

PUBLIC REFERENCE COPY
BEFORE THE

RECEIVED

Federal Communications Commission

MAY 14 1990

WASHINGTON, D.C. 20554

Federal Communications Commission
Office of the Secretary

RECEIVED

In the Matter of the Application of)
)
ORBITAL COMMUNICATIONS CORPORATION)
)
For Authority to Construct a)
Low-Orbit Mobile Satellite System)

MAY 18 1990

File No. 22-DSS-MP-90(20)
Satellite Radio Branch

PETITION TO DENY SUBJECT TO AMENDMENT TO APPLICATION

STARSYS, Inc. ("STARSYS"), by its attorneys and pursuant to the Commission's April 11, 1990 Public Notice, Report No. DS-953 at 2, hereby petitions to deny the above-captioned application of Orbital Communications Corporation ("Orbital") on the grounds that Orbital's proposed "ORBCOMM" system, as presently configured, is not spectrum efficient, and that approval of the Orbital application would contravene longstanding Commission policies favoring and fostering competitive multiple entry into new satellite technologies. In support whereof, the following is shown.

Orbital has applied for authority to construct twenty small satellites that are intended to operate in a low-earth orbit (approximately 970 kilometers above the earth) for the provision of two-way data communications and position determination services. The ORBCOMM system would use 478 KHz of spectrum in the 148-149.9 MHz portion of the VHF frequency bands for uplink transmissions and 370 KHz of spectrum in the

137-138 MHz portion of the VHF band for downlink transmissions. ORBCOMM would also use a 50 KHz UHF downlink channel at 400.075-400.125 MHz to transmit time signals and other information.

STARSYS does not dispute that the services Orbital proposes to provide would be in the public interest, or that there exists tremendous demand and potential for the establishment of a low earth orbit mobile satellite service ("LEO MSS") in the United States. Indeed, STARSYS has petitioned the Commission to allocate spectrum for a spread spectrum-based LEO MSS, and has applied for authority to construct and operate its own LEO MSS system (called "STARNET").

Nor does STARSYS take any position on the questions whether Orbital is legally and financially qualified to construct its proposed ORBCOMM system. The sole basis for this petition is Orbital's reliance on technology that precludes multiple entry, and the fact that Commission approval of such a system could have the undesired and undesirable effect of granting Orbital the exclusive right to operate an LEO MSS system in the requested frequency bands.

The basic technology proposed by Orbital is now more than a decade old. While Orbital may be correct in its assertion that its proposed ORBCOMM system, in the frequencies requested, would provide millions of Americans with access to LEO MSS via low-cost user terminals in the \$50-\$300 price

range, the fact remains that grant of the Orbital application is likely to inhibit the development of competition in the LEO MSS service. Indeed, it appears that Orbital, because of its proposed utilization of non-multiple entry technology, contemplates that it will have the exclusive right to provide commercial LEO MSS in the United States.

Such a result is contrary to the public interest. In view of the fact that alternative technology exists and has been proposed to the Commission by STARSYS, the inefficiency of the ORBCOMM system requires the denial or reformation of Orbital's application.

The Commission has repeatedly held that the public interest requires, whenever possible, competitive multiple entry in satellite and most other services. See, e.g., Domestic Communications Satellite Facilities, 22 F.C.C.2d 665 (1972). See also Establishment of Satellite Systems Providing International Communications, 101 F.C.C.2d 1046 (1985). STARSYS's proposed STARNET system offers the Commission an opportunity to create a commercial LEO MSS service based on efficient spread spectrum modulation techniques -- a service that will allow for competitive multiple entry and encourage the historically-observable benefits that are attendant thereto.

The Commission's experience with spread spectrum modulation has been uniformly positive. Spread spectrum modulation has made possible the following service innovations:

- Competitive multiple entry in the radiodetermination satellite service ("RDSS");
- Authorization of mobile satellite services at Ku-band; and
- Major increases in cordless telephone band capacity.

As applied to the instant comparison between Orbital's system proposal, and the STARNET spread spectrum system proposed by STARSYS, the difference between old and new technology makes the difference between an old-fashioned monopoly service and a modern competitive service.

It simply is not in the public interest to accept exclusivity in the provision of LEO MSS services when a competitive alternative exists. The development of the LEO MSS market will be stifled by a lack of competitive pressure on the licensee, as an exclusive service provider has much less incentive to construct a system, offer unproven service innovations or reduce prices to the public. Accordingly, under no circumstances -- except for the lack of a viable alternative -- would the establishment LEO MSS monopoly serve the public interest.

Here, of course, there is a viable alternative to Orbital's proposed ORBCOMM system. The Commission could, upon adoption of the spectrum allocation requested in STARSYS's May 4, 1990 petition for rule making, allocate spectrum for a new LEO MSS in the frequencies now requested by STARSYS and Orbital, and impose at the same time a requirement that any LEO MSS applicant, in order to be licensed in the frequency bands, would have to propose a system premised on spread spectrum modulation techniques in order to be found technically qualified. Orbital, of course, could amend its ORBCOMM application to provide for spread spectrum modulation as an integral part of its system. If Orbital amends its application in line with this suggestion, thereby accepting the concept of free-market competition for LEO MSS, STARSYS would no longer object to the granting of the ORBCOMM system application.

Based on Orbital's own market projections, which it claims to be very conservative, there will be more than ample demand for LEO MSS services in the United States alone to assure the viability of at least two LEO MSS systems. See Orbital Application at 56 and Table III-2. Assuming a customer base of 2.6 million users each for two LEO MSS systems (this figure is taken from Orbital's estimate of 5.2 million subscribers), if each user pays only \$100 per year in service-type fees, each LEO MSS system would generate revenues of \$260 million per year. This means that in one year, both

Orbital and STARSYS would generate revenues from LEO MSS system operations that exceed the total capital expenditures for their respective systems. Not only are Orbital's projections conservative, experience has shown that healthy competition increases overall demand.

CONCLUSION

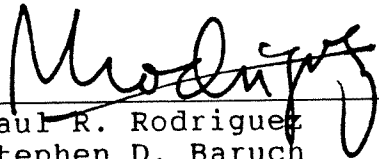
In sum, given the existence of LEO MSS technology that is more efficient than the technology proposed by Orbital, and given the Commission's traditional emphasis on the encouragement of competitive multiple entry into new satellite technologies, the ORBCOMM system, as presently configured, cannot be found to satisfy the public interest, convenience, and necessity. A spectrum-efficient commercial LEO MSS system, authorized under competitive rules, will best serve the public interest.

To this end, Orbital should amend its ORBCOMM application to specify reliance on spread spectrum technology, or face the prospect that its application will be dismissed on the ground that Orbital is not technically qualified to construct its proposed system. Only spread spectrum-based LEO MSS systems can be found to advance the public interest, and only spread spectrum-based LEO MSS systems will enable the LEO MSS service to be established on a competitive basis (with all

of the attendant benefits in service innovation, market responsiveness, and increased demand that typically follow therefrom).

Respectfully submitted,

STARSYS, INC.

By: 
Raul R. Rodriguez
Stephen D. Baruch

Leventhal, Senter & Lerman
2000 K Street, N.W.
Suite 600
Washington, D.C. 20006-1809
(202) 429-8970

May 14, 1990

Its Attorneys