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

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of	)	
	)	
	)	IB Docket No. 99-81
The Establishment of Policies	)	
and Service Rules for the Mobile	)	
Satellite Service in The 2 GHz Band	)	

REPLY COMMENTS OF ICO SERVICES LIMITED

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TABLE OF CONTENTS

Introduction and Summary 1

I. THE OBJECTIONS TO THE NPRM'S NEGOTIATED ENTRY OPTION DO NOT APPLY TO ICO'S PROPOSED VARIANT OF THAT APPROACH 3

A. The ICO/IUSG Approach Will Not Delay Competition And In Fact Will Hasten New Entry By Qualified Systems 4

B. The ICO/IUSG Plan Ensures That Early Entrants Will Not Delay Commencement Of Service By Later Entrants 5

C. The Commission's Part 25 Regulations Sufficiently Protect Government Space Operations In the 2200-2290 MHz Bands 7

D. Iridium's Claim That The European Licensing Process Gives ICO An Unfair Advantage Is Entirely Unfounded 8

E. ICO's Plan Ensures That Default Access To Spectrum And Commission Intervention Rarely Will Be Required 9

II. THE COMMENTERS HAVE NOT DEMONSTRATED THE SUPERIORITY OF ALTERNATIVE APPROACHES 10

A. A Traditional Band Plan Will Not Serve The Public Interest 11

B. The Proposed Flexible Approach Has The Same Defects As The Traditional Band Plan 14

C. The Comments Provide No Basis For Adoption Of A Competitive Bidding Approach 16

D. Globalstar's "All Shared Band" Plan Includes Elements Of Negotiated Entry But Proposes A Variant Of That Option That Would Cause Needless Delay 17

III. QUALIFICATION REQUIREMENTS 19

IV. NON-SERVICE LINK ISSUES 19

A. MCHI Does Not Support Its Claim Of Inability To Coordinate With Feeder Links At 7 GHz 19

B. ITU-R Recommendations Should Be Used For Establishing Coordination Distances Between ARNS Stations and MSS Feeder Link Stations In The 5091-5250 MHz Band 20

V. SERVICE RULES 20

A. The Commission Should Adopt Effective Implementation Milestones 21

B. 2 GHz MSS Systems Should Not Be Required To Provide E911 Service 22

C. The Commission Should Not Mandate MSS Service To Unserved Communities 23

D. There Is No Need For Anti-trafficking Rules Specific To ICO 24

E. There Is No Need For An Exclusionary Arrangements Rule Specific To ICO 25

VI. INTERSERVICE SHARING 26

VII. ACCESS TO THE U.S. MARKET FOR NON-U.S. LICENSED SYSTEMS SHOULD NOT BE CONDITIONED UPON SUCCESSFUL INTERNATIONAL COORDINATION 27

CONCLUSION 28

Attachment A

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REPLY COMMENTS OF ICO SERVICES LIMITED

ICO Services Limited ("ICO") hereby submits its reply to the comments filed in this proceeding on June 24, 1999.

INTRODUCTION AND SUMMARY

In their comments in this proceeding, ICO and the ICO USA Service Group ("IUSG") proposed a spectrum assignment process designed to bring new competition to the MSS industry with a minimum of delay. Specifically, ICO and IUSG proposed a variant of the Commission's negotiated entry option under which qualified 2 GHz MSS systems would receive conditional authorizations to provide service in the 2 GHz frequency band. Accordingly, under the ICO/IUSG approach the first 2 GHz MSS systems that commence service would operate flexibly in the GSO or NGSO segments of the U.S. 2 GHz MSS bands, as applicable, subject to domestic frequency coordination and negotiation with later MSS arrivals.

As ICO's comments pointed out, negotiated entry offers several advantages over *a priori* processing alternatives, including the Commission's traditional and flexible band plan options. First, under negotiated entry, 2 GHz MSS systems that are prepared to provide service need not await the outcome of lengthy band planning and domestic frequency coordination negotiations among all 2 GHz MSS applicants before commencing operations. Second, negotiated entry does not force MSS applicants to

commit themselves prematurely to system designs that may have to be modified, with resultant changes to the Commission's spectrum assignment plan. Third, systems that are allowed to operate flexibly within the relevant bands can make market-driven choices as to where in the applicable bands they can most efficiently operate. Finally, under negotiated entry the relocation of terrestrial incumbents will be guided by technical and economic considerations rather than the imperatives of a rigid band plan.

The ICO/IUSG proposal also recognizes, however, that assignment of spectrum to early entrants might raise two concerns among later entrants: first, that operational systems will lack an adequate incentive to coordinate with later entrants in good faith; and second, that later entrants will incur higher costs of relocating terrestrial incumbents than those systems that begin operations earlier.

To address these concerns, ICO and IUSG urged the Commission to augment its negotiated entry option with a self-executing mechanism under which later qualified entrants would be guaranteed timely, interim access to 2 GHz spectrum, regardless of the progress made in their coordination discussions with operational 2 GHz MSS systems. ICO and IUSG also recommended an expedited process by which earlier and later entrants may invoke the Commission's aid to resolve domestic frequency coordination disputes. Finally, ICO and IUSG proposed that the Commission develop an equitable method of ensuring that the burden of relocating terrestrial incumbents - if those costs are to be borne by 2 GHz MSS systems - will be fairly distributed.

The record in this proceeding fully justifies the adoption of the ICO/IUSG approach. Notably, the comments, which address only the negotiated entry option described in the Notice of Proposed Rulemaking *("NPRM")*,[1] raise no objections to

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[1] *The Establishment of Policies and Services Rules for the Mobile Satellite Service in the 2 GHz Band*, Notice of Proposed Rulemaking, IB Docket No. 99-81 (March 25, 1999) (*"NPRM"*).

negotiated entry that are not fully addressed by the ICO/IUSG variant of that option. At the same time, the comments do not reflect a consensus in favor of any of the other processing alternatives set out in the *NPRM*. All applicants continue to oppose competitive bidding.[2] Some applicants propose variants of the Commission's traditional and flexible plans, but generally express reservations about *a priori* licensing and suggest modifications that they hope will avoid the inherent rigidity and inefficiency of those approaches;[3] and Globalstar proposes a variant of negotiated entry that poses the same potential for delay as a traditional band plan.[4]

In view of the lack of consensus among commenters on the Commission's proposed processing options, ICO urges the Commission to adopt the approach that best serves the interests of consumers and most fully addresses the concerns of the commenters. As ICO explains more fully below, the ICO and IUSG proposals will best achieve these goals.

I. THE OBJECTIONS TO THE *NPRM'S* NEGOTIATED ENTRY OPTION DO NOT APPLY TO ICO'S PROPOSED VARIANT OF THAT APPROACH

The principal objection of commenters to the negotiated entry option described in the *NPRM* is that it may give early entrants a strategic advantage and delay entry by other

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[2] Only BellSouth, which is not an applicant for 2 GHz MSS spectrum, supports the use of auctions as a means of assigning that spectrum to MSS service providers. Comments of BellSouth Corporation at 2-5 ("BellSouth Comments").

[3] Comments of the Boeing Company at 20-22 ("Boeing Comments"); Comments of Celsat America, Inc. at 7 ("Celsat Comments"); Comments of Constellation Communications, Inc. at 19-21 ("Constellation Comments"); Comments of Inmarsat Ltd. at 5 ("Inmarsat Comments"); Comments of Iridium LLC at 23 ("Iridium Comments"); Comments of Mobile Communications Holdings, Inc. at 5 ("MCHI Comments"); Comments of TMI Communications and Company, Limited Partnership at 5 ("TMI Comments").

[4] Globalstar Comments at 11.

systems.[5] TMI, for example, argues that negotiated entry "would force later entrants to jump one more hurdle prior to beginning service" and that some early entrants "may find it advantageous to delay the successful conclusion of arrangements merely in order to prevent the early advent of competition."[6] Similarly, Inmarsat argues that under negotiated entry "one or two early entrants could achieve tremendous strategic advantage by gaining spectrum for themselves and then thwarting and delaying the entrance of additional competitors," while "negotiation and coordination among the applicants could lead to hopeless deadlock and spectrum paralysis."[7] None of these objections, however, applies to the variant of the negotiated entry option proposed by ICO and IUSG.

A. The ICO/IUSG Approach Will Not Delay Competition And In Fact Will Hasten New Entry By Qualified Systems

No commenter denies that the negotiated entry option will bring new competition to the MSS marketplace more rapidly than the other, proposed approaches.[8] Under negotiated entry, 2 GHz MSS systems that are prepared to launch their satellites and provide service can commence operation, flexibly within any relevant portion of the applicable 2 GHz MSS bands, without first awaiting the outcome of lengthy band planning and domestic frequency coordination discussions among all nine of the 2 GHz applicants, including applicants whose ground network and satellite construction are many years off and who therefore have little incentive to reach a timely resolution of band planning negotiations.

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[5] The Commission describes its negotiated entry option in the *NPRM* at ¶¶ 40-45.

[6] TMI Comments at 6.

[7] Inmarsat Comments at 10-11.

[8] ICO, for example, is not among the multiple MSS systems already authorized to operate at 1.6/2.4 GHz and will bring new competition to the MSS industry when it begins service. Accordingly, the public interest is served by a spectrum assignment process that permits new MSS service providers, like ICO, to enter the market with a minimum of delay.

As recent spectrum licensing history shows, *a priori* spectrum assignment often requires "months of discussions with interested parties" and filings regarding the final band plan.[9] In the past, the negotiation process has taken up to a year. For example, the Commission adopted an initial band segmentation plan for the Ka band in July 1995 but did not issue the final band plan until July 1996.[10] Similarly, in the Big LEO context, the Commission initiated a negotiated rulemaking proceeding for the purpose of developing an initial band plan in January, 1993 and after many months of negotiation proposed a spectrum sharing plan in January 1994. After several months of further negotiations among the applicants, the Commission finally adopted the spectrum sharing proposal in October 1994.[11] Spectrum sharing for Little LEOs also required significant coordination effort and time.[12] The ICO/IUSG proposal, therefore, by avoiding initial band planning and coordination negotiations among all applicants, would significantly hasten the delivery of new MSS service to consumers.

B. The ICO/IUSG Plan Ensures That Early Entrants Will Not Delay Commencement Of Service By Later Entrants

Instead of claiming (as they could not reasonably claim) that negotiated entry will delay the offering of service to consumers, those commenters that oppose negotiated

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[9] *In the Matter of Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and For Fixed Satellite Services*, 12 FCC Rcd 22310, 22315 (1997)("*Ka Band FSS Order*").

[10] *Id.* at 22313, 22315. The Ka band plan required a framework that would accommodate spectrum for GSO and NGSO FSS systems and for Local Mutlipoint Distribution Systems ("LMDS"). *See id.* at 22315.

[11] *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 Bands*, 9 FCC Rcd 5936, 5939 (1994).

[12] *See, e.g.,* Amendment of Part 25 of the Commission's Rules to Establish Rules and Policies Pertaining to the Second Processing Round of the Non-Voice, Non-Geostationary Mobile Satellite Service, 13 FCC Rcd 9111 (1997).

entry argue that incumbents, once licensed to operate across the available 2 GHz band, will delay the introduction of additional competition by negotiating in bad faith with later-entrant systems. This objection, however, even if valid, is fully addressed by the variant of negotiated entry proposed by ICO and IUSG, according to which *later qualified entrants will be guaranteed access to a minimum amount of spectrum* and a mechanism will be provided whereby the Commission will intervene if later entrants are dissatisfied with the pace of their negotiations with 2 GHz MSS incumbents.

Specifically, to meet the concerns of other applicants ICO and IUSG first propose a default spectrum access mechanism that is triggered if a domestic frequency coordination agreement is not reached between an operating 2 GHz MSS licensee and a newly entering 2 GHz MSS licensee within 120 days of commencement of good-faith negotiations.[13] Under the proposed rule, the new licensee automatically will be entitled to use spectrum sufficient to meet its reasonably predicted operational requirements, up to 2.5 MHz in each direction or $1/(n + 1)$ of the spectrum then available for use by all operating 2 GHz MSS licensee(s), where n is the number of 2 GHz MSS licensees then in operation and/or entering the frequency band, whichever is less.[14] This "default" assignment of spectrum to new entrants, although effective only for the interim until coordination discussions can be completed or a ruling obtained pursuant to the proposed Commission intervention process described below, offers later entrants a self-executing mechanism under which their prompt access to 2 GHz MSS spectrum is assured.

ICO and IUSG also have proposed a mechanism for timely Commission intervention when inter-system coordination has not achieved prompt results. At the same time that a new entrant becomes eligible to invoke the proposed default access

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[13] ICO Comments at 8-10; IUSG Comments at 9-12.

[14] IUSG Comments at 9-12 and Exhibit A.

mechanism, the new entrant also may file a declaration with the Commission of its inability, after 120 days of good-faith negotiations, to reach a coordination agreement with an operating 2 GHz MSS licensee.[15] Within ten days of filing the declaration, the new entrant may submit to the Commission a Petition for Coordination Determination, commencing an accelerated procedure under which a Commission decision on coordination between the systems may be promptly obtained.

Finally, ICO and IUSG have urged the Commission to adopt a mechanism that ensures equitable sharing of the cost of relocating terrestrial incumbents, if the Commission requires 2 GHz MSS systems to bear those costs.[16]

C. The Commission's Part 25 Regulations Sufficiently Protect Government Space Operations In the 2200-2290 MHz Bands

In response to the Commission's request for comment on potential adjacent band interference between 2 GHz MSS downlinks in the 2165-2200 MHz band and Government space research, earth exploration-satellite and space operation space system downlinks in the 2200-2290 MHz band,[17] The National Telecommunications and Information Administration ("NTIA") suggests that the Commission may have to adopt new power limits and out-of-band emission limits for the 2 GHz MSS downlink band.[18]

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[15] ICO Comments at 9-10; IUSG Comments at 17-18.

[16] As ICO noted in its comments, however, ICO continues to maintain that the costs of transitioning terrestrial wireless incumbents out of global MSS spectrum should be borne by those incumbents under traditional spectrum management practices and should not be imposed upon global MSS systems operating at 2 GHz. ICO Comments at 8 n.19. ICO also reiterates its request, made in its pending Petition for Further Limited Reconsideration in Docket No. 95-18, that new BAS licenses and BAS and FS renewals be conditioned to require the relevant BAS and FS licensees to operate on a secondary basis and pay their own relocation expenses. As ICO pointed out in its comments, by granting and renewing these licenses on a secondary basis without reimbursement rights, the Commission may very well eliminate the need for later arrivals to pay relocation costs at all. ICO Comments at 8.

[17] *NPRM* at ¶ 115.

[18] NTIA Comments at 21.

The Commission's Part 25 rules, however, specify power limits and out-of-band emission limits that have proven themselves adequate for this purpose. Accordingly, the Commission should not adopt new rules to address potential interference between 2 GHz MSS downlinks at 2165-2200 MHz and Government space operations.

D. Iridium's Claim That The European Licensing Process Gives ICO An Unfair Advantage Is Entirely Unfounded

Iridium, in comments plainly aimed at ICO, identifies what it believes to be a global first-mover advantage that supposedly would be exacerbated by the negotiated entry option. Specifically, Iridium argues that a non-U.S. licensed system is likely to secure access to one-half the European 2 GHz MSS band that will become available in 2001, and also is likely to be one of the first entrants into the U.S. market. According to Iridium, under negotiated entry, that same non-U.S. licensed entity will control all 2 GHz MSS spectrum in the U.S. and Europe, giving it no incentive to "effect coordination on a global basis."[19] Iridium's argument, however, is without merit on several grounds.

First, and perhaps most fundamentally, Iridium's quarrel is not with the negotiated entry option but with the European spectrum assignment process. If ICO could, in fact, obtain access to all of the pre-2005 European spectrum (a scenario that depends, as noted below, on a mischaracterization of the European assignment process), then any anti-competitive effect of such exclusive access would be the same, whether ICO obtained access to the U.S. market under negotiated entry or one of the other options suggested in the *NPRM*. No matter how the U.S. spectrum was assigned, ICO would for some period of time be the only MSS carrier with access to both U.S. and European spectrum at 2 GHz.

In fact, however, Iridium's description of the European assignment process has no basis in fact. As the attached letter from the Chairman of the CEPT European

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[19] Iridium Comments at 19-21.

Radiocommunications Committee points out, the current European 2 GHz assignment decisions, which were developed in full consultation with Iridium, have given U.S. MSS systems "access to the full bandwidths requested" by those systems. As the attached letter also points out, the European authorities are fully prepared to undertake a review of their decisions and "designate spectrum at 2 GHz MSS bands to new [MSS] . . . systems on the basis of European needs as well the interest shown by the industry."[20] Such a review can be undertaken at any time and will consider additional spectrum for systems "to be brought into operation after 1 January 2001 . . ."[21] Accordingly, there is no basis for Iridium's assumption that a non-U.S. licensed MSS operator will secure and maintain assess to one-half of the European MSS band until 2005.

Finally, Iridium's claim is directed only at the version of negotiated entry described in the *NPRM,* which does not include the protections for later entrants developed in the ICO/IUSG proposal.

E. ICO's Plan Ensures That Default Access To Spectrum And Commission Intervention Rarely Will Be Required

Under the processing plan proposed by ICO/IUSG, a new MSS entrant at 2 GHz will be entitled to coordinate with existing MSS users of 2 GHz spectrum after that system has commenced ITU frequency coordination and is within one year of launch of its first system satellite under an unconditional launch contract – *i.e.,* a probable two years before the new entrant's commencement of service. Accordingly, under the ICO/IUSG approach only MSS systems that have satisfied the Commission's implementation milestone requirements for satellite construction and are reasonably close to satellite launch will coordinate their spectrum with operational 2 GHz MSS systems.

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[20] Attachment A, letter from Patrick Carey, Chairman, CEPT European Radiocommunications Committee, to Magalie Roman Salas, Secretary, Federal Communications Commission (Mar. 22, 1999).

[21] *Id.*

This approach also ensures that terrestrial incumbents need not relocate - and the costs of relocating those incumbents will not be incurred - until required by an MSS system that is likely to provide service to the public. At the same time, the ICO/IUSG proposal ensures that all entrants will have ample time to coordinate with operational 2 GHz MSS systems before access to 2 GHz spectrum is needed.

The process described in the comments of ICO and IUSG fully addresses the limited objections of other applicants to the negotiated entry option. Because the ICO/IUSG proposal prevents the exercise of "squatter's rights" by early entrants, avoids lengthy inter-system coordination discussions before systems that are prepared to serve customers can do so, and leaves decisions concerning system design and choice of spectrum for initial operation to the market rather than regulatory *fiat*, the Commission should adopt that approach in preference to all other proposed options.

II. THE COMMENTERS HAVE NOT DEMONSTRATED THE SUPERIORITY OF ALTERNATIVE APPROACHES

A number of commenters share ICO's concern that both the traditional and "flexible" band plans are rigid and inefficient. Despite these concerns, some commenters urge the Commission to license 2 GHz MSS providers through a traditional band plan or variants of the flexible option.[22] The commenters have not demonstrated, however, that their proposed approaches will avoid the acknowledged inflexibility and inefficiency that are inherent to all *a priori* space segment licensing plans. Accordingly, the Commission should reject those proposals.

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[22] As ICO discusses further at pp. 16-17, BellSouth - a non-applicant for 2 GHz MSS spectrum - urges the Commission to assign this spectrum through competitive bidding. BellSouth's arguments, however, rely on a misreading of the applicable law and disregard the public interest consequences of auctions of spectrum for global MSS services.

A. A Traditional Band Plan Will Not Serve The Public Interest

As ICO and IUSG point out in their comments, traditional band plans are an inherently wasteful means of assigning spectrum, particularly where applicants for that spectrum are in widely differing stages of system development.[23] The traditional band plan option proposed by the Commission,[24] for example, would require lengthy and arduous band planning and domestic, inter-system coordination discussions before any 2 GHz MSS operator can begin service, and will assign spectrum equally to systems that are prepared to offer service and those that will not be ready for several years, if ever. Under this option, spectrum also will be assigned on the basis of proposed system designs that in many cases are preliminary and subject to substantial change. This option will cause much of the available spectrum to remain unused for an indeterminate time and will likely require substantial change to the plan as system designs are modified in response to real-world engineering and financial constraints. The traditional plan also imposes artificial regulatory constraints on what should be market-driven decisions. Notably, early entrants will be deprived of the ability to operate initially in the manner that would best suit their systems and 2 GHz licensees will lose all flexibility in relocation coordination with terrestrial incumbents.

A number of commenters share ICO's concerns. Celsat, for example, objects that the traditional band plan will over-assign spectrum to systems that never will offer service and "require the Commission to reclaim [that spectrum] from defaulting licensees before reassigning it."[25] MCHI, similarly, points out that a traditional plan will "cause inefficient spectrum warehousing" by less prepared systems and assign inadequate

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[23] ICO Comments at 10-11; IUSG Comments at 27-34.

[24] The Commission proposes a traditional band plan, according to which the available 2 GHz MSS spectrum is divided by the number of 2 GHz MSS applicants. *NPRM* at ¶¶ 44-45.

[25] Celsat Comments at 13.

spectrum to more prepared systems, while reducing the incentives of all applicants to build out their facilities.[26] TMI points out that the proposed traditional band plan assignments "preclude future growth potential for those operators who require additional spectrum,"[27] and Inmarsat states flatly that the traditional plan "would suffer from the total loss of any flexibility whatsoever."[28]

Some commenters, nevertheless, propose that the Commission use a traditional band plan to assign 2 GHz MSS spectrum. Those proposals only underscore the intractable drawbacks of such plans, however, by suggesting refinements that mitigate some problems of *a priori* planning only by aggravating other problems.

Constellation, for example, proposes to make the traditional band plan more flexible by introducing a complex series of coordination negotiations and Commission interventions. Specifically, Constellation recommends the assignment of specific bands within the available spectrum following an election by applicants to take shareable or non-shareable assignments.[29] This initial election would be followed by voluntary negotiation among applicants of "an initial assignment plan," followed by imposition of an initial assignment plan by the Commission in the event those discussions do not succeed, followed by further negotiations to modify initial assignments "as systems are implemented," followed by yet more Commission intervention if agreement cannot be reached.[30] Unfortunately, in its effort to avoid inflexibility Constellation's proposal aggravates another problem of the traditional plan – *i.e.,* the need for lengthy band

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[26] MCHI Comments at 10-11.

[27] TMI Comments at 7.

[28] Inmarsat Comments at 11.

[29] Constellation Comments at 19-21.

[30] *Id.* at 20.

planning and coordination negotiations among applicants, regardless of their stage of development, before any 2 GHz MSS system can begin to offer services to customers.

Boeing also recommends adoption of a traditional band plan, although reluctantly and with the express reservation that the Commission continues to explore alternatives.[31] Boeing's chief concern with the traditional approach is that the Commission may under-assign spectrum to systems that actually will serve customers, and Boeing therefore insists that each applicant must be authorized to operate initially in at least 3.75 MHz of paired spectrum.[32] In guarding against under-assignment of spectrum, however, Boeing does not address the associated problem of warehousing by "paper" systems of the 3.75 MHz of paired spectrum per system that the band plan, as endorsed by Boeing, will assign; nor does Boeing suggest how the Commission should address the delay that initial system coordination among all applicants will cause, or the traditional band plan's forced, premature election among multiple access technologies.

The commenters that favor traditional band plans argue - although with definite reservations - that fixed assignments of specified spectrum may encourage investment, promote international coordination, eliminate uncertainty concerning relocation of incumbents and blunt the advantages that early entrants otherwise might enjoy.[33] These

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[31] Boeing Comments at 22.

[32] Boeing Comments at 19.

[33] In fact, there is no evidence for the claim that the lack of a traditional band plan will hamper the ability of systems to obtain financing. As investment bankers' letters filed in this proceeding show, a satellite "operator does not necessarily require . . . access to specific spectrum frequencies as a precondition for financing or assistance in obtaining financing." Letter from Michael K. French, Baring Forman Selz, LLC, to Magalie Roman Salas (Mar. 4, 1999); *see also* letter from Donaldson, Lufkin & Jenrette Securities Corporation to Magalie Roman Salas, Secretary, Federal Communications Commission (Mar. 5, 1999) (stating that "we generally do not require the [satellite] operator to have government assurances that it will have access to specific spectrum frequencies as a precondition for financing . . ."). Copies of these letters are appended to IUSG's comments in this proceeding.

supposed advantages, however, are illusory and the attempt to achieve them will replace rapid entry and market-driven decisions with delay and regulatory constraint. As ICO and IUSG point out, a negotiated entry option that guarantees later entrants' access to sufficient spectrum will encourage investment without needless delay in the introduction of new MSS services.

B. The Proposed Flexible Approach Has The Same Defects As The Traditional Band Plan

As ICO and IUSG pointed out in their comments, the proposed flexible licensing option is no more efficient than the traditional band plan.[34] The flexible plan, no less than the traditional band plan, inevitably will require lengthy band planning and coordination discussions among *all* applicants - regardless of their preparedness to offer service - before the initial assignments are finalized. Similarly, the flexible plan, no less than the traditional plan, will force applicants to make premature choices between multiple access technologies, setting the Commission up for substantial changes to the plan when those system designs change. Finally, the flexible approach, like the traditional plan, deprives applicants of the ability to operate initially based upon reasonable technical and economic considerations. Accordingly, both plans replace market-based decision making with rules that inevitably include a strong element of arbitrariness.

Some of the commenters echo the concerns expressed by ICO and IUSG. Boeing argues that the flexible plan under-assigns spectrum for initial operation and leaves expansion spectrum fallow despite the "inevitable fact " that some systems will default and supply ample expansion spectrum for the surviving 2 GHz MSS operators.[35] Constellation argues that the flexible plan will force systems to choose prematurely

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[34] ICO Comments at 10-11; IUSG Comments at 27-34.

[35] Boeing Comments at 21.

between multiple access techniques, under-assign initial spectrum to some systems and encourage operators to use their initial assignments inefficiently in order to qualify for expansion spectrum.[36] Globalstar raises a number of objections to the flexible plan, including the insufficiency of the initial spectrum assignments under that plan, the lack of a clear standard for ascertaining a system's need for expansion spectrum and the need for "yet another proceeding to award access to the expansion spectrum, which is likely to be long, expensive and ultimately crippling to licensees."[37]

Those commenters that urge adoption of a flexible plan do not suggest a practical, effective way to solve these problems, and in some cases propose rules that even exacerbate them. MCHI, for example, insists that assignment of core spectrum under the flexible plan should be preceded by band sharing discussions among CDMA applicants that admittedly "may prove formidable given the sheer number of parties to the negotiations, the disparate technical parameters of the Applicants' MSS systems, the varied dates of commencement of operation of the Applicants, and the competitive nature of the Applicants' relationship."[38] MCHI also recommends additional Commission proceedings to ascertain applicants' compliance with a two-part test before access to expansion spectrum will be granted.[39] Celsat, while acknowledging that over-allocation of core spectrum to systems that will not use it is "virtually certain to happen" under the flexible plan,[40] proposes to reduce this inefficiency by absorbing the core spectrum of systems that do not meet their milestones automatically into the pool of expansion

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[36] Constellation Comments at 11-12.

[37] Globalstar Comments at 16.

[38] MCHI Comments at 7.

[39] *Id.* at 8-9.

[40] Celsat Comments at 10.

spectrum.[41] Inmarsat proposes a flexible plan modeled on European allocation decisions, with periodic review of individual system's usage and requirements based on operator reporting.[42] Finally, TMI supports the flexible option as proposed by the Commission.[43]

The advantages that these commenters associate with the flexible plan will not be achieved by that option. Those advantages can be realized, however, by the ICO/IUSG version of negotiated entry without the delay and rigidity that are inherent in the flexible plan.

C. The Comments Provide No Basis For Adoption Of A Competitive Bidding Approach

BellSouth, alone among the commenters in this proceeding, endorses competitive bidding as its favored means of assigning 2 GHz MSS spectrum. BellSouth urges two grounds for its position: first, that the Commission is wrong in concluding that the Communications Act requires it to avoid mutual exclusivity where feasible; and second, that auctions will ensure that only financially sound applicants gain access to 2 GHz spectrum. Neither of these arguments has merit.

BellSouth's reading of section 309(j) of the Communications Act, in particular, is unsupported and incorrect. In support of its view of section 309 (j)(6)(E), BellSouth cites only the D.C. Circuit decision in *DIRECTV, Inc. v. FCC*,[44] in which the court found that it was not arbitrary and capricious for the Commission to auction certain reclaimed DBS channels after first finding that a proposed pro-rata distribution plan was not feasible. Contrary to BellSouth's apparent belief, the court did not find that the Commission may disregard the statutory requirement to take specific measures to avoid mutual exclusivity;

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[41] *Id.*

[42] Inmarsat Comments at 4.

[43] TMI Comments at 6.

[44] 110 F. 3d 816 (D.C. Cir. 1997).

instead, the court found that the Commission had explored specific engineering and negotiated alternatives to mutual exclusivity and had found them wanting.[45] Nothing in the *DIRECTV* decision, therefore, relieves the Commission of its statutory obligation to avoid mutual exclusivity in this proceeding if possible, and to adopt a competitive bidding approach only where a finding of mutual exclusivity cannot reasonably be avoided.

In addition to its mischaracterization of the controlling law, BellSouth entirely ignores the drastic anti-competitive and anti-consumer potential of competitive bidding for 2 GHz MSS spectrum. As ICO and IUSG point out in their comments, auctions of U.S. spectrum for services that will be provided globally will do far more than simply weed out less qualified operators (a goal that can be served at least as well through implementation milestones). Auctions in this case will create an indeterminate level of uncertainty for global operators, lead to inflated bids by regional 2 GHz MSS systems and raise costs needlessly for consumers.[46] BellSouth's comments do not provide a basis for such a drastic decision, which clearly would not serve the public interest.

D. Globalstar's "All Shared Band" Plan Includes Elements Of Negotiated Entry But Proposes A Variant Of That Option That Would Cause Needless Delay

Globalstar's comments correctly point out that the traditional and flexible band plan options are needlessly restrictive and do nothing to ensure that assigned spectrum is not warehoused by paper systems. Accordingly, Globalstar opposes those plans and

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[45] *Id.* at 828.

[46] As a recent publication of this Commission points out, auctions can chill the development of global systems by creating a precedent for "sequential auctions in countries where . . . operator[s] would like to provide service," raising the potential cost of entering the global MSS market and causing "uncertainty to the satellite operator as to the final costs of the system." Federal Communications Commission, *Connecting the Globe: A Regulator's Guide to Building a Global Information Community,* § 8, <http://www.fcc.gov/connectglobe/sec8.html>.

proposes its own version of the negotiated entry option. Globalstar's plan, however, includes a preliminary coordination phase in which "all systems would be required to implement a sharing design."[47] These designs would be developed in the course of discussions among all applicants to "determine basic system parameters for sharing the 2 GHz spectrum."[48] Following this initial negotiation, all applicants would be authorized to operate in all of the available spectrum on a coordinated basis. As "each system is ready to initiate service, all operational systems [would] be required to coordinate with the new system to assure optimal service for all systems."[49] As Globalstar acknowledges, its "all shared band" plan "does not necessarily permit each system to choose its own system design. . . ."[50] In fact, the proposed preliminary negotiation among all applicants not only will be long and arduous, but appears to be an effort to require all applicants to adopt CDMA technology in order to share the band. This proposal not only will impose indefinite delay in the initiation of new service; it will place the Commission in the position of choosing the technology under which licensees will operate -- including non-U.S. licensed systems as to which the Commission cannot dictate system designs -- and will impose a crippling disadvantage on systems, such as ICO, that have completed their system design and are well along in construction of their space segment and supporting ground infrastructure, including gateway (feeder link) earth stations.

As ICO and IUSG point out in their comments, a principal benefit of the negotiated entry option is that it permits operators to commence service without awaiting the outcome of lengthy coordination among systems and permits 2 GHz MSS operators

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[47] Globalstar Comments at 11.

[48] *Id.* at 12

[49] *Id.*

[50] *Id.*

flexibility in their technological choices.[51] Globalstar's variant of the negotiated entry option eliminates both of these critical advantages and should be rejected.

III. QUALIFICATION REQUIREMENTS

ICO agrees with NTIA that there is no need at this time for regulatory provisions for AMS(R)S at 2 GHz.[52] As NTIA points out, there is no traffic requirement for AMS(R)S in the 2 GHz bands at this time, and any FCC regulation concerning AMS(R)S at 2 GHz should be deferred until the existing ITU Radio Regulation footnotes addressing AMS(R)S preemption are amended and the ITU-R Working Document toward a Draft New Recommendation on MSS provision of AMS(R)S is completed. Accordingly, the Commission's 2 GHz MSS rules should make no specific provision for AMS(R)S service.

IV. NON-SERVICE LINK ISSUES

A. MCHI Does Not Support Its Claim Of Inability To Coordinate With Feeder Links At 7 GHz

ICO opposes, and in fact is mystified by, MCHI's claim that it can coordinate its requested 7 GHz feeder links with authorized Big LEO feeder links at 7 GHz (including its own) but "does not believe that it is possible to accommodate additional feeder links in these bands without incurring prohibitively high and unjustifiable costs to prevent interference."[53] ICO is in the process of coordinating its 5 and 7 GHz feeder links with other NGSO systems and has encountered no claims, in the course of those discussions, that ICO's feeder links cannot be accommodated. Accordingly, and especially because MCHI has offered no support for its claim, the Commission should give MCHI's request no weight.

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[51] ICO Comments at 6-8; IUSG Comments at 6-12.

[52] NTIA Comments at 18.

[53] MCHI Comments at 25.

B. ITU-R Recommendations Should Be Used For Establishing Coordination Distances Between ARNS Stations And MSS Feeder Link Stations In The 5091-5250 MHz Band

ICO agrees with NTIA that ITU-R Recommendation S. 1342 is the appropriate basis for coordination of MSS feeder links operating in the 5 GHz bands referred to in that Recommendation with International Civil Aviation Organization (ICAO) Standard Microwave Landing System (MLS) systems operating in the 5030-5091 MHz portion of the band.[54] Specifically, ICO urges that compliance with the "Method for Determining Coordination Distances" set out in Annex 1 of ITU-R S. 1342 should satisfy any requirement for coordination between 5 GHz MSS feeder links operating in the applicable bands referenced in the Recommendation and the MLS operating in the 5030-5091 MHz portion of the band.

V. SERVICE RULES

The comments generally agree that 2 GHz service rules should promote new competition with minimal regulatory burdens. For example, commenters generally agree that 2 GHz MSS systems should not be classified as common carriers. Commenters also generally recommend a license term for MSS operators of greater than 10 years, in order to match the license term more closely to the expected useful life of 2 GHz MSS satellites, and support the imposition of implementation milestones to ensure that valuable spectrum is not hoarded by systems that are not preparing to serve customers.

Some commenters, however, support requirements that would impose excessive burdens on 2 GHz MSS operators or discriminate against some systems in favor of others. The Commission should reject these proposals as contrary to the public interest.

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[54] NTIA Comments at 6-7; Recommendation ITU-R Rec. S. 1342, *Method for Determining Coordination Distances, in the 5 GHz Band, between the International Standard Microwave Landing System Stations Operating in the Aeronautical Radionavigation Service and Non-Geostationary Mobile Satellite Service Station Providing Feeder Uplink Services* ("ITU-R Rec. S. 1342").

A. The Commission Should Adopt Effective Implementation Milestones

A number of commenters support the Commission's proposal to impose implementation milestones as a means of eliminating systems that are not preparing to serve customers, and some commenters propose more stringent milestones than those described in the *NPRM*.[55] ICO continues to support the adoption of effective implementation milestones, which should include the milestone proposed by ICO and IUSG for intersystem coordination between operating 2 GHz MSS systems and later entrants.[56] Taken together, the Commission's proposed milestones and the ICO/IUSG intersystem coordination schedule will prevent unprepared systems from hoarding spectrum or burdening operational systems and the Commission with premature coordination negotiations and dispute resolution proceedings.[57]

Globalstar, in particular, has proposed a set of implementation milestones for NGSO 2 GHz MSS systems that will permit the Commission to identify more readily those systems that are not likely to become operational.[58] Notably, Globalstar proposes to supplement the Commission's construction, launch and operation milestones with required reports on satellite manufacturing milestones, completion of the critical design review, evidence of a binding agreement to launch the minimum number of satellites

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[55] *NPRM* ¶¶ 83-90; ICO Comments at 17; IUSG Comments at 38-39; Constellation Comments at 25; Globalstar Comments at 36; Iridium Comments at 43.

[56] As noted earlier, ICO and IUSG both proposed in their comments that newly entering MSS systems at 2 GHz should be permitted to coordinate spectrum with operational systems after they have commenced international spectrum coordination and are within one year of satellite launch under an unconditional launch contract.

[57] ICO also urges that unused spectrum, as determined by an MSS licensee's failure to meet milestones, should not be subject to a second processing round until after all milestone dates established in this processing round have passed. At that time, spectrum taken up by systems that have failed to meet implementation milestones should be available to participants in this processing round that have met milestones.

[58] Globalstar Comments at 35-40.

required to provide a continuous service within the United States and evidence of a binding agreement for the construction and installation of gateway earth stations.[59] ICO supports, in principle, Globalstar's NGSO 2 GHz MSS milestones, with necessary adjustments to accommodate specific systems and a set of counterpart implementation milestones that would be appropriate for GSO 2 GHz MSS systems.[60]

B. 2 GHz MSS Systems Should Not Be Required To Provide E911 Service

Most commenters oppose the imposition of E911 requirements on 2 GHz MSS operators. Celsat, BellSouth and the United States Coast Guard, however, urge the Commission to impose those requirements upon all 2 GHz MSS systems regardless of those systems' stages of development. Celsat argues that an E911 requirement "at this stage of the 2 GHz MSS proceeding is fully consistent with the technological capabilities of MSS systems and will ensure that those systems - many of which may not initiate service for many years - will be designed from the outset to provide these valuable services."[61] Similarly, BellSouth argues that "it probably will be easier for the MSS providers to design the functionalities into their systems now rather than later, especially to the extent that components with those capabilities must be included in the spacecraft."[62]

Finally, the Coast Guard urges the Commission to require "all such systems to have position location capabilities at least as accurate as the 125-meter RMS standard"

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[59] *Id.* at 37-38.

[60] Adoption of Globalstar implementation milestones also will address the concerns of those commenters that continue to urge the Commission to adopt financial qualification requirements for 2 GHz MSS systems as a means of identifying systems that will not become operational.

[61] Celsat Comments at 30.

[62] BellSouth Comments at 8.

and require any MSS system to be capable of providing: (a) location of a call's origin; (b) the mobile transmitter subscriber's name; (c) the mobile transmitter subscriber's call back number; (d) the priority of the call; and (e) routing information to the nearest public service answering point.[63]

The comments of BellSouth, Celsat and the Coast Guard substantially understate the impact of these proposed requirements on systems, like ICO's, that have reached an advanced stage of system design and construction. To require substantial redesign now would drastically increase the cost of all 2 GHz MSS service, ultimately raising the cost of that service for end users, and would disproportionately burden and delay those operators that have been most diligent in their preparations to serve consumers. Such a requirement also would harm competition by imposing on 2 GHz MSS operators a burden that is not imposed upon their Big LEO MSS competitors. By imposing a burden that will fall far more heavily on some systems than on others, the proposed E911 requirements would be anti-competitive as well as needlessly burdensome.

C. The Commission Should Not Mandate MSS Service To Unserved Communities

As ICO pointed out in its comments, MSS systems are uniquely suited to provide telecommunications services to remote areas and unserved or underserved communities. However, as ICO also pointed out, the best way to ensure that 2 GHz MSS providers serve remote communities is to reduce regulatory burdens that will artificially inflate the cost of MSS service to end users. Although a number of commenters agree with ICO, Celsat proposes that applicants that serve remote or unserved areas should be granted preferential access to expansion spectrum.[64] ICO opposes this suggestion, which could have the unintended result of making expansion spectrum available to operators that will

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[63] Coast Guard Comments at 7-8.

[64] Celsat Comments at 29.

not make efficient use of it at the expense of systems that will. Access to 2 GHz spectrum should be based upon the readiness of MSS systems to provide service - not on artificial distinctions among different classes of customers and communities that all CMRS providers -- including providers of MSS service to end users -- already have a common-carrier obligation to serve.[65]

D. There Is No Need For Anti-trafficking Rules Specific To ICO

As ICO and IUSG pointed out in their initial comments in this proceeding, no new anti-trafficking rule is required to prevent speculation in bare 2 GHz MSS licenses and resultant unjust enrichment of licensees. It is unlikely that any 2 GHz MSS system has undergone the expense of preparing and prosecuting an MSS application for purely speculative reasons.[66] And if the Commission had any cause for such concern, adoption of the ICO/IUSG variant of negotiated entry, combined with stringent implementation milestones, would prevent purely speculative systems from holding spectrum without building out their systems.

If the Commission nonetheless decides that new anti-trafficking rules are in the public interest, ICO urges the Commission to reject Iridium's specific "anti-trafficking" rule that would prohibit ICO from transferring spectrum between ICO and Inmarsat unless the Commission first determines that all systems not affiliated with Inmarsat and ICO have equitable access to spectrum in every country and market in which Inmarsat

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[65] Because MSS operators must recover their operating and other costs from a significantly smaller number of calls than PCS and cellular operators, the imposition of relocation costs on MSS will have a much greater effect on MSS customers' per-call prices than the same requirement would have for terrestrial wireless customers. As a result, despite the unique ability of MSS to serve unserved Indian reservations, the imposition of relocation costs on MSS will have an inordinate negative impact on the cost (and price) of MSS service to these areas.

[66] *See* IUSG Comments at 42.

and ICO have access.[67] By proposing an obligation that would apply to ICO but not other 2 GHz MSS systems, Iridium asks the Commission to violate its own policy as announced in the *DISCO II Order*; and by conditioning transfers of spectrum upon the satisfaction of conditions over which Inmarsat and ICO have no control, the Commission would be acting arbitrarily and capriciously.[68] Instead of Iridium's ill-considered proposal, the Commission should adopt only those anti-trafficking rules that apply equally to all 2 GHz MSS systems.

E. There Is No Need For An Exclusionary Arrangements Rule Specific To ICO

ICO's comments express support for the Commission's view that 2 GHz MSS providers should not be permitted to enter into exclusionary arrangements - *i.e.*, "agreements [s] between a space station operator or service provider that offers a particular satellite system as the only permissible facility through which to obtain a particular satellite service between the United States and another country."[69] As ICO also pointed out in its comments, however, the market-opening commitments made by the United States in the World Trade Organization ("WTO") Basic Telecom Agreement and the requirements imposed by the Commission's *DISCO II Order* already include this prohibition, rendering the addition of this requirement to the 2 GHz MSS service rules unnecessary.[70]

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[67] Iridium Comments at 8.

[68] Transfers of spectrum between operating systems are not "trafficking" at all and should not be included in an anti-trafficking rule. In fact, Iridium's proposed rule, if taken seriously, would prevent ICO and Inmarsat from participating in inter-system coordination discussions that result in one of those companies giving up spectrum in favor of the other.

[69] *NPRM* at ¶ 103.

[70] ICO Comments at 22; *Amendment of the Commission's Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Satellite Service in the United States*, 12 FCC Rcd 24094, 24166 (1997) (*DISCO II Order*).

The comments in this proceeding generally support the proposed prohibition on exclusive arrangements. Boeing's comments, however, go beyond the Commission's proposal and revive Boeing's demand, first made in May of 1998, that ICO's authorization be conditioned "on an obligation to refrain, on a continuing basis, from using its status as an Inmarsat affiliate to inhibit the ability of other 2 GHz MSS systems from participating on an equal footing in international markets."[71] Boeing's proposed condition of ICO's authorization goes well beyond the Commission's definition of "exclusive arrangement" and ignores the fact that Inmarsat now is privatized and has an interest in ICO of less than 10 percent. Also, the FCC can address anti-competitive conduct quite effectively without imposing discriminatory conditions on licenses. Accordingly, it is neither appropriate nor necessary for the Commission to make Boeing's demand a condition of ICO's authorization.

VI. INTERSERVICE SHARING

NTIA contends that the out-of-band emission limits for the 2 GHz MSS mobile earth terminals are inadequate to protect Global Navigation Satellite System ("GNSS") receivers.[72] ICO believes that the limits represented in ITU-R M. 1343, of -70dBW/MHz across the band, are appropriate. There is no need for a narrow band limit of -80dBW in 700 Hz given the frequency separation from transmitting terminals. The application of such a limit also would have a negative impact upon the status of the ITU Recommendation, which was developed to facilitate global circulation of mobile earth terminals and does not include the proposed -80dBW requirement.

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[71] Boeing Comments at 36-37.

[72] NTIA Comments at 9-12.

VII. ACCESS TO THE U.S. MARKET FOR NON-U.S. LICENSED SYSTEMS SHOULD NOT BE CONDITIONED UPON SUCCESSFUL INTERNATIONAL COORDINATION

The *NPRM* notes that this is the first proceeding in which the Commission has developed service rules and coordination policies that will apply to a processing round involving letters of intent filed by non-U.S. licensed satellite systems.[73] Accordingly, the Commission asks commenters to address whether "designations of spectrum for non-U.S. licensed systems should be conditioned in some manner on successful coordination internationally."[74]

ICO opposes any such condition. The Commission is not responsible for coordination of non-U.S. licensed systems and cannot, therefore, require other countries to accept its designation of U.S. spectrum for non-U.S. licensed systems. Such a requirement, in fact, might violate the commitments of the United States under the WTO Basic Telecom Agreement. Accordingly, the Commission should not condition access to the U.S. market on successful international coordination.[75]

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[73] *NPRM* at ¶ 110.

[74] *Id.*

[75] *See* Globalstar Comments at 47-48.

CONCLUSION

In order to bring new choices to consumers with a minimum of delay, the commission should adopt a spectrum assignment approach and service rules that facilitate rapid entry by qualified systems, minimize disruption and cost to MSS systems and terrestrial incumbents, and avoid warehousing of spectrum by systems that are not preparing to serve consumers. The ICO/IUSG proposal, which minimizes delay and regulatory cost while fully protecting the legitimate interests of all 2 GHz applicants, best serves these goals and should be adopted.

Respectfully submitted,

By: _____

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Date: July 26, 1999

ATTACHMENT A

EX PARTE OR LATE FILED

European Conference of Postal and Telecommunications Administrations

European Radiocommunications Committee

E R C

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FCC MAIL ROOM

Ms Magalie Salas,
Secretary,
Federal Communications Commission,
The Portals,
445 Twelfth Street S.W.,
Washington D.C. 20554,
United States

Ref: Ex Parte
ET Docket No. 95-18
File 188-SAT-LO1-9A

22 March 1999

Dear Ms Salas,

EUROPEAN S-PCS REGULATORY FRAMEWORK

The European Radiocommunications Committee (ERC) has been informed of the on-going discussions in the United States on the access to 2 GHz Mobile Satellite Service (MSS) spectrum and, in particular, of the recent Ex-Parte presentations (ref. 1 and 2) made by Iridium, in which references have been made to the planning of the 2 GHz MSS frequency bands within Europe. More Specifically, the Iridium's January 20, 1999 Ex Parte presentation states " .. that no US-licensed 2 GHz MSS system will be able to access spectrum in the 2 GHz bands in Europe until at least the year 2005..". ERC, having considered the matter, have come to the opinion that these references made to the European position could have resulted from a misunderstanding of the European regulatory framework, and it was agreed that I, as the chairman of the ERC, should write to you to clarify the European position.

EUROPEAN S-PCS REGULATORY FRAMEWORK

The MSS systems operating in the bands 1610 – 1626.5 MHz, 2483.5 – 2500 MHz and 1980 – 2010 MHz and 2170 – 2200 MHz and providing personal communications have been addressed within a "family of Decisions" adopted by CEPT under the title of "Satellite –Personal Communications Services" or S-PCS. The ERC Decisions are:

ERC Decision (97)03: "on the Harmonised Use of Spectrum for Satellite Personal Communication Services (S-PCS) operating within the bands 1610-1626.5 MHz, 2483.5-2500 MHz, 1980-2010 MHz and 2170-2200 MHz";

ERC Decision (97)04: "on transitional arrangements for the Fixed Service and the Mobile-Satellite Service in the bands 1980-2010 MHz and 2170-2200 MHz in order to facilitate the harmonised introduction and development of Satellite Personal Communications Services;

ERC Decision (97)05: "on free circulation, use and licensing of Mobile Earth Stations of Satellite Personal Communications Services (S-PCS) operating within the bands 1610-1626.5 MHz, 2483.5-2500 MHz, 1980-2010 MHz and 2170-2200 MHz within the CEPT.

../.

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The CEPT ECTRA committee has also adopted a Decision on S-PCS:

ECTRA Decision (97)02 "on harmonisation of authorisation conditions and co-ordination of procedures in the field of Satellite Personal Communications Services (S-PCS) in Europe, operating within the bands 1610-1626.5 MHz, 2483.5-2500 MHz, 1980-2010 MHz and 2170-2200 MHz.

These Decisions were adopted after extensive consultations with industry. I understand most US S-PCS companies, including Iridium, were directly involved in the consultations. The frequency table given in the ERC Decision (97)03 resulted from these extensive consultations, and accurately reflects the proposals made by industry to gain access to the frequency bands concerned, by 1 January 2001. It should be noted that spectrum had been designated to all S-PCS systems – proposed by industry - meeting certain initial criteria. You will see that S-PCS systems originating from the US had been given access to the full bandwidths requested, i.e. 1610 – 1626.5 MHz and 2483.5 – 2500 MHz bands, a total of 2 x 16.5 MHz . The 2 GHz bands allocated to MSS in Region 1 were also considered by the ERC, and according to the proposals made by industry ICO and Inmarsat, amongst others, had been given access to the bands 1995 – 2010 MHz and 2185 – 2200 MHz, a total of 2 x 15 MHz. There have been no subsequent proposals made with regard to the access to the access to the 2 GHz MSS bands.

The CEPT under the ERC Decision (97)03 and ECTRA Decision (97)02 have established a milestone based procedure to overcome the possibility of designating spectrum for paper satellites. This procedure is administered by the Milestone Review Committee.

The CEPT has already identified the bands 1980 – 2010 MHz and 2170 – 2200 MHz for MSS/S-PCS, incorporating the satellite component of UMTS (IMT-2000). My committee would further consider the need to designate spectrum at 2 GHz MSS bands to new S-PCS or satellite component of UMTS systems on the basis of European needs as well as the interest shown by industry. Designation of spectrum for new systems, which are to be brought into operation after 1 January 2001, may be facilitated with the review of the Decision ERC (97) 03. This review may take place, if necessary, after two years from the date of the adoption of this Decision. ERC Decision (97)03 was adopted on 30 June 1997.

Yours sincerely,

Patrick Carey
Chairman
CEPT European Radiocommunications Committee

Ref 1: Iridium Ex Parte presentation dated January 20, 1999.
ET Docket No. 95-18
IB Docket No. 96-132

Ref 2: Iridium Ex Parte presentation dated January 27, 1999
ET Docket No. 95-18
IB Docket No. 96-132

Copy to Mr. N. Argyris, Director, DG XIII, European Commission

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CERTIFICATE OF SERVICE

I, James S. Bucholz, do hereby certify that copies of the foregoing **REPLY COMMENTS OF ICO SERVICES LIMITED** were delivered, by hand delivery, on this 26th day of July, 1999, to the following:

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