

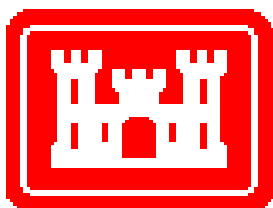


Inland ENC Harmonization Group

15th Annual Meeting

October 22nd – 24th 2019

New Orleans, USA



Inland ENC Harmonization Group 15th Annual Meeting

October 22nd – 24th 2019

Location: Hale Boggs Federal Building, New Orleans, USA

500 Poydras Street, New Orleans, LA in the basement conference room

Lodging: Renaissance Pere Marquette Hotel

817 Common Street, New Orleans, LA

Transportation to the Hotel from the Airport (MSY)

- Taxi – Approx. \$36 USD (one way)
- Airport Shuttle Company - \$24 USD (one way), \$44 USD (roundtrip)
- Uber & Lyft are also available in New Orleans

Meeting Venue

The 15th meeting of the IEHG will be held at the **Hale Boggs Federal Building**, 500 Poydras Street, New Orleans, LA in the basement conference room. There will be limited internet access in the meeting room, but I will attempt to provide temporary “hot spots”.

Walking Directions (from the Pere Marquette Hotel to the Hale Boggs Federal Building)

Go SE 3 blocks on Common Street. Turn right on Camp Street. Cross Poydras Street. The Federal Building is on the left; the entrance is on Camp Street (approx. 0.4 mi / 0.7 km).

Local contact: Denise LaDue
Tel.: 1-502-315-6926
E-mail: Denise.R.LaDue@usace.army.mil
Mobile phone: 1-502-415-8228

Draft Agenda of the IEHG meeting

- | | |
|---|---|
| 1. Welcome, Introductions of Participants, organizational details | Denise LaDue, all |
| 2. Presentation on Inland ENC's and IEHG – Overview
[only if new countries participating] | Bernd Birkhuber |
|
Update on the legal and organizational background and the status of implementation in | |
| Brazil | Flavia Mandarino? |
| China | Liu Li? |
| Europe | Wieland Haupt |
| U.S. | Denise LaDue |
| Presentations should include information on the planned and completed IENC coverage (names of waterways and kilometers) and the availability | |
|
Action point from last meeting: Please provide an email to bernd.birkhuber@bmvit.gv.at containing updates to the information. | |
| 3. Presentations by the new participants about their river/inland waterway network, navigation and cartography
[only if new countries participating] | ? |
| 4. Presentation of Inland ENC applications by private companies | |
| 7Cs | ? |
| Caris | ? |
| ESRI | ? |
| IIC Technologies (development of Under Keel Clearance Application) | ? |
| Jepessen | ? |
| Moris Ltd | ? |
| Periskal | Gael Billet |
| Tresco | ? |
|
Action point from last meeting: The IEHG website contains a list of both National Organizations and Private Companies involved with IENCs. If not listed, please provide web address to bernd.birkhuber@bmvit.gv.at for inclusion on the website. | |
| 5. Working methods of IEHG [only if new countries participating]
Deleting e-mail addresses from the members list at the website?
Involving end users in the development of S-401, especially regarding portrayal | Bernd Birkhuber
Bernd Birkhuber
Bernd Birkhuber |
| 6. Election of the Core Group of IEHG | all |
| Election of the chairs, co-chairs and technical coordinators | all |
| Election of the representatives of IEHG in the Domain Control Body and the Executive Control Body of S-100 | all |
| Amendment of the Terms of Reference | Bernd Birkhuber
Gert Morlion |

Update of the Introduction of the Encoding Guide for Inland ENCs
[only if new countries participating]

Bernd Birkhuber

7. Updates to the Encoding Guide and Product Specification

all

Action points from last meeting:

Denise LaDue to change all instances of "UNKNOWN" to "unknown" in the Encoding Guide

Flavia Mandarino to create new CR for the encoding of an aqueduct.
[CR adopted 12.12.2017]

Rene Visser to clarify whether groin or levee is meant, because dyke/levee is a DYKCON not a SLCONS.

Denise LaDue to ensure resolution of existing discrepancies with S-100 and verify no additional discrepancies have developed

Denise LaDue to update the Encoding Guide Letter J to reflect the applicable changes in the section Use of the Object Catalogue of S-57 and to submit a CR regarding the use of 'sensor'.

Wieland Haupt to present the next version of the EG in docbook format at the next IEHG meeting.

Chris Hudson to contact Yong Baek whether docbook could be used for the DCEG builder.

8. Update intervals and processes, decision on next version or edition

all

Action points from last meeting:

All - Update change requests regarding the EG before 1 December 2017. Change requests with no opposition will be adopted on 12 January 2018.
[Done]

Denise LaDue to update the Encoding Guide by 31 January 2018, which will enter into force 6 weeks later, if no opposition.
[Done, 2.4.1 adopted on 2019 03 20]

Bernd Birkhuber to submit the proposal for the Guideline for CRs on the IEHG Discussion Forum. [see <https://iehg.centralus.cloudapp.azure.com/t/change-request-form-and-guidelines/328>]

All – provide feedback to the Draft Guidelines. [done]

9. Quality standards for Inland ENCs

updates of the recommended validation checks for Inland ENCs

Bernd Birkhuber

Action point from last meeting: Wieland Haupt to update and provide Edition 2.4.1 of the Recommended Validation Checks (taking into account adopted CRs).

minimum content of Inland ENC

Bernd Birkhuber

Action point from last meeting: Brazil & China to investigate whether a different definition of minimum content is necessary for their respective waterways.

accuracy information in Inland ENC
development for S-101?

?

10. **Status of development of S-99, S-100 and S-101**

Denise LaDue

Action point from last meeting: Denise LaDue to make the request at HSSC-9 for S-402 to be assigned to the IEHG for Bathymetric Inland ENC. [Done]

11. **Alignment of the Inland ENC Product Specification with S-101 (S-401)**

Wieland Haupt
Denise LaDue
Gael Billet

1. Product specification
2. Feature Catalogue
3. Portrayal Catalogue
4. DCEG / EG

Action points from last meeting:

COMEX should submit proposals on the Discussion Forum.

All members of the IEHG are invited to provide feedback.

All members – provide regional specific symbols in SVG or any other format, along with size requirements and portrayal rules, to Wieland for conversation to SVG and inclusion in the portrayal catalogue.
(S-401-EUR-Symbols_RUS_AtoNs-mod.xls,
SVG-symb-lib_S-401_V0.3.pdf)

Bernd Birkhuber to submit the amended CR form on the Discussion Forum [Done, see <https://iehg.centralus.cloudapp.azure.com/t/change-request-form-and-guidelines/328>]

12. **S-57 to S-100 converter development**

Tom De Puyt?

13. **The Aids to Navigation (AtoN) Information Product Specification (S-201)**
The Navigation Services Product Specification (S-125)
The Bathymetric Contour Overlay for Inland ENC Product Spec. (S-402)

Dave Lewald
Dave Lewald

Bernd Birkhuber

14. **Navigational assistance systems and autonomous sailing, a challenge for Inland ECDIS**

Wieland Haupt

15. **Do we need encryption of Inland ENCs for Security?**

Bernd Birkhuber

16. **Annual Report to HSSC about IEHG**

Denise LaDue

Action point from last meeting: Denise LaDue and Bernd Birkhuber to prepare the ppt presentation to HSSC immediately after the meeting. [Done: HSSC-9-07-6A - IEHG_Report – Pres.pdf]

17. **Updates of the Information documents on Inland ENC**
(Inland ENC.doc and Inland ENC.ppt)

Bernd Birkhuber

Action point from last meeting: All members of IEHG are invited to submit proposals for amendments of the information document on Inland ENCs (Inland ENC.ppt on the IEHG website).

Article for HYDRO International

?

18. **Future operation of:**

the ienc.openecdis.org website

Bernd Birkhuber
Gael Billet

discussion forum for Inland ENCs

Denise LaDue

IENC Register (as part of S-100 Registry)

Denise LaDue

19. **Any other business**

all

How to encourage more countries/regions to join IEHG

- South America
- East Asia

Action points from last meeting:

- Keep track of S-101 developments and the consequences for IENCs (Cameron, Chris, Tom, René)
- Update CRs and submission on the discussion forum (Bernd) [Done, see <https://iehg.centralus.cloudapp.azure.com/t/change-request-form-and-guidelines/328>]
- Registration of symbols in S-100 (Gert)
- Preparation of 2.5, including draft FC 2.5 (Denise)
- Update of list of members (Bernd)
- Meeting minutes (Denise and Bernd) [Done, IEHG_XIV_Minutes.pdf]
- Start information exchange with IALA regarding S-201 and RTCM regarding SC 129 (Dave)

20. **Next meeting – Date and Location**

Preliminary time schedule:

October 22nd to 24th 2019

Meeting hours - 09:00 to 17:00

Coffee breaks - 10:30 to 10:50 and 15:00 to 15:30

Lunch hours - 12:00 to 12:45

Participants of 15th IEHG meeting:

Name	Affiliation	
BILLET Gael	Periskal	g.billet@periskal.com
BIRKLHUBER Bernd	Ministry of Transport, AT	bernd.birkhuber@bmvit.gv.at
CELSE Jose	DHN, BR	jose.celso@marinha.mil.br
CONYON John	IIC Technologies	john.conyon@iictechnologies.com
DE PUYT Tom	ESRI	tdepuyt@esri.com
DODSON Dale	US Army Corps of Engineers, US	Dale.K.Dodson@usace.army.mil
GALLAGHER Jonathan	via donau China Waterborne Transport Research Institute	Jonathan.gallagher@viadonau.org
GU Qun		guqun@wti.ac.cn
HANZSCHE Mark	IIC Technologies	mark.hanzsche@iictechnologies.com
HAUPT Wieland	Fachstelle für Geoinformationen Süd, DE	Wieland.Haupt@wsv.bund.de
HUDSON Chris	IIC Technologies	chris.hudson@iictechnologies.com
LADUE Denise	US Army Corps of Engineers, US	Denise.R.LaDue@usace.army.mil
LEWALD Dave	US Coast Guard China Waterborne Transport Research Institute	Robert.D.Lewald@uscg.mil
LIU Li		liuli@wti.ac.cn
McLEAY Cameron	Teledyne	Cameron.mcleay@teledyne.com
MOGGERT- KÄGELER Friedhelm	Seven Cs	mo@sevencs.com
MORLION Gert	De Vlaamse Waterweg, BE	gert.morlion@vlaamsewaterweg.be
NILES Anthony	US Army Corps of Engineers, US	Anthony.R.Niles@usace.army.mil
PUEENTE Gustavo	Quadrant ENC	gustavo@quadrant-enc.com
REDMAYNE Mike	Teledyne	Michael.Redmayne@Teledyne.com
SCHEID Ralph	US Army Corps of Engineers, US	Ralph.A.Scheid@usace.army.mil
TETREAUULT Brian	US Army Corps of Engineers, US	brian.j.tetreault@usace.army.mil
THORNBERRY Gerald	US Army Corps of Engineers, US	Gerald.L.Thornberry@usace.army.mil
VAN HOYLANDT Marie		

Annex

Agenda points 1 to 5 should provide an introduction to the work of the Inland ENC Harmonization Group (IEHG) for new participants and provide the possibility for new participants to inform the group about their river/inland waterway network, navigation and cartography. The individual presentations should have a maximum length of 20 minutes.

If there are no new countries participating the agenda points will only deal with updates regarding the status of implementation and the IENC applications. Presentations about the status of implementation should include information on the planned and completed IENC coverage (names of waterways and kilometers) and the availability (e.g. download from a website).

Ad Agenda point 5

Involvement of end users in the development of S-401, especially regarding portrayal (e.g which symbols, priority of information, ...)

“representatives of user groups” can become participants of IEHG and can participate in discussions on the forum. Individual boatmasters cannot become participants of IEHG according to the Terms of Reference. But we could invite them to participate in the discussion forum. Would we need a special section on the discussion forum to be able to administer special access rights?

If end users are invited to participate in the discussions, some questions would have to be presented in a form that allows end users to react. Do we need a special section in the discussion forum? Or e.g. a special notification service (just in case of “questionnaires” for end users), but access to all S-401 documents?

Ad Agenda point 6

Election of chairs

According to the Terms of Reference of IEHG the group is electing chairpersons, vice-chairs and technical coordinators by simple majority vote. The Core Group consists of

- 1) Chair – Two persons (co-chairs) each from a different region. Only representatives of waterway authorities can become chairpersons.
- 2) One vice-chair from each region, which is not already a chair.
- 3) Technical Coordinators - One technical coordinator for each region.

Currently the Chairs are Denise LaDue (North America) and Bernd Birkhuber (Europe), the Vice Chairs are Flavia Mandarino (South America) and Fei Weijun (Asia).

The technical coordinators are Cameron McLeay (North America), Yong Baek (Asia), Gael Billet (Europe), and Nuno Silva (South America).

The meeting should confirm the current Core Group members or elect new members. Each region can elect its technical coordinator and its candidate for chair/vice chair. The whole group is electing the two chairs from the group of the candidates.

Amendment of the Terms of Reference

The domain control bodies of all domains in the Registry need to approve new registered items to avoid inconsistencies. This means that for the adoption of a CR with a new registration in the IHO GI Registry it could take more time than the 6 weeks as described in the ToR. The meeting could discuss an adaptation of the ToR.

Additionally there might be requests for amendments of the Terms of Reference of IEHG (available at <http://ienc.openecdis.org/?q=content/iehg>)

Election of the representatives of IEHG in the Domain Control Body and the Executive Control Body of S-100

IEHG is the owner of the Inland ENC domain in the S-100 registry and has to nominate representatives for the Domain Control Body and the Executive Control Body of S-100 in accordance with S-99.

Currently Denise LaDue and Gert Morlion are the representatives in the Domain Control Body and Denise LaDue and Gael Billet are the representatives in the Executive Control Body. Denise LaDue and Gael Billet are the representatives of IEHG as submitting organization.

IEHG should confirm the current representatives or elect new representatives.

Update of the Introduction of the Encoding Guide for Inland ENCs

The Introduction section of the Encoding Guide for Inland ENCs is containing a short history of IEHG. It should be updated if new countries have joined IEHG.

Ad Agenda point 7

Updates to the Encoding Guide and Product Specification

Change Requests for the Encoding Guide or the Product Specification should be transmitted at least six weeks before the meeting (i.e. before 10th September 2019). If everybody agrees with the Change

Requests they are adopted before the meeting. If there are objections, the Change Requests can be discussed at the meeting. The meeting will try to find solutions for those CRs. The proposals of the meeting will be distributed via the discussion forum and will be adopted within a period of six weeks after the meeting.

It is also intended to review all Change Requests that have been adopted since the 14th IEHG meeting.

Ad Agenda point 8

Update intervals and processes

The procedure for the adoption of Change Requests is defined in the Terms of Reference of IEHG (available at <http://ienc.openecdis.org/?q=content/iehg>).

If IEHG decides to publish a new edition of the Product Specification (that would be 2.5) and the Encoding Guide (2.5.1), or a new version of the Encoding Guide only (2.4.2), it might discuss the time schedule for the publication and the implementation and use of the new edition/version.

An update of the Encoding Guide can (currently) be adopted by IEHG within 6 weeks. Adopted updates may be used in a region (depending on regional regulations), but a new edition of the Encoding Guide, Feature Catalogue and Product Specification is only published after a decision of the IEHG meeting (procedure adopted by IEHG in 2009). Edition 2.4 has been published by IEHG in spring 2015. The IEHG meeting could discuss whether the next edition will be S-401 or an intermediate update 2.5. Here are possible timelines for the two options:

Edition 2.5	S-401
Adoption IEHG: 2019	S-101 ed. 3.0.0 of IHO: 2022
Publication by IEHG: 2019/2020	S-401 ed. 3.0.0: 2022 / 2023
Adaptation of regional regulations (e.g. Europe): 2022	Publication by IEHG: 2023 / 2024
Practical use: 2023	Adaptation of regional regulations (e.g. Europe): 2026 / 2027
	Practical use: 2027 / 2028

Ad Agenda point 9

Quality standards for Inland ENC

- **Updates of the Recommended validation checks for Inland ENCs** (based on S-58)
IEHG has developed and adopted "Recommended Validation Checks for Inland ENCs, edition 1.1" which are based on S-58 and edition 2.1 of the Product Specification for Inland ENCs.

IEHG has also developed and adopted “Recommended Validation Checks for Inland ENC, edition 2.3 corr1” which are based on S-58 and edition 2.3 of the Product Specification for Inland ENC and a preliminary version 2.4. IEHG could decide about the official status of edition 2.4 and consider future developments depending on the decisions about future versions of the Product Specification and the Encoding Guide.

- **Minimum content of Inland ENCs and Minimum accuracy requirements**

The minimum content of an Inland ENC is specified in the Introduction of the Encoding Guide for Inland ENCs. Experience has shown that this rather abstract definition is not sufficient if an authority contracts a private chart producer for the production of official Inland ENCs. A European task force has developed a proposal for a more detailed specification of the minimum content and an Excel sheet which is also containing minimum accuracy requirements and update requirements. This Excel sheet has been reflected in edition 2.4.0 of the Encoding Guide for Inland ENCs.

Accuracy information in Inland ENCs

At the 9th meeting IEHG came to the conclusion that it is quite difficult for the user to find the information on the accuracy of different objects in the Inland ENC. IEHG might discuss how to improve the information.

IHO is also discussing the same topic. IEHG might discuss the results of IHO.

Accuracy information for individual features might also become important for autonomous navigation. In this case it is only important to include the information in a machine readable form in the IENCs, the presentation of the information is not relevant.

Participation in DQWG of IHO

IHO has invited the IEHG to participate the DQWG in February 2020. The meeting could decide if IEHG is going to participate and who is going to represent IEHG in this WG.

Ad Agenda point 10

Status of development of S-99, S-100 and S-101

The meeting could be informed about the status of the development of S-99, S-100 and S-101 within IHO.

Ad Agenda point 11

Alignment of Inland ENC Product Specification with S-101 (S-401)

IEHG has already decided to align the Product Specification for Inland ENCs with S-101 and IHO has reserved the code S-401 for this future Product Specification.

The European project River Information Services Corridor Management Execution (RIS COMEX) is currently working on the improvement of the initial drafts and will present the documents. The meeting could discuss these proposals in detail and agree on a strategy and timeline for the further development.

Up to now IEHG has only dealt with the harmonization of Inland ENC's. There were different standards for the display of these charts in the various regions (e.g. the "Inland ECDIS standard" in Europe), because inland vessels do not travel from one region to another.

At the 8th meeting IEHG decided to set up an Inland portrayal domain within the S-100 registry, because one of the goals of IEHG is to ensure that maritime vessels are able to use Inland ENC's when they are using inland waterways. The development of this new domain has to be based on the portrayal domain for maritime ENC's. Depending on the progress within IHO the RIS COMEX project will present proposals for the implementation.

Edition 1.0.0 of S-101 has been published (see <http://registry.iho.int/beta/productspec/list.do>), but portrayal, validation, encryption, alerts and indications will only be finalized in an edition 2.0.0 that is scheduled for 2020. The European project RIS COMEX will submit a proposal for the text of the S-401 Product Specification for Inland ENC's. Following the example of IHO it will not contain Annex B (portrayal) and annex C (Validation checks). The meeting could discuss and adopt the proposal as an edition 1.0.0 of S-401 which could be the basis for pilot implementations and testing.

Although it is not possible to finalize the portrayal section in 2019 a draft that is based on an older draft of S-101 is already available. In accordance with the decisions of IEHG in the past, it has been prepared on basis of the European standard for presentation of IENC's, because IEHG did not deal with portrayal so far. The draft is containing a number of questions that have to be discussed and decided before a proposal for the portrayal section can be finalized.

Decision on the future structure of the EG: The EG for Inland ENC's is based on real world objects. For each real world object it is containing the S-100 features that have to be used to encode it. The Data Classification and Encoding Guide (DCEG) of S-101 is based on S-100 features. The meeting could discuss the advantages of the two models and decide on the structure of the future EG for Inland ENC's and which parts of the S-101 DCEG should be copied to the future EG/DCEG for Inland ENC's.

Ad Agenda point 12

S-57 to S-100 converter development

IEHG has been informed about the development of a converter for S-57 datasets to S-101 for test purposes. The information might be updated.

Ad Agenda point 13

IALA is working on Product Specifications for Aids to Navigation (AtoN) Information (S-201) and for Navigation Services (S-125). The meeting could be informed about the status of development and discuss whether these Product Specifications could also be used for inland waterways or could be adapted for inland waterways.

IEHG could discuss the approach of S-101 and S-201 to AtoNs in the maritime area and the consequences for S-401.

S-402 has been reserved by IHO for the Bathymetric Contour Overlay for Inland ENC Product Specification as decided at the last IEHG meeting. The existing Product Specification for bathymetric Inland ENCs and S-401 should be the basis for the development of S-402. The European side proposes to start with the development of S-402 when the corresponding parts of S-401 have been adopted.

Ad Agenda point 14

Navigational assistance systems and autonomous sailing, a challenge for Inland ECDIS

Wieland Haupt will present considerations to use Inland ENCs (and Inland ECDIS) as the basis for advanced navigational assistance systems and autonomous sailing. IEHG could make a comparison to the developments in the maritime area and discuss the consequences for S-401.

Ad Agenda point 15

Do we need encryption of Inland ENCs for Security?

Up to now Inland ENCs are published in unencrypted S-57 format e.g. in Europe and in the USA. Encryption has mainly been used to protect the copyright and to allow the selling of maritime ENCs. Inland ENCs are provided free of charge and encryption is therefore not foreseen in the standards of IEHG. With the progress in the digitalization of inland navigation there are growing concerns about cyber security. IEHG could discuss whether encryption in accordance with S-63 would solve security issues.

Ad Agenda point 16**Annual Report to HSSC about IEHG**

IEHG is recognized as a NGO with observer status by IHO and is therefore presenting a report on the status of Inland ENC standardization and implementation each year to HSSC.

Ad Agenda point 17**Updates of the Information documents on Inland ENCs (Inland ENC.doc and Inland ENC.ppt)**

IEHG has agreed on an information document (Inland ENC.ppt, available at <http://ienc.openecdis.org/?q=content/iehg>) on Inland ENCs and the Inland ENC Harmonization Group (IEHG). It was proposed to develop also a text document. The meeting might discuss amendments of the information documents to take the latest developments into account.

Ad Agenda point 18**Future operation of the ienc.openecdis.org website**

The website of IEHG is hosted and maintained by Periskal based on a contract with the European Commission. The contract expires at the end of 2019. The meeting might discuss the latest developments and possible improvements of the content of the website.

Future operation of the discussion forum for Inland ENCs

The discussion forum is currently hosted by the USACE. The meeting might discuss possible improvements in the discussion forum.

Future operation of the IENC Domain (as part of S-100 Registry)

IEHG has set up an Inland ENC domain in the S-100 Registry (see <http://registry.iho.int/feature/list.do> and <http://registry.iho.int/beta/fdd/list.do>). The meeting might discuss possible improvements.

Ad Agenda point 19**Any other business**

The meeting might discuss how to encourage more countries/regions to join IEHG, e.g. countries in South America, East Asia or Africa

Ad Agenda point 20**Next meeting – Date and Location**

According to rotation principle the next meeting of IEHG could take place in Europe in autumn 2020. The meeting could discuss the date, location and the agenda of the next meeting. The meeting could also discuss to shift the meeting date to March or April. This would allow to deliver a more up-to-date report to the annual meeting of HSSC.