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Agenda item 13

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Singapore eRadar/ eRacon Trials

# Summary

The Maritime and Port Authority or Singapore (MPA) together with Furuno and Tideland Signal will be carrying out joint sea trials for eRadar/ eRacon performance. The sea trials will be extensions to the previous trials done in Denmark (EfficienSeas Project, 2011, Reference 1) and United Kingdom (ACCSEAS Project, 2013, Reference 2) where the Singapore sea trials will be carried out in a busy port environment.

# Purpose

Recognizing the critical need for real time accurate, terrestrial based positioning to complement GNSS positioning (Resilient PNT), especially in port and coastal areas, a joint project Team comprising representatives from the MPA Hydrographic Department, Furuno and Tideland Signal have set the following goals for the sea trials in Singapore and they are:

1. The positions of the vessel from the eRadar to be displayed in real time based on a modified ECDIS. The ECDIS will display and compare the vessel’s positions determined from the DGPS and e-Racon receivers. This is a major step forward where the vessel’s e-Racon position is computed and displayed on-the-fly.
2. This sea trial area has been selected in a busy channel environment so as to evaluate the performance of the e-Racon system under real world conditions with signal reflections from passing vessels in the vicinity. This is another step forward as previous trials were done in relatively open waters.
3. To study the various eRacon modulation parameters which will be trialed and evaluated for two purposes, namely to :

i). Evaluate the visual quality of the eRacon trace on normal radars; and,

ii). evaluate the effect of modulation on performance in a busy port/ channel environment.

1. To study the accuracy and robustness of the positioning accuracy of eRadar/eRacon (both static and dynamic positioning) as compared to DGPS positioning. The aim is to achieve positioning differences to within +/- 2.5 meters as compared to the DGPS

# Schedule

The sea trials will be carried out on MPA buoy Tender vessel MV Panduan and the trials are scheduled in the week of 26 October 2015. Furuno would be providing the shipborne e-Racon radar system and Tideland Signal would provide the e-Racon Transponders which would be mounted on navigational beacons.

# References

1. E-Navigation Underway, January 2012, Enhanced Radar Positioning as an e-Navigation Service, Jens K. Jensen, Danish Maritime Authority
2. Radar Positioning - Trials results and feasibility analysis, IALA e-NAV14-9.7.1, Nick Ward, GLA

# Action requested of the Committee

This paper is for information only and requires no action by the Committee.