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

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**FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY**

**IB Docket No. 99-81
RM-9328
DA 00-222**

In the Matter of)
)
The Establishment of Policies and Service)
Rules for the Mobile Satellite Service in the)
2 GHz Band)

COMMENTS OF ICO SERVICES LIMITED

ICO Services Limited ("ICO") hereby submits its comments in response to the Commission's Public Notice of February 7, 2000 in this proceeding.¹

SUMMARY

ICO continues to urge the Commission to adopt the "negotiated entry" approach proposed in ICO's and the ICO U.S. Service Group's ("IUSG") previous comments in this proceeding. By permitting early entrants to operate flexibly, anywhere within the U.S. 2 GHz MSS bands, the ICO/IUSG proposal would allow 2 GHz MSS systems to operate with maximum efficiency.

However, the Commission's hybrid proposal to permit 2 GHz MSS systems to select and operate within distinct segments of "home" spectrum when each system's first satellite reaches its intended orbit, and to operate flexibly outside those home assignments subject to inter-system coordination, represents a substantial advance over the processing alternatives

¹ *Establishment of Policies and Service Rules for the Mobile Satellite Service in the 2 GHz Band*, IB Docket No. 99-81, RM-9328, Public Notice DA 00-222 (Feb. 7, 2000) ("Public Notice").

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described in last year's Notice of Proposed Rulemaking.² Notably, by permitting 2 GHz MSS operators to select their home spectrum assignments, the plan in the Public Notice avoids the *a priori* assignments of initial spectrum contemplated by the Commission's "traditional" and "flexible" processing alternatives. Also, by not requiring inter-system coordination before deployment of an operator's first satellite, the hybrid proposal avoids the delay that would have resulted from the Commission's original "negotiated entry" option.³ Accordingly, although not offering the same flexibility as the ICO/IUSG proposed approach, the Commission's proposal would promote the efficient, market-driven operation of 2 GHz MSS systems and help to reduce the impact of 2 GHz MSS operations on terrestrial incumbents. Specifically, ICO agrees with the Commission's proposal that each 2 GHz MSS system operator will be entitled to select its own "home" spectrum when that system's first satellite reaches its intended orbit.

However, ICO suggests that three refinements to the Commission's plan would further improve 2 GHz MSS operations and promote service to unserved and underserved areas. First, the Commission should permit 2 GHz MSS systems that have been assigned home spectrum to use additional 2 GHz MSS spectrum as required to meet their customers' needs.⁴ Such spectrum will be used on a conditional basis, and will be available only to the extent it does not infringe the home spectrum of other operational systems with which sharing is not feasible. Second, when 2 GHz MSS systems fail to meet implementation milestones, the home spectrum available to those systems should be divided among and

² *Establishment of Policies and Service Rules for the Mobile Satellite Service in the 2 GHz Band*, Notice of Proposed Rulemaking, 14 FCC Rcd 4843, 4857 (1999) ("NPRM").

³ *Id.* at 4861-62.

⁴ ICO agrees with the Commission's suggestion that operations outside a system's home spectrum will be subject to inter-system coordination. The Commission should confirm, however, that inter-system coordination will be required only among operational 2 GHz MSS systems.

made available to the remaining 2 GHz MSS systems, for unconditional assignment to those systems as additional home spectrum. Finally, as a technical matter, the Commission should permit 2 GHz MSS systems to select their home spectrum assignments in the MSS uplink and downlink bands independently - *i.e.*, on a flexible, non-paired basis. These refinements will help to ensure that 2 GHz MSS systems operate within those uplink and downlink bands where they are most efficient, without spectrum capacity constraints that will impede their ability to increase their capacity to serve large numbers of customers at reasonable rates.

I. THE COMMISSION SHOULD PERMIT FLEXIBLE OPERATION OUTSIDE ASSIGNED HOME SPECTRUM

In its Public Notice, the Commission suggests permitting 2 GHz MSS systems that have been assigned home spectrum to operate outside that spectrum, subject to inter-system coordination, so long as those systems do not operate within home spectrum selected by and assigned to other 2 GHz MSS systems. The Commission also proposes, however, that each system's total use of 2 GHz MSS spectrum should be confined to no more than the amount of spectrum assigned to that system as home spectrum.

The proposed limitation on the total amount of spectrum a system can use will limit the technical flexibility of 2 GHz MSS operators and may cause those systems to have a greater impact than necessary on terrestrial incumbents. Rather than impose this inefficient constraint, the Commission should permit 2 GHz MSS systems to use, on a conditional basis, out-of-home spectrum as needed to meet customer demand. So long as those systems are required to coordinate with other operational systems and are not permitted to use other operational systems' home spectrum without the consent of those systems, the flexibility this approach affords will not infringe on the interests of any 2 GHz MSS system.

II. THE COMMISSION SHOULD PROVIDE FOR EXPANSION SPECTRUM

Even if the Commission permits 2 GHz MSS systems to operate conditionally outside their home spectrum on the flexible basis ICO has proposed, operators will have

assured access only to a narrow segment of the available 2 GHz frequencies, with operations elsewhere in the band subject to reassignment.⁵ By not providing for access to expansion spectrum in which 2 GHz MSS systems can operate on a primary basis, this plan introduces technical uncertainty and artificial scarcity into the planning and providing of 2 GHz MSS service.

To address this concern, ICO suggests a further refinement to the hybrid plan under which the Commission would, as proposed, divide the available 2 GHz MSS spectrum into segments of equal bandwidth from which eligible systems may select home spectrum. (The Commission should clarify, however, that the available home spectrum will be defined by dividing the number of qualified applicants into the *entire* 2 GHz uplink and downlink bands - *i.e.*, 35 MHz in each direction.⁶) As the Commission suggests, a 2 GHz MSS system that has placed a first satellite into its intended orbit then would select, and operate within, home spectrum and also would be permitted to operate outside that home spectrum on a conditional basis.

In order to prevent warehousing of spectrum, ICO also proposes that when individual 2 GHz MSS operators fail to meet implementation milestones, the amount of spectrum available for assignment as home spectrum should be expanded by dividing the remaining 2 GHz uplink and downlink bands equally among the 2 GHz MSS systems that have met those milestones. Systems that already have qualified for initial assignment of home spectrum then could acquire additional home spectrum, up to a total amount per system that equals x/n , where x is the total available 2 GHz MSS spectrum and n is the

⁵ As ICO previously has advised the Commission, ICO anticipates that it can efficiently use up to 15 MHz of 2 GHz MSS spectrum in each direction.

⁶ In other words, the number of qualified applicants should be divided into the entire 1990-2025/2165-2200 MHz frequency bands allocated to MSS.

number of systems that have met implementation milestones.⁷ Each system's acquisition and use of this reassigned spectrum then would be added to the system's home spectrum, and would not be subject to displacement by any other system.

In order to ensure that this expansion spectrum is made available with reasonable promptness, the Commission also should adopt the implementation milestones proposed in the Notice of Proposed Rulemaking in this proceeding. Specifically, the Commission should find that a 2 GHz MSS system's eligibility for continued access to 2 GHz spectrum will depend upon the system's compliance with the following milestones:

NGSO System

Date N: System conditionally authorized to operate at 2 GHz

N plus one year: System must begin construction of first two satellites. (NPRM ¶ 85)

N plus three years: System must begin construction of remaining system satellites (NPRM ¶ 85)

N plus four years: System must complete construction and launch of two satellites (NPRM ¶ 86)

N plus six years: Entire system must be launched and operational (NPRM ¶ 86)

GSO System

Date N: System conditionally authorized to operate at 2 GHz

N plus one year: System must begin construction of first satellite. (NPRM ¶ 85)

N plus three years: System must begin construction of remaining satellites (NPRM ¶ 85)

N plus five years: System must complete construction and launch of at least one satellite into each assigned orbital location (NPRM ¶ 86)

⁷ The formula should be adjusted to take into account the ability of some systems to share the same spectrum bands.

N plus six years: Entire system must be launched and operational (NPRM ¶ 86)

The Commission should expressly direct its new Enforcement Bureau to audit compliance with these implementation milestones and declare, when a milestone is missed, that the delinquent system's authorization or spectrum reservation is null and void. When that finding is made, 2 GHz MSS systems that have placed their first satellites in their intended orbits and complied with all implementation milestones will immediately be eligible for permanent access to expansion spectrum. Those systems that have missed implementation milestones should not have another opportunity to obtain access to 2 GHz MSS spectrum in this processing round.⁸

III. THE COMMISSION SHOULD NOT REQUIRE "HOME" UPLINK SPECTRUM TO BE PAIRED INFLEXIBLY WITH SPECIFIC SEGMENTS OF DOWNLINK SPECTRUM

If the Commission adopts its proposed variant of the negotiated entry option, it should not associate each segment of "home" 2 GHz MSS uplink spectrum with a mandatory, paired segment of downlink spectrum.⁹ Such an inflexible pairing requirement, which would likely increase the impact of 2 GHz MSS systems on terrestrial 2 GHz incumbents, is not required by contemporary satellite and mobile earth station technology. Earlier-generation satellites, upon receiving an uplink transmission, stepped that signal up or down in frequency to generate a downlink signal. Because the magnitude of the frequency shift was fixed, any signal received on a given segment of uplink spectrum automatically was converted to a return signal on a uniquely associated segment of downlink spectrum. With these earlier technologies, no alternative pairing of uplink and

⁸ As ICO has pointed out in its previous comments in this proceeding, the Commission also should not initiate a second 2 GHz MSS processing round until all milestone dates established in the present processing round have elapsed. Comments of ICO Services Limited at 17-18 (June 24, 1999) ("ICO Comments").

⁹ As noted in its earlier comments, ICO recommends that the Commission's service rules require 2 GHz MSS systems to have the capability for unpaired uplink and downlink operation. ICO Comments at 22.

downlink spectrum was possible; as a consequence, the frequencies programmed to the user terminals also were uniquely paired. By contrast, contemporary MSS systems, such as ICO, can operate with any pairing of uplink and downlink frequencies, and the user terminal frequencies for uplink transmission and downlink reception are also independently programmed.¹⁰ Accordingly, the Commission should permit 2 GHz MSS operators to choose any pairing of "home" uplink and downlink spectrum segments that will best serve the technical and service requirements of their systems and minimize relocation impact on terrestrial 2 GHz incumbents.

IV. TECHNICAL FLEXIBILITY AND ACCESS TO EXPANSION SPECTRUM WILL ENHANCE ICO'S ABILITY TO REACH UNSERVED AND UNDERSERVED AREAS

As ICO pointed out in previous comments in this proceeding, ICO fully supports the goal of extending service to unserved and underserved areas, including rural communities and Indian reservations.¹¹ In fact, ICO believes that MSS technology is uniquely suited to the communications needs of remote areas. However, as ICO also has pointed out, MSS operators' ability to provide affordable service to unserved and underserved areas will depend heavily upon the impact, on the cost and availability of those services, of relocation liability and other regulatory burdens. Accordingly, if the Commission adopts the variant of negotiated entry described in the February 7 Notice, it should maximize the efficiency of that plan - and reduce the potential impact of relocation on terrestrial incumbents and MSS

¹⁰ Also, as the ICO USA Service Group points out in its comments on the Public Notice, spectrum allocated internationally for service exclusively to Region 2 falls at the top of the 2 GHz MSS uplink band, but at the bottom of the 2 GHz downlink band. Accordingly, pairing spectrum that falls in the same place in both the 2 GHz MSS uplink and downlink bands by means of a standard offset would wastefully require GSO systems to forego the use of at least half of the 2 GHz MSS spectrum that is best suited to their systems. Supplemental Comments of the ICO USA Service Group at 7-8 (Feb. 17, 2000).

¹¹ ICO Comments at 19-20. ICO's comments acknowledged the importance of service to unserved and underserved areas, but questioned the proposal of some 2 GHz MSS applicants that they should be given preferential access to expansion spectrum on the basis of unenforceable assurances that they would serve remote areas. *Id.* at 20-21.

customers alike - by permitting flexible pairings of uplink and downlink spectrum and providing for qualified 2 GHz MSS operators' access to expansion spectrum.

CONCLUSION

ICO continues to believe that the negotiated entry approach proposed in its earlier comments in this proceeding, which would permit qualified systems to operate flexibly anywhere within the available 2 GHz MSS spectrum while assuring the reasonable access of later entrants to the 2 GHz MSS bands, will best serve the interests of consumers. The variant of the negotiated entry approach suggested in the Public Notice, however, if supplemented by the refinements ICO has suggested in these comments, offers a reasonably efficient and equitable basis for assignment of spectrum among qualified 2 GHz MSS applicants.

Respectfully submitted,

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Date: February 17, 2000

CERTIFICATE OF SERVICE

I, James S. Bucholz, do hereby certify that copies of the foregoing **COMMENTS OF ICO SERVICES LIMITED** were hand delivered, via U.S. Mail, on this 17th day of February, 2000, to the following:

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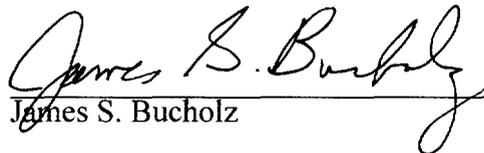
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