Spectrum Policy Overview

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Agenda

- Spectrum
  - Technology Neutrality
  - Spectrum Bands of Interest
  - Band Plan Considerations

Broadband Spectrum Policy

- Technology Neutrality:
  - Flexibility in regulations to encourage technology growth and adoption

- Flexibility: to allow licensee to choose any appropriate broadband wireless technology
  - Technology, service type
  - Channel arrangements: duplexing, size, modulation
  - Large block aggregates
  - Support secondary markets (spectrum trading, spectrum sharing)

Global Recognition of Technology Neutrality

Benefits of Technology Neutrality

- Enables market forces to drive best solutions to benefit of citizens
  - Removes impediments to technology growth and innovation
- Example:
  - Wi-Fi technology (IEEE 802.11g) was impeded in many countries due to specific modulation conditions placed in regulations (DSSS and FHSS only)
  - This had to be changed to digital modulation to allow OFDM technologies on the market

Spectrum Bands

Bands of interest for mobile broadband

- Existing "3G" and "4G" bands (e.g. 2.3-2.4 GHz, 2.5-2.69 GHz)
- 5G:
  - Low band (600/700 MHz),
  - Mid Band (3.3-4.2 GHz, 4.4-5 GHz)
  - High Band (24.25-29.5 GHz, 37-43.5 GHz)
- RLANs use license-exempt spectrum (NIB)
  - 2.4 GHz and 5 GHz
  - 6 GHz: 5.95 – 7.125 GHz
  - 57-71 GHz

Important considerations for designing a band plan

Banding Considerations

- Adequate amount of spectrum for broadband
  - 400 MHz channels for 5G high bands
- Spectrum efficiency
- Number of operators, applications
- Minimal technical rules - Band edge mask, limit at geo boundary
- Operator coordination instead of potential Guard bands

Summary

- Technology neutrality
- Adequate spectrum for licensed and unlicensed uses
- Band plans
  - Modulation and duplexing flexibility
  - Channel flexibility
  - Block edge mask
  - Limits defined at geo border
  - Network coordination amongst operators


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