



Vessel Traffic Service

in the Republic of Korea

Feb 25th, 2019.



Korea Coast Guard

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Organization of Korea Coast Guard



27 offices
10,552 members



330 ships

KCG

24 aircraft



20 VTS

(15 Ports, 5 Coastal VTS)



Korea Coast Guard

The Missions of Korea Coast Guard

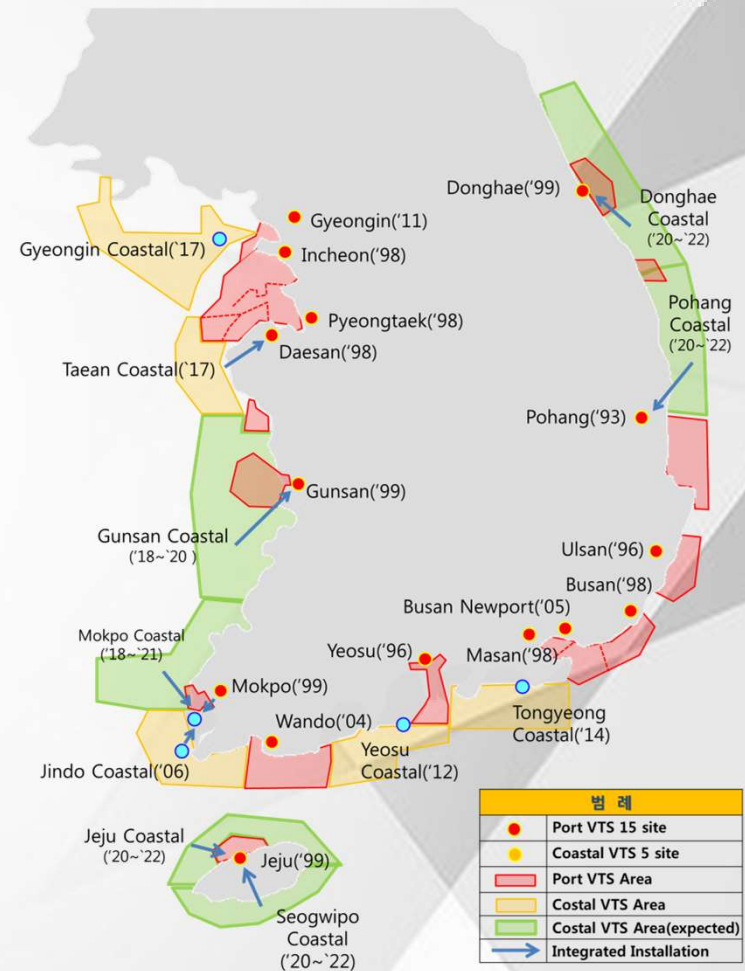
- A wide range of activities for the purpose of securing maritime territory and sovereignty
- Rescue efforts and response for safety and vessel incidents
- Response to marine pollution, accidents and taking preventive measures



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VTS operating status in the Republic of Korea

- **1993** : VTS system was firstly introduced in Pohang Port
- **2018** : Total 20 VTS centers
(15 Port VTS, 5 Coastal VTS)
460 VTS Personnel
- **Future plan** : Plan to expand more Coastal VTS centers in the future



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Regulation

- IMO SOLAS Article 5-12 "Vessel Traffic Service"
- IMO Resolution A.857(20) "Guidelines for Vessel Traffic Services"
- 1978 STCW Resolution 10 "Pilot, VTS operator Training"
- IALA MSC Circ.1065, Standards for training and certification of Vessel Traffic Service Personnel(Model Course V-103/ 1 Operator, 2 Supervisor, 3 OJT, 4 OJT Instructor)
- MRITIME SAFETY ACT Article 36-2(Vessel Traffic Controllers)
- ACT ON THE ARRIVAL, DEPARTURE, ETC. OF SHIPS Article 19(Conduct of Ship Traffic Control)



Qualifications of VTS Operators

- A person who has acquired a **fifth deck officer license** and **has had more than a year seagoing experience** is qualified to take the VTS Operator Exam.
- The international Certification **Education is a mandatory** course to complete before performing VTS work . It consists of the study of theory such as English for VTS. Navigation, etc. and simulation practice in compliance with IALA recommendations.
- *In the past, operators able to use the Morse Code were hired to work as **Radio operator**, however deck officer with sailing experience started to be hired since 2005 with the installation of RADAR on VTS centers in 1993.*



KCG Education Training Center



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VTS education plan

The Model Courses developed by IALA

- VTS Operator Training 10 weeks
- Supervisor Training 2 weeks
- OJT Training Instructor 1 weeks
- Refresher Training 2 weeks

The Model Courses developed by KCG

- VTS Manager Training 1 weeks
- Training on VTS Facilities 1 weeks
- Ship Handling Training 3 days
- Situation Response Training 1 weeks
- Education on Marine Weather 2 days

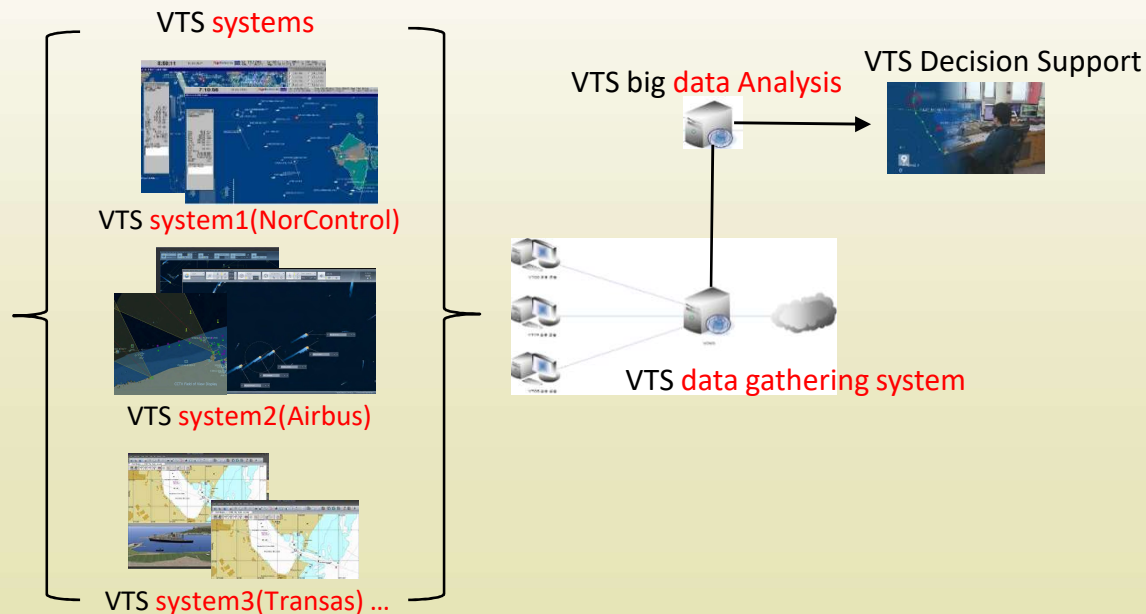


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VTS Research & Development

● New R&D project for the development of big data-based VTS systems in Korea

- R&D Period : 2019 ~ 2024
- R&D Budget : 2,700 Million Won (Government Funded)
- Research Content
 - 1) Development of a VTS **data gathering system** (Interface Module and standardized data storage)
 - 2) Integrated **big data analysis system**

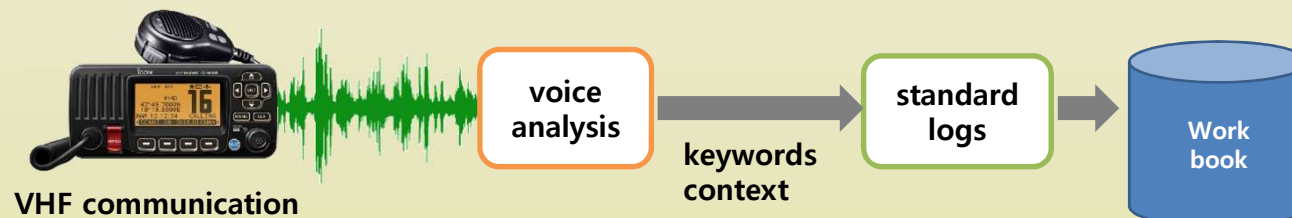


VTS research & development

• Applications to support VTSO

Automation of Work Book

- VTSO have to record the work book.
- Work books are handwritten and increase the VTSO's workload.
- Also, there are different formats among centers and VTSO.
- **Standardization** of work book format.
- **Digitalization/automation** of work book using VHF voice analysis.



VTS research & development

- Applications to support VTSO

Statistical analysis

- VTS data **analysis**
 - ✓ traffic characteristics : vessel trajectory patterns, vessel statistics
- **Generate reports** of statistical analysis automatically.



VTS research & development

● Applications to support VTSO

Anomaly detection

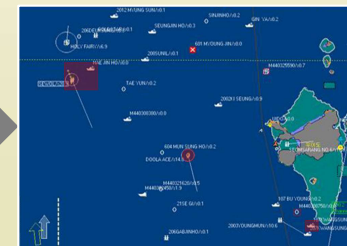
- Detect abnormal behavior vessels using **artificial intelligent technologies**
 - ✓ cross the fairway
 - ✓ approach the specific area
 - ✓ sudden change of heading/speed
 - ✓ heading to shore/shallow area



VTS big data

train traffic
patterns

detect
anomaly



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Thank you for your attention