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SUBMITTED ELECTRONICALLY VIA ECFS

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

Re: Exploring Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz, GN Docket No. 17-183; Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550- 3650 MHz Band, GN Docket 12-354; Petition for Rulemaking to Amend the Commission's Rules Regarding the Citizens Broadband Radio Service in the 3550-3700 MHz Band, RM-11788; Petition for Rulemaking to Maximize Deployment of 5G Technologies in the Citizens Broadband Radio Service, RM-11789.

Dear Ms. Dortch:

The GSM Association (“GSMA”) applauds the recent Commission actions that could optimize the use of mid-band spectrum for Fifth Generation (“5G”) wireless technologies, thus potentially creating globally-harmonized allocations for the spectrum. GSMA encourages the Commission to take the next steps toward global harmonization by adopting the proposed changes to the rules governing the 3550-3700 MHz band (“3.5 GHz band”) Citizens Broadband Radio Service suggested in the Petitions for Rulemaking filed by T-Mobile and CTIA (together, “Petitioners”),^{1/} and pursuing the further actions contemplated in the recently initiated Notice of Inquiry (“NOI”) examining flexible use of spectrum between 3.7 and 24 GHz.^{2/}

Globally, 3 GHz frequencies are being actively considered for 5G operations. International organizations and countries worldwide have begun to act to make spectrum in the 3 GHz band available for 5G operations. For instance, the Australian Communications and Media Authority

^{1/} See CTIA Petition for Rulemaking, GN Dkt. No. 12-354, RM-11788 (filed June 16, 2017); T-Mobile USA, Inc. Petition for Rulemaking, GN Dkt. No. 12-354, RM-11789 (filed June 19, 2017) (“T-Mobile Petition”).

^{2/} *Exploring Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, Notice of Inquiry, FCC-CIRC 1708-04 (forthcoming) (“NOI”). GSMA encourages the Commission to adopt the NOI so that the Commission can develop a more complete record on the opportunities available in the 3.7-4.2 GHz band.



issued a consultation starting the preliminary replanning process for mobile broadband use of the 3.6 GHz band, with a goal of forming a final view on the best use of the 3.6 GHz band later this year.^{3/} Across Asia – in China, Japan, Singapore, and Hong Kong – policymakers have begun work to make 3 GHz band spectrum available for 5G. Specifically, China issued a public consultation seeking comment on plans to use the 3.3-3.6 GHz band for 5G;^{4/} Japan allocated and licensed spectrum in the 3.5 GHz band for mobile broadband and its Ministry of Internal Affairs and Communications identified and issued a public consultation considering use of the 3.6-4.2 GHz band for 5G operations;^{5/} Singapore’s Infocomm Media Development Authority issued a public consultation on 5G technology development and spectrum requirements, identifying the 3.4-3.6 GHz band, among others, for mobile use;^{6/} and the Communications Authority of Hong Kong intends to issue a public consultation later this year on re-allocating the 3.4-3.7 GHz band for 5G mobile services.^{7/}

In Europe, the radio spectrum policy advisory group to the European Commission released an analysis concluding in part that it considers the 3.4-3.8 GHz band to be the primary band suitable

^{3/} See *Future approach to the 3.6 GHz band*, AUSTRALIAN COMMUNICATIONS AND MEDIA AUTHORITY (June 2017), http://www.acma.gov.au/theACMA/future-approach-to-the-3_6-ghz-band.

^{4/} See Monica Allevan, *China issues plan to use 3300-3600 MHz, 4800-5000 MHz for 5G*, FIERCEWIRELESS (June 7, 2017), http://www.fiercewireless.com/wireless/china-issues-plan-to-use-3300-3600-mhz-4800-5000-mhz-for-5g?mkt_tok=eyJpIjoiT0RVM016QTBOR0poTkdaaCIIsInQiOiJkcCtCUkxpT2E2d0dkRUFJvXJyaE1XQnFlNEJyXC9LNFI1citSZVRxSW1YVEZ4N3BIWVp1OW9rc1hEMHdzYXJDZnNtaW1obm9pQmlGQkYrdXoxUmJTclpuNGVabl14cUw2UEE0Z3UzODZnemRyTVM0MFcxZW50YzlhRXpCQWRrOFMifQ%3D%3D&mrkid=4599669&utm_medium=nl&utm_source=internal.

^{5/} See Kuniko Ogawa, Director for Land Mobile Communications Division, Ministry of Internal Affairs and Communications, *Presentation on Japan’s Radio Policy to realize 5G in 2020* (June 28, 2016), http://www.gsma.com/spectrum/wp-content/uploads/2016/08/MIC_Spectrum-for-5G-MIC-Kuniko-OGAWA.pdf; Dean Brenner, *Discussing 5G spectrum on Capitol Hill*, QUALCOMM (July 20, 2017), <https://www.qualcomm.com/news/onq/2017/07/20/discussing-5g-spectrum-capitol-hill>.

^{6/} See *5G Mobile Services and Networks, Consultation Paper Issued by the Info-Communications Media Development Authority of Singapore* (rel. May 23, 2017), <https://www.imda.gov.sg/~media/imda/files/inner/pcdg/consultations/consultation%20paper/public%20consultation%20on%205g%20mobile%20services%20and%20networks/5g-public-consultation.pdf?la=en>.

^{7/} See Press Release, *The Communications Authority’s Work Plan for Making Available Additional Radio Spectrum to Meet the Demand of Public Mobile Services Towards 2020 and Beyond*, Communications Authority (Mar. 21, 2017), http://www.coms-auth.hk/en/media_focus/press_releases/index_id_1423.html.



for introduction of 5G services in Europe.^{8/} In keeping with this analysis, European countries have begun to take action to make the 3 GHz band available for 5G. The United Kingdom will soon be auctioning 150 megahertz of spectrum in the 3.4 GHz band for 5G mobile use^{9/} and it has proposed making the 3.6-3.8 GHz band available for mobile services including 5G;^{10/} Ireland recently auctioned spectrum in the 3.4-3.8 GHz band for 5G deployment;^{11/} Italy will begin auctioning and awarding spectrum in the 3.6-3.8 GHz band for 5G uses by 2018;^{12/} and Germany has announced a 5G plan that includes making the 3.5 GHz band available in 2018,^{13/} and is completing a consultation on making the 3.6 GHz band available in the near future.^{14/}

Adopting the Petitioners' proposals would, among other things, make Priority Access Licenses ("PAL") available on a Partial Economic Area basis with ten-year license terms and a renewal expectancy, make the full number of PALs applied for available, permit bidding on specific PAL blocks, protect Citizens Broadband Radio Service Device registration information, and make technical changes to the 3.5 GHz rules to accurately reflect likely 5G technology specifications –

^{8/} See EUROPEAN COMMISSION, RADIO SPECTRUM POLICY GROUP, STRATEGIC ROADMAP TOWARDS 5G FOR EUROPE, 3 (2016), http://rspg-spectrum.eu/wp-content/uploads/2013/05/RPSG16-032-Opinion_5G.pdf.

^{9/} See *Ofcom sets rules for mobile spectrum auction*, OFCOM (July 11, 2017), <https://www.ofcom.org.uk/about-ofcom/latest/media/media-releases/2017/ofcom-sets-rules-for-mobile-spectrum-auction>;

^{10/} See OFCOM, IMPROVING CONSUMER ACCESS TO MOBILE SERVICES AT 3.6 TO 3.8 GHZ (rel. Oct. 6, 2016), https://www.ofcom.org.uk/__data/assets/pdf_file/0035/91997/3-6-3-8ghz-consultation.pdf.

^{11/} See Press Release, Five Winning Bidders in ComReg's 3.6 GHz Band Spectrum Award, Commission for Communications Regulation (May 22, 2017), <https://www.comreg.ie/five-winning-bidders-comregs-3-6-ghz-band-spectrum-award/>.

^{12/} *Spectrum for 4G and 5G*, QUALCOMM, 19 (July 2017) <https://www.qualcomm.com/media/documents/files/spectrum-for-4g-and-5g.pdf>.

^{13/} See 5G-Strategie für Deutschland, Federal Ministry of Transport and Digital Infrastructure (2017), http://www.bmvi.de/SharedDocs/DE/Anlage/Presse/098-dobrindt-5g-strategie.pdf?__blob=publicationFile; Scott Bicheno, *Germany unveils its cunning plan for 5G*, TELECOMS.COM (July 13, 2017), <http://telecoms.com/483379/germany-unveils-its-cunning-plan-for-5g/>.

^{14/} See *Key Elements for the rollout of digital infrastructures and Identification of Demand for nationwide assignments in the 2 GHz and 3.6 GHz bands*, Bundesnetzagentur (June 2017), https://www.bundesnetzagentur.de/SharedDocs/Downloads/EN/Areas/Telecommunications/Companies/TelecomRegulation/FrequencyManagement/ElectronicCommunicationsServices/201070704_KeyElementsDemandIdentification.pdf;jsessionid=7489D2FA5345E2A7A9188F429C2D03E6?__blob=publicationFile&v=1



such as the OOB that Qualcomm proposed.^{15/} These changes would further harmonize 3.5 GHz band 5G use in the United States with much of the 3 GHz band in other countries, and would make U.S. technical standards consistent with international norms. This, in turn, would allow companies to leverage the global products ecosystem, thereby encouraging the greatest amount of innovation, investment, and deployment. The Commission should therefore maximize the utility of the 3.5 GHz band for 5G operations in the United States by adopting the Petitioners' proposals.

The Commission's recent NOI would similarly – assuming follow-on regulatory actions – make additional mid-band spectrum available in the United States, consistent with the approach being taken in other countries. It appropriately seeks input in particular on ways in which the 3.7-4.2 GHz band can be used to address the lack of mid-band spectrum for 5G.^{16/} Robust development of 5G technologies requires additional spectrum in low-, mid-, and high-bands, and at present, the only mid-band spectrum available for 5G in the U.S. is the 3.5 GHz band, which as the Petitioners point out, is not optimized for 5G use. The 3.7-4.2 GHz band is ideally suited to address the United States' need for additional mid-band spectrum. It is immediately adjacent to the 3.5 GHz band, has favorable propagation characteristics and can also potentially be globally harmonized. As noted above, several countries have begun assessing, and, in some cases, allocating portions of the 3.7-4.2 GHz band for future 5G use. For example, Japan has identified and issued a public consultation considering use of the 3.6-4.2 GHz band for 5G operations^{17/} and plans to issue technical rules by next summer.^{18/} The United Kingdom, Italy, and Ireland also have taken action to make the 3.7-3.8 GHz band available for 5G. If the United States makes the 3.7-4.2 GHz band available for 5G operations, it will further promote international use of the band and help accelerate innovation and development of the band for 5G technologies worldwide.

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^{15/} See Letter from Dean R. Brenner, Senior Vice President, Spectrum Strategy & Technology Policy, and John W. Kuzin, Vice President and Regulatory Counsel, Qualcomm, Inc. to Marlene H. Dortch, Secretary, FCC, GN Dkt. No. 12-354 (filed June 19, 2017) (“Qualcomm *Ex Parte*”).

^{16/} See NOI ¶16 (“Recognizing the existing uses of the band, we seek comment, generally, on the potential for more intensive use of the 3.7-4.2 GHz band for wireless broadband.”).

^{17/} See Kuniko Ogawa, Director for Land Mobile Communications Division, Ministry of Internal Affairs and Communications, Presentation on Japan's Radio Policy to realize 5G in 2020 (June 28, 2016), http://www.gsma.com/spectrum/wp-content/uploads/2016/08/MIC_Spectrum-for-5G-MIC-Kuniko-OGAWA.pdf; Dean Brenner, *Discussing 5G spectrum on Capitol Hill*, QUALCOMM (July 20, 2017), <https://www.qualcomm.com/news/onq/2017/07/20/discussing-5g-spectrum-capitol-hill>.

^{18/} *Discussing 5G spectrum on Capitol Hill*, QUALCOMM (July 20, 2017), <https://www.qualcomm.com/news/onq/2017/07/20/discussing-5g-spectrum-capitol-hill>.



GSMA therefore urges the Commission to take actions in the above referenced proceedings that will optimize mid-band spectrum in general, and the 3.5-4.2 GHz band in particular, for 5G operations.

Yours sincerely,

A handwritten signature in black ink, which appears to read "John Giusti", is written over a horizontal line.

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