BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of	)	
	)	
Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use	)	**IB Docket No. 98-172**

To: The Commission

COMMENTS OF
WINSTAR COMMUNICATIONS, INC.

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SUMMARY

WinStar Communications, Inc. (WinStar) is fundamentally opposed to the loss of critical limited spectrum currently available for use by fixed services in the 18 GHz band. However, WinStar recognizes the need to segment spectrum allocations to accommodate both fixed services and other services, including new offerings, such as satellite-delivered internet access. In providing for such new services and to prevent inter-service interference, WinStar supports band segmentation for incompatible services and "exclusion zones" for sharing between "compatible" services for which spectrum is allocated on a co-primary basis.

Regardless of proposed band plans to accommodate new services, sufficient and adequate spectrum must be maintained for the fixed services to permit incumbent and new licensees to construct and operate competitive and reliable telecommunications facilities for commercial services and private internal uses. In the event that there is insufficient spectrum in the 18 GHz band to accommodate both existing and new services, WinStar proposes that the Commission identify and designate other suitable spectrum for displaced fixed services. Moreover, existing licensees in the 18 GHz band should be grandfathered and, if required to relocate in order to accommodate new services, should be compensated for the costs incurred in moving to comparable facilities. The Commission should provide for relocation procedures that are consistent with previous decisions, and that contribute to the enforcement of negotiated relocation agreements.

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COMMENTS OF
WINSTAR COMMUNICATIONS, INC.

WinStar Communications, Inc. ("WinStar"), by its attorneys and pursuant to Section 1.415 of the Rules and Regulations of the Federal Communications Commission ("Commission" or "FCC"), respectfully submits the following Comments in response to the Notice of Proposed Rule Making ("Notice") adopted in the above-captioned matter on September 17, 1998.[1] The Commission has proposed to redesignate the 17.7-19.7 GHz ("18 GHz") band among the currently allocated services including fixed services, fixed satellite services, mobile satellite services/feeder links and broadcast satellite services. This redesignation proposal includes the grant of grandfather rights for terrestrial fixed services in portions of the band where satellite services are to be designated as "primary," and the use of

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[1] 63 Fed. Reg. 54100 (October 8, 1998).

"primary" or "co-primary" designations for the entire band to either fixed services, satellite services, or both. WinStar supports the Commission's proposals to eliminate sharing between fixed services and blanket-licensed satellite services, to provide band segmentation between coordinated services, to provide grandfather rights for incumbent fixed services, and to require relocation where sharing is unworkable. WinStar also urges the Commission to establish "exclusion zones" where fixed and satellite services are widely deployed, to allow reasonable modifications to grandfathered systems, and to provide exclusive spectrum in other bands to accommodate the relocation of fixed services.

I. PRELIMINARY STATEMENT

1. WinStar is a leading provider of competitive telecommunications services through its fixed wireless broadband network. WinStar, through its various subsidiaries, is the largest licensee of spectrum in the 38.6-40.0 GHz ("38 GHz") band, the winner of fifteen 28 GHz LMDS licenses at the recent LMDS auction, the holder of licenses for approximately 200 links in the 18 GHz band, and the licensee of limited amounts of spectrum in other bands. WinStar utilizes its microwave links in the 38 GHz, 28 GHz and 18 GHz bands to connect with its customers for the provision of competitive local exchange, interexchange, high speed data transmission, video and other services. WinStar also provides critical high-capacity links to private voice and data networks typically found at university campuses, office parks and other high density areas.

WinStar presently serves small to medium sized businesses in 27 of the top 50 markets in the United States.

2. WinStar's common carrier wireless network offers competitive high capacity service to urban and suburban areas through rooftop dish antennas that interface with central hub stations. The hub stations deploy point-to-point and point-to-multipoint transceivers. Many of WinStar's 18 GHz links are used to provide direct wireless connectivity between central hubs operating as points of distribution to outlying facilities at the customer's premises, typically an office building. Other 18 GHz links provide backbone connectivity to carry traffic between hub locations.

3. WinStar generally uses spectrum in the 38 GHz and 28 GHz bands as the primary "last mile" connection to its customers, with 18 GHz links serving as the principal connection between hubs. The 38 GHz and 28 GHz links are typically engineered to provide 99.999% availability fiber optic quality Wireless Fiber℠ service. Since 38 GHz paths are usually limited to a range of less than two or three miles, however, use of the 18 GHz band allows WinStar to provide service to more relatively distant outlying areas (typically up to five miles) where competitive high-speed data services otherwise may not be readily available. Further, as fiber build-out increases in populated urban areas, outlying areas and smaller buildings often remain unserved and have the greatest immediate unmet need for high-speed services. In reaching many

of those types of areas, the longer range 18 GHz links are suitable to provide the necessary connection.

4. WinStar also operates certain Individual Case Basis ("ICB") links supporting private telecommunications networks that utilize the 18 GHz band. For instance, WinStar provides redundant backhaul service connecting Federal Aviation Administration ("FAA") radar installations with MCI points-of-presence for vital air traffic control systems. Outages for even short periods of time in these types of critical services is contrary to the public interest. Numerous other ICB customers across the country are supported by WinStar with microwave links in the 18 GHz band including banks, stock brokerage firms, newspapers and cellular telephone companies. Continued access to 18 GHz spectrum is essential for efficient business operations of these types of entities. Lack of adequate spectrum, or worse, interference caused by sharing with satellite operations, would seriously undermine the efforts of the Commission to promote both public safety and competition in the provision of telecommunications services.

5. WinStar has been successful in bringing competition to the local exchange carrier market by providing advanced, cost-effective and timely wireless access to the public switched network. Part of this success has come from the ability to build a reliable network using, in part, spectrum in the 18 GHz band to serve existing and new customers. To promote competition, the Commission must ensure that advanced communications services, such as those provided by WinStar, continue to be available at cost-effective rates and with a high degree of reliability.

Competition in the local exchange market will not develop and flourish if new entrants are unable to provide at least equivalent, if not superior, service at lower costs.

6. While great strides have been made in fostering an environment where competitive services will thrive, and the Commission's recognition that the creation of exclusive blocks of spectrum designated solely for the fixed service through band segmentation is absolutely correct, the proposed redesignation of the 18 GHz band would be a serious step backwards, since a large portion of the spectrum currently available for fixed services licensing in the band would be effectively eliminated. Compounding this loss are the following additional proposals: 1) allocation of the 18.55-18.8 GHz band to fixed services is essentially a complete loss of the spectrum because the 18.55-18.8 GHz band only allows one-way transmission and there is no proposed matched allocation to allow for the provision of two-way services; 2) redesignating the 19.26-19.3 GHz band to NGSO FSS systems which makes the paired frequencies at 17.7-17.74 unavailable; and 3) designating the 17.7-17.8 GHz band as co-primary with Broadcast Satellite Services in 2007 resulting in possible loss of this spectrum, as well. Unfortunately, this proposed reduction in spectrum availability comes at the same time that demand for 18 GHz spectrum is growing both for new terrestrial systems and for relocated fixed services from other bands. The ability of the Commission to relocate licensees from the 1850-1990 MHz ("1.8 GHz") band, and eventually to relocate 2.1 GHz terrestrial licensees, depends on the continued availability of adequate replacement spectrum. It is, therefore, clearly

in the public interest to maximize the amount of 18 GHz spectrum available to satisfy fixed services relocation requirements now and in the future.

7. Although WinStar supports adoption of some of the elements of the proposals made in the Notice, these comments include recommendations to further protect incumbent fixed services from the loss of vital 18 GHz spectrum by: permitting limited modifications of grandfathered systems; adopting relocation rules for the 18 GHz band that have already been successfully implemented in other bands; allowing parties to file relocation agreements with the Commission; and designating a sufficient amount of exclusively fixed services relocation spectrum in other bands.

II. COMMENTS

8. WinStar supports the general concept of band segmentation. It is correct that satellite and fixed services systems cannot share the same spectrum, especially when one or both of the services contemplate dense deployments. However, WinStar is deeply concerned that this proceeding fails to consider and accommodate adequately both the present and future needs of terrestrial fixed services. Without modifications to the rules proposed in the Commission's Notice, existing terrestrial fixed services which support critical competitive local exchange services, will be unable to grow, and worse, will be forced to vacate most of the 18 GHz band. It is incumbent upon the Commission to continue its current path of promoting local competition,

in which WinStar and other fixed services users will play an increasingly important role, by tempering its proposals, providing a secure amount of operating spectrum and further protecting incumbent licensees.

A. Sharing Between Fixed Services and Uncoordinated Blanket-Licensed Satellite Services is Unworkable and Should Be Avoided.

9. According to satellite industry projections, it appears likely that a significant number of satellite earth stations will ultimately be deployed in heavily populated areas, which is precisely where WinStar and other fixed service licensees presently operate links in the 18 GHz band. The Commission correctly recognized in its Notice that blanket-licensed, ubiquitously deployed earth station terminals and terrestrial fixed service facilities cannot share the same frequencies. As the Commission stated, "blanket licensing would make it impractical for terrestrial fixed service providers to coordinate new operations to avoid interference in shared frequency bands where blanket licensing is allowed."[2/] Operations by either one of the services would result in unacceptable interference to the other service. The resulting interference would mean either satellite earth stations would not work in certain areas, or more likely, satellite operations would force the relocation of virtually all incumbent terrestrial services from the 18 GHz band. Frequency separation serves to resolve interference issues and improve overall spectral efficiency. Because of these interference considerations, WinStar strongly opposes the implementation of blanket licensing in any bands shared between the satellite and fixed services.

[2/] Notice at ¶ 19.

B. Band Segmentation Is Necessary to Protect Incumbent Fixed Services From Satellite Interference.

10. WinStar supports the concept of band segmentation as proposed by the Commission in the instant proceeding to separate fixed services and satellite services in the 18 GHz band. Grouping all ubiquitously deployed satellite services within a common band segment and providing terrestrial fixed services a separate band segment will allow for the most efficient use of spectrum by both services and reduce coordination difficulties. The Commission reached a similar conclusion in the Notice, stating that separation would benefit both services through reducing coordination difficulties, eliminating preclusion from large geographic areas, and allowing a denser population of operations.[3] Already, the Commission has recognized in the LMDS proceeding that sharing between fixed services and ubiquitously deployed satellite earth stations is simply not feasible.[4] WinStar recently filed comments in the 38 GHz proceeding stating that similar sharing in that band is unworkable.[5] As a practical matter, in terms of propagation and antenna discrimination, the LMDS, 38 GHz and 18 GHz bands are

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[3] Notice at ¶¶ 20-21.

[4] See Rulemaking to Amend Parts 1, 2, 21 and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, FCC 96-311, CC Docket No. 92-297, *First Report and Order and Fourth Notice of Proposed Rulemaking* (rel. July 22, 1996) at ¶ 27 ("We conclude, based on the entire record before us, that co-frequency sharing between either GSO/FSS or NGSO/FSS ubiquitously deployed terminals and LMDS with its ubiquitously deployed subscriber terminals is not feasible at this time.").

[5] See Comments and Reply Comments of WinStar Communications, Inc., filed on May 5, 1997 and June 3, 1997, respectively, in Allocation and Designation of Spectrum for Fixed Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz, and 48.2-50.2 GHz Frequency Bands, IB Docket No. 97-95 (rel. March 24, 1997).

virtually indistinguishable concerning the feasibility of sharing spectrum between satellite and fixed services.

11. To illustrate the difficulty of sharing in the 18 GHz band between fixed and satellite services, the Commission need look no further than to the Corrigendum to Document 4-9S/54E filed at the International Telecommunications Union ("ITU") by the U.S. delegation to Working Party 4-9S, attached hereto as Appendix A. This analysis clearly demonstrates that point-to-point fixed services in and around an urban area (in this case, Buenos Aires, Argentina) create a large area in which it would be virtually impossible to coordinate additional fixed systems or satellite earth stations. Within a 40 kilometer diameter circle, 65% of the region is no longer available in the 18.8 to 19.3 GHz band. This pattern is typical of many urban areas in the United States.

12. In metropolitan and surrounding areas where WinStar principally operates its 18 GHz links, sharing between fixed services and satellite services on a co-primary basis would be simply unworkable. Terrestrial based facilities for both the fixed services and satellite services tend to create areas around them within which interference coordination between the satellite and fixed services would be virtually impossible. Even a limited number of fixed satellite users within a given geographic area would create insurmountable coordination problems. The only

way for the Commission to ensure the efficient use of spectrum in such a situation is to provide for band segmentation.[6]

C. Where Band Segmentation is Not Feasible and Spectrum Is Shared on a Co-Primary Basis, Point-to-Point Licensed Fixed Services Should Be Provided Appropriate "Exclusion Zones".

13. Prior experience has shown the impracticality of spectrum sharing on a co-primary basis between point-to-point fixed services and satellite earth stations located within close proximity of major metropolitan areas, as well as in some remote areas. In many respects, the instant proceeding is reminiscent of the allocation of the 4 GHz band for satellite operations, in that the initial discussions of sharing were premised on a "few" satellite earth stations, principally located away from major metropolitan areas. At a recent meeting of the National Spectrum Managers Association ("NSMA"), members reported that it is nearly impossible to coordinate new terrestrial point-to-point microwave systems in the 4 GHz band because satellite earth stations have "sterilized" the band. This experience at 4 GHz demonstrates that even co-primary status, based on frequency coordination, does not guarantee that spectrum will be available for the services intended.

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[6] However, WinStar recognizes that fixed service use of the same spectrum with Mobile Satellite Services/Feeder Links may be feasible if such feeder links are subject to specific geographic segmentation restrictions such as earth stations associated with those systems being located a sufficient distance away from urban areas and being limited in the total number of systems deployed in the U.S. Consequently, WinStar proposes that the Commission establish rules setting a minimum distance for feeder links from the outskirts of urban areas of at least 95 miles and limiting the total number of such coordinated systems deployed to no more than ten nationwide.

14. In order to avoid the undesirable outcome experienced in the 4 GHz band, and to address the difficulty of sharing 18 GHz spectrum in highly utilized urban areas, WinStar proposes that incumbent 18 GHz licensees be granted "exclusion zones" for their operations. Creation of exclusion zones would allow each service to obtain predictable access to authorized frequencies, and would provide for simplified inter-service coordination. Such exclusion zones could be created where a band is encumbered by a certain service in the aggregate over a certain threshold of perhaps 33% of the geographic area. For site licenses, such as point-to-point microwave, the exclusion zone would be the area contained by the coordination distance from each affected site and every point along the path between all affected sites. Coordination of new licensees within the exclusion zone would be permitted only for licensees within the same service.[7]

D. Grandfathering of Existing Fixed Services Should Be Required with Reasonable Modification Rights.

15. Extending grandfather rights to existing licensees is essential to preserve incumbents' rights and to provide for an equitable migration and transition to the new band plan. To the extent that the fixed service loses spectrum to the satellite service in this proceeding, WinStar supports, with reasonable modifications, the Commission's proposal for grandfathering

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[7] It should be noted that for wide-area licenses, such as WinStar's 38 GHz licenses, exclusion zones should be based on the entire licensed area. Because such licensees are wide-area and exclusive, licenses are able to locate anywhere within the licensed area without coordination.

existing fixed service systems in the 18.3-18.55 GHz and 18.8-19.3 GHz bands, where WinStar and many other fixed service licensees operate numerous links under existing rules.

16. Reasonable modifications must also be permitted to grandfathered systems so as to facilitate growth and other changes. As WinStar expands its network, continued adjustments are often necessary to provide the requisite high level of service to end users. For example, if a newly constructed building blocks the line of sight from a hub to an outlying station, the antenna for that station may need to be moved to an adjacent building or the antenna height may need to be increased. It has been the Commission's policy in the past to allow minor modifications such as "changes in antenna azimuth, antenna beamwidth, antenna height, authorized power, channel loading, emission, station location, and ownership or control; reduction in authorized frequencies; or addition of frequencies" not in the affected band.[8] These types of changes must be permissible for grandfathered 18 GHz systems.

17. This limited modification policy will allow for the continued viability of grandfathered fixed systems. If such a limited modification to a grandfathered system is not allowed, WinStar would be severely constrained in operating its network and providing much-needed service to the public.

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[8] Third Report and Order and Memorandum Opinion and Order, ET Docket No. 92-9 (Aug. 13, 1993).

E. As Satellite Systems Deploy, Sharing with Grandfathered Fixed Services Will Become Infeasible and Relocation With Reasonable Compensation Based on Negotiations Will Be Required.

18. WinStar recognizes that sharing between satellite services and grandfathered fixed services will not be feasible in the long term, particularly in large metropolitan areas where the greatest number of end users may be located. Relocation ultimately will be required. The Commission's Emerging Technology proceeding, ET Docket No. 92-9, and the Mobile Satellite Service at 2 GHz allocation proceeding, ET Docket No. 95-18, provide an appropriate relocation model for the 18 GHz band. The transition rules resulting from those proceedings require voluntary and mandatory negotiations between incumbent fixed services and PCS or MSS licensees, respectively. Payment by the emerging technologies licensee of the incumbents' necessary and reasonable expenses for relocation to comparable facilities is required before the new entrant may commence service.

19. For the 18 GHz band, fair relocation rules likewise should include a phased-in negotiation period coupled with relocation to "comparable facilities," meaning facilities that provide equivalent or better throughput, deployment flexibility, operational reliability and cost of operation. Reimbursement compensation should include all reasonable and necessary costs, including installation, testing, removal of existing facilities, and any other expenses, recurring or non-recurring.

20. Enforcement of relocation agreements has from time to time proven difficult. For example, a new entrant may agree to relocate not only the incumbent's links it needs immediately, but several other links it may need in the future. Then, over time, dedication to the agreement may, for a variety of reasons, waver. WinStar suggests that relocation agreements may be filed with the Commission on a voluntary and confidential basis by either party. If both parties agree, suitable redactions of confidential information may be made. Having the right to file agreements with the FCC might increase the likelihood that the parties will honor their commitments.

F. Sufficient Exclusive Spectrum for Fixed Services Should Be Established.

21. If relocation within the 18 GHz band is not feasible, an alternative solution is to designate appropriate spectrum in other bands, such as the 24-25 GHz band, as exclusive relocation spectrum for displaced fixed services from the 18-GHz band. As the Commission is aware, because of propagation and rain attenuation characteristics, the reliable range in the 24-25 GHz band is considerably less than for the 18 GHz band, *i.e.*, 24 GHz paths are shorter than similarly reliable 18 GHz paths. Consequently, if additional spectrum above 18 GHz is identified for relocation of 18 GHz incumbents, the amount of spectrum provided should be sufficient to account for the probability that intervening links may be required to provide the same reliability. Consistent with the relocation of DEMS from the 18 GHz band to the 24 GHz

band,[9] WinStar proposes that four times the spectrum lost to 18 GHz licensees be provided to licensees required to relocate to higher frequency bands.

III. CONCLUSION

22. WinStar urges the Commission to recognize, as it has in the past, that wireless communications services competitively meeting consumers' telecommunications needs must be protected and encouraged. The market clearly demands reliable high-speed terrestrial wireless networks, and the Commission should avoid taking any action in this proceeding that reduces the viability of such systems in this formative stage. WinStar has proven that its systems are highly reliable, offer tremendous capacity and flexible solutions, and bring competitively priced competition to the local exchange. Notwithstanding worthy proposals to advance the satellite services, it is important that the Commission continues to foster growth and innovation in the fixed wireless services, especially those supporting competitive local exchange services.

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[9] Report and Order in ET Docket No. 97-99 released March 14, 1997, ¶ 12.

WHEREFORE, THE PREMISES CONSIDERED, WinStar Communications, Inc. respectfully urges the Federal Communications Commission to act in a manner fully consistent with the views expressed herein.

Respectfully submitted,

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INTERNATIONAL TELECOMMUNICATION UNION

RADIOCOMMUNICATION
STUDY GROUPS

Corrigendum to
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United States of America

AN ANALYSIS OF THE POTENTIAL INTERFERENCE FROM POINT-TO-POINT FS TRANSMITTERS INTO NGSO FSS EARTH STATION RECEIVERS OPERATING IN THE 18.8-19.3 GHz BAND

Please replace Figures 5, 6 and 7 by the following Figures.

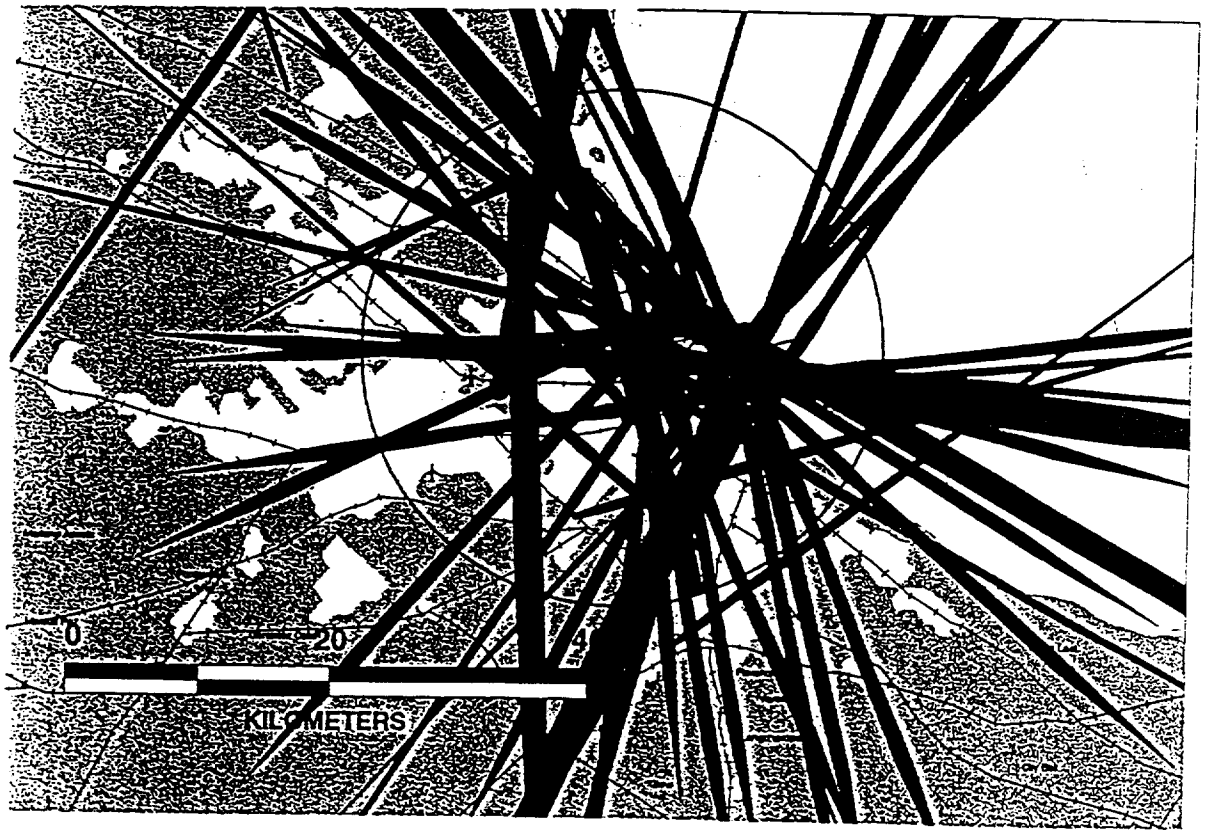

Figure 5. 18.8 – 19.3 GHz FS Terminal Locations and Potential Excluded Area in Buenos Aires Urban Region: Composite Exclusion Zone 65% in Reference 40-Km Circle

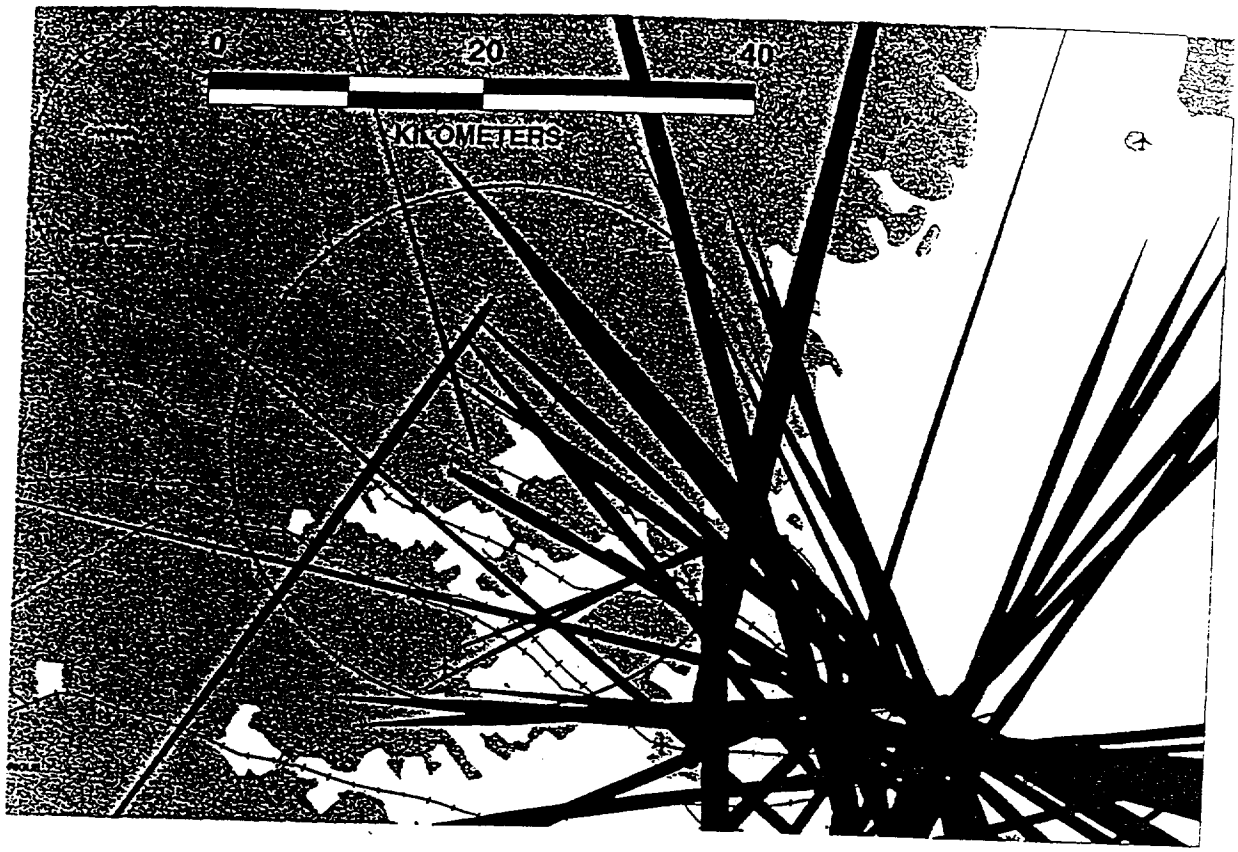

Figure 6. 18.8 – 19.3 GHz FS Terminal Locations and Potential Excluded Area in Buenos Aires Suburban Region: Composite Exclusion Zone 37% in Reference 40-Km Circle

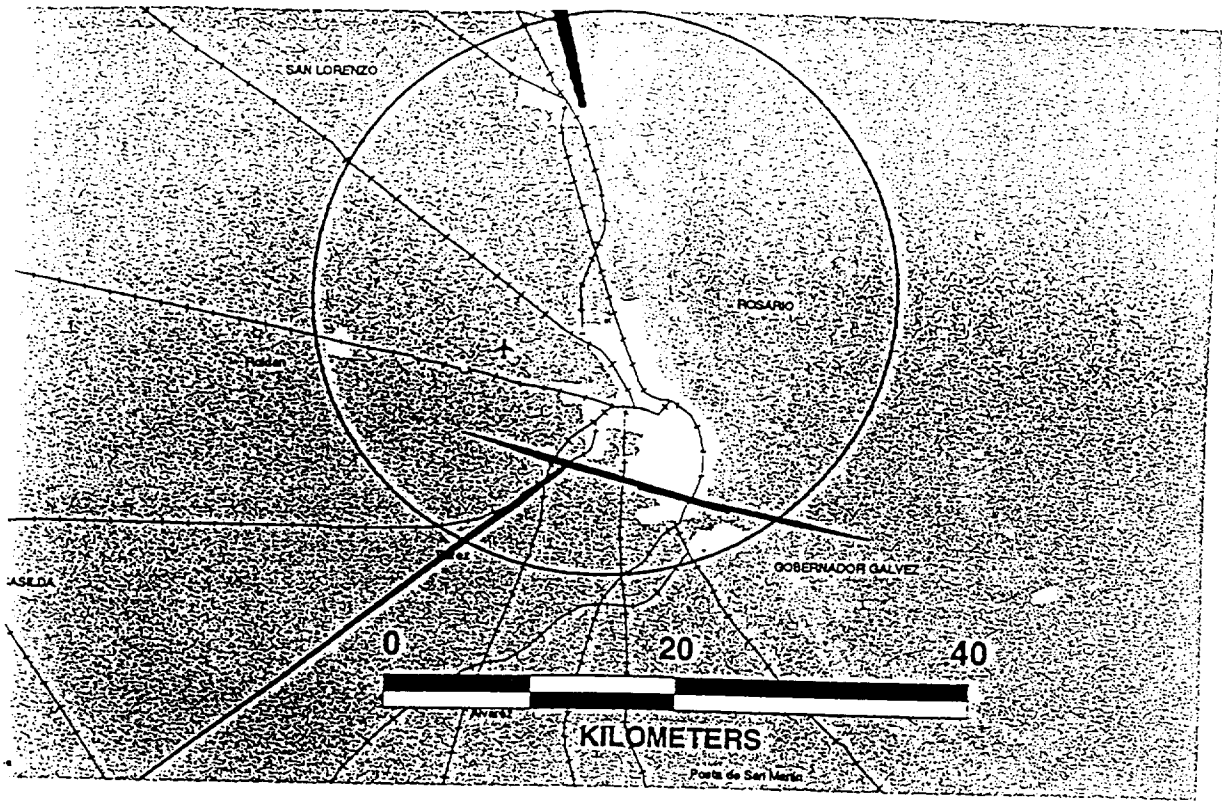

Figure 7. 18.8 – 19.3 GHz FS Terminal Locations and Potential Excluded Area in Rosario Rural Region: Composite Exclusion Zone 2.3% in Reference 40-Km Circle