

July 18, 2008

**VIA ELECTRONIC FILING**

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

**Re: Ex Parte Notice  
WT Docket No. 07-195**

Dear Ms Dortch:

On July 17, 2008, Thomas Sugrue, Kathleen O'Brien Ham, Cole Brodman, and Mark McDiarmid of T-Mobile USA ("T-Mobile"), Thomas Dombrowsky (Engineering Consultant) of Wiley Rein LLP, and the undersigned met with the following Commission personnel to discuss the above-captioned docket: Commissioner Jonathan Adelstein and Renée Crittendon, legal advisor to Commissioner Adelstein; Commissioner Robert McDowell and Angela Giancarlo, chief of staff and senior legal advisor to Commissioner McDowell; Commissioner Deborah Taylor Tate and Wayne Leighton, special advisor to Commissioner Tate; Aaron Goldberger, legal advisor to Chairman Kevin Martin; Bruce Gottlieb, legal advisor to Commissioner Michael Copps; Julius Knapp, Bruce Romano, Ira Keltz, Patrick Forster, Geraldine Matise, and Ahmed Lahjouji of the Office of Engineering and Technology; and James Schlichting and Martin Liebman of the Wireless Telecommunications Bureau.

The specific issues discussed during the meetings are reflected in the attached written presentation, which was provided to the Commission participants in the meetings. The written presentation was also provided to Chairman Martin.

Pursuant to section 1.1206(b) of the Commission's rules, an electronic copy of this letter and attachment is being filed electronically with the Office of the Secretary for inclusion in the above-referenced docket and served electronically on the Commission participants in the meetings and to Chairman Martin.

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

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Please direct any questions regarding this filing to the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read "Howard J. Symons", with a long horizontal flourish extending to the right.

Howard J. Symons

Attachment

cc: Hon. Kevin Martin  
Hon. Jonathan Adelstein  
Hon. Robert McDowell  
Hon. Deborah Taylor Tate  
Aaron Goldberger  
Renée Crittendon  
Bruce Gottlieb  
Angela Giancarlo  
Wayne Leighton  
Julius Knapp  
Bruce Romano  
Ira Keltz  
Patrick Forster  
Ahmed Lahjouji  
Geraldine Matise  
James Schlichting  
Martin Liebman

# AWS-3 FCC Meetings

**Cole Brodman**  
**Chief Technology and Innovation Officer**

July 17, 2008

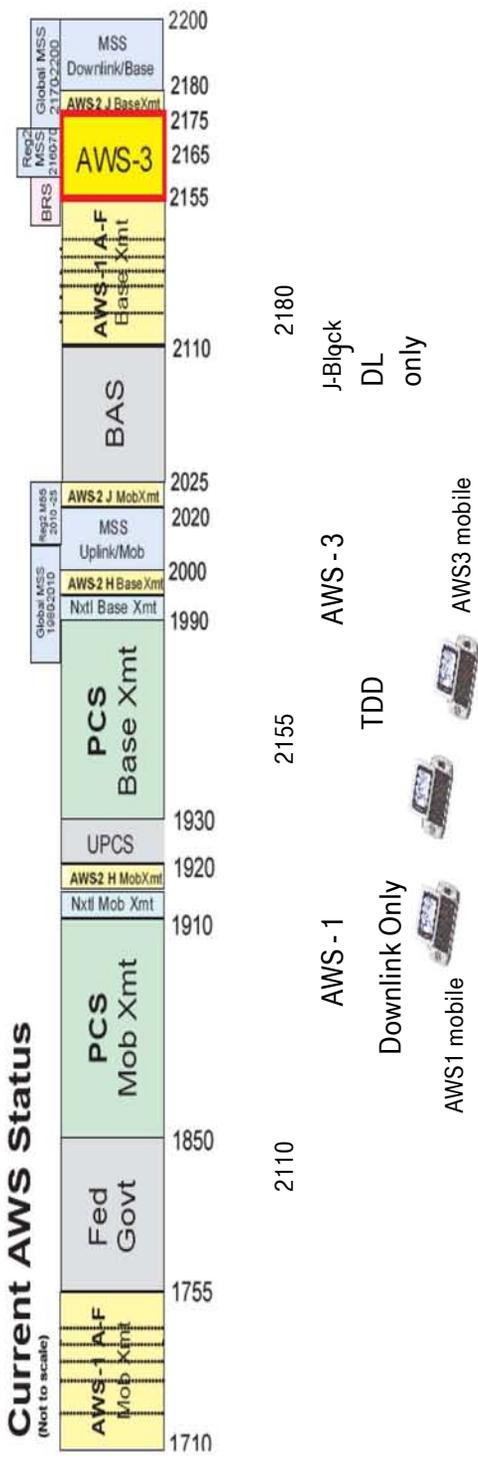
# AWS-3 Issues - Summary

- T-Mobile Is Making Wireless Broadband a Reality
- AWS-3 TDD Mobile Transmissions Will Cause Interference to AWS-1 Operations
- AWS-1 Licensees Must Be Protected from Harmful Interference
  - Vital to Choice and Competition
  - Proponents Have Not “Conclusively Demonstrated” Lack of Interference
- Handset “Filters” Do Not Cause or Cure Interference
- M2Z’s Proposed Mitigation Measures Will Not Work
- M2Z’s Business Plan Should Not Be Adopted
- FCC Should Defer Action on AWS-3, Undertake Testing, and Develop Appropriate Interference Protection Measures

# T-Mobile is Making Wireless Broadband a Reality

- T-Mobile bid nearly \$4.2 billion for AWS licenses in auctions in 2006 (including around \$1.14 billion for E Block and \$1.4 billion for F Block licenses).
- T-Mobile has already invested about \$2 billion to build out its 3G network so far in 2008.
- T-Mobile has already launched high speed wireless service in New York City and will deploy in 25 more markets in 2008.
- T-Mobile's wireless broadband service will have potential data transmission capabilities of greater than 3 Mbps – truly high-speed broadband comparable to cable and landline telephone company offerings.
- T-Mobile has placed about one million AWS-ready handsets either into customer hands or the supply chain. Other handsets, including an Android Open Handset Alliance device, are well into the development phase.

# AWS-3 Mobile Interference to AWS-1 Operations



- Testing shows that AWS-3 mobile TDD transmissions will cause interference to AWS-1 operations.
- Using the Boeing lab facilities, T-Mobile engineers have conducted empirical tests. Preliminary results confirm harmful interference to AWS-1 mobiles. T-Mobile will submit final test results to the FCC.
- Interference will be significant, frequent and not limited to marginal situations.
- Proponents of AWS-3 plan have *never* conducted empirical tests.
- Ideally, the FCC should adopt an objective set of test parameters after consulting with interested parties and provide sufficient time for comprehensive independent testing.

# AWS-1 Licensees Must Be Protected

- FCC's Proposed AWS-3 Plan Will Cause Harmful Interference to T-Mobile's Wireless Broadband Service.
  - Mobile transmissions in the AWS-3 band will lead to serious degradation in the adjacent AWS-1 band, where T-Mobile is already building out broadband wireless networks after having spent billions of dollars on spectrum infrastructure.
  - Degradation of T-Mobile's wireless broadband service with its reductions in transmission capacity, coverage and service availability under the proposed AWS-3 rules threatens competition and choice.
- AWS-1 Licensees Were Never Put On Notice of Potential Interference from TDD in AWS-3.
  - Contrary to M2Z's claims, it was the proponents of TDD operations in the AWS-3 band who were put on notice that before such use would be permitted they must "conclusively demonstrate that portions of this spectrum could be used for [TDD] transmissions without causing interference to ... other licensees." *AWS-1 Service Rules Order*, 18 FCC Rcd. 25162 ¶ 46 (2003).
  - No such demonstration has been provided.

# Handset “Filters” Do Not Cause or Cure Interference

- Currently deployed AWS handsets use FCC-approved filters that are used in handsets worldwide in this band.
- While manufacturers could develop specialized filters that could screen out AWS-3 frequencies (which are part of the AWS-1 band in other countries), that would not prevent harmful interference absent a large guard band and significant restrictions on AWS-3 power levels and out-of-band emissions.
  - Even with a 2110-2155 MHz filter, the mobile transmission power must be limited (between -7 and -11 dBm if AWS-3 mobile operations are permitted directly adjacent to AWS-1 mobile receivers).
- The laboratory tests being conducted by T-Mobile engineers verify that filters alone will not solve the interference problems created by mobile operations in the AWS-3 band.

## Proposed Mitigation Measures Will Not Work

- M2Z has discussed several potential mitigation measures, but none of them are effective at resolving mobile-to-mobile interference:
  - Base Station Siting - Mobile interference is nomadic and occurs in many different locations at different times; no specific siting can mitigate the interference.
  - Antenna Polarization - Antenna polarization is random and variable, making it impossible to obtain any effective interference isolation from changing antenna polarization in the handset.
  - Adaptive Antennas - Physical size of handsets limits the number of antennas and separations that can be used.
  - Transmitter/Receiver Improvements - Even with state-of-the-art receive filtering, significant interference requiring large exclusion zones (radius of up to 65 meters) could occur from AWS-3 mobile transmitters to AWS-1 mobile receivers.

## Proposed Mitigation Measures Will Not Work (continued)

- Power Control - High data transmission rates make it impossible to reduce the transmit power of interferers while simultaneously increasing the transmit power to desired mobiles for advanced services.
- Mobile Handover to Additional Spectrum - Not possible to predict beforehand when and where mobile-to-mobile interference will occur, and nearly impossible for the network to communicate with a mobile upon the onset of debilitating interference to command it to handover to additional spectrum.
- Intersystem Frequency Coordination - Random nature of interference could take large band segments out of service.
- Cognitive Radio Technology for Interference Control - Not available and not practical for the extremely dynamic nature of mobile-to-mobile interference.

## M2Z's Business Plan Should Not Be Adopted

- FCC properly rejected M2Z's proposal just last year. The Commission found that M2Z's proposal would actually "prevent, rather than facilitate, widespread broadband deployment" and therefore determined that it was not in the public interest.
- Will likely reduce the number of potential bidders and the revenue received from any AWS-3 auction, which is in contravention of statutory objectives to "promote efficient and intensive use of the electromagnetic spectrum," "recover[] for the public of a portion of the value of the public spectrum resource made available for commercial use," and "avoid[] unjust enrichment through the methods employed to award uses of that resource."
- Proposed rules would be an abrupt and unexplained departure from the "minimal regulatory environment" established by the *2007 Wireless Broadband Ruling*.
- Could negatively affect AWS-1 customers' ability to use their phones internationally and preclude international customers from using their phones in the U.S.
- "Free" service proposal is dubious, inefficient, unnecessary and technologically unsound.
- There are other valuable uses for the AWS-3 band that parties, including T-Mobile, would be interested in pursuing.

## The FCC Should Defer Action on AWS-3

- The FCC should give applicants the flexibility to design their own service plans, rather than imposing one.
- The FCC should oversee laboratory tests on interference issues either on its own or through an independent third party.
- The FCC should do what it always does and what it is supposed to do – protect existing licensees, especially those who are already offering service, from harmful interference from a new service allocation.
  - Only permit downlink operations in the 2155-2180 MHz band; or
  - At a minimum, set out-of-band emissions and power limits that fully protect AWS-1 operations.