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March 20, 2015

VIA ELECTRONIC FILING

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

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Re: *Ex Parte* Submission – Response to AT&T Supplemental Information Response; AT&T Mobility Spectrum LLC and Club 42 CM Limited Partnership, Application for Consent to the Assignment of Two Lower 700 MHz B Block Licenses in California; WT Docket No. 14-145

REDACTED - FOR PUBLIC INSPECTION

Dear Ms. Dortch:

Competitive Carriers Association (“CCA”) hereby responds to the “Response of AT&T Mobility Spectrum to Supplemental Information Request Dated February 19, 2015,” filed on March 9, 2015, in the above-referenced proceeding.¹

The Commission’s Supplemental Information Request sought additional information in connection with the proposed assignment of the Lower 700 MHz license for spectrum in San Luis Obispo County, California CMA340 (“CA-5”) held by Club 42 CM Limited Partnership (“Club 42”) to AT&T Mobility Spectrum LLC (“AT&T”). Specifically, the Commission requested that AT&T provide detailed explanations of how AT&T is maximizing its use of its

¹ Response of AT&T Mobility Spectrum LLC to Supplemental Information Request Dated February 19, 2015, WT Docket No. 14-145 (filed Mar. 9, 2015) (“AT&T March 9th Response”).

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current spectrum holdings in the San Luis Obispo CA-5 market and why the proposed additional concentration of below-1-GHz spectrum, in particular, would not preclude rival service providers and potential new entrants from expanding or entering into this market.

AT&T has again failed to demonstrate that it meets the heightened standard of review applicable to the market in question—one in which AT&T already holds more than one-third of below-1-GHz spectrum *before* taking into account the additional spectrum it hopes to obtain through this transaction. In this transaction—involving a preexisting high level of low-band spectrum concentration in a geographic market—the Commission has repeatedly made clear that applicants must demonstrate that the public interest benefits clearly outweigh the potential public interest harms associated with acquiring more below-1-GHz spectrum, irrespective of other factors.² AT&T has not done so.

I. AT&T’S REQUEST FOR THE COMMISSION TO CONSIDER THE STATUS OF LOWER 700 MHZ D AND E BLOCKS IS UNTIMELY

Despite direct questions from the Commission³ and clear aggregation rules, AT&T spends the first three pages of its response in a detour that effectively asks the Commission to reconsider its decisions in its *Mobile Spectrum Holdings Order*. Specifically, AT&T suggests that only “true below-1-GHz spectrum” should be included for purposes of determining whether the Commission’s enhanced factor review is triggered, and contends that its Lower 700 MHz D and E Block spectrum is *not* “true below-1-GHz spectrum.”⁴ AT&T therefore concludes that it should only be deemed to hold 37 MHz of below-1-GHz spectrum in the market. AT&T has previously argued in this proceeding that its Lower 700 MHz D and E Block spectrum should not count *as heavily* as paired spectrum in the enhanced factor analysis.⁵ AT&T now ratchets up this

² *Policies Regarding Mobile Spectrum Holdings*, Report and Order, 29 FCC Rcd 6133 ¶ 287 (2014) (“*MSH Order*”).

³ For ease of reference, the Commission asked AT&T to provide for CA-5 San Luis Obispo a detailed explanation “of how [AT&T] is maximizing its use of its current spectrum holdings, and how the acquisition of additional below-1-GHz spectrum is necessary to maintain, enhance, or expand mobile telephony/broadband services provided to consumers” and “[w]hy this additional concentration of below-1-GHz spectrum, specifically, would not preclude rival service providers and potential new entrants from expanding or entering into this market.” Letter to Michael P. Goggin, AT&T Inc., from Roger C. Sherman, Chief, Wireless Telecommunications Bureau, Application of AT&T Mobility Spectrum LLC and Club 42 CM Limited Partnership for Consent to Assign Licenses (WT Docket No. 14-145), Supplemental Request for Information, Attachment (Feb. 19, 2015).

⁴ AT&T March 9th Response at 4.

⁵ See Joint Opposition of AT&T Mobility Spectrum LLC and Club 42 CM Limited Partnership, WT Docket No. 14-145, at 4 n.8 (filed Oct. 27, 2013). CCA would note that AT&T’s current call for “weighting” its Lower 700 MHz D and E Block spectrum is inconsistent with its advocacy in the Mobile Spectrum Holdings proceeding. See

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defense to argue that such spectrum should not be included *at all*.⁶ In either event, AT&T's positions are without merit, and are directly undercut by repeated and express Commission findings to the contrary.⁷

Since as far back as 2011, the Commission has rejected AT&T's arguments that Lower 700 MHz D and E Block spectrum does not carry with it competitive advantages. In its Order approving AT&T's acquisition of significant amounts of such spectrum from Qualcomm, the Commission noted that "AT&T's bonding of unpaired 700 MHz spectrum with AWS-1 would achieve significant increases in downlink capacity associated with the use of below 1 GHz spectrum. *In addition, AT&T could bond the Qualcomm spectrum with cellular spectrum at 850 MHz and fully achieve benefits of increased coverage and in-building penetration associated with below 1 GHz spectrum.*"⁸ Indeed, AT&T's CEO, Randall Stephenson, touted the benefits of AT&T's Lower 700 MHz spectrum shortly after closing its purchase with Qualcomm, noting that "one of the beauties of the latest [700 MHz] spectrum we bought" is that it "propagates like a bandit."⁹

The Commission's findings from the *AT&T-Qualcomm Order* were reiterated more recently in the *Mobile Spectrum Holdings Order*, in which the Commission rejected AT&T's arguments that it is limited to pairing D and E Block spectrum only with high-band spectrum finding "insufficient technical evidence" to support AT&T's position and tension with current efforts at 3GPP.¹⁰ There also is no serious debate that AT&T will very likely migrate its cellular spectrum to LTE, further increasing AT&T's dominance of low band spectrum available for LTE.¹¹

As CCA explained in its Reply to the Joint Opposition of AT&T and Club 42, the Commission already found in the *Mobile Spectrum Holdings Order* that the D and E Block spectrum should be considered "suitable and available" for commercial wireless broadband

generally Opposition of AT&T to Sprint's Petition for Reconsideration, WT Docket No. 12-269, GN Docket No. 12-268 (filed Sept. 24, 2014).

⁶ AT&T March 9th Response at 4, 6.

⁷ See *MSH Order* ¶ 178.

⁸ *Application of AT&T Inc. and Qualcomm Inc. (for Consent to Assign Licenses and Authorizations)*, Order, 26 FCC Rcd 17589 ¶ 50 (2011) ("*AT&T-Qualcomm Order*") (emphasis added).

⁹ Transcript: AT&T's Randall Stephenson on the Network's Strength, CNN MONEY (July 18, 2012), available at <http://tech.fortune.cnn.com/2012/07/18/randall-stephenson-att/>.

¹⁰ *MSH Order* ¶ 178.

¹¹ See Declaration of Douglas Hyslop, attached hereto as "Exhibit A," ¶ 5 ("Hyslop II Declaration"). Moreover, to the extent AT&T focuses on limitations it faces in pairing its Lower 700 MHz D and E Blocks with its Lower B and C Blocks, this is merely a symptom of AT&T's dominant ownership of low-band spectrum. *Id.* ¶ 6.

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deployment.¹² Similarly, CCA has demonstrated that the better propagation of low-band spectrum on the downlink D and E Block spectrum still improves service performance and user experience indoors and at the cell edge relative to operations using high-band spectrum for both uplink and downlinks, irrespective of its pairing.¹³ This is wholly consistent with AT&T's previous position on inclusion of BRS spectrum in the Commission's spectrum screen. According to AT&T:

[T]he Commission [in 2008] excluded certain portions of BRS spectrum from the screen because certain segments of the band are authorized for high power operations or can be preserved as a duplex gap or guard band spectrum between mobile broadband and other uses. Although certain BRS spectrum can be used for high-powered operations, that fact is irrelevant. Cellular and PCS can be used for fixed services, and lower 700 MHz C, D and E Block spectrum can be used for high powered broadcasts, *yet all of these bands are included in the screen calculation as suitable and available because they can be used for mobile wireless services.* To justify the exclusion of any segment of BRS/EBS spectrum simply because high power operations are also authorized would logically remove all mobile spectrum permitting flexible use from the screen. *The bottom line is that all of the BRS/EBS spectrum is available and usable for mobile wireless services; it should all be counted.*¹⁴

Moreover, as noted in the most recent Mobile Competition Report, "AT&T has announced plans to deploy commercial mobile broadband services using carrier aggregation technology—which is part of the LTE Advanced specifications—to combine transmissions across either AWS or PCS high-band band spectrum with 700 MHz D and E block spectrum" and is "also exploring the possibility of offering eMBMS services on these bands."¹⁵ This

¹² See CCA Reply to Joint Opposition, WT Docket No. 14-145, at 6-7 (filed Nov. 3, 2014) ("CCA Reply"). The Commission has recognized from the start of this proceeding that AT&T already holds 49 MHz of below-1-GHz spectrum, including the Lower 700 MHz D and E Blocks. See, e.g., Public Notice, *AT&T Mobility Spectrum LLC and Club 42 CM Limited Partnership Seek FCC Consent to the Assignment of Two Lower 700 MHz B Block Licenses in California*, WT Docket No. 14-145, DA 14-1288 (rel. Sept. 8, 2014); Letter to Michael P. Goggin, AT&T Inc., from Roger C. Sherman, Chief, Wireless Telecommunications Bureau, Application of AT&T Mobility Spectrum LLC and Club 42 CM Limited Partnership for Consent to Assign Licenses (WT Docket No. 14-145), Attachment, General Information Request, Question 4 (Sept. 22, 2014)

¹³ See CCA Reply at Exh. A ¶¶ 2-3

¹⁴ Comments of AT&T, WT Docket No. 12-269 at 39-40 (filed Nov. 28, 2012) (emphasis added, internal citations omitted).

¹⁵ *Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services*, Seventeenth Report, 29 FCC Rcd 15311 ¶ 183 (2014).

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development further undercuts AT&T's arguments that Lower 700 MHz D and E Block spectrum should not trigger enhanced review of the present transaction.

Finally, AT&T once again fails to present any engineering or technical evidence to support its claim of passive intermodulation interference when combining its Lower D and E Block spectrum with other low-band spectrum, such as other Lower 700 MHz frequencies.¹⁶ In fact, these issues are likely solvable "with proper antenna engineering and radiofrequency component selection"¹⁷

For all of these reasons, AT&T's argument that such spectrum should be disregarded in determining the applicability of the heightened standard for below-1-GHz spectrum should be rejected as an untimely attempt to reconsider the Commission's decision in the *Mobile Spectrum Holdings Order*.

II. IN SPITE OF REPEATED OPPORTUNITIES, AT&T STILL HAS NOT MET ITS BURDEN OF PROOF

The new information in the AT&T March 9th Response still is insufficient to demonstrate that the public interest benefits of the proposed transaction clearly outweigh the potential public interest harms associated with such additional concentration of below-1-GHz spectrum, irrespective of other factors. AT&T argues that rival service providers and new entrants would not be precluded from expanding or entering this market by pointing to the spectrum holdings of Verizon, DISH, Sprint and T-Mobile that are suitable for a 10 x 10 MHz LTE deployment.¹⁸ However, the carriers in the market other than Verizon each only have spectrum above 1 GHz that is suitable for such deployment.¹⁹ AT&T thus ignores the Commission's questions regarding the ability of the two largest carriers to raise rivals' costs or foreclose competition by denying competitors access to low-band spectrum.

The Commission's enhanced factor review of transactions involving concentrations of spectrum below 1 GHz is based in part on concerns stemming from AT&T and Verizon together holding more than 70 percent of 700 MHz spectrum nationwide,²⁰ which is consistent with the aggregated holdings of low-band spectrum of these two carriers in CA-5.²¹ Indeed, AT&T

¹⁶ Hyslop II Declaration ¶ 3.

¹⁷ *Id.* AT&T's present advocacy rings particularly hollow when contrasted with its advocacy in the Commission's Incentive Auction proceeding. *See id.*

¹⁸ AT&T March 9th Response at 11.

¹⁹ *Id.* at 11-12.

²⁰ *See MSH Order* ¶ 58.

²¹ *See Application of AT&T and Club 42*, ULS File No. 0006344543, Ex. 4 at 1.

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would hold licenses for 45.5 percent of the below-1-GHz spectrum in the market following this transaction, with Verizon holding licenses for an additional 35 percent.²²

AT&T's assertion that it [BEGIN NRUF/LNP CONFIDENTIAL INFORMATION] [END NRUF/LNP CONFIDENTIAL INFORMATION] thus does not alleviate the public interest harms presented by this transaction.²³ Allowing AT&T to acquire Club 42's 700 MHz license would further increase AT&T and Verizon's aggregated low-band holdings to approximately 80 percent, which would exacerbate the competitive challenges that other carriers face in this market. [BEGIN NRUF/LNP CONFIDENTIAL INFORMATION]

[END NRUF/LNP CONFIDENTIAL INFORMATION]

Moreover, AT&T's argument suggests that deploying a 10 x 10 LTE channel on *any* spectrum (regardless of whether it is low-band or high-band spectrum) is sufficient for other carriers to remain competitive in the mobile market. If this is true, then AT&T could use the 20 MHz of AWS-3 spectrum it recently acquired covering CA-5 in Auction No. 97 instead of relying on the Lower 700 MHz spectrum at issue.²⁸ The Commission has recognized, however,

²² *Id.* And even more startling, AT&T admits in its March 9th Response that most of its 700 MHz transactions trigger the new enhanced factor review, highlighting that all of its low-band aggregation attempts should be scrutinized. *See* AT&T March 9th Response at 9.

²³ *See id.* at 12.

²⁴ *See* NRUF/LNP data supplied in this proceeding.

²⁵ *See* NRUF/LNP data supplied in this proceeding. [BEGIN NRUF/LNP CONFIDENTIAL INFORMATION]

[END NRUF/LNP CONFIDENTIAL INFORMATION]

²⁶ AT&T March 9th Response at 12.

²⁷ *See* NRUF/LNP data supplied in this proceeding.

²⁸ *See* Auction of Advanced Wireless Services (AWS-3) Licenses Closes, Winning Bidders Announced for Auction 97, DA 15-131, Exh. A (rel. Jan 30, 2015). In its March 9th

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the distinct technical advantages that make low-band spectrum a competitive necessity for all carriers, and thus, AT&T's reliance on comparisons of the high-band spectrum holdings of other carriers in the market to meet its heightened public interest showing is misplaced.²⁹

In light of its recent acquisition of 20 MHz of AWS-3 spectrum and its assertion that it only needs a 10 x 10 LTE channel on any spectrum (not low-band spectrum), AT&T's arguments regarding its need for the Club 42 license in CA-5 are moot. AT&T contends that the Club 42 license is needed to enable AT&T to increase the quality of service it offers to customers in this market.³⁰ AT&T relies on [BEGIN AT&T HIGHLY CONFIDENTIAL INFORMATION]

[END AT&T HIGHLY CONFIDENTIAL INFORMATION]³¹ Yet while AT&T may deliver [BEGIN AT&T HIGHLY CONFIDENTIAL INFORMATION]

[END AT&T HIGHLY CONFIDENTIAL INFORMATION]³²
Moreover, AT&T chooses to focus exclusively on [BEGIN AT&T HIGHLY CONFIDENTIAL INFORMATION]

[END AT&T HIGHLY CONFIDENTIAL INFORMATION]³³

Because AT&T continues to fall short of meeting its heightened burdens of proof that apply to this transaction, CCA respectfully requests that the Commission deny AT&T and Club 42's application for consent to this transaction in its entirety.

Respectfully submitted,



James H. Barker
Elizabeth R. Park

Response, AT&T attributes the 20 MHz Verizon recently acquired in Auction 97 to Verizon's ability to deploy 10 x 10 LTE, yet any reference to its acquisition of a similar 20 MHz of AWS-3 spectrum is noticeably absent from AT&T's discussion of why it needs additional *low-band* spectrum to maintain, enhance or expand services to consumers.

²⁹ *MSH Order* ¶ 47.

³⁰ AT&T March 9th Response at 9.

³¹ *Id.*

³² *See* ATT-C42000201.

³³ *Id.*

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Attachment

cc: Scott Patrick (scott.patrick@fcc.gov; hand delivery of Highly Confidential version)
Kate Matraves (catherine.matraves@fcc.gov)
Jim Bird (TransactionTeam@fcc.gov)
Best Copy & Printing (fcc@bcpiweb.com)

EXHIBIT A

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
AT&T Mobility Spectrum LLC and Club)	WT Docket No. 14-145
42CM Limited Partnership Application for)	
Consent to the Assignment of Two Lower 700)	
MHz B Block Licenses in California)	
)	

DECLARATION OF DOUGLAS HYSLOP

I, Douglas Hyslop, provide the following declaration pursuant to 47 C.F.R. § 1.16:

1. My name is Douglas Hyslop. I am a principal in Wireless Strategy, LLC, a consulting firm that provides business and technology consulting to wireless operators. I work with new entrants and established providers to plan, deploy and operate wireless networks, including researching air interface technologies, developing system requirements and evaluating coverage and capacity issues for providers. Prior to founding Wireless Strategy, LLC, I was a Director of Next Generation Access Technologies for Sprint Nextel Corp (“Sprint”). While at Sprint I led the radio access network (“RAN”) technology selection for Sprint’s 2.5 GHz band. At Nextel (prior to its merger with Sprint), I designed, deployed and launched the first iDEN systems in California, and directed the radio frequency (“RF”) engineering department for Nextel’s Houston, San Antonio and Austin markets. I was also instrumental in standardizing national guidelines for RF design, optimization and capacity planning for Nextel. I hold a B.S. in Electrical Engineering from the University of Virginia.

2. I have reviewed the Response of AT&T Mobility Spectrum LLC (“AT&T”) to Supplemental Information Request Date February 19, 2015 filed March 9, 2015 (the “March 9th

Response”) in support of the joint application of AT&T Mobility Spectrum LLC and Club 42 CM Limited Partnership for consent to assign two Lower 700 MHz B Block licenses. In the March 9th Response, AT&T argues that the Lower 700 MHz D and E Block spectrum should not be counted towards the total amount of spectrum it holds below 1 GHz because “(1) these blocks currently can only be used in conjunction with spectrum above 1 GHz, rendering moot many of the ‘inherent benefits’ of spectrum below 1 GHz, and (2) AT&T’s use of the D and E blocks is governed by unique technical limitations.”¹ The technical discussion in my prior declaration, which refuted these claims and explained the sustained value of low-band downlink spectrum when paired with high frequency bands, remains valid and continues to apply despite AT&T’s contradictory claims about whether this spectrum should be discounted or disregarded.²

3. In the March 9th Response, AT&T does not present any engineering or technical evidence to support its claim of impairment from passive intermodulation when combining D and E Block with other low-band spectrum such as 700 MHz. AT&T’s argument that they have “found significant Passive Intermodulation (“PIM”) effects with use of the D and E Block spectrum in conjunction with the B and C Blocks”³ is not supported by engineering measurements or technical analysis. Passive intermodulation is a mechanism in which two or more transmitted signals mix and transfer energy onto mathematical multiples of the frequencies. For instance, the frequency affected by third order intermodulation may be calculated by doubling the first frequency and subtracting the second frequency. Thus, AT&T claims that the PIM is generated by doubling the D+E block transmission (718-728 MHz) and subtracting the B+C block transmission (736-746 MHz), with the resulting product landing in the B+C block

¹ March 9th Response at 5.

² See CCA Reply to Joint Opposition, WT Docket No. 14-145 at Ex. A.

³ March 9th Response at 6.

base station receive frequencies (704-714 MHz). It is mathematically correct that PIM could land on the receive frequencies, but with proper antenna engineering and radiofrequency component selection, PIM is a manageable problem. For example, in the Incentive Auction proceeding, AT&T expressed support for the 600 MHz band plan which placed base station transmissions in the lower portion of the 600 MHz band.⁴ This placement of base station transmit frequencies will create a similar situation as that described in the March 9th Response. These 600 MHz transmissions hold the potential to mix with AT&T's Lower 700 MHz base station transmit frequencies and produce intermodulation on AT&T's cellular base station receive frequencies. As an example, a downlink transmission at 640 MHz could mix with AT&T's LTE transmission at 740 MHz, producing third order intermodulation at 840 MHz in the cellular base station receive band ($2 \times 740 - 640 = 840$). AT&T's support of the downlink placement within the 600 MHz band plan implies that PIM is manageable, in contradiction to its own statements in the current proceeding.⁵ The math in this example is the same as in the March 9th response, and the engineering constraints involved in the calculations are identical. If PIM were a severe engineering constraint hindering spectrum band pairing, then AT&T would have recommended a different band plan for the 600 MHz band to preserve its future utility of this promising resource.

4. Furthermore, AT&T's developer web page claims that AT&T can "host public safety dedicated 700 MHz base stations (eNode B). AT&T can co-locate and maintain Radio Access Network (RAN) equipment dedicated to public safety at its sites."⁶ A mathematical

⁴ Comments of AT&T Inc., GN Docket No. 12-268 at 32 (filed Jan. 25, 2013).

⁵ March 9th Response at 6.

⁶ Long-Term Evolution (LTE) | AT&T Developer, <http://developer.att.com/technical-library/network-technologies/long-term-evolution>, last visited Mar. 19, 2015.

examination of the potential for PIM between the Lower B+C base station transmit frequencies and the Public Safety 700 MHz transmit frequencies results in third order intermodulation overlap with the Public Safety 700 MHz base station receive frequencies. If PIM were a significant engineering concern, then this claim of Public Safety support would not be possible without similar restrictions on the Public Safety base station transmit power.

5. AT&T does not fully consider its future migration path which would permit the D and E Blocks to be paired with other low-band spectrum, such as cellular. As AT&T acknowledges on its LTE web page for developers, “AT&T will also have the option of reallocating portions of the 850/1900 MHz bands for LTE.”⁷ A future migration of the cellular band to LTE would permit AT&T to pair the Lower D and E Blocks with this low-frequency band, reaping the full benefits of additional low-band spectrum.

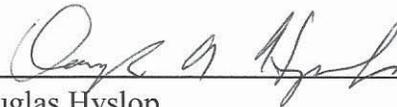
6. AT&T’s claimed operational issues in employing the D and E Blocks stem from its massive below 1 GHz spectrum holdings and therefore dominant position in that band. The D and E Blocks, as low-band spectrum, hold great technical value well established by the industry. A wireless operator deploying service in the D and E Blocks would realize a lower cost of ownership from the improved RF propagation characteristics of the spectrum. Thus, the D and E Block spectrum has value equivalent to other low-band spectrum. This inherent technical value does not change depending on the owner of the spectrum. The operational issues which AT&T claims to experience are a result of the rich portfolio of low-band spectrum which AT&T has already acquired; if AT&T did not already own 10 to 20 MHz of 700 MHz spectrum, then the D and E Blocks could more readily be employed with AT&T’s existing spectrum assets. Instead,

⁷ *Id.*

AT&T's claims of operational issues resulting from its low-band ownership serves as an argument in favor of careful enforcement of spectrum limitations, in order to reduce operational issues and provide adequate access to low-band spectrum for competitive carriers.

7. Finally, AT&T provides a spectrum comparison in the March 9th Response which reinforces the disparity of low-band spectrum ownership in the market.⁸ AT&T attempts to make the point that other competitors have a path to 10+10 MHz or more of LTE capacity in the market; however, a compelling point emerging from AT&T's comparison is the lack of low-band spectrum for LTE among those competitors. Notably, of the companies which AT&T cited in the March 9th Response, the only competitor capable of fielding an LTE 10x10 MHz deployment in low-band spectrum is Verizon.⁹

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on March 20, 2015 in Vienna, Virginia.



Douglas Hyslop
Principal, Wireless Strategy, LLC

⁸ Response at 11-12.

⁹ *Id.*