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

Federal Communications Commission
Office of the Secretary

In the Matter of	)	File Nos. 43-DSS-MP/ML-90,
	)	44-DSS-MP/ML-90, 45-DSS-
	)	MP/ML-90, 46-DSS-P/LA-90,
GEOSTAR POSITIONING	)	52-DSS-EXT-90, 53-DSS-EXT-90,
CORPORATION	)	CSS-90-012 (ML), CSS-90-013
	)	(ML), CSS-90-014 (ML),
For Modification of the)	CSS-90-015 (ML)
Geostar RDSS Space)	
Station Authorizations)	

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Domestic Facilities Division
Satellite Radio Branch

OPPOSITION TO COMMENTS OF MOTOROLA, INC.

GEOSTAR POSITIONING CORPORATION

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OPPOSITION TO COMMENTS OF MOTOROLA, INC.

Geostar Positioning Corporation ("Geostar"), hereby files its Opposition to the Comments filed on November 5, 1990, by Motorola, Inc. on Geostar's above-referenced applications.

I. INTRODUCTION AND SUMMARY

Geostar is currently the sole licensee in the Radio-determination Satellite Service ("RDSS"). Geostar is currently operating an interim RDSS system using special RDSS relays carried on host domestic fixed satellites together with conventional 4/6 GHz transponders.¹ However, Geostar has already begun construction of three space stations for initiation of its permanent RDSS system, as authorized by the

¹ See GTE Spacenet Corporation, 1 FCC Rcd 1163 (1986), Mimeo 5175 (June 16, 1986), DA 88-1265 (Aug. 15, 1988) and DA 89-1506 (Dec. 6, 1989); Geostar Positioning Corporation, FCC 89-142 (May 25, 1989).

Commission.² The applications under consideration here propose technical modifications to two of Geostar's currently authorized RDSS satellites, the construction and launch of two new ones, and a modest delay in their launch and operation. As demonstrated herein, Geostar has made substantial progress in the implementation of its RDSS service and is currently providing valuable services to its customers.

According to Motorola, Geostar's applications reflect its "latest effort to keep its satellite authorizations alive while it attempts to obtain financing and identify a market for its RDSS service"³ and that grant of the extension would "merely lock up valuable frequency spectrum which could otherwise be used for more economic and spectrally efficient satellite-based mobile services."⁴ In essence, Motorola seeks to have Geostar's applications denied, and its licenses revoked, so that additional spectrum might be made available for Motorola's proposed IRIDIUM satellite system. Geostar urges the Commission to reject these comments.

To begin with, Motorola's attempt to have the 1610 MHz to 1626.5 MHz band reallocated is misplaced in this

² Geostar Corp., for Authority to Construct, Launch and Operate Space Stations in the Radiodetermination Satellite Service, 60 R.R.2d 1725 (1986).

³ Comments of Motorola, Inc., filed Nov. 5, 1990 at 1 ("Comments").

⁴ Id.

proceeding. If Motorola disagrees with the Commission's allocation decisions in this band, it should have petitioned the Commission for a reconsideration of its decision within 30 days of when the allocation was made. Alternatively, Motorola could have filed a Petition for Rulemaking,⁵ asking the Commission to reexamine the situation in light of new circumstances. However, Motorola's attempt to have this portion of the spectrum reallocated through its comments in this docket is procedurally incorrect, and should be dismissed by the Commission as an untimely petition for reconsideration.

Notwithstanding this fatal flaw, Geostar agrees with Motorola that valuable spectrum space should be put to its most efficient use. However, such goals are furthered by the Commission's existing RDSS plan. As the Commission well knows, current RDSS spectrum is designed to be shared by multiple entrants, and the FCC is considering a proposal for further spectrum sharing. This proposal -- unlike Motorola's apparent plan -- will be compatible with existing and planned RDSS operations.

Geostar's current RDSS system makes significant use of the FCC's RDSS spectrum. Indeed, while Motorola intimates that there may be no market for RDSS,⁶ Geostar's current

⁵ See 47 C.F.R. § 1.429 (1989).

⁶ Comments at 1.

customers would dispute otherwise. In addition, Ellipsat Corporation recently filed an application seeking Commission authorization to construct its own RDSS system claimed to be compatible with Geostar RDSS. Surely, if there was no market for this service, other applicants would not be interested in spending the enormous amount of time and money involved in constructing their own RDSS system.

Finally, because Motorola has not filed an application to construct its IRIDIUM system, not enough information is available to even determine whether the system will present the Commission with the prospects of a viable, innovative service. Therefore, since there is no pending proposal before the Commission, it cannot properly deny Geostar's applications on the basis of this possible service, which may never come to fruition. Geostar urges the Commission to dismiss the comments filed by Motorola and grant its applications.

II. MOTOROLA'S COMMENTS REPRESENT AN UNTIMELY PETITION FOR RECONSIDERATION AND SHOULD BE DENIED

To the best of Geostar's knowledge, Motorola does not compete with Geostar in the provision of RDSS service. Furthermore, Motorola did not submit an original application to provide RDSS service, nor did it file a Petition for Reconsideration of the Commission's 1985 Order allocating 33

MHz of spectrum to RDSS.⁷ Moreover, because the Commission is currently considering the possibility of adding additional services to the RDSS bands on a compatible basis,⁸ Motorola cannot legitimately claim that it is harmed by not being able to make use of this portion of the spectrum. Indeed, Motorola has failed to show any injury which will befall it as a result of the Commission's grant of the Geostar applications.

Nevertheless, Motorola is asking the Commission to deny the Geostar applications and to reallocate this portion of the spectrum for its proposed IRIDIUM satellite service. There is no evidence that Motorola was denied the opportunity to challenge the Allocation Order through proper use of the Commission's reconsideration procedures -- by filing a petition for reconsideration. Alternatively, it could have raised its concerns by petitioning the Commission for a rulemaking. It has chosen, however, to voice its objections to the Commission's allocation decision by filing an opposition to Geostar's applications. Such a request constitutes, in essence, a petition for reconsideration of the

⁷ Radio Determination Satellite Service, 58 R.R.2d 1416 (1985).

⁸ See Second Notice of Inquiry, Gen. Docket No. 89-554, FCC 90-316 (Oct. 1, 1990) at ¶¶ 70-72. See infra for a discussion of this issue.

Commission's Allocation Order, and as such should be dismissed as untimely.

As repeatedly noted by the Commission, "the proper method of contesting a final Commission action is to file a timely petition for reconsideration."⁹ The Commission's Rules require that a petition for reconsideration be filed within 30 days from the date of public notice of the Commission's action.¹⁰ Any interested person may file a petition for reconsideration.¹¹ There is nothing requiring that a party participate in any of the earlier proceedings. The purpose of this rule is to ensure that "long-settled and unappealed matter[s] should not be reopened."¹²

It is a well settled principle that spectrum capacity is scarce and that the demand for spectrum exceeds the availability of usable frequencies. Because spectrum allocation decisions generally involve preferring one potential user over another, the Commission must constantly reexamine how to partition this valuable resource, and must balance a number of competing concerns in making such decisions. Moreover, there will always be parties who believe that the public

⁹ Investigation of Equal Access Rate Elements Filed Pursuant to Waivers of Part 69, 5 FCC Rcd 2573 (1990).

¹⁰ 47 C.F.R. §1.429 (1989).

¹¹ Id.

¹² Charles Smithgall, 29 F.C.C.2d 89 (1971).

interest would be best served by different services. However, the regulatory process simply cannot withstand attacks on every application filed at the Commission because a party might seek to use the spectrum for another purpose. Moreover, there are appropriate procedural remedies available for parties seeking Commission review of an earlier decision.

Indeed, the FCC has already faced this precise issue regarding the RDSS allocation. In 1987, a company called Starfind presented the agency with similar speculative claims that it had developed a "better mousetrap" for RDSS and petitioned the FCC to authorize its system even though it was not compatible with the RDSS spread spectrum sharing rules. The FCC refused:

To the extent that Starfind's petition questions the Commission's decisionmaking in adopting the spread spectrum transmission mode for the RDSS and in granting four RDSS licenses based on such a system design, it is not a timely request for reconsideration of those actions pursuant to 47 C.F.R. § 1.106.¹³

Motorola's plea should be similarly treated.

In sum, Motorola's comments, urging the Commission to deny Geostar's applications and "fine-tuning"¹⁴ its rules to allow non-compatible systems in the RDSS spectrum, in reality

¹³ Letter from James R. Keegan, Chief, Domestic Facilities Division, to Richard A. Halavais, Starfind, Inc. (Sept. 29, 1987), at 2.

¹⁴ Comments at 8.

constitute a petition for reconsideration of the Commission's earlier RDSS orders. Because Motorola has failed to comply with any of the Commission's procedural rules, its comments should be dismissed by the Commission as an untimely petition for reconsideration.

III. GEOSTAR IS NOT MONOPOLIZING SCARCE SPECTRUM

According to Motorola, grant of the Geostar applications would "merely lock up valuable frequency spectrum which could otherwise be used for more economic and spectrally efficient satellite-based mobile services."¹⁵ This is simply untrue. The Commission's innovative RDSS licensing policies permit other parties to obtain an authorization to provide RDSS service in competition with Geostar. The Commission always envisioned the RDSS marketplace to be "a competitive industry with minimal regulation"¹⁶ and established a multiple entry policy for RDSS which remains in effect.¹⁷

¹⁵ Comments at 2.

¹⁶ Policies and Procedures for the Licensing of Space and Earth Stations in the Radiodetermination Satellite Service, Gen. Docket No. 84-690, 60 R.R.2d 298, 311 (1986) ("Licensing Order").

¹⁷ Indeed, three parties, besides Geostar, filed applications to provide RDSS service. *Id.* at 299. Other parties receiving RDSS authorizations were Omninet Corporation, MCCA American Radiodetermination Corporation and McCaw Space Technologies, Inc.

Furthermore, the Commission is currently considering the possibility of adding additional services to the RDSS bands on a compatible basis to increase the flexibility and efficiency of spectrum use.¹⁸ Should the Commission adopt such a proposal, Motorola would be free to use the spectrum for other purposes, as long it does not interfere with RDSS operations.

Thus, Geostar is not attempting to "warehouse" spectrum for some later use. Furthermore, the mere existence of Geostar's license does not squander use of valuable spectrum space. Other parties remain free to obtain authorizations from the Commission to provide RDSS service, and possibly -- in the future -- other services as well. Motorola's concerns, therefore, simply have no basis in fact.

**IV. GEOSTAR HAS MADE SUBSTANTIAL AND DEMONSTRABLE
PROGRESS IN THE IMPLEMENTATION OF ITS RDSS SYSTEM**

**A. Geostar Has Successfully Made the Transition from a
Start-Up Venture to a Fully Operational Company**

When the Commission issued Geostar its authorizations in 1986, it was clear that Geostar was a start-up company, and that Geostar did not then have the financial assets of a large corporation that could readily afford to construct and launch a new satellite system. However, the Commission's

¹⁸ Second Notice of Inquiry, Gen. Docket No. 89-554, FCC 90-316 (Oct. 1, 1990), ¶¶ 70-72.

regulatory response to applications can change with time and changed circumstances. In particular, the Commission should take into account when considering whether to grant the proposed applications, the substantial progress made by Geostar since 1986.

When Geostar filed its application and petition for rulemaking in 1983, Geostar's financial status was similar to that of many other nascent satellite applicants. Geostar could demonstrate innovative technical and service concepts, but not the cash on hand for full system implementation. Nevertheless, the Commission has consistently issued satellite system authorizations to such start-up companies allowing them to proceed subject to a series of milestone requirements in order to demonstrate due diligence in system implementation.

Geostar started out with seed capital of just over \$100,000 from initial shareholders and was conducting a first round private placement to raise an additional \$500,000.¹⁹ Since then, Geostar has obtained \$125 million in funds from service revenues, equity and debt placements, and other revenue and income. These funds have been expended towards the construction of both the interim²⁰ and dedicated RDSS

¹⁹ See Geostar's March 31, 1983 Application at 9.

²⁰ The RDSS relays were an integral part of Geostar's interim RDSS system since 1985 since the authorization for the GSTAR II relay, which failed in orbit in 1986, was

facilities, including the funding of losses from operations since 1983. Such fundraising cannot be viewed as insubstantial or used to demonstrate any asserted lack of commitment by Geostar to the RDSS marketplace.

It is notable that, within 2 years of the grant of Geostar's system authorization, Geostar began receiving revenue from an interim service using an RDSS relay operating in the 1610-1626.5 MHz band allocated by the Commission to RDSS.²¹ In developing its interim service, Geostar has made effective use of the frequencies allocated to RDSS in a manner that will allow efficient implementation of its full RDSS system architecture and transmission format.

Geostar's ability to raise these funds and develop its interim and dedicated RDSS facilities did not rely on any form of Commission regulatory preference or protection. Geostar pioneered the concept of a multiple entry policy for RDSS, which allowed the Commission to grant four initial RDSS system authorizations without comparative evaluations. Even today, the Commission's Rules provide for the routine processing of new RDSS system applications.

released in 1985. See GTE Satellite Corporation, Mimeo No. 1181 (Dec. 2, 1985).

²¹ Geostar could have begun operations two years earlier in 1986 had the RDSS relay on GSTAR II not failed in orbit. Launch of the next RDSS relay on board the Spacenet III satellite was delayed until 1988 because of the launch problems encountered during the 1986-1987 period by the Shuttle and Ariane programs.

**B. The Success of Geostar's Service Offerings
Evidence the Existence of a Viable RDSS Marketplace**

Geostar is currently providing an interim RDSS service using RDSS relays installed at Geostar's expense on board the GTE Spacenet III and GSTAR III satellites. These RDSS relays operate in the 1610-1626.6 MHz band allocated to RDSS and use the same transmission format that will be used in Geostar's full RDSS system. These inbound relays are currently being used together with conventional 4/6 GHz transponder capacity to provide a two-way interim service that provides much of the functionality that Geostar's full RDSS system will provide.

Motorola asserts that Geostar "has not found a market" for its service.²² The facts, however, belie this claim. Today, Geostar has over 130 customers and close to 4,000 units in operation, with another 6,000 on backlog order. Numerous new units are installed each day. Geostar provides over 155,000 position fixes per day (62 million since beginning service) and any messaging is and will remain ancillary to the positioning function.

Current and prospective customers demand positioning as an integral part of the service. Geostar has two RDSS relays in orbit and leases redundant 4/6 GHz transponders to provide service to these customers. Geostar's own staff currently

²² Comments at 5.

consists of 68 personnel, while another 100 people are directly involved with Geostar's service in various vendor organizations manufacturing, installing and supporting user terminals in the field.

Geostar's interim system users are obtaining valuable benefits. For example, users of the Geostar system in the long-haul trucking industry can save from \$3,400 to \$5,500 per year per truck in increased asset utilization, reduction of deadhead miles, shortened billing cycles, reduced communications costs to track vehicle location and status, reduced driver recruitment and retention costs, and reduction of insurance rates and premiums. In addition to these quantifiable benefits, use of Geostar's service provides improved help in emergency conditions and allows trucking companies to improve the reliability and efficiency of the service they provide their customers.

Geostar is developing many other applications of its service, particularly in the maritime and aeronautical areas.²³ For example, Geostar's current system is being used by the Coast Guard to track some of its vessels, and the

²³ Standards have been adopted for RDSS use in the maritime and aeronautical areas by the Radio Technical Commission for Maritime Services (RTCM) and the Radio Technical Commission for Aeronautics (RTCA). See RTCM Recommended Standards for Maritime Applications of the Radiodetermination Satellite Service (RDSS), RTCM Special Committee No. 108, August 1, 1990; Minimum Aviation System Performance Standards for Radiodetermination Satellite Service (RDSS), Document No. RTCA/DO-206, March 21, 1990 (Prepared by SC-161).

Bureau of Land Management for aircraft tracking and emergency reporting.

Geostar's system has already provided examples of life saving messages. For example, in June 1989, Geostar's system was the only reliable means of monitoring the status of the Gentry Eagle speedboat in the North Atlantic after a storm knocked out all of its other radio equipment. Geostar's system has also been used to summon help in life threatening situations. In February 1990, a student driver was pinned underneath a Geostar-equipped truck as a result of an accident in a remote area. The Geostar system was used to summon an ambulance which arrived in a fraction of the time it normally would have, and in so doing saved a life.²⁴

Geostar's success in providing service to the long-haul trucking industry, which comprises the bulk of Geostar's current customer base today, as well as its efforts to develop new markets, has been a necessary step in the development of its full RDSS system. Grant of the subject applications will allow Geostar to provide satellite ranging with better than 50 meter accuracy within the system, as well as increased satellite capacity, lower cost vehicle terminals, and the satellite power to support handheld user terminals. With the

²⁴ Additional details of these incidents are provided in Appendix A to Geostar's March 20, 1990, Comments filed in PR Docket No. 89-599.

lower cost of such user terminals the market for Geostar's RDSS services will of course expand.

Indeed, additional evidence of the flaw in Motorola's reasoning comes in the recent filing of a new satellite venturer called "Ellipsat." This start up company -- which unlike Motorola has actually applied to construct a satellite system²⁵ -- proposes to offer mobile voice, data and RDSS positioning in a fashion somewhat similar to Motorola's IRIDIUM plan.²⁶ Unlike Motorola, however, Ellipsat proposes to offer these services in a fashion that it claims is compatible with the CDMA transmission scheme adopted by the FCC for the RDSS allocation.²⁷

The Ellipsat filing demonstrates two things: First, entrepreneurs other than Geostar agree that a need exists for radiodetermination services: "RDSS clearly constitutes a publicly beneficial service, as evidenced by the many instances where lives have been saved, stolen vehicles found and hazardous cargo controlled by means of satellite-based

²⁵ Application of Ellipsat for Authority To Construct an Elliptical Orbit Satellite System (filed Nov. 2, 1990).

²⁶ See infra for a discussion of IRIDIUM.

²⁷ Ellipsat's plan is now being analyzed by Geostar engineers to ensure that the two systems are compatible. At the moment their investigation requires further technical information. When the investigation is concluded, Geostar will provide its results to the Commission.

radio-determination."²⁸ Second, Ellipsat's application promises full compatibility with other RDSS systems, according to the Commission's CDMA sharing rules. Thus, for Ellipsat, unlike Motorola, spectrum is not a zero sum game: innovative companies need not seize spectrum from existing RDSS providers to meet their own service goals.

The satellite facilities under consideration in Geostar's request are needed in order to continue to serve existing customers, to meet growth in service requirements, and to extend the applications to the full range possible with RDSS. Motorola, which has neither customers nor a satellite, would strand existing RDSS users and ask them to await implementation of a system that has not even been applied for, much less licensed, constructed and launched. Geostar's current customers would not hesitate to label this a bad deal and neither should the FCC.

C. Geostar Has Made Substantial Progress Towards the Implementation of Its Full RDSS System

Geostar has made considerable progress in its dedicated satellite construction program. Detailed engineering and

²⁸ Ellipsat Application at 24. In addition to Ellipsat, other recent satellite applicants have proposed to offer some positioning services. See Application of Orbital Communications Corp., FCC File No. 22-DSS-MP-90(20); Application of Starsys, Inc., FCC File No. 33-DSS-P-90(24). Such interest in RDSS flies squarely in the face of Motorola's unsupported assertion that RDSS rule changes are necessary to encourage market entry. See Comments at 9.

design work has been completed with respect to its multi-beam satellites.²⁹ One of the outgrowths of this work was the modified design proposal that provides switchable spot beams to cover virtually all of the western hemisphere and to extend coverage to other countries for both commercial and government customers.³⁰

Geostar has constructed an operational hub facility at its Washington, D.C. operating center consisting of two 5.5 meter antennas, a radio frequency hub facility comprised of sophisticated spread spectrum acquisition and demodulation equipment built to Geostar's unique specifications, uninterruptable power supplies and backup generator capacity, and redundant computer networking facilities to assemble, route, and process position reports and ancillary messages within Geostar's operating center, and sophisticated data terminal equipment to provide a variety of interfaces with its customers. Appendix A provides photographic evidence of the extent of Geostar's currently operational central earth

²⁹ Over \$10 million has been expended to date on these satellites. Tasks completed include the System Definition Review to establish the final baseline design requirements, definition of preliminary spacecraft configurations and sub-system interfaces, trade-off studies to optimize S/L-band antennas and power amplifiers, preliminary launch vehicle (shuttle/PAM-D-II) interfaces, and vendor selection for the power amplifiers and S/L-band antennas.

³⁰ See Application of Geostar Positioning Corporation, filed April 4, 1989, File Nos. CSS-89-003(3) and 1145/1146/1147-DSS-MP-89.

station facilities. Most of the facilities now in operation form a necessary part of the central earth station facilities that will be required for operation with Geostar's dedicated RDSS satellites.

Geostar has made other technical progress in achieving the implementation of its RDSS service. One of the key benefits and promises of RDSS as originally envisioned was the ability of RDSS satellites to provide positioning and ancillary two-way messaging to handheld RDSS terminals.³¹ Geostar has already demonstrated a working, engineering model of a handheld RDSS user terminal to various government agencies.³² This transceiver is 22 cubic inches and weighs 22 ounces including a keyboard/display and integrated antennas, but not including battery pack, and is the result of an R&D investment of more than \$20 million. All of the dedicated RDSS satellites proposed in the applications under

³¹ Licensing Order at 304.

³² This unit transmits signals that are received at Geostar's central earth station facilities over Geostar's in-orbit RDSS relays at 1618.25 MHz. Since the receivers in these units are tuned to the 2491.75 MHz RDSS downlink frequency, two-way transmissions are not currently possible. However, all of this development effort will be wasted if Geostar is not permitted to construct and launch its dedicated RDSS satellites in these bands.

consideration, including the single beam satellites, will support these handheld user terminals.³³

Moreover, during January 1990, Geostar conducted a demonstration -- using its interim system -- of the satellite ranging techniques it will use in its full RDSS system. This demonstration tracked a van as it drove across Florida. The results of that demonstration show that Geostar will be able to provide an accuracy of 50 meters or better once its full RDSS system is in operation.³⁴

Geostar's activities have not been limited to the United States. It has expended extensive efforts to support the Commission and other government agencies to obtain international recognition of the Commission's domestic allocation of frequencies to RDSS at the 1987 Mobile World Administrative Radio Conference ("WARC"). RDSS was considered one of the successes of the United States delegation to that conference.³⁵

Geostar has licensed its patented technology overseas to enable the development of a European RDSS system known as

³³ The link budgets presented in the May 18, 1990 applications are premised on serving these handheld terminals.

³⁴ Geostar has not yet published an account of this demonstration, but will be glad to provide a copy of its internal proprietary report to the Commission on a non-disclosure basis.

³⁵ See, e.g., Notice of Proposed Rulemaking, Gen. Docket No. 89-103, FCC 89-125 (May 5, 1989), ¶ 13.

Locstar. In addition, Geostar currently holds an 8.9 percent interest in Locstar whose first two satellites will be capable of providing RDSS service in Europe, northern Africa, and the Middle East. Locstar has already entered into contracts for the construction and launch of these L- and S-Band multi-beam satellites, the construction of central earth station facilities, and user terminal manufacture. The first launch of an Ariane rocket is scheduled for April 1992. The Locstar system will be interoperable with the Geostar RDSS system to provide the same level of RDSS service within the combined coverage areas of the two systems. Geostar's experience with its interim RDSS system and its efforts to develop its dedicated RDSS satellites have and are contributing directly to the development of the Locstar system.

Geostar is also working to extend the scope of its system coverage throughout the western hemisphere. These activities include the addition of a Caribbean coverage beam to its GSTAR III RDSS relay, the establishment of Canadian and Mexican affiliates to resell Geostar's services, and marketing efforts throughout Latin America.³⁶ It would be ironic indeed if, at the very time that a U.S. entrepreneurial company such as Geostar is succeeding in marketing

³⁶ Additional details on Geostar's activities to extend the coverage of RDSS services are provided in Geostar's international service application, note 30, supra.

U.S. high technology abroad, the FCC undercuts the its allocation at home.

These accomplishments and ongoing activities are not a sign of a company whose "short term survival appears to be in doubt"³⁷ or that is about to cease operations. Rather, they are part of a comprehensive program to develop RDSS technology and services in both the United States and throughout the world. Grant of the applications under consideration here is necessary for Geostar to continue these developments in a practical and prudent manner.

V. MOTOROLA'S PROPOSED IRIDIUM SERVICE REMAINS HIGHLY SPECULATIVE AND DOES NOT PROVIDE A SUFFICIENT BASIS FOR THE COMMISSION TO RECONSIDER ITS COMMITMENT TO RDSS SERVICE.

In its Comments, Motorola states that its primary interest in Geostar's application

is predicated upon a desire to have the Commission utilize the limited frequency spectrum available for mobile satellite communications in a spectrally efficient manner and not to have one license tie up valuable bandwidth.³⁸

A more careful reading, however, will reveal that Motorola's underlying purpose in filing these comments is to secure spectrum space for its IRIDIUM system -- a proposed satellite system that remains only at the discussion phase at

³⁷ Comments at 6.

³⁸ Comments at 3.

this point in time. While Geostar fully supports efforts to develop technologically new and innovative services, it respectfully objects to Motorola's use of this proceeding to promote its new service and respectfully submits that the Commission should not deny its applications simply because Motorola will possibly construct a new satellite system sometime in the future.

Motorola's IRIDIUM service remains highly speculative at this time. To begin with, no application has been filed with the Commission seeking authority to begin construction of the system. Indeed, without such an application, the Commission cannot even properly assess whether provision of this service is in the public interest, and thus worthy of consideration. Furthermore, Geostar and other parties cannot properly determine whether the IRIDIUM system would be technically compatible with other proposed uses of the RDSS spectrum, and RDSS service itself. In essence, there is simply not enough technical definition to date to allow outside evaluation of the IRIDIUM system.

From what little is known about IRIDIUM, however, it does not seem to be sufficiently developed to even warrant Commission consideration at this time. For example, Geostar has learned, from press reports, the following information about the IRIDIUM system. The system would consist of 77 low orbit satellites intended to provide mobile telephone service

worldwide. According to Motorola, the system could provide "enhanced RDSS services to tens of thousands of users, employing only a portion of the RDSS allocation" ³⁹ Service would be provided by handheld equipment estimated to cost approximately \$3,500 each. ⁴⁰ By most recent accounts, Motorola does not expect to have system construction completed until 1996. Of course, Motorola will need to complete and launch a large percentage of the total 77 satellites before it could be assured of continuous coverage.

The current projected cost of the system appears to be at least \$2.4 billion, ⁴¹ only 20 percent of which would be financed by Motorola. Moreover, while Motorola seems to question Geostar's "long term viability" ⁴² the press is full of recent accounts of Motorola's unsuccessful attempts to obtain financing for its system. ⁴³ Indeed, Japanese

³⁹ Comments at 9. Of course, Motorola admits that while only a portion of the RDSS spectrum would be used, the "limited bandwidth would pose certain capacity limitations on the overall IRIDIUM system which could be met by allocations elsewhere in the L-band." Id. at n.12.

⁴⁰ Data Communications, The Gods Must Be Crazy, August, 1990, at 23.

⁴¹ Satellite Week, Oct. 29, 1990 at 9.

⁴² Comments at 6.

⁴³ See Japan Economic Journal, Motorola Seeks Satellite 'Boosters'; Japan Firms Show Little Interest in Joining Global Communications Net, October 20, 1990 at 15; Satellite Week, Oct. 29, 1990, at 9.

executives have questioned whether sufficient demand exists to support the IRIDIUM system.⁴⁴

In contrast, as described in more detail in Section IV, RDSS service is much more than an "exotic"⁴⁵ speculative service. Geostar has made substantial and demonstrable progress in the implementation of its RDSS service and it today providing valuable services to its customers. The system, upon full construction, will be able to serve millions of users at approximately \$0.05 per position and a 100 character message (as opposed to \$3 per minute of voice proposed by the IRIDIUM system). Finally, the cost to build an RDSS system is far more competitive, with each region costing approximately \$200-\$300 million.

Motorola is, and continues to be, a pioneer in the provision of telecommunications products and services. Indeed, Motorola is the leading manufacturer of cellular phones and paging equipment. Geostar commends Motorola for continuing to advance mobile and satellite communications and, when the time is appropriate and the proper applications have been filed, the Commission should give serious consideration to Motorola's proposed system. That time, however, has not yet arrived. Furthermore, the potential merits of

⁴⁴ Japan Economic Journal, Oct. 20, 1990.

⁴⁵ See Business Week, Motorola: How Much Will It Cost To Stay No. 1?, October 20, 1990, at 96, (describing IRIDIUM as Motorola's most exotic wireless project).

Motorola's IRIDIUM project, and its possible use of spectrum already allocated to RDSS, do not provide a sufficient basis for denial of Geostar's applications.

VI. CONCLUSION


As demonstrated herein, Geostar has fully pursued the implementation of its RDSS system to the best of its ability. Geostar has devoted significant amounts of capital and human resources to development of a viable RDSS system, and has met

the Commission's imposed deadlines for beginning construction of its RDSS system.

For the foregoing reasons, grant of Geostar's application would be in the public interest, and Motorola's Comments should be dismissed.

Sincerely,

GEOSTAR POSITIONING CORPORATION

By: 
T. Stephen Cleston
Executive Vice President of
Governmental Affairs
1001 22nd St., N.W.
Washington, DC 20037

(202) 887-0870

November 28, 1990

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

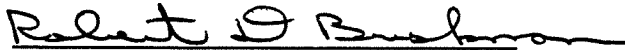
In the Matter of	)	File Nos. 43-DSS-MP/ML-90
	)	44-DSS-MP/ML-90, 45-DSS-
	)	MP/ML-90, 46-DSS-P/LA-90,
	)	48-DSS-P/LA-90, 51-DSS-
GEOSTAR POSITIONING	)	EXT-90, 52-DSS-EXT-90, 53-
CORPORATION	)	DSS-EXT-90, CSS-90-012
	)	(ML), CSS-90-013 (ML),
For Modification of the	)	CSS-90-014 (ML), CSS-90-
Geostar RDSS Space Station	)	015 (ML)
Authorizations)	
)	
City of Washington)	
	)	ss:
District of Columbia)	

AFFIDAVIT OF ROBERT D. BRISKMAN


I, Robert D. Briskman, being duly sworn, depose and state:

1. I am the General Manager of Geostar Positioning Company.
2. I make this affidavit in support of Geostar's Opposition to Motorola's Comments in the above-referenced proceeding.
3. I have read the attached Opposition and state that all the facts contained therein are true to the best of my knowledge and belief.

DATED this 28th day of November, 1990


 Robert D. Briskman
 General Manager
 Geostar Positioning Corporation

Sworn to before me
 this 28th day of November, 1990


 Notary Public

Viviane N. Leary
 Notary Public, District of Columbia
 My Commission Expires Feb. 28, 1993

CERTIFICATE OF SERVICE

I hereby certify that on this 28th day of November, 1990, caused copies of the foregoing "Opposition To Comments of Motorola, Inc." to be mailed via first-class postage prepaid mail to the following:

Jill Abeshouse Stern, Esq.
Miller & Holbrooke
1225 19th Street, N.W.
Washington, D.C. 20036

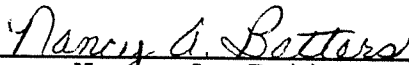
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Counsel for Qualcomm



Nancy A. Batters