Input paper: [[1]](#footnote-2) VTS51-10.3.2

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

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

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

Agenda item [[2]](#footnote-3) 10.3

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

Author(s) / Submitter(s) Korea Coast Guard

Introduction of Cloud VTS concept for effective VTS digital information service operation

# Summary

IALA VTS Task Plan 2018-2022 raises the task “Develop a Product Specification under the S-100 framework for VTS” (Task2.3.1). Analysis on the “VTS48-9.3.1 WP VTS product specification v060”,“IHO S-100 IHO Universal Hydrographic Data Model”, draft on Guidelines for Vessel Traffic Services[IMO Resolution A.857(20)],“Initial Descriptions of Maritime Services in the Context of E-navigation”(IMO MSC.1/Circ.1610) and “VTS48-8.2.2 WP Draft Guideline on Maritime Services (VTS47-13.3.10)”，this input paper provides introduction of Cloud VTS concept for effective VTS digital information service operation.

## Purpose of the document

The purpose of this document is to introduce the concept of Cloud VTS under development in Republic of Korea for effective VTS Digital Information Service (S-212, VTS DIGITAL INFORMATION SERVICE) operation

## Related documents

The relevant documents of this proposal are as follows：

IALA VTS48-7.1 VTS Task Plan 2018-2022 20191010

IHO S-100 IHO Universal Hydrographic Data Model, Edition 4.0.0 (December 2018)

IHO S-100WG5-4.16 Proposal to Add S-100 Compliance Categories

IMO Resolution A.857(20) Guidelines for Vessel Traffic Services（Draft，NCSR 7）

IMO MSC.1/Circ.1610 Initial Descriptions of Maritime Services in the context of e-navigation（14 June 2019）

IALA VTS48-8.2.2 WP Draft Guideline on Maritime Services (VTS47-13.3.10)

IALA VTS 48-9.3.1 WP VTS Product Specification v060 (VTS47-13.3.2)

# Background

Existing VTS manufacturers have limited VTS information sharing between adjacent VTS centers, as the data exchange system between manufacturers is limited to some data, such as IVEF. Development of a system that can integrate and share information to ensure continuous monitor and information sharing of vessels from ports to coastal waters.

Current VTS operations only took place in the VTS Center. In this case, control is not possible in emergency situations such as closing the VTS Center. Therefore, it is necessary to develop a system that can be controlled by VTS at a remote location.

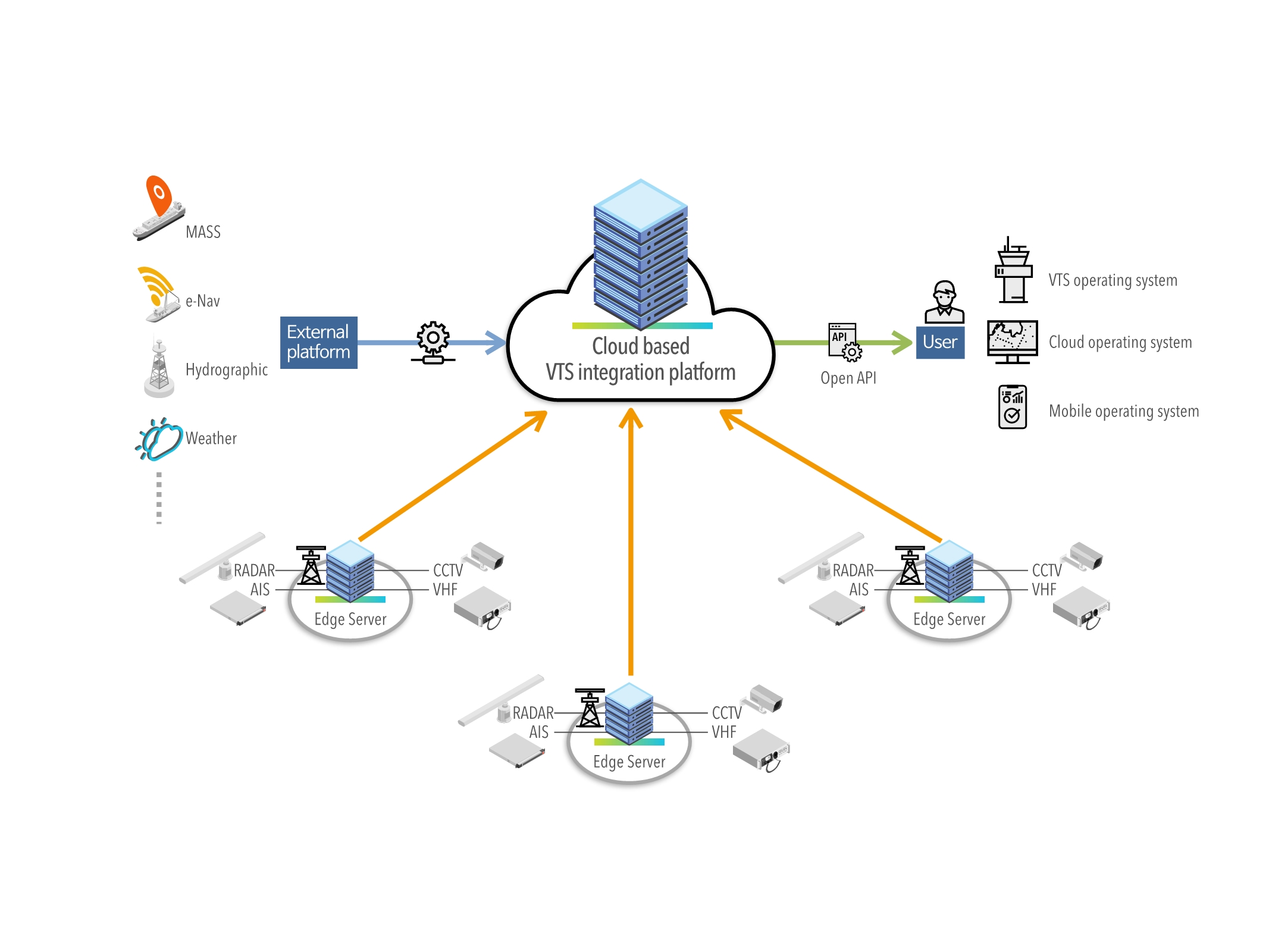
In the event of a maritime accident, VTS information sharing with on-site agencies such as the VTS Center, the Korea Coast Guard's control center and patrol boats is mainly used by phone or messenger, and these methods impede rapid information sharing and information reliability.

It is necessary to develop an information sharing platform that can collect and manage all information related to ship traffic safety and provide VTS information to organizations that need information, rather than simply providing control services.

# Discussion

## Concept of Cloud VTS system

It is a service that collects, analyzes, and stores VTS information and external platform linkage information by establishing a cloud-based next-generation VTS integration platform to provide information to users in various forms of platforms.



*Figure 1 Concept of Cloud VTS system*

## Function of Cloud VTS system

The VTS integrated cloud platform has the following features:

1. Data collection, analysis, and storage functions

* Collect information from the control center and store it in the cloud center
* Integrate and analyze the collected control information and store it in the cloud center
* Collect data from external platforms such as Weather center, e-navigation center and store it in the cloud center

1. service provision function

* Provide data stored in the cloud center to registered internal/external users
* Provide data by specifying the level of access data for each registered internal/external user

1. Data exchange standard function

* Defines data exchange standards to collect data and provide services for cloud VTS integration platform development that is not limited to VTS manufacturers

## Expected Effects of Cloud VTS

With VTS intergrated cloud platform, the following effects can be expected.

* It is possible to share control information between VTS centers, enabling continuous control tasks.
* Increased flexibility of work not only by VTS center, but also by being able to control at remote locations.
* By sharing information in real time with relevant organizations that need control information, it is possible to quickly handle the initial response and remedy in the event of a marine accident.
* VTS centers, coast guard center and patrol boats can respond to the situation by receiving information collected from each VTS center from the Cloud platform. Furthermore, various research on marine safety is possible through the use of big data at research institutes.
* By supporting the connection of various devices such as computers, smartphones, and tablets, it is possible to solve temporal, spatial, and economic

## Further steps

* Step 1 – Cloud Platform Design: Research and analysis of current VTS –related task, system status to transition to cloud platform. User-defined and user-specific requirements collection steps
* Step 2 – Building a Cloud Platform: Building a Cloud Platform Based on Design
* Step 3 – Cloud Platform Operation: Identifying and Complementing Problems with Pilot Operations

# Action requested of the Committee

The Committee is requested to note the information above

1. Input document number, to be assigned by the Committee Secretary [↑](#footnote-ref-2)
2. Leave open if uncertain [↑](#footnote-ref-3)