

November 16, 2007

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 Twelfth Street, NW  
Washington, DC 20554

Re: *Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band - IB Docket No. 95-91, GEN Docket No. 90-357, RM-8610*

NOTICE OF ORAL EX PARTE PRESENTATION

Dear Ms. Dortch:

I am writing pursuant to Section 1.1206(b)(2) of the Commission's Rules to notify the Commission that yesterday, Guy Parrinello and Jennifer McCarthy of NextWave Broadband, Inc., Ron Olexa of Horizon Wi-Com, LLC, Brian Benison of AT&T Inc., David Don of Comcast Corporation, Mary O'Connor of Wilkinson Barker Knauer and I met with Angela Giancarlo of Commissioner McDowell's office to discuss the rules proposed by the WCS Coalition to govern the operation of satellite Digital Audio Radio Service terrestrial repeaters and Wireless Communications Service systems in the 2305-2360 MHz band. During the course of that discussion, we reviewed the information set forth in the attached document.

Should you have any questions regarding this presentation, please contact the undersigned.

Respectfully submitted,

/s/ Paul J. Sinderbrand

Paul J. Sinderbrand

Counsel to the WCS Coalition

Attachment

cc: Angela Giancarlo

WCS Coalition Proposal for  
Amending Parts 25 and 27 to  
Promote WCS and DARS  
Coexistence

November 15, 2007

# Areas of Agreement

- We agree with Sirius that it (as well as WCS) must be “willing to accept a level of interference that could significantly compromise” service.
- We agree with DARS that coexistence of WCS and DARS terrestrial repeaters is best promoted by rules that impose “equal and mutual obligations upon both services.”
- We agree with DARS that the modifications to Part 25 and to Part 27 necessary to facilitate the coexistence of the two services “be concluded simultaneously.”

# WCS Base Station Power Compromise

- WCS is proposing a compromise limit on transmit power for WCS base stations and DARS repeaters of 2,000 Watts Average EIRP and 400 Watts Average EIRP per 1 MHz.
  - at least 6 dB more than WCS had previously advocated.
  - WCS supports a 13 dB maximum peak-to-average power ratio (DARS currently operates with 6-7 dB PAR).
  - Current repeater STA power levels will cause devastating interference to WCS. Adoption of WCS proposal reduces (but does not totally eliminate) overload problem by equalizing power levels among all licensees.

# WCS User Station Proposal

- Under WCS Coalition proposal, all user stations will be limited to 20 watts average EIRP
  - Current rules allow non-mobile user stations up to 2000 watts peak EIRP.
- As a practical matter, handheld mobiles are limited by OET Bulletin 65 RF exposure rules.

# DARS Transmit Power Proposal Is Flawed

- DARS proposal to limit WCS “average power level” to -44 dBm measured 2 meters AGL is unworkable for WCS.
  - DARS operates one-way broadcast systems with antennas mounted relatively high above ground, usually with no downtilt.
  - WCS WiMAX systems require base stations relatively low to ground and with significant downtilt to facilitate spectrum reuse and assure ubiquitous coverage.
  - WiMAX subscriber equipment will be located in close proximity to the ground. WiMAX subscriber equipment must transmit reasonable power levels (in the range of several hundred milliwatts) to ensure two-way communication with a base station.
    - DARS proposal would restrict WCS subscriber equipment’s transmit power to about *0.4 milliwatts*, at best (assuming a 0 dBi antenna and 5 MHz measurement bandwidth).
  - Measuring at 2 meters AGL ignores that sensitive WCS base station receivers are located much higher.

# Current WCS OOB Limits Are Excessive

- Current limits were adopted in a vacuum and were based on “worst cases” assumptions because WCS or DARS terrestrial technologies had not been identified.
- WCS accepts Sirius’ proposed  $75 + 10 \log (P)$  mask for DARS transmitters and WCS base stations.
- Current WCS OOB limits on mobile devices are unnecessarily strict, and are so much more restrictive than those adopted for other services and in other countries that retention will deprive Americans of the full benefits of WiMAX economies of scale and scope.
  - For a 2 watt EIRP mobile WCS transmitter, the current  $110 + 10 \log P$  mask exceeds that which is required to protect a DARS receiver by a margin of 50 dB.

# WCS Coalition OOB E Proposal

- For fixed stations transmitting at less than 2 watts average transmitter output power, and for mobile stations transmitting at less than 2 watts average EIRP, restrict OOB E by  $55 + 10 \log (P)$  on first 4 MHz of DARS band, by  $61 + 10 \log (P)$  on next 4 MHz of DARS band, and by  $67 + 10 \log (P)$  in center 9 MHz of DARS band.
- Reduced mask only available if device incorporates transmitter power control.

# Testing Establishes That DARS Overstates Interference Risk

- WiMAX Navini LMX Test Fixture capable of maintaining a fixed, continuous transmit power and center frequency with an  $80+10 \log (P)$  emissions mask.
- Results show that no muting could be induced in DARS overlapping terrestrial-repeater/satellite coverage at 250 mW and 100 mW even when there was less than 2 feet of separation between the DARS antenna and WCS WiMAX CPE.
- In DARS satellite-only coverage muting was induced at 250mW at distances of 4 to 13 ft and at 100mW at distances of 2 to 10 feet.
- Odds against operations in close proximity, transmitter power control, multiple DARS diversity paths, DARS long-duration interleavers and polarization mismatch also must be considered.

# High-Powered Repeaters Should Not Be Grandfathered

- DARS should be required to conform terrestrial operations no later than one year of adoption of new rules.
- STAs were specifically subject to compliance with new rules.
- Failure to conform means interference to WCS as consumer broadband services are deployed.

# Next Steps

- Issue NPRM soliciting comment on all open issues.
- Significant steps can be taken more quickly by private agreement.
  - DARS can start bringing its repeater power levels down now.
  - Under Section 27.53(a)(10), DARS can agree to accept OOB from WCS that exceed rules, but comport with WCS proposal.