



OneWeb

WRC-23 activities
ITU-APT Foundation

Oct 21st 2021

We are building a truly global communications network in space that will deliver low latency, high-speed internet services that connect everywhere & everyone.

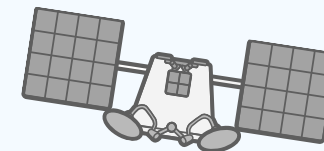


OneWeb at glance - A new story of global connectivity

Ownership



Satellites built by OneWeb Satellites



Launching satellites at regular cadence
358 satellites in orbit to date

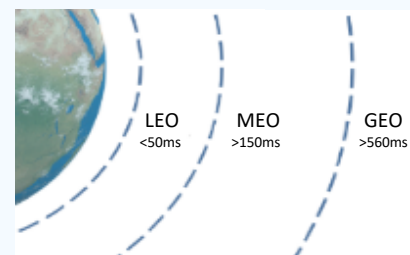


In the time of COVID
connectivity is critical
infrastructure

Building a satellite network to
deliver global broadband
communications



6 GHz
of Ku-band & Ka-band
spectrum



Lowest Latency
< 50 milliseconds

Space is a global, shared,
natural resource.
It is up to all of us to **protect it.**

Responsible Space

<https://responsible.space/>

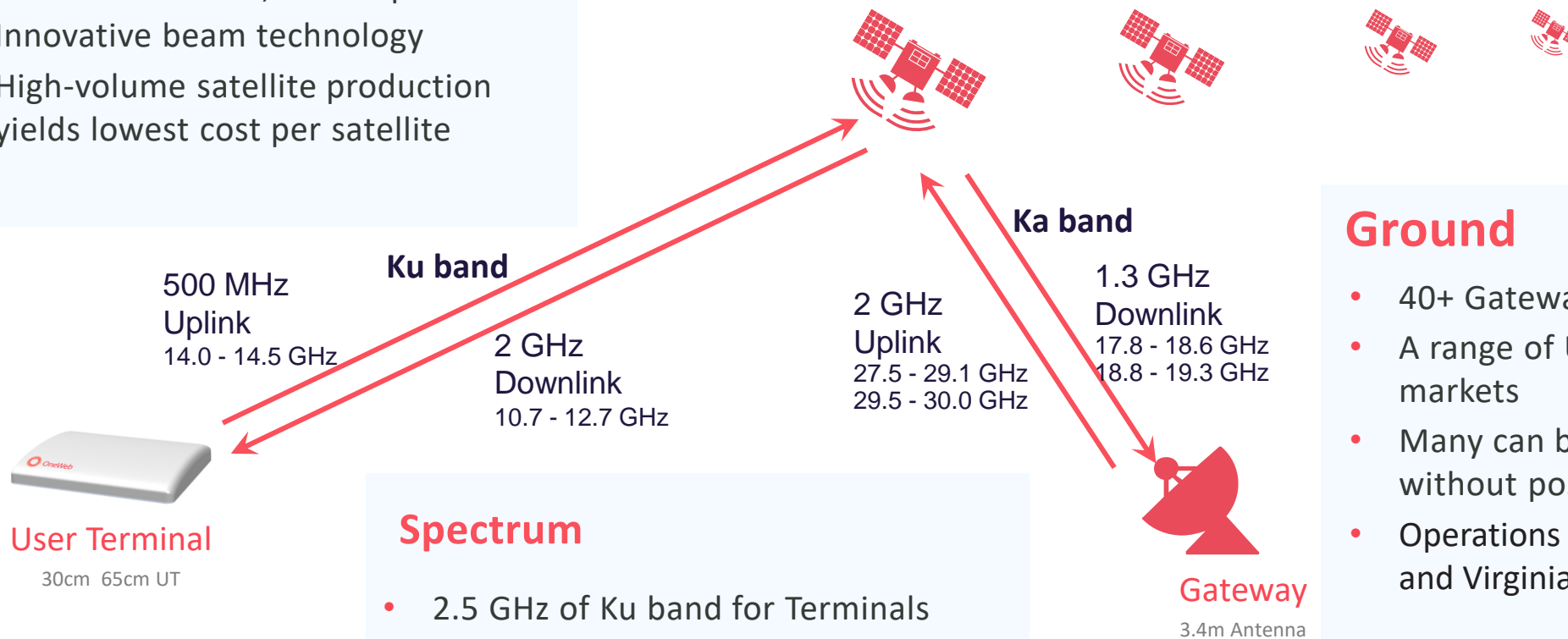
OneWeb is a leader in
Responsible Space

How it Works



Space

- 650 LEO satellites; orbital planes
- Innovative beam technology
- High-volume satellite production yields lowest cost per satellite



User Terminal
30cm 65cm UT

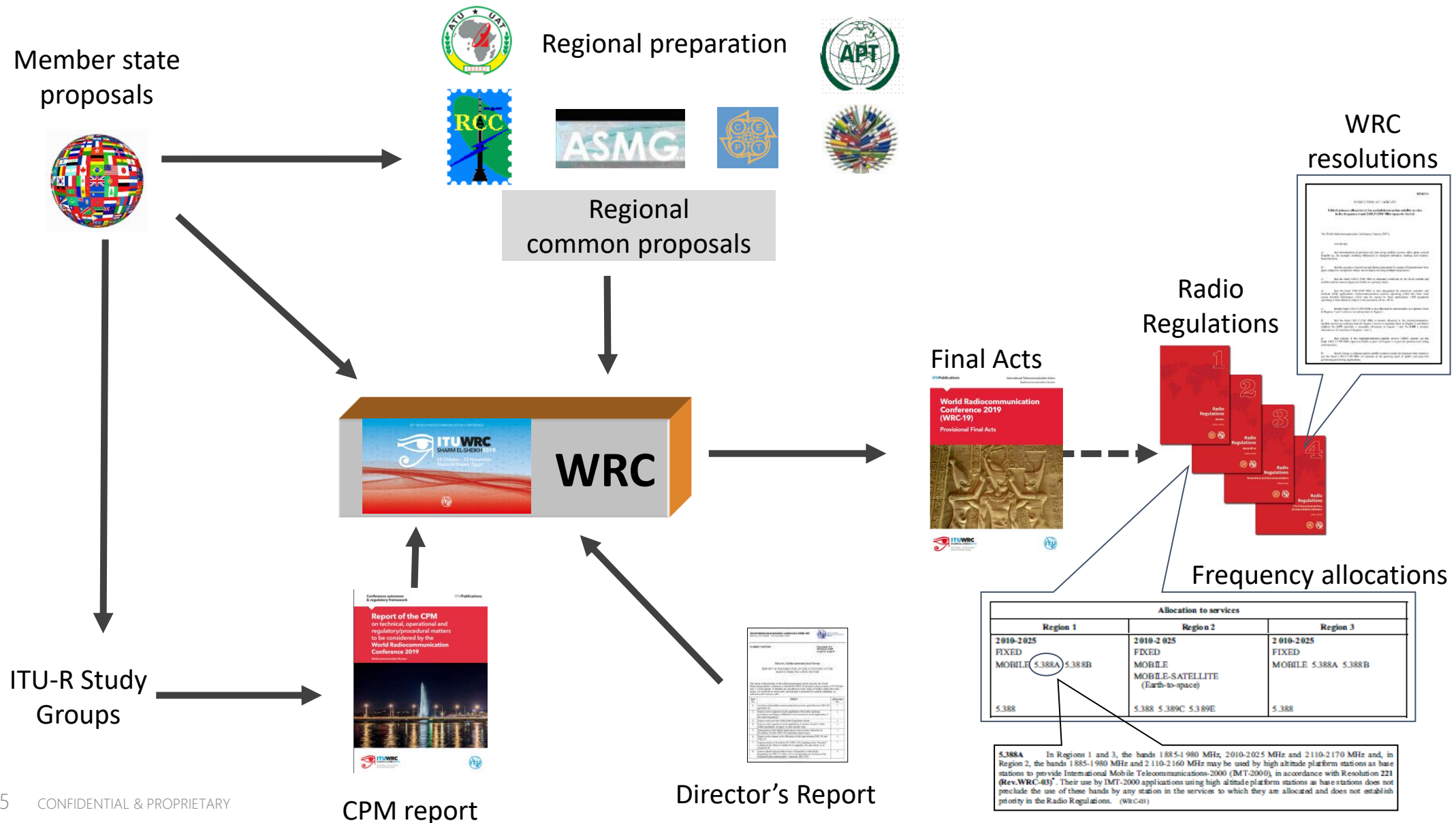
Spectrum

- 2.5 GHz of Ku band for Terminals
- 3.3 GHz of Ka band for Gateways

Ground

- 40+ Gateways across the globe
- A range of UTs to meet varying markets
- Many can be easily installed without position aiming
- Operations Centers in London and Virginia

WRC Process



Allocation to services		
Region 1	Region 2	Region 3
2 010-2 025 FIXED MOBILE 5.388A 5.388B	2 010-2 025 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space)	2 010-2 025 FIXED MOBILE 5.388A 5.388B
5.388	5.388 5.389C 5.389E	5.388

5.388A In Regions 1 and 3, the bands 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz and, in Region 2, the bands 1 885-1 980 MHz and 2 110-2 160 MHz may be used by high altitude platform stations as base stations to provide International Mobile Telecommunications-2000 (IMT-2000), in accordance with Resolution 221 (Rev.WRC-03). Their use by IMT-2000 applications using high altitude platform stations as base stations does not preclude the use of these bands by any station in the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-03)

Agenda Item 7

Improvements to satellite procedures – Res. 86 (WRC-07)

Agenda Item 7: *to consider possible changes, in response to Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference, on advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks, in accordance with Resolution 86 (Rev.WRC-07), in order to facilitate the rational, efficient and economical use of radio frequencies and any associated orbits, including the geostationary-satellite orbit.*

Background

This is a standing Agenda Item. The following items have been identified to study:

- A. Tolerances for certain orbital characteristics of NGSO space stations in the FSS, MSS and BSS (notified vs actual).
- B. NGSO post-milestone procedure.
- C. Protection of GSO networks in the MSS in 7/8 and 20/30 GHz from NGSO.
- D. Modifications to Appendix 1 to Annex 4 of Appendix 30B
- E. Improved procedures under RR Appendix 30B for new ITU Member States
- F. Excluding uplink service areas in AP30A (Regions 1& 3) and AP30B bands

General position

Improvements to international regulatory procedures enable efficiency for notifying administrations of satellite networks and systems to increase transparency and ease regulatory burden, administration would support studies on the above issues at this point of the WRC process

Topic A, Tolerances for Certain Orbital Characteristics of Non-GSO Space Stations in the FSS, BSS and MSS

Background

- WRC-19 invited the ITU-R to study “as a matter of urgency, tolerances for certain orbital characteristics of non-GSO space stations of the fixed-satellite, mobile-satellite or broadcasting satellite services to account for potential differences between the notified and deployed orbital characteristics for
 - i) the inclination of the orbital plane,
 - ii) the altitude of the apogee of the space station,
 - iii) the altitude of the perigee of the space station and
 - iv) the argument of the perigee of the orbital plane.”

APG23-2 Preliminary View

- APT Members support the ongoing activities that are carried out by ITU-R WP 4A regarding Topic A namely the development of the definition of tolerances of non-geostationary-satellite orbit (non-GSO) space stations in the FSS, BSS and MSS, as well as appropriate regulatory consequences for operations beyond the specified allowable tolerances.

Proposed India Preliminary View for APG23-3

- Non-GSO space stations tolerances should take account for potential differences between the notified and deployed orbital characteristics, including recognizing the need for some separation between orbital planes of a given NGSO system to minimize the possibility of collisions.

Topic B, Post-milestone reporting procedure for non-GSO systems

Background

- WRC-19 discussed at length and ultimately agreed on Resolution **35 (WRC-19)**, “A milestone-based approach for the implementation of frequency assignments to space stations in a non-geostationary-satellite system in specific frequency bands and services.”
- Resolves 19 of Resolution **35 (WRC-19)** requires administrations to inform the BR, for information purposes only, of the date when the number of capable satellites deployed falls below a specified threshold.
- This topic B is to study the possible development of a post-milestone procedure, to address the case where a non-GSO system has completed the milestone process and subsequently experiences a reduction in the number of satellites deployed, taking into account *resolves* 19 of Resolution **35 (WRC-19)**.

APG23-2 Preliminary View

- APT Members support the ongoing activities that are carried out by ITU-R WP 4A regarding Topic B namely the development of the post-milestone procedures for NGSO satellite systems in FSS, BSS and MSS.

Proposed India Preliminary View for APG23-3

- Post-milestone procedures for NGSO to be finalized by the WRC-23 should take into account resolves 19 of Resolution 35 (WRC-19)
- Necessary operational flexibility for the maintenance of the non-GSO system should be duly considered



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Global Connectivity Coming Soon

#OneWebOneWorld