

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
Amendment of Part 25 of the Commission's) IB Docket No. 96-220
Rules to Establish Rules and Policies)
Pertaining to the Second Processing Round)
of the Non-Voice, Non-Geostationary)
Mobile Satellite Service)

NOTICE OF PROPOSED RULE MAKING

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I. INTRODUCTION

1. By this Notice, we take the next step toward licensing systems in the second processing round for the non-voice, non-geostationary mobile satellite service ("NVNG MSS"). This service, also referred to as the "Little LEO" satellite service, uses constellations of low-Earth orbiting ("LEO") satellites to provide commercial radio location and two-way data

messaging services to potential customers anywhere in the world. It is Commission policy to attempt to provide spectrum to as many applicants as possible in order to increase competition and the provision of service to the public. In this Notice, we propose rules and policies that will allow us to increase competition and bring new services to market as quickly as possible.

2. This Commission has already licensed three Little LEO systems to serve the United States. We believe that adding more systems will enhance competition and will lead to lower prices and increased service options for customers. Therefore, in this second processing round, we propose rules that would limit eligibility to new entrants in the service. If we do not have sufficient spectrum to accommodate all qualified applicants, we seek comment on whether we should conduct an auction to select licensees from mutually exclusive applicants.

II. BACKGROUND

3. Little LEO satellite systems allow customers to use small, inexpensive user transceivers to communicate with satellites operating at altitudes much lower than those in geostationary satellite orbits. The lower altitudes improve signal quality and reduce the time delay of the transmission. Because they are operating in non-geostationary satellite orbits, each satellite in the constellation appears to be moving. In other words, a particular satellite, as it orbits the Earth, will appear above the horizon, move across the sky, and disappear below the horizon. User transceivers are capable of tracking the satellite and picking up another satellite as it comes into view.

4. Constellations of Little LEO satellites are capable of providing two-way data services, including position location services, anywhere in the world. The myriad of potential applications for this service include emergency location service to remote areas, environmental data collection, vehicle tracking, and time-sensitive business and personal data communications.

5. In 1990, Orbital Communications Corporation ("Orbcomm") filed an application proposing a commercial Little LEO system. Subsequently, Starsys Global Positioning, Inc. ("Starsys") and Volunteers in Technical Assistance ("VITA")¹ filed applications to be considered concurrently with Orbcomm's. These applicants, comprising the first Little LEO processing round, requested authority to operate their systems, both service and feeder links, in a variety of frequencies in the 137-138 MHz, 148-149.9 MHz, and 400.15-401 MHz frequency bands. These frequency bands were not then allocated to the Little LEO service.

¹ VITA's request for experimental authorization on September 7, 1988, which the Commission later granted, was the first request for authorization to provide Little LEO service. See Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum for Fixed and Mobile Satellite Services for Low-Earth Orbit Satellites, Report and Order, 8 F.C.C. Rcd. 1812 (1993).

6. At the 1992 World Administrative Radio Conference ("WARC-92"), these bands including the 149.9-150.5 MHz band were allocated to the Little LEO service on a worldwide primary shared basis.² Consequently, Little LEO operations must be coordinated with the operations of other primary services in these bands.

7. After WARC-92, the Commission allocated these bands domestically to the Little LEO service on a primary shared basis.³ In 1993, we adopted rules and policies for licensing the applicants in the first Little LEO processing round.⁴ These rules and policies were largely drawn from a successful Negotiated Rulemaking proceeding,⁵ where the applicants agreed to a framework that would allow all three systems to operate in the available spectrum. The applicants represented that their agreement would also allow us to license additional systems in these bands.⁶ As a result, by the end of 1995, we had issued licenses to all three first round applicants.⁷

8. Before we took action on the first round applications, LEO One USA Corporation ("LEO One") filed an application for another Little LEO system and requested that we open a second processing round. LEO One requested authority to operate in portions of the bands allocated at WARC-92. We placed LEO One's application on public notice before we completed action on the first round to demonstrate the need for additional spectrum consistent with the

² World Administrative Radio Conference 1992, Torremolinos, Spain. "Primary" services have equal rights to operate in particular frequencies. Stations operating in primary services are protected against interference from stations of "secondary" services. Stations operating in a secondary service cannot claim protection from harmful interference from stations of a primary service. See 47 C.F.R. §§ 2.104(d) and 2.105(c).

³ Amendment of Section 2.106 of the Commission's Rules to allocate Spectrum to the Fixed Satellite Service and the Mobile Satellite Service for Low-Earth Orbiting Satellites, Report and Order, 8 F.C.C. Rcd. 1812 (1993).

⁴ Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Non-Voice, Non-geostationary Mobile Satellite Service, Report and Order, 8 F.C.C. Rcd. 8450 (1993) ("Little LEO Order").

⁵ Below 1 GHz LEO Negotiated Rulemaking Committee, Report, September 16, 1992.

⁶ Id. at 8-9; Little LEO Order at ¶ 21 and n.38.

⁷ Application of Orbcomm for Authority to Construct, Launch, and Operate a Non-Voice, Non-Geostationary Mobile-Satellite System, Order and Authorization, 9 F.C.C. Rcd. 6476 (1994) ("Orbcomm Authorization"), recon. 10 F.C.C. Rcd. 7801 (1995); Application of Starsys for Authority to Construct, Launch, and Operate a Non-Voice, Non-Geostationary Mobile-Satellite System, Order and Authorization, 11 F.C.C. Rcd. 1237 (1995) ("Starsys Authorization"); Application of VITA for Authority to Construct, Launch, and Operate a Non-Voice, Non-Geostationary Mobile-Satellite System, Order and Authorization, 11 F.C.C. Rcd. 1358 (1995) ("VITA Authorization").

United States' position seeking additional spectrum for the Little LEO service at the 1995 World Radio Conference (WRC-95).⁸ In the Public Notice, we established a cut-off date for filing applications to be considered concurrently with the LEO One application. In response, four entities submitted applications for new Little LEO systems. They were CTA Commercial Systems, E-Sat, Inc., Final Analysis Communication Service, Inc. ("FACS"), and GE American Communications, Inc. ("GE Americom"). Two first round licensees, VITA and Orbcomm, in the second processing round, submitted modifications to their licensed systems to use additional service bands within the WARC-92 allocation.⁹ Additionally, Starsys had filed an amendment on April 25, 1994, after the cut-off date for filing applications in the first processing round, proposing use of additional service bands within the WRC-92 allocations. We deemed Starsys's filing to be a "major amendment" and deferred its request to the second processing round.¹⁰ Consequently, all three first round licensees are also applicants in the second processing round. Thus, eight applicants are in the second processing round.

9. In this Notice, we propose rules for licensing these applicants. These include rules that would limit eligibility in the second round to new applicants, specifically, those who are not already a licensee or affiliated with a licensee. Even with limited eligibility, however, it is possible that there will not be spectrum sufficient to accommodate all applicants. Thus far, applicants have failed to negotiate sharing arrangements. If mutual exclusivity occurs between qualified applicants, we ask for comment on whether we should conduct an auction.

III. DISCUSSION

10. One of the Commission's primary objectives is to create a regulatory environment facilitating the provision of efficient, innovative, and cost-effective satellite communications services in the United States.¹¹ We have sought to do so by promoting fair and vigorous competition in the satellite communications market and by inhibiting "warehousing" of spectrum by those who will not use it at the expense of those who will. Toward this end, we have

⁸ We placed LEO One's application on public notice on September 16, 1994 prior to granting the first Little LEO license on October 20, 1994, the second on July 21, 1995, and the third on November 13, 1995. See Satellite Application Acceptable for Filing Cut-off Established for Additional Applications, Public Notice, Report No. DS-1459 (September 16, 1994). The Public Notice also solicited applications for systems to operate inter-satellite links in the 22.55-23.55 GHz and the 24.45-24.75 GHz frequency bands.

⁹ Non-voice Non-geostationary Low Earth Orbit Satellite Applications accepted for Filing, Public Notice, Report No. DS-1484 (November 25, 1994).

¹⁰ See Starsys Authorization at ¶¶ 19 and 21.

¹¹ See 47 U.S.C. § 151.

adopted rules in particular satellite services to encourage entry by qualified applicants and to give operators maximum flexibility to tailor their offerings to meet their customers' requirements.¹² This "Open Skies" policy has enabled the United States to lead the world in developing and implementing satellite technology. In this second Little LEO processing round, we similarly seek to foster a climate that maximizes competition and promotes multiple entry to the benefit of the United States public.

A. Eligibility for the Second Round

1. New Entrant Proposal

11. In light of the Commission's goal of promoting multiple entry and competition, we propose to award licenses only to new entrants in the second Little LEO processing round. This will enhance competition by allowing additional Little LEO satellite service providers to enter the marketplace.

12. We propose to exclude current licensees from participating in this proceeding because competition in the Little LEO marketplace may be limited if an existing licensee obtains additional spectrum thereby excluding a new licensee from entering the Little LEO market. Once we have granted licenses in this proceeding, there will not be sufficient spectrum to support additional Little LEO systems in the U.S. market. Therefore, in order to promote competition in the Little LEO market, we propose to maximize entrants.

13. We propose to define a "new entrant" as a pending applicant who is not a Little LEO licensee or an affiliate of a Little LEO licensee. We propose to identify any individual or entity as an affiliate if such an individual or entity: (1) directly or indirectly controls or influences a licensee; (2) is directly or indirectly controlled or influenced by a licensee; or (3) is directly or indirectly controlled or influenced by a third party or parties that also has the power to control or influence a licensee. We seek comment on this proposal.

14. Where a licensee is affiliated with one of its competitors, neither company has as strong an incentive to compete vigorously against its partner as it does with respect to an unrelated competitor. A company that is entitled to a substantial percentage of the profit generated by its competitor will be reluctant to undercut the competitor's price. Doing so would amount to taking money out of its own pocket. Rather than compete on price, both companies

¹² See, e.g., Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Band, 9 F.C.C. Rcd. 5936 (1994) ("Big LEO Order"); Policies and Procedures for Licensing of Space and Earth Stations in the Radiodetermination Satellite Service, 104 FCC.2d 650 (1986) ("RDSS Order").

have an incentive to maintain a high price level and maximize joint profits or returns by coordinated interaction.

15. Partial ownership interests can create the very non-competitive markets that we want to avoid.¹³ Even silent financial interests -- *i.e.*, non-controlling shares or equity interests -- may affect the behavior of the partly owned company by causing the minority owner to take into account its behavior on the profits of its partly owned competitor. A minority shareholder would have an incentive to stifle vigorous price competition. It would also have the capability to do so, because a minority owner may exert influence over the company by challenging various business decisions, by conducting (or even just threatening) litigation, by refusing to provide additional capital, by insisting upon business audits, or by using other mechanisms by which minority owners protect their investments in closely held firms.

16. Thus, we propose to adopt rules that attribute to the holder any interest of five percent or more, whether voting or nonvoting, and partnership interests whether general or limited. This is consistent with other ownership thresholds the Commission has applied to other licensees.¹⁴ In addition, we propose to adopt attribution rules that: (1) attribute any interest of ten percent or more held by an institutional investor or investment company, rather than a five percent interest; (2) employ a multiplier for determining attribution of interests held through intervening entities; (3) provide for attribution of interests held in trust; (4) attribute the positional interests of officers and directors; (5) attribute limited partner interests based not only upon equity but also upon percentages of distributions of profits and losses; and (6) provide for attribution based upon certain management, joint marketing, and joint operating agreements. We seek comment on whether other positional interests should be deemed cognizable interests for purposes of application of spectrum limitations and whether we should attribute debt or unexercised convertible interests or insulated limited partnership interests to their holders. We seek comment on these proposals.

17. We propose to attribute both the ability to control and the ability to influence to the holder of interest in the entity. These two concerns have long driven attribution policies in the

¹³ Joseph Farrell & Carl Shapiro, Asset Ownership and Market Structure in Oligopoly, 21 *RAND Journal of Economics* 275, 285 (1990).

¹⁴ See, e.g., Review of the Commission's Regulations governing Attribution of Broadcast Interests, 10 F.C.C. Rcd. 3606 (1995); Amendment of the Commission's Rules to Establish New Personal Communications Services, 9 F.C.C. Rcd 4957, ¶¶ 105-122 (1994); Reexamination of the Commission's Rules and Policies Regarding the Attribution of Ownership Interests in Broadcast, Cable Television and Newspaper Entities, 97 FCC.2d 997 (1984), recon. granted in part, 58 R.R.2d 604 (1985), clarification, 1 F.C.C. Rcd. 802 (1986); Revision of Rules and Policies for the Direct Broadcast Satellite Service, FCC 95-507, IB Docket No. 95-168, ¶¶ 85-97 (released December 15, 1995) ("DBS Order").

mass media context and we believe these concerns are also appropriate in the context of Little LEOs. Control and influence can be conferred or exercised over management operation, decision making, and market conduct in the absence of ownership interests that confer *de jure* control. As in the context of the Commission's rules in other communications services, "control" means not only majority equity ownership, but includes any general partnership interest or any means of actual working control over the operation of the licensee in whatever manner exercised. Influence has been viewed as an "interest that is less than controlling, but through which the holder is likely to induce a licensee or permittee to take action to protect the investment."¹⁵ We propose to rely on existing case law for making control¹⁶ and influence determinations where such issues arise. We request comment on whether we should attribute the ability to control or the ability to influence or both to the holder of the interest.

18. If we adopt a rule limiting eligibility to new entrants, we will dismiss all applicants who do not meet this criterion when the rule becomes effective. To ensure that competition continues to flourish once the license has been granted, we ask for comment on whether we should adopt rules or policies to ensure that control of a license is not transferred or assigned to a first round licensee or its affiliate. If, however, we secure additional spectrum allocations for the Little LEO mobile satellite service at a future World Radio Conference, we shall consider allowing existing licensees to be eligible to use this spectrum if they can demonstrate the need for additional capacity to meet customer demand. These licensees, by that time, should be operating established systems in a competitive environment. We expect to request further comment on this analysis if and when we open a third processing round.

a. Rationale

19. The foregoing proposed service rules are structural solutions designed to promote competition by maximizing the number of providers.

i. Multiple Entry and Competition Policy

20. In the market for the services provided by Little LEOs, as in the markets for all services provided by satellites, the Commission seeks to ensure that the public receives a great array of choices, innovative services, and low prices. In order to achieve these objectives, the

¹⁵ See Intermountain Microwave, 24 Rad. Reg. (P&F) 983 (1963). Review of the Commission's Regulations Governing Attribution of Broadcast Interests, Notice of Proposed Rule Making, 10 F.C.C. Rcd. 3606, ¶ 4 (1994).

¹⁶ See, e.g., WWIZ Inc., 36 F.C.C. 561 (1964), aff'd sub nom. Lorain Journal Co. v. FCC, 351 F.2d 824 (D.C. Cir. 1965), cert denied 383 U.S. 967 (1966).

Commission has encouraged multiple entry and competition.¹⁷ Thus, applicants arguing against our proposal to limit second round applicants to new entrants must persuade the Commission that consumer benefits from other factors, such as economies of scale and scope outweigh the benefits of increasing competition.

ii. Market Analysis

21. To confirm our tentative conclusion that we should exclude first round licensees from the second round, we propose to use the structure-conduct-performance (SCP) paradigm of modern industrial organization.¹⁸ This analysis will allow us to understand more fully how the market would perform if there were only three Little LEO satellite systems versus how it would perform if there were four, five or six systems. The SCP model measures the *performance* of a market by first defining the *basic conditions* and *structure* of that market, and then by evaluating the *conduct* of suppliers and consumers within the structural framework of that market. If a market is performing well, consumers should benefit from, among other things, lower and more stable prices, more services, and technical innovation.

22. We request comment regarding the general approach to our analysis as well as: (a) the basic conditions of the Little LEO market; (b) the structure of this market under the two scenarios; (c) the likely conduct of firms within these alternate structures; and (d) the potential market performance which might be expected to result under each scenario.

iii. Basic Conditions

23. In analyzing basic market conditions, we propose, to examine the characteristics of consumer demand for Little LEO services, such as the willingness of consumers to substitute Little LEO services for other services and other factors that would make demand more or less elastic. We also propose to examine the characteristics of supply, such as suppliers' cost structures and other factors that would make supply more or less elastic. Elasticity of demand and elasticity of supply are components of a well-performing market since they indicate

¹⁷ See, e.g., RDSS Order; Big LEO Order; Little LEO Order.

¹⁸ The SCP paradigm is a well-accepted methodology under modern industrial organization economics. See F.M. Scherer and David Ross, *Industrial Market Structure and Economic Performance* 4-7 (3rd ed. 1990) ("Scherer & Ross"); Dennis W. Carlton & Jeffrey M. Perloff, *Modern Industrial 2-4 Organization* (2d ed. 1994). The Commission has used this analysis in a variety of contexts to help guide its policy decisions. See, e.g., In re Petition of the Connecticut Department of Public Utility Control, 10 F.C.C. Rcd. 7025, ¶ 18 (1995); In re Petition of the State of California, 10 F.C.C. Rcd. 7486, ¶ 28 (1995); In re Implementation of Section 19 of the Cable Television Consumer Protection and Competition Act of 1992, Annual Assessment of the Status of Competition in the Market for Delivery of Video Programming, 9 F.C.C. Rcd. 7442, Appendix H (1994).

consumer and supplier responsiveness to price changes.

24. As we stated above, Little LEO systems have the potential to provide low-cost, commercial radio location and two-way data messaging ("CRL-TWDM") services anywhere in the world using small, inexpensive transceivers. These systems will allow subscribers to send and receive short data messages to and from locations. Ultimately, Little LEO systems may be used to provide a number of diverse services, including emergency location services in remote areas, environmental data collection, vehicle tracking and monitoring, and time-sensitive business and personal data. The market for these CRL-TWDM services is the subject of our analysis. Suppliers may include Little LEOs or others.

25. *Demand.* Potential consumers for these services include transportation and shipping companies (for mobile messaging and location); business travelers, and business and public safety organizations with locations in remote sites (for paging, e-mail, and mobile computing); factories, utilities, and agricultural concerns (for data acquisition, monitoring, and control including reading meters and sensors); businesses and residences (for alarm messages); hikers and skiers (for emergency notification and location messages); and retailers (for retail point-of-sale reporting, credit card validations, ATM reporting, direct-to-home TV shopping).

26. As with many consumer services, the more consumers can switch to substitutes for Little LEO services when prices increase, the more incentive suppliers have to compete to attract and keep customers.¹⁹ There may be other services that could be substitutes for CRL-TWDM services. We request comment on the prevalence of substitutes for Little LEO service and the costs of switching suppliers and other characteristics of demand.

27. *Supply.* In our analysis of basic market conditions, we must also explore whether CRL-TWDM services themselves (as opposed to substitutes for them) may be provided by suppliers other than Little LEOs. Big LEO systems, for example, can also provide two-way, worldwide, mobile data services. Several other service providers can provide similar services as well. Operators of any of the more than thirty U.S.-licensed geostationary orbit ("GSO") fixed-satellites can provide nationwide or regional fixed-data services. Also, AMSC Corporation, which is operating a GSO mobile-satellite, and terrestrial service providers, such as personal communications service ("PCS") providers, provide two-way mobile data services in the United States. We request comment on whether these or other suppliers can be considered suppliers of CRL-TWDM services.

28. Even if there are alternative suppliers, however, they may be unable to provide the

¹⁹ See *In re Motion of AT&T Corp. to be Reclassified as a Non-Dominant Carrier*, 11 F.C.C. Rcd. 3271, ¶¶ 63-66 (1995).

entire range of CRL-TWDM services at a cost comparable to that estimated by the Little LEO applicants. We request comment as well on the implication of the assertion by some applicants that Little LEOs provide service at a lower price than non-Little LEO suppliers of the same services. If the incremental cost of service provision is lower for Little LEOs than for non-Little LEOs, then, even if there are non-Little LEO suppliers of CRL-TWDM, the entry of additional Little LEO systems would increase competition by increasing significantly the number of suppliers with those lower prices. In their analyses, commenters should consider the cost of providing these services since the cost structure of provision of Little LEO services has significant implications for economies of scale and the benefits to competition.

29. We also request comment on the existence of barriers to entry. Depending on the existence and type of non-Little LEO suppliers of CRL-TWDM service, barriers to entry for potential suppliers may be very high if the relevant market for analysis is only Little LEOs (*i.e.*, there are no close substitutes or other suppliers). If, however, suppliers of Little LEO service include PCS companies or other satellite systems, then barriers to entry may be somewhat lower. We ask parties to comment on the existence of barriers to entry. We also ask that if there are in fact, barriers to entry, whether there is something the Commission can do to lower those barriers.

iv. Market Structure

30. Once we have defined the basic conditions of the market, we can analyze the structure of that market by examining the number and size of consumers and suppliers and any economies of scale and scope that might pertain to a specific supplier's cost structure.

31. First round licensees argue that benefits from economies of scale and scope outweigh the benefits from additional competition. For example, Orbcomm argues that permitting it additional spectrum, will improve system design and reliability, with a result of better service to the public.²⁰ We seek comment on the presence of economies of scale and scope and whether granting expansion capacity to existing licensees would create significant benefits as a result of such economies. We ask if there are other ways to get those same efficiencies, such as through capacity sharing.

32. We request comment on other factors influencing cost of providing service.

v. Conduct

²⁰ Orbcomm Application for Modification of License to Construct, Launch, and Operate a Non-voice, Non-geostationary Mobile Satellite System, File No. 28-SAT-MP/ML-95, Consolidated Response of Orbcomm at 2, (dated April 10, 1995).

33. The market structure will suggest certain possibilities for the conduct of consumers and suppliers in the market, including tacit or overt cooperation among sellers. The extent to which firms will tend to compete on price or service will depend in part on the number of relevant suppliers (competitors) and the number of substitutes. If there are only three competitors -- namely, the three Little LEO systems -- competition will likely be less than if Little LEO systems compete with non-Little LEOs for provision of the same or substitute services. We seek comment on potential issues of conduct.

vi. Performance

34. To inform our final decision on whether to adopt rules to increase the number of Little LEO operators, we propose to compare how the market would perform -- and therefore the benefits it would provide to consumers -- under a scenario in which there were three Little LEO systems versus how it would perform under a scenario in which there were four, five or six Little LEO systems.²¹ We seek comment on the performance that will result under each scenario, given the basic conditions, market structure, and conduct in the relevant market.

35. We tentatively conclude that if Little LEOs operate using a lower-cost technology than non-Little LEO suppliers of Little LEO services, then performance will be enhanced by the entry of new suppliers even in the presence of substitute or non-Little LEO suppliers. In this case, one, two or three new suppliers will be added to the three existing suppliers at the lower cost and will increase competition in the market overall. In the case where there are no other suppliers or very few, the addition of up to three suppliers would similarly enhance performance. In either case the benefits to consumers would likely outweigh any cost in terms of lost economies of scale. We seek comment on this tentative conclusion.

vii. Effect on First Round Licensees

36. We licensed all three first round applicants on the basis of the sharing proposal they advanced in the Negotiated Rulemaking. Significantly, our approval of that sharing proposal rested on a promise that future entrants could be licensed in the allocated spectrum. In the Little LEO Order, we noted that "[s]ome unassigned NVNG spectrum remains available under the applicants' sharing proposal" and that "[b]oth Orbcomm and Starsys continue to assert their

²¹ Under well-established precedent, this Commission may analyze imminent future competition based upon current market conditions in its decision-making. See Connecticut Department of Public Utility control v. FCC, 78 F.3d 842 (2d Cir. 1996) (Connecticut PUC v. FCC); Petition of the People of the State of California and Public Utilities Commission of the State of California to Retain Regulatory Authority Over Wholesale Cellular Service Providers in the State of California, 10 F.C.C. Rcd. 7486 at ¶ 22 and n.60 (1995) (California Cellular Petition), recon. denied 11 F.C.C. Rcd. 796 (1995).

abilities to share their proposed service link frequencies with future systems."²² In fact, we did not place spectrum or power limits on the three licensees, as proposed by a party interested in filing a second round application, because we believed that the licensees would be able to coordinate their operations successfully with future Little LEO systems.²³ We indicated, however, that we would consider imposing spectrum limitations in order to permit additional entry if "service link sharing [does] not prove satisfactory."²⁴

37. First-round licensees have been on notice for several years that we expected to be able to authorize additional Little LEO systems in this band. First round applicants had no reason to believe that, in addition to approving their sharing proposal, we might grant first-round licensees expansion capacity to the exclusion of new Little LEO licensed systems.

viii. Promoting Efficient Spectrum Use

38. Aside from the competitive concerns in determining eligibility to hold a second round license, we want to ensure that licensees are making full use of their assigned spectrum before they are granted expansion capacity. Currently, none of the three Little LEO licensees is operating at full capacity. Indeed, Orbcomm is the only licensee providing any service, and at present, is operating only two of its thirty-six authorized satellites. Nevertheless, all licensees have requested additional spectrum. We tentatively conclude that it is not in the public interest for this Commission to hold additional spectrum for existing licensees on the basis of speculative long-term traffic projections, if the result is to exclude qualified "new" entities who are proposing competitive alternatives.

2. Financial Qualifications

39. In light of the huge costs involved in constructing and launching a satellite system, financial ability has always been considered a significant factor in determining whether an applicant is qualified to hold a license.²⁵ Historically, the Commission has fashioned financial requirements for satellite services on the basis of entry opportunities in the particular service being licensed. This policy stems from our repeated experience that licensees without sufficient available resources will likely spend a significant amount of time attempting to raise the financing required to construct and launch a satellite system and these attempts will often end

²² Little LEO Order at ¶ 21 and n. 38.

²³ *Id.* at n. 38 and 39.

²⁴ *Id.* at n. 38.

²⁵ See, e.g., RDSS Order; Big LEO Order.

unsuccessfully.²⁶ As a result, in cases where there are more applicants than the spectrum can accommodate, a grant to an under-financed space station applicant may preclude a capitalized applicant from implementing its system, and delay service to the public. In these cases, we have required a stringent financial showing. Where grant to an under-financed applicant will not prevent grant of other applications, the required demonstration has been less stringent. For example, in the radiodetermination satellite service, where all applicants could be accommodated with our mandated system architecture and future entry also was possible, only a detailed business plan was required.²⁷ In contrast, in the domestic fixed-satellite service, where applications to implement space stations regularly exceed the number of available orbital locations for those satellites, evidence of full, irrevocable financing is required.²⁸

40. Under the current financial requirement for the Little LEO service an applicant must demonstrate that it has the finances necessary to construct, launch, and operate two satellites in its system for at least one year. Given that future entry may not be possible in the Little LEO service and grant to an under-financed applicant will likely prevent a capitalized applicant from going forward, we propose to amend the current financial qualification standard to require that each applicant demonstrate that it has the finances necessary to construct, launch, and operate its entire system for a year.²⁹ We ask that commenters respond to this proposal and make any other relevant proposals concerning our financial standard.

B. Spectrum Sharing Proposals

41. When we established the second Little LEO processing round, we invited applications to provide service in the 148-150.5 MHz, 137-138 MHz, and 400.15-401 MHz bands.³⁰

²⁶ See, e.g., National Exchange Satellite, Inc., 7 F.C.C. Rcd. 1990 (Com. Car. Bur. 1992); Rainbow Satellite, Inc., Mimeo No. 2584 (Com. Car. Bur., released Feb. 14, 1985); United States Satellite Systems, Inc. Mimeo No. 2583 (Com. Car. Bur., released Feb. 14, 1985) (domestic satellite licenses declared null and void for failure to begin implementation as required by license). In addition, Geostar Corporation, a start-up company licensed in the radiodetermination satellite service, declared bankruptcy nearly five years after its licenses were issued. It had not built any of its satellites.

²⁷ RDSS Order. Although Geostar Corporation declared bankruptcy eventually, it did not keep any fully capitalized companies from implementing their systems.

²⁸ Licensing Space Stations in the Domestic Fixed-Satellite Service, FCC No. 85-395, CC Docket No. 85-135 (released August 29, 1985) ("1985 Domsat Order"); 47 C.F.R. § 25.140(c).

²⁹ See, e.g., 1985 Domsat Order; Big LEO Order.

³⁰ See Satellite Application Acceptable for Filing; Cut-off Established for Additional Applications, Public Notice, Report No. DS-1459 (September 16, 1994).

Portions of these bands are already licensed to Orbcomm, VITA, and Starsys.³¹ We now propose to license second round applicants to operate in portions of these bands as well. In their sharing plan developed in the first round, Orbcomm, Starsys, and VITA³² concluded that additional systems could be accommodated by using time division multiple access ("TDMA") or frequency division multiple access ("FDMA") modulation techniques and by time-sharing.³³ Although complex technical issues remain, we believe that with appropriate modulation techniques, proper system coordination, and time-sharing of frequencies, there is sufficient spectrum available to grant a license for at least one, and possibly for up to three new systems in the second processing round.

42. Specifically, we propose that one Little LEO system operate in the 149.81-149.9 MHz (uplink) and the 400.5050-400.5517 MHz (downlink) bands. We will refer to this first potential licensee as "System-1." We propose that a second Little LEO system ("System-2") operate in the 137-138 MHz band (downlink) and the 148.905-149.81 MHz band (uplink). Finally, we propose that a third Little LEO system ("System-3") operate in the 149.95-150.05 MHz band (uplink) and the 400.150-400.505 MHz and 400.645-401.000 MHz bands (downlink).³⁴

43. We recognize that each of these systems will be required to operate under certain constraints. We discuss each potential system in more detail below and request comment on the viability of the proposed systems' and whether it would be technically feasible to accommodate more than one additional system in each of the band segments. Additionally, we ask whether the uplink and downlink pairings we propose are the most efficient. Parties are also asked to comment on alternative proposals and pairings. All comments should be supported with detailed technical showings on how each new system or systems can be accommodated in the proposed spectrum or in any alternative pairings. These showings should include information on appropriate modulation techniques, time-sharing scenarios including visibility statistics appropriate to each band, and system parameters (such as constellation size) that might affect

³¹ Specifically, Orbcomm is authorized to use the 148-149.9 MHz (uplink) and 137-138 MHz (downlink) frequency bands; VITA is authorized to use the 149.81-149.9 MHz (uplink) and 400.505-400.595 MHz (downlink) frequency bands; and Starsys is authorized to use the 137-138 MHz (downlink), 148-149.9 MHz (uplink) and 400.15-401 MHz (downlink) frequency bands. There are also non-U.S.-licensed Little LEO systems authorized in portions of these bands. They are described in more detail later. See infra ¶¶ 45, 49, 50, and 69.

³² See Below 1 GHz LEO Negotiated Rulemaking Committee, Report 8-9, September 16, 1992.

³³ TDMA is a transmission technique in which the same frequency band is used by multiple earth stations transmitting in alternating time slots. FDMA provides users multiple discrete channels.

³⁴ We propose to allow applicants to submit amended applications to operate in any or all of these three blocks of spectrum. See infra ¶¶ 103-106.

a new entrant's ability to share successfully with existing users. Any authorization we grant would be for operations in the United States; however, in order to ensure interference-free operations with other U.S. government systems operating throughout the world, as discussed below, we propose to require the second round, Little LEO licensees to comply on a worldwide basis, with all the technical requirements, including time-sharing, that we adopt in this proceeding. Furthermore, to serve regions outside of the United States, Little LEO licensees will have to coordinate the operation of their systems with other systems operating in the proposed frequency bands in other regions of the world.

44. We note that FACS has proposed that we use their "Virtual Constellation" concept as a means of sharing the available spectrum. The Virtual Constellation concept involves licensing all applicants to operate over the entire available spectrum, with each applicant operating a small number of technically compatible satellites. Although the satellites would be independently owned and operated, there would be some joint operations to facilitate spectrum sharing. The Commission would likely sanction an agreement by all parties to participate in a Virtual Constellation, but at this time we do not propose to mandate that all applicants participate in the Virtual Constellation. We request comment on FACS's proposal.

1. Little LEO System-1 (149.81-149.9 MHz/400.5050-400.5517 MHz)

45. We propose that Little LEO System-1 use the 149.81-149.9 MHz (uplink) and 400.5050-400.5517 MHz (downlink) bands. VITA will also be operating in these frequencies.³⁵ Orbcomm, Starsys, and France's Little LEO system, S80-1, also plan to operate in the 148.0-149.9 MHz uplink band but will not be operating in the 149.81-149.9 MHz portion of the band. Starsys, the Department of Defense ("DoD"), and S80-1 plan to operate in the 400.15-401.0 MHz downlink band but will not be operating in the 400.5050-400.5517 MHz portions of the band. Thus, Little LEO System-1 will share frequencies with VITA and coordinate its system with all users of the 148.0-149.9 MHz and 400.15-401.0 MHz frequency bands. We believe this is possible because Orbcomm, Starsys, and VITA have represented that they can share their

³⁵ SatelLife, Inc. currently has an experimental authorization to operate a satellite that uses the same frequencies as those licensed to VITA. SatelLife, Inc. has been operating since 1994 and a new Little LEO entrant will likely not be launched in the these bands for at least two to four years. Therefore, SatelLife, Inc. should have ample time to conduct its experiments and terminate its operations prior to the beginning of operations by a new Little LEO licensee. Since experimental authorizations are granted on a non-interference basis to licensed operations, we will require SatelLife, Inc. to terminate its operations prior to the launch of any satellite by a new licensee in these bands. See SatelLife, Inc. Experimental Radio Station Construction Permit and License, Call Sign KS2XDT, File No. 4892-EX-PL-95 (effective September 20, 1995).

assigned service link frequencies with at least one other system.³⁶

46. At least one additional Little LEO system can operate in the same frequency bands with the VITA system on a time-sharing³⁷ basis using TDMA/FDMA modulation techniques. VITA is authorized to operate a one-satellite system only.³⁸ This satellite will only be visible to users a small percentage of the time and visibility will be affected by the users location. A user located at the equator will be able to "see" VITA's one satellite approximately 3.7 percent of the time.³⁹ To users located at 40 and at 80 degrees latitude, VITA's satellite will be visible for 5 and 13.8 percent of the time, respectively.

47. The time when VITA's satellite is not visible can be used by Little LEO System-1. For example, a user at the equator will have access to Little LEO System-1 for over 96 percent of the time, or approximately 23 hours out of a 24 hour period. Consequently, allowing this band to remain unused for as much as 23 hours each day would not only be spectrally inefficient, but would also deny the public valuable services, inhibit further development within the mobile satellite industry, and ignore the technical advancement that makes time-sharing possible.

48. Below we discuss time-sharing techniques that may be used for Little LEO Systems 2 and 3 and the National Oceanic and Atmospheric Administration ("NOAA") and DoD, respectively.⁴⁰ Similar arrangements may be necessary in order for Little LEO System-1 to time-share with VITA. However, we do not propose any specific time-sharing requirements, and instead, will allow VITA and Little LEO System-1 the flexibility to make the arrangements necessary to ensure interference free operations. If VITA or any other party believes that such arrangements need to be codified in a rule or discussed in further detail in this proceeding, we request that the party provide detailed discussion of the issues and any proposed rules in their comments.

³⁶ See *infra* ¶¶ 36-37. Orbcomm and Starsys, however, have indicated that they could not share gateway frequencies with other systems. See Below 1 GHz LEO Negotiated Rulemaking Committee, Report 5-7, September 16, 1992.

³⁷ Time-sharing is a new and revolutionary process that has not yet been attempted. However, given the scarcity of spectrum and its potential to maximize spectrum use, we believe time-sharing is a realistic proposal for utilizing the spectrum.

³⁸ See VITA Authorization.

³⁹ This calculation is based on a VITA satellite operating at an elevation angle of 0 degrees, an altitude of 800 km and an orbital inclination of 99 degrees.

⁴⁰ See *infra* ¶¶ 49-77.

2. Little LEO System-2 (148.905-149.81 MHz/137-138 MHz)

49. The spectrum we are proposing to authorize for use by Little LEO System-2 is the 148.905-149.81 MHz band for uplinks and a number of sub-bands of the 137-138 MHz band for downlinks. Orbcomm and Starsys are authorized to use the 148.0-149.9 MHz uplink band. Orbcomm's system, however, is the only system that is coordinated to use the 148.905-149.81 MHz frequency band. Meteorological satellites ("MetSats") operated by NOAA in addition to Orbcomm and Starsys are authorized to use the 137-138 MHz downlink band. Also, METEOR, a meteorological satellite system, is authorized by Russia and the S80-1 Little LEO system is authorized by France to operate in the 137-138 MHz band.

50. Furthermore, NOAA has an agreement with the European Meteorological Satellite Organization ("Eumetsat") for the operation of a polar orbiting meteorological satellite in conjunction with NOAA's system in the 137-138 MHz band. The Eumetsat satellite may begin operations at 137.025-137.175 MHz and 137.825-138 MHz as early as 1998. In addition, DoD is expected to merge its system which will operate in the 400.15-401.0 MHz frequency band with NOAA's system. Beginning in 1998, NOAA will be responsible for "on orbit" operations of the DoD metsat satellites, and NOAA will assume all command and control functions for the DoD system by 2007. Our use of the terms "NOAA" and "DOD" in this Notice incorporates the separate systems operated by NOAA and DoD as well as the systems resulting from agreements with Eumetsat and the merger of the NOAA and DoD systems.

a. Uplink Band

51. With respect to our proposed uplink band for Little LEO System-2, Orbcomm, VITA, and Starsys are authorized to operate in the 148.0-149.9 MHz band. We believe the 148.905-149.81 MHz portion of this band can be used for Little LEO System-2 uplinks. This uplink band segment does not include frequencies coordinated for use by the French S80-1 system, Starsys, and VITA and the frequencies we have proposed that Little LEO System-1 use. In addition, NOAA indicated that they have tracking and command functions at 148.56 MHz for their polar orbiting spacecraft. Therefore, a Little LEO System-2 entrant would be required to share frequencies with Orbcomm and coordinate its system with the other users of the 148.0-149.9 MHz band to ensure interference free operations. As noted above, Orbcomm, Starsys, and VITA have represented that they can share their assigned frequencies with at least one other system.⁴¹ We request comment on accommodating an additional entrant or entrants. To the extent that more than one new entrant can be accommodated in this band, we seek comment on methodologies for sharing this band and coordinating with existing users.

⁴¹ See infra ¶ 36-37.

b. Downlink Band

i. NOAA's Use of the Band

52. With respect to our proposed downlink band, Footnote US318 of the Table of Frequency Allocations, 47 C.F.R. § 2.106, reserves the 137.333-137.367 MHz, 137.485-137.515 MHz, 137.605-137.635 MHz, and 137.753-137.787 MHz sub-bands ("NOAA channels") for use by Government satellite operations on a primary basis. Non-Government MSS use in these NOAA channels is secondary until January 2000. After that date, Government and non-Government use of the NOAA channels will be on a co-primary basis. The NOAA channels are currently used by NOAA for a two satellite MetSat system. The 137.025-137.175 MHz and 137.825-138 MHz sub-bands ("NOAA bands") are allocated to MSS on a secondary basis⁴² and are not currently being used by Government satellite systems.⁴³ Our understanding is that NOAA plans to implement MetSat operations in the NOAA bands between 2003 and 2006. NOAA's system currently is composed of two satellites but, for a period of time, could consist of up to five satellites.⁴⁴ NOAA is expected to implement three new satellites in the NOAA bands and continue to operate its existing two satellites in the NOAA channels until the satellites become inoperable.

53. Furthermore, NOAA and Orbcomm have been coordinating Orbcomm's use of the 137-138 MHz band. In order to ensure that Orbcomm does not cause interference to the NOAA system when it begins operation in the 137.025-137.175 MHz band-edge sub-band,⁴⁵ Orbcomm will have to migrate some of its operations from the 137.1850-137.2375 sub-bands to as many as two of the NOAA channels, specifically the 137.485-137.515 MHz and 137.605-137.635 MHz channels. Thus, any proposals by the second round applicants to use the 137-138 band should contemplate the use of as few as two of the NOAA channels, specifically the 137.333-137.367 MHz and 137.753-137.787 MHz channels. We believe that two channels coupled with the use of the band edge is sufficient spectrum for a Little LEO system to operate. However,

⁴² See Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum to the Fixed Satellite Service and the Mobile Satellite Service for Low-Earth Orbiting Satellites, Report and Order, 8 F.C.C. Rcd. 1812 (1993).

⁴³ HETE, a one satellite, non-geostationary U.S. satellite system, plans to use the 137.955-137.965 MHz band and is scheduled to launch in November 1996.

⁴⁴ Each operational NOAA satellite is assigned two of the four frequencies, but we understand that NOAA does not have any plans to implement any frequency changes to its operational satellites.

⁴⁵ Space operation, meteorological satellite, space research, and mobile satellite service systems can all operate on a primary basis in the 137.0-137.025 MHz frequency segment. See 47 C.F.R. § 2.106, Footnote US244.

we do ask for comments on whether this spectrum is sufficient to support a system.

54. Consequently, a Little LEO system would have use of the NOAA bands until the year 2003 and time-shared use of the available NOAA channels from the year 2000 and the NOAA bands from 2003. When NOAA's satellites in the NOAA channels become inoperable, the Little LEO licensee could use the channels on a primary, full-time basis. Further, subject to coordination with the Executive Branch, specifically NTIA and NOAA, a Little LEO system could continue to time-share the NOAA bands with NOAA satellites on a secondary basis.⁴⁶

55. The implementation of NOAA's system in the NOAA bands could work as follows: Little LEO System-2 could begin operating in the NOAA bands and work with NOAA to migrate Little LEO service to the NOAA channels after the year 2000. After the year 2000, Little LEO System-2 could time-share the available NOAA channels until NOAA's two satellites become inoperable. Since the NOAA system currently has two operational satellites in the NOAA channels and will continue to operate them until they become inoperable, we anticipate the Little LEO licensee would be able to use the NOAA channels for 89.8 percent of the time.⁴⁷ However, during NOAA's implementation of its satellites in the NOAA bands, Little LEO System-2 would have to time-share both the NOAA channels and bands with NOAA's system. During this period, the Little LEO system would operate on a secondary basis to NOAA's system in the NOAA bands. We calculate that the licensee would be able to use the NOAA bands for 84.5 percent of the time.⁴⁸ Once NOAA has vacated the channels and implemented

⁴⁶ Ongoing studies in the International Telecommunication Union - Radiocommunication Sector ("ITU-R") indicate that sharing between MSS downlinks and MetSats at 137-138 MHz can be accomplished by using co-frequency avoidance in the same geographic area. See "Modification to Attachment 21; Report of the Fifth Meeting of ITU-R Working Party 8D" (Geneva 13-22 March 1996) at § 4.1.1.1.5.

⁴⁷ This calculation is based on the operation of two satellites by NOAA with an earth station having an elevation angle towards the satellite of 0 degrees and for a user located in the Washington, D.C. area. Currently, NOAA's two satellites are phased in the orbital planes and each utilizes two of the four channels to provide meteorological satellite service. Consequently, we also anticipate that Little LEO System-2 would be able to use one of the two channels for 94.9 percent of the time.

As stated previously, the availability of the satellite to the user is, in part, a function of the location of the user. For example, NOAA's two satellites will be available to its users located at latitudes of 0, 30, and 60 degrees for 92.4, 90.8, and 81.6 percent of the time, respectively. For calculations based on the operation of four satellites, see paragraph 70.

⁴⁸ This calculation is based on the operation of three satellites by NOAA with an elevation angle of zero degrees. The availability of NOAA's system to its users will increase if NOAA increases the number of satellites in its system from two to three. This in turn will diminish the availability of the Little LEO system to its users. As previously stated, the Little LEO licensee will need to coordinate its system with other users of the NOAA bands.

its system at the band-edge, the Little LEO licensee could continue to time-share and operate on a secondary basis to NOAA in the NOAA bands.⁴⁹ However, a Little LEO licensee would have primary use of the NOAA channels when NOAA's satellites become inoperable.

ii. Time-Sharing with NOAA

56. In bands shared by Little LEO system-2 and NOAA, time-sharing offers complex but effective technique for maximizing the use of orbital and spectrum resources. In order to time-share effectively and avoid transmitting signals that interfere with the NOAA earth stations' receipt of transmissions from NOAA satellites, each Little LEO satellite must "know" its position relative to each NOAA satellite and be able to shut-off operations when necessary.

57. To ensure that NOAA earth stations⁵⁰ do not experience harmful interference from Little LEO downlink signals, we propose to require that Little LEO satellites not transmit into the region beneath the NOAA satellite, the "protection area," on the frequency used by that NOAA satellite.⁵¹ As a NOAA satellite progresses along its orbit, its protection area will move across the surface of the Earth beneath it. The Little LEO satellites following their orbits must track these moving NOAA protection areas and shut-off their transmissions if they enter any NOAA protection area worldwide.

58. By using precision information concerning the location of the NOAA satellite, Little LEO satellites can avoid interference to NOAA earth stations. The precision information needed includes ephemeris data, which consists of spacecraft orbital parameters,⁵² the elevation angle of the NOAA satellite, and the frequency on which the NOAA satellite is operating.⁵³ This

Other Administrations plan to use the NOAA bands and this may affect the time available for use by a Little LEO system.

⁴⁹ The availability of NOAA's system to its users will increase if NOAA increases the number of satellites in its system from two to three. This in turn will diminish the availability of the Little LEO system to its users.

⁵⁰ The term "NOAA earth stations" as used herein refers to all earth stations (including DoD earth stations) receiving NOAA signals regardless of whether or not they are operated by NOAA.

⁵¹ See Section 25.257, Appendix B.

⁵² Ephemeris data are technical parameters calculated for a particular satellite that mathematically represent the location of the satellite in its orbit at any given time.

⁵³ The elevation angle is the angular height of the satellite above the horizon as viewed from a point on the Earth. As used herein, the elevation angle is the angle, as measured from a NOAA satellite receiving location on the Earth, upward to a passing NOAA satellite. If the passing NOAA satellite is at the horizon the

information can be used by the Little LEO satellites (which have their own ephemeris data) to determine the location of the NOAA satellite protection areas at all times.

59. In order to ensure that the Little LEO satellite can accurately locate the protection areas of the NOAA satellites, updated information must be provided periodically to the Little LEO operator. The gravitational forces of the Sun and Moon, the non-spherical nature of the Earth, and atmospheric drag affect satellite locations, thereby slightly altering the relevant ephemeris data over time. Thus, Little LEO systems must be capable of generating timing sequences to coordinate properly the termination of transmissions when their satellites are within sight of a protection area, and the satellites must be capable of receiving the instructions necessary to implement their timing sequence from their gateway Earth stations. In order to ensure that the necessary information is uploaded to the Little LEO satellites frequently enough to prevent accumulation of erroneous data that may lead to incorrectly identifying NOAA protection areas, we propose to require that the Little LEO licensee obtain updated ephemeris data from NOAA and upload the updated ephemeris data to its satellites on at least a weekly basis or as often as necessary to avoid interference.⁵⁴ We seek comment on the appropriateness of this requirement.

60. We also propose to require Little LEO operators to identify a point of contact accessible twenty-four hours a day, so that anomalies or reports of interference while time-sharing can be addressed expeditiously.⁵⁵ We ask interested parties to comment on the preferred means of transferring ephemeris data to the Little LEO operators, e.g., via electronic transfer or by diskette. We also ask for comment on the procedures to be undertaken in the event of unavailability of the data or observed errors, and similar matters.

61. To minimize the likelihood and extent of interference to NOAA earth stations, we propose that Little LEO systems use a zero degree elevation angle when calculating the location of NOAA's protection area. This assumes that the NOAA receiver is at an Earth location which can see a Little LEO satellite at the horizon. In some cases, of course, a Little LEO satellite would not be visible until it is a few degrees higher than the horizon, due to buildings, trees, etc. In some environments, such as on large bodies of water, zero degrees represents a reasonable approximation. In general, we believe an elevation angle of zero degrees should be sufficient to protect NOAA earth stations from Little LEO satellite transmissions. At this angle

elevation angle is zero degrees. If the NOAA satellite is directly overhead the elevation angle is 90 degrees.

⁵⁴ See Section 25.257(a), Appendix B.

⁵⁵ See Section 25.257(b), Appendix B.

there will be very little radio energy received by a NOAA receiver from a Little LEO satellite. We request comments on the use of a zero degree elevation angle.

62. In some cases, NOAA and Little LEO satellites may be so far apart that the Little LEO satellite transmissions will not overlap with the protection area beneath the NOAA satellite. Under these circumstances, there is little possibility the Little LEO satellites will interfere with the NOAA earth station's receipt of transmissions from the NOAA satellite. For smaller separations, however, the Little LEO satellite will impose sufficiently strong signals into the NOAA protection area potentially causing harmful interference. If notified that this interference is occurring, we propose to require that the Little LEO transmitter be shut-off.

63. As a further step to assure that interference to the NOAA system is minimized, we are proposing Section 25.257(c) that will require a Little LEO satellite to automatically cease transmissions in the 137-138 MHz band if the satellite does not receive a valid reset signal from a Little LEO gateway station within forty-eight hours. Thus, if a Little LEO satellite were to malfunction and transmit into a NOAA protection area, the potential damage would be limited by the automatic shutdown feature. We have selected forty-eight hours as the reset period for this protective protocol, based on what we believe to be the reasonable period of accessibility to all Little LEO satellites from a given gateway Earth station. However, it is quite possible that less than 12 hours is feasible, particularly if there are several gateway Earth stations located worldwide. Part of the reset protocol may require confirmation or validation that the Little LEO satellite is functioning properly. Otherwise, resetting would simply perpetuate rogue transmissions. We ask interested parties to comment on the necessity of this reset capability, the need for and characteristics of a validation mechanism, and our proposal for a forty-eight hour reset period.

64. Finally, we seek comment on the effect of this time-sharing proposal on the NOAA community. NOAA earth stations, scattered throughout the world, will "see" the Little LEO co-frequency transmissions for extended periods of time when those receivers are not receiving a NOAA signal. The respective technical features of the NOAA and Little LEO radio transmissions should prevent NOAA earth stations from experiencing any significant adverse impact. However, there may be circumstances or particular equipment designs that cannot achieve that signal differentiation and will be adversely affected. We ask for details concerning any such circumstances or equipment, and recommendations on how to ameliorate any adverse impact to the time-sharing technique we are proposing.

65. In order to facilitate interference-free operations, prior to the launch and operation of a licensed system, we propose to require that the Little LEO licensee successfully coordinate its system with NOAA. In addition, we request comment on our proposed sharing and migration scenario between Little LEO System-2 and the MetSats. Parties should specifically address how

the NOAA channels and the band-edge sub-bands can be used most effectively by a new Little LEO entrant or entrants. We ask interested parties to include detailed discussion of their technical plans sufficient to demonstrate that there will be no unacceptable interference to the NOAA system operating in the 137-138 MHz band. We ask parties to comment on how sharing with a NOAA system consisting of two satellites operating in the NOAA channels and three satellites operating in the NOAA bands can be accomplished in the 137-138 MHz band. Specifically, parties should address whether time-sharing of frequency blocks is feasible (e.g., how time should be restricted, the effect on service to consumers, the impact on interference), and if so, how these blocks should be licensed. Further, parties should address whether more than one entrant's downlinks can be accommodated in this band.

iii. Other Users of the Band

66. In addition to NOAA's use, Orbcomm uses a range of channels in the 137-138 MHz band employing FDMA modulation techniques.⁵⁶ Starsys is expected to use essentially the entire 137-138 MHz band by employing spread spectrum multiple access ("SSMA") modulation techniques. France's S80-1 Little LEO system plans to operate in this spectrum and will use SSMA across most of the band. Russian's METEOR system will also operate in this band. At least three Little LEO systems, Orbcomm, Starsys, and S80-1, anticipate operating twenty-four hours a day and will have essentially full geographic coverage.

67. Nevertheless, we believe that at least one additional system can be accommodated in the 137-138 MHz band through time-sharing techniques. As noted, both Orbcomm and Starsys have represented that an additional Little LEO entrant can share their authorized spectrum. We also believe that the scheduled MetSat migration will relieve congestion in certain channels, freeing spectrum for a new Little LEO entrant.

3. Little LEO System-3 (149.95-150.05 MHz/400.150-400.5050 MHz/400.645-401.0 MHz)

68. The spectrum we are proposing for use by Little LEO System-3, the 149.95-150.05 MHz (uplink) and 400.150-400.5050 and 400.645-401.0 MHz (downlink) bands, are not currently licensed to Little LEO systems. The uplink band is used for radionavigation-satellite service (RNSS) systems, while the downlink bands are authorized for use by the DoD.

⁵⁶ See Orbcomm Application for Modification of License, Application, File No. 5-SAT-ML-96, (dated October 18, 1995). By its modification which is pending before the Commission, Orbcomm proposes adjusting its frequencies in the 137-138 MHz band, among other reasons, to be compatible with Russia's METEOR system. Coordination of Orbcomm's modification to facilitate operation with France's planned S80-1 system has not been completed internationally.

69. In coordinating the three licensed Little LEO systems with France, the 149.95-150.0 MHz and 150.0-150.05 MHz band segments have been earmarked for use by U.S. Little LEO systems. Nevertheless, we still need to re-coordinate use with France in the future. We believe that, together, these two 50 kHz segments can accommodate one system. The licensee would need to develop sharing arrangements and coordinate with existing RNSS use by a U.S. and a Russian system. We believe, however, that sharing arrangements should not prove unduly difficult because we expect the United States RNSS system to vacate this band in the near future. We request comment on the sharing potential with RNSS systems in this band. We also request comment on whether multiple "small" networks might be accommodated in this band. Those who favor a multiple system approach should address spectrum sharing, inter-system coordination and interference avoidance.

70. With respect to our proposed downlink band for Little LEO System-3, DoD is authorized to use the 400.150-400.5050 MHz and 400.645-401.0 MHz band.⁵⁷ Our understanding is that DoD plans to operate a satellite system worldwide that will consist of up to five satellites in the 400.15-401.00 MHz frequency band. We estimate that a DoD user in Washington D.C. would have access to a DoD three-satellite system for approximately 15.5 percent of the time.⁵⁸ The remaining 84.5 percent of available time, or about twenty hours per day, could be used by Little LEO System-3. A DoD user at 0, 30, and 60 degrees latitude would have access to a DoD four-satellite system for 15.2, 16.8, and 34.9 percent of the time, respectively. For a five satellite system, the time availability will be proportionally higher for a DoD user. We request comment on how the Little LEO system could best use the remaining available time based on a DoD system composed of five satellites.

71. The Little LEO System-3's ability to implement this time-sharing scheme is vital to the global national security interests of the United States. Therefore, it is important that licensees who share the 400.15-401 MHz band with DOD assign the highest priority to avoiding interference to DOD systems worldwide. We have proposed rules for the 137-138 MHz band which we believe will prevent harmful interference to current users. Those rules and the attendant discussion are also largely applicable to the 400.15-401 MHz band, where DOD operates its METSAT system. Based on concerns expressed by DOD, however, we request comment by interested parties on the feasibility of establishing a protection area in the 400.15-401 MHz band that extends below the horizon, *i.e.*, an elevation angle of less than zero degrees. Comments on this issue should include examination and analysis of the impact of elevation

⁵⁷ As stated previously, all references to a system operated by DoD in the 400.15-401.0 MHz band incorporates, a system operated by DoD and any system merged with NOAA. The DoD system is expected to merge with the NOAA system.

⁵⁸ This is calculated using an elevation angle of 0 degrees.

angles below the horizon on NVNG service viability, as well as the need for such angles to protect DOD METSAT users worldwide. As a preliminary proposal, we have included an elevation angle of zero degrees in Section 25.258(a). Further, in order to assure accuracy in the implementation of orbital propagator algorithms used to program NVNG satellites to prevent interference to DOD systems worldwide, we request interested parties to provide a description of their propagator algorithms they expect to use with their NVNG systems. We also ask interested parties to comment on the extent to which error in the propagator algorithms may affect protection to the DOD METSAT system. At this time we are not proposing specific language for a rule supporting a particular propagator algorithm, but notice is hereby given that a reference propagator algorithm may be specified if, based on the record, it appears that adequate protection to the DOD METSAT system cannot otherwise be achieved.

72. Each DoD satellite using the 400.15-401 MHz band will be assigned just one of two possible frequencies. It is our understanding that there will be occasions when those assignments will be changed. There may be operational or logistical circumstances which require DoD satellites to change from one frequency to the other on very short notice. As we understand it, DoD can change the frequency on which its satellites are operating and inform its earth stations worldwide of the new frequency choice in less than ninety minutes.

73. If DoD changes the frequency for a particular satellite, Little LEO systems must also be able to change its frequency to avoid interference to the DoD user. In order to accomplish this, a mechanism must be developed between DoD and the Little LEO operator to exchange ephemeris and frequency information. The Little LEO operator must be informed of the change in order to update system parameters expeditiously. Failure to update rapidly creates an increase in the risk of harmful interference to the worldwide operations of the DoD system. Therefore, Little LEO satellite operators must be capable of implementing DoD-imposed frequency changes within ninety minutes of the implementation of the change in frequencies of the DoD system.

74. We ask interested parties to provide information concerning the procedure by which information, frequency as well as ephemeris data, can be provided to Little LEO operators to facilitate timely deployment of revised protection areas, and the meaning of "timely" for purposes of avoiding harmful interference to the DoD earth stations when there is a DoD-prompted frequency change. As stated above, we believe DoD can, in less than ninety minutes, upload information to its satellite instructing the satellite to change the frequency on which it is operating, inform its earth stations of the frequency change, have its satellite begin transmitting on the new frequency, and its earth stations begin receiving signals transmitted on the new frequency. Our understanding is that a Little LEO system operating with one (or two) gateway stations in the United States, can implement such a frequency change in 14.4 hours or less. We do not believe a 14.4 hour implementation period is an acceptable time to avoid interference to the DoD system. Furthermore, a Little LEO system can reduce its implementation time by

increasing the number of gateway stations in its system. Therefore, we propose that Little LEO systems be able to implement the change of frequency within ninety minutes of receiving the request from DoD.

75. Thus, we ask for comment including discussion of relevant technical and economic facts concerning what we should adopt as an appropriate time period to implement frequency changes to preclude any interference to DoD users. We ask Little LEO applicants whether it is technically and economically feasible for them to implement a frequency change procedure that is sufficiently responsive to avoid substantially increasing the risk of interference to DoD earth stations. We also ask Little LEOs to comment on the fastest possible time their systems will be able to implement a frequency change. We further ask interested Little LEO applicants to provide statistical estimates of the extent of interference to the DoD earth station as a function of the time between DoD system frequency change and responsive Little LEO system frequency change, and the costs in terms of system capacity and viability should they choose to program their Little LEO satellites to refrain from operating on any DoD frequency in DoD protection areas. Prior to the launch and operation of a licensed system, we propose to require that the Little LEO licensee successfully coordinate its system with DoD. We also propose to require that, at DoD's instruction, the Little LEO System-3 operator test, up to four times a year, its systems ability to implement a DoD-requested frequency change. This exercise would serve to ensure that the system operator can implement the frequency change and there are no equipment or system based problems in doing so. We also ask parties to comment on all aspects of the proposed rule and submit any additional proposals they find necessary.

76. Given the significant national security interests involved, we emphasize that Little LEO operations in the 400.15-401.0 MHz band must occur on an interference-free basis with the DoD satellites. The Commission will not hesitate to address problems of interference worldwide by requiring the licensee to terminate the interfering operations immediately and by imposing sanctions including monetary forfeitures and license revocations, when appropriate. Furthermore, we remind licensees that any transfer of a license includes the transfer of all conditions and limitations of the license.

77. We ask for comments on all aspects of our proposals for Little LEO System-1, 2, and 3.

4. Use of WRC-95 and WRC- 97 Spectrum

78. At WRC-95, additional uplink spectrum was allocated for the Little LEO service.⁵⁹ As the Little LEO systems become operational and acquire additional customers, it may be advantageous for them to have access to additional spectrum. In addition, the availability of the WRC-95 spectrum may assist the Commission in satisfying the spectrum needs of the qualified second round Little LEO applicants. See 47 U.S.C. 309 (j)(6)(E). Thus, we seek comment on whether we should allow second round licensees exclusive use of the WRC-95 spectrum and whether they would be able to use the spectrum effectively, particularly since there is no available corresponding downlink spectrum. We also ask for comment on the overall public interest benefits of authorizing second round applicants to use the WRC-95 spectrum, rather than allowing others to apply for it. We note that the second round Little LEO applicants were instrumental in the United States' successful effort at WRC-95 to obtain additional spectrum for the Little LEO service. Moreover, it is settled that the Commission need not open each and every frequency for competing applications before assigning it.⁶⁰ Finally, given the high demand for Little LEO spectrum, we also request comment on whether any additional Little LEO spectrum secured at WRC-97 should be assigned to existing licensees or first be subject to a third round of applications.

C. Licensing Framework

79. As discussed, we tentatively conclude that we can issue Little LEO system licenses for each of the three discrete frequency segments to a qualified applicant. To maximize entry, we propose to limit each licensee to a system operating in only one of these segments. As described in more detail below, we will afford all applicants an opportunity to amend their applications to apply for any or all of these segments. If more than one applicant has applied for a system in a particular band segment, we propose to consider those applications mutually exclusive. In that case, we propose to conduct an auction for the segment. If the same applicant files for two or more segments, and these are the only applications filed for these segments, or if any applicant wins more than one segment in an auction, we will ask the applicant to choose in which segment it wishes to operate. The rejected segment will then be available for assignment to another second-round applicant, or, if no other second round applicant has applied for the segment, it will be deemed available to an applicant in a future processing group.

D. Resolving Mutual Exclusivity

⁵⁹ At WRC-95 the 399.9-400.05 MHz uplink band was allocated for Little LEO use worldwide and the 455-456 MHz and 459-460 MHz uplink bands were allocated for use in region two.

⁶⁰ Rainbow Broadcasting Co v. FCC, 949 F.2d 405, 409-10 (D.C. Cir. 1991).

80. To the extent possible, we have tried and will continue to try to accommodate all those who seek to provide global Little LEO satellite service. As the analysis below suggests, auctions for transnational satellite services raise issues that are considerably more complex and difficult than issues raised by terrestrial applicants for the Little LEO service and there is no mutual exclusivity, we avoid the need to deal with these problematic issues. We recognize, however, that we may be faced with mutually exclusive applications. The use of competitive bidding to award licenses for global systems appears to raise a significant number of extremely difficult issues. If we auction licenses for service in this country, providers are likely to face a series of sequential auctions in different countries. Sequential auctions create significant uncertainty for potential service providers because providers are unsure that they will win auctions in all the countries in which they wish to provide service. This uncertainty may be so severe that, given the high fixed cost of a global system, it may deter entry, and impede the provision of service and the development of new offerings.

81. Furthermore, the United States is required by treaty to coordinate its satellite systems internationally with other terrestrial and satellite systems that may be affected by the new system's operations. Coordination negotiations generally begin once the U.S. system is licensed and are usually conducted on a country-by-country basis. A coordination agreement may contain a variety of operational constraints that are designed to ensure that all the systems can operate compatibly. The international coordination process becomes more extensive with a U.S.-licensed global satellite system, because its worldwide operations have the potential to affect every country operating radio systems in the frequency bands the U.S. system will use.

82. Nevertheless, we must recognize that it may become necessary to develop a means of choosing among mutually exclusive applicants. As long as spectrum is scarce, the Commission will be required to make difficult choices to serve the public interest. The Commission lacks authority to conduct lotteries for applications filed after July 26, 1993.⁶¹ Comparative hearings have resulted in years of delay in licensing, without any assurance that the licenses ultimately end up in the hands of those that value them most highly. As a general rule, by contrast, auctions have proven to be a fast, fair, and efficient means of assigning spectrum licenses. Accordingly, we seek comment on whether, if we are faced with mutually exclusive applicants for Little LEO licenses, we should use auctions to decide amongst them. We specifically ask commenters to address the likelihood that other countries may use competitive bidding to award licenses.

1. Authority to Conduct Auctions

⁶¹ See 47 U.S.C. § 309(i).

83. In the event that there is mutual exclusivity among Little LEO applicants and if we were to decide that an auction was the best way to choose among the applicants, we note that Section 309(j) of the Communications Act allows us to employ auctions to choose among mutually exclusive applications for initial licenses or construction permits.⁶² In order to employ auctions for a particular service, we must determine that "the principal use of [the] spectrum will involve, or is reasonably likely to involve, the licensee receiving compensation from subscribers."⁶³ In addition, the Commission also must find that the use of competitive bidding will promote certain statutory objectives.⁶⁴ These objectives are:

- (a) the development and rapid deployment of new technologies, products, and services for the benefit of the public, including those residing in rural areas, without administrative or judicial delays;
- (b) promoting economic opportunity and competition and ensuring that new and innovative technologies are readily accessible to the American people by avoiding excessive concentration of licenses and by disseminating licenses among a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned by members of minority groups and women;
- (c) recovery for the public of a portion of the value of the public spectrum resource made available for commercial use and avoidance of unjust enrichment through the methods employed to award uses of that resource; and
- (d) efficient and intensive use of the electromagnetic spectrum.⁶⁵

84. In the case of Little LEO systems, should there be more qualified applicants than spectrum segments, we believe that the condition precedent to auctions, mutual exclusivity, would exist. In the Second R&O, we stated that we will exclude from competitive bidding those classes of services where mutual exclusivity between applications cannot exist because channels must be "shared" by multiple licensees. We request comment on this. We note, however, our proposal that each Little LEO licensee time-share its spectrum segment with other licensees.⁶⁶

⁶² 47 U.S.C. § 309(j)(1).

⁶³ 47 U.S.C. § 309(j)(2)(A).

⁶⁴ 47 U.S.C. § 309(j)(2)(B).

⁶⁵ 47 U.S.C. § 309(j)(3)(A)-(D).

⁶⁶ See *infra* ¶¶ 41-77.

85. We turn next to the question of whether the principal use of the spectrum is reasonably likely to involve the licensee receiving compensation from subscribers. Auctions are authorized if at least a majority of the use of the spectrum is likely to be for subscription-based services.⁶⁷ We look to classes of licenses and permits rather than to individual licenses.⁶⁸ Based on their applications, it appears that the Little LEO applicants contemplate providing subscription-based services. Although the statute requires that licensees receive compensation from subscribers in return for enabling those subscribers to receive and transmit communications signals, we do not believe that the statute requires a direct service arrangement between end users and space station licensees. The House Report states that "where the Commission determines that the principal use of the spectrum will be to, in essence, resell the spectrum to subscribers, and [where the objectives of Section 309(j)(3) are met], then the class of licenses should be subject to competitive bidding."⁶⁹ The statutory requirements may be satisfied where applicants choose to provide service to resellers rather than end users. The statute's legislative history indicates that it is irrelevant to the applicability of Section 309(j)(2) whether a licensee's subscribers are end users or resellers. Consequently, we tentatively conclude that the Little LEO service is likely to be primarily, if not entirely, a subscription-based service in the foreseeable future, and that the principal use requirement of Section 309(j)(2) is satisfied.

86. We also believe that using competitive bidding as a means of awarding licenses would advance the public interest objectives of Section 309(j)(3). The ability of the Little LEO service to provide global, two-way data communications and position location services, using low-cost, portable transceivers, should enhance communications capabilities, particularly in sparsely populated and remote locations. To the extent that an auction would allow us to license such systems more quickly than other licensing methods, we believe the public would be served.

87. Further, competitive bidding should encourage efficient use of the electromagnetic spectrum. An applicant would only bid for the minimum amount of spectrum needed, thereby encouraging spectrum efficiency. We seek comment on these conclusions.

88. If we were to decide to auction these licenses, we propose to auction licenses for three Little LEO systems in the following frequency bands:

⁶⁷ Second R&O at ¶¶ 30-36.

⁶⁸ Id.

⁶⁹ H.R. Rp. No. 103-111, 103rd Congress, Second Session, at 253.

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- (a) System-1: We propose to auction one Little LEO system license that will permit operations in the 149.81-149.9 MHz (uplink) and the 400.5050-400.5517 MHz (downlink) bands.
 - (b) System-2: We also propose to auction one Little LEO system license that will permit operations in the 137-138 MHz band (downlink) and the 148.905-149.81 MHz band (uplink).
 - (c) System-3: Further, we propose to auction one Little LEO system license that will permit operations in the 149.95-150.05 MHz band (uplink) and the 400.150-400.505 MHz and 400.645-401.000 MHz bands (downlink).

2. Competitive Bidding Design

89. In the event that licenses for the Little LEO service are subject to competitive bidding because mutual exclusivity cannot be avoided, we seek comment on whether we should conduct an auction. If so, we seek comment on whether we should employ a single round sealed bid auction (either sequential or simultaneous), a sequential oral auction, a simultaneous multiple round auction or some other methodology pursuant to the procedures set forth in Part 1, subpart Q of our rules relating to competitive bidding.⁷⁰ We also propose to retain our discretion to implement or modify certain procedures that will be announced by Public Notice prior to any auction in this proceeding, including rules governing the timing of application and payment requirements as well as any activity rules and stopping rules that may be appropriate. We seek comment on these proposals.

90. We intend to apply the general competitive bidding procedures found in Part 1, Subpart Q of our rules in the event that we conduct auctions. Under the rules established in the Second R&O, applicants are required to file a short-form application prior to the auction in which they wish to participate, in accordance with the Public Notice specifying a filing deadline for such applications.⁷¹ The short-form application we propose to use for these auctions (FCC Form 175) appears in Appendix C. We request comment on this form as well as the applicability to the Little LEO service of the short-form application procedures set forth in Part 1, subpart Q of our rules. In addition, we seek comment on whether it would be more appropriate to employ electronic or manual filing of short-form applications, especially in light of the limited number of applicants.

⁷⁰ 47 C.F.R. §1.2103.

⁷¹ 47 C.F.R. § 1.2105.

91. *Upfront Payment.* We propose to require the submission of an upfront payment prior to any Little LEO auction. The Commission or the Wireless Telecommunications Bureau, on delegated authority, may establish the appropriate amount of such upfront payment. We seek comment on this proposal. Would it be appropriate, for example, to establish an upfront payment of five percent of the spectrum's estimated value? If commenters agree with this approach, they should discuss how the Commission or the Bureau should estimate the value of the spectrum to be auctioned.

92. *Payment for Licenses Awarded by Competitive Bidding.* To help ensure that auction winners are able to pay the full amount of their bids, we decided generally in the Second R&O that every winning bidder in an auction must tender a down payment sufficient to bring its total deposit up to 20 percent of its winning bid.⁷² A down payment in the amount of 20 percent of the winning bid would help protect against possible default. We also concluded that full payment of the remainder of the winning bid should be paid in a lump sum.⁷³ We will follow similar procedures here and will set forth payment procedures in a future Public Notice.⁷⁴

93. *Bid Withdrawal, Default and Disqualification.* We have previously explained that it is important not only to deter insincere or speculative bidding in auctions, but also to provide an incentive for bidders in multiple round auctions wishing to withdraw their bids to do so before bidding ceases. In the Second R&O, we observed that it is appropriate to create such an incentive because a withdrawal that occurs after an auction ends (default) is likely to be more harmful than one that occurs before closing.⁷⁵ We seek comment on using the bid withdrawal and default procedures in Part 1.

94. We will examine the winning bidder's application, including all petitions to deny the application, after the auction, to determine the bidder's qualifications to be a licensee. Since the "long-form" application referred to in our general auction rules will be filed before the auction, i.e., when amended Little LEO applications are filed,⁷⁶ the usual post-auction "long-form" application submission is not necessary unless the winning applicant has substantially changed

⁷² Second R&O, at ¶¶ 189-190.

⁷³ We have made an exception to this rule for "designated entities," which, in the context of FCC auctions, refers to small businesses, rural telephone companies, and businesses owned by women and minorities. See id. at ¶ 227. See also 47 U.S.C. § 309(j)(4)(A).

⁷⁴ See, e.g., 47 C.F.R. § 1.2107.

⁷⁵ Second R&O at ¶¶ 154-155.

⁷⁶ See infra ¶¶ 103-106.

its amended application. We propose that, if necessary, amended long-form applications must be filed within 10 days of the announcement of winning bidders.

95. After the auction, we will place the winning bidders' long form applications on public notice and entertain petitions to deny. If, pursuant to Section 309(d) of the Communications Act, the Commission dismisses or denies any and all petitions to deny, the Commission or the International Bureau acting for the Commission on delegated authority would issue a separate announcement to this effect, and the winning bidder would then have a prescribed amount of time to submit the balance of its winning bid as set forth in Part 1 of our rules. If the bidder did so, the license would be granted subject to any conditions that may be imposed. If the bidder failed to submit the balance of the winning bid or the license was otherwise denied, we would assess a default payment as discussed in Part 1. We request comment on these proposals.

3. Regulatory Safeguards

96. *Performance Requirements.* Congress has also directed that the Commission, in implementing auction procedures, "include performance requirements, such as appropriate deadlines and penalties for performance failures, to ensure prompt delivery of service to rural areas, to prevent stockpiling or warehousing of spectrum by licensees or permittees, and to promote investment in and rapid deployment of new technologies and services."⁷⁷ We believe that existing performance requirements such as our construction and milestone requirements, in conjunction with the requirement that licensees pay for spectrum use, should be adequate to prevent the warehousing of spectrum and ensure fair competition and the prompt delivery of service.⁷⁸ We therefore tentatively conclude that it is unnecessary to adopt any further performance rules in connection with our proposed auction procedures. We seek comment on this tentative conclusion.

97. *Rules Prohibiting Collusion.* In the Second R&O, we adopted rules prohibiting collusive conduct in connection with competitive bidding, explaining that these rules, which are codified at 47 C.F.R. § 1.2105, would enhance the competitiveness of both the auction process and the structure of post-auction markets.⁷⁹ Under these rules, bidders are required to identify on their short-form applications any parties with whom they have entered into any consortium arrangements, joint ventures, partnerships or other agreements or understandings which relate in any way to the competitive bidding process. Bidders are also required to certify on their

⁷⁷ 47 U.S.C. § 309(j)(4)(B).

⁷⁸ Little LEO Order at ¶ 18.

⁷⁹ Second R&O at ¶¶ 221-226.

short-form applications that they have not entered into any explicit or implicit agreements, arrangements or understandings of any kind with any parties, other than those identified, regarding the amount of their bid, bidding strategies or the particular properties on which they will or will not bid. We propose to apply these same rules to Little LEO auctions if such auctions are held.

98. In addition, consistent with other provisions of 47 C.F.R. § 1.2105, we propose to require winning bidders to submit a detailed explanation of the terms and conditions and parties involved in any bidding consortia, joint venture, partnership or other agreement or arrangement they have entered into relating to the competitive bidding process prior to the close of bidding. All such arrangements must have been entered into prior to the filing of short-form applications. In the DBS context, we concluded that after short-form applications are filed, and prior to the time the winning bidder has submitted its 20 percent down payment, all applicants should be prohibited from cooperating, collaborating, discussing or disclosing in any manner the substance of their bids or bidding strategies with other applicants for licenses serving the same or overlapping geographical area, unless such bidders are members of a bidding consortium or other joint bidding arrangement identified on the bidder's short-form application.⁸⁰ We seek comment on whether we should apply the same prohibition in any Little LEO auction we might hold. As we explained in the Second R&O, we believe that such requirements are not unduly burdensome and are appropriate to deter bidders from engaging in anticompetitive behavior. As we also noted in the Second R&O, allegations of collusion in a petition to deny may be investigated by the Commission or referred to the U.S. Department of Justice for investigation. Bidders who are found to have violated the antitrust laws or the Commission's Rules while participating in an auction may be subject to forfeiture of their down payment or their full bid amount, as well as revocation of their license, and may be prohibited from participating in future auctions.⁸¹

99. At the same time, we believe it would be appropriate to apply to the Little LEO service the exceptions to our collusion rules adopted subsequent to the Second R&O. Thus, we propose to allow applicants to (1) modify their short-form applications to reflect formation of consortia or changes in ownership at any time before or during an auction, provided that such changes do not result in a change in control of the applicant, and provided that the parties forming consortia or entering into ownership agreements have not applied for licenses for Little LEO systems that may be used to cover the same or overlapping geographical areas; and (2) make agreements to bid jointly for licenses after the filing of short-form applications, provided that the parties to the agreement have not applied for licenses that may be used to serve the same

⁸⁰ DBS Order at ¶208.

⁸¹ Id. at 2388.

or overlapping geographical areas. We further propose to allow a holder of a non-controlling attributable interest in an entity submitting a short-form application to acquire an ownership interest in, form a consortium with, or enter into a joint bidding arrangement with other applicants for licenses that may be used to serve the same or overlapping geographical areas after the filing of short-form applications, provided that (1) the attributable interest holder certifies to the Commission that it has not communicated and will not communicate with any party concerning the bids or bidding strategies of more than one of the applicants in which it holds an attributable interest, or with which it has a consortium or joint bidding arrangement, and which have applied for licenses that may be used to serve the same or overlapping geographical areas, and (2) the arrangements do not result in any change in control of an applicant.⁸² We request comment on whether these proposed rules prohibiting collusive bidding arrangements are appropriately tailored for any Little LEO auctions we may hold.

100. *Designated Entities.* Section 309(j) of the Communications Act provides that, when promulgating competitive bidding regulations, the Commission must "ensure that small businesses, rural telephone companies, and businesses owned by members of minority groups and women are given the opportunity to participate in the provision of spectrum-based services."⁸³ The Commission has employed several mechanisms to implement the statute's provisions concerning these "designated entities," including installment payments, bidding credits and spectrum set-asides, when establishing competitive bidding procedures for particular services.⁸⁴ We seek comment on what mechanisms, if any, the Commission should employ in implementing the provisions of Section 309(j).

E. Unauthorized and Interfering Transmissions

101. Little LEO earth terminals will have the physical capability to roam from one region or country to the next. Because of their inherent mobility, users may attempt to operate their earth terminals in a country in which the Little LEO licensee is not authorized to operate. This would not only violate that country's sovereign rights, but operation of the unauthorized earth terminal may cause interference to authorized users of the spectrum in that country. In order to protect against this, we ask for comment on effective methods of preventing unauthorized transmission and the cost related to each method. One method, for example, would require each Little LEO user terminal to be equipped with position determination capabilities that would

⁸² See Implementation of Section 309(i) of the Communications Act -- Competitive Bidding, 9 F.C.C. Rcd 7684 (1994); 47 C.F.R. § 1.2105(c)(2)-(4).

⁸³ 47 U.S.C. § 309(j)(4)(D). See also 47 U.S.C. §§ 309(j)(3)(B) & (j)(4)(A).

⁸⁴ Second R&O, at ¶¶ 227-288. See also 47 C.F.R. § 1.2110.

prevent transmissions in countries from which they are not authorized to transmit. We specifically request comment on whether, and to what extent, the associated costs for each proposed method would impact the second round licensees ability to compete with existing licensees, who are not required to meet such a requirement. We request comment on how we should treat existing licensees.

F. Exclusive Arrangements

102. We ask for comment on whether we should adopt limitations on licensees' ability to enter into exclusive arrangements with other countries concerning communications to or from the United States.⁸⁵ An exclusive agreement may foreclose other Little LEO licensees from serving a foreign market, preventing that licensee from providing global service. Any limitations that we adopt on these types of arrangements would apply only to the handling of traffic to and from the United States. We recognize, however, that spectrum coordination and availability in a particular country may limit the number of systems that can serve that country.

G. Amended Applications

103. Amended applications must conform to Part 25 of our rules and include the technical and financial information required by Part 25 of our rules. Applicants must indicate in which spectrum block(s) they propose to operate, the technical parameters of their systems, time-sharing techniques with NOAA and DoD, and finances sufficient to launch and operate two satellites in their system for a year.

104. We require all applicants to provide technical information sufficient to demonstrate compatibility with existing authorized users. Potential coordination conflicts can thus be identified in the application process. Commenters should present, in technical detail, the operational protocols and descriptions of their proposed time-sharing techniques, including information about the methods they would use to avoid unacceptable interference to government and other systems in the sub-bands. We ask also that commenters describe in detail the strategies they propose to shift overall operation in the 137-138 MHz frequency band from the band-edge to the sub-bands during the years 2000 to 2005. Descriptions should include a detailed analysis of the impact such transition would have on the number of potential licensees and subscribers. Some licensees may choose to remain in the band-edge, based on their

⁸⁵ Such limitations were adopted in the Big LEO service. See Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz frequency Band, Memorandum Opinion and Order, FCC 96-54, CC Docket No. 92-166, ¶¶ 54-55 (released February 15, 1996); 47 C.F.R. § 25.143(h) (prohibiting Big LEO satellite systems from entering into exclusive arrangements to serve particular countries).

assessment of the impact of government operation there. If, upon review, the Commission believes that it is feasible for the parties to coordinate successfully and a license is granted, we will expect the parties to coordinate their systems in good faith.

105. In order to expedite the licensing process and grant licenses as quickly as possible, applicants in the second processing round must submit their amended applications no later than December 16, 1996. If an applicant finds it necessary to preserve its right to operate in all three spectrum blocks, the applicant must file three separate applications. Applicants who submit only one application will not be allowed to amend their applications after the adoption of the Report and Order to include the frequencies not contained in its application.

106. Applicants will be allowed to further amend their applications once the Report and Order has been released only to the extent necessary because of new obligations that we have imposed differing from the proposals in this Notice. Aside from the changes outlined above, if an amendment is deemed "major," the entire application will be considered newly-filed as of the date of the amendment. The application will no longer be eligible for consideration in the processing round because of its failure to be properly filed as of the original cut-off date for accepting amended applications, December 16, 1996. We emphasize that only amendments necessary to conform the application to the final rules and policies adopted in the Report and Order will be accepted unconditionally. All other amendments will be treated under the existing procedural regulations.

H. Existing Rules

107. Second round Little LEO systems are subject to our existing rules and policies governing Little LEO system licensing and operation. We will not require Little LEO space station licensees to provide service on a common carrier basis.⁸⁶ Further, we will issue a blanket license for the space segment, a ten year operating license for the system that begins to run when the first LEO satellite is launched, authority to replace the older satellites in the system as they are retired, a filing window for next generation system proposals, and system implementation milestones.

IV. CONCLUSION

108. In this Notice, we propose regulations that will allow the licensing and operation of competitive non-voice, non-geostationary mobile-satellite service systems operating in the public interest. Based on the considerations discussed above, we believe the proposals set forth in this Notice will best serve the public interest in competitive, efficient, rapid, and intense use of Little

⁸⁶ Little LEO Order at ¶ 24.

LEO resources. We ask parties to comment on all aspects of the proposed service and auction rules and make any additional proposals necessary to serve the public interest and facilitate the efficient processing of second round applications.

V. PROCEDURAL MATTERS

109. As required by Section 603 of the Regulatory Flexibility Act, the Commission has prepared an Initial Regulatory Flexibility Analysis ("IRFA") of the expected impact on small entities of the proposals suggested in this document. The IRFA is set forth in Appendix A. Written public comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines as comments on the rest of the Notice, but they must have a separate and distinct heading designating them as responses to the Initial Regulatory Flexibility Analysis. The Secretary shall send a copy of this Notice of Proposed Rulemaking, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with paragraph 603(a) of the Regulatory Flexibility Act, Pub. L. No. 96-354, 94 Stat. 1164, 5 U.S.C. § 601 et seq (1981).

110. Pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's Rules, 47 C.F.R. §§ 1.415 and 1.419, interested parties may file comments on or before November 29, 1996, and reply comments on or December 16, 1996. To file formally in this proceeding, you must file an original and four copies of all comments, reply comments, and supporting comments. If you want each Commissioner to receive a personal copy of your comments, you should file five additional copies. Send comments and reply comments to the Office of the Secretary, Federal Communications Commission, Washington, D.C. 20554. Comments and reply comments will be available for public inspection during regular business hours in the Federal Communications Commission, Reference Center, Room 239, 1919 M Street, N.W. Washington, D.C. 20554.

111. This Notice contains either a proposed or modified information collection. As part of its continuing effort to reduce paperwork burdens, we invite the general public and the Office of Management and Budget ("OMB") to comment on information collections contained in this Notice, as required by the Paperwork Reduction Act of 1995, Pub. L. No. 104-13. Public and agency comments are due at the same time as other comments on this Notice; OMB comments are due 60 days from the date of publication of this Notice in the Federal Register. Comments should address: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection

techniques or other forms of information technology.

112. Written comments by the public on the proposed and/or modified information collections are due to the Commission on or before November 29, 1996. In addition to filing comments with the Secretary, a copy of any comments on the information collections contained herein should be submitted to Dorothy Conway, Federal Communications Commission, Room 234, 1919 M Street, N.W., Washington, DC 20554, or via the Internet to dconway@fcc.gov and to Timothy Fain, OMB Desk Officer, 10236 NEOB, 725 - 17th Street, N.W., Washington, DC 20503 or via the Internet to fain_t@al.eop.gov. Written comments on the proposed and/or modified information collections must be submitted to the Office of Management and Budget (OMB) on or before 60 days after date of publication in the Federal Register.

113. This is a non-restricted notice and comment rulemaking proceeding.⁸⁷ *Ex parte* presentations are permitted, except during the Sunshine Agenda period, provided they are disclosed as provided in the Commission's rules. See generally 47 C.F.R. §§ 1.1202, 1.1203, and 1.1206(a). The Sunshine Agenda period is the period of time that commences with the release of public notice that a matter has been placed on the Sunshine Agenda and terminates when the Commission (1) releases the text of a decision or order in the matter; (2) issues a public notice stating that the matter has been deleted from the Sunshine Agenda; or (3) issues a public notice stating that the matter has been returned to the staff for further consideration, whichever occurs first. 47 C.F.R. § 1.1202(f). During the Sunshine Agenda period, no presentations, *ex parte* or otherwise, are permitted unless specifically exempted. 47 C.F.R. § 1.1203.

114. In general, an *ex parte* presentation is any communication directed to the merits or outcome of the proceeding made to decision-making personnel that (1) if written, is not served on the parties to the proceeding, or (2) if oral, is made without advance notice to the parties to the proceeding and without opportunity for them to be present. 47 C.F.R. § 1.1202(b). Any person who makes or submits a written *ex parte* presentation shall provide on the same day it is submitted, two copies of the same under separate cover to the Commission's Secretary for inclusion in the public record. The presentation (as well as any transmittal letter) must clearly indicate on its face the docket number of the particular proceeding and the fact that two copies of it have been submitted to the Secretary, and must be labeled or captioned as an *ex parte* presentation. 47 C.F.R. § 1.1206(a)(1).

⁸⁷ Interested persons may make *ex parte* presentations concerning the issues in this rulemaking proceeding, subject to the rules for non-restricted proceedings described above. However, pending Little LEO applications are subject to the *ex parte* rules for restricted proceedings. See 47 C.F.R. 1.1208. Therefore, *ex parte* presentations concerning individual applications are prohibited.

115. Any person who is making an oral *ex parte* presentation including data or arguments not already reflected in the person's written comments, memoranda, or other previous filings in that proceeding shall provide on the day of the oral presentation an original and one copy of a written memorandum to the Secretary (with a copy to the Commissioner or staff member involved) that summarizes the data and arguments. The memorandum (as well as any transmittal letter) must clearly indicate on its face the docket number of the particular proceeding and the fact that an original and one copy of it have been submitted to the Secretary, and must be labeled or captioned as an *ex parte* presentation, 47 C.F.R. § 1.1206(a)(2).

116. For further information concerning this rulemaking contact Paula Ford (202) 418-0760 or Brian Carter (202) 418-2119 of the International Bureau, Federal Communications Commission, Washington, D.C. 20554.

VI. ORDERING CLAUSES

117. Accordingly, IT IS ORDERED that pursuant to the authority contained in Sections 1, 4(i), 4(j), 301, 303, 308, and 309(j) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i), 154(j), 301, 303, 308, and 309(j), NOTICE IS HEREBY GIVEN of our intent to adopt the policies and rules set forth in this Notice and that COMMENT IS SOUGHT on all the proposals in this Notice.

118. IT IS FURTHER ORDERED that E-SAT, Inc.'s Petition for Rulemaking in Establishing Rules for Licensing Second-Round Applicants in the Non-voice, Non-geostationary Mobile Satellite Service dated February 14, 1996 and requesting that the Commission initiate a rulemaking proceeding to develop regulations for processing the second-round Little LEO applications IS GRANTED.

119. IT IS FURTHER ORDERED that the Secretary shall send a copy of this Notice of Proposed Rulemaking, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with paragraph 603(a) of the Regulatory Flexibility Act, Pub. L. No. 96-354, 94 Stat. 1164, 5 U.S.C. §§ 601 et seq. (1981).

FEDERAL COMMUNICATIONS COMMISSION

William F. Caton
Acting Secretary

APPENDIX A**Initial Regulatory Flexibility Analysis**

As required by Section 603 of the Regulatory Flexibility Act, the Commission has prepared an initial Flexibility Analysis of the expected significant economic impact on small entities by the policies and rules proposed in this Fourth Notice of Proposed Rulemaking. Written public comments are requested on the IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on this Notice.

A. Reason for Action

This rulemaking proceeding is being initiated to obtain comment and develop a record on the proposed policies and modifications to the licensing and service rules for the second processing round for the Little LEO service. Specifically, this Notice proposes to limit eligibility in the second processing round to applicants who are not already Little LEO licensees or affiliated with Little LEO licensees. It also proposes particular technical requirements to maximize entry into the Little LEO market and seeks comment on whether we should conduct an auction if we do not have sufficient spectrum to accommodate all qualified applicants.

B. Objectives

The Commission seeks to amend the rules established for the Little LEO service, in order to ensure a more efficient and rapid development and implementation of Little LEO service, to promote effective competition, to prevent anticompetitive behavior, and to reflect developments in the service, technology, and spectrum use since the original rules were promulgated.

C. Legal Basis

The proposed action is authorized under the Administrative Procedure Act, 5 U.S.C. § 553; and Sections 1, 4(i), 4(j), 7, 301, 303, 308, and 309(j) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i), 154(j), 157, 308, and 309(j).

D. Description and Estimate of Small Entities Subject to the Rules

The Commission has not developed a definition of small entities applicable to non-geostationary mobile satellite service licensees. Therefore the applicable definition of small entity is the definition under the Small Business Administration (SBA) rules applicable to Communications Services, Not Elsewhere Classified. This definition provides that a small entity

is one with \$11.0 million or less in annual receipts.⁸⁸ According to Census Bureau data, there are 848 firms that fall under the category of Communications Services, Not Elsewhere Classified. Of those, approximately 775 reported annual receipts of \$11 million or less and qualify as small entities.⁸⁹

The proposed rules would apply to the existing applicants in the second processing round seeking authorization to provide Little LEO service under Part 25 of the Commission's rules. Of the eight applicants in the second processing round, two are small businesses, VITA and LEO One. Orbcomm, Starsys, GE Americom, CTA, Final Analysis, and E-Sat, are not small businesses since they each have revenues in excess of eleven million dollars annually or have parent companies or investors that have revenues in excess of \$11 million annually. We request comment on the description and the number of small entities that are significantly impacted by this proposal.

E. Reporting, Recordkeeping, and Other Compliance Requirements

The proposals under consideration in this Notice involve reporting requirements if an auction is necessary. The Notice proposes that applicants who participate in an auction provide certain information to identify themselves and their authorized representatives. These applicants would be required to comply with proposed requirements to file a report approved for use by applicants for other auctions conducted by the Commission (FCC Form 175), but this is not estimated to be a significant economic burden for these entities. In the event of an auction, applicants must comply with rules prohibiting collusion and providing for penalties for withdrawn bids that are not outbid and for failure to make timely downpayment. If adopted this proposal would apply to the existing eight applicants in the processing round and other future (if any) Little LEO applicants if there is mutually exclusivity. We note also, that this Notice requests comments on additional issues, such as financial qualifications, (see e.g. paragraphs 39-40) which, if adopted, may generate additional reporting or recordkeeping requirements.

F. Any Significant Alternatives Considered

This Notice solicits comment on other alternatives such as licensing more than three systems and using uplink spectrum allocated at WRC-95. Licensing more than three systems may further promote competition in this market. However, it may not be technically feasible to license more

⁸⁸ 13 C.F.R. § 121.201, Standard Industrial Classification (SIC) Code 4899.

⁸⁹ U.S. Bureau of the Census, U.S. Department of Commerce, 1992 Census of Transportation, Communications, and Utilities, UC92-S-1, Subject Series, Establishment and Firm Size, Table 2D, Employment Size of Firms: 1992, SIC Code 4899 (issued May 1995).

than three systems. Allowing second round licensees to use WRC-95 spectrum may facilitate the operation of their systems. However, we are uncertain that the second round licensees would be able to use the spectrum effectively, particularly since there is no corresponding downlink.

In proposing to restrict the second round of Little LEO applications to new entrants, we believe we create competition and opportunity for businesses including small businesses. We seek comment on whether we should auction these licenses if there are mutually exclusive applications. We recognize that auctions by definition require bidders to raise funds for the license. While this may raise additional barriers for small businesses, we inquire into the appropriateness of bidding credits, installment payments, and other provisions to encourage participation by small businesses. We also ask about the appropriate financial qualification standard to encourage service and prevent warehousing. This standard should encourage new entrants including small businesses while deterring applicants who lack the capability to construct and launch a system.

G. Federal Rules that Overlap, Duplicate or Conflict with These Proposed Requirements

None.

APPENDIX B

Proposed Rule Amendments to 47 C.F.R. Part 25 of the Commission's Rules

Part 25 of the Commission's Rules and Regulations (Chapter I of Title 47 of the Code of Federal Regulations) is proposed to be amended as follows:

1. The authority citation for Part 25 continues to read as follows:

Authority: Secs. 25.101 to 25.601 issued under Sec. 4, 48 Stat. 1066, as amended; 47 U.S.C. 154. Interpret or apply secs. 101-104, 76 Stat. 419-427; 47 U.S.C. 701-744; 47 U.S.C. 554.

PART 25-SATELLITE COMMUNICATIONS

2. The Table of Contents for Part 25 is amended by adding Sections 25.257 and 25.258 to Subpart C:

* * * * *

Subpart C -- Technical Standards

* * * * *

Sec.

- | | |
|--------|---|
| 25.257 | Time Sharing Between NOAA Meteorological Satellites and NVNG Satellites in the 137-138 MHz band |
| 25.258 | Time Sharing Between DoD-NOAA Meteorological Satellites and NVNG Satellites in the 400.15-401 MHz band. |

* * * * *

3. Sections 25.257 and 25. 258 are added to Subpart C to read as follows:

§ 25.257 Time Sharing Between NOAA Meteorological Satellites and NVNG Satellites in the 137-138 MHz band

- (a) An NVNG licensee time-sharing spectrum in the 137-138 MHz band shall not transmit

signals into the "protection areas" of National Oceanic and Atmospheric Administration ("NOAA") satellites. The protection area shall be calculated by using ephemeris data and an earth station elevation angle of zero degrees towards the NOAA satellite. The NVNG licensee is responsible for obtaining the necessary ephemeris data. This information shall be updated system-wide on at least a biweekly basis.

(b) NVNG licensees shall establish a 24-hour per day contact person and telephone number so that claims of harmful interference into the NOAA earth stations and other issues can be reported and resolved expeditiously. This contact information shall be made available to NOAA.

(c) NVNG satellites shall be designed to cease transmissions automatically if, within a forty-eight hour period, a valid reset signal has not been received from the NVNG gateway Earth station. All NVNG satellites shall be capable of instantaneous shutdown on any sub-band upon command from the gateway earth station.

§ 25.258 Time Sharing Between DoD-NOAA Meteorological Satellites and NVNG Satellites in the 400.15-401 MHz band.

(a) An NVNG licensee time-sharing spectrum in the 400.15-401.0 MHz band shall not transmit signals into the "protection areas" of Department of Defense ("DoD")-National Oceanic and Atmospheric Administration ("NOAA") meteorological satellites. The protection area shall be calculated by using ephemeris data and an earth station elevation angle of zero degrees toward the DoD-NOAA meteorological satellite. The NVNG licensee is responsible for obtaining the necessary ephemeris data. This information shall be updated system-wide on at least a weekly basis.

(b) NVNG licensees shall establish a 24-hour per day contact person and telephone number so that claims of harmful interference into DoD-NOAA earth station users and other operational issues can be reported and resolved expeditiously. This contact information shall be made available to DoD-NOAA.

(c) NVNG satellites shall be designed to cease transmissions automatically if, within forty-eight hours, a valid reset signal has not been received from the NVNG gateway earth station. All NVNG satellites shall be capable of instantaneous shutdown on any sub-band upon command from the gateway earth station.

(d) Notwithstanding other provisions of this section, NVNG satellites sharing the 400.15-401 MHz with DoD-NOAA meteorological satellites shall implement within ninety minutes of receiving notice of a DoD-NOAA system frequency change, all appropriate modifications and

updates to operate on a non-interference basis in accordance with subsection (a), above.

(e) At DoD-NOAA's instruction, the Little LEO System-3 operator will test, up to four times a year, the Little LEO system's ability to implement a DoD-NOAA requested frequency change.

APPENDIX C

Proposed Short Form Application
FCC Form 175

Application to Participate in an FCC Auction
(Read Instructions on Back Before Completing)

Special Use				
FCC Use Only				

OMB Approval: 3060-0600
Expires 9/30/98
Estimated Average Burden
Per Response: 45 Minutes

1. Applicant			8. Applicant Classification:	
			<input type="checkbox"/> Individual	<input type="checkbox"/> Partnership
			<input type="checkbox"/> Trust	<input type="checkbox"/> Corporation
			<input type="checkbox"/> Other	
2. Mail Address (No P.O. Boxes)			9. Financial Eligibility (if applicable):	
			<input type="checkbox"/> Gross revenues do not exceed the maximum dollar amount specified in the FCC rules governing the auctionable service. <input type="checkbox"/> Total Assets (if applicable) do not exceed maximum dollar amount specified in the FCC Rules governing the auctionable service.	
3. City	4. State	5. ZIP Code	10. Applicant Status:	
			<input type="checkbox"/> Small Business _____ % Bidding Credit Eligible _____ Installment Payment Plan Type _____ <input type="checkbox"/> Rural telephone company <input type="checkbox"/> Minority owned business <input type="checkbox"/> Woman owned business <input type="checkbox"/> None of the above	
6. Auction Number		7. FCC Account Number		

11. Markets and Frequency Blocks /Channels for which you want to bid. If more than 5 markets, use supplemental form (FCC 175-S).

Market No.	Frequency Block/Channel No.
ALL <input type="checkbox"/>	Enter Frequency Block /Channel Number(s) or Letter(s) or Check All <input type="checkbox"/>
(a)	
(b)	
(c)	
(d)	
(e)	

Check here if supplemental forms 175-S are attached. Indicate number of supplemental forms 175-S attached: _____

Check here if exhibits are attached. Indicate number of supplemental exhibits attached: _____

12. Person(s) authorized to make or withdraw a bid (Typed/Printed Name)

(a)	(b)	(c)
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Certification: I certify the following:

- that the applicant is legally, technically, financially and otherwise qualified pursuant to 308(b) of the Communications Act and the Commission's Rules and is in compliance with the foreign ownership provisions contained in Section 310 of the Communications Act.
- that the applicant is the real party in interest in this application and that there are no agreements or understandings other than those specified in this application (see instructions for certification), which provide that someone other than the applicant shall have an interest in the license.
- that the applicant is aware that, if upon Commission inspection, this application is shown to be defective, the application may be dismissed without further consideration, and certain fees forfeited. Other penalties may also apply.
- that the applicant has not entered into and will not enter into any explicit or implicit agreements or understandings of any kind with parties not identified in this application regarding the amount to be bid, bidding strategies or the particular license on which the applicant or other parties will or will not bid.
- that the applicant, or any party to this application, is not subject to a denial of federal benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988.
- that, if financial eligibility block or applicant status is claimed in block 9 or 10, the applicant is eligible for any special provisions set forth in the Commission's Rules applicable to this auction and consents to audits, as set forth in the Commission's Rules, to verify such status.
- that the applicant is and will, during the pendency of its application(s), remain in compliance with any service specific qualifications applicable to the licenses on which the applicant intends to bid including, but not limited to, financial qualifications.

I declare, under penalties of perjury, that I am an authorized representative of the above-named applicant for the license(s) specified above, that I have read the instructions and the foregoing certification and all matters and things stated in this application and attachments, including exhibits, are true and correct.

Typed/Printed Name of Person Certifying	Title of Person Certifying	Date
	Contact Person	Telephone No.
Signature of Person Certifying (Blue Ink ONLY)	E-mail address	FAX No.

Willful false statements made on this form are punishable by fine and/or imprisonment (U.S. Code, Title 18, Section 1001), and/or revocation of any station license or construction permit (U.S. Code, Title 47, Section 312(a)(1)), and/or forfeiture (U.S. Code, Title 47, Section 503).