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| From: VTS | DTEC1-5.0.5 |
| To: DTEC and ARM | 27 September 2023 |

LIAISON NOTE

VTS Digital Services Architecture Development

# INTRODUCTION

The VTS Committee is tasked with formulating technical service specifications for the digital data interchange between VTS and associated entities (VTS-2.5.2) and developing a Product Specification within the S-100 framework for VTS(VTS-2.8.1). Currently, the primary focus lies on enhancing the ship-to-shore data exchange for VTS services. In line with this, the VTS Committee has drafted a VTS digital service architecture.

For an overview of these tasks, refer to the document “VTS54-XXX Task Register 2023-2027.docx”, specifically tasks VTS-2.5.2 and 2.8.1

# VTS digital services architecture

VTS Committee initiated the task of developing a technical services specification, taking into account relevant IALA documents, including G1128 on the specification of e-Navigation technical services and G1157 on Web service based S-100 data exchange and G1161 on the evaluation of platforms for the provision of Maritime Services.

During the VTS 53 and VTS 54 sessions, the committee established the initial framework for the VTS digital services architecture. Serving as the foundation for service descriptions and product specifications for VTS services, this architecture outlines the data and information exchange between VTS and ships. Additionally, it provides clarity on its scope, defines terms, and identifies involved stakeholders. Further details on this architecture can be found in the annex attached to this communication.

A critical consideration during its development was ensuring the architecture adhered to existing guidelines relating to digital communication and information services.

Recognizing that DTEC has produced a number of technical service-related documents and ARM is developing some of the service specifications, the VTS Committee intends to circulate the draft architecture for feedback from the other committees. VTS Committee sees that insights and comments on the architecture from other committees can refine the document, aligning it closely with relevant Recommendations and Guidelines.

# ACTION REQUESTED

DTEC and ARM Committees are requested to Discuss and comment on the annex of the document and provide feedback to VTS Committee.

ANNEX

**Architecture of the Digital Delivery of VTS Information**

Afbeelding met tekst, diagram, schermopname, lijn

Automatisch gegenereerde beschrijving

Figure 1 - High level view on the Digital Delivery of VTS Information

**Explanation**

1. Purpose/scope
   1. The purpose of the drawings is to explain the high level architecture on how the technical services and the product specifications relate to facilitate a digital data exchange for VTS information
   2. The data exchange between VTS and ships applies to both MASS and conventional ships
2. Definitions
   1. VTS System

* See definition in G.1111
  1. MASS
* As defined by IMO
  1. Technical Services Specification
* Describes how to implement the digital data exchange using specific technologies (see G.1128)
* The technical service specifications are referenced in the MS description in the context of eNavigation for VTS as “associated technical services” (MSC.1/circ.1610)
* VTS Navigational ECDIS/MASS Services specifications
  + - * This is the subset of the technical service specifications from the VTS system that is targeting ECDIS (S-100 capable) and/or regulated MASS navigation systems
      * The communication between the VTS system and the ECDIS (S-100 capable) should follow set regulations, in particular IEC 63173-2:2022 (SECOM) and IALA (G.1157)
      * SECOM requires a service and identity registry, which can be provided by the Maritime Connectivity Platform (MCP)
* VTS Navigational Service specifications for MASS
  + - * This is the subset of the technical service specifications from the VTS system that is targeting regulated MASS navigation systems
      * The communication between the VTS system and the MASS navigation systems should follow set regulations, in particular IEC 63173-2:2022 (SECOM) and IALA (G.1157)
      * SECOM requires a service and identity registry, which can be provided by the Maritime Connectivity Platform (MCP)
* VTS Other Services specifications
  + - * This is the subset of the technical service specifications from the VTS system that is targeting non-regulated systems
  1. Non standard VTS Services
* The exchange of data through other means than standardized technical services (e.g. email, website, …)
  1. S-100 Product Specifications
* S-212 data
* S-421 data
* …
  1. Other VTS data
* Datasets exchanged with the VTS other than S-100, these can possibly been harmonized by other standards (e.g. IMO compendium, …)

1. External Stakeholders
   1. Entities other than ships that need to exchange data with the VTS

* Coastal State Authorities
* Port Authorities
* Allied Services
* Other VTS Centers
* Hydrographic/Meteorological offices
* ENC providers
* Shore Control Centers
* …
  1. Data exchange with external stakeholders and other relevant entities include but is not limited to S-100 harmonized datasets

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Figure 2 - VTS Digital Services System Architecture

1. Tasks
   1. Product Specification (task 2.8.1)

* Has 2 parts:
  + - * VTS exclusive datamodel based on elements in the IHO feature catalogue, i.e. not covered by Product Specifications by other domains
      * When needed definition of the portrayal
  1. Technical Services Specifications (task 2.5.2)
* Making the Technical Service Specifications derived from the use cases defined by task 1.2.4