by the current S-100 specification. It has been suggested that the way forward would be to provide an input paper for the next meeting of TSMAD, followed by a discussion on the way forward.

Note: The notion of identification applies for both equipment and data sources. The development of technologies requires the development of a seamless method to identify both with a harmonized/unique set of tools.