



**TECHNICAL AND COMPLIANCE COMMITTEE**

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**REPORT FROM FIELD TESTS OF SRT VMS-100S**

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Paper submitted by Japan

# **Report from field tests of SRT VMS-100S**

At TCC16, Japan raised concerns about the ability of SRT VMS-100 to transmit its position data stably on an hourly basis because it uses AIS 2 and AIS 2 wave channels and data transmission via AIS wave channels is not stable because of the typically very busy traffic. Following the discussion and in cooperation with SRT, Japan conducted field tests of SRT VMS-100S.

The following two types of tests for SRT VMS-100S were conducted. This document describes the results of these tests in accordance with the agreement letter signed by both parties on February 15, 2021

1. Verification of position reports of VMS-100S and its transmission signals
2. Running test on board a vessel at sea

## **1. Verification of position reports of VMS-100S and its transmission signals**

Japan received two test units of VMS-100S from SRT on March 5, 2021.

At a testing lab in Tokyo, the test units were operated:

- to verify that position reports were correctly delivered from SRT, and
- to verify transmission frequencies and types of transmitting AIS messages

Since the first unit used for the test was faulty, it took some time to have a test unit work correctly. On April 27, the first position report was delivered from SRT, and the tests were completed on May 10<sup>th</sup>.

The findings of the tests were:

- 1) Position data distribution from SRT

Starting on April 27, the position data were correctly delivered with emails from SRT.

- 2) Transmission frequencies

The VMS-100S were transmitting its position data with AIS1 (161.975MHz) and AIS2 (162.025MHz) frequencies.

- 3) AIS messages transmitted by VMS-100S

VMS-100S was transmitting AIS messages of message type “25” only. The messages are undecodable since they are coded with a non-public format.

## 2. Running test on board a vessel at sea

The on-board test started in the middle of August after some delay due to changes in candidate vessels for the test as well as restrictions of logistics and on-site work caused by Covid-19.



August 16, around 15h UTC	departure from Zhoushan port, China
August 22, around 18h UTC	back to Zhoushan
August 24, around 07h UTC	departure from Zhoushan again
September 3, 04h UTC	still in operation, data end for the analysis

Except the time when the vessel stayed at port (Aug.22 18h to Aug.24 07h), the data for 16 days in total was analyzed.

Fig.1 and 2 show the tracks of the test vessel.



Fig.1 tracks of the test vessel (1)

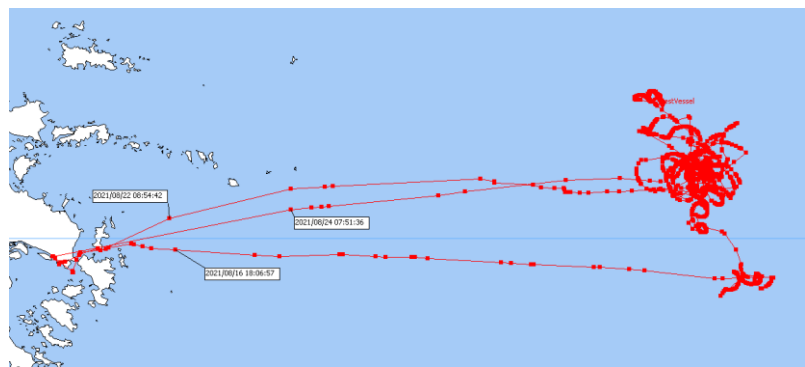


Fig.2 tracks of the test vessel (2)

The received data are in the attached Excel file. The summary of these data is as follows:

- Number of position data received: 1577
- Average time duration between two position data: 14.6 minutes
- Maximum time duration between two position data: 186.5 minutes
- Number of time duration between two positions more than 60 minutes: 51 (3.2%)

Fig.3 below is the plots for each position of the time interval from the last position data.

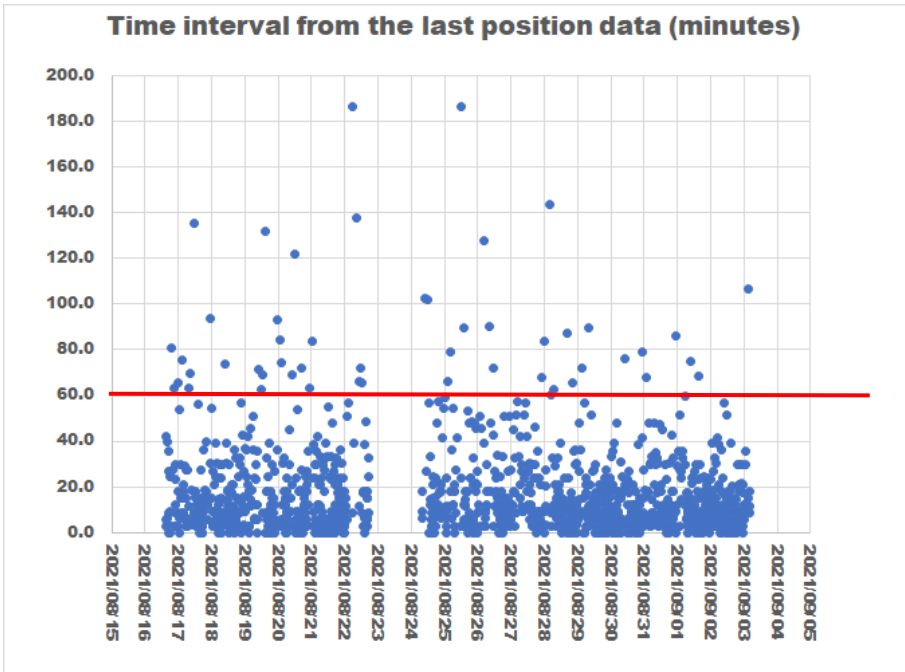


Fig.3 Time interval from the last position data

Since there are 51 positions of which time interval from the last position exceeds 60 minutes during the 16 days, it seems necessary to examine more carefully if VMS-100S meets the requirement of WCPFC ALC minimum standard "3. ALCs fitted to fishing vessels must be capable of transmitting data referred to in para 1, hourly."

### 3. AIS "Messages 25" used by SRT VMS-100S (for information)

SRT VMS-100S transmits the position data with "message 25", not with "message 18" which is the standard message to transmit ship position information for anti-collision purpose of AIS. "Message 25" was originally designed to be used to transmit any other information than ship position data. While the transmissions of "message 25" with AIS1 and AIS2 frequencies consume the resource of AIS frequencies known to be already very congested and the messages are received by all near-by AIS devices, the positions in the messages cannot be monitored by the vessels around because they are coded with a non-public format.

With these, we recommend seeking opinions of experts of IMO/ITU who define the regulations of AIS and its frequency use for transmitting position data with "message 25".