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## EX PARTE PRESENTATION

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

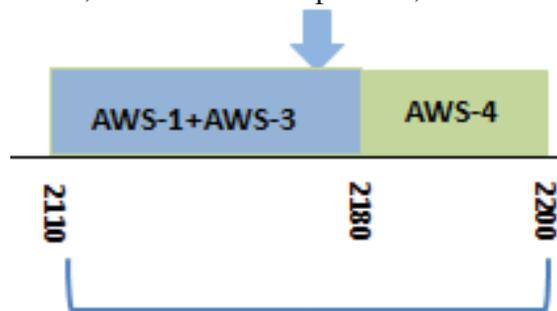
Re: Ex Parte Presentation in GN Docket No. 13-185, *Amendment of the Commission's Rules with Regard to Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands*

Dear Ms. Dortch:

Following on its March 7, 2014 *ex parte* in the above-referenced docket, DISH Network Corporation ("DISH") provides additional support for its AWS-3 interoperability proposal.

### I. Introduction

DISH proposes that the forthcoming AWS-3 Report and Order adopt an interoperability requirement for the downlink band for 2110 MHz to 2200 MHz.<sup>1</sup> Such a requirement (illustrated below) would, among other things, promote the efficient use of spectrum and "the availability of higher quality and lower priced offerings and enhanced choices for customers,"<sup>2</sup> and would substantially increase funding certainty for FirstNet by making the AWS-3 auction much more competitive. It would, in short, be a win for competition, consumers and public safety.



<sup>1</sup> See Letter from Jeffrey H. Blum, DISH Network Corporation, to Marlene H. Dortch, FCC, GN Docket No. 13-185, at Attachment (March 7, 2014).

<sup>2</sup> See Promoting Interoperability in the 700 MHz Commercial Spectrum, *Report and Order and Order of Proposed Modification*, WT Docket No. 12-69, FCC 13-136, at ¶ 49 (rel. Oct. 29, 2013) ("700 MHz Interoperability Order").

The record already reflects broad support for interoperability across the AWS-1 and AWS-3 bands (downlink at 2155-2180 MHz, uplink at 1755-1780 MHz) for new networks.<sup>3</sup> Given the rapidly increasing consumer demand for high-bandwidth, high-speed data consumption, wider swaths of contiguous downlink spectrum or the ability to aggregate across carriers are desirable. For this reason, existing carriers, particularly those with existing AWS-1 licenses, view the upcoming auction of AWS-3 spectrum as a key opportunity to add capacity to their networks. These benefits would be enhanced by extending the requirement to include 2180-2200 MHz (the upper AWS-4 band) as supplemental downlink to create a fully interoperable 90 MHz downlink band.<sup>4</sup>

DISH has a nationwide footprint at 2180-2200 MHz, which is the foundation of its plans to launch a competitive mobile broadband network. But an important step to DISH's success in offering a viable consumer offering is getting its licensed spectrum bands into the mobile devices that consumers use. A regulatory requirement that 2180-2200 MHz be a part a 90 MHz downlink ecosystem helps ensure that the AWS-4 band can be utilized fully and efficiently in the mobile broadband market.

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<sup>3</sup> See Letter from George Y. Wheeler, Peter M. Connolly, and Leighton T. Brown, United States Cellular Corporation, to Marlene H. Dortch, FCC, GN Docket No. 13-185, at 3 (February 27, 2014) (Asking the Commission to require that “(1) all AWS-3 mobile devices be capable of transmitting across the entire 1710-1780 MHz uplink band and receiving across the entire 2110- 2180 MHz downlink band; and (2) all AWS-3 networks support and permit the use of such mobile devices.”); Reply Comments of T-Mobile USA, Inc., GN Docket No. 13-185, at 21 (October 28, 2013) (“[T]he Commission should consider an interoperability mandate at least for the 1755-1780 MHz band...”). See also Letter from C. Sean Spivey, Competitive Carriers Association, to Marlene H. Dortch, FCC, GN Docket No. 13-185, at 3 (March 6, 2014) (“CCA urged the Commission to adopt an interoperability requirement for the AWS-3 band.”); Reply Comments of the Rural Wireless Association, GN Docket No. 13-185, at 7-8 (filed October 28, 2013) (“[I]t is imperative that the Commission adopt rules requiring interoperability in the AWS-3 band in order to increase deployment of wireless broadband services to rural America. Mandating interoperability across the AWS-3 band will avoid a repeat of the problems small wireless carriers have experienced with obtaining devices that work in the Lower 700 MHz band, which has left them unable to effectively compete against large carriers in their markets and has significantly delayed deployment of services. Not requiring a fully interoperable AWS-3 device ecosystem could result in a repeat of the delayed roll-out of the Lower 700 MHz band.”); Letter from Tamara Preiss, Verizon, to Marlene H. Dortch, FCC, GN Docket No. 13-185, at 2 (February 3, 2014) (Asking the FCC to “adopt technical rules for the AWS-3 spectrum that are consistent with the rules for the AWS-1 band, including a mobile uplink power limit of +23 dBm EIRP, which will facilitate use of the AWS-3 spectrum and interoperability across AWS bands. We noted the opportunity for industry to promote handset interoperability through the development of a single band class that would cover AWS-1 and paired spectrum at 1755-1780 MHz and 2155-2180 MHz.”).

<sup>4</sup> DISH also supports the interoperability request across 1710-1780 MHz (existing AWS-1 uplink added to new AWS-3 uplink) advanced by other carriers. DISH, however, is not seeking an interoperability mandate between the AWS-1/3 uplink with 1695-1710 MHz.

Significantly, DISH's interest in bidding in the auction would be *greatly* enhanced by the certainty of interoperability. This is because without an interoperability requirement (which includes 2180-2200 MHz), the AWS-4 downlink could not be carrier-aggregated with the AWS-3 band. Carrier aggregation is not feasible for two immediately adjacent 3GPP bands, which use separate filters. Such carrier aggregation configurations are only feasible with a single 90 MHz filter, which requires an interoperability requirement across the downlinks of AWS-1, AWS-3, and AWS-4. If, however, the FCC extends AWS-3 interoperability to include 2180-2200 MHz, DISH has a compelling reason to win licenses in 2155-2180 MHz.

## **II. A 90 MHz AWS Downlink Band Is Technically Sound and Creates No Additional Burdens on Current and Future AWS Licensees**

DISH's interoperability proposal is technically sound, and will not diminish the value or utility of 2110 to 2180 MHz. Extending interoperability across the AWS downlink bandwidth to include 2155-2180 MHz and 2180-2200 MHz results in a bandwidth size of 90 MHz. Supportable filter bandwidth depends on frequency of operation. The proposed 90 MHz filter bandwidth is 4.18% of the band's center frequency at 2155 MHz. This ratio is in line with typical filter design recommendations.<sup>5</sup> This means a device could support the AWS-1, AWS-3, and AWS-4 downlink bands with a single filter, a critical component enabling device interoperability. The proposed 90 MHz AWS downlink also allows AWS-1 and AWS-3 blocks to augment their downlink capacities by aggregating with the 2180-2200 MHz band as supplemental downlink. Such downlink capacity augmentations would be achieved via standard 3GPP intra-band carrier aggregation.

Extending the interoperability requirement for the upper AWS-4 band to be a part of the larger AWS ecosystem is also beneficial from a cost standpoint for all other ecosystem participants. By ensuring that the upper AWS-4 band is included within any new AWS downlink ecosystem, there will be increases in economies of scale and lower costs for all AWS operators. And, if 2180-2200 MHz is supported in future AWS devices, other AWS operators will be able to enter into roaming, leasing, or partnership agreements with DISH and leverage the additional downlink capacity.

There is, moreover, no burden to any winners of AWS-3 spectrum to adopt DISH's proposal, because a new 3GPP band plan will be needed anyway in order to include the newly auctioned frequencies. The current 3GPP Band 10 downlink specification extends from 2110-2170 MHz. Regardless of whether the next band plan is for 2110-2180 MHz or for 2110-2200 MHz, the impacted stakeholders will need to begin work from *square one* to develop a new band plan at 3GPP. Importantly, DISH is not seeking a backward-looking mandate that would require legacy AWS-1 devices to operate on AWS-4. Instead, AWS-4 would be required to be included with any new 3GPP band plan(s) developed to include AWS-1 and AWS-3 for the future.

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<sup>5</sup> See International Wireless Industry Consortium, IWPC Mobile RF Filter Group, *available at* <http://apps.fcc.gov/ecfs/document/view;jsessionid=0J4jQ2TKvhG0HdMlkHQncJLv15qQwHmQbzJ1JBt2kQh9CsHvF4pr!-56284754!-224088840?id=7022066310>.

### **III. AWS-3 Downlink Interoperability Would Serve the Public Interest and Be Consistent with Commission Precedent**

As the Commission previously found, interoperability among mobile broadband spectrum bands is good for consumers and competition, such as in last year's Lower 700 MHz Band interoperability decision. There, the Commission correctly found that ensuring that devices could operate across the entire Lower 700 MHz Band would "promote the efficient use of spectrum, the availability of higher quality and lower priced offerings and enhanced choices for customers of all wireless broadband providers, overall timely deployment of nationwide wireless broadband coverage, and the delivery of such service to rural and underserved areas."<sup>6</sup> The same benefits apply to DISH's proposal for AWS-3.

Unfortunately, the interoperability mandate was applied to the Lower 700 MHz Band after-the-fact, only when the Commission came to understand that failing to mandate interoperability in the original technical rules caused a situation in which the "existence of two incompatible band classes [presented] a substantial obstacle to the ability of subscribers to switch their service provider to take advantage of higher quality or lower cost service."<sup>7</sup>

In the AWS-3 proceeding, we should learn the lessons of the past. The Commission should set the right rules *at the outset* before carriers and new entrants begin network planning and deployment of AWS-3 spectrum (which likely will coincide with DISH's own buildout of AWS-4). Thus, to achieve the substantial benefits described above, DISH urges the Commission to establish interoperability that spans 2110 to 2200 MHz in the forthcoming AWS-3 Report and Order.

Respectfully submitted,

/s/ Jeffrey H. Blum

Jeffrey H. Blum

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<sup>6</sup> See *700 MHz Interoperability Order* ¶ 49.

<sup>7</sup> *Id.* ¶ 50.