



**Docket No. 04-151
3650-3700 MHz**

**Presentation to
the FCC**

August 1, 2006

Overview



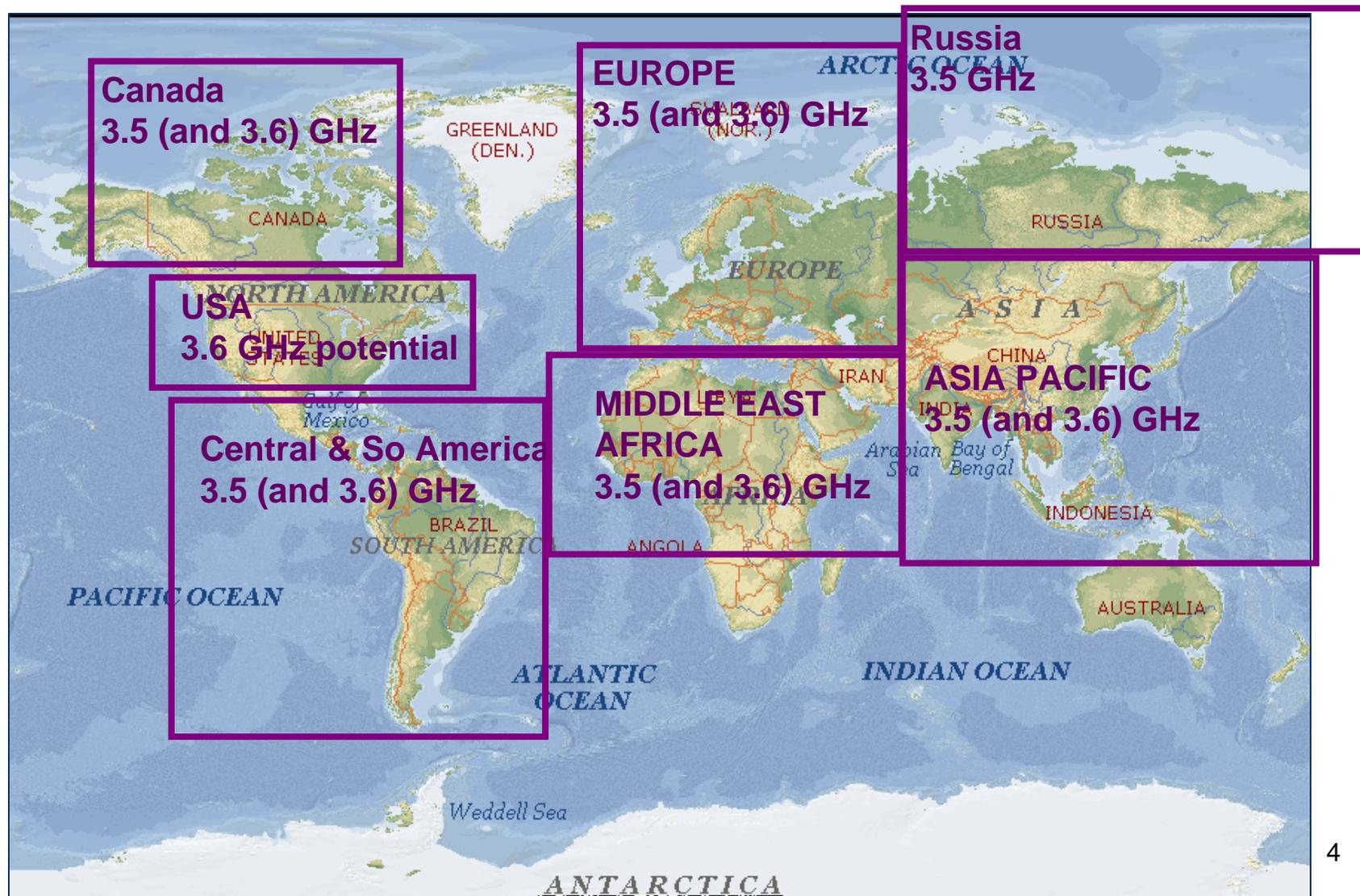
- 3650-3700 MHz band offers significant promise but rules must be revisited
- Emerging broadband applications such as VoIP and video streaming demand QoS that current licensing/interference protection regime cannot satisfy
- Adopt a new licensing regime
 - Establish two 25 MHz blocks
 - Block A: auction licenses on a MSA/RSA basis;
 - Block B: auction MSA licenses; in RSAs, retain non-exclusive licensing (absent the contention-based protocol requirement)
- Modify the satellite interference protection regime
 - Revise OOB limits to address C-band satellite claims
 - Improve coordination around grandfathered earth stations

The 3650-3700 MHz Band: Significant Promise for Broadband Deployment



- Strong record of support for US broadband deployment in this band
- Significant 3.6 GHz broadband deployment internationally
 - One of the few internationally harmonized bands for wireless broadband
- Global equipment market already exists
 - Off-the-shelf equipment
 - Cost savings to US consumers

3.5 (and 3.6) GHz: Globally Harmonized



Contention-Based Protocol: Disincentive to Investment, Tragedy of the Commons



- A single common protocol does not exist for multiple systems using different technologies to share the band without interference
 - Will delay service if single protocol must be developed
 - Will increase costs to develop US-only equipment since no other administration imposes a single protocol
- Even if multiple protocols are permitted, multiple technologies such as IEEE 802.11, 802.16, and 802.20 use different approaches to coexistence of multiple users; these different approaches are not compatible and will not prevent interference among systems
- No matter the protocol(s), non-exclusive licensing and unlimited users prevent service providers from offering QoS to compete in broadband market

QoS: Increasingly Necessary to Compete in the Broadband Market



- Evolving applications like VoIP and full motion video streaming require high bandwidth and/or low latency
- Many commenters including some WISPs identify the importance of broadband QoS
- The record in Docket No. 04-151 evidences that shared spectrum results in tragedy of the commons in congested areas
- Current non-exclusive licensing/interference regime does not assure required QoS

WCA's Licensing Proposal: Enabling QoS and Guaranteed Rural WISP Access



- The Plan
 - Create two 25 MHz blocks licensed on an MSA/RSA basis
 - Block A: auction licenses on a MSA/RSA basis
 - Block B: auction MSA licenses; in RSAs, retain non-exclusive licensing (absent the contention-based protocol requirement)
 - For spectrum to be auctioned, apply DE bidding credit rules and prohibit package bidding

WCA's Licensing Proposal: Enabling QoS and Guaranteed Rural WISP Access (cont'd)



- The Benefits
 - Urban: addresses QoS and interference protection in congested markets by exclusive-use licensing
 - Rural: provides rural customers with same opportunity for high-level QoS; allows providers in rural areas to choose whether QoS or free access to spectrum is a higher priority
 - Small Entities: ensures opportunities to access spectrum – exclusive-use spectrum is available in 734 geographic regions in over 1,000 licenses; DE bidding credits; no package bidding; and non-exclusive access in RSA markets

Satellite Issues: Revised OOB Limits Can Address Reasonable C-Band Claims



- SIA claims OOB levels must be reduced to $71.25 + 10\log(P)$ dB to protect adjacent C-band (3700-4200 MHz) receive terminals
- WCA Task Group concluded SIA proposal would foreclose broadband deployment and identified a reasonable, achievable solution instead
- FCC should apply the ETSI standard for all equipment (base station or subscriber) in the 3650-3700 MHz band:
 - $43+10\log P$ from 0 to 15 MHz above the 3700 MHz band edge
 - $60+10\log P$ from 15 to 70 MHz above the 3700 MHz band edge
 - $70+10\log P$ beyond 70 MHz above the 3700 MHz band edge
- Measurement procedure should track BRS/EBS and PCS rules for the first 1 MHz outside the band
- The LNB saturation claim should be rejected – interference potential is low due to characteristics of use, physical separation, and blockage

Satellite Issues: Modify 3650-3700 MHz 150 km FSS Exclusion Zone



- Grandfathered Extended C-Band FSS earth stations warrant interference protection
- The FCC should adopt Part 101 coordination procedures for new FS operators (fixed point-to-point operations such as backhaul)
 - Proven track record of coordination for fixed microwave paths and earth stations in the 3.7-4.2 GHz and 10.7-11.7 GHz bands.