Input paper: [[1]](#footnote-1) ENG8-11.6

Please note that this is a revision of the previous version of this paper posted on 17 September.

Input paper for the following Committee(s): check as appropriate Purpose of paper:

**□** ARM **X** ENG **□** PAP **X** Input

**□** ENAV **□** VTS **□** Information

Agenda item [[2]](#footnote-2) (from agenda) 11

Workplan Task Number / Technical Domain 2 …………………………………

Working Group WG3 Radionavigation services

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Development of eLoran S-2XX Product Specification

# Summary

## Background

The Ministry of Oceans and Fisheries (MOF) of Republic of Korea and IALA, both parties had agreed to sign to the MOU on May 2018 to strengthen cooperation on technical development of maritime safety and standardization for the field of AtoN. As part of its effort, MOF established the plan for execution and is on the process of developing S-200 series product specification in cooperation with Korea Research Institute of Ships and Ocean Engineering (KRISO).

## Purpose of the document

KRISO is in charge of the development of products specification for DGNSS MF beacon and eLoran, which are the S-200 series relevant to PNT. The specification development for S-240 DGNSS station almanac has been completed in last ENAV 21st meeting, and it has been registered to IHO registry in December 2017.

This document was made to share the status of eLoran product specification development since after ENAV 21st meeting and ENG WG3 is requested to review the draft of product specification for S-246 and S-247.

## Related documents

* IALA Guideline 1106 – Producing an IALA S-200 series product specification
* IALA S-240 DGNSS Station Almanac Product Specification
* ENAV17 13.13.1 Progress on the development of S-240 DGNSS Station Almanac
* RTCM SC 127 Minimum Performance Standards for Marine eLoran Receiving Equipment
* ENAV20 13.20 Progress on Development of eLoran S-20X Product Specification
* ENAV21 13.11 Progress and Plan of eLoran S-2XX Product Specification
* International Loran Association, Enhanced Loran (eLoran) Definition Document for Consultation, 2007.

# Discussion

## Status of the eLoran S-2XX product specification development

After ENAV 21st meeting KRISO team renamed the terminology of S-245, 246, and 247 as the following. By naming as international rule, this is intended to reduce the confusion, and the terminology from International Loran Association (ILA) eLoran definition document is referred.

* S-245 eLoran ASF data
* S-246 eLoran transmitting station almanac
* S-247 Differential loran reference station almanac

To enhance the document performance, we gathered the comment and expertise as requesting review for eLoran related professionals from industry and institute. The followings are the issues that we received and will be reflected to the development after discussion. The review will be ongoing process even after this documentation.

* Invalid eLoran ASF data indication problem
* Decimal place for grid information (Current: 8, Comment: 6)
* HDF-5 format’s limitation of using by receiver

KRISO team wrote the draft of S-246 and 247 product specification. This draft referred to the IALA guideline 1106 ‘Producing an IALA S-200 series product specification’. The product specification of S-246 is the agenda of 11.6.1 and the agenda for S-247 is 11.6.2. We would like to request ENG WG3 for review these documents.

## Plan for the eLoran S-2XX product specification

In the document, we suggested HDF-5 format based modelling which is normally used in S-100 because S-245 contains the data formed by grid. Recently, there is an update regarding to HDF-5 encoding in S-100 so S-245 data model would need apply the update. Until next meeting, we are about to provide the result of renew for S-245 and suggest the draft of product specification.

The eLoran product specification development is aimed to be done by 2020. The plan is the following

* ENG 9th : Documentation of the drafted S-245 product specification
* ENG 10th : Implementation and verification of the S-246, 247 based on S-200 testbed
* ENG 11th : Implementation and verification of the S-245
* ENG 12th : Completion of eLoran related product specification development
* Liason with eLoran service providers and manufacturers

# Action requested OF the Committee

The Committee is requested to:

1. Note the status of the eLoran S-2XX product specification development
2. Review the draft of S-246 and S-247 product specification
3. Provide comments for the future plan

1. Input document number, to be assigned by the Committee Secretary [↑](#footnote-ref-1)
2. Input papers should be assigned to a work task as listed in the Committee work plan which is available in input papers. Leave open if uncertain but consider how the paper is to be processed if not relevant to a work task [↑](#footnote-ref-2)