Input paper: [[1]](#footnote-1) ENG17-3.1.2.9

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

**□** ARM X ENG **□** PAP X Input

**□** DTEC **□** VTS **□** Information

Agenda item [[2]](#footnote-2) n.n

Technical Domain / Task Number 2 …………………………………

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Development of Procedures and Requirements for the Recognition of Augmentation Systems in the WWRNS

# Summary

IMO MSC 107 Committee considered the document MSC 107/17/7 co-sponsored by IALA, proposing a newoutput to develop minimum performance standards for dual frequency multi-constellation satellite-based augmentation systems (DFMC SBAS) and advanced receiver autonomous integrity monitoring (ARAIM) in shipborne radionavigation receivers. The IMO MSC committee noted that:

1. radionavigation systems and global navigation satellite systems (GNSS) were assessed and recognized by the Organization following the procedures and criteria set out in resolutions A.1046(27) and A.915(22), as appropriate, and on this basis performance standards for receiver equipment were developed;
2. **procedures and/or criteria for the recognition of augmentation systems as part of the Worldwide Radionavigation System were not clearly established by the Organization;** and
3. augmentation systems were proposed as new functionalities or capabilities for GNSS shipborne receiver equipment.

The Committee agreed to include in its post-biennial agenda:

1. **an output on "Development of procedures and requirements for the recognition of augmentation systems in the World-wide radionavigation system", with one session needed to complete the item; and**
2. an output on "Development of performance standards for dual frequency multi-constellation satellite-based augmentation systems (DFMC SBAS) and advanced receiver autonomous integrity monitoring (ARAIM) in shipborne radionavigation receivers", with two sessions needed to complete the item,

assigning the NCSR Sub-Committee as the associated organ. In doing so, the Committee agreed that the performance standards for DFMC SBAS and ARAIM in shipborne radionavigation receivers should be developed only after the **approval/adoption of the necessary procedures and requirements for the recognition of augmentation systems**.

## Purpose of the document

The purpose of the document is to inform IALA ENG on the resolution from IMO and to request to the ENG Committee to prepare an input paper for the next IMO NCSR with the objective of initiating the “**Development of procedures and requirements for the recognition of augmentation systems in the World-wide radionavigation system**” based on already existing elements from IMO standards and IALA guidelines.

The new input paper should consider:

1. elements already existing for recognition of GNSS systems in IMO resolution A.1046;
2. elements existing in **IALA Recommendations and Guidelines** **related to augmentation systems** e.g. R‑1022 on recognition of augmentation services, G-1112 on performance monitoring of DGNSS services and G-1152 on SBAS Maritime Service.

# Discussion

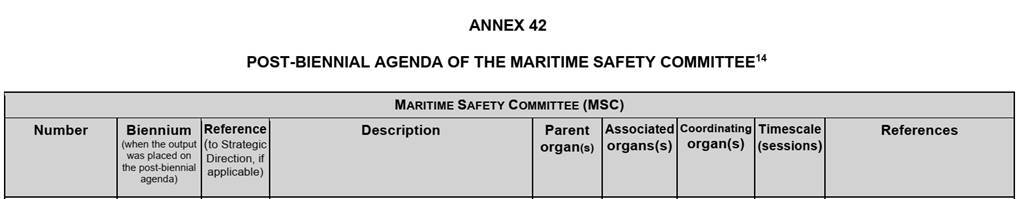
It is considered that IMO standards already include elements that could support this work (e.g. IMO resolution A.1046). Furthermore, IALA Recommendations and Guidelines (noted above) would be very valuable inputs for the discussion as well.

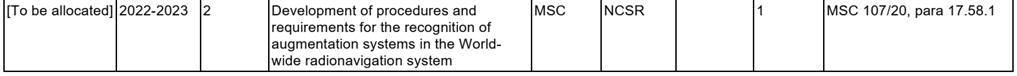
Consequently, it is proposed that IALA ENG drafts an input paper for the next IMO NCSR referring to such existing material in order to initiate the discussion on GNSS augmentation systems so that they are considered part of the WWRNS.”

Such input paper could make reference to the need for augmentation in order to achieve the levels of integrity as set out in IMO Resolution A.1046 and the wider accuracy and integrity requirements as described in IMO Resolution A.915.

Given IALA’s current status as an observer within the IMO, consideration should also be given to seeking co‑sponsorship of the paper by an IMO member state.

## Schedule





IALA input/info paper should be ready by February 2024 for its submission to IMO NCSR. The work is proposed to be performed in 1 session of the ENG committee in October 2023.

## Future work

After the approval/adoption in IMO of the necessary procedures and requirements for the **recognition of augmentation systems**, it will be possible to start the work of performance standards for DFMC SBAS and ARAIM in shipborne radionavigation receivers.

# References

1. MSC 107-20 - Report Of The Maritime Safety Committee On Its 107Th Session (Secretariat)
2. MSC 107-20-Add.1 - Report Of The Maritime Safety Committee On Its 107Th Session (Secretariat)
3. IMO Resolution A.1046(27) (2011), <https://wwwcdn.imo.org/localresources/en/KnowledgeCentre/IndexofIMOResolutions/AssemblyDocuments/A.1046(27).pdf>
4. IALA Guidelines 1112, https://www.iala-aism.org/product/g1112/
5. IALA Guidelines 1152, <https://www.iala-aism.org/product/g1152/>

# Action requested of the Committee

The Committee and its members are requested to:

1. Note the information provided in this paper and;
2. Support the process of “**Development of procedures and requirements for the recognition of augmentation systems in the World-wide radionavigation system**” by preparing an input/information paper for submission to IMO NCSR in 2024, potentially in collaboration with an IMO member state.

1. Input document number, to be assigned by the Committee Secretary [↑](#footnote-ref-1)
2. Leave open if uncertain [↑](#footnote-ref-2)