

**MARITIME**

# **FOCUS ON RISK MANAGEMENT TOOL**

# **VESSEL MONITORING AND VOICE ALERTING SYSTEM**

**The 44<sup>th</sup> session of IALA VTS Committee**

**CHINA MSA**

**2017-9-26**

# OUTLINE

**1**

**Intention  
Why?**

**Principle and Features  
How?**

**2**

**3**

**Functions  
What?**

**Conclusion**

**4**

# Intention

- ◇ How to monitor the real-time movement of all vessels effectively within a large VTS area?

Port of Tangshan, China

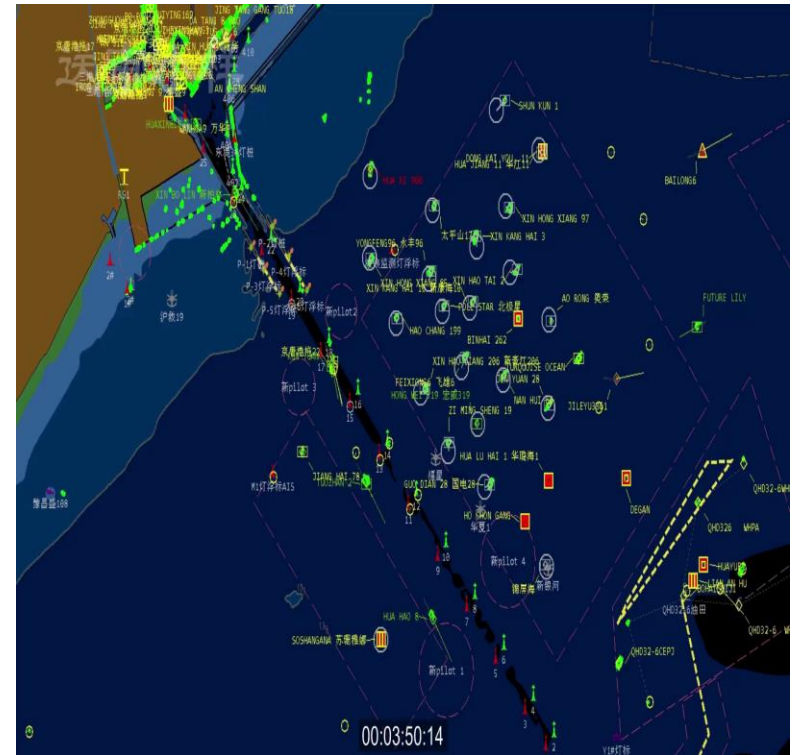
Vessel: more than 400 per day

Area: 1800 square km

- ◇ Warnings produced by existing VTS system:

- Large number
- Repeated warnings or false warnings

- ◇ How can we inform vessels of useful traffic warnings?



# Principle



# Features

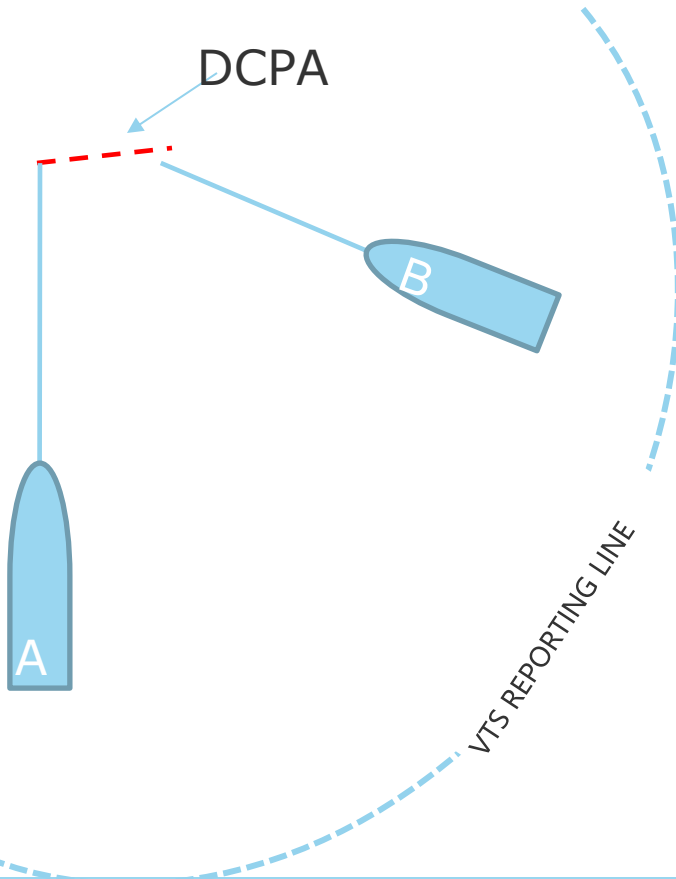
---

- ◇ Risk calculation and analysis of ship navigation.
  - collision
  - overspeed
  - approach to the special area
- ◇ Classified and filtered risk information intelligently according to **different areas** or **different types of vessels**.
- ◇ Transformed useful warning information into speech signal using **text-to-speech technology**.
  - Chinese
  - English
- ◇ **Hardware** was designed to control VHF to broadcast navigational information or warnings to all ships in VTS area.

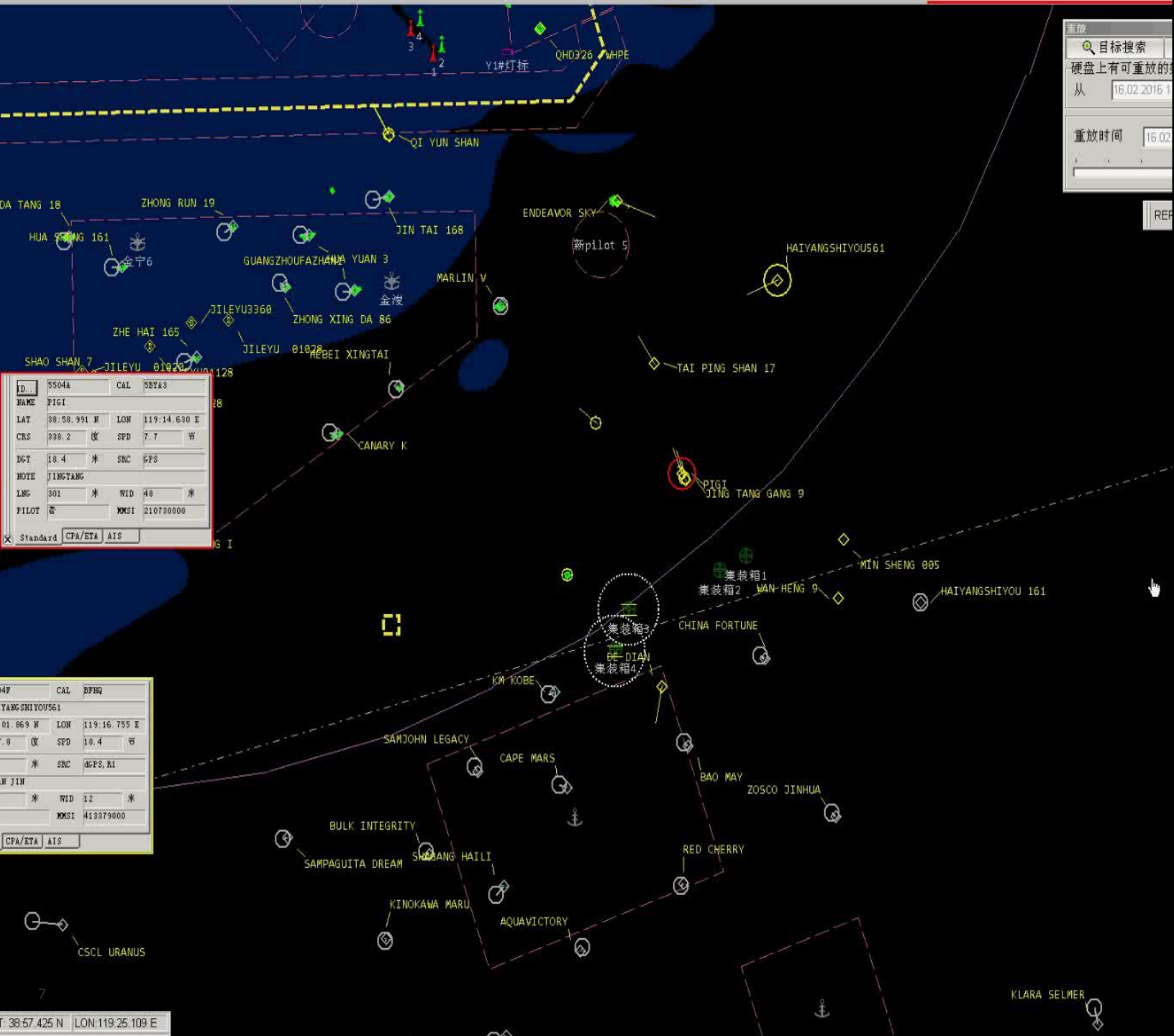
# Function Introduction

Ship A and ship B are in dangerous of collision.

DCPA



The VMVA system calculates the **DCPA** (Distance of the Closest Point of Approach) and **TCPA** (Time to Closest Point of Approach) between two ships which are taken as the collision risk index. When the index reaches a preset threshold value, the system will remind vessels automatically through VHF radio.



重放

目标搜索

硬盘上有可重放的

从 16.02.2016 1

重放时间 16.02

REF

ID	55044	CAL	SEYAS
NAME	PIGI		
LAT	38:58.991 N	LON	119:14.690 E
CRS	339.2 度	SPD	7.7 节
DGT	18.4 米	SNC	GPS
NOTE	JING-TANG		
LMG	301 米	WID	48 米
PILOT	否	MMSI	210730000

☒ Standard ☐ CPA/ETA ☐ AIS

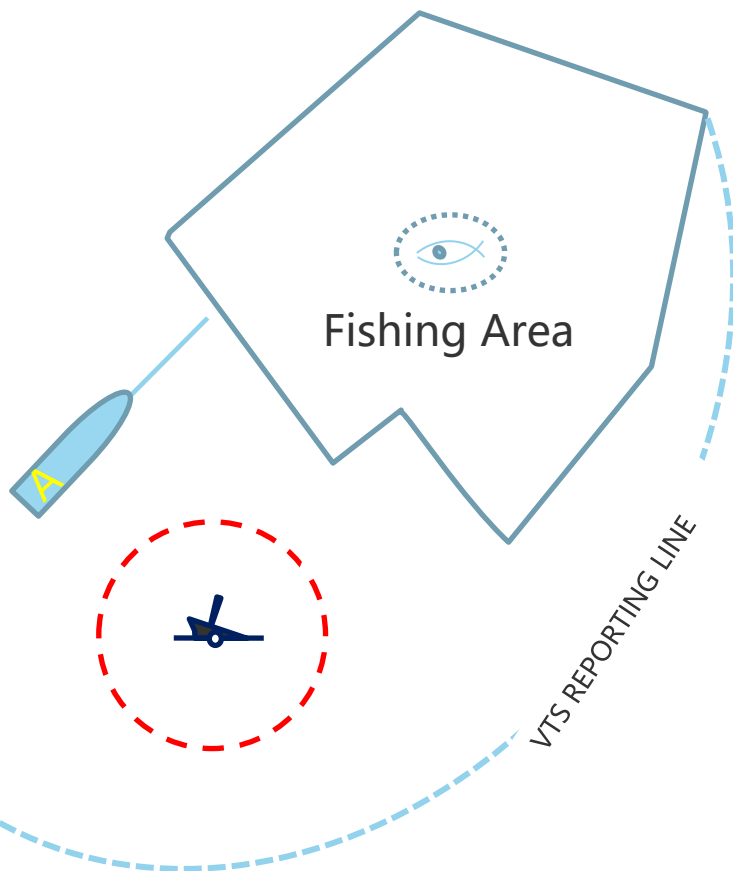
4P	CAL	BFHQ
YANGSHIYOU561		
01:06.9 N	LOW	119:16.755 E
8 度	SPD	10.4 节
米	SNC	GPS, K1
N JIN		
米	WID	12 米
	MMSI	413379000

☐ CPA/ETA ☐ AIS

T: 38:57.425 N LON: 119:25.109 E

# Function Introduction

Ship A is approaching to the fishing area.



**Warning of approach to  
the special area**



When the ship is approaching the special area, like fishing area, restricted navigational area or dangerous shallow water area, the system will give warning that the ship should keep away from these areas to avoid accidents.





# Function Introduction

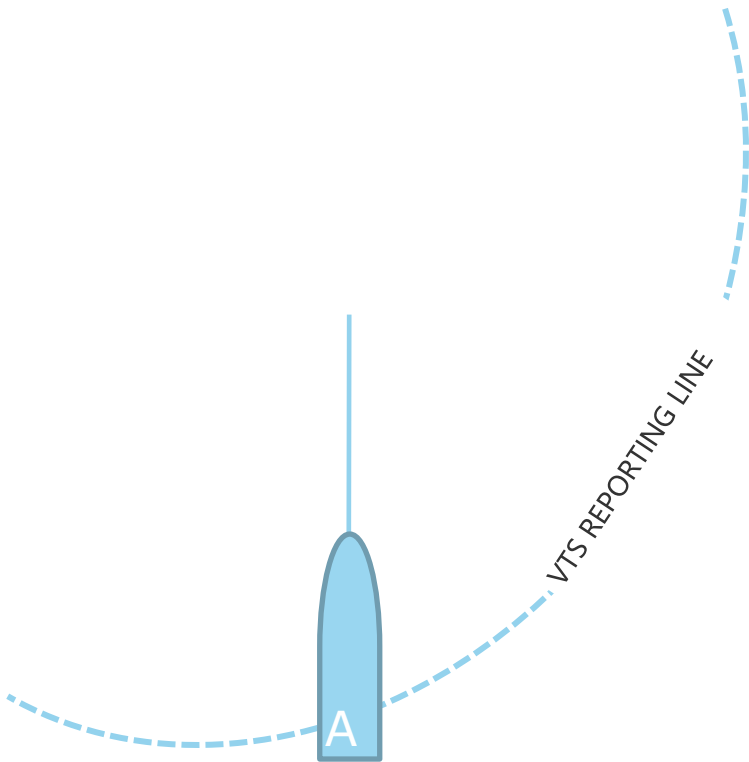
Ship A is passing reporting line.

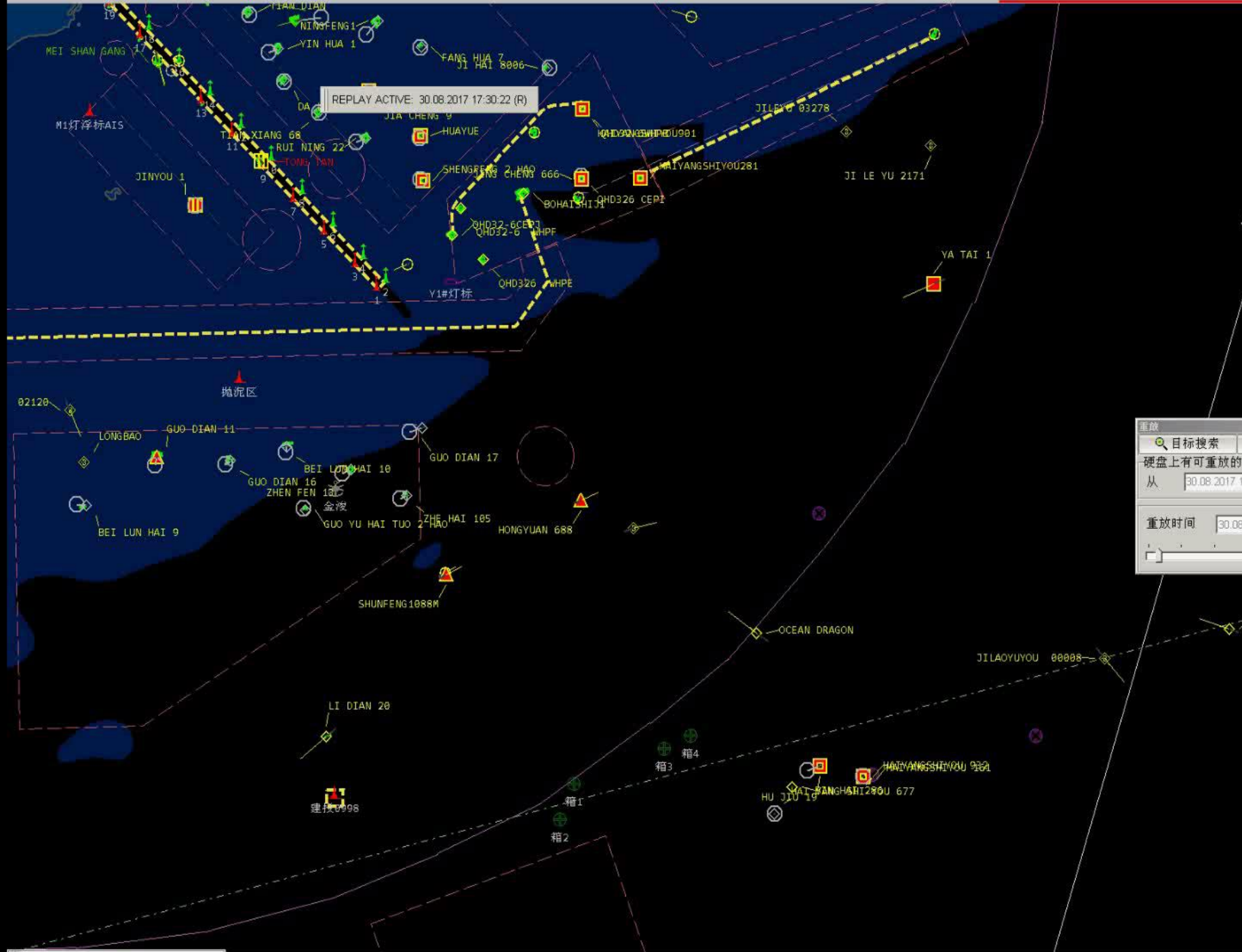


Alert of passing the reporting line



When the ship is passing the VTS reporting line, the system will alert the ship should report to VTS center.





REPLAY ACTIVE: 30.08.2017 17:30:22 (R)

回放

目标搜索

硬盘上有可重放的

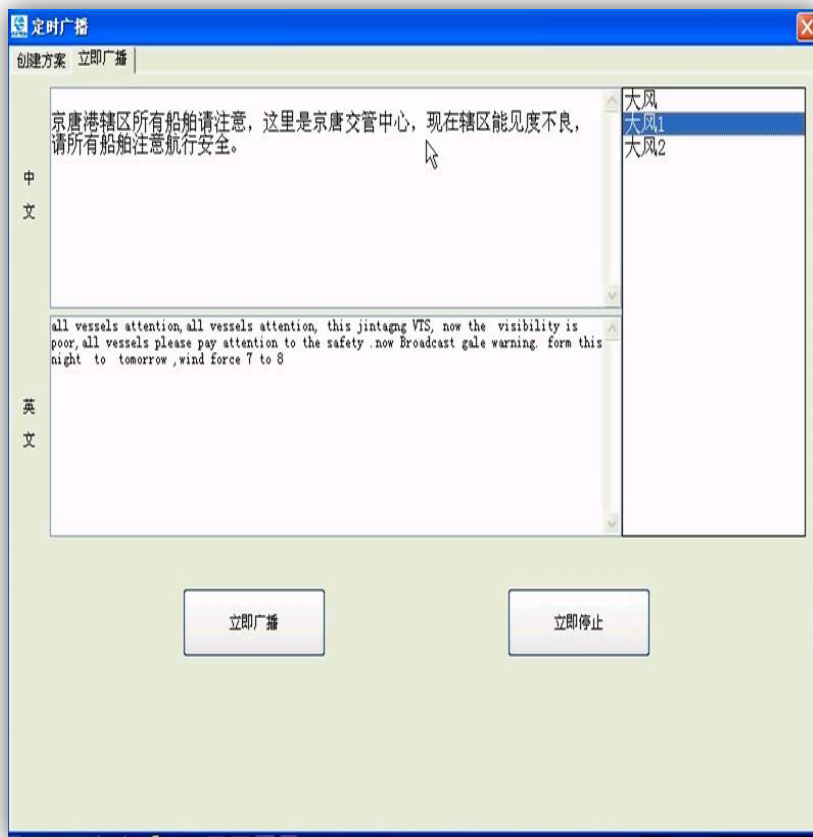
从 30.08.2017 1

重放时间 30.08

1

# Function Introduction

Broadcasting service  
information periodically



The VMVA system could also disseminate the maritime safety information, including navigational and meteorological warnings, maritime rescue messages, and so on. The system will transform the texts into spoken languages, and broadcast automatically based on pre-set time interval.

2016-6-4 16:58:56 重点关注船舶鸿阳山已进入报告线

17:00:09

定时广播

创建方案 立即广播

中文

英文

大雾  
大风1  
大风2  
渔船2016224 (限次-有效)

立即广播

立即停止

## ENHANCE MARITIME SAFETY

---

The VMVA system was completed in Dec 2015, and has been successfully running as an effective monitoring tool in VTS daily work. In VTS area of Tangshan Port, the system broadcasts more than 160 useful navigational warnings per day. By using the system, the efficiency of ship supervision is greatly improved, the safety of life and navigation at sea are enhanced, and the labor intensity of VTS operators is reduced.





Looking forward to your cooperation!



The VMVA system has been used in VTS centers in [seven](#) Chinese ports. And [Certificate of Utility Model Patent](#) is granted by state intellectual property office of China.

**FOCUS ON RISK MANAGEMENT TOOL**

**VESSEL MONITORING AND VOICE ALERTING SYSTEM**

**The 44th session of IALA VTS Committee**

Tel: +86 0315 5365084

Email: [ysjab@163.com](mailto:ysjab@163.com)

**CHINA MSA**