

Draft

United States of America

PROPOSALS FOR THE WORK OF THE CONFERENCE

AGENDA ITEM 1.1

Agenda item 1.1

1.1 _____ to consider additional spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for International Mobile Telecommunications (IMT) and related regulatory provisions, to facilitate the development of terrestrial mobile broadband applications, in accordance with Resolution 233 (WRC-12);

Issue

Addressing frequency bands above 6 425 MHz under WRC-15 Agenda Item 1.1.

Background

Conference Preparatory Meeting (CPM) 15-1 established a dedicated Joint Task Group (JTG-4-5-6-7) to address issues related to WRC-15 Agenda item 1.1 and 1.2.¹

Regarding Agenda Item 1.1, JTG 4-5-6-7 was tasked to develop draft CPM text and perform associated studies in accordance with the provisions of Resolution 233 (WRC-12).

As part of its terms of reference, JTG 4-5-6-7 is to consider the results of studies from Working Party 5D on spectrum requirements for the mobile service, including suitable frequency ranges for IMT, from which JTG 4-5-6-7 is to conduct sharing studies for purposes of developing CPM text.

In Document 4-5-6-7/220, "Final input to Joint Task Group 4-5-6-7 on suitable frequency ranges WRC-15 Agenda Item 1.1"², WP 5D has confirmed and provided to the JTG 4-5-6-7 its final input on suitable frequency ranges for IMT, which in their sum includes the frequency range 410 MHz to 6 425 MHz as suitable.

Over several meetings, WP 5D discussed the suitability of frequencies above 6 425 MHz for IMT for consideration under WRC-15 Agenda Item 1.1. However, as noted in Document 4-5-6-7/220, WP 5D did not include frequencies above 6425 MHz as suitable for IMT under WRC-15 under Agenda Item 1.1, as as WP 5D stated that, "Working Party 5D indicated that it is continuing to consider the frequency ranges above 6 GHz in terms of their suitability for IMT". In addition, as noted in Document 4-5-6-7/220, "WP 5D also confirms it is continuing to study the

¹ See *Administrative Circular CA/201, Annex 10*, International Telecommunication Union (19 March 2012, Geneva).

² See *ITU-R Document 4-5-6-7/220*

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Deleted: Introduction¶
In this document the United States of America makes some proposals under WRC-15 Agenda Item 1.1. It is anticipated that the United States of America will submit at a later date additional proposals including proposals for future Conferences.

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Whilst new access spectrum for cellular usage will link the consumer to the cell tower all of the data needs to be "backhauled" to the core network and with the amounts of data envisaged there are only two technologies that can provide this level of capacity, fibre-optic cable and microwave. The restriction with fibre is that over some terrain, mountains ranges etc and/or dense urban areas fibre is effectively ruled out because of the cost and difficulty of laying the fibre from the cell tower to the main switching centre, thus leaving microwave as the only viable option.

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Deleted: declined to identify frequencies above 6 425 MHz and chose not to include them for consideration under WRC-15 Agenda Item 1.1,

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frequency ranges above 6 GHz in the light of the evolution of technology and services, in addition to the already acknowledged suitable frequency ranges in the bands below 6 GHz³.” In consequence, WP 5D did not provide IMT system characteristics and deployment parameters in those frequencies and no sharing studies were conducted in any band above 6 425 MHz between IMT systems and the existing systems or applications operating in frequencies above 6 425 MHz. Therefore, the United States maintains that there should be no new spectrum allocations to the mobile service on a primary basis, nor identification of additional frequency bands for IMT in any band above 6 425 MHz under WRC-15 Agenda Item 1.1.

Deleted: This was recognized by the JTG which agreed that the issue of frequencies above 6 GHz would be better considered at a future WRC after WRC-15.¶

Proposal:

ARTICLE 5

Frequency allocations

Section IV – Table of Frequency Allocations
(See No. 2.1)

NOC USA/AI 1.1/1

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1.1 . to consider additional spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for International Mobile Telecommunications (IMT) and related regulatory provisions, to facilitate the development of terrestrial mobile broadband applications, in accordance with Resolution 233 (WRC-12);

³ See ITU-R Document 4-5-6-7/220

https://www.itu.int/md/dologin_md.asp?lang=en&id=R12-JTG4567-C-0220!!MSW-E

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5 570 -7 250 MHz

<u>Allocation to services</u>		
<u>Region 1</u>	<u>Region 2</u>	<u>Region 3</u>
...		
<u>5 925 -6 700</u>	FIXED 5.457	
	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B	
	MOBILE 5.457C	
	5.149 5.440 5.458	
<u>6 700-7 075</u>	FIXED	
	FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441	
	MOBILE	
	5.458 5.458A 5.458B 5.458C	
...		

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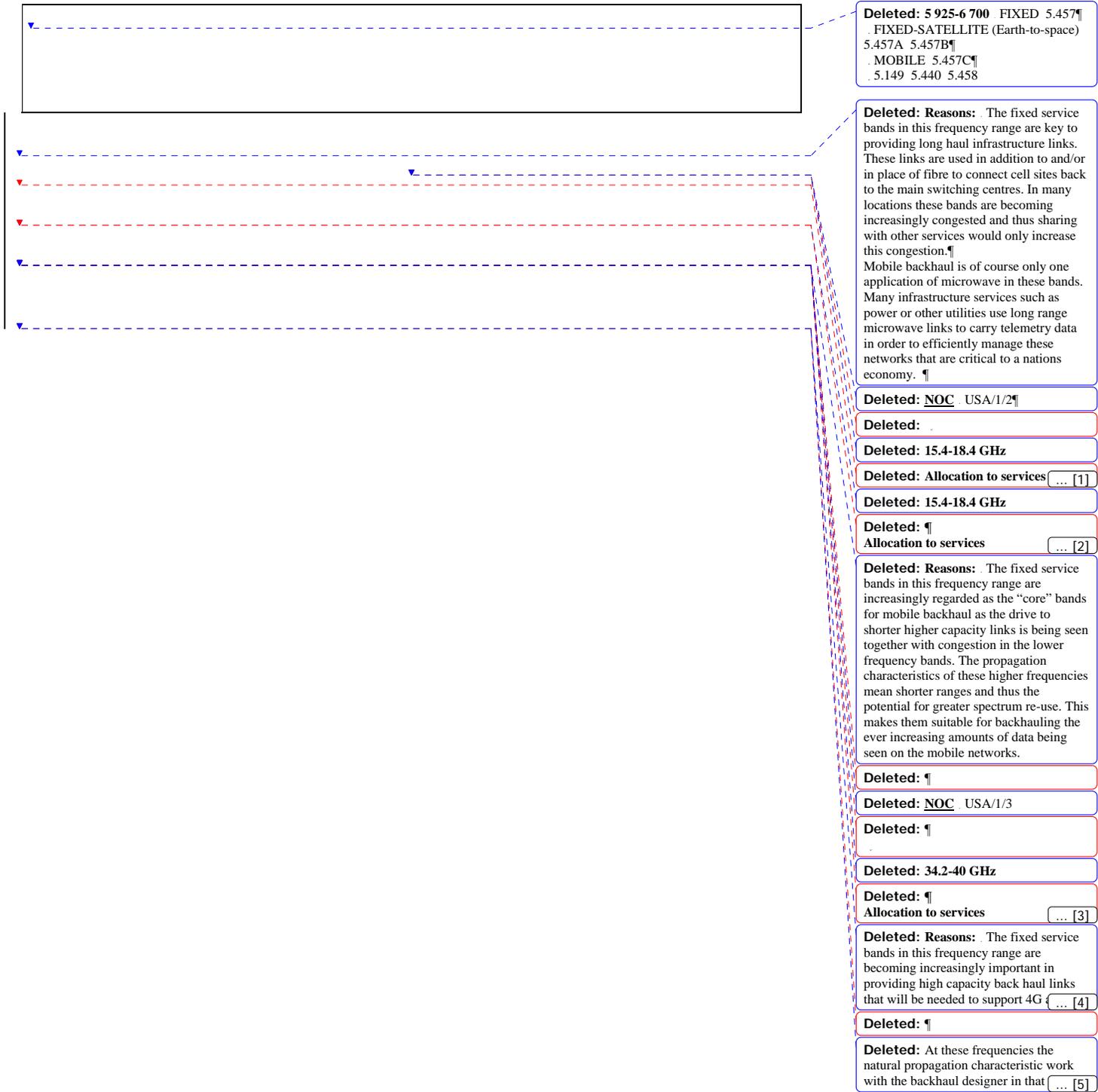
248-3 000 GHz

<u>Allocation to services</u>		
<u>Region 1</u>	<u>Region 2</u>	<u>Region 3</u>
...		
<u>275-3 000</u>	(Not allocated) 5.565	
...		

Reasons:

This proposal for NOC applies for 6425 MHz and above. As the expert working party on IMT, WP 5D declined to include any frequencies above 6 425 MHz as suitable for IMT, and WP 5D did not provide to JTG 4-5-6-7 IMT system characteristics and deployment parameters in those frequencies. In consequence, no sharing studies were conducted in JTG 4-5-6-7 for any band above 6 425 MHz. Therefore, in accordance with Resolution 233 (WRC-12), there should be no additional “spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for IMT” in any band above 6 425 MHz.

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Frequency allocations¶
Section IV – Table of Frequency Allocations .
(See No. 2.1)
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- Deleted: Region 2
- Deleted: Region 3



Allocation to services		
Region 1	Region 2	Region 3
18.1-18.4	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B (Earth-to-space) 5.520 MOBILE 5.519 5.521	

Allocation to services		
Region 1	Region 2	Region 3
18.4-18.6	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B MOBILE	

Allocation to services		
Region 1	Region 2	Region 3
38-39.5	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Earth exploration-satellite (space-to-Earth) 5.547	

Reasons: The fixed service bands in this frequency range are becoming increasingly important in providing high capacity back haul links that will be needed to support 4G and future cellular services. These frequencies are ideally suited to the dense deployment of short range link, typically and few miles or less. This increasingly common trend in short range links is being driven by the ever increasing demand for more and more data to be delivered wirelessly to the end user, e.g. smartphones tablet computers etc.

At these frequencies the natural propagation characteristic work with the backhaul designer in that the smaller antennas and the inherent short range give rise to good spectrum reuse with visually less obtrusive antennas. In addition the bandwidth available at these higher frequencies enable the backhaul network to carry the large amounts of data needed to support new and future service offerings.