

May 27, 2011

VIA ELECTRONIC DELIVERY

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Room TWA325
Washington, DC 20554

**Re: Notice of *Ex Parte* Presentations
RM-11592; WT Docket No. 11-18**

Dear Ms. Dortch:

Yesterday, Vulcan Wireless LLC (“Vulcan”) representatives Paul Nagle, Paul Kolodzy, Michele Farquhar, and Scott Wills (by telephone) met with Kathy Harris, Paul Murray, Paul D’Ari, Monica DeLong, Joel Taubenblatt, and Melissa Glidden Tye from the Wireless Telecommunications Bureau and Neil Dellar and Virginia Metallo from the Office of General Counsel. Paul Nagle, Michele Farquhar, and Scott Wills (by telephone) also met with Louis Peraertz, Legal Advisor to Commissioner Mignon Clyburn.

The Vulcan representatives discussed Vulcan’s concerns as a Lower 700 MHz A Block licensee, as described in the attached presentation. Specifically, they highlighted the benefits of nationwide 700 MHz interoperability and the conditions proposed in Vulcan’s reply comments regarding the AT&T-Qualcomm transaction pending before the Commission.

Pursuant to Section 1.1206(b) of the Commission’s rules, I am filing this notice electronically in the above-referenced dockets. Please contact me directly with any questions.

Respectfully submitted,

/s/ Michele C. Farquhar

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cc: Kathy Harris
Paul Murray
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Joel Taubenblatt
Melissa Glidden Tye
Neil Dellar
Virginia Metallo
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Analysis and Recommendation
Regarding the Proposed
AT&T-Qualcomm
D and E Block License Transfer

May 26, 2011

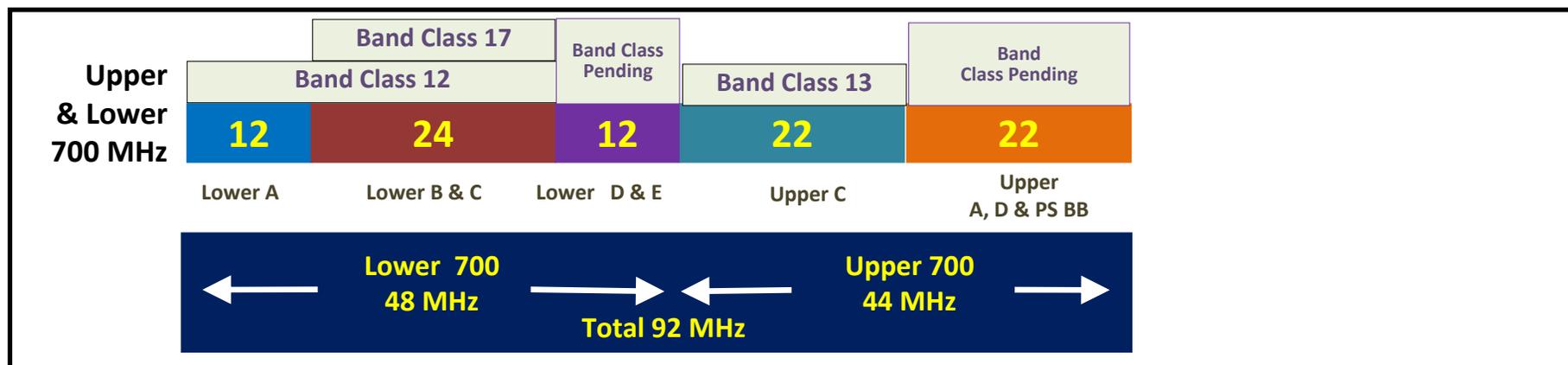
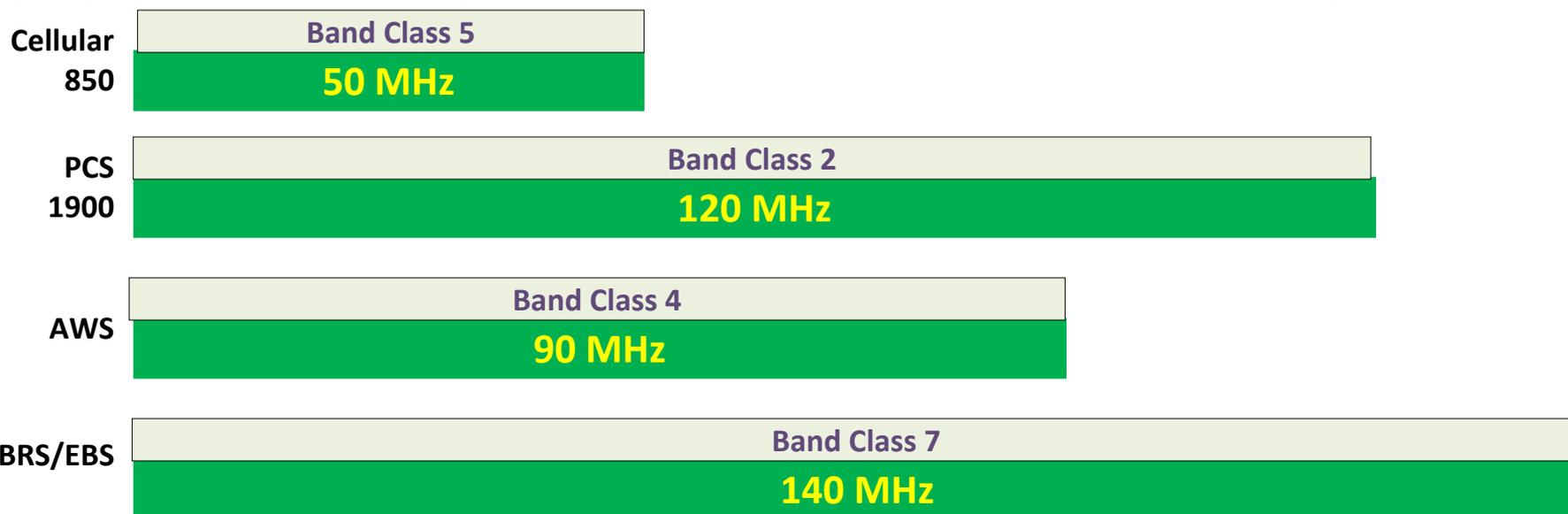
The AT&T Acquisition Creates New Interference Obstacles for Lower A Block Holders, Threatens their Ability to Achieve Interoperability, and Could Allow AT&T to Technically Circumvent the Roaming Order

This Transaction Magnifies AT&T Market Power in the Lower 700 MHz Band, Furthers their Undue Influence and Worsens Interoperability Problems

The Commission Should Not Approve the Proposed AT&T-Qualcomm License Transfer without a Transaction Specific Condition

Wireless Frequencies & 3GPP Band Classes

- Unified Band Plans contributed significantly to ecosystem development, industry growth & consumer choice.
- The unique use of 700 MHz wireless frequencies exclusively in the US has given Verizon and AT&T (the dominant 700 MHz spectrum holders) excessive influence. This undue influence has led to constrained & unprecedented standards fragmentation, delays in 700 MHz standards completion, slowed ecosystem development & less consumer choice and value.
- This US-only band provides the FCC with an opportunity to take corrective measures to address exploitation concerns and remedy the problem before the next major iteration of LTE devices is introduced in the market and new spectrum auctions.

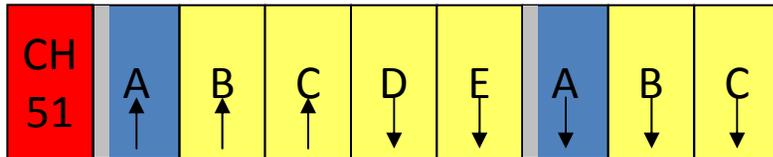


Activity Timeline for 700 MHz Band Class

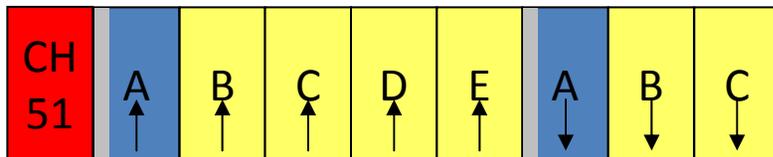
Pre and Post Auction 73

December 2007	January 24, 2008	March 18, 2008	April 5 - 9, 2008	June 16 - 20, 2008	September 18 - 22, 2008	September 2009 (still pending)	December 2010
<ul style="list-style-type: none"> The 3GPP Standard Body had only used Band Class 12 to develop standards for all Lower 700 MHz A, B & C spectrum blocks. No other band class had ever been used in 3GPP to set standards for any deployed wireless technology governing those spectrum blocks. 	<ul style="list-style-type: none"> Auction 73 opens 	<ul style="list-style-type: none"> Auction 73 closes 	<ul style="list-style-type: none"> Motorola submits paper to 3GPP to evaluate the need for a new Band 17. It eliminates the Lower 700 MHz A Block and only includes Blocks B and C, which orphans A Block, significantly curtails manufacturer support for A Block and eliminates interoperability. 	<ul style="list-style-type: none"> Ericsson presents discussion paper arguing against Band 17 and raises concerns <i>"which goes against economies of scales and may lead to market fragmentation"</i>. AT&T presents discussion paper arguing in favor of Band 17. Ericsson eventually withdraws their protests, clearing the path for Band 17. 	<ul style="list-style-type: none"> (6 months after the close of Auction 73) – 3GPP ratifies Release 8 with new Band Classes for LTE: Bands include: <ul style="list-style-type: none"> 17 - Lower B/C (primarily for AT&T owned Spectrum) 13 - Upper C (exclusively for Verizon Spectrum Block) 12 - Lower A/B/C (loosing support from AT&T for B & C) 14 - for Upper D & Public Safety Broadband 	<ul style="list-style-type: none"> 700 MHz Block A Good Faith Purchasers Alliance Petitions for Rulemaking on Interoperability 	<ul style="list-style-type: none"> 3GPP modifies Releases 8 & 9 to include 1 MHz Guard Band within Band 12 to address potential interference issues and gains some limited manufacturer support.

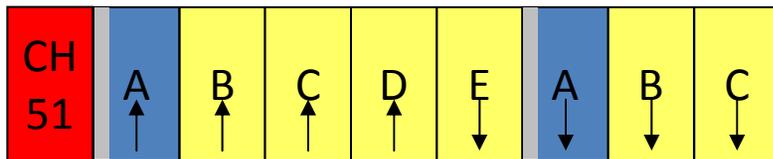
Several D&E Block Configurations Can Negatively Impact A Block License Holders



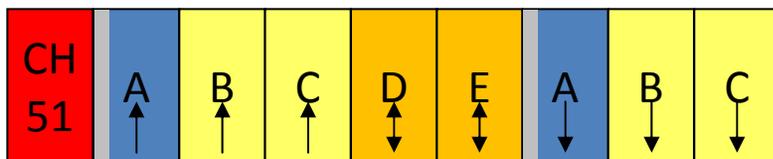
D & E CMRS Downlink and Combined with B & C: half-duplex operations on B&C Blocks uplink to address potential interference which would be incompatible with A Block full-duplex uplink thus precluding interoperability.



D & E CMRS Uplink and Combined with B & C: use A Block downlink as the duplex spacing and thus precluding interoperability. This removes FCC allocated channel spacing between A Block uplink and downlink channels.



D as CMRS Uplink and E as CMRS downlink and Combined with B & C: half-duplex operations on B, C, D Blocks uplink to address potential interference which would be incompatible with A Block full-duplex uplink thus precluding interoperability.



D & E as CMRS TDD: A Block would need to address mobile-to-mobile interference that may require different technical requirements than B & C Block thus precluding interoperability.

The Solution - Interoperability

Any mobile wireless device that is manufactured after **June 2013** and operates on paired spectrum in the lower 700 MHz band must operate on all paired spectrum in the lower 700 MHz band.

Narrowly tailored and transaction specific

- Doesn't apply outside the lower 700 MHz band
- Flows from the concerns around the acquisition of the new spectrum

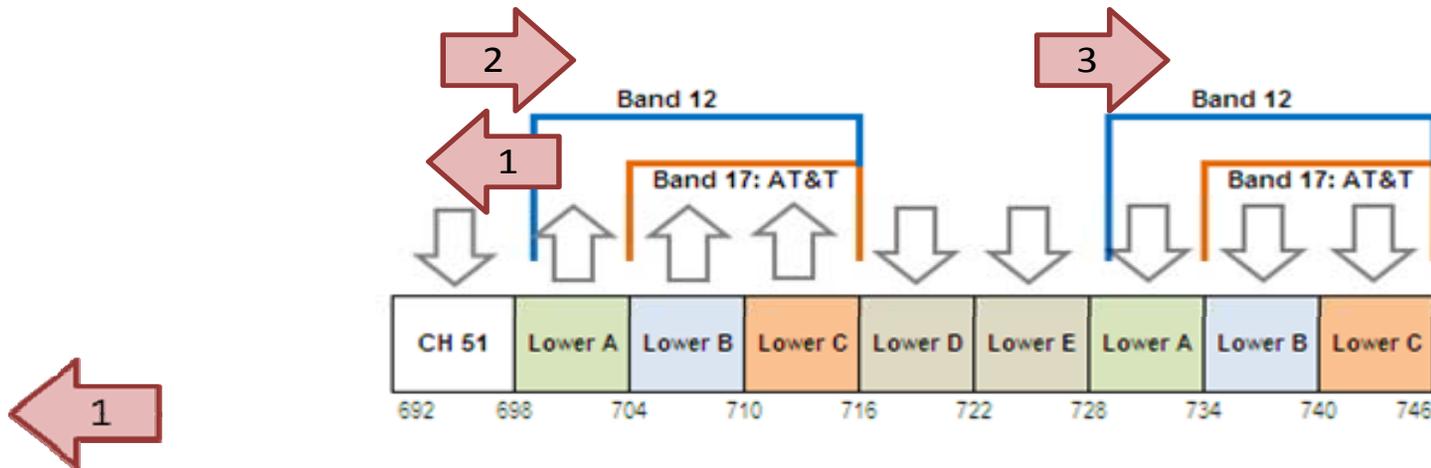
Not an onerous condition

- No stranded investment because no impact on current handset sales
- New phones are constantly developed and deployed
- New phone technology will be necessary to make use of Qualcomm spectrum if the acquisition is approved

It's an organic solution that will evolve as wireless services evolve

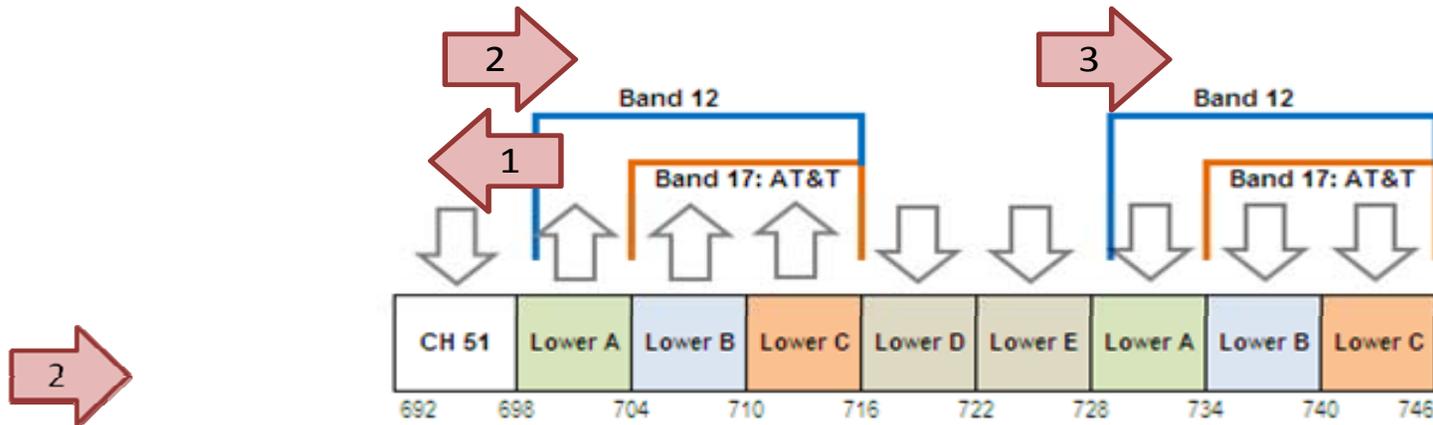
- Doesn't force AT&T into a single configuration, but imposes a service condition. Allows them to innovate and evolve just as is the case in other bands

**There are *No Interference Issues* that Technically Justify
a Different Band Class for Lower B and C Blocks**



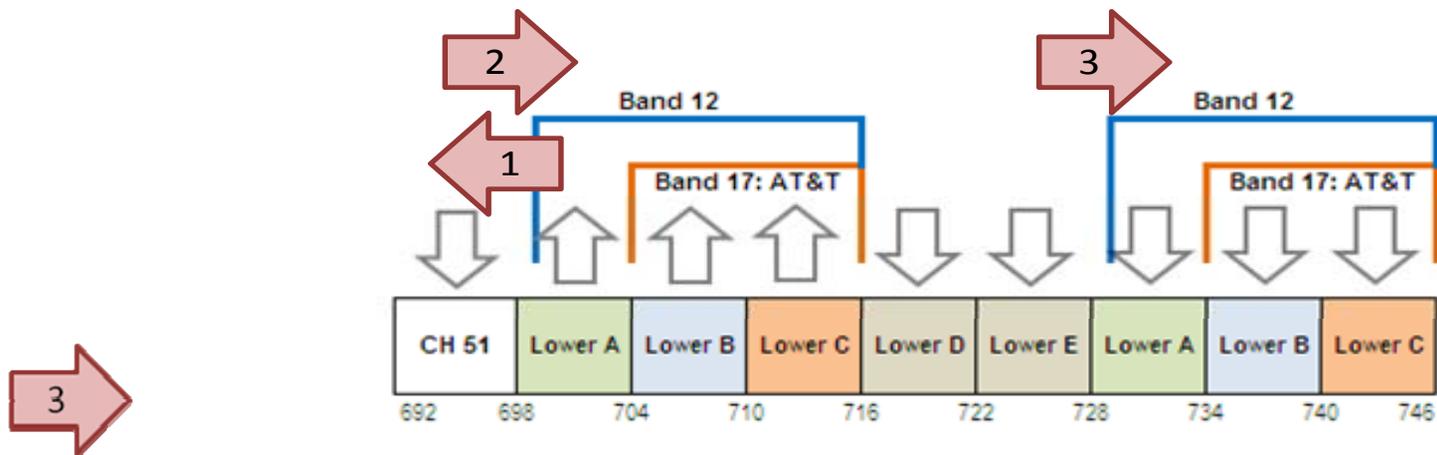
The first case is interference from Band 12 device transmissions to Channel 51 DTV receivers. The Band 12 devices fully comply with the FCC emissions criteria into Channel 51. Adjacent channel protection from the Lower A Block to Channel 51 is handled through the typical planning process for base station deployment, and does not impact device specifications or performance. Lower A Block licensees have recently requested a freeze on new Channel 51 stations, and would benefit from an eventual clearing of the Channel 51 stations to ease deployment planning and allow full use of the A Block. ***The interference case 1 is not an issue for device component selection; Band 12 may be used without harming lower B or C deployment.***

There are *No Interference Issues* that Technically Justify a Different Band Class for Lower B and C Blocks



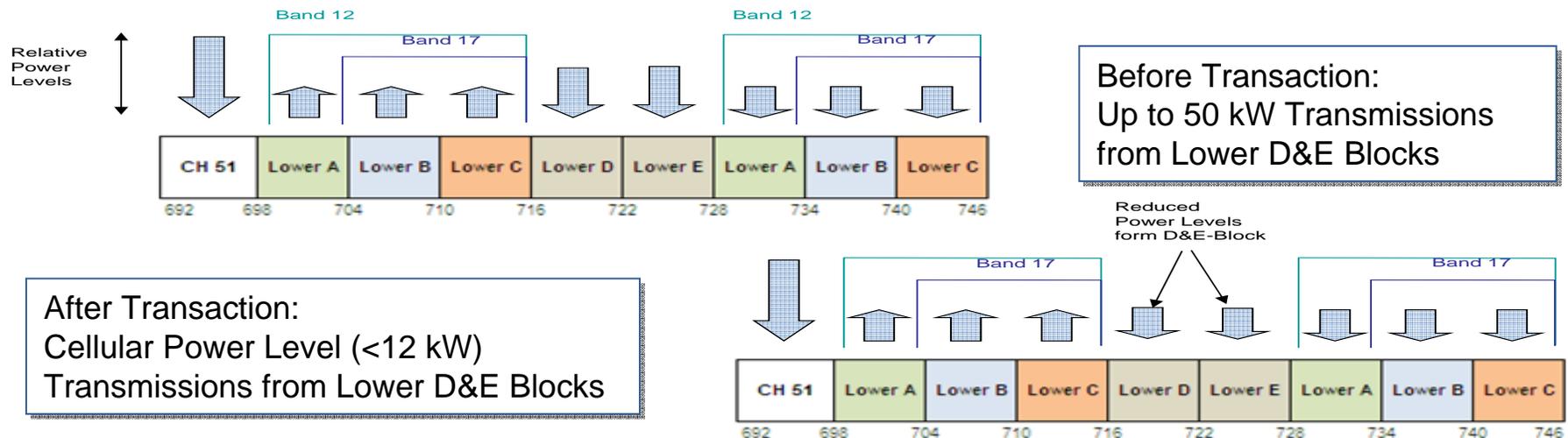
The second case is Channel 51 transmission interacting with device transmission in Lower B and C Blocks (704-716 MHz) within a device to create an unintended intermodulation interference signal in the Lower B Block (734-740 MHz). Three circumstances would prevent this interference mechanism from impacting device performance: 1) the chance of radio signal conditions aligning to create intermodulation is low; 2) should the unlikely radio conditions occur, the device must be transmitting over a large bandwidth (>5 MHz), which is also very unlikely as LTE shares spectrum among many users and limits spectrum assignments; and 3) a simple mitigation scheme could be used such as programming the base station schedulers to avoid uplink assignments of > 5 MHz at the small number of base stations near Ch 51 towers (only needed for a few dozen LTE sites nationwide). ***The interference case 2 is not an issue which should impact device component design; Band 12 should be used.***

There are *No Interference Issues* that Technically Justify a Different Band Class for Lower B and C Blocks



The third case is from Lower D and E Block base station transmission which are permitted to operate at higher power levels (50 kW) than the base station downlinks of A, B and C Blocks (5 kW in 5 MHz and up to 20 kW in 10 MHz). The interference concern is that a device receiving the combined A, B and C Blocks would be desensitized or “blocked” due to the somewhat higher D and E Block transmissions. The device reception may be affected when closely approaching an E Block tower while the device’s desired signal strength is low. The D Block is not a concern, since A Block is sufficiently far away from the edge of the D Block to adequately filter the D Block signal. The E Block signal, based on its FCC allowed power level, may be stronger than an LTE base station transmission. However, receiver blocking is unlikely to occur for several reasons: 1) typical components performance within current devices is sufficient to prevent blocking – so a typical device would not have a receiver blocking issue from E Block; 2) there are few if any commercially deployed E Block systems transmitting at 50 kW today and with the ATT-Qualcomm spectrum sale there would be fewer systems; 3) recent filter technologies provide improved protection from any high-power E Block transmissions. ***The interference case 3 is not an issue since there are many device component designs to address any concerns Band 12 should be used.***

There Are No Significant Technical Differences Separating Band Class 12 and Band Class 17 Post-Transaction



	Band 12/17 <u>Before</u> Transaction	Band 12/17 <u>After</u> Transaction
Channel Bandwidths	1.4, 3, 5, & 10 MHz (Band 12) 5 & 10 MHz (Band 17)	1.4, 3, 5, & 10 MHz (Band 12) 5 & 10 MHz (Band 17)
Impact of Channel 51	No Differences: No Impact, addressed by A-Block Guard Band	No Differences: No Impact, addressed by A-Block Guard Band
Impact of High Power D-Block on Downlink	No Differences: No impact, both Bands address identically	No Differences: Not an issue
Impact of High Power E-Block on Downlink	Band 17 has more rejection for E-Block signals though <u>unlikely</u> interference event	No Differences: Not an issue
Impact of High Power D-Block on Uplink	No Difference: Base-to-Base Interference for both Bands	No Difference: Base-to-Base Interference for both Bands
Impact of High Power E-Block on Uplink	No Differences	No Differences
Summary	No differences except to address a low probability interference case that can be addressed by deployment and component choices	No Differences

Interoperability is Clearly in the Public Interest

Prerequisite to Competition. An interoperability requirement will ensure that AT&T, which will hold the vast majority of Lower 700 MHz spectrum and disproportionate influence over the vendor ecosystem, will not hold the vendor community captive, to the detriment of A Block licensees.

Economies of Scale. The 700 MHz band is unique in that it does not match other international allocations, so no global economies of scale can be leveraged. This makes it more difficult for smaller providers when the biggest U.S. holders of the spectrum use the standards bodies to facilitate creating equipment that only works for their portions of the band, thus orphaning bands of smaller providers. As a result, Lower A Block holders face far higher costs than those associated with other spectrum bands.

Time to Market. In first serving the needs of the unique band class that is dominated by AT&T, the Lower A Block holders are significantly disadvantaged through the lack of access to new devices and delays in the development of standards, chip sets, and equipment. For example, AT&T developed a new band class and has completed product development in the time it has taken lower A block licensees to get their band class approved. VZW had its LTE network deployed covering 100+ million US POPs before Band Class 12 was even fully ratified in the LTE standards body. An interoperability requirement is therefore needed to create a competitive marketplace and a robust ecosystem, much like a number portability requirement was needed to ensure that customers could have meaningful choices.

Prerequisite to Data Roaming. Without an interoperability requirement, AT&T can easily use the standards body process to render the FCC's new data roaming requirements technically infeasible.

911 and Public Safety Interoperability. Some 911 calls could fail without an interoperability requirement. The 700 MHz spectrum provides a different footprint than other bands currently used for mobile. In a geographic (likely rural) location only served by a 700 MHz footprint, it is possible that a phone operating on the Lower 700 MHz A Block could only reach a Lower 700 MHz B and C Block tower but not be able to communicate due to differing standards or a lack of interoperability. In addition, commercial interoperability should offer cost savings for public safety. The Congressional Research Service predicts that carriers with common radio interfaces are expected to put the cost of public safety radios within the same price range as commercial high-end mobile devices (\$500). By contrast, non-interoperable radios for 700 MHz narrowband networks cost \$3,000 and up each.

Jobs and Deployment. Smaller wireless carriers and new entrants hold all of the A Block licenses beyond the top 25 markets, which are held by VZW. Whether they are competitive providers or the only provider, A Block licensees bring jobs and economic opportunities to their communities. The President's broadband deployment goal of reaching 98% of Americans cannot be met without the participation of all wireless carriers.

Less \$ Needed for USF Subsidy in Rural Areas. The cost needed to serve these areas will only go up and ultimately be paid for through USF.

More \$ at Future Auctions/Diversity. A major reason for the success of recent auctions is multiple bidders. Multiple bidders/entrants provide an opportunity for marketplace diversity and auction competition. These entities will not bid if they can simply be driven out of the marketplace through standards bodies practices. The overall pool of auctions monies will be reduced and the larger carriers will see less competition for markets, further reducing revenues.