

Operation of Wireless Broadband Services in the Band 3550-3650MHz identified under the NTIA Fast-Track Evaluation

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Introduction

- ▶ The NTIA and FCC have proposed making additional spectrum available for Wireless Broadband Services in the 3.5GHz Band
- ▶ Motorola supports those proposals
- ▶ We believe there is an opportunity to leverage existing rules, licensing approach and equipment eco-system to quickly put the 3550 – 3650 MHz spectrum to productive use providing wireless broadband
 - Extending the rules (restricted contention) for 3.65GHz down to the band 3.55-3.65GHz to support broadband access
- ▶ We believe this approach has both business and public interest benefits



Rationale

- ▣ There is a clear need for additional spectrum for access
- ▣ 100MHz is a reasonable Bandwidth to allow for a workable systems
 - Supports multiple users in an area
- ▣ NTIA has identified a need for exclusion zones in its analysis
 - The concept of exclusion zones is accepted in the rules and procedures for the 3.65GHz band
 - The power levels proposed by Motorola (and WISPA) minimise the size of the exclusion zones



What's Important?

- ▶ Avoiding harmful interference to Incumbent users of the band (radar systems) should be the major consideration
 - Original NTIA analysis looked at Mobile BS type EIRP levels (up to 61dBm) but the Mobile operators have no plans for this band
 - The EIRP limits in the 3.65GHz rules (1W/MHz, or 43dBm) would limit the interference to incumbent systems
 - This limits the size of exclusions zones that would be required to protect radars
- ▶ Protection of Broadband Systems is secondary issue
 - On channel interference to these systems from the very low duty cycle radars (0.1% or less with narrow Beamwidth rotating antennas) is not likely to be a significant problem
 - Equipment can be made to sense whole band and select the channels with least interference



Radar Parameters

▶ Fixed Ground Installations

- Only operate up to 3500MHz – clear 50MHz guard band exists
- NTIA proposed very small exclusion zones (similar to current 3.65GHz band) required to protect radar from off-channel emissions
- Need to confirm exclusion zones with lower BB EIRP

▶ Airborne Operation

- Only operate up to 3500MHz – clear 50MHz guard band exists
- NTIA concluded exclusion zones not needed to protect airborne radars as operation limited by self interference issues

▶ Shipborne radars

- No guard band, but
- Concentrating on protection of incumbents, the lower EIRP from Broadband Systems means smaller exclusion zones than expected by NTIA (down to 73km) can be used depending on margin required



Business and Economic Issues

- ▶ There is already good take-up of 3.65GHz band licenses (over 1600 to date)
 - Demand from WISPs and other industrial users exists for medium power spectrum providing long reach and/or high data rates
- ▶ Currently more than 20 suppliers ship equipment that is ready or easily modified for use in the expanded spectrum
 - 100 MHz of spectrum can quickly be put to use
 - Expanding access to broadband especially in rural areas
- ▶ Existing rules and procedures from 3.65GHz can be applied relatively easily to the new 100MHz band



Summary

- ▶ The best and most productive use of the 3550 – 3650 MHz spectrum for broadband would be to make it available under the existing 3.65 GHz band rules and licensing approach
- ▶ This approach
 - promotes the public and business interests and
 - has the technical advantage of reducing the risk of interference to incumbent users of the band

