Input paper: [[1]](#footnote-1) ENAV24-6.1.11

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

**□** ARM **□** ENG **□** PAP **x** Input

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

Agenda item [[2]](#footnote-2) 6

Technical Domain / Task Number 2 Comms WG3…………

Author(s) / Submitter(s) CANADA / Jean-Francois Coutu…

Requirement for VDE File Transfer protocol

# Summary

Shore authorities have many sources of Situation Awareness (SA) and Maritime Safety Information (MSI) that they need to transfer to ships. These information transfers must happen Just In Time (JIT) to allow mariners to react to possible changes in navigation conditions while not being overloaded by information while they navigate. VDE could be leveraged to transfer S-xxx products to ships to meet this requirement.

## Purpose of the document

Canada would like the eNavigation Communication Working Group (WG3) to consider developing a VDE File transfer protocol to enable JIT transmission of S-xxx products to ships as per section 3 below.

# Background

A few years ago, IHO started on the path to create the S-100 suite of standards to specifically allow information exchange and SA & MSI to be integrated in ECS and ECDIS for an integrated navigational picture / domain awareness.

Here is the preliminary list of S-100 products that are being developed by IHO and some of it’s sister organisations (including IALA):

**International Hydrographic Organization**[**(IHO)**](http://iho.int/srv1/index.php?lang=en) (S-101 to S-199)

* S-101 Electronic Navigational Chart (ENC)
* S-102 Bathymetric Surface
* S-103 Sub-surface Navigation
* S-104 Water Level Information for Surface Navigation
* S-111 Surface Currents
* S-112 Open - (See Decision HSSC9/38)
* S-121 Maritime Limits and Boundaries
* S-122 Marine Protected Areas
* S-123 Marine Radio Services
* S-124 Navigational Warnings
* S-125 Marine Navigational Services
* S-126 Marine Physical Environment
* S-127 Marine Traffic Management
* S-128 Catalogue of Nautical Products
* S-129 Under Keel Clearance Management (UKCM)
* S-1xx Marine Services
* S-1xx Digital Mariner Routeing Guide
* S-1xx Harbour Infrastructure
* S-1xx (Social/Political)

**International Association of Light Authorities**[**(IALA)**](http://www.iala-aism.org/products-projects/technical-area/iho-s-100-gi-registry/iala-s-200-development-status/) (S-201 to S-299)

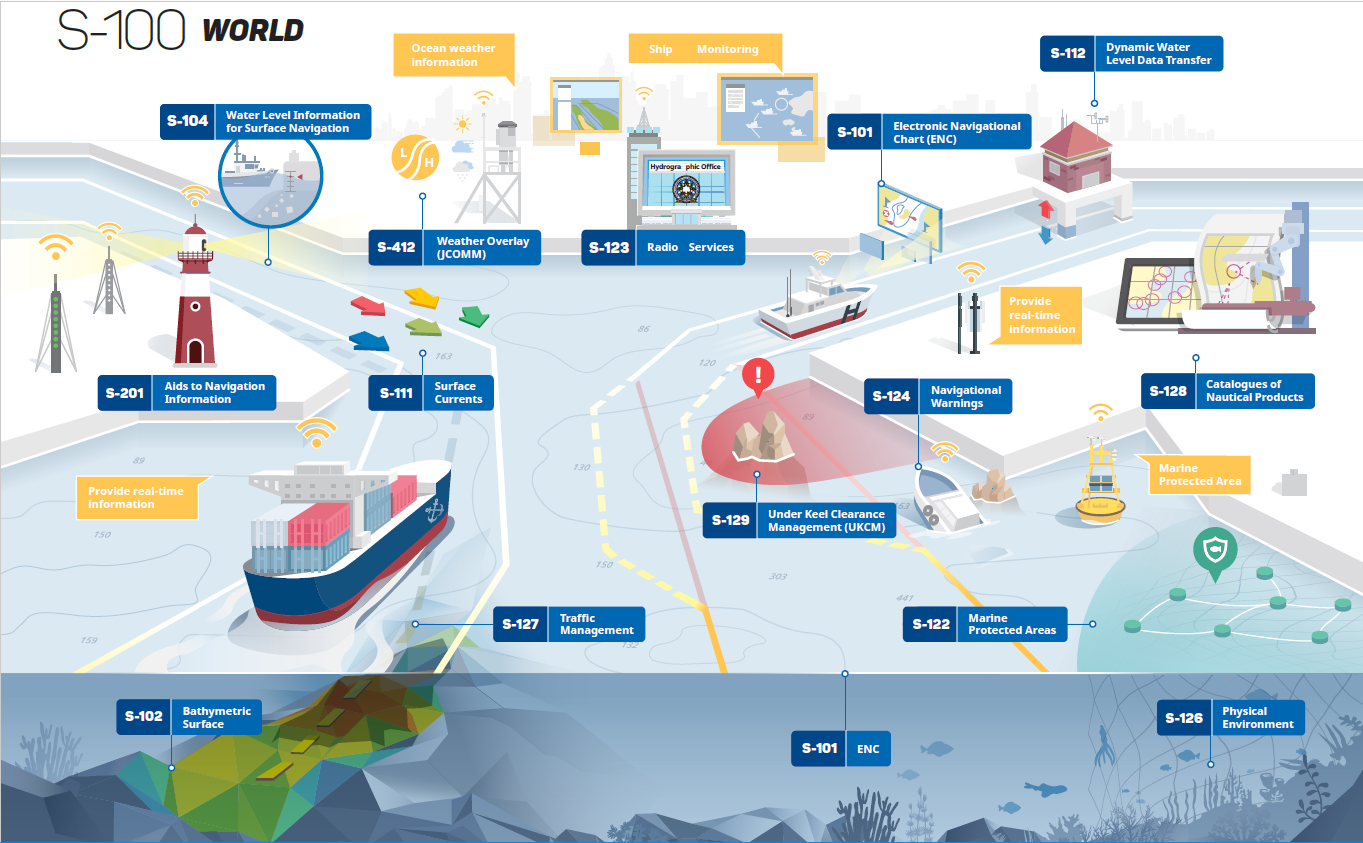
* S-201 Aids to Navigation Information
* S-210 Inter-VTS Exchange Format
* S-211 Port Call Message Format
* S-230 Application Specific Messages
* S-240 DGNSS Station Almanac
* S-245 eLoran ASF Data
* S-246 eLoran Station Almanac
* S-247 Differential eLoran Reference Station Almanac

**Inland ENC Harmonization Group**[**(IEHG)**](http://ienc.openecdis.org/?q=content%2Fiehg) (S-401 to S-402)

* S-401 IEHG Inland ENC
* S-402 IEHG Bathymetric Inland ENC

**Joint Technical Commission for Oceanography and Marine Meteorology**[**(WMO/IOC JCOMM)**](http://www.jcomm.info/) (S-411 to S412)

* S-411 JCOMM Ice Information
* S-412 JCOMM Weather Overlay
* S-413 Weather and Wave Conditions
* S-414 Weather and Wave Observations



The international effort to finally create maritime data exchange standards that will be supported by on-board equipment, both ECS and ECDIS, should be leveraged to expedite the adoption of eNavigation. Some of the SA & MSI listed above are somewhat static in nature but most are dynamic and are subject to JIT transmission.

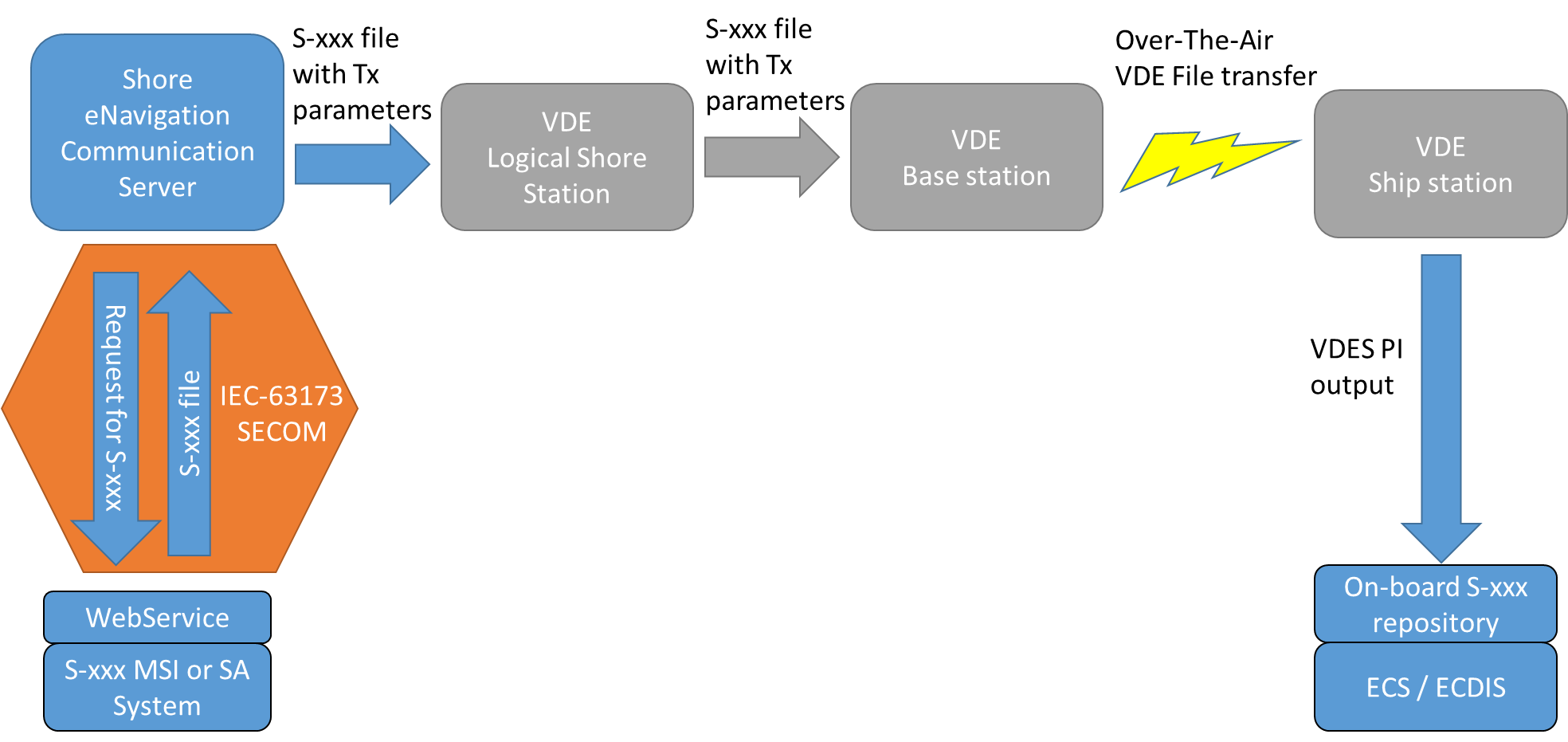
# Discussion

Shore authorities have a requirement to be able to send these products to ships in their waters. In order to meet the Shore Authorities obligation, the information should be able to be broadcasted to all ships in a country’s waters, per region, to make sure the ships receive the information that matters to their voyage only. In other words, the shore authorities need to make due diligence that the data is available to mariners on-board when they are going to need it. This creates a need that can be fulfilled by VDE (both TER and SAT).

Shore authorities are currently in the process of reviewing and changing their interenal data systems to be able to produce S-100 products natively. VDE can provide a way for shore authorities to carry these products all the way to the bridge of the ship and integrate the data in their navigational tools, ECS and ECDIS.

In order to carry S-100 products to the bridge of the ship, the VDE would simply need to provide an interface for file transfer. Shore Authorities could then simply take the S-100 products files that they have produced and send them to their VDE system for transmission. This VDE file transfer function should be available as an addressed or broadcast service.

Canada would like the eNavigation Communication Working Group (WG3) to consider developing a VDE File transfer protocol to enable JIT transmission of low bandwidth (or smaller datasets) S-xxx products to ships as per the diagram below.



**FIGURE 1:** Example of VDES file transfer usage with IEC SECOM to retrieve S-xxx files for JIT to ships.

# Action requested of the Committee

The Committee is requested to: (Body text)

1. Forward the document to the communications working group (WG3) for their consideration.

1. Input document number, to be assigned by the Committee Secretary [↑](#footnote-ref-1)
2. Leave open if uncertain [↑](#footnote-ref-2)