

From: DTEC1
To: ENG and ARM

ARM17-
(DTEC1-12.3.2.2)
05 October 2023

LIAISON NOTE

Developments on the Maritime Internet of Things (IoT)

1 INTRODUCTION

Over the last work period the ENAV Committee WG2 (now DTEC Committee WG2) received presentations on developing technologies that included the maritime internet of things (IoT). Based on these presentations, and noting the increasing developments of IoT, DTEC developed a guideline to provide guidance to those who may want to undertake testing, trials and/or deployment of IoT systems. It was noted that this task was completed at ENAV30, with the publication of IALA G1179 – An introduction to the Internet of Things from an IALA perspective. G1179 also provides guidance for organizations implementing technical solutions to support the introduction of IoT.

The concept of the maritime internet of things (IoT) continues to evolve. Within the IALA Work Programme this task is identified under different task descriptions.

Title	Description	Expected outcome	Committee (*leading)
S1010, 1.1 Guidance on the use of simple IOT sensors on physical aids	Establish requirement for IOT sensors.	Guideline	ARM
S1060, 6.2 Define user requirements for Maritime Connectivity, Maritime Internet of Things (IoT), and MRN addressing (may be three subtasks)	Revised Guideline G1143 to include aspects relevant to MRN	Revised guideline	ARM

In addition, the report of PAP50 (provided in DTEC-3.1.4) reflected on the paper provided by Jonas Lindberg (PAP50-6.7.1.1) regarding IoT technology implementation. PAP noted that ENG would take the lead on consideration of this document.

2 DISCUSSION

Related to the past work of the DTEC Committee on IoT, DTEC01 reviewed the paper and received two presentations related to IoT on AtoN:

- Scott Beatty (MarineLabs)
- Jonas Lindberg (SPX)

Key points identified for consideration by ARM and ENG in their ongoing work on IoT:

- Within the existing G1179 there are three basic layers identified. It was noted that there may be scope to expand this to add in a layer between the Transportation Layer and Application Layer.
- The messaging protocol MQTT was discussed, noting it is royalty free, hardware agnostic, works on top of TCP/IP and is commonly used (integrated into many existing IoT devices).
- There would benefit in preparing a comparison table that looks at: the IoT typical use case; size of message; latency; frequency; availability of network; existing standards; IP (or royalty free); efficiency of protocol; reliability of information throughput.
- When looking to implement IoT in the IALA perspective, the availability and reliability of information were discussed, noting possible liability issues.
- Guiding principles on implementing IoT could include: efficient; affordable; scalable; with a focus on harmonised sharing of data.

3 ACTION REQUESTED

The ARM and ENG Committee are requested to:

- 1 Note the work carried out by ENAV during the 2018-2023 work programme on Maritime IoT, specifically the publication of G1179
- 2 Take into consideration the discussion points from DTEC 01