



IALA RECOMMENDATION (INFORMATIVE)

R1020 TERRESTRIAL RADIONAVIGATION SYSTEMS

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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 2020	First Issue	

THE COUNCIL

RECALLING the function of IALA with respect to safety of navigation, the efficiency of maritime transport and the protection of the environment.

RECOGNIZING the need for resilient positioning, navigation, and timing information in support of the safe operation and management of certain Marine Aids-to-Navigation (AtoN) and the navigation of vessels.

Specifically, recalling from IALA Recommendation on Resilient PNT (R-1017) ¹:

- 1 That existing, and future, Global Navigation Satellite Systems (GNSS) such as GPS, GLONASS, GALILEO and BeiDou and Regional Navigation Satellite Systems (RNSS) such as Indian Regional Navigation Satellite System (IRNSS) and Quasi-Zenith Satellite System (QZSS) 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 target solutions.
- 3 That signals from GNSS and RNSS 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.

FURTHER RECOGNIZING:

- 1 That terrestrial radionavigation systems can use different frequency bands, transmitter powers and message architectures, and can therefore provide similar navigation performance to GNSS while having dissimilar failure modes.

NOTING that the “Performance Standards for Multi-System Shipborne Radionavigation Receivers” (MSC.401 as amended) and “Guidelines for Shipborne Position, Navigation and Timing (PNT) Data Processing” (MSC.1/Circ. 1575) developed by the International Maritime Organization (IMO) seek to provide a means of resilient positioning, navigation and timing that can support AtoNs and vessels alike.

ADOPTS the Recommendation on Terrestrial Radionavigation Systems, as described below.

RECOMMENDS that IALA members and authorities:

- 1 Consider the provision of terrestrial radionavigation systems, which may include regional systems such as eLoran and/or R-Mode (and any new systems yet to be developed); supported by local systems such as enhanced radar positioning.
- 2 Consider appropriate IALA Guidelines on the operation of such terrestrial radionavigation systems where available.

¹ IALA Recommendation on Resilient Position, Navigation and Timing (PNT), R1017, December 2018.



- 3 Consider working collaboratively with neighbouring IALA members and authorities, especially where terrestrial radionavigation services bridge international boundaries.
- 4 Consider the recognition of such systems either as a component of the IMO Worldwide Radionavigation System (Resolution A.1046(27)) or through other suitable means.

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.