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May 11, 2010

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

Re: *Amendment of Part 27 of the Commission's Rules to Govern the Operation of Wireless Communications Services in the 2.3 GHz Band (WT Docket No. 07-293)* -- WRITTEN EX PARTE PRESENTATION

Dear Ms. Dortch:

I am writing on behalf of the WCS Coalition to respond to a staff inquiry regarding the WCS Coalition's belief that, if the Commission adopts the technical proposals advanced in the staff's April 2, 2010 *Public Notice*,[1] compliant 2.3 GHz Wireless Communications Service ("WCS") equipment could start to become available for the domestic market within approximately twelve-to-eighteen months, with shipments in volume possible several months thereafter.

Attached hereto is a summary of the general hurdles that will have to be overcome before 2.3 GHz WCS equipment can become available for the domestic market. As this summary illustrates, there are a number of variables that will impact the timing of equipment availability, some which are manufacturer-specific and some which are out of the control of the individual manufacturer. The attachment makes reasonably optimistic assessments of the timing of each item, and attempts to identify linkages between various elements of the timeline.

Pursuant to Sections 1.1206(b)(1) and 1.49(f) of the Commission's Rules, this letter is being filed electronically with the Commission via the Electronic Comment Filing System.

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[1] *See* Commission Staff Requests That Interested Parties Supplement The Record On Draft Interference Rules For Wireless Communications Service And Satellite Digital Audio Radio Service, *Public Notice*, DA 10-592 (rel. Apr. 2, 2010) ("*Public Notice*").

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

Respectfully submitted,

/s/ Paul J. Sinderbrand

Paul J. Sinderbrand

Counsel to the WCS Coalition

Attachment

cc: Richard Arsenault

TIMELINE TO 2.3 GHz EQUIPMENT AVAILABILITY

(Assuming Adoption of FCC Staff Proposals)

1. **Completion of the Standards Process (2 – 6 months)**
   - WiMAX 802.16e profiles do not yet exist that are consistent with either the new RF restrictions to be imposed on the WCS band or the availability of only 2.5 MHz in the C and D Blocks. One or more profiles will have to be developed and adopted by the WiMAX Forum.
   - The TD-LTE standard is not yet finalized, and will have to be modified to provide a class that is consistent with new RF restrictions to be imposed on the WCS band, the availability of only 2.5 MHz in the C and D Blocks, and the adoption of a duty cycle requirement that is inconsistent with current TD-LTE duty cycles. Given that TD-LTE standards work is somewhat behind that for WiMAX, the process of securing an appropriate TD-LTE class for WCS may take longer.
2. **Base Station Equipment Modifications (3 – 9 months, following #1)**
   - New base station equipment firmware will be required to support WiMAX the WCS band. This will be an extensive effort given the lack of any material work to date on a 2.5 MHz profile.
   - New base station filters will be required to meet emissions specifications for the SDARS segment. Vendors should be able to utilize a discrete (cavity) filter that can be designed to fit into the same space within the transmitter where the current filter is placed. However, if that is not possible, more extensive transmitter redesign work may be required.
3. **Fixed/Portable Device Modifications (2 – 3 months, following #1 and in sequence with #2)**
   - Existing outdoor and desktop CPE would require a new firmware load. Current A and B Block equipment would likely meet the new RF emissions standards, but revised equipment designs with better filters will be required to allow C and D Block operations at maximum authorized power.
4. **Mobile Device Modifications (6 – 12 months, following #1 and in sequence with #2)**
   - Chipset vendors will be required to develop a new RF chipset and baseband chipset. This process includes design, sample chipset fabrication, software development, chipset testing, etc. It will be iterative, meaning that the first design that is fabricated and tested likely will not yield desired results so 1-2 additional designs could be required.
   - Optimization of the RF and WiMAX baseband chipset will be required to meet the new OOBE standards. Vendors will likely need to implement new peak-to-average power reduction and power amplifier linearization technologies to achieve the new maximum OOBE levels.

- A new filter (likely utilizing BAW technology) will be needed. This will be a two stage (bandpass and notch) filter that will require significant time to develop.
- A new transmit amplifier may be required, depending on the current design of the mobile.
- A new modem board layout and design will be required to accommodate the chipset and filter. The power consumption of the board will need to be tested to ensure that the existing device design can properly dissipate any additional heat losses that the board generates.
- The modem board will have to meet the specifications of current devices, since it is unlikely that a manufacturer would design and fabricate new devices solely for the WCS band. This is likely to require a number of iterations before it is perfected.

5. **Network (2 – 3 months, following #1 and #2, in sequence with #3 and #4)**
   - Vendors will need to make changes to their NOC/OSS/BSS software platforms, the extent of which will depend on how much is changed in the base stations and mobile devices. New 2.5 MHz profiles will be need new software for configuration management, performance management, etc.
6. **Certification (2 – 3 months, following #1 - #5)**
   - FCC, UL, and standards body equipment certifications will be required.
7. **Vendor Field Test (1 – 2 months, following #1 - #5, in sequence with #6)**
   - New base stations and devices will be field tested by vendors before they are rolled out at scale to system operators.