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February 18, 2008

FILED ELECTRONICALLY

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

Re: *Written Ex Parte* in WT Docket No. 01-90 and EB Docket No. 98-95: DSRC/FSS Earth Station Spectrum Sharing Protocol

Dear Ms. Dortch:

On behalf of the Satellite Industry Association ("SIA"), the Intelligent Transportation Society of America ("ITS America") and the American Association of State Highway and Transportation Officials ("AASHTO"), I am writing to advise the Commission of the recently completed agreement for sharing of the 5.9 GHz Band (5.850-5.925 GHz) by the Dedicated Short Range Communications ("DSRC") Services and the Fixed-Satellite Service ("FSS"). Three industry associations -- SIA representing FSS interests; and ITS America and AASHTO representing DSRC interests -- sponsored a cooperative effort to develop a set of recommended guidelines and procedures for the siting and operation of DSRC and FSS earth stations in the 5.9 GHz Band to reduce the potential for inter-service interference.[1] In addition to being counsel to FSS interests, I have served as a co-chairman of the working group convened for this effort.

Attached for the Commission's consideration are two documents. The first document, entitled "Terms of Reference," provides background information regarding the working group's participants, operating assumptions and process, and envisioned work products. Although the group was unable to reach consensus on certain aspects of its initial work plan, the essential task of the group -- to develop a sharing arrangement for DSRC and FSS earth station operations in the 5.9 GHz Band -- was accomplished and is embodied in the other documents agreed to by the industry representatives.

[1] *See Amendment of the Commission's Rules Regarding Dedicated Short-Range Communication Services in the 5.850-5.925 GHz Band (5.9 GHz Band)*, WT Docket No. 01-90, Report and Order, 19 FCC Rcd 2458, ¶¶ 74-80 (2004); *Amendment of the Commission's Rules Regarding Dedicated Short-Range Communication Services in the 5.850-5.925 GHz Band (5.9 GHz Band)*, WT Docket No. 01-90, Memorandum Opinion and Order, 21 FCC Rcd 8961, ¶¶ 20-25 (2006).

The second document is the proposed DSRC/FSS Earth Station Spectrum Sharing Protocol, which includes recommended guidelines and procedures for the siting and operating of DSRC roadside units and FSS transmit earth stations in the 5.9 GHz Band to avoid potential interference. Attached to the Spectrum Sharing Protocol is an appendix (Appendix A) that proposes modifications to FCC Rules Part 25 (for FSS) and Part 90 (for DSRC) to implement the Spectrum Sharing Protocol. It is requested that the Commission consider adopting the proposed rule changes.

I would be pleased to answer any questions or provide further information.

Sincerely,

/s/

Carlos M. Nalda

Attachments

cc (w/ att.): Patricia Cooper, Satellite Industry Association
Joe Averkamp and Suzanne Murtha, Intelligent Transportation Society of America
William Brownlow, American Association of State Highway and Transportation Officials

DSRC/FSS Technical Discussions:
Terms of Reference

I. Background and Purpose

Dedicated Short Range Communications ("DSRC") and Fixed-Satellite Service ("FSS") uplink operations share primary allocation in the frequency band at 5.850-5.925 GHz ("5.9 GHz Band") with Government military radiolocation services (isolated to a limited number of military test ranges). Immediately adjacent to the 5.9 GHz Band are additional primary FSS uplink operations in the frequency band at 5.925-6.425 GHz ("conventional C-band").

Three industry associations -- the Intelligent Transportation Society of America ("ITS America") and the American Association of State Highway and Transportation Officials ("AASHTO") for DSRC, and the Satellite Industry Association ("SIA") for FSS -- have agreed to sponsor a cooperative effort to develop and reach agreement on a set of recommended guidelines and procedures for the siting and operation of DSRC and FSS earth stations in the 5.9 GHz Band to reduce the potential for inter-service interference. The three associations desire to jointly submit a proposed DSRC/FSS Earth Station Spectrum Sharing Protocol ("Sharing Protocol") and associated FCC rule changes for possible Commission adoption. The associations also agreed to update a previous analysis regarding the potential for interference from aggregate DSRC transmissions into co-frequency FSS space station receivers (ITS America submitted a study of this issue to the FCC in May 1997); and to examine the potential for interference from FSS uplink operations in the conventional C-band to DSRC operations in the 5.9 GHz Band.

II. Participants

Participants include representatives from both the DSRC and FSS industries, with informal sponsorship from ITS America, American Association of State Highway and Transportation Officials and the Satellite Industry Association. Additional parties may be invited to participate in order to benefit from their particular expertise or perspective.

DSRC:

- ITS America
- AASHTO
- ARINC
- John Hopkins University/Applied Physics Lab

FSS:

- SIA
- Intelsat
- SES New Skies
- SES Americom

Third Parties:

- Comsearch

III. Operating Assumptions

- DSRC and FSS systems and operations are co-primary in the 5.9 GHz Band.
- The DSRC community is concerned that DSRC operations located within the proximity of an FSS earth station site may experience harmful interference from in-band FSS earth station operations.
- The FSS community is concerned that ubiquitous deployment of DSRC systems may constrain co-primary FSS operations in the 5.9 GHz Band and primary FSS operations in the adjacent conventional C-band.
- There is no requirement in the FCC Rules for frequency coordination between DSRC operations in the 5.9 GHz Band and FSS operations in the adjacent conventional C-band. Such coordination will not be addressed by this committee.
- To facilitate spectrum sharing in the 5.9 GHz Band, accurate, up-to-date and comprehensive DSRC and FSS earth station site information should be available to licensees.

IV. Terms of Reference

- Examine the potential for interference to DSRC stations from in-band and adjacent band FSS earth stations, and identify methods that can mitigate potential interference to DSRC stations from FSS earth station transmissions.
- Exchange technical information that may help to minimize the potential impact of transmissions of FSS earth stations operating in the adjacent conventional C-band on DSRC operations in the 5.9 GHz Band.
- Review FCC licensing procedures for possible revisions in order to enable in-band DSRC and FSS spectrum sharing.
- Examine whether there is a potential for interference to FSS space station receivers from aggregate in-band DSRC transmissions.
- Examine the use of "interference contours" for in-band FSS earth stations, which can serve as a preliminary mechanism to determine if a potential exists for an FSS earth station to interfere with a DSRC roadside unit.

V. Committee Process

The participants plan to hold a series of meetings to address technical and policy discussions for the development of the Spectrum Sharing Protocol and additional work products as described in the following section. A starting point for the technical discussions will be the interference assessment conducted by The Johns Hopkins University Applied Physics Laboratory

regarding the potential interference to DSRC operations from in-band FSS stations.[1] Where a need is identified, additional technical studies may be conducted by the participants or requested of third parties to inform the meeting participants.

These discussions will also consider policy considerations for each service that may impact the Sharing Protocol and other planned work products. "Strawman" proposals for each work product are expected to be prepared and distributed for review and comment for all participants.

The discussions are to be chaired jointly by a designated representative for each of the DSRC and FSS industry groups.

VI. Committee Work Product

The participants envision three different work products. The first work product is a Sharing Protocol, which will include an annex of proposed changes to the FCC rules, to facilitate in-band sharing of operations in the 5.9 GHz Band by DSRC and FSS earth station licensees. The second work product is an analysis of the potential for interference from FSS earth station uplink operations in the conventional C-band into DSRC receive operations. The third work product is an analysis of potential aggregate interference from simultaneous, multiple DSRC transmissions in the 5.9 GHz band into co-frequency FSS space stations receivers.

[1] "Report on Interference Assessment of In-Band Fixed Satellite Service Earth Station Uplinks to Dedicated short Range Communications (DSRC) Service Operations," The Johns Hopkins University Applied Physics Laboratory, Version 1.0, SSD-POR-04-7434 V1.0 (October 2004).

DSRC/FSS Earth Station Sharing Protocol

1.0 Introduction

On February 10, 2004, the FCC issued a *Report and Order* ("*R&O*") in WT Docket 01-90 adopting licensing and service rules for the Dedicated Short Range Communications Service (DSRC) operating in the 5850 – 5925 MHz ("5.9 GHz") band.[1] In the *R&O*, the FCC acknowledged the concerns raised by both Fixed-Satellite Service ("FSS") and DSRC interests regarding operational sharing in the 5.9 GHz band, but opted to defer any rule changes until further industry study on the issue.[2] Industry representatives have agreed to convene an informal working group to develop and reach agreement on a set of recommended guidelines and procedures for the siting and operations of DSRC systems and FSS ~~s~~earth stations in the 5.9 GHz Band. The desired outcome of these policy and technical discussions will be a Spectrum Sharing Protocol proposal to be considered for adoption by the FCC.

Comsearch was solicited by the working group to submit a "strawman" proposal for a spectrum sharing etiquette that the working group could use as the framework to facilitate band sharing between DSRC systems and FSS earth stations. In developing our approach, the following working group terms of reference were considered:

- DSRC systems and FSS earth stations share co-primary allocations in the 5.9 GHz Band.
- There is a potential for interference to DSRC stations from in-band and adjacent band FSS earth stations.
- The availability of technical information on DSRC and FSS earth station deployments can assist in the development of sound engineering practices and guidelines that will help to minimize the potential for interference, for new DSRC deployments in the vicinity of incumbent FSS earth stations.

A spectrum sharing etiquette generally involves two main elements: a technical approach and a procedural approach. The technical approach considers how the systems will operate, establishes the appropriate interference criteria, and recommends a method for determining the interference

[1] *Amendment of the Commission's Rules Regarding Dedicated Short-Range Communications Services in the 5.850-5.925 GHz Band (5.9 GHz Band)*, Report and Order, WT Docket No. 01-90, 19 FCC Rcd 2458 (2004) ("*R&O*"). In July 2006, the Commission released a *Memorandum Opinion and Order* that modified a few of the rules adopted in the *R&O*. *See Amendment of the Commission's Rules Regarding Dedicated Short-Range Communications Services in the 5.850-5.925 GHz Band (5.9 GHz Band)*, Memorandum Opinion & Order, WT Docket No. 01-90, 21 FRCC Rcd 8961 (2006) ("*MO&O*").

[2] *R&O* at ¶ 80. In a subsequent *MO&O*, the Commission acknowledged the on-going efforts by representatives of the DSRC and FSS industries to investigate interference issues. The Commission took no action regarding suggested rule changes, instead encouraging the two industry groups to reach consensus on the appropriate interference methodology, at which time the Commission will consider any appropriate rule changes. *MO&O* at §§ 20-25.

potential. The procedural approach applies the results of the technical approach and identifies the rights and responsibilities of the spectrum sharing parties under various operating conditions.

2.0 Technical Approach

2.1 Interference Analysis Methodology

The first step in developing a spectrum sharing etiquette is to adequately characterize the interference environment. This is accomplished by identifying system operating parameters, typical uses, terrain, antenna characteristics, and determining permissible levels of interference.

The general concepts of frequency analysis and coordination outlined in FCC Rule Parts 25 and 101 dealing with FSS and Fixed Service ("FS") point-to-point microwave stations provide the framework for a DSRC/FSS earth station sharing approach. Under this process, the interference analysis between earth stations (FSS) and terrestrial stations (DSRC) normally involves the following steps:

- Calculation of the earth station horizon gain pattern based on the antenna pattern, desired range of look angles, and the terrain.
- Determination of the earth station interference contours for FSS/DSRC.
- Determination of terrestrial stations inside versus outside the interference contour.
- Detailed interference level calculations for terrestrial stations inside the interference contour.
- Mitigation options for any cases that fail to meet interference objectives.

2.1.1 Horizon Gain Function

For the great circle mechanism, the signal leaves the transmitting antenna and enters the receiving antenna in the direction of the local horizon. In the interference calculations, it is the effective isotropically radiated power (EIRP) toward the horizon that is used. Calculating the horizon antenna gain for the terrestrial station in the direction of the earth station involves first determining the discrimination angle – the difference between the antenna pointing azimuth and the azimuth towards the earth station - and then identifying the discrimination value from the appropriate radiation pattern envelope. The antenna gain is the difference between the main beam gain and the discrimination value.

Calculating the earth station EIRP in the direction of the terrestrial station must take into account that the earth station antenna can be oriented to view a range of satellites, may not be directed horizontally, and very often the horizon it sees is elevated. Horizon gain patterns are calculated for earth stations based on the actual radiation pattern of the antenna also taking into account the range of look-angles to which the antenna might be pointed and the terrain. This pattern gives the earth station worst-case (highest) antenna gain (and consequently, EIRP) toward the horizon as a function of azimuth for 360 degrees around the earth station. After the plot has been developed, the bearing from the earth station to the terrestrial station must be determined. Enter the curve at that azimuth and read the value of gain to be used for the interference calculations.

2.1.2 Received Signal Level Calculations

The relationship between the factors discussed above and the received interfering signal level is given by:

$P_r = P_t + G_t - L + G_r$ (1)

Where:
P_r = received signal level at DSRC RSU (dBW)
P_t = earth station transmitter power (dBW)
G_t = gain of the earth station transmitter antenna toward the DSRC RSU (dBi)
L = basic transmission loss (dB)[3]
G_r = gain of the DSRC RSU receive antenna toward the earth station (dBi)

It may be useful to carry out the interference calculations on a power density basis with Pt and Pr expressed, for example, in dBW/4kHz. Earth stations are normally authorized to transmit a certain power density whereas their total transmitter power is not specified.

2.1.3 Part 25/101 Coordination Contours

Coordination contours are an integral part of the FSS/FS band sharing regime found in FCC Rule Parts 25 and 101. Coordination contours can provide a useful means of streamlining interference analyses by quickly identifying which subset of systems may be expected to experience potential interference. The purpose of the coordination contour is to define an area outside of which the potential for interference is so remote that stations beyond this limit need not be considered. To be effective, the contour should be easily derived and identifiable such as a simple polygon so that a device location that is within or outside of the contour may be determined via a straightforward distance calculation. The procedure is to establish the amount of loss required to reduce the interfering signal levels below the objective and then relate the loss to a distance. The basic relationship for the loss required is obtained by solving equation (1) for L.

$L_{req} = P_t + G_t + G_r - P_o - H$ (2)

Where:
L_{req} = loss required to meet objective (dB)
P_o = interference objective (dBW)
H = correction factor for earth station horizon (dB)
and the other terms are as previously defined.

To obtain the loss required, one must make some worst-case assumptions. Maximum values are assumed for P_t and G_t with no antenna discrimination for the terrestrial systems. In addition, prior analyses conducted by the Johns Hopkins University Applied Physics Laboratory and

[3] Basic transmission loss includes losses from propagation, waveguide, connector, attenuator, combiner, etc.

submitted to the FCC in support of this coordination activity indicate that the interference zone must also be extended to consider diffraction and refraction effects.[4]

The FCC rules[5] prescribe the relationship between loss required and distance, which is a function of radio climate[6] and frequency. The relationships are valid for distances of 100 km or more and follow approximately an 80*log(distance) relationship as compared to the 20*log(distance) slope for free space propagation. The coordination contour is drawn at the distance that has sufficient loss to cause the interference to be at or below the objective.

2.1.4 DSRC/FSS Interference Contours

To streamline the band sharing process between DSRC and FSS earth stations, an "interference contour" may be established for each proposed,[7] applied-for,, and licensed FSS earth station in the 5.9 GHz band. This contour must be easily derived and identifiable. It should be based upon worst-case FSS and DSRC parameters. For RSUs that are to be located within the interference contour of an earth station, more detailed interference calculations will be required. These calculations will take into account the specific, rather than worst-case parameters while still recognizing and accounting for the flexibility authorized under the earth station license.

Additional factors that should be included are:

- Path loss based on a terrain-based propagation model.[8]
- The horizon gain pattern of the earth station.
- The gain of the DSRC antenna based on its pattern and pointing azimuth.
- Empirical field measurements at planned RSU site.

Mitigation options to reduce or resolve cases of FSS interference into DSRC include:

- Positioning either the earth station or DSRC antenna to take advantage of shielding.
- Changing the RSU antenna pattern (*e.g*. directional vs. omni-directional).
- Re-orienting the RSU antenna.

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[4] *See* Comments of Johns Hopkins University Applied Physics Laboratory, WT Docket No. 01-90 (Sept. 2, 2004).

[5] *See* 47 CFR §25.203 and §101.103.

[6] Radio climate refers to the impact on radio propagation from effects such as average annual temperature and humidity.

[7] Proposed FSS earth station facilities are systems that are undergoing the FCC Part 101 prior coordination process with other licensees. Considering proposed FSS earth stations preserves the first-in-time rights of these facilities during the coordination process.

[8] There are numerous terrain-based propagation models available for this analysis, (*e.g.*, the Terrain Integrated Rough Earth Model (TIREM) and NBS Tech. Note 101, etc.).

- Considering frequency offsets, if any.
- Use of additional filtering.
- Acceptance of elevated interference levels in DSRC system design.
- Reducing the RSU antenna height (assuming desired coverage can still be achieved).
- Antenna diversity.
- Macro diversity (*e.g.*, application repeats messages).

3.0 Procedural Approach

3.1 New DSRC deployments

It is recommended that specific DSRC system deployment/planning consider the potential impact from all proposed, applied-for, and licensed in-band FSS earth stations in the vicinity. The most likely effect of FSS interference into DSRC receivers will be degradation of the receiver threshold resulting in a reduction of the RSU coverage zone and/or reduced throughput, which could result in an inability for DSRC devices to meet application timing requirements. The interference potential with DSRC is one-way from FSS into DSRC. Therefore, while it may not be necessary for the FCC to mandate an up-front analysis for new DSRC deployments, it is further recommended that DSRC licensees should conduct an analysis of FSS earth station interference potential because they will find it essential to their operations. The following points apply to new DSRC deployments:

- DSRC planners should conduct field assessments of actual FSS interference at planned RSU sites.
- DSRC licensees should design and implement their system to effectively mitigate interference from all proposed, applied-for and licensed FSS earth stations located in-band.
- DSRC deployments should conduct an interference analysis using worst-case FSS earth station operating parameters. The full arc and bandwidth on the license should be considered.
- Interference contours as described in Section 2.1.4 should be calculated around FSS earth stations to quickly identify the interference potential. RSU sites located outside of the interference zone should not be expected to experience any interference.
- For RSU sites located within an interference contour, a more detailed analysis should be conducted to quantify or resolve the potential interference. This analysis can be conducted on a point-to-point basis using actual operating parameters of the DSRC system, and can include a terrain based propagation model.
- For DSRC deployments within interference contours, the DSRC licensee is presumed to be accepting the interference as it exists upon registration of the system in the DSRC database.
- DSRC systems that accept a calculated interference from an existing FSS earth station must allow subsequent modifications to the existing FSS earth station that do not increase the interference potential.

3.2 New or Modified FSS Earth Station Deployments (In-Band)

New Deployments

Pursuant to FCC Rule 25.203, new FSS earth station deployments in the 5850 – 5925 MHz band must consider all proposed, applied for, and licensed terrestrial stations. Consistent prior coordination conditions should apply to new FSS earth station deployments in the 5850-5925 MHz band with respect to proposed, applied-for, and licensed DSRC RSU units. Prior to operation, new FSS earth station licensees should perform a detailed interference analysis to determine the potential impact on any registered RSU sites existing within the interference contour of the proposed FSS earth station antenna. DSRC licensees must be notified of the parameters of new FSS deployments.

Modifications to Existing Deployments

Existing FSS earth station licensees may make changes to their deployments, provided they have complied with all applicable frequency coordination procedures considering existing, licensed terrestrial stations in accordance with FCC Rule 25.251 (47 C.F.R. § 25.251), as amended as proposed in Appendix A. (Proposed changes are underscored.) As with new deployments, it is recommended that the same conditions apply to existing, registered (licensed) DSRC RSU units. FSS licensees making changes[9] to their existing earth stations should perform a detailed interference analysis to determine the potential impact on any registered RSU sites existing within the interference contour of the FSS earth station antenna. DSRC licensees should be notified of the parameters of modified FSS deployments.

4.0 ADJACENT C-BAND

FSS earth station deployments in the standard C-band (5.925-6.425 GHz) and adjacent band DSRC systems are not required to prior coordinate. No modification of the FCC's rules is proposed with respect to this issue. However, there will be an area around a limited number of standard C-band FSS earth stations in which DSRC RSU receivers may experience interference from earth station uplink transmissions.

5.0 Registration and Databases

Mutual knowledge of FSS earth station and DSRC system parameters is required to analyze the interference potential for new deployments. The FCC is requiring registration of RSU locations and data, which may be usable for this purpose. There is data on FSS earth stations available in the FCC IBFS system which may be usable for this purpose. Additional technical parameters are stored in existing frequency coordination databases used for formal coordination with terrestrial microwave systems and access should be provided to facilitate DSRC system design in accordance with Section 3.1 hereof.

[9] *See* 47 CFR §25.118(a)(1).

APPENDIX A: PROPOSED FCC IMPLEMENTING RULES

§25.203 Choice of sites and frequencies.

(a) Sites and frequencies for earth stations, operating in frequency bands shared with equal rights between terrestrial and space services, shall be selected, to the extent practicable, in areas where the surrounding terrain and existing frequency usage are such as to minimize the possibility of harmful interference between the sharing services.

(b) An applicant for an earth station authorization in a frequency band shared with equal rights with terrestrial microwave services or Dedicated Short Range Communications Services (DSRCS) shall compute the great circle coordination distance contour(s) for terrestrial microwave services, or the interference contour(s) for DSRCS, for the proposed station in accordance with the procedures set forth in §25.251. The applicant shall submit with the application a map or maps drawn to appropriate scale and in a form suitable for reproduction indicating the location of the proposed station and these contours. These maps, together with the pertinent data on which the computation of these contours is based, including all relevant transmitting and/or receiving parameters of the proposed station that is necessary in assessing the likelihood of interference, an appropriately scaled plot of the elevation of the local horizon as a function of azimuth, and the electrical characteristics of the earth station antenna(s), shall be submitted by the applicant in a single exhibit to the application. The coordination or interference contour plot(s), horizon elevation plot, and antenna horizon gain plot(s) required by this section may also be submitted in tabular numerical format at 5 degrees azimuthal increments instead of graphical format. At a minimum, this exhibit shall include the information listed in paragraph (c)(2) of this section. An earth station applicant shall also include in the application relevant technical details (both theoretical calculations and/or actual measurements) of any special techniques, such as the use of artificial site shielding, or operating procedures or restrictions at the proposed earth station which are to be employed to reduce the likelihood of interference, or of any particular characteristics of the earth station site which could have an effect on the calculation of the coordination distance.

(c) Prior to the filing of its application, an earth station applicant shall coordinate the proposed frequency usage with existing terrestrial users and with applicants for terrestrial station authorizations with previously filed applications in accordance with the following procedure:
(1) An applicant for an earth station authorization shall perform an interference analysis in accordance with the procedures set forth in §25.251 for each terrestrial station, for which a license or construction permit has been granted or for which an application has been accepted for filing, which is or is to be operated in a shared frequency band to be used by the proposed earth station and which is located within the great circle coordination distance contour(s) for sharing with terrestrial microwave services or the interference contour(s) for sharing with DSRCS of the proposed earth station.
(2) The earth station applicant shall provide each such terrestrial station licensee, permittee, and prior filed applicant with the technical details of the proposed earth station and the relevant interference analyses that were made. At a minimum, the earth station applicant shall provide the terrestrial user with the following technical information:

(i) The geographical coordinates of the proposed earth station antenna(s),

(ii) Proposed operating frequency band(s) and emission(s),
(iii) Antenna center height above ground and ground elevation above mean sea level,
(iv) Antenna gain pattern(s) in the plane of the main beam,
(v) Longitude range of geostationary satellite orbit (GSO) satellites at which antenna may be pointed, for proposed earth station antenna(s) accessing GSO satellites,
(vi) Horizon elevation plot,
(vii) Antenna horizon gain plot(s) determined in accordance with §25.251 for satellite longitude range specified in paragraph (c)(2)(v) of this section, taking into account the provisions of §25.251 for earth stations operating with non-geostationary satellites,
(viii) Minimum elevation angle,
(ix) Maximum equivalent isotropically radiated power (e.i.r.p.) density in the main beam in any 4 kHz band, (dBW/4 kHz) for frequency bands below 15 GHz or in any 1 MHz band (dBW/MHz) for frequency band above 15 GHz,
(x) Maximum available RF transmit power density in any 1 MHz band and in any 4 kHz band at the input terminals of the antenna(s),
(xi) Maximum permissible RF interference power level as determined in accordance with §25.251 for all applicable percentages of time, and (xii) A plot of great circle coordination distance contour(s) <u>for terrestrial microwave services or a plot of the interference contour(s) for DSRCS</u> and rain scatter coordination distance contour(s) as determined by §25.251.

(3) The coordination procedures specified in §101.103 <u>(for terrestrial microwave services) or §90.375(d) (for DSRCS)</u> of this chapter and §25.251 shall be applicable except that the information to be provided shall be that set forth in paragraph (c)(2) of this section, and that the 30-day period allowed for response to a request for coordination may be increased to a maximum of 45 days by mutual consent of the parties.
(4) Where technical problems are resolved by an agreement or operating arrangement between the parties that would require special procedures be taken to reduce the likelihood of harmful interference (such as the use of artificial site shielding) or would result in lessened quality or capacity of either system, the details thereof shall be contained in the application.
(5) The Commission may, in the course of examining any application, require the submission of additional showings, complete with pertinent data and calculations in accordance with §25.251, showing that harmful interference is not likely to result from the proposed operation.

Sections (d) – (k) omitted from this document

§25.251 Special requirements for coordination.
(a) The administrative aspects of the coordination process are set forth in §101.103 of this chapter in the case of coordination <u>of terrestrial microwave services</u> with earth stations, <u>in §90.375(d) in the case of coordination of DSRCS and earth stations,</u> and in §25.203 in the case of coordination of earth stations with terrestrial stations.

(b) The technical aspects of coordination <u>of terrestrial microwave services with earth stations</u> are based on Appendix S7 of the International Telecommunication Union Radio Regulations and certain recommendations of the ITU Radiocommunication Sector (available at the FCC's Reference Information Center, Room CY–A257, 445 12th Street, SW., Washington, DC 20554).

(c) The technical and procedural aspects of coordination of DSRC services with earth stations are based on [DSRC/FSS Earth Station Sharing Protocol] (available at the FCC's Reference Information Center, Room CY-A247, 445 12th Street, SW, Washington, DC 20554).

Part 90 DSRC Rule provision:

§90.375. RSU license areas, communication zones, ~~and~~ registrations and inter-service spectrum sharing

* * *

(d) DSRCS RSUs in the 5850-5925 MHz band may be coordinated with co-frequency uplink earth stations in accordance with § 25.251. The technical and procedural aspects of coordination of DSRCS RSUs with earth stations are based on [the DSRC/FSS Earth Station Sharing Protocol] (available at the FCC's Reference Information Center, Room CY-A247, 445 12th Street, SW, Washington, DC 20554).