

JOINT IMO/ITU EXPERTS GROUP ON
MARITIME RADIOCOMMUNICATION
MATTERS
19th meeting
Agenda item 6

IMO/ITU EG 19/6/1
9 August 2023
ENGLISH ONLY

ANY OTHER BUSINESS

Liaison statement from ITU-R Working Party 5B

Comments on WPT studies

Note by the Secretariat

SUMMARY

***Executive
summary:***

This document contains in the annex a reply liaison statement from ITU-R Working Party 5B concerning comments on WPT studies. The reply liaison statement is submitted to the IMO/ITU Experts Group for preliminary consideration and to advise NCSR 11, as appropriate.

Action to be taken: Paragraph 3

Related documents:

Introduction

1 This document contains in the annex a reply liaison statement from ITU-R Working Party (WP) 5B (10 to 21 July 2023) concerning comments on WPT studies. The reply liaison statement is submitted to IMO/ITU EG 19 for preliminary consideration and to advise NCSR 11, as appropriate.

2 In the reply liaison statement, reference is made to ITU and IMO documents, which are available on the ITU and/or IMO websites. Delegates who do not have access to ITU documents could obtain an electronic copy of this document (English ONLY) through the Secretariat (ncsr@imo.org or Karlis.Bogens@itu.int).

Action requested of the Experts Group

3 The Experts Group is invited to note the information provided in the attached reply liaison statement and take action, as appropriate.

ANNEX

Radiocommunication Study Groups



Source: Document 5B/TEMP/337

Subject: Liaison statement on WPT

28 July 2023
English only

ITU-R Working Party 5B

REPLY LIAISON STATEMENT TO ITU-R WORKING PARTY 1A (COPY TO INTERNATIONAL MARITIME ORGANIZATION AND INTERNATIONAL CIVIL AVIATION ORGANIZATION FOR INFORMATION)

Comments on WPT studies

ITU-R Working Party (WP) 5B would like to thank ITU-R WP 1A for its liaison statement in Document [5B/752](#) and keeping WP 5B informed. It seems the information provided previously pertaining specifically to WPT EV was not taken into account by WP 1A. The interference risk of high power WPT (i.e. WPT for electric vehicle charging) and its unwanted emissions substantially exceed that of low power WPT. It is therefore necessary to focus the work of WP 1A on those applications with a higher interference risk. Although information on this topic has previously been provided to WP 1A (see liaison statement sent in Documents [1A/238](#) and [1A/377 \(2015-2019\)](#)), this issue still needs to be addressed and resolved as a matter of urgency.

Working Party 5B has identified that the work carried out in WP 1A addresses different categories of WPT: high power WPT (i.e. WPT for electric vehicle charging) and low power WPT for portable and mobile devices. Each is addressed in corresponding ITU-R Recommendations and Reports. WP 5B would specifically like to point out that the interference risk of high power WPT (i.e. WPT for electric vehicle charging) and its unwanted emissions exceeds those of low power WPT. The response here is therefore split into two parts. The first part covers WPT-EV¹ while the second part focuses on low power WPT for portable and mobile devices.

¹ This information may also be relevant for other cases of high power WPT.

1 WPT Studies regarding WPT-EV (Report ITU-R SM.2451 and Recommendation ITU-R SM.2110)

Working Party 5B analysed Report ITU-R SM.2451 and did not find any study results regarding the Aeronautical Radionavigation Services (ADF/NDB) and Maritime Mobile Services. There is a need for additional studies.

Aeronautical Radionavigation Services (130-525 kHz)

In liaison with International Civil Aviation Organization (ICAO) (Doc. [5B/649, Annex 29](#)) WP 5B received the response Document [5B/651](#).

Working Party 5B would also like to recall the information provided previously to WP 1A in Document [1A/377 \(2015-2019\)](#).

Maritime Services

In particular the following two scenarios regarding Maritime Services are raised:

- 1 high power WPT systems installed in the vicinity of ports and waterways especially inland waterways might cause interference to Maritime Services; and
- 2 installation of such systems on roll-on roll-off (ro-ro) ships including ro-ro passenger ships (“ferries”) should be carefully considered taking into account the interference factor.

It should be noted that the operational use of maritime radio equipment includes usage in ports and harbours and in close proximity to land including inland waterways.

International Maritime Organization (IMO) has provided further information in Document [5B/756](#) which is integrated into this LS.

A) Maritime Radionavigation Service

Working Party 5B would like to provide guidance on the Maritime Radionavigation Service in the frequency range below 325 kHz. This frequency range is used for transmissions of differential data for global navigation satellite systems (DGNSS).

Recommendation ITU-R M.823-3 provides technical characteristics for these systems. WP 5B suggests using the following information for use in the studies:

DGNSS parameters

Parameters	Value	Reference
Min. wanted signal strength at the edge	Between 40 and 100 $\mu\text{V/m}$	IALA information, Table of DGNSS stations, Edition 1.8 2021
Protection ratio, C/I (dB)	15 (dB) Co-channel	ITU-R M.823-3 Table 5
Coverage	Between 50 and 500 km	IALA information, Table of DGNSS stations, Edition 1.8 2021
Signal Availability (Navigation in ocean waters)	99.8%	IMO Resolution A.1046(27) Appendix 2.52

Working Party 5B would like to inform WP 1A that DGNSS is also used on inland waterways to provide accurate position information.

IMO performance standard providing information regarding maritime safety systems required to be carried on board vessels under IMO carriage requirements, as laid down in SOLAS chapters IV and V and under related environmental conditions, are:

- | | | |
|---|---|---|
| 1 | <u>Resolution MSC.114(73)</u> | Revised performance standards for shipborne DGPS and DGLONASS maritime radio beacon receiver equipment (operating in the band 283.5-325 kHz); |
|---|---|---|

B) Maritime Mobile Services

Radio Regulations (RR) Appendix **15** provides the list of frequencies that particularly need protection from any emissions of WPT.

IMO performance standards providing information regarding maritime safety systems required to be carried on board vessels under IMO carriage requirements, as laid down in SOLAS chapters IV and V and under related environmental conditions, are:

- | | | |
|---|--|--|
| 1 | <u>Resolution MSC.508(105)</u> | Performance standards for the reception of maritime safety information and search and rescue related information by MF (NAVTEX) and HF MSI (operating in the band 490-518 kHz); |
| 2 | <u>Resolution MSC.512(105)</u> | Performance standards for shipborne MF and MF/HF radio installations capable of voice communication, digital selective calling and reception of maritime safety information and search and rescue related information (operating in the band 1 600 kHz-4 000 kHz); |
| 3 | Document NSCR 10/8,
see attachment below | Draft performance standards for the reception of maritime safety information and search and rescue related information by MF and HF digital navigational data system (NAVDAT) (operating in the band 495 kHz-505 kHz). |

Operational assumptions and requirements for the establishment of the aforementioned services are provided in the following documents:

- | | | |
|---|---|--|
| 1 | <u>Resolution MSC.509(105)</u>
(annex 2) | Criteria for use when providing shore-based digital selective calling (DSC) facilities for use in the GMDSS; |
| 2 | <u>Resolution MSC.509(105)</u>
(annex 3) | Criteria for establishing GMDSS sea areas; |
| 3 | <u>Resolution MSC.509(105)</u>
(annex 4) | Criteria for use when providing a NAVTEX service; |
| 4 | Document NSCR 10/8 (annex 2),
see attachment below | Draft amendments to provision of radio services for the global maritime distress and safety system (GMDSS) (resolution MSC.509(105)) annex 5); |
| 5 | <u>IMO Res. A.1046(27)</u> | World-wide radionavigation system. |

2 Part 2: WPT Studies regarding portable and mobile low power WPT in Report ITU-R SM.2449 and Recommendation ITU-R SM.2129

Working Party 5B recognises the additional studies added to the Report ITU-R SM.2449 that cover the elements requested by WP 5B before and no additional studies are required. DGNSS in the frequency band 315-325 kHz is widely used to improve the accuracy of positioning and enhance the safety of navigation. This frequency band 315-405 kHz is being studied for use by mobile and portable WPT devices, which may cause in-band and adjacent band interferences to maritime radionavigation services, especially to the usage of shipborne equipment. WP 1A is invited to complete the studies on the impact of WPT on DGNSS.

Working Party 5B notes that the studies for the frequency ranges 315-405 kHz, 1 700-1 800 kHz and 2 000-2 150 kHz were carried out at a level of –15 dB μ A/m at 10 m distance which is significantly lower than the unwanted emissions limits of Recommendation ITU-R SM.329. In many countries this corresponds to the permitted level of other inductive devices.

3 Conclusion

Working Party 5B kindly asks WP 1A to take this information into account as it progresses its work on WPT, including a possible update of Recommendation ITU-R SM.2129 and looks forward to continuing to work with WP 1A on this subject. WP 5B would appreciate being kept informed of any further developments related to WPT after the next meeting of WP 1A.

Status: For action or information, as appropriate

Deadline: 31 October 2024

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Attachment: NCSR 10-8 – Draft performance standards for the reception of maritime safety information and search and rescue related information by MF and HF digital navigational data system (NAVDAT) (operating in the band 495 kHz-505 kHz)

