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| U.S. Radiocommunications Sector  Fact Sheet | |
| **Working Party:** ITU-R WP5C | **Document No:** USWP5C23\_12\_rev1a - WBHF Question |
| **Ref:** Res.429 ( WRC-19), Res.656 (Rev WRC-19) | **Date:** 7/20/2021 |
| **Document Title:** Preliminary Draft New Question – Accommodating Wide Band High Frequency (WBHF) services within the 3 to 30 MHz Frequency Band | |
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| **Purpose/Objective:** This is a Fact Sheet for the development of a Draft New Question regarding the accommodation of MESH networks nd services operating in the 3-30 MHz Frequency Band. Such services would include digital voice (both point-to-point and multi-point), database replications (financial transactions, logistics, medical records), remote sensor reporting (tsunami or meteorological buoys), ice shelf diagnostics, emergency services and disaster relief operations and management, email, FTP file transfer, chat rooms and video calls.. | |
| **Abstract:** Advancements in HF technologies and increasing demand to pass large amounts of data over HF have resulted in a need to support wider channel bandwidths in the 3 to 30 MHz frequency range. Approaches have also been proposed for increasing the capability of HF radio communications through MESH networks. These networks will be using contiguous and non-contiguous signalling bandwidths of 48 kHz or higher. This would be accomplished in two ways; 1) a contiguous 48 kHz channel or, 2) an aggregation of 3 kHz, 6 kHz or 8 kHz frequency channels that are spread across a 200 kHz span within the 3 to 30 MHz frequency range. This question would establish the basis for the identification and qualification of HF MESH Networks technical and operational characteristics for use in channelization, interference, sharing and compatibility studies between these systems and HF incumbent services within the 3-30 MHz frequency band. | |

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| **Radiocommunication Study Groups** |  |
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| Accommodating Wide Band High Frequency (WBHF) services within the 3 to 30 MHz Frequency Band | |
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*Editors Note: This introduction is for the benefit of USWP-5C use during the review process. It will be removed once the document is approved for NC reviews*.

**Introduction**

Although an existing HF Question (246) addresses some aspects of HF operations it does not address WBHF topics. The work that is proposed in this Preliminary Draft New Question is focused on WBHF operations throughout the 3 to 30 MHz Frequency Band. As such the topics that are covered by this question are unique to WBHF Systems and are not addressed through the existing HF Question.

Resolution 1 indicates that a Working Party can produce Recommendations on anything under its purview. It also indicates that the Working Party can do so with or without a question. An additional objective of developing this question is to make other interested Administrations aware of this work and give them the opportunity to contribute to the development of Reports and Recommendations prior to the introduction of WBHF related documents at the ITU Working Party level and to enlist the aid of interested parties in moving the WBHF work forward by contributing to the development of related studies.

This question would establish the basis for the identification and qualification of WBHF system technical and operational characteristics for use in channelization, interference, sharing and compatibility studies between WBHF systems and incumbent services within the 3-30 MHz frequency band. The document seeks answers to the following questions.

1. What are the technical and operational characteristics for WBHF systems operating within the 3 to 30 MHz frequency range? (e.g., transmitter power, antenna characteristics, emission characteristics, frequency tolerance, channel bandwidths, network topologies, Automatic Link Establishment (ALE) capabilities, spectrum utilization, sense and detect capabilities and other yet to be defined parameters.)

2. Can the 3-30 MHz frequency band accommodate WBHF systems operating across multiple services and what impact would such operations have on incumbent service channel plans and allocations within the band?

3. Can current protection criteria protect incumbent services from WBHF systems operating within the 3 to 30 MHz frequency band.

DRAFT QUESTION ITU-R  #X-M/Y

**Accommodating WBHF Mesh Networks Operating in the 3-30 MHz Frequency Band**

(202X)

The ITU Radiocommunication Assembly,

*considering*

*a)* that there is a necessity for efficient use of the 3 to 30 MHz frequency band;

*b)* that an interchange of information on the requirements of administrations concerning the technical characteristics of Wide Band High Frequency (WBHF) equipment used in the 3 to 30 MHz frequency band would support the efficient use of the band;

*c)* that an exchange of information among different administrations concerning the practices applied to the assignment of WBHF channels within the 3 and 30 MHz is of value;

*d)* that a certain measure of agreement may be desirable on the characteristics of the WBHF communications equipment that are used in the border areas of neighbouring countries to minimize mutual interference;

*e)* that it is desirable to determine WBHF equipment technical characteristics, to facilitate the planning of channel allocation in the fixed, aeronautical, maritime and land mobile bands and the establishment of system parameters and network topologies for use in compatibility and sharing studies;

*decides* that the following Questions should be studied

1 What are the technical and operational characteristics for WBHF systems operating within the 3 to 30 MHz frequency range (e.g., transmitter power, antenna characteristics, emission characteristics, frequency tolerance, channel bandwidths, etc.)?

2 To what extent will WBHF system deployment and operation across multiple services impact the present operation of existing services within the 3 and 30 MHz frequency band?

3 To what extent will WBHF systems operating within the 3 to 30 MHz frequency range impact current channel plans?

4 What changes would need to take place from an allocation and channelization perspective to accommodate WBHF operations within the 3-30 MHz frequency band?

5. Can current protection criteria protect incumbent services from WBHF systems operating within the 3 to 30 MHz frequency band?

*further decides*

1 that the results of the above studies should be included in one or more Recommendations and/or Reports;

2 that studies related to question 1 and 2 should be completed in time for WRC-23;

3 that studies related to questions 3, 4 and 5 be completed in time for WRC-27.

Category: S2