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January 26, 2004

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, D.C. 20554

**Re: ET Docket No. 03-102
Notice of *Ex Parte* Presentations**

Dear Ms. Dortch:

Pursuant to Section 1.1206(b) of the Commission's rules, I am writing on behalf of the Short-Range Automotive Radio Frequency Allocation ("SARA") and Long Range Automotive Radio Frequency Allocation ("LARA") groups, two associations of automobile and vehicular radar manufacturers that deploy collision warning, collision mitigation and active safety systems on automobiles in the United States, to notify you of oral *ex parte* presentations before Jennifer Manner, Legal Advisor to Commissioner Abernathy, and Sam Feder, Legal Advisor to Commissioner Martin, that occurred on January 23, 2004. SARA and LARA were represented in the meetings by Dan Selke, Mercedes-Benz USA; Robert Kelly of Squire, Sanders & Dempsey L.L.P., representing Delphi Corp.; Mark Esherick, Siemens Corp.; Jeffrey Krauss, Consultant to M/A-COM; and Ari Fitzgerald and David Martin of Hogan & Hartson L.L.P. As summarized below, the SARA and LARA representatives used the *ex parte* meetings to reiterate the positions taken by the organizations in their prior comments responding to the pending NPRM in this proceeding. ^{1/}

^{1/} See Amendment of Part 2 of the Commission's Rules to Realign the 76-81 GHz band and the Frequency Range Above 95 GHz Consistent with International Allocation Changes, ET Docket No. 03-102, *Notice of Proposed Rulemaking*, FCC 03-90 (rel. Apr. 28, 2003). In the NPRM, the Commission proposed, *inter alia*, three new allocations for the 76-81 GHz band: radio astronomy, amateur-satellite, and space research.

The Commission Should Take No Action that Would Negatively Impact Existing Long Range Vehicular Radars at 76-77 GHz

The 76-77 GHz band is currently used by long range vehicular radars operating on an unlicensed basis pursuant to §15.253 of the Commission's rules. These radars enable adaptive cruise control ("ACC") systems which the National Transportation Safety Board ("NTSB") has concluded could, once deployed in large numbers, prevent about 12,000 rear-end collisions on U.S. interstate highways alone each year.^{2/} To determine how ACC can best be deployed and used to mitigate accidents, the National Highway Transportation Safety Administration ("NHTSA"), in conjunction with General Motors, Delphi and the University of Michigan, is currently conducting a field operational test of ACC systems combined with forward collision warning systems ("CWSs"). LARA believes that, as ACC equipment costs decline and deployment grows in future years, ACC will form a key component of active safety systems that will play a significant role in reducing the 40,000 automotive accident fatalities that occur every year.

In sharp contrast to the important public safety benefits being provided by the use of the 76-77 GHz band for vehicular radar, no public interest justification has been put forward for making the three new allocations (radio astronomy, amateur-satellite, and space research) proposed for the band. In determining whether to make the new allocations, the Commission should – consistent with past precedent – consider the potential impact on ACC systems, notwithstanding the fact that such systems operate on an unlicensed basis. For example, the Commission recently declined to make a new allocation to the amateur services where important, but unlicensed, public service-related power line communications ("PLC") would have been impacted.^{3/} The Commission explained that:

We disagree with . . . assertions concerning the consideration we should accord incumbent Part 15 use in these bands in deciding whether to provide an allocation for amateur services. Our decision must be based upon the facts at hand and our evaluation of any potential changes to the spectral environment due to our decision. In evaluating whether new operations should be added to a band, licensed or not, we must consider the potential for interference conflicts between the operations. While

^{2/} NTSB, "Special Investigation Report: Vehicle-and Infrastructure-Based Technology for the Prevention of Rear-End Collisions," NTSB/SIR-01/01, PB2001-917003 (May 1, 2001) at 15, 33.

^{3/} See Amendment of Parts 2 and 97 of the Commission's Rules to Create a Low Frequency for the Amateur Radio Service, ET Docket No. 02-98, *Report and Order*, FCC 03-105 (rel. May 14, 2003).

unlicensed PLC operations have no protection status, they provide a vital public service. Therefore, we disagree with amateur comments that we should not consider the impact on unlicensed operations when making spectrum allocation decisions. ^{4/}

In another context, the Commission permitted the introduction of a new licensed service only after taking steps to ensure the protection of important unlicensed services operating in the same band. ^{5/}

In the instant situation, the record is devoid of any support for the new allocations, and no justification demonstrating a need for the proposed services in the band has been put forward. Should the Commission nevertheless decide to proceed with the allocations, the Commission should, consistent with its past precedent, at least take action to protect the important incumbent operations. Specifically, the Commission should make it clear that the new authorized services will enjoy no interference protection from unlicensed vehicular radar operations, and that no reduction in power levels will be imposed on vehicular radar devices.

As demonstrated in the LARA and SARA comments, millimeter wave operations in the radio astronomy and space research services would most likely involve only a few sites, most of which would be located in remote areas. ^{6/} Given the nature of the sites typically used for radio astronomy and space research, users of these services would be in the best position to design site-specific interference mitigation techniques (*e.g.*, shielding and control over the immediate vicinity) to protect their operations from vehicular radar emissions.

With regard to the amateur-satellite allocation, LARA and SARA note that existing §97.303(r)(1) would prevent any amateur-satellite operations in the 76-

^{4/} *Id.* at ¶ 17.

^{5/} See Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, *Report and Order*, 10 FCC Rcd 4695 (1995) ("*LMS Order*") at ¶ 77 ("In order to limit the potential for interference [to Part 15 devices] from [new LMS] transmissions, we will limit the maximum power level of reverse links to 30 watts ERP.") See also Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, ET Docket No. 00-258, *Third Report and Order*, FCC 03-16 (rel. Feb. 10, 2003) ("*AWS Order*") at ¶ 46 (deciding not to reallocate the 1920-30 MHz band in order not to upset the reasonable investment-backed expectations of unlicensed PCS equipment manufacturers).

^{6/} See LARA Comments at 9-12, 14-15; SARA Comments at 10-13.

77 GHz band. ^{7/} The Commission specifically adopted this freeze on amateur operations to protect vehicular radar operations, explaining that “[b]ecause harmful interference to vehicle radar systems could affect public safety, we will proceed with the utmost amount of caution.” ^{8/} Like terrestrial-based amateur operations, earth-to-space amateur-satellite transmissions pose the potential to cause harmful interference to ACC systems. ^{9/} Although the existing rule prohibits all amateur station transmissions, LARA and SARA request that the Commission make a clarifying amendment so that the rule unambiguously states that “. . . amateur station transmissions, including operations in the amateur-satellite service, are suspended . . .” Alternatively, the Commission should clearly state in its adopting order that the current §97.303(r)(1) prohibits any amateur-satellite operations in the 76-77 GHz band.

The Commission Should Take No Action that Would Prevent Future Short Range Radar Operations at 77-81 GHz

As the Commission is well aware from the ultra-wideband proceeding, many of SARA’s member companies are in the process of developing and deploying short range automotive radars (“SRRs”) that will operate in the 22-29 GHz (“24 GHz”) band pursuant to §15.515 of the Commission’s rules. The Commission has recognized the important safety implications of SRRs, noting that it expects SRRs to “become as essential to passenger safety as air bags.” ^{10/}

^{7/} 47 C.F.R. 97.303(r)(1) (“Authorization of the 76-77 GHz segment of the 4 mm band for amateur station transmissions is suspended until such time that the Commission may determine that amateur station transmissions in this segment will not pose a safety threat to vehicle radar systems operating in this segment.”). This rule imposes no practical regulatory constraint on amateur-satellite operations for the foreseeable future, given that, due to equipment cost concerns, amateur-satellite operations are in practice limited much lower frequency bands. *See* LARA Comments at 12-13.

^{8/} 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, *Third Report and Order*, 13 FCC Rcd 15074 (1998) at ¶ 8.

^{9/} As noted by LARA in its comments, “[a]ssuming maximum transmitting power on earth station antennas positioned at low elevation angles, sidelobe emissions could extend to the ground, at a level more than sufficient to cause harmful interference to vehicular radar.” LARA Comments at 13-14.

^{10/} *See* Revision of Part 15 of the Commission’s Rules Regarding Ultra-Wideband Transmission Systems, ET Docket 98-153, *First Report and Order*, FCC 02-48 (rel. April 22, 2002) (“*UWB Order*”) at ¶ 64.

As explained in SARA's comments, ongoing developments in Europe may result in the 77-81 GHz band becoming available in the long term for SRR operations. Accordingly, SARA expects that some of its members may eventually be interested in deploying 77-81 GHz SRRs in the U.S. as well as in Europe. (SARA makes clear, however, that although some of its members may seek access to the 77-81 GHz band in addition to the 24 GHz band, all SARA members seek to maintain access to the 24 GHz band for SRR indefinitely.) Therefore, the Commission should take no action that would have the effect of preventing a future vehicular radar allocation in the band. There is no evidence in the record that there will be any need in the foreseeable future for the proposed services to operate in the 77-81 GHz band. Thus, any Commission allocation decision should protect the 77-81 GHz band for future vehicular radar operations for the same reasons that it should protect the 76-77 GHz band for existing vehicular radar operations. ^{11/}

^{11/} Although unlikely to be deployed for economic reasons, amateur-satellite operations would pose a threat of interference to vehicular radars. For this reason, SARA requests that the Commission modify §97.303(r)(1) to extend the freeze on amateur operations to encompass the entire 76-81 GHz band.

Conclusion

Vehicular radar is a nascent technology still in the very early stages of deployment. Regulatory certainty is critically important for its continued growth and success. ^{12/} These dramatic safety-enhancing systems are becoming available as a result of the hundreds of millions of dollars invested by the members of LARA and SARA in developing such systems. Any adverse change in the rules would improperly upset the legitimate, investment-backed expectations of the manufacturers who have contributed the capital to make this technology possible, and limit significantly its potential road safety benefits. ^{13/} Accordingly, the Commission should take no action that would effectively impose an obligation on vehicular radar devices to protect, or tolerate interference from, the proposed new services, or that would require a reduction in the current permitted vehicular radar emission levels.

Respectfully submitted,

/s/ Ari Q. Fitzgerald

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^{12/} See *LMS Order*, *supra* note 5, at ¶ 2 (“Our decisions [protecting incumbent unlicensed operations] provide certainty for all users of the band so they can invest in the equipment and facilities necessary to bring quality, low cost services to consumers.”).

^{13/} See *AWS Order*, *supra* note 5, at ¶ 46 (deciding not to reallocate incumbent unlicensed users in order not to upset reasonable investment-backed expectations).