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## 3GPP Band Plan Integrates DISH Spectrum

- | 3GPP standardizes Band 66 that includes DISH's current AWS-4 downlink, along with AWS-1 and paired AWS-3 spectrum
- | AWS-4 to be integrated in consumer devices
- | Band 66 is first asymmetric paired band completed in 3GPP
- | A second band to include unpaired AWS-3, lower AWS-4, and H Block spectrum moves forward with the successful completion of 3GPP feasibility study

ENGLEWOOD, Colo.--(BUSINESS WIRE)-- DISH Network Corporation (NASDAQ: DISH) announced today that the Third Generation Partnership Project (3GPP), the global wireless standards body, approved Band 66 which enables interoperability for AWS spectrum. Band 66 includes DISH's current AWS-4 downlink spectrum, as well as AWS-1 and paired AWS-3. With this approval, 3GPP specifications will enable devices with Band 66 to support carrier aggregation, which will combine the downlink capabilities of AWS-4, AWS-1 and AWS-3.

"Band 66 is a win for the public who will be able to take advantage of the innovations and increased data throughput that a single AWS band class will deliver," said Tom Cullen, DISH Executive Vice President of Corporate Development. "We're very pleased with the adoption of Band 66 by the industry. Interoperability of different spectrum bands increases network capacity and is an important priority for the FCC. This is a critical step forward on the path to deployment and commercialization."

Band 66 includes AWS-1 spectrum, which is designated as Band 4 and a key LTE band in the US.

"The standardization of Band 66 clears the path for DISH's upper AWS-4 spectrum to be included in the network and device ecosystem for both operators and consumers," continued Cullen.

Band 66 is the first asymmetric paired band completed in 3GPP, and aligns with the recognition that consumer demand for downlink capacity is significantly greater than uplink. Band 66 pairs 70 MHz of uplink spectrum with 90 MHz of downlink spectrum including AWS-1 (1710-1755 MHz and 2110-2155 MHz), the recently auctioned AWS-3 paired spectrum (1755-1780 MHz and 2155-2180 MHz), and DISH's upper AWS-4 spectrum (2180-2200 MHz) approved for use as downlink.

In addition to the adoption of Band 66, 3GPP approved the completion of a feasibility study and the initiation of a Work Item for a new band, which includes DISH's remaining AWS-4 spectrum and its H Block. The new band pairs 15 MHz of AWS-3 uplink (1695-1710 MHz) and 25 MHz of downlink comprised of DISH's lower AWS-4 spectrum (2000-2020 MHz) and H Block (1995-2000 MHz). The FCC has granted DISH the flexibility to convert the lower portion of AWS-4 to downlink from its legacy uplink designation.

"Similar to Band 66, the proposed band includes a greater proportion of downlink spectrum relative to uplink," added Cullen. "By pairing the AWS-3 uplink spectrum with valuable downlink spectrum on an asymmetrical basis, the overall utility of the spectrum will be enhanced to the benefit of consumers as the growth of applications like mobile video continue to require more downlink capacity."

With the successful completion of the 3GPP study, DISH will continue to work with fellow 3GPP members to finalize this new band in the coming year.

DISH and the entities in which it has invested have on average approximately 75 MHz of spectrum nationwide, covering over 23 billion MHz-POPs.

### **About DISH**

DISH Network Corp. (NASDAQ:DISH), through its subsidiaries, provides approximately 13.909 million pay-TV subscribers, as of Sept. 30, 2015, with the highest-quality programming and technology with the most choices at the best value. DISH offers

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