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ICAO WRC-27 Preparatory Workshop Agenda item 1.18: protection of Earth exploration-satellite service (EESS) and Radio astronomy service (RAS) above 76 GHz

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Presentation Overview

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Background

Agenda Item Title (A.I. 1.18)

To consider, based on the results of ITU Radiocommunication Sector studies, possible regulatory measures regarding the protection of the earth exploration-satellite service (EESS) (passive) and the radio astronomy service (RAS) in certain frequency bands above 76 GHz from unwanted emissions of active services, in accordance with Resolution 712 (WRC-23).

Background

RESOLUTION 712 (WRC-23)

Studies on compatibility between the earth exploration-satellite service (EESS) (passive), the radio astronomy service (RAS) in certain bands above 76 GHz, and active services in adjacent and nearby frequency bands

The World Radiocommunication Conference (Dubai, 2023),

resolved to invite the ITU Radiocommunication Sector to complete **following studies** in time for the 2027 world radiocommunication conference

1. compatibility studies between Earth Exploration-Satellite Service (EESS) (passive) and the corresponding active services in adjacent frequency bands as listed in Table 1 below:

TABLE 1

EESS (passive) frequency bands to be studied and corresponding active services to be included

EESS (passive) frequency band	Active service frequency band	Active service
86-92 GHz	81-86 GHz	Fixed-satellite service (FSS) (Earth-to-space), mobile service (MS)
	92-94 GHz	MS, radiolocation service (RLS)
114.25-116 GHz	111.8-114.25 GHz	Fixed service (FS), MS
164-167 GHz	158.5-164 GHz	FS, FSS (space-to-Earth), MS, mobile-satellite service (MSS) (space-to-Earth)
	167-174.5 GHz	FS, FSS (space-to-Earth), inter-satellite service (ISS), MS
200-209 GHz	191.8-200 GHz	FS, ISS, MS, MSS, radionavigation service (RNS), radionavigation-satellite service (RNSS)
	209-217 GHz	FS, FSS (Earth-to-space), MS

2. compatibility studies between the radio astronomy service (RAS) and the active satellite services in certain adjacent and nearby frequency bands listed in Table 2 below with a view to setting the relevant threshold levels for unwanted emissions from any GSO and non-GSO space stations and revising and updating Resolution 739 (Rev.WRC-19) accordingly;

TABLE 2

RAS frequency bands to be studied and corresponding active services to be included

Radio astronomy frequency band	Active satellite service frequency band	Active satellite service (space-to-Earth)
76-81 GHz	71-76 GHz	Fixed-satellite service (FSS), mobile-satellite service (MSS), broadcasting-satellite service (BSS)
130-134 GHz	123-130 GHz	FSS, MSS, radionavigation-satellite service (RNSS)
164-167 GHz	167-174.5 GHz	FSS
226-231.5 GHz	232-235 GHz	FSS

Potential Issues

A number of foreign object debris (FOD) detection (radar) systems are operated in the frequency range 92-100 GHz, which is adjacent to one of the proposed earth exploration satellite service (EESS) (passive) bands identified in Resolution 712 (WRC-23).

Studies undertaken as part of this agenda may potentially impose some technical or operational constraints on FOD detection systems in the frequency band 92-94 GHz.

ICAO Position

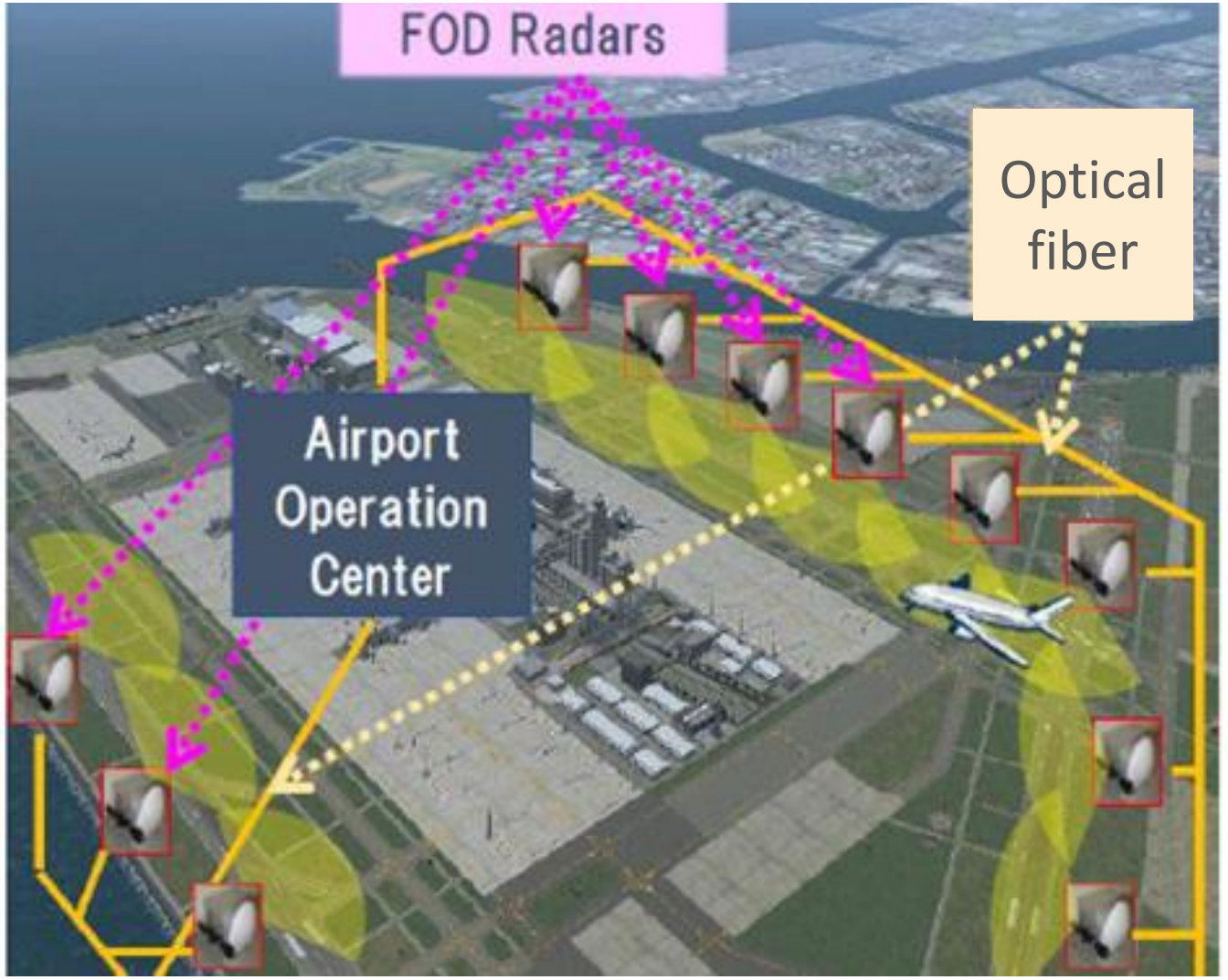
To ensure that the studies undertaken in response to this agenda item taking into account FOD detection systems operating in the radiolocation service (RLS) in frequency band 92-94 GHz.

To ensure any action taken because of this agenda item in the frequency band 86-92 GHz would not impose any technical or operational constraints on FOD detection systems in the frequency band 92-94 GHz.

4

Introduction FOD detection system

Let me show you a video



Let me show you promotion video of FOD detection system.

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Thank You

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