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April 1, 2016

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

Re: Written *ex parte* presentation in RM-11681; IB Docket No. 12-340

Dear Ms. Dortch:

Ligado Networks LLC ("Ligado") submits this *ex parte* letter to respond to a number of points raised in the March 22, 2016 filing of SNR Wireless ("SNR") in the above-captioned dockets. In summary, the technical compatibility and spectrum coordination issues identified by SNR are nothing new and have been addressed already or can be addressed during the Commission's proceeding on service rules for the 1675-1680 MHz band. Thus, the Commission should move forward with a Public Notice on these and related issues, as the company has proposed, so that SNR and other parties, such as Northstar Wireless, which filed similar comments on March 31, 2016 in the same dockets and shares a common majority owner with SNR, can comment in that proceeding and any legitimate concerns can be addressed in due course.

First, SNR is mistaken when it suggests that the spectrum coordination issues it outlines are intractable and a reason for delay. As has been said numerous times in many other contexts, reasonable technical rules for one block of spectrum serve the public interest by maximizing the terrestrial use of a band while maintaining the efficient use of an adjacent band.[1] That is

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[1] *See* Comments of DISH Network Corporation in Service Rules for the Advanced Wireless Services H Block, WT Docket No. 12-357 (Feb. 6, 2013) at 2 ("Reasonable technical rules for the upper H Block would serve the public interest by maximizing the terrestrial and MSS use of the adjacent AWS-4 band, while maintaining the efficient use of the H Block."); *see also id.* at 10 ("If the Commission finds that it can satisfy the Spectrum Act and offers the H Block at auction, then DISH urges the Commission to incentivize the future H Block operator to deploy networks responsibly, in a way that will enable the maximum efficient utilization of both adjacent bands (H Block and AWS-4)."); *id.* at 24 ("The Commission should take a holistic (continued...)

precisely the process that Ligado requested the Commission engage in when it filed the rulemaking petition; that is precisely the process that was no doubt contemplated when the President decided to include 1675-1680 MHz in his budget for the past four years; and that is precisely the process that we look forward to engaging with all affected stakeholders when the Commission issues a public notice on this and related matters.

Second, SNR claims that the use of the 1675-1680 MHz band could cause consequences for efficient use of the AWS-3 band and that "[t]hese limitation were not contemplated by Auction 97 bidders like SNR." *Id.* at 1. This statement suffers two flaws. The initial defect is revealed on the same page in the SNR letter, which goes on to state: "In 2012, Ligado petitioned the [Commission] for a rulemaking to allow terrestrial mobile use of the 1675-1680 MH band." Thus, SNR was aware, at least since 2012, of Ligado's pending petition to reallocate the 1675-1680 MHz band to shared terrestrial use. Moreover, the President's Budget since that same time has contained a proposal to allocate this band to shared commercial use. SNR thus either knew about or at least had ample opportunity to discover the possible use of 1675-1680 MHz for terrestrial mobile use before it bid for its spectrum, under auction procedures that state clearly that bidders have due diligence obligations.[2]

Third, SNR asserts that the terrestrial use of the 1675-1680 MHz band has serious consequences for federal and commercial users. SNR fails to mention, however, the study by Alion that was prepared to address NOAA's concerns and recommends protection zones to ensure NOAA's earth stations used in connection with both existing and future GOES are not affected. Ligado has asked the Commission to include in the service rules for the 1675-1680 MHz band appropriate protection zones consistent with the Alion study. Ligado also has asked that such license conditions should include the provision by the licensee of high speed access, plus cloud based storage, of all relevant satellite-obtained weather data for all non-NOAA users

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approach to the H Block proceeding, and promulgate rules that: (1) protect PCS from harmful H Block interference; (2) incentivize greater auction participation; (3) maximize the terrestrial and MSS use of the adjacent AWS-4 band to promote jobs, investment and competition, and (4) conduct an auction that will result in a net overall gain of spectrum for mobile broadband."); and *see* Reply Comments of DISH Network Corporation in Service Rules for the Advanced Wireless Services H Block, WT Docket No. 12-357 (Mar. 7, 2013) H Block Auction, at 1 ("DISH is poised to inject much needed investment and competition into the wireless industry as it begins planning its network deployment, and the Commission can support DISH's efforts by adopting properly balanced H Block service rules that ensure that both spectrum bands are used efficiently to deploy mobile broadband to consumers.").

[2] Auction of Advanced Wireless Servs. (AWS-3) Licenses Scheduled for November 13, 2014, 29 FCC Rcd 8386, 8403-04 (2014) (Public Notice stressing that bidders are solely responsible for investigating and evaluating all factors that may have a bearing on the value of the licenses they are seeking).

of such satellite data, up to some agreed upon limit. Furthermore, the licensee ought to be required to take other steps useful to NOAA and its mission. SNR's claim that use of this band would affect commercial users in the adjacent band is an issue that we look forward to addressing as part of the notice-and-comment process. While SNR did not offer any engineering analysis in its submission, we expect a robust discussion of this claim and other concerns about use of this band when the Commission issues a public notice and begins a formal process.

Fourth, another defect lies in the claim that the 1695-1710 MHz uplink is separated by only 15 MHz and that will affect the probability of in-band interference. *Id.* at 3. SNR fails to note that there are many spectrum coexistence scenarios where the difference between uplink and downlink is 15 MHz or less. Those include spectrum blocks very familiar to SNR:

- PCS A block downlink is 10 MHz away from H-Block uplink;
- PCS A block downlink is 15 MHz from G block uplink;
- PCS G block downlink is 5 MHz away from AWS-4 uplinks;
- PCS H-Block downlink is 0 MHz away from AWS-4 uplinks;
- PCS C-Block downlink is 10 MHz away from AWS-4 uplinks; and
- 700 MHz lower D block (716-722 MHz) which is TDD, is 0 MHz away from 700MHz lower C block uplink (710-716 MHz).

It is common industry practice for adjacent band operators to coordinate and keep separation between their antennas. There are existing deployments using bands that are spectrally separated by less than 15 MHz in which operators reach just these understandings. We welcome a discussion on these kinds of operational issues as part of the rulemaking process.

Fifth, SNR contends that if the spectrum at 1675-80 MHz were used both for satellite and terrestrial purposes then it is possible that SNR would have to spend more money on the architecture of its network as deployed in 1695-1710 MHz. This follows from SNR's statement that "any Ligado base station deployment . . . would . . . consume a portion of the currently allowed interference budget, thereby *reducing the budget available for AWS-3 licensees.*" (*Id.* at 4 emphasis added). In other words, SNR is stating that it might have to deploy more base stations in order to accommodate deployment of some in the 1675-80 MHz band. But this is a speculative assertion – SNR has not provided an analysis that shows whether its interference budget would be reduced. When the Commission issues a Public Notice all parties will have the opportunity to review the engineering behind this claim to see if it has any merit, and if so how it should be addressed.

Please direct any questions to the undersigned.

Sincerely,

Gerard J. Waldron
Counsel to Ligado Networks