



World Radiocommunication Conference 2015 (WRC-15)

Presentation to the FCC Open Meeting
December 17, 2015



World Radiocommunication Conferences

- Held every 3 to 4 years by the ITU; Next WRC is 2019
- Updates the Radio Regulations (treaty text)
 - International Table of Allocations
 - Notification Procedures
 - Administrative and Operational Procedures
- Adopts Resolutions
- Over 25 agenda items



WRC-15 Outcomes

- Region 2 (the Americas) made great strides in identifying spectrum for International Mobile Telecommunications (IMT).
 - The United States will have access to more than 619 MHz of spectrum, although we do not intend to use it all at this time.
- The U.S. achieved its goals on public protection and disaster relief, automotive radars, unmanned aircraft systems, and global flight tracking.
- Emerging trends from WRC-15:
 - Global allocations are increasingly challenging.
 - Identifying spectrum on a regional basis may be more realistic.
 - Incumbent services have a strong voice and show little flexibility in considering spectrum sharing mechanisms.



WRC-15 Agenda Item 1.1 Comparison

	Region 2 Americas	Region 3 Asia Pacific	Region 1 Europe/Middle East/Africa
--	----------------------	--------------------------	---------------------------------------

U H F 470- 698 MHz	228 MHz by Country Footnote Allocation (7 countries)	228 MHz by Country Footnote Allocation (8 Countries)	WRC-23 Agenda Item
---	--	--	---------------------------

C - B a n d 3.4-3.7 GHz	200 MHz Region-Wide +100 MHz Canada, Colombia, Costa Rica, U.S.	200 MHz by Country Footnote Allocation (12 countries)	200 MHz Region-Wide
--	--	---	----------------------------

L - B a n d 1427-1518 MHz	91 MHz Region-Wide	51 MHz Region-Wide	51 MHz Region-Wide 40 MHz by Country Footnote Allocation
--	---------------------------	---------------------------	---

3.3- 3.4 GHz	100 MHz (6 Countries)	100 MHz (6 Countries)	100 MHz (33 countries in Africa)
-------------------------	---------------------------------	---------------------------------	--



Additional Positive Outcomes

Public Protection and Disaster Relief (PPDR)

- WRC adopted a regulatory framework for PPDR applications that will pave the way for harmonization of spectrum in the 700-800 MHz range globally.

Automotive Radars

- WRC approved an allocation for short-range radars in the 78 GHz range. This will enable radars in automobiles to help avoid traffic accidents and save lives. Radars also have use in aviation, helping to prevent on-the-ground collisions between aircraft.

Global Flight Tracking

- WRC allocated spectrum to enable beyond line-of-sight transmissions to facilitate reporting the position of aircraft anywhere in the world.

Unmanned Aircraft Systems (UAS)

- WRC approved the use of select fixed satellite service links for command and control of long-range UAS.

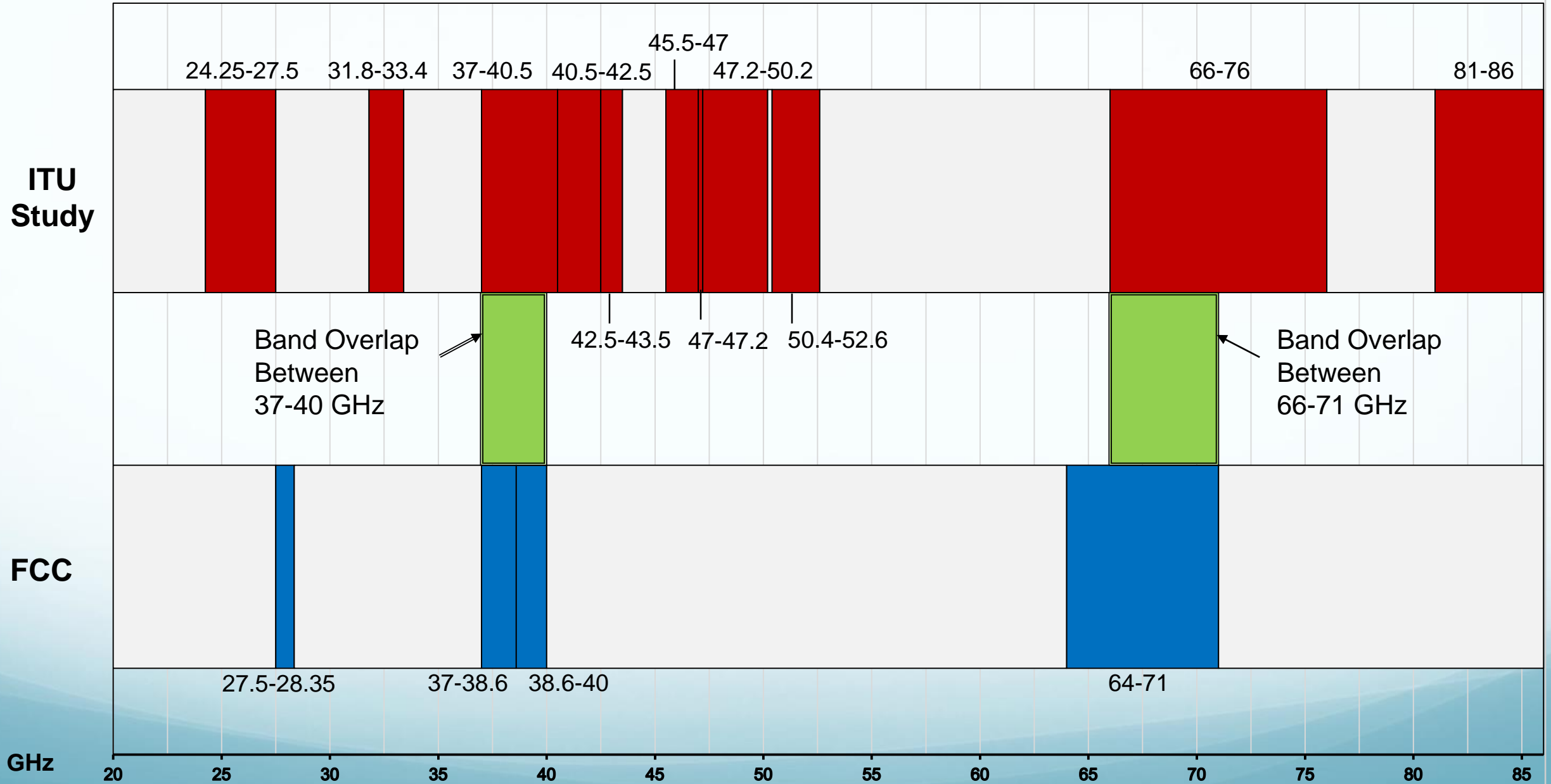


Looking Ahead to WRC-19

5G Above 6 GHz

- WRC-19 Agenda Item calls for studying additional bands above 6 GHz for expanded mobile broadband capacity.
- The 11 candidate ranges identified by the WRC have some overlap with the FCC's Spectrum Frontiers bands:
 - 37-40 GHz
 - 66-71 GHz
- The 28 GHz band was not identified for study at the ITU.
 - Countries can move forward without the ITU because the band has a global primary mobile allocation.
 - 8 countries joined with U.S. in stating that they would pursue studies in the 28 GHz band.

5G Above 6 GHz: ITU 5G Study Bands v. FCC Spectrum Frontiers Bands





Looking Ahead to WRC-19

Other Issues

- **Radio Local Area Network (RLANS):** WRC-19 will consider studies related to RLANS (WiFi networks) within the 5 GHz band.
 - Includes 120 MHz the U.S. identified as a priority, and additional 400 MHz.
- **High Altitude Platform Systems (HAPS):** WRC-19 will consider spectrum allocations for HAPS, which will enable lower-cost delivery of bandwidth for developing economies and remote areas around the globe.
- **Global Aeronautical Distress and Safety System (GADSS):** As a follow-up to WRC-15 work on Global Flight Tracking, WRC-19 will comprehensively explore further technological and regulatory needs for flight tracking and management.
- **Additional Spectrum for Fixed Satellite Service (FSS):** WRC-19 will study bands for possible allocation to FSS.



FCC WRC Team

Mindel De La Torre

Bob Nelson

Julie Knapp

Kathy O'Brien

Donna Christianson

Larry Olson

Chip Fleming

Sankar Persaud

Carlos Flores

Alex Roytblat

Dante Ibarra

Allen Yang

Michael Mullinix

With special thanks to Chairman Wheeler, Diane Cornell,
Commissioner O'Rielly and Erin McGrath