**United States**

PROPOSALS FOR THE WORK OF THE CONFERENCE

# Agenda item 1.13

1.13 *to consider identification of frequency bands for the future development of International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis, in accordance with Resolution* ***238 (WRC-15)****;*

**Background**:

Resolution **238 (WRC-15)** calls for studies to determine the spectrum needs for the terrestrial component of IMT in the frequency range between 24.25 GHz and 86 GHz, as well as sharing and compatibility studies, taking into account the protection of services to which the frequency band is allocated on a primary basis, for the frequency bands:

– 24.25-27.5 GHz, 37-40.5 GHz, 42.5-43.5 GHz, 45.5-47 GHz, 47.2-50.2 GHz, 50.4‑52.6 GHz, 66-76 GHz and 81-86 GHz, which have allocations to the mobile service on a primary basis; and

– 31.8-33.4 GHz, 40.5-42.5 GHz and 47-47.2 GHz, which may require additional allocations to the mobile service on a primary basis.

It is important to note that the properties of higher frequency bands, such as shorter wavelength, would better enable the use of advanced antenna systems, including multiple-input and multiple-output (MIMO) and beam-forming techniques in supporting enhanced mobile broadband.

Spectrum needs studies conducted in response to Resolution 238 determined that 6.1 GHz of spectrum is needed for the terrestrial component of IMT in the frequency range 37-52.6 GHz. The United States, contrary to studies within the ITU-R, has proposed to make 7.5 GHz of spectrum in this range available to the terrestrial component of IMT, in the frequency ranges 37-43.5 GHz and 47.2-48.2 GHz.

Further, several compatibility studies between the EESS/SRS (passive) in the frequency band 50.2-50.4 GHz and IMT in the frequency band 47.2-50.2 GHz have been conducted. All of these studies showed that IMT systems will cause exceedance of the EESS (passive) protection criteria, especially if IMT deployments by multiple operators are considered.

Data from EESS (passive) systems in this band plays a major role in many public safety activities such as:

– identifying areas at risk for natural disasters;

– forecasting weather and predicting climate change;

– detecting and tracking tsunamis, hurricanes, tornadoes, oil leaks, etc.;

– providing alerting/warning information of such disasters;

– assessing the damage caused by such disasters;

– providing information for planning relief operations; and

– monitoring recovery from a disaster.

This band is also being utilized by the Fixed Satellite Service for the deployment of both gateways and user terminals. Additionally, studies have shown the sharing is not feasible between FSS user terminals with undetermined locations and ubiquitous IMT.

**Proposal:**

Considering the potential impacts to EESS (passive), the infeasibility of sharing between FSS user terminals and IMT, and that the United States has proposed spectrum for the terrestrial component of IMT that exceeds, in aggregate, the spectrum needs, as determined by ITU-R studies, for the terrestrial component of IMT in the 37-52.6 GHz frequency range, NOC is proposed for the 50.4-52.6 GHz frequency band.

ARTICLE 5

Frequency allocations

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

NOC USA/4827A13/1

47.5-51.4 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| \* \* \* | | |
| 50.4-51.4 FIXED  FIXED-SATELLITE (Earth-to-space) 5.338A  MOBILE  Mobile-satellite (Earth-to-space) | | |

**Reasons:** Because spectrum needs have been met and exceeded in other bands in the 37-52.6 GHz frequency range, and to protect EESS (passive) in the 50.2-50.4 GHz band and due to infeasibility of sharing between FSS user terminals and IMT, NOC is proposed for the 50.4-52.6 GHz frequency band.

NOC USA/4827A13/2

51.4-55.78 GHz

|  |  |  |
| --- | --- | --- |
| Allocation to services | | |
| Region 1 | Region 2 | Region 3 |
| 51.4-52.6 FIXED 5.338A  MOBILE  5.547 5.556 | | |
| 52.6-54.25 EARTH EXPLORATION-SATELLITE (passive)  SPACE RESEARCH (passive)  5.340 5.556 | | |
| 54.25-55.78 EARTH EXPLORATION-SATELLITE (passive)  INTER-SATELLITE 5.556A  SPACE RESEARCH (passive)  5.556B | | |

**Reasons:** Because spectrum needs have been met and exceeded in other bands in the 37-52.6 GHz frequency range, and to protect EESS (passive) in the 50.2-50.4 GHz band and due to infeasibility of sharing between FSS user terminals and IMT, NOC is proposed for the 50.4-52.6 GHz frequency band.