Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Richtec Incorporated	)	File No. SES-LIC-20020228-00442
	)	File No. SES-AMD-20020611-00981
Application for Blanket License to Operate	)	
up to 10,000 Mobile Earth METs in the	)	
1525-1544 MHz and 1626.5-1645.5 MHz	)	
Frequency Bands (E020074)	)	

ORDER AND AUTHORIZATION

Adopted: March 6, 2003 **Released:** March 7, 2003

By the Chief, Satellite Division, International Bureau:

I. Introduction

1. By this Order, we grant Richtec Incorporated (Richtec) blanket authority, subject to certain conditions and for a term of two years, to operate up to 10,000 half-duplex mobile earth terminals (METs) to provide mobile satellite services (MSS) in the United States via Inmarsat, Ltd. (Inmarsat) satellites in portions of the lower L-band.[1] Grant of this application will promote competition in the MSS market providing U.S. consumers and users with innovative and improved service at lower prices.

[1] The L-band encompasses frequencies from 1525-1544/1545-1559 MHz and 1626.5-1645.5/1646.5-1660.5 MHz. The frequencies 1525-1544 MHz and 1626.5-1645.5 MHz are referred to as the "lower L-band" and 1545-1559 MHz and 1646.5-1660.5 MHz as the "upper L-band." The band 1544-1545/1645.5-1646.5 MHz is limited to safety and distress communications in the MSS in accordance with Footnotes S5.356 and S5.365 to the Table of Frequency Allocations. *See* 47 C.F.R. § 2.106.

II. Background

2. Richtec is a U.S. corporation wholly-owned by Richtec PLC, a foreign company incorporated under the laws of England and Wales.[2] Richtec holds a Section 214 authorization to provide land mobile satellite services to domestic mobile earth stations using Inmarsat satellites in the East and West Atlantic and Pacific Ocean Regions.[3]

3. Richtec has filed an application to operate up to 10,000 half-duplex METs in the lower L-band in order to provide a mobile data service in the United States, known as "Inmarsat D+," via Inmarsat satellites.[4] The Inmarsat D+ service Richtec seeks to provide is a low cost, low data rate, two-way, short messaging and tracking service. The system design enables very compact METs to be built with an integrated Global Positioning Satellite (GPS) receiver antenna. According to Richtec, its Inmarsat D+ METs will provide U.S. consumers with low cost satellite communications for applications such as asset tracking and Supervisory Control and Data Acquisition (SCADA) systems.[5] SCADA systems provide real-time monitoring and control of production activities such as oil, gas and refinery operations.

4. No objections to this application were filed. The National Telecommunications and Information Administration (NTIA) submitted comments supporting the grant of Richtec's application, subject to certain conditions.[6]

III. Discussion

5. The ORBIT Act Analysis. On October 9, 2001, the Commission found that Inmarsat, formerly an intergovernmental satellite organization, had privatized in a manner consistent with the Open-Market Reorganization for the Betterment of Telecommunications Act (the ORBIT Act).[7] Consequently, in the *ORBIT Act Order*, the Commission authorized use of

[2] On May 15, 2002, the International Bureau granted a Petition for Declaratory Ruling filed by Richtec and found that it would not serve the public interest to prohibit Richtec's foreign ownership in excess of the 25 percent benchmark of Section 310(b)(4). *See* FCC Public Notice (International Authorizations Granted), Report No. TEL-00531 (rel. May 17, 2002).

[3] *See* FCC Public Notice, Report No. TEL-00522 (rel. April 25, 2002).

[4] Half-duplex METs are capable of receiving and transmitting data messages on the same channel, however, not simultaneously. Therefore, a half-duplex MET must finish transmitting before it can receive an incoming message.

[5] *See* Application of Richtec Incorporated to operate 10,000 Inmarsat D+ Mobile Earth Stations, File Nos. SES-LIC-20020228-00442 at Exhibit 5 (filed Feb. 22, 2002).

[6] Letter from James Vorhees, Acting Program Manager Spectrum Plans, National Telecommunications and Information Administration to Thomas Tycz, Chief, Satellite Division, International Bureau, FCC (September 20, 2002).

[7] *See COMSAT Corporation d/b/a COMSAT Mobile Communications et al.*, Memorandum Opinion, Order and Authorization, 16 FCC Rcd 21661, paras. 58-60 (2001) (*ORBIT Act Order*).

Inmarsat for non-core services to, from, and within the United States.[8] Consequently, U.S. customers are now able to use the Inmarsat satellite system for a variety of aeronautical, maritime and land mobile satellite communications services, including voice, data, facsimile and high-speed Internet. These authorizations have increased competition among mobile satellite services and provide additional service options for U.S. consumers.

6. The Commission conditioned the authorizations set forth in the *ORBIT Act Order* on Inmarsat conducting an initial public offering (IPO) by December 31, 2001 consistent with Sections 621(2) and 621(5)(A)(ii) of the ORBIT Act.[9] By legislation, the deadline for this IPO was extended from December 31, 2001 to December 31, 2002 and the Commission was given authority to extend this deadline further, but to no later than June 30, 2003.[10] The deadline has been further extended and, as a result, current authorizations to use Inmarsat in the United States are conditioned on Inmarsat conducting an IPO by June 30, 2003.[11]

7. *DISCO II* Analysis. Requests by foreign licensed satellite systems to serve the U.S. market are considered under the framework established in the Commission's *DISCO II* decision.[12] In *DISCO II*, the Commission stated that it would consider requests to serve the U.S. market pursuant to the Commission's public interest mandate and identified other public interest factors relevant to making this determination. These factors include the effect of competition in the United States, spectrum availability, eligibility requirements, technical requirements, and national security, law enforcement and foreign policy and trade issues, as appropriate.[13] After consideration of these factors in the *ORBIT Act Order*, the Commission concluded that the entry of a privatized Inmarsat into the U.S. market was consistent with *DISCO II*. Grant of this application is fully consistent with similar applications approved by the Commission in the *ORBIT Act Order* that permit the operation of various types of METs to provide mobile satellite service via a privatized Inmarsat satellite system.[14]

---

[8] *Id.* at para. 54.

[9] Id. at para. 59.

[10] See Pub.L. 107-77, Title VI, § 628, Nov. 28, 2001, 115 Stat. 804.

[11] *Inmarsat Ventures, PLC Request for Extension of Time Under Section 621(5) of the Satellite Communications Action of 1962, as amended by the Open-Market Reorganization for the Betterment of International Communications Act*, File No. SAT-MSC-20020925-00187, Order, DA 02-3489 (released December 19, 2002).

[12] *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*, IB Docket No. 96-111, *Notice of Proposed Rulemaking*, 11 FCC Rcd 18178 (1996), *Report and Order*, 12 FCC Rcd 24094 (1997) (*DISCO II*).

[13] Id. at para 15.

[14] *Inmarsat Ventures, PLC Request for Extension of Time Under Section 621(5) of the Satellite Communications Action of 1962, as amended by the Open-Market Reorganization for the Betterment of International Communications Act*, File No. SAT-MSC-20020925-00187, Order, DA 02-3489 (released December 19, 2002).

8. Although the Commission's finding in the *ORBIT Act Order* addresses the question of whether Inmarsat's entry into the U.S. market, as a general matter, is in the public interest, Inmarsat service can be provided over several types of METs with different technical characteristics. Since the Commission has not previously authorized the use of Inmarsat D+ METs, we consider here whether use of the Inmarsat D+ METs is consistent with the Commission's technical requirements for operation in the L-band. Our primary concerns are whether service can be provided consistent with the Commission's real time access and priority preemption requirements and out-of-band emission standards.

9. Real Time Access and Priority Preemption Requirements. In the lower L-band, MSS operators must be able to provide real time access and priority preemption capability for certain safety and distress services. Footnote US315 to the Table of Allocations to Section 2.106 of the Commission's rules, 47 C.F.R. § 2.106, states that lower L-band mobile satellite service systems may not interfere with maritime mobile-satellite service (MMSS) distress and safety communications that also operate in these frequencies.[15] Footnote US315 protects MMSS distress and safety communications, such as Global Maritime Distress Satellite Service (GMDSS), domestically by providing real time access and priority preemption capability for distress and safety communications. In the *Lower L-Band Report and Order*,[16] the Commission observed that full compliance with Footnote US315 was not possible for METs operating in half-duplex mode because the half-duplex transmission cannot be interrupted once it has started. However, the Commission noted that, over the past two years, the International Bureau has waived full compliance with Footnote US315 because experience has shown that, with appropriate restraints and due to the short duration of half-duplex transmissions, the integrity of maritime safety and distress communications can be maintained. Given the importance of safety-related communications, the Commission has declined to waive Footnote US315 on a permanent basis for half-duplex METs operating in the lower L-band. Rather, the Commission stated that requests for operational authority subject to waiver of Footnote US315 would continue to be considered on a case-by-case basis. The Commission further noted that the NTIA has indicated that if a terminal is capable of, among other things, ceasing transmissions and inhibiting further transmissions within one second, that terminal would be considered to meet the real time access and priority preemption requirements.[17]

10. Richtec concedes that the Inmarsat D+ METs are not capable of ceasing transmissions and inhibiting further transmission within one second.[18] However, Richtec states that the Inmarsat D+ METs will not pose any interference or real time access and priority preemption problem for GMDSS. According to Richtec, for most Inmarsat services (*i.e.*, services using the A, B, C and mini-M METs), bandwidth is allocated to a pool of channels

[15] 47 C.F.R. § 2.106.

[16] *Establishing Rules and Policies for the Use of Spectrum for Mobile Satellite Service in the Upper and Lower L-band,* Report and Order, 17 FCC Rcd 2704 (2002) *(Lower L-band Report and Order).*

[17] *See Lower L-band Report and Order,* 17 FCC Rcd at paras. 30-41 (2002).

[18] *See* Letter *from* Geoffrey P. Tamulonis, Vice President of Regulatory Affairs, to Marlene H. Dortch at 3 (June 11, 2002).

available to any service provider -- and ultimately end-users -- on a demand basis. By contrast, Richtec states that its D+ METs will operate on channels dedicated only for its D+ service.[19] Thus, channels dedicated to Richtec's D+ service are not taken from the pool of channels used for the other Inmarsat services.[20] Consequently, Richtec states that use of Inmarsat for Richtec's D+ service will not affect the real time access and priority preemption for GMDSS by taking away any spectrum allocated for another service that is used for GMDSS.[21] Thus, Richtec states that the time it takes for its D+ METs to shut-down is not as critical for determining compliance with real time access and priority preemption requirements as it is for other Inmarsat METs.[22]

11. While acknowledging that the shut-off time for the D+ METs does not meet the one second shut-off guidelines, NTIA does not object to authorization of the D+ METs in the United States on a limited basis. NTIA notes that D+ METs are becoming widely available outside the United States. In addition, the record does not show that there have been adverse consequences from the operation of these METs to safety related services. NTIA is also optimistic that technical advances to reduce transmission time and improved protocols allowing for faster shut-off time will be explored to improve the responsiveness of the D+ METs. [23] Further, NTIA states that there are applications of the use of the D+ METs, including Federal government applications, where operation of these METs within the United States would be beneficial.[24] Moreover, Richtec's representation that the D+ METs will operate on dedicated channels makes it unlikely that operation of these METs will affect the real time access and priority preemption for GMDSS. Accordingly, we will authorize the use of the D+ METs for a limited term of two years. We will also limit the operation of the D+ METs to not exceed approximately 10 channels (2.5 kHz each) in each direction of transmission as suggested by NTIA to ensure that these METs do not interfere with safety related services.

12. Out of Band Emissions. The level of out-of-band and spurious emissions from Richtec's METs must be consistent with the Commission's out-of-band emission limits specified in Section 25.216 of the Commission's rules, 47 C.F.R. § 25.216. [25] The evidence

[19] *Id.*

[20] *Id.*

[21] *Id.*

[22] *Id.* at 3.

[23] *See* Letter from William T. Hatch, Associate Administrator, Office of Spectrum Management, Department of Commerce, National Telecommunication and Information Administration to Donald Abelson, Chief, International Bureau, FCC (August 25, 2000).

[24] Letter from James Vorhees, Acting Program Manager Spectrum Plans, National Telecommunications and Information Administration to Thomas Tycz, Chief, Satellite Division, International Bureau, FCC (September 20, 2002).

[25] *See* Letter from Geoffrey P. Tamulonis, Vice President of Regulatory Affairs, to Marlene H. Dortch, Secretary, FCC (July 23, 2002). These requirements are set forth in Sections 25.202(f) and 25.216 of the Commission's rules. *See* 47 C.F.R. § 25.202(f); *Amendment* of *Part 2 and 25 to Implement the Global Mobile Personal Communications by Satellite (GMPCS) Memorandum of Understanding and Arrangements; Petition of the National Telecommunications and Information Administration to Amend Part* 25 *of the Commission's Rules*

submitted by Richtec demonstrates that its proposed Inmarsat D+ METs comply with the Commission's out-of-band emission requirements for METs operating in the L-band. NTIA states that the unwanted emission levels of the requested Inmarsat D+ METs, as measured by the manufacturer, JRC, appear adequate to protect Global Positioning Systems that operate on nearby frequencies. Nevertheless, we will impose conditions to ensure that these requirements are met.[26]

IV. Conclusion and Ordering Clauses

13. Accordingly, IT IS ORDERED that Application File Nos. SES-LIC-20020228-00442, SES-AMD-20020611-00981 IS GRANTED to the extent described herein, and Richtec Incorporated IS AUTHORIZED to operate 10,000 half-duplex METS manufactured by JRC, on a common carrier basis, in the lower L frequency bands 1525-1544 MHz and 1626.5-1645.5 MHz through Inmarsat-3 at 15.5° W.L. (Atlantic Ocean Region), Inmarsat-3 at 54° W.L. (Atlantic Ocean Region) and Inmarsat-3 at 178° E.L. (Pacific Ocean Region) to provide mobile satellite service in the United States in accordance with the technical specifications set forth in its application and its Radio Station Authorization, and consistent with the Commission's rules, subject to the conditions set forth below.

14. IT IS FURTHER ORDERED that this authorization is subject to a future Commission finding that Inmarsat has conducted an IPO under Sections 621(2) and 621(5)(A)(ii) of the ORBIT Act.

15. IT IS FURTHER ORDERED that this authorization is subject to limitation or revocation pursuant to Section 601(b)(1) of the ORBIT Act and Title III of the Communications Act of 1934, 47 U.S.C. § 301 et seq., should Inmarsat fail to conduct an IPO in compliance with the requirements of Section 621 of the ORBIT Act.

16. IT IS FURTHER ORDERED that this authorization is subject to operation of Inmarsat under Section 648 of the ORBIT Act imposing restrictions on exclusive arrangements for the provision of satellite services between the United States and other countries.

---

to Establish Emissions Limits for Mobile and Portable Earth Stations Operating in the 1610-1660.5 MHz Band, Report and Order and Further Notice of Proposed Rulemaking, FCC 02-134 (rel. May 14, 2002)*(Out-of-Band Emissions Order).*

[26] Although Richtec's original application requested authority to use Inmarsat D+ METs manufactured by SkyWave and JRC, Richtec has not provided the necessary information to demonstrate that the SkyWave METs comply with the Commission's out-of-band emissions requirements. Consequently, Richtec requests that the Commission process its application with respect to the JRC METs and not the SkyWave METs. *See* Letter from Geoffrey P. Tamulonis, Vice President of Regulatory Affairs, Richtec Inc. to Marlene H. Dortch, Secretary, FCC (July 23, 2002). Thus, our decision here relates to consideration of the JRC METs only. Should Richtec desire to use the Inmarsat D+ METs manufactured by SkyWave in the future, a new application would be required and Richtec would have to demonstrate that those METs comply with the Commission's out-of-band emission limits.

17. IT IS FURTHER ORDERED that Richtec's mobile earth station operations shall be limited to the portions of the 1525-1544 and 1626.5-1645.5 MHz band coordinated for the satellite being accessed in the most recent annual L-band operator-to-operator agreement. In the absence of a continuing annual L-band operator-to-operator coordination agreement, Richtec's operation in the 1525-1530 MHz, 1530-1544 MHz, 1626.5-1645.5 MHz frequency bands (lower L-bands) will be on a non-interference basis until a future operator-to-operator agreement is concluded. Richtec shall not cause harmful interference to any other lawfully operating satellite or radio facility and shall cease operations upon notification of such interference. Furthermore, Richtec must notify all other operators in these frequency bands that it will be operating on a non-interference basis. Richtec must also notify its customers in the United States that its operations are on a non-interference basis.

18. IT IS FURTHER ORDERED that for the half-duplex METs authorized herein to operate in the 1525-1544 MHz and 1626.5-1645.5 MHz bands, footnotes US315 and S5.353A to Section 2.106 of the Commission's Rules ARE WAIVED to permit the half-duplex METs authorized herein to operate in a portion of the lower L-band (1525-1544 MHz and 1626.5-1645.5 MHz) on a non-real-time preemptive basis. Under this waiver, operations of half-duplex METs in the lower L-band shall be on a secondary basis to safety and distress communications of those stations operating in the GMDSS.

19. IT IS FURTHER ORDERED that Richtec's METs shall comply with the out-of-band emission limits set forth in Sections 25.202(f) and 25.216 of the Commission's rules. *See* 47 C.F.R. § 25.202(f); *Out-of-Band Emission Order*, FCC 02-34 (rel. May 14, 2002). This authorization is limited to the Inmarsat D+ METs manufactured by JRC.

20. IT IS FURTHER ORDERED that this authorization does not permit the licensee to provide common carrier service outside of the United States. If the licensee wishes to provide such service, it must obtain authority pursuant to Section 214 of the Communications Act, 47 U.S.C. § 214 before doing so.

21. IT IS FURTHER ORDERED that this license shall not vest in the licensee any right to operate Earth stations or use the assigned frequencies beyond the term thereof or in any manner other than authorized herein, and neither the license nor the rights granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act.

22. IT IS FURTHER ORDERED that the license term for the METs authorized by this *Order and Authorization* shall be two years.

23. IT IS FURTHER ORDERED that Richtec Incorporated be afforded thirty days to decline this authorization. Failure to respond within this period will constitute formal acceptance of the authorization.

24. This Order is issued pursuant to Section 0.216 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective upon release.

FEDERAL COMMUNICATIONS COMMISSION

Thomas S. Tycz
Chief
Satellite Division
International Bureau