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ICAO WRC-27 Preparatory Workshop
Agenda item 4: Resolution 676 (WRC-23)

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Presentation Overview

01 Background

02 Potential Issues

03 ICAO Position

04 Conclusion

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01 Background

GNSS Interference definitions (Source: ICAO NSP/5 IP/26 - Montréal, 6-15 November 2018)

Intentional interference is generally referred to as interference whose purpose is to disrupt signal reception. Most effects of interferers on air navigation services are collateral and can be due to conflict zones, sensitive areas, personal privacy devices

The International Telecommunication Union (ITU) Radio Regulations (Vol 1, Art I, Sect VII) [24] define interference as
"The effect of unwanted energy due to one or a combination of emissions, radiations, or inductions upon reception in a radiocommunication system, manifested by any performance degradation, misinterpretation, or loss of information which could be extracted in the absence of such unwanted energy".

01 Background

GNSS Interference definitions (Source: ICAO NSP/5 IP/26 - Montréal, 6-15 November 2018)

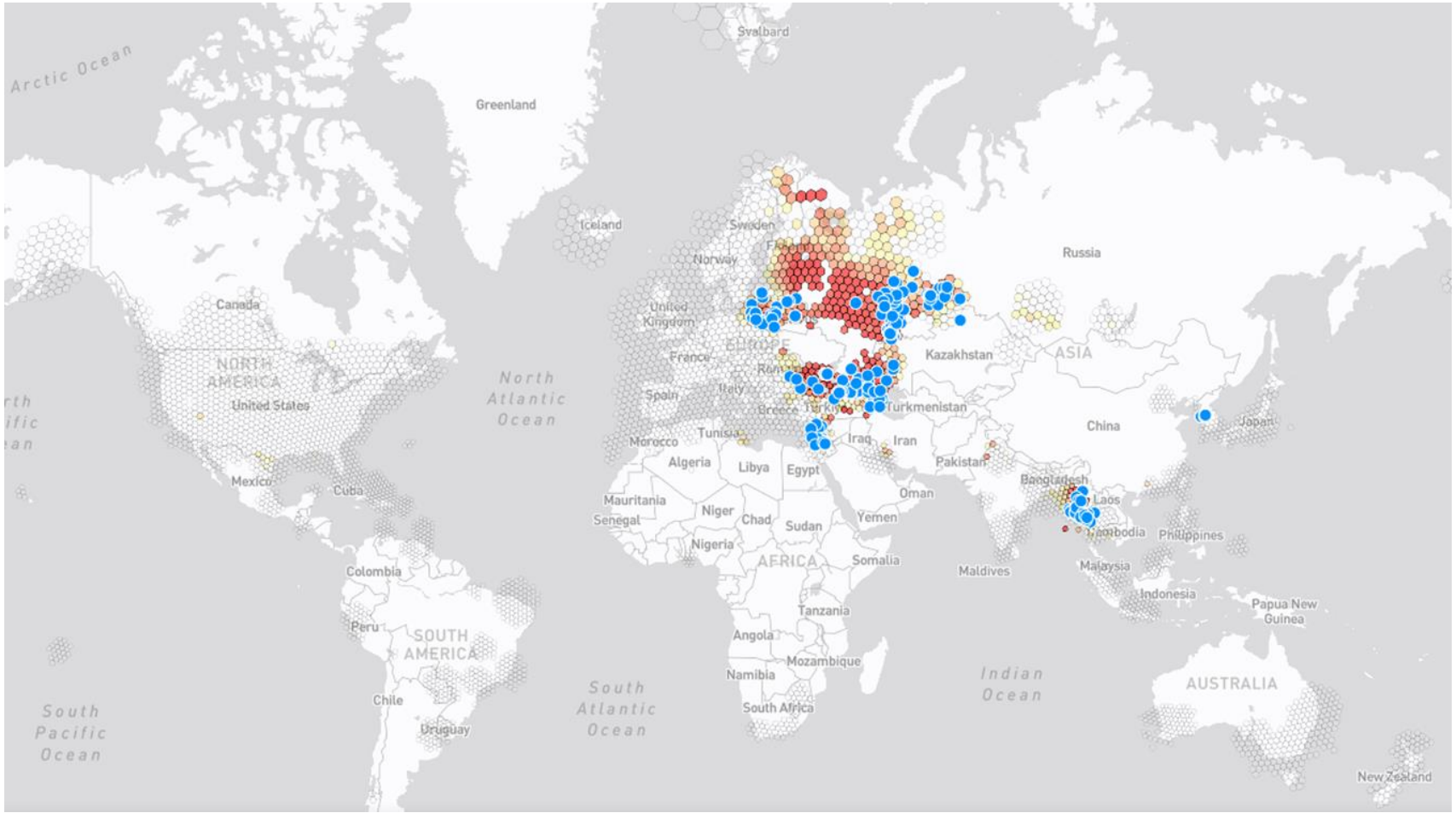
ITU classifies interference as permissible, accepted or harmful, where harmful interference is defined as "Interference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service operating in accordance with Radio Regulations".

The proposed top-level types of harmful interference threats are Jamming and Spoofing, where:

- Jamming denotes emissions that do not mimic GNSS signals, but rather interfere with the receiver’s ability to acquire and track GNSS signals.
- Spoofing denotes emissions of GNSS-like signals that may be acquired and tracked in combination with or instead of the intended signals.

02 Potential issues

GNSS Interference jamming and spoofing zones



03 ICAO Position

WRC-23 Resolution 676

Extract from ICAO NSP JWGs/12 Report:

6d26) The history of this ITU WRC23 Resolution 676 started witl letters from ECTL. Resolution went a quick path.

6d27) It was not possible to get States to agree to this resolutio without making reference to the right of States to interfere with any radio service, as per the ITU Constitution, for security purposes. That part of the resolution is just restating a right for states to generate RFI that had been existing at ITU since the 1950s.

6d28) What this resolution is suggesting is that if there is not a zone of conflict, then this zone should not be having RFI

International Civil Aviation Organization

INFORMATION PAPER

NAVIGATION SYSTEMS PANEL (NSP)

JOINT WORKING GROUPS – TWELFTH MEETING

13 – 17 and 23 May 2024
(Montreal, Canada)

Agenda Item 6: Spectrum (except WRC issues)
6.4) GNSS signal and interference issues

ITU WRC23 Resolution 676

(Presented by Gerhard BERZ, EUROCONTROL)

SUMMARY

This paper provides information about a recent ITU World Radio Conference Resolution on RNSS, which is the radio spectrum allocation under which GNSS operates.

This information is in advance of a formal notification of ICAO by the ITU, as has been agreed as part of the resolution. The IP therefore makes no statements on any further work as a result of the resolution, since this will be done through the secretariat at the appropriate time and is within the remit of PSMP.

1. INTRODUCTION

1.1 The final acts of the WRC-23, which was held in Dubai UAE, are available for free in all the UN languages on the following website:

https://www.itu.int/en/publications/ITU-R/pages/publications.aspx?parent=R-ACT-WRC.14-2024&media=electronic

1.2 The resolution against GNSS interference can be found on page 371 of the final acts in English as resolution 676. It is also reproduced at the end of this paper for convenience.

03 ICAO Position

WRC-27 Agenda Item 4

In accordance with Resolution 95 (Rev.WRC-19), to review the resolutions and recommendations of previous conferences with a view to their possible revision, replacement or abrogation.

ICAO Position:

676 (WRC-23)	Prevention and mitigation of harmful interference to the radionavigation-satellite service in the frequency bands 1 164-1 215 MHz and 1 559-1 610 MHz.	Modify to remove formal recognition that Administrations can deny access to RNSS.

04 Conclusion

- The GNSS interference threat is active and evolving
- It is a global problem that is considered at Industry level and State levels
- Evolution of regulations, standards and recommended practices have started in order to address short term challenges as well as develop long term solutions
- GNSS Interference was a major topic on the agenda of the ICAO 42nd Assembly
- It is crucial that States take into consideration strict limits and conditions when emitting harmful interference

Thank You

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