Liaison Note to RTCM

Navigation message for medium frequency R-Mode

# Introduction

Ranging Mode (R-Mode) is a maritime terrestrial navigation system that is designed as a backup for Global Navigation Satellite Systems (GNSS). Extending the functionality of existing maritime radiobeacons is one possible way to implement R-Mode on existing maritime radio infrastructure. The beacons broadcast differential GNSS corrections in the medium frequency band as a continuous data stream encoded with the format known as RTCM 2.3. To enable the use of the modified beacon signals for R-Mode based ranging and positioning additional navigation information is needed that provides static and dynamic information about the R-Mode transmitter. An obvious approach to distribute this information is to use the RTCM 2.3 data stream of the R-Mode enabled radiobeacon to provide the navigation information together with the differential GNSS corrections.

The IALA received as input to the 15th ENG committee meeting a proposal for an RTCM 2.3 message which allows the flexible provision of static and dynamic R-Mode navigation data. The message was designed to keep the delays in the differential GNSS service moderate. The input paper “ENG15-3.1.3.6 RTCM navigation message for medium frequency R-Mode” is attached as the annex of this document.

The document was discussed during the ENG 15 meeting. It was agreed that it is a good starting point for the standardisation of the medium frequency R-Mode navigation message.

IALA invites RTCM for a collaboration between the IALA ENG Committee and the RTCM Special Committee 104 on the further development of the RTCM version 2.3 to integrate the proposed R-Mode navigation message as an amendment.

# Action requested

The RTCM is requested to:

1. Consider the annex about the proposed medium frequency R-Mode navigation message.
2. Check if the defined messages can be added as an amendment to RTCM 10402.3.
3. Inform IALA how to move the initiative of standardisation of R-Mode navigation message further.

# Annex























