



IALA RECOMMENDATION (NORMATIVE)

R1017 RESILIENT POSITION, NAVIGATION AND TIMING (PNT)

Edition 1.1

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DOCUMENT REVIEW

Revisions to this document are to be noted in the table prior to the issue of a revised document.

Date	Details	Approval
December 2018	1 st issue	Council 68
September 2020	Editorial corrections.	



THE COUNCIL

RECALLING:

- 1 The function of IALA with respect to Safety of Navigation, the efficiency of maritime transport and the protection of the environment.
- 2 Article 8 of the IALA Constitution regarding the authority, duties and functions of the Council.

RECOGNIZING:

- 1 That existing, and future, Global Navigation Satellite Systems (GNSS) such as GPS, GLONASS, GALILEO and BeiDou are strategic key elements for the provision of Position, Navigation and Timing (PNT) services used to support safe navigation;
- 2 That improved reliability, resilience and integrity of bridge equipment and navigation information is one of the IMO e-navigation solutions;
- 3 That signals from GNSS satellites are vulnerable to interference, whether intentional or not, and given that no single PNT source is perfect, multiple dissimilar PNT sources are recommended to achieve resilient PNT;
- 4 GNSS PNT services, terrestrial PNT services and augmentation services, along with vessel traffic services and ship based sensors, can be considered as candidates to improve performance and achieve resilient PNT;
- 5 The variety of systems provided by administrations to support safe maritime navigation which should be considered as candidates to improve performance and contribute to resilient PNT.

CONSIDERING the proposals of the IALA Engineering and Sustainability Committee,

ADOPTS the Recommendation on Resilient Position, Navigation and Timing (PNT), as described below.

INVITES members and marine aids to navigation authorities worldwide to implement the provisions of the Recommendation and share their findings.

RECOMMENDS That National members and other appropriate authorities providing marine aids to navigation services consider:

- Conducting a risk assessment into the impact of PNT service degradation or total loss, to their services and associated systems.
- How services that use PNT information can be made more resilient.
- How services that provide PNT information can be made more resilient.
- How their services support resilient PNT for the mariner.
- Mitigating the risks identified.

REQUESTS the IALA Engineering and Sustainability Committee or such other committee as the Council may direct to keep the Recommendation under review and to propose amendments, as necessary.