International Civil Aviation Organization

FIFTH MEETING OF SPECTRUM REVIEW WORKING GROUP (SRWG/5)

Video Teleconference, 15 – 17 March 2021

Agenda Item 5: VHF Com Simulation for 2030

VHF COM SIMULATION FOR 2030

(Presented by Secretariat)

SUMMARY

This paper presents a draft plan to simulate the VHF COM for APAC in 2030.

1. INTRODUCTION

1.1 The Spectrum Review Working Group (SRWG) was originally established to study the requirement of 8.33KHz channel spacing. The CNS SG/24 adopted the revised TOR of this group, the keynote for this revision is to conduct simulation on VHF COM frequency assignment and expand its scope of work to cover Navigation systems with highlight on GBAS implementation.

1.2 In order to maintain 5 years as buffer to transition to the 8.33 KHz spacing scheme for VHF Com in APAC, a new round of simulation is deemed necessary with the target year of 2030.

2. DISCUSSION

2.1 The most important function of SRWG expert working group was to study the issue of the requirement of 8.33 kHz channel spacing, and it could be considered as completed by 2016 after SRWG/3. The simulation activities of the SRWG/3 in 2015 determined that implementation of 8.33 kHz channel spacing would not be necessary until at least 2025. The results of this simulation have been recorded in the Frequency List 3 (Frequency Finder) with the remark “Only for SRWG Simulation”. Currently 219 frequency assignments are registered in COM list 3 for SRWG simulation only. These frequency assignments have not yet been brought into operational use and can be used to meet future requirements e.g., until 2030.

2.2 CNS SG/24, held from 30 November to 4 December 2020 in VTC mode, adopted the following Decision/Conclusion drafted by SRWG/4:

> **Decision CNS SG/24/6(SRWG/4/1) - Frequency requirements for VHF-COM systems and ILS, VOR, DME and GBAS/VDB facilities**.
>
> *That, the SRWG is tasked to develop a rolling frequency assignment plan for VHF-COM and ILS, VOR, DME and GBAS/VDB facilities to meet the operational requirements until [2030], subject to a regular review and updating by the SRWG.*

Conclusion CNS SG/24/7(SRWG/4/2) – Simulation of VHF COM Frequency requirements for next 10 years.

To conduct a new round of simulation for VHF COM frequency assignment based on new operational requirements of States to 2030 as necessary.

2.3 Agenda Item 5 of this meeting is to review the simulation of the frequency requirements for VHF COM systems until 2030, it initiates a rolling frequency assignment planning from now on. The primary purpose of this simulation is to determine if a congestion in the use of frequencies can be foreseen that would require the implementation of 8.33 kHz channel spacing in any parts of the APAC Region.

Updating current frequency assignments in Frequency List 3

2.4 An up-to-date and complete Frequency List 3 is the basis of a successful simulation. The current Frequency List 3 can be accessed with the ICAO program Frequency Finder. It is the intention to take this opportunity to update the Frequency List 3 with frequency assignments that to date have not yet been submitted by States to the APAC Regional Office. States are requested to check if all frequency assignments that are in use are also registered in the Frequency List 3. Only frequency assignments that are in the Frequency List 3 can be considered to be protected from harmful interference during future frequency assignment planning activities.

2.5 Considering not all States have the installation of Frequency Finder, a copy of Frequency List 3 for a State is available at Regional Office upon request.

2.6 The table in **Attachment A** can be used to insert any frequency assignment that has not yet been submitted to the APAC Regional Office.

New requirements for VHF communication services (frequency assignments until 2030)

2.7 With the view to determine the medium-term spectrum requirements for VHF communication services, States are invited to submit these requirements to the APAC Regional Office by 15 June 2021. On the basis of these requirement, the APAC Regional Office will undertake an analysis that is aimed at determining whether these requirements can be assigned a frequency within the available 25 kHz channels.

2.8 In case not all frequency requirements until 2030 can be satisfied using 25 kHz channels, the SRWG is expected to develop material for the introduction of 8.33 kHz channel or other viable solution in the APAC Region or parts thereof. It should be noted that in many cases, the introduction of 8.33 kHz channel separation would require a retrofit of airborne/ground equipment. European experience has shown that the offset carrier operations implemented for 25KHz, 50KHz and 100KHz spaced channel may not be feasible anymore in using 8.33 KHz channels.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;
b) provide up-to-date information for Frequency List 3 by using Attachment A;
c) provide required information for simulation by using Attachment A, with a separate file name;
d) discuss any relevant matter as appropriate

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Country	Location	Frequency	Service/DOC	ER	CoordLat	NS	CoordLong	WE	Remarks

Note: To identify the service, use one of the options as presented in Table A-1

Table A-1 – Designated Operational Coverage of Communications Services

Service	*Designated operational coverage (DOC)*		*Comments*	*Mode*
	Range (NM)	*Height (ft)*		
Aerodrome				
TWR (Tower)	25	4 000	Tower	A/G
AFIS	25	4 000	Aerodrome Flight Information Service	A/G
AS	Limits of aerodrome	Surface	Aerodrome Surface Communication	A/G
Approach				
APP–L	50	12 000	Approach control service (low)	A/G
APP–I	75	25 000	Approach control service (intermediate)	A/G
APP–U	150	45 000	Approach control service (upper)	A/G
En-Route				
ACC–L	Area	25 000	Area Control Service - Low; Within specified area; maximum recommended range is 155 NM	A/G
ACC-I	Area	25 000	Area Control Service – Intermediate; Within specified area; maximum recommended range is 130 NM	A/G
ACC–U	Area	45 000	Area Control Service – Upper; Within specified area; maximum recommended range is 200 NM	A/G
FIS-L	Area	25 000	Flight Information Service – Low; Within specified area; maximum recommended range is 155 NM	A/G
FIS or FIS-U	Area	45 000	Flight Information Service – Upper; Within specified area; maximum recommended range is 200 NM	A/G
VOLMET	200	45 000	Meteorological information; Maximum recommended range is 200 NM	BC
Other functions				
ATIS	200	45 000	Automatic Terminal Information Service	BC

Service	*Designated operational coverage (DOC)*		*Comments*	*Mode*
	Range (NM)	*Height (ft)*		
A/A	200	45 000	Air-to-air communications (unspecified); Maximum recommended range is 200 NM	A/A
A/G	200	45 000	Air-to-ground communications (unspecified); Maximum recommended range is 200 NM	A/G
AOC	100	250	Aeronautical Operational Control; Not protected; maximum recommended range is 100 NM	A/G
EM	N/A	N/A	Emergency communications; No frequency coordination required	A/G
SAR	N/A	N/A	Search and Rescue communications; No frequency coordination required	A/G
GP	200	45 000	General Purpose communications; Maximum recommended range is 200 NM	A/G

Note: States may specify a different Designated Operational Coverage to meet specific operational requirements for communication services.