Input paper: ARM20-6.2.2

Input paper for the following Committee(s): check as appropriate Purpose of paper:

X ARM X ENG **□** PAP X Input

X DTECX VTS **□** Information

Agenda item 6.2

Author(s) / Submitter(s) Secretariat

International Mobile Telecommunication (IMT) to Marine AtoNs Workshop

# 1 Summary

During the DTEC3 meeting, the German delegation raised the need for a workshop on IMT (International Mobile Telecommunication Technologies, 5G and 6G, etc.). It was decided to inform the IALA membership about what these technologies offer and how the membership could and should utilise these cutting-edge technologies in their Aids to Navigation provision. The Policy Advisory Panel discussed this and agreed that there is indeed a need for such a workshop or seminar.

During IALA Transition Council 03 the proposal for a workshop on IMT technologies for Marine Aids to Navigation (AtoN) was discussed and approved.

## 2 RELATED DOCUMENTS

* TC03-19.1 Report of the 3rd transition council.
* TC03-10.6.4 –Workshop proposal on IMT for Marine Aids to Navigation.
* IMT Workshop webpage: https://events.iala.int/workshop-on-international-mobile-telecommunication-imt-for-marine-atons/

# 3 Discussion

For the first time, IALA made the maritime domain aware of the potential of the IMT family of systems in November 2019 by submitting document NCSR 7/INF.6 “3rd Generation partnership project (3GPP) in the maritime domain” to the IMO's NCSR Sub-Committee. At that time, there was a concentration on IMT-Advanced systems (aka LTE or 4G) applied to maritime communications.

In the meantime, the IMT family of systems was progressed massively by the ITU – both ITU-R and ITU-T sectors concurrently – towards ‘IMT-2020 and beyond’ (aka 5G) and recently towards ‘IMT-2030 and beyond’ (aka 6G). There is substantial documentation available from ITU-R alone regarding the key performance indicators and functionalities of each of those systems so that we have access to a detailed view of their capabilities.

The decision of IMO MSC 109 to include the new agenda item 14 of IMO NCSR12 devoted to establishing a framework for data distribution and global IP-based connectivity for ECDIS S-100 products as a new work item. The "IP-based connectivity" that the IMT family of systems offers, with advanced performance features, is certainly a topic where the IMT family of systems excels and surpasses all other wireless communication systems. IMT-Advanced" (aka 4G or LTE) and "IMT-2020 and beyond" (aka 5G) are already members of the "IMT-family", but even so with "IMT-2030 and beyond" (aka 6G) in the (near) future – only 5 years away.

Following this discussion, it was concluded that all of this would be best communicated to IALA membership through a dedicated workshop in 2025, from which IALA draft documents may also emerge.

This paper addresses the growing importance of IMT-Advanced (4G), IMT-2020 (5G), and IMT-2030 (6G) technologies for supporting e-navigation, S-100 systems, and Maritime Autonomous Surface Ships (MASS).

IMT workshop contributes to these goals by focusing on the following key objectives:

* **Navigation the future of IMT Technologies**  
  Explore advancements in the IMT family, particularly current technologies (4G and 5G) and the upcoming “IMT-2030 and beyond” (6G).
* **Adapting IMT Features for Marine AtoNs**  
  Identify and evaluate adaptable features of IMT technologies for application in the marine aids to navigation (AtoN) domain including VTS.
* **Addressing Challenges in Maritime IMT Integration**  
  Examine technical, regulatory, and operational challenges in applying IMT technologies to the marine AtoN domain including VTS.
* **Defining IALA’s Strategic Role in the IMT Ecosystem**  
  Discuss IALA’s ongoing role in the adoption and integration of the IMT family within the marine AtoN context.

The workshop will take place in Karlsruhe, Germany, from 1 to 5 September 2025.

# 4 Action requested of the Committee

The Committee is requested to note the approved IMT Workshop and consider participation.