Mercedes-Benz

Mercedes-Benz USA, LLC
A Daimler Company

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Amendments of Parts 1, 2, 15, 90, and 95 of the Commission's Rules to Permit Radar Services in the 76-81 GHz Band	)	ET Docket No. 15-26
	)	
Amendment of Part 15 of the Commission's Rules to Permit the Operation of Vehicular Radar Services in the 77-78 GHz Band	)	RM-11666
	)	
Amendment of Sections 15.35 and 15.253 of the Commission's Rules Regarding Operation of Radar Systems in the 76-77 GHz Band	)	ET Docket No. 11-90 RM-11555
	)	
Amendment of Section 15.253 of the Commission's Rules to Permit Fixed Use of Radar in the 76-77 GHz Band	)	ET Docket No. 10-28
	)	
Amendment of the Commission's Rules to Permit Radiolocation Operations in the 78-81 GHz Band	)	WT Docket No. 11-202

COMMENTS
OF
MERCEDES-BENZ USA, LLC

Mercedes-Benz USA, LLC, on behalf of itself, and jointly with its parent company, Daimler Aktiengesellschaft (hereinafter "MBUSA") submits the following comments in response to the Notice of Proposed Rulemaking ("NPRM") in the above-captioned dockets.[1]

[1] *Amendment of Parts 1, 2, 15, 90 and 95 of the Commission's Rules to Permit Radar Service in the 76-81 GHz Band et al.*, Notice of Proposed Rulemaking and Reconsideration Order, FCC 15-16 (rel. Feb. 5, 2015) ("NPRM").

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Background

MBUSA is responsible for the distribution, marketing and customer service for all Mercedes-Benz and Maybach vehicles in the United States and offers drivers the most diverse line-up in the luxury segment, with 13 model lines ranging from the sporty CLA-Class to the flagship S-Class sedans and the new AMG GT supercar. MBUSA is also responsible for the distribution, marketing and customer service of the Mercedes-Benz Sprinter Vans, as well as the smart vehicles in the US.

For well-over a decade, MBUSA has been quite engaged with the Commission in its rulemakings related to frequencies allocated for vehicular radar systems. We are deeply appreciative of the Commission's efforts and forward thinking actions to establish[2] and refine[3] spectrum allocations in support of the deployment of Vehicular Radar Services. The Commission can be extremely proud of playing such a critical role in mitigating overall vehicle collisions on our nation's roads and highways resulting in fewer vehicle occupant deaths and injuries.

MBUSA's Use of Automotive Radar Systems

In 1995, the Commission adopted the rules and electromagnetic emission limits for vehicular radar systems set forth in Section 15.253 of its rules.[4] Enabled by this rule change, in the fall of 1999, Mercedes-Benz was the world's first vehicle manufacturer to introduce Adaptive Cruise Control on its flagship 2000MY S-Class sedan in the United States market. Since then, there has been significant growth in the use of automobile radar systems, and they have become relatively commonplace as a result of consumer demand and the driver's desire to increase vehicular safety, comfort, and convenience.

In fact, MBUSA has led the rollout of critical safety systems that utilize both 24 GHz radar and 76-77 GHz radar technologies. Beginning with MY2015 models, MBUSA released Collision Prevention Assist Plus, which became our standard single-radar based system that provides Forward Collision Warning, Adaptive Brake Assist, and even Crash Imminent Braking, on approximately 80% of all Mercedes-Benz sold in the US. In addition, we have developed an optional 'basic' Driver Assistance Package for our new compact car lines that is based on a different single radar sensor, but will enjoy a comparable performance for Forward Collision Warning, Adaptive Brake Assist, and

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[2] *See Amendment of Parts 2, 15, and 97 of the Commission's Rules to Permit Use of Radio Frequencies Above 40 GHz for New Radio Applications*, First Report and Order and Second Notice of Proposed Rulemaking, 11 FCC Rcd 4481 (1995) ("*Millimeter Wave First Report and Order*").
[3] *See* 47 C.F.R. § 15.253.
[4] *See Millimeter Wave First Report and Order*, 11 FCC Rcd at 4481.

Crash Imminent Braking starting with MY2015 vehicles. Additionally, MBUSA created a higher-end Driver Assistance Package, which features a more sophisticated sensing system that allows for refined functionality as compared to our 'basic' Driver Assistance Package. Further, the fusion of radars with a stereo-camera input allows for the detection of crossing vehicles, or even pedestrians, within the vehicle's path. All of this could not have been possible without the support and decisions from the Commission to allow for Vehicular Radar Services, which in turn has greatly improved overall highway safety.[5]

For years, the Commission has pursued the express goal of "ensur[ing] that vehicle radar systems will have sufficient spectrum and design flexibility to develop their systems successfully."[6] With its recent NPRM, the FCC once again took the initiative to create the framework for the future development of sufficient spectrum for safety-critical radar technologies.

MBUSA Supports the Expansion of Vehicular Radar Use in the 76-81 GHz Band Under Part 95 of the Commission's Rules

MBUSA fully supports the Commission's proposal to expand vehicular radar use throughout the 76-81 GHz frequency range. As with radar technologies operating within the 76-77 GHz band, expanding the operational range to 76-81 GHz will only further increase the availability of safety technologies for vehicles, while also promoting future comfort and convenience systems available through autonomous vehicle driving.

Likewise, MBUSA fully supports the Commission's proposal to regulate automotive radars under Part 95. Doing so will prevent OEMs from having to obtain individual licenses from the FCC, resulting in fewer obstacles and greater flexibility to developing innovative new safety features. In addition, Part 95 grants the important advantage of a formal interference protection for qualifying technologies and reflects the importance of the undisturbed operation of automotive radars for the safety of vehicles and passengers that will increase with autonomously driving vehicles.

MBUSA Supports the Continuing Operation of Vehicular Radar in the 24 GHz Band

In closing, MBUSA is concerned about the proposed phase out period for 24 GHz ultra-wide band ("UWB") radars, which are currently allowed under Section 15.515 of the

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[5] *Id.*

[6] *Amendment of Parts 1, 2, 15, 90 and 95 of the Commission's Rules to Permit Radar Service in the 76-81 GHz Band et al.*, Notice of Proposed Rulemaking and Reconsideration Order, FCC 15-16 (rel. Feb. 5, 2015) ("NPRM").

Commission's rules.[7] Various automotive OEMs continue to rely on the availability of these bands for vehicular radar. Meanwhile, there is no pressing need to eliminate the use of the 24 GHz band for vehicular radar. However, if the Commission is determined to phase out the use of wideband and ultra-wideband 24 GHz radars, it should ensure that any such phase-out gives OEMs ample time to transition their systems in a manner that is not disruptive and that is at the very least harmonized with international phase-out schedules. Alternatively, the Commission's proposed 30-day phase out period in the NPRM simply would not provide sufficient time for MBUSA or other OEMs to make the necessary transition.

Product life-cycles in the automotive industry require longer lead times than many industries that are also regulated by the FCC. As such, automobile manufacturers have already finalized their plans and are working toward the deployment and execution of products in 2022 and beyond. This consideration is reflected and driven by respective legislation inside the European Union, and the European Conference of Postal and Telecommunications Administrations ("CEPT") where the phase out procedure for the 24 GHz UWB radars is being regulated by the directives 2005/50/EC, and the ECC Decision 04(10).[8] These regulations will allow for the use of 24 GHz UWB radars as components of new vehicles until 2022. The FCC should consider that the automotive industry inside the US and the respective supplying industry may today have plans even beyond that time and need for an even longer transition period. Therefore, the FCC should not implement any phase out schedule shorter or narrower than the current regulation within the CEPT and European countries.

Finally, the Commission should clarify that it will continue to allow OEMs to secure new 24 GHz narrowband vehicular radar equipment certifications, regardless of its decision for system in the wideband and ultra-wideband 24 GHz.

MBUSA strongly endorses all comments filed by the international Strategic Automotive Radar frequency Allocation (SARA) consortium and all comments filed by the Alliance of Automobile Manufacturers of which MBUSA is a member. In particular, SARA has been instrumental in promoting the frequency management for automotive radar worldwide.

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[7] *Id.*, ¶ 44.

[8] Commission Decision 2005/50/EC, on the harmonisation of the 24 GHz range radio spectrum band for the time-limited use by automotive short-range radar equipment in the Community, 2005 O.J. (L21) as amended by Commission Implementing Decision 2011/485/EU 2011, amending Decision 2005/50/EC on the harmonisation of the 24 GHz range radio spectrum band for the time-limited use by automotive short-range radar equipment in the Community, 2011 O.J. (L198/71); ECC Decision (04)10, The frequency bands to be designated for the temporary introduction of Automotive Short Range Radars (SRR), as corrected (Mar. 6, 2015).

If you have any inquiries or correspondence concerning this matter, please feel free to contact Dan Selke, of my staff, at 201-573-2616, or Daniel.Selke@mbusa.com .

Sincerely yours,

Julian Soell
General Manager
Engineering Services

April 6, 2015