

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554**

In the Matter of)	
)	
Mobile Satellite Ventures Subsidiary LLC)	
)	
Application for Minor Modification of Space Station License (AMSC-1))	File No. _____
)	
Application for Minor Modification of Space Station License (MSV-1))	File No. _____
)	
Application for Minor Modification of Blanket License to Operate Mobile Earth Terminals (MSAT-1))	File No. _____
)	

AMENDMENT AND REQUEST FOR EXPEDITED CONSIDERATION

SkyTerra Subsidiary LLC (“SkyTerra”)¹ hereby amends its pending modification applications to its ATC authorization² and seeks waivers of certain technical rules applicable to its Ancillary Terrestrial Component (“ATC”) license to reflect the multilateral coordination agreement executed by and among SkyTerra, SkyTerra (Canada) Inc. (“SkyTerra Canada”),³ and Inmarsat Global Limited (“Inmarsat”), ITU Region 2 Mobile Satellite Service (“MSS”) L-band

¹ Mobile Satellite Ventures Subsidiary LLC has changed its name to SkyTerra Subsidiary LLC and has separately filed a letter notifying the Commission.

² SkyTerra hereafter refers to these three applications collectively as the “*ATC Modification Application*.” See File Nos. SAT-MOD-20051104-00211, SAT-MOD-20051104-00212, SES-MOD-20051110-01561.

³ Mobile Satellite Ventures (Canada) Inc. has changed its name to SkyTerra Canada.

operators.⁴ For the most part, the limits in the existing L-band ATC rules were established to permit ATC operations to coexist with Inmarsat services in the absence of coordinated operating parameters, and the need for such rules has now been eliminated by the coordination agreement. The negotiated operating terms and parameters provide greater flexibility for system deployment, increased spectrum efficiency in the L band, and vastly improved measures to control and mitigate interference than strict application of the FCC's rules. As the Commission has recognized in the ATC rulemaking and other proceedings, intersystem interference concerns are best managed through coordination among the affected operators. With respect to those technical rules designed to protect other services, SkyTerra affirms its commitment to adhere to those rules and, where applicable, proposes to take extra measures to coordinate with affected services and reduce the potential for interference.

By granting this application, SkyTerra will be able to put substantial additional spectrum capacity to work for United States consumers in both rural and urban areas, providing new and advanced services and allowing for additional competition in the concentrated wireless industry. Moreover, SkyTerra's hybrid MSS/ATC system will provide a reliable, interoperable, and redundant communications infrastructure, which is critical for national security and during times of disaster. For these reasons, SkyTerra submits that grant of the waiver requests and modification of SkyTerra's ATC license would serve the public interest.

Background

In February 2003, in response to SkyTerra's pioneering 2001 application to provide ATC, the Commission in a unanimous decision issued rules permitting MSS licensees to integrate ATC

⁴ Skyterra Communications Inc., the ultimate parent company of SkyTerra, is also a party to the coordination agreement.

into their satellite systems.⁵ In that landmark decision, the Commission hailed the value of ATC, finding that the expanded authority would promote the efficient use of MSS spectrum,⁶ allow MSS providers to offer ubiquitous service by overcoming coverage gaps in densely populated areas,⁷ achieve economies of scale that would dramatically reduce the cost of MSS equipment and service,⁸ promote public safety and national security,⁹ and increase competition.¹⁰ On reconsideration in 2005, the Commission again unanimously affirmed those conclusions.¹¹

Since the Commission's decisions in its four-year rulemaking proceeding, the benefits of ATC have been increasingly recognized globally. The European Union has approved its own form of ATC, referred to as Complimentary Ground Component,¹² and the 2007 World

⁵ See *Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands*, 18 FCC Rcd 1962 (2003) (“ATC Order”).

⁶ See *id.* at ¶¶ 1, 18-22.

⁷ See *id.* at ¶¶ 1, 23.

⁸ See *id.* at ¶ 1.

⁹ See *id.* at ¶¶ 1, 28-29.

¹⁰ See *id.* at ¶¶ 1, 24, 30-32.

¹¹ See *Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands, Memorandum Opinion and Order and Second Order on Reconsideration*, 20 FCC Rcd 4616, at ¶ 9 (2005) (“ATC Reconsideration Order”).

¹² ECC Decision of 1 December 2006 on the designation of the bands 1980-2010 MHz and 2170-2200 MHz for use by systems in the Mobile-Satellite Service including those supplemented by a Complementary Ground Component (CGC) (ECC/DEC/(06)09).

Radiocommunication Conference officially acknowledged the global benefits of the deployment of integrated MSS/ATC systems.¹³

L-band ATC Rules. The Commission in its ATC rulemaking adopted “a flexible set of technical rules that would prevent harmful interference while permitting the rapid and economically efficient development of ATC.” *ATC Reconsideration Order*, at ¶ 37; *see also ATC Order*, at ¶¶ 103-206. In the L band, the Commission adopted specific rules to protect Inmarsat satellites from potential uplink interference that might be caused by user terminals on SkyTerra’s network and to protect Inmarsat’s mobile terminals from potential interference caused by ATC base stations.¹⁴ The Commission also imposed other technical requirements to protect non-MSS services, such as Radionavigation Satellite Service (“RNSS”) or Global Positioning System (“GPS”), Search-and-Rescue Satellite (“SARSAT”) Service, and Mobile Aeronautical Telemetry (“MAT”).¹⁵

SkyTerra’s ATC Authorization and Pending Modification Application. On November 8, 2004, the International Bureau granted the first-ever ATC authorization to SkyTerra.¹⁶ SkyTerra

¹³ Meeting of Working Party 4B, Sept. 24-Oct. 1, 2008, *Working Document Towards a Preliminary Draft New Report or Recommendation on Network Architectures, Applications and Performance for Integrated Systems Operating within the Mobile-Satellite Service in the 1-3 GHz Bands* (Working Party 4B, Annex 12 to Document 4B/51-E) (Oct. 22, 2008), available at <http://www.itu.int/md/R07-WP4B-C-0051/en>; *see also* Int’l Telecomm. Union, Final Acts – WRC-07, at 531 (2007) (Recommendation 206), available at http://www.aph.gov.au/house/committee/JSCT/16september2008/treaties/radio_text.pdf.

¹⁴ *ATC Order*, at ¶ 131.

¹⁵ *See, e.g.*, 47 C.F.R. § 25.216, § 25.253(c).

¹⁶ *See Mobile Satellite Ventures Subsidiary LLC Application for Minor Modifications of Space Station License for AMSC-1; Minor Amendment to Application for Authority to Launch and Operate a Next-Generation Replacement MSS Satellite, Application for Minor Modification of Blanket License for Authority to Operate Mobile Earth Terminals with MSAT-1*, 19 FCC Rcd 22144, at ¶¶ 18-26 (2004) (“*SkyTerra ATC Decision*”).

still requires the following waivers of, or variances from, the Commission's rules that were granted pursuant to that application:

- authority to use a link-margin booster in conjunction with ATC terminals used with current generation satellites (*id.* at ¶¶ 19-21, 95(g)-(h)); and
- authority to initiate ATC services without constructing a new satellite of the same design as the current generation in-orbit satellites (*id.* at ¶¶ 22-25).

The approval SkyTerra requests here will effectively supersede two already-approved waivers:

- authority to deploy ATC capable of supporting CDMA and GSM air interface protocols (*SkyTerra ATC Decision*, at ¶¶ 85-91, 95(i)); and
- authority to increase co-channel reuse to the extent SkyTerra submits test data demonstrating that the spatially-averaged antenna gain of its ATC terminals is less than 0 dBi in the direction of co-channel satellites (*id.* at ¶¶ 52-56, 95(f)).

On February 25, 2005, the Commission released a decision providing additional flexibility for L-band MSS operators to reuse their coordinated spectrum.¹⁷ SkyTerra subsequently filed the captioned applications to modify its ATC license, seeking authorization consistent with the 2005 *ATC Reconsideration Order* and other relevant relaxations including TDD authority.¹⁸

Multilateral Coordination Agreement. Following years of negotiations and months of careful technical collaboration, Inmarsat, SkyTerra, and SkyTerra Canada on December 20, 2007

¹⁷ See *ATC Reconsideration Order*, at ¶¶ 37-51 (authorizing additional uplink flexibility); *id.* at ¶¶ 53-65 (authorizing additional downlink flexibility); see also 47 C.F.R. § 25.253(a) (codifying additional uplink flexibility); 47 C.F.R. § 25.253(d), (e) (codifying additional downlink flexibility). This application is based on these modified rules as well as the other, current rules.

¹⁸ See *ATC Modification Application*, at 7-8. The application sought waivers of certain operating values specified in 47 C.F.R. § 25.253 and clarification that SkyTerra is permitted to deploy ATC base station antennas with less than five degrees of down-tilt. SkyTerra no longer seeks to deploy TDD in the 1.5 GHz portion of the L band. See *ATC Modification Application*, Technical Appendix, at 3.

reached a multilateral coordination agreement that allows increased and more efficient use of the L-band spectrum resource among the satellite systems licensed by the United Kingdom, the United States, and Canada, respectively. This cooperative agreement defines mutually acceptable technical and operating rules for all parties, including final agreement on all terms necessary for SkyTerra to proceed with ATC deployment as proposed in this application. The agreement also provides certainty in other matters that are crucial to long-term planning by all parties. These matters include a highly-flexible approach to accommodating a variety of possible deployments while maintaining acceptable interference levels, a phased process for implementation, a mechanism for further optimization through additional coordination, and procedures to ensure compliance.

Discussion

The instant application amends SkyTerra's pending *ATC Modification Application* to reflect the multilateral coordination agreement executed by and among SkyTerra, SkyTerra Canada, and Inmarsat. The coordination agreement eliminates the need to comply with certain ATC technical rules that were established to apply in the absence of such an agreement.¹⁹ Some

¹⁹ See *infra* note 41. SkyTerra will continue to comply with the out-of-band emission limits to protect RNSS/GPS as reflected in the *SkyTerra ATC Decision*, at ¶ 95; specifically:

- (c) [SkyTerra] shall ensure that the EIRP density of emissions from its ATC base stations do not exceed -100 dBW/MHz EIRP in the 1559-1610 MHz band, averaged over any two-millisecond interval, and that the EIRP of discrete ATC base-station emissions of less than 700 Hz bandwidth do not exceed -110 dBW in that band, averaged over any two-millisecond interval. These EIRP limits apply to ATC base stations that employ either Time Division Multiple Access (TDMA) or Code Division Multiple Access (CDMA) and apply to the total EIRP within any ATC base-station sector. [SkyTerra] shall also ensure that all mobile terminals accessing its ATC network restrict the EIRP density of emissions in the 1559-1605 MHz band to -90 dBW/MHz or less averaged over two-millisecond interval, restrict the EIRP of discrete emissions of less than 700 Hz

of the agreed-upon coordination parameters can be implemented without FCC action because the applicable FCC rules permit operators to supersede those rules via coordination. Pursuant to Sections 25.149(a)(2) and 25.253(a)(4), SkyTerra's ATC operations will at all times be limited to the frequency assignments authorized and internationally coordinated for its MSS system.²⁰ Pursuant to the Commission's ATC rules, the coordination agreement automatically supersedes the specified uplink limits.²¹ Similarly, the parties' agreement satisfies the requirement for SkyTerra to give notice to and seek coordination with Inmarsat regarding ATC base station locations, pursuant to Section 25.253(h).

bandwidth to -100 dBW in that band averaged over any two-millisecond interval, restrict the EIRP density of emissions in the 1605-1610 MHz band to a level determined by linear interpolation from -90 dBW/MHz at 1605 MHz to -66 dBW/MHz at 1610 MHz, averaged over any two-millisecond interval, and restrict the EIRP of discrete emissions of less than 700 Hz bandwidth in the 1605-1610 MHz band to a level determined by linear interpolation, from -100 dBW at 1605 MHz to -76 dBW at 1610 MHz, averaged over any two-millisecond interval. Further, [SkyTerra] shall ensure that all new mobile terminals placed in service more than five years after it commences ATC operation restrict the EIRP density of emissions in the 1605-1610 MHz band to a level determined by linear interpolation from -95 dBW/MHz at 1605 MHz to -71 dBW/MHz at 1610 MHz, averaged over any two-millisecond interval, and restrict the EIRP of discrete emissions of less than 700 Hz bandwidth to a level determined by linear interpolation from -105 dBW at 1605 MHz to -81 dBW at 1610 MHz, averaged over any two-millisecond interval.

- (d) [SkyTerra] shall ensure that test results demonstrating compliance with the foregoing limits on emissions in the 1559-1610 MHz band are included in any application for equipment authorization pursuant to 47 C.F.R. Part 2 and § 25.149(c) for mobile terminals that would be used to communicate via [SkyTerra's] ATC network.

²⁰ ATC deployments will be pursuant to the spectrum plan coordinated in the multilateral agreement rather than the spectrum segments identified in SkyTerra's pending application.

²¹ Subsections 25.253(a)(2) and (3) each provide, in relevant part, "[a]ny future coordination agreement between the parties governing ATC operation[s] will supersede this paragraph."

In other cases, the ATC rules appear to require SkyTerra to seek a waiver. Accordingly, SkyTerra seeks waiver of those rules, as follows:

- Section 25.253(b) limits the out-of-channel emissions (“OOCE”) of ATC base stations. SkyTerra proposes that the Commission specify that, as determined by the parameters and models agreed to in the coordination agreement: (1) the total power flux spectral density (PFSD) from BTS²² emissions in the 1.5 GHz band that are calculated to be receivable at an AES receiver at an altitude of 100 meters or greater from Earth’s surface shall not exceed -187.27 dBW/m²-Hz at a spectral offset of 2 MHz from the nominal edge of spectrum used for ATC;²³ (2) the total PFSD from any single ATC BTS sector within 1300 meters of an airport (as defined in the coordination agreement) that are calculated to be receivable at an AES receiver, when on the ground on a runway or aircraft stand area of such an airport, shall not exceed -181.27 dBW/m²-Hz at a spectral offset of 2 MHz from the nominal edge of spectrum used for ATC; and (3) the total PFSD from any single ATC BTS sector within 1300 meters of a navigable waterway²⁴ that are calculated to be receivable at an MES receiver on such a navigable waterway shall not exceed -181.27 dBW/m²-Hz at a spectral offset of 1 MHz from the nominal edge of spectrum used for ATC, with compliance determined pursuant to the coordination agreement. In cases (2) and (3), the total PFSD from any single BTS sector is the sum of all PFSD values associated with all carriers in any single ATC BTS sector in the 1.5 GHz frequency band. In addition, the maximum calculated OOCE would be -32.4 dBW/MHz PSD at 1 MHz from the nominal edge of ATC spectrum and -39.4 dBW/MHz PSD at 2 MHz from the nominal edge of ATC spectrum. For BTS installations these OOCE limits are based on a maximum EIRP of 42 dBW per sector and an EIRP in any 1 MHz segment of 32 dBW/MHz regardless of the number of carriers and the bandwidth of each carrier. The maximum calculated OOCE would be -51.4 dBW/MHz PSD for microcells

²² A BTS comprises a standard power base station with a maximum EIRP of 42 dBW per sector. A microcell is a base station with EIRP between -4 and 10 dBW/MHz, whether deployed indoors or outdoors. A femtocell is a base station deployed indoors with less than -4 dBW/MHz EIRP. Aircraft Earth Station (“AES”) interference calculations include microcells and femtocells by counting as a BTS an equivalent number of such cells that collectively produce the same level of emissions as a single standard power base station, as shown in the coordination agreement.

²³ Nominal edge of ATC spectrum means any edge of a contiguous spectrum block allocated to ATC as defined in the agreement. It is not based on the spectral characteristics of the ATC carrier.

²⁴ The definition of “Navigable Waterways,” as specified in the coordination agreement, is provided in Attachment 1. The listing of U.S. commercial ports continues to be discussed with the United States Coast Guard (USCG) and may be modified.

and -55.4 dBW/MHz for femtocells at 2 MHz from the nominal edge of ATC spectrum.²⁵ The permitted OOCE for a BTS or outdoor microcell installation within 1300 meters of an airport or navigable waterway would be reduced as necessary to comply with the reduced power levels specified for such cases in the models and tables in the coordination agreement. A BTS or outdoor microcell on or within 500 meters of bridges (but not near airports), indoor microcells and femtocells would be exempt from these limits.²⁶ BTS and outdoor microcell installations on bridges near airports, however, would be subject to more rigorous restrictions, as detailed in the coordination agreement and its models and tables.

- Sections 25.253(d)(1)-(4) establish limits on ATC base station EIRP. SkyTerra plans to have up to two 10 MHz or four 5 MHz bandwidth carriers/sector in a BTS sector. However, the coordination agreement allows different emission bandwidths to be deployed, in which case, the number of carriers may vary. SkyTerra proposes the Commission specify that, consistent with the parameters and models agreed to in the coordination agreement, no ATC BTS shall exceed a maximum average EIRP of 42 dBW per BTS sector in the 1.5 GHz band and the total EIRP in any 1 MHz segment shall not exceed 32 dBW/MHz regardless of the number of carriers and the bandwidth of each carrier. Furthermore, the total PFD from BTS emissions in the 1.5 GHz band that is calculated to be receivable at an AES receiver at an altitude of at least 100 meters from the Earth's surface shall not exceed -26.8 dBW/m², with compliance determined according to the coordination agreement. This limit of -26.8 dBW/m² is based on Inmarsat modifying its aeronautical terminals to increase their resiliency by at least 30 dB, so that the overload threshold of such devices is not less than -26.8 dBW/ m².
- Section 25.253(d)(5) establishes PFD limits for base stations in the vicinity of airport runways and stand areas. SkyTerra proposes that the Commission specify that, consistent with the parameters and models agreed to in the coordination agreement, the total PFD from any single ATC BTS sector within 1300 meters of an airport that is calculated to be receivable at an AES receiver, when on the ground on a runway or aircraft stand area at such airport, shall not exceed -26.8 dBW/m², with compliance determined pursuant to the coordination agreement. This limit of -26.8 dBW/m² is based on Inmarsat modifying its aeronautical terminals to increase their resiliency by at least 30 dB, so that the overload threshold of such devices is not less than -26.8 dBW/m². In this case and the case immediately below (for Sections 25.253(d)(6)-(7)), the total PFD is the sum of all PFD values in any single ATC BTS sector in the 1.5 GHz frequency band.

²⁵ These OOCE limits are based on a maximum EIRP of 10 dBW/MHz for microcells station and -4 dBW/MHz for femtocells. *See* note 22, *supra*.

²⁶ A microcell or femtocell in or near airports would operate with 0 dBW EIRP or less when within 50 meters from runways and stand areas and with 6 dBW EIRP or less when at greater distances than 50 meters from runways and stand areas.

SkyTerra also seeks waiver, to the extent necessary, to permit it to implement, consistent with the parameters and models agreed to in the coordination agreement, special coordination procedures with Inmarsat in order to provide coverage within buildings adjacent to airports, runways and aircraft stand areas using microcells and femtocells.²⁷

- Sections 25.253(d)(6)-(7) establish PFD limits for base stations in the vicinity of navigable waterways. SkyTerra seeks waiver to specify that, consistent with the parameters and models agreed to in the coordination agreement, the total PFD from any single ATC BTS sector within 1300 meters of a navigable waterway that is calculated to be receivable at an MES receiver on such navigable waterway shall not exceed -34.6 dBW/m^2 , with compliance determined pursuant to the coordination agreement. This limit of -34.6 dBW/m^2 is based on Inmarsat replacing or modifying its maritime terminals installed on vessels to increase their resiliency by at least 30 dB, so that the overload threshold of such devices is not less than -34.6 dBW/m^2 . SkyTerra also seeks waiver, to the extent necessary, to permit it to implement, consistent with the parameters and models agreed to in the coordination agreement, special coordination procedures with Inmarsat in order to provide coverage of bridges over navigable waterways such that interference to vessels is reasonably comparable to blockage otherwise experienced due to their passing under the bridge superstructure.
- Sections 25.253(d)(8) and (e) require base stations to use left-hand-circular polarization antennas with a maximum gain of 16 dBi and overhead gain suppression according to a specified table. SkyTerra seeks waiver to permit its operation of BTSs, microcells and femtocells with the more precise and flexible operating metrics for base station emissions specified in the coordination agreement.
- Section 25.253(g)(1) limits peak EIRP and out-of-channel-emissions for ATC mobile terminals. SkyTerra seeks waiver to permit it to deploy user terminals with different EIRP, provided that operation of its MSS/ATC system at all times remains compliant with the agreed Delta T/T limits specified in the coordination agreement. SkyTerra also seeks waiver of this rule to permit an OOCE limit for user terminals of -58 dBW/4kHz per terminal at a 1 MHz offset from the edge of the spectrum used for ATC. The maximum power of such devices shall be no more than 6 dBW.
- Section 25.253(f)(1) requires coordination of ATC base stations that are within 27 km or radio horizon of SARSAT receivers, whichever is less. To avoid interference to SARSAT receivers as a result of operations pursuant to the coordination agreement, SkyTerra proposes that every BTS within 80 km or radio

²⁷

Id.

horizon of a SARSAT receiver, whichever is less, be coordinated with that SARSAT receiver. Similarly, every outdoor microcell that is within 45 km or radio horizon of a SARSAT receiver, whichever is less, will be coordinated with that SARSAT receiver.²⁸ To the extent necessary, SkyTerra seeks waiver of Section 25.253(f)(1).²⁹

- The FCC's rules permit the use of air interface protocols other than a standard GSM protocol, provided an applicant shows that such operations would produce no more interference than a standard GSM network operating in compliance with the requirements of Section 25.253.³⁰ SkyTerra's pending *ATC Modification Application* requested certain flexibility to deploy different air interfaces.³¹ SkyTerra now seeks authority to operate with any air interface protocol, as long as such operations conform to the agreed parameters in the coordination agreement, including at least 6 dB of power control.³² To the extent necessary, SkyTerra seeks waiver of any applicable requirement.

SkyTerra proposes that these new limits be made a condition of the requested waivers.

Equipment certification of SkyTerra's base stations would include calculation of the OOCE EIRP level based on the power measured at the output of the transmitter, to ensure consistency with the new limits. To the extent the BTS equipment is capable of exceeding these OOCE limits at certain power levels, it is permitted nonetheless to be certified as compliant so long as the tests demonstrate the power level at which the equipment complies with the OOCE limits and

²⁸ Indoor microcells and femtocells would not be subject to coordination with SARSAT receivers.

²⁹ Section 25.253(f)(2) requires that an MSS/ATC licensee take all practicable steps to avoid locating base stations within radio line of sight of MAT receivers and coordinate all base stations that are within radio line of sight. SkyTerra does not seek waiver of this requirement but acknowledges that its higher power ATC operations, pursuant to the coordination agreement, must be considered in the coordination of BTS installations with MAT receivers.

³⁰ See, e.g., *SkyTerra ATC Order*, at ¶ 85; *ATC Reconsideration Order*, at ¶ 74.

³¹ See *ATC Modification Application*, Narrative, at 1 and Table 2.

³² To the extent that SkyTerra deploys an air interface protocol with less than 6 dB of power control, it should be permitted to do so without further waiver as long as it reduces BTS power accordingly, as provided in the coordination agreement.

the certification states that the equipment may not be operated above such level. Microcells, femtocells and user devices would also undergo standard FCC equipment certification to demonstrate their compliance with applicable limits.³³

As the ATC network is deployed, SkyTerra will submit periodic certifications to the Commission indicating its compliance with the rules, including semi-annual reports providing information on all non-exempt base stations near navigable waterways or airports brought into service over the prior six months.³⁴ Specifically:

- For each market³⁵ the operator will submit a deployment report to the FCC every six months after ATC network deployment begins. The report will identify the location of new BTS and microcell installations, the cumulative number of such installations, the average antenna downtilt; and the average EIRP of a sector.³⁶ The operator will maintain individual BTS and microcell records.

³³ As noted above, SkyTerra is already required to ensure through the FCC equipment certification process that its user terminals comply with the applicable OOCE limits for emissions into the 1559-1610 MHz band. In support of the requested waivers, SkyTerra would also undertake to ensure, through the equipment certification process, that all user devices comply with the applicable limits set forth herein.

³⁴ SkyTerra will notify the Spectrum Management Division of the United States Coast Guard at least six months prior to operation of ATC base stations in a market that contains navigable waterways and update that notice to the extent that additional base stations are deployed in those markets within 1300 meters of a navigable waterway. Such notice will include predicted contours of interference to Inmarsat terminals which do not meet the resiliency requirements described previously and, in the case of base stations near bridges, predicted contours of interference to Inmarsat terminals which do meet the resiliency requirements described previously. To the extent that the United States Coast Guard has concerns that any of the ATC base stations near bridges will create interference that will exceed what is reasonably comparable to blockage otherwise experienced due to a vessel passing under the bridge superstructure, SkyTerra will coordinate deployment of those base stations with the Coast Guard.

³⁵ Market is defined as one contiguous geographic area with a radius of no more than 71.4 km with SkyTerra defined center of coverage area.

³⁶ Average sector EIRP will be calculated from (i) transmitter type (including FCC certification number); (ii) transmit carrier power setting; (iii) cabling and other losses; (iv) transmit antenna gain; and (v) number of carriers per ATC BTS sector.

- Each semi-annual report will provide specific information regarding all BTS and outdoor microcell installations near airports or navigable waterways brought into service in the reporting period. The report will include (i) the location of such BTS or microcell; (ii) ground distance between the transmit antenna and the nearest edge of a navigable waterway, a runway or an aircraft stand area; and (iii) the EIRP setting of a sector facing waterways or an airport.³⁷
- Each semi-annual report will include information on the coordination of SARSAT stations and MAT facilities.
- Each semi-annual report will include a specific report regarding all BTS and outdoor microcell installations on or near bridges over navigable waterways and on bridges near airports brought into service over the prior six months. Reports regarding such installations on bridges near airports will include (i) location of the station; (ii) distance between the transmit antenna and the nearest edge of a runway or an aircraft stand area; and (iii) the EIRP of a sector facing waterways or an airport.³⁸

The Commission may waive its rules “for good cause.”³⁹ Good cause exists when deviation from a rule requirement would not disserve the rule’s underlying purpose and would better serve the public interest than strict application of the rule.⁴⁰ For the most part, the limits in the existing L-band ATC rules were established to permit ATC operations to co-exist with Inmarsat services in the absence of coordinated operating parameters.⁴¹ The need for such rules,

³⁷ The EIRP shall be calculated as described in note 36, *supra*.

³⁸ *Id.*

³⁹ 47 C.F.R. § 1.3.

⁴⁰ See *Northeast Cellular Telephone Co., LP v. FCC*, 897 F.2d 1164 (D.C. Cir. 1990) and *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969).

⁴¹ *ATC Order*, at ¶ 143 (“We believe we have accurately analyzed the potential for interference from SkyTerra ATC transmitters to Inmarsat; however, we recognize that both Inmarsat and SkyTerra reach somewhat different conclusions on the circumstances under which interference would occur. . . . While we adopt rules to prevent harmful interference, we do not intend to prohibit L-band MSS operators from agreeing to less restrictive limitations on MSS ATC. We support and encourage private negotiations among interested parties in the band and will consider waiver requests of these rules based on negotiated agreements.”).

however, has been eliminated by the coordination agreement. With respect to those technical rules designed to protect other services, SkyTerra has affirmed its commitment to adhere to those rules and, where applicable, proposed to take extra measures to coordinate and prevent potential interference.

The joint technical approach allows the parties to address real-world operating conditions with a much greater degree of granularity than is otherwise possible through uncoordinated operations pursuant to the technical criteria specified in the L-band ATC rules. The negotiated technical criteria are not identical to those reflected in the FCC's rules. Each party has made adjustments to its interference models to better reflect interference conditions. Among other assurances, the parties have agreed to a comprehensive and efficient methodology for determining compliance through a set of models and calculations developed jointly by the parties to the agreement. Taken as a whole, the parties' joint approach to coordination and cooperation yields greater certainty in and flexibility for system deployment, increased spectrum efficiency, and vastly improved measures to control and mitigate interference than could be achieved through strict application of the FCC's existing rules. Inmarsat is contemporaneously submitting a letter supporting grant of this application.

The Commission has acknowledged the substantial public interest benefits of negotiated resolution of interference issues in cases far less challenging than this.⁴² Moreover, in the case of satellite services, the Commission has often *insisted* that the parties attempt to resolve

⁴² See, e.g., *In the Matter of Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands*, 21 FCC Rcd 5606, at ¶¶ 188-90 (2006) (permitting BRS/EBS licensees to exceed maximum signal strength at the boundary upon consent of the victim licensee).

differences consensually before it would consider intervening.⁴³ In contrast, denial of these waivers could lead to unnecessary costs and would limit the amount and quality of service that could be provided.⁴⁴ For all of the above reasons, the Commission should grant the requested waivers.

To ensure that the proposed waivers of the ATC technical rules are consistent with the policies underlying those rules, SkyTerra requests that the Commission condition grant of this authority as follows:⁴⁵

- (i) the foregoing waivers shall remain in effect for as long as SkyTerra has a coordination agreement in place with Inmarsat relating to ATC, and (ii) SkyTerra shall be required to operate its ATC network in accordance with the coordination agreement it has in place with Inmarsat.

⁴³ See, e.g., 47 C.F.R. § 25.255 (requiring MSS operators to attempt private resolution of ATC interference complaints before petitioning the FCC for resolution); see also *In the matter of Applications of Satcom Systems, Inc. and TMI Communications and Company, L.P.*, 14 FCC Rcd 20798, at ¶ 52 (1999) (issues concerning out-of-band emissions should first be addressed by the parties themselves; if the parties cannot agree to a mutually acceptable solution with respect to operations, the Commission then will become involved as necessary); *Assignment of Orbital Locations to Space Stations in the Domestic Fixed-Satellite Service*, 5 FCC Rcd 179, at ¶ 32 (1990) (Commission will not become involved unless the parties are unable to reach an agreement. If a coordination agreement between private sector parties cannot be reached after exhaustive good faith effort, the parties may then request Commission intervention); *Orion Satellite Corp.*, 5 FCC Rcd 4937, at ¶ 14 (1990) (same).

⁴⁴ Cf. *In the Matter of Applications of Intelsat LLC For Authority to Operate, and to Further Construct, Launch, and Operate C-band and Ku-band Satellites that Form a Global Communications System in Geostationary Orbit*, 15 FCC Rcd 15460, at ¶ 60 (2000) (waiving two-degree spacing rule because satellites had been coordinated and enforcement of rule would increase interference).

⁴⁵ See *In re Telesat Canada; Petition for Declaratory Ruling for Inclusion of Anik F3 on the Permitted Space Station List*, 22 FCC Rcd 588 (2007) (waiving application of technical rules as long as spacecraft operates in accordance with (i) an international trilateral agreement among Canada, Mexico and the United States, and (ii) current and future coordination agreements with affected operators).

Conclusion

Agreement by Inmarsat and SkyTerra on a sharing framework for L-band ATC is a significant development that promises great public interest benefits for consumers, for businesses, and for public safety and emergency communications. Expedited Commission approval of this application will allow SkyTerra to proceed with deployment of a robust, integrated MSS/ATC service so that the public can realize sooner the benefits of this new service.

SKYTERRA SUBSIDIARY LLC

By: /s/
Randy Segal
Senior Vice President, General Counsel & Secretary
SkyTerra Subsidiary LLC
10802 Park Ridge Boulevard
Reston, VA 20191
703-390-2700

Bruce D. Jacobs
Tony Lin
John K. Hane
Pillsbury Winthrop Shaw Pittman LLP
2300 N Street, N.W.
Washington, D.C. 20037
202-663-8000
Counsel for SkyTerra Subsidiary LLC

Dated: December 10, 2008

Attachment 1

Definition of Navigable Waterways

Navigable Waterways are the following bodies of water or waterways: (a) saltwater bodies of water located in North America, (b) the Great Lakes and the St. Lawrence Seaway, and (c) the bodies of water proximate to, or waterways between, those U.S. and Canadian commercial ports identified in the charts below (each a “Commercial Port”), provided always that in the case of any river way falling within this sub-paragraph (c), the relevant Navigable Waterway shall be deemed to exist only from the mouth of the river to the Commercial Port located on that river and closest to the source of that river.

U.S. commercial ports

Alpena, MI	Gary, IN	New Iberia, LA	Port of Port Lavaca. Point Comfort,TX
Anacortes, WA	Grand Haven, MI	New Orleans, LA	Port of Wilmington, Delaware
Anchorage, AK	Green Bay, WI	New York, NY and NJ	Port of Wilmington, NC
Ashtabula, OH	GUAM	Nikishka, AK	Portland, ME
Baltimore, MD	Gulfport, MS	Nome, AK	Portland, OR
Barbers Point, Oahu, HI	Honolulu, HI	Norfolk Harbor, VA	Portsmouth, NH
Baton Rouge, LA	Houston, TX	Oakland, CA	Presque Isle, MI
Beaumont, TX	Huron, OH	Olympia, WA	Redwood City, CA
Bellingham,WA	Indiana Harbor, IN	Orange, TX	Richmond, CA
Boston, MA	Jacksonville, FL	Oswego, NY	San Diego, CA
Bridgeport, CT	Juneau, AK	Palm Beach, FL	San Francisco, CA
Brownsville, TX	Kalama, WA	Panama City, FL	San Juan, PR
Buffalo, NY	Ketchikan, AK	Pascagoula, MS	Sandusky, OH
Buffington, IN	KIVILINA, AK	Paulsboro, NJ	Savannah, GA
Burns Waterway Harbor, IN	Lake Charles, LA	Philadelphia, PA	Seattle, WA
Camden,NJ	Long Beach, CA	Plaquemines, LA, Port of	Silver Bay, MN
Charleston, SC	Longview, WA	Ponce, PR	South Louisiana, LA, Port of
Charlevoix, MI	Lorain, OH	Port Angeles, WA	ST CLAIR
Chicago, IL	Los Angeles, CA	Port Arthur, TX	St. Bernard Port Chalmette, Louisiana
Cleveland, OH	Manistee, MI	Port Canaveral, FL	St. Croix, Virgin
Conneaut, OH	Marblehead, OH	Port Dolomite, MI	St. John, Virgin
Coos Bay, OR	Marcus Hook, PA	Port Everglades, FL	St. Thomas, Virgin
Corpus Christi, TX	Marine City, MI	Port Fourchon. LA	Stoneport, MI
Detroit, MI	Marquette, MI	Port Hueneme, CA	Tacoma, WA
Drummond Island, MI	Marysville, MI	Port Inland, MI	Taconite, MN
Duluth-Superior, MN and WI	Matagorda Ship Channel, TX	Port Manatee Palmetto, FL	Tampa, FL
Erie, PA	Miami, FL	Port of Brunswick, GA	Texas City, TX
Escanaba, MI	Milwaukee, WI	Port of Georgetown, SC	The Port of Davisville, RI
Everett, WA	Mobile, AL	Port of Grays Harbor Aberdeen, WA	Toledo, OH
Fairport Harbor, OH	Monroe, MI	Port of Humboldt Bay Eureka, CA	Two Harbors, MN
Freeport, TX	Muskegon, MI	Port of Morehead City, NC	Valdez, AK
Galveston, Texas	New Haven, CT	Port of New Bedford,MA	Vancouver, WA

Canadian commercial ports

Belledune	Sehdiaç
Charlottetown	Sept-Iles
Churchill	St. John
Comer Brook	St. John's
Goderich	Sydney
Goose Bay	Thunder Bay
Halifax	Toronto
Hamilton	Trois Reivieres
Montreal	Tuktoyaktuk
Oshawa	Windsor
Quebec	Vancouver
Saguenay	Prince Rupert, BC
Sarnia	Nanaimo, BC
Sault Ste. Marie	