

From: DTEC1
To: ENG17 / ARM17

ARM17-6.2.3
(DTEC1-12.3.3.2)
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LIAISON NOTE

New Technology Review – Metal Surface Wave Technology (MS@MS)

1 INTRODUCTION

The DTEC Committee reviews new technologies that may be of interest to the members of IALA. To support this work, the Committee approved G1153 – Template for the Review of Emerging Technologies for Possible Use by IALA Members.

Metal Surface at Magnetic Substance (MS@MS wave) was initially presented to ENAV30, with further review using the G1153 template at ENAV-EM1. The review was completed at DTEC1.

2 Discussion

The DTEC Committee reviewed a radio-free wireless communication based on Metal Surface Wave technology (MS@MS) and created the technology assessment table (DTEC1-12.3.2.1.2 Completed Review of Radio-free wireless comms MS@MS).

The technology provides a wireless approach for data transfer where RF based wireless transmission can be difficult due to metal shielding (Faraday Cage). This enables communications and sensor data to be shared into an IoT environment without the use of radio waves.

The MS@MS data link can be established along any path exclusively on the surface of various metal materials between the transmitter and the receiver.

The physical carrier of the MS@MS technology is proprietary, but an open data link protocol is provided at the application interfaces of both transmitter and receiver devices. There may be IPR and/or patents involved for the technology/system. It is understood by the DTEC Committee that this emerging technology will only gain wider acceptance if, and when, its application is made available to IALA members in a non-discriminatory way.

3 Possible application within IALA domain

The technology appears to be promising for AtoN applications within IALA's remit that require a data communication link between a location that is inaccessible, or not easily or safely accessible. For example, a sensor might measure conditions within the inaccessible location, forward the measurement data to the MS@MS access point, which in turn forwards the data via another means to the application (i.e. a cable, or RF links).

Opportunities for use within the IALA domain could include:

- Data acquisition from within steel buoys and vice-versa

- Applications in historic lighthouses with no or limited cabling options
- Sensor integration within structures
- On board buoy tenders

There may be additional applications beyond IALA's remit in general shipping, such as sensor applications in confined spaces onboard vessels, in port environments or to assist in ship inspection.

4 ACTION REQUESTED

The ENG and ARM committees are invited to:

- 1 consider the attached emerging technology assessment of the DTEC Committee and additional document available;
- 2 if considered suitable, invite IALA members to implement MS@MS technology trials to verify the practical application of the technology;
- 3 Encourage members to present results of trials using the revised IALA G1107 Planning and Reporting of Testbeds in the Maritime Domain Ed 3.0.

5 Related Documents

DTEC1-12.3.2.1.1 Metal Surface at Magnetic Substance wave

DTEC1-12.3.2.1.2 Completed Review of Radio-free wireless comms MS@MS