Input paper: [[1]](#footnote-1) ENAV30-5.1.1.2

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

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

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

Agenda item [[2]](#footnote-2) n.n

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

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Development of technical service specifications for digital data exchange between VTS and other entities - primarily ships

# Summary

During VTS52, a joint VTS/ENAV task group was formed with the purpose of developing technical service specifications for digital data exchange between VTS and other entities - primarily ships. The technical services will be developed in the same manner as IHO is developing a technical service specification for the provisioning of navigational warnings and as IALA is developing technical service specifications for the provisioning of AtoN information.

So far, the task group has had two inter-sessional meetings, and will have a physical meeting during VTS53. The group has been discussing the exact definition of the task - how to proceed and the relevant methods/guidelines/standards to be used.

The group will

Identify the suite of relevant technical services for VTS (including identifying which are VTS "exclusive" and which are not)

Identify a few obvious ("pioneer") technical services and begin the actual specifications of these.

The "exclusive" VTS services are services that will not be used by other entities than VTS - and thereby needs to be defined by this group. Other services may be part of the suite of technical services used by VTS - but will be defined elsewhere. For example - most VTS will provide navigational warnings (in S-124 format), but this is within the IHO domain - so the technical service specification for navigational warnings will be developed by IHO but will still be a service in the suite of VTS services.

The suite of technical services will be identified based on requirements/use-cases derived from existing documents such as 'G1141 [Ed2.1 Operational Procedures for Delivering VTS January 2022](https://www.iala-aism.org/repository/20220217/guidelines/G1141%20Ed2.1%20Operational%20Procedures%20for%20Delivering%20VTS%20January%202022.pdf)' ‘R0127 (V-127) [Ed3.2 VTS Operations January 2022](https://www.iala-aism.org/repository/20220217/recommendations/R0127%20%28V-127%29%20Ed3.2%20VTS%20Operations%20January%202022.pdf)’ and 'G1089 Provision of a VTS'. These requirements will be further refined to a level of detail needed to identify specific technical services.

The initial suite of technical services are the ones listed (as associated technical services) in the description of Maritime Service 1 - Vessel Traffic Service. However, the group intends to assess this suite of services.

With regard to identifying a few "pioneer" services, the group is considering:

**VTS area information**

Provision of information about the VTS Area circumstances and dynamic features that are relevant to the vessel.

This information is broadcasted to all vessels entering a VTS area or within VTS area

**VTS Traffic Clearance Service**

Retrieve information related to the management of the ship traffic

This information is provided to a specific vessel

Annex A is a (proposed) task description for the IALA task registry

Annex B is a list of relevant guidelines/standards and other relevant documents that will be used in the development of the technical services specifications.

# Action requested of the Committee

To take note of the information. And any interested parties are encouraged to join the task group and contribute to the work.

Annex A

|  |
| --- |
| **VTS COMMITTEE WORK PLAN 2023-2027** |
| **Standard No** | 1040 - Vessel Traffic Services1070 – Information services |
| **Topic Area/Scope***(See Standard or Work Programme 2023-2028)* | S1040-3 VTS data and information management |
| **Strategic Alignment***(See IALA Strategic Vision)* | **Goal:** G1 – Marine Aids to Navigation are developed and harmonised through international cooperation and the provision of standards.**Strategy:** S6 - Improve and harmonise the delivery of VTS globally and in a manner consistent with international conventions, national legislation and public expectations, to ensure the safety and efficiency of vessel traffic and to protect the environment. |
| **Task***(Proposed task name for new tasks)* | *Development of technical service specifications for digital data exchange between VTS and other entities - primarily ships* |
| **Objectives of the task** | To develop technical service specifications for VTS using the G1128 guideline ‘ Specification of e-navigation technical servicesThese technical services will be referenced in Maritime Service 1 – Vessel Traffic Service, as associated technical services |
| **Expected outcome***(e.g. Recommendation, Guideline, Model Course)* | A number of technical service specifications |
| **Compelling need***(Describe briefly why this task should be included in the Work Programme)* | The technical service specifications will enable VTS providers and related stakeholders such as ship equipment manufacturers to implement technical services and thus enable them to exchange digital information securely and reliably. This will bring VTS into the digital era with all the associated benefits including support for the future of MASS. |
| **Scope***(Describe key items to be taken into account as well as what is not included)* | In Scope: Technical service specifications for VTSOut of scope:Technical service specifications for services that may be provided by VTS – but inherently belong to a different domain. These could be navigational warnings, water levels, AtoN information etc.Also, data-models and portrayal will not be considered (but feedback to work done on these items may be relevant to provide). |
| **Brief and concise description of the work to be undertaken and programme mile­stones** | The task will work on developing technical service specifications for VTS using a number of existing guidelines and standards.The main guideline will be G1128 'Specification of e-navigation technical services'. This provides the overall guideline for developing the specifications which is aligned with the template for technical services provided in IMO MSC.467(101) 'Guidance on the definition and harmonization of the format and structure of Maritime Services in the context of e-navigation'.Other relevant guidelines/standards include* G1157 'Web Service Based S-100 Data Exchange'
* IEC 63173-2 'Secure exchange and communication of S-100 based products' (SECOM)
* IALA G1143 'Unique identifiers for maritime resources'
* IALA G1161 ‘[Evaluation of Platforms for the Provision of Maritime Services’](https://www.iala-aism.org/repository/20220217/guidelines/G1161%20Evaluation%20of%20Platforms%20for%20the%20Provision%20of%20Maritime%20Services%20Ed1.0.pdf)
* R0127 (V-127) VTS Operations
* G1141 Operational Procedures for Delivering VTS
* G1089 Provision of a VTS

Furthermore – the technical services will be depending on the VTS S-212 product specification with regard to data-model and portrayal.The process (milestones) may be:* Identity technical services
* Finalise first (simple) technical service
* perform testing
* Continue specification of all identified services
* Test
* Complete specifications
 |
| **Expected numbers of sessions for completion** | Session number:54 55 56 57 58 59 60???XXXXXXXX |
| **Committee notes** | **Origins /Input paper****Who proposed the task?****Forwarded from previous work period:** |       *(name of file)*  PAP    *(name of organisation)* Yes NoX |
|  | **Working Group** | **WG#**   2    | **Comments**       |
| **Agreed by VTS Cte** |       *(VTS Cte Session)* |       *(Month & Year)* |
| **Approved by Council** |       *(Council Session)* |       *(Month & Year)* |
| **Revision Notes:** |       |

ANNEX B

The purpose is the develop a suite of technical service specification that can be implemented at VTS centers and facilitate exchange of digital information between VTS and relevant systems - mainly including ECDIS.

The most basic guideline/standards and other relevant documents will be

[G1128](https://www.iala-aism.org/product/g1128-specification-e-navigation-technical-services/?download=true) - The specification of e-Navigation technical services

This is the overall technology agnostic guideline that the specifications should follow

S-XXX - The datamodels for the services will (most likely) be taken from the appropriate S-100 - primarily [S-212](https://nextcloud.iala-aism.org/index.php/f/171996) – VTS Digital information service product specification, which is under development in another VTS task group

The overall description of the [Maritime Service Description for VTS](https://nextcloud.iala-aism.org/index.php/f/172160)

The document makes reference to (identifies) the technicialservices that this group will specify

[G1143](https://www.iala-aism.org/product/g1143-unique-identifiers-for-maritime-resources-2/?download=true) - Unique identifiers for maritime resources (MRN)

Everything (Data, the services them selves, etc) needing a unique identifier will be given an (one or more) MRN

[G1157](https://www.iala-aism.org/product/g1157-web-service-based-s-100-data-exchange/?download=true) - Web Service Based S-100 Data Exchange

Describes how to make G1128 services using internet technology - i.e. less technology agnostic.

[G1161](https://www.iala-aism.org/product/g1161-evaluation-of-platforms-for-the-provision-of-maritime-services-in-the-context-of-e-navigation/) - Evaluation-of-Platforms-for-the-Provision-of-Maritime-Services

A guideline that established the need for a platform that facilitates authentication of service provider/consumer and service discoverability among other things, i.e. the [Maritime Connectivity Platform](http://maritimeconnectivity.net/).

[IEC 63173-2 SECOM](https://webstore.iec.ch/publication/64543) - Secure exchange and communication of S-100 based products

A standard that follows both G1128 and G1143, and in detail describes how to specify a service that facilitates data exchange between a shore entity and a ship (ECDIS)

It is the expectation that a revised ECDIS performance standard will refer to this IEC standard - and thus make it possible to deliver S-100 data (including VTS) directly to the ECDIS.

Draft technical service for providing AtoN information is being developed

This is being developed by a joint ARM/ENAV task groups

The specification can be found [here](https://nextcloud.iala-aism.org/index.php/f/116995)

In a sub-directory, there is also a draft IHO technical service specification for the provision of navigational warnings using the datamodel from S124. This is a more mature specification, and the AtoN specification has been using that as inspiration

In addition to the above guidelines/documents describing how to develop the technical services several VTS document will be relevant both with regard to the identification of the technical services from requirements / use-cases and possible some that we may wish to influence by making references to the technical services we will be specifying.

[G1141](https://www.iala-aism.org/product/operational-procedure-for-delivering-vts/) Operational Procedures for Delivering VTS

This is a very central IALA document regarding VTS. We should make sure that this document refer to the technical service specifications that will be developed. This would ensure that VTS centres in the future will be implementing these services.

[G1089](https://www.iala-aism.org/product/provision-of-vts-types-of-service-1089/) Provision of a VTS

As the above - but perhaps an even more fundamental VTS document

[R0127 (V-127) VTS Operations](https://www.iala-aism.org/repository/20220217/recommendations/R0127%20%28V-127%29%20Ed3.2%20VTS%20Operations%20January%202022.pdf)
Describing VTS on the highest level, making reference to more specific documents including G1141 and G1089

[R0145 INTER-VTS EXCHANGE FORMAT SERVICE (V-145)](https://www.iala-aism.org/product/r0145/)

Other possibly relevant guidelines:

[G1159](https://www.iala-aism.org/product/ship-reporting-from-a-shore-based-perspective/) – SHIP REPORTING FROM A SHORE-BASED PERSPECTIVE

The [IMO Compendium](https://www.imo.org/en/OurWork/Facilitation/Pages/IMOCompendium.aspx) on Facilitation and Electronic Business

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