UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and
Information Administration
Washington, D.C. 20230

JAN 6 2009

Mr. Julius Knapp
Chief, Office of Engineering and Technology
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Dear Mr. Knapp:

The National Telecommunications and Information Administration (NTIA) provides the following comment concerning the New ICO Satellite Services G.P. (ICO) request to waive the Federal Communications Commission's (Commission) rules 47 C.F.R. Sections 25.252(a)(1) and 25.252(a)(6).[1] These rules provide out-of-band emission (OOBE) limits and a separation distance necessary to protect federal earth stations in the band 2200-2290 MHz from ancillary terrestrial component (ATC) operations in the adjacent band 2180-2200 MHz. Specifically, Section 25.252(a)(1) requires an OOBE limit of -100.6 dBW/4 kHz and Section 25.252(a)(6) requires that ATC base stations be separated by at least 820 meters from federal earth stations.

ICO and the affected federal agencies have met and signed an agreement which is enclosed. I am forwarding this agreement with NTIA's concurrence and requesting the following Ordering Clauses be included in the ICO license:

> IT IS ORDERED that all ICO ATC operations will be conducted in a manner consistent with the "Operator-to-Operator Agreement between ICO Global Communications and United States Federal Government Agencies Operating Earth Stations in the 2200-2290 MHz Band".
>
> IT IS ORDERED that all ICO ATC base stations located within 133 km of an existing federal earth station shall not exceed an EIRP of -100.6 dBW/4 kHz for out-of-channel emissions at the edge of the 2200-2290 MHz band.

If you have any questions my point-of-contact on this issue is Edward M. Davison (202-482-5526; edavison@ntia.doc.gov).

Sincerely,

Karl B. Nebbia
Associate Administrator
Office of Spectrum Management

Enclosure

[1] *See* IBFS File Nos. SES–AMD–INTR2008–00147 (January 18, 2008) and SES–LIC–INTR2007–02866 (December 3, 2007).

Operator-to-Operator Agreement
between
ICO Global Communications
and
United States Federal Government Agencies
Operating Earth Stations in the 2200-2290 MHz Band

1. Introduction

In response to an ICO Global Communications (ICO) request to the Federal Communications Commission (FCC), made pursuant to Section 25.252(a)(6) of the Commission's rules, the National Telecommunications and Information Administration (NTIA) sent a letter, dated March 8, 2007, to Mr. Julius Knapp, Chief, Office of Engineering and Technology of FCC, identifying federal earth stations, operating in the 2200-2290 MHz band, within the United States of America.[1] On October 2, 2007, NTIA provided an updated list of federal earth station facilities.[2]

On March 5, 2008, FCC released a Public Notice listing ICO's application for authority to implement an ancillary terrestrial component ("ATC") for ICO's 2 GHz MSS system.[3] In the application ICO seeks to waive specific portions of Section 25.252 of the Commission's rules, including Sections 25.252(a)(1)[4] and 25.252(a)(6).[5]

Consistent with its ATC request, ICO initiated a consultation process with the federal agencies that operate earth stations in the 2200-2290 MHz band.[6] The federal agencies identified in the NTIA Corrected Letter are:

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[1] Letter from Karl B. Nebbia, Associate Administrator, Office of Spectrum Management, National Telecommunications and Information Administration to Julius Knapp, Chief, Office of Engineering and Technology, Federal Communications Commission, dated March 8, 2007.

[2] Letter from Karl B. Nebbia, Associate Administrator, Office of Spectrum Management, National Telecommunications and Information Administration to Julius Knapp, Chief, Office of Engineering and Technology, Federal Communications Commission, dated October 2, 2007. ("NTIA Corrected Letter").

[3] Federal Communications Commission, Public Notice, Report No. SES-01012 (March 5, 2008) corrected by Public Notice, Report No SES-01014 (March 12, 2008). In its ATC Application, ICO requests waiver of the distance restriction in 47 C.F.R. § 25.252(a)(6) and requests that ATC operators be permitted instead to coordinate with U.S. Earth Station facilities in the 2200-2290 MHz band on a case-by-case basis. See File Nos. SES-LIC-20071203-01646 (ICO ATC Application) at 22-23, Attachment D.

[4] 47 C.F.R. § 25.252(a)(1): Applicants for an ancillary terrestrial component in these bands must demonstrate that ATC base stations shall not: (1) Exceed an EIRP of -100.6 dBW/4kHz for out-of-channel emission at the edge of the MSS licensee's selected assignment.

[5] 47 C.F.R. § 25.252(a)(6): Applicants for an ancillary terrestrial component in these bands must demonstrate that ATC base stations shall not: (6) be located less than 820 meters from a U.S. Earth Station facility operating in the 2200-2290 MHz band. In its MSS ATC application, the MSS licensee should request a list of operational stations in the 2200-2290 MHz band.

[6] The federal agencies holding the 2200-2290 MHz frequency assignment(s), under Section 6.08 of the NTIA Manual, and the associated earth station facility authorizations under Section 6.03 of the NTIA Manual have been identified in the NTIA Corrected Letter.

U.S. Department of the Air Force (Air Force)
National Aeronautics and Space Administration (NASA)
U.S. Department of Commerce (DOC)
U.S. Department of the Navy (Navy)
U.S. Department of Energy (Energy)

The federal agencies listed above are the points of contact, the responsible entities for this consultation process, and the parties to this operator-to-operator agreement.

The objective of the agreement is to ensure that the FCC's grant of the ICO waiver requests (e.g., Sections 25.252(a)(1) and 25.252(a)(6)) would not result in unacceptable interference to the federal earth stations operating in the band 2200-2290 MHz due to ICO ATC base station out-of-band emissions.

Annex A as incorporated into this agreement sets out the technical basis for the agreement, identifies procedures for ICO and federal agencies to follow when coordination is appropriate pursuant to this agreement, and establishes a procedure for addressing observed unacceptable interference. Annex B as incorporated into this agreement provides the locations of the existing federal earth stations. This list has been revised and updated by the responsible federal agencies from the list provided in the NTIA Corrected Letter.

2. Conditions for compatible operation

The federal agencies and ICO exchanged potential interference assessments for ICO ATC base station out-of-band emissions into the federal earth stations in the 2200-2290 MHz band. In order to protect the federal earth stations receiving in the 2200-2290 MHz band, the parties agree to the following operational conditions for the ICO ATC base stations:

1. All ICO ATC base stations operating in the band 2180-2190 MHz and located within 133 km of those federal earth stations listed in Annex B shall have an out-of-band emission filter to ensure that the EIRP spectral density shall not exceed -100.6 dBW/4kHz for out-of-band emissions at the edge of the 2200-2290 MHz band.

2. All ICO ATC base stations operating in the band 2180-2190 MHz and located more than 133 km from those federal earth stations listed in Annex B shall have out-of-band emissions outside of the ICO frequency band (e.g., 2180-2190 MHz) attenuated at least 43+10log(P) dB, where P is the transmitter power in watts.

3. No ICO ATC base station shall be located less than 820 meters from the federal earth stations listed in Annex B and operating in the 2200-2290 MHz band.

4. For new federal earth stations operating in the 2200-2290 MHz band belonging to the responsible federal agencies listed in this agreement or other federal agencies:
   I. If the federal earth station is to be located within 3 km of an existing federal earth station (e.g., those contained in Annex B), this new federal earth station shall be treated as an existing federal earth station, and its electromagnetic compatibility analysis ("EMC") protection is conferred by the existing earth station which is within a 3 km distance. ICO will

not be required to provide additional EMC protection to this new federal earth station other than the existing obligation for the corresponding federal earth station.

II. If the new federal earth station is to be located more than 3 km from an existing federal earth station (e.g., those contained in Annex B), this new federal earth station shall be protected as follows:

A. All ICO ATC base stations operating in the band 2180-2190 MHz and located within 71 km of this new federal earth station shall have an out-of-band emission filter to ensure that the EIRP spectral density shall not exceed -100.6 dBW/4kHz for out-of-band emissions at the edge of 2200-2290 MHz band.

B. For all ICO ATC base stations operating in the band 2180-2190 MHz and located between 71-km and 133-km from the new federal earth station, ICO shall coordinate the use of the spectrum with the responsible federal agency of the new federal earth station as set out in Annex A to this agreement.

i. If the ICO EMC analysis demonstrates that the protection level is less than 160 dB of isolation, the corresponding ICO based station shall have an out-of-band emission filter to ensure that the EIRP spectral density shall not exceed -100.6 dBW/4kHz for out-of-band emissions at the edge of 2200-2290 MHz band.

ii. If the ICO EMC analysis demonstrates that the protection level is equal to or more than 160 dB of isolation, the corresponding ICO based station shall have an of out-of-band emission outside of the ICO frequency band (e.g., 2180-2190 MHz) attenuated at least 43+10log(P) dB, where P is the transmitter power in watts.

5. New federal earth stations operating in the 2200-2290 MHz band shall not be located closer than 820 meters from any existing ICO ATC base station.

3. Conclusion

Subject to the above operating conditions, all parties agree that operations consistent with this agreement should protect the federal earth stations in the band 2200-2290 MHz from potential unacceptable interference due to ICO ATC out-of-band emissions. Instances of observed unacceptable interference to a federal earth station operating in the 2200-2290 MHz band will be resolved as set out in Annex A to this agreement.

The responsible federal agencies shall convey this agreement to NTIA through the Interdepartment Radio Advisory Committee (IRAC), indicating that they have no objection to the ICO ATC waiver requests as stated in the ICO ATC application if ICO complies with the conditions of this agreement and its Annexes, and urging NTIA to concur with the ICO ATC waiver requests with the aforementioned limitations in the FCC/NTIA consultation process.

ICO and the responsible federal agencies have each caused this agreement to be signed by its duly authorized representatives.

12-11-08
Name/Date: Suzanne Hutchings Malloy
Title: SVP, Regulatory Affairs
ICO

12/9/08
Name/Date: Ronald L. Carbery
Title: Acting Director, Spectrum Policy and Planning
National Aeronautics and Space Administration

1-5-09
Name/Date: Frederick D. Wedefield, Jr.
Title: Director of Strategic Planning
Department of the Air Force IRAC Rep

15 Dec 08
Name/Date: Thomas P. Kidd III
Title: IRAC Representative
U.S. Department of the Navy

12/5/08
Name/Date: TheAnne E. Gordon
Title: Associate CIO for IT Architecture, Planning, and E-Government
U.S. Department of Energy

12/9/08
Name/Date: James Mentzer
Title: Chief, Office of Radio Frequency Management
U.S. Department of Commerce

ANNEX A

Protection of Existing Federal Earth Stations in the 2200-2290 MHz Band

ICO and the federal agencies agree that to protect existing federal earth station sites in the 2200-2290 MHz band, all ICO ATC base stations operating in the band 2180-2190 MHz and located within 133 km of those receiving earth stations listed in Annex B shall have an out-of-band emission filter to ensure that the EIRP spectral density shall not exceed -100.6 dBW/4kHz for out-of-band emissions at the edge of the 2200-2290 MHz band.

- The EMC analysis determining the 133 km distance utilized the NTIA/ITS Irregular Terrain Model (ITM) in Area Prediction Mode with the following input assumptions:
  - The propagation percentage of time and confidence factor
    - percentage of time = 1.0% and
    - 10% confidence factor;
  - The interference budget is based on ITU-R SA.1154;
  - The acceptable interference threshold:
    - 10% of interference budget and 2 simultaneous interferers plus 2 dB correction factor.
  - Antenna heights:
    - ICO base station: 30 m
    - federal earth station: 10 m
  - The terrain irregularity parameter:
    - Delta_H = 90 m – "average" terrain
  - The mode of variability
    - Individual
  - Radio Climate
    - Continental Temperate
  - Polarization: V
  - Conductivity of Ground: 0.005 S/m
  - Surface Refractivity: 301 N-units
  - Dielectric Constant of Ground: 15

Construction of New Federal Earth Stations in the 2200-2290 MHz Band

ICO and the federal agencies agree that for new federal earth station sites in the 2200-2290 MHz band, a basic coordination process will be followed as set out below:

1. The responsible federal agency will notify ICO of the location of a new federal earth station 24 months prior to initial operation, including:
    - coordinates (latitude and longitude)
    - antenna height above ground level (AGL).
2. ICO will plan to retrofit all existing base stations within 71 km of the proposed earth station with an out-of-band emission filter that ensures the EIRP spectral density shall not exceed -100.6 dBW/4kHz for out-of-band emissions at the edge of the 2200-2290 MHz band.
3. ICO will run the NTIA Irregular Terrain Model (ITM) in Point-To-Point Mode on every existing, unfiltered site that is between 71 and 133 km of the proposed earth station location, using a terrain database selected by the responsible federal agency with ICO's concurrence.
    - The federal agency will provide terrain database to ICO within 60 days of notification of the new federal earth station.
    - Actual antenna heights will be used in the point-to-point analysis.
    - Other input parameters to the ITM model will be identical to those listed above, as appropriate.
4. All ICO base stations between the 71 km and the 133 km radius of a federal earth station that provide less than 160 dB of isolation to the federal earth station will be identified as sites requiring retrofit with a filter as described in Step 2 above.
5. ICO will send the calculation results to the responsible federal agency for validation.
6. Upon agreement with the calculations and conclusions, ICO will submit a plan to the responsible federal agency that outlines the retrofit schedule for all base stations identified as requiring a filter per this process.
7. ICO and responsible federal agency will agree to the proposed retrofit schedule.
8. Upon completion of the retrofit process, ICO will submit formal notification that all base stations requiring filters per this agreement have been retrofit.

Per the agreement, new federal earth stations that are within 3 km of an existing federal earth station will be exempt from this process.

Observed Unacceptable Interference

In the instance of observed unacceptable interference to a federal earth station operating in the 2200-2290 MHz band, since there will be multiple transmitters in the bands adjacent to 2200-2290 MHz that may be located in the vicinity of federal earth stations, including those ATC base-stations belonging to ICO and Terrestar, the federal agency observing unacceptable interference must identify the specific ATC base-station antenna causing the unacceptable interference and contact the responsible entity. If ICO is responsible for the identified ATC base-station antenna, ICO will correct the identified ATC base-station transmitter to prevent unacceptable interference. If ICO's actions do not resolve the unacceptable interference the responsible federal agency will ask NTIA to work with the FCC to obtain satisfactory relief.

ICO Point of Contact

Alfredo Echeverria

Director, Network Systems

11700 Plaza America Drive, Suite 1010

Reston, VA 20190

703 964 1400 (office)

703 964 1452 (direct)

443 386 4882 (mobile)

ANNEX B

2200-2290 MHz Federal Earth Station Locations

LOCATION	COORDINATES	AGENCY
AK, Fairbanks	645838N1473054W	NASA
AK, Fairbanks	645131N1475127W	NASA
AK, Fairbanks	645822N1473004W	Commerce
AK, Fairbanks	645824N1473007W	Commerce
AK, Fairbanks	645826N1473036W	Commerce
AK, Fairbanks	645826N1473021W	Commerce
AK, Fairbanks	645836N1473103W	Commerce
AK, Fairbanks	645842N1472951W	Commerce
AK, North Pole	644818N1473000W	NASA
AK, Poker Flat	650705N1472559W	NASA
AK, Poker Flat	650700N1472736W	NASA
CA, Azusa	341259N1175232W	Air Force
CA, Berkeley	375248N1221438W	NASA
CA, Camp Parks	374400N1215200W	Air Force
CA, Edwards AFB	345739N1175441W	NASA
CA, Goldstone (DSS-14)	352533N1165322W	NASA
CA, Goldstone (DSS-15)	352519N1165314W	NASA
CA, Goldstone (DSS-24)	352024N1165229W	NASA
CA, Goldstone (DSS-27)	351418N1164644W	NASA
CA, Laguna Peak	340630N1190354W	Navy
CA, Table Mountain	342256N1174056W	NASA
CA, Vandenberg AFB	342924N1203154W	Air Force
CO, Boulder	395926N1051551W	Commerce
CO, Buckley Field	394255N1044629W	Air Force
CO, Schriever AFB	384754N1043128W	Air Force
FL, Cape Canaveral	282910N0803434W	Air Force
FL, Merritt Island	283030N0804137W	NASA
FL, New Smyrna Beach	290400N0805447W	NASA
Guam, Andersen AFB	133648N1445112E	Air Force
Guam, GRGT	133655N1445122E	NASA
Guam, Marianas	133655N1445122E	NASA
Guam, NCTAMS WESTPAC	133455N1445050E	Navy
HI, Kaena Point	213418N1581634W	Air Force
HI, Kamaoa-Puueo	190049N1553948W	NASA
HI, Kauai	220735N1593954W	NASA
HI, Nelha	194332N1564332W	NASA
HI, South Point	190449N1553948W	NASA
HI, Wahiawa	213115N1575946W	Commerce
MA, Westford	423724N0712918W	NASA

LOCATION	COORDINATES	AGENCY
MD, Blossom Point	382544N0770502W	NASA and Navy
MD, Greenbelt	385959N0765024W	NASA
MD, Greenbelt	385957N0765116W	Commerce
MD, Greenbelt	390002N0765029W	Commerce
MD, Laurel	391014N0765334W	NASA
MD, Pomonkey	382548N0770512W	Navy
ME, Prospect Harbor	442455N0680150W	Navy
NH, New Boston	425654N0713824W	Air Force
NM, Albuquerque	350459N1063900W	Energy
NM, Kirtland AFB	350300N1062400W	Air Force
NM, Kirtland AFB	350150N1063245W	Energy
NM, Las Cruces	321622N1064438W	NASA
NM, Los Alamos	355220N1061937W	Energy
NM, White Sands (WSGT)	322954N1063631W	NASA
NM, White Sands (STGT)	323240N1063648W	NASA
NM, White Sands (WSGT-TDRS Central)	323059N1063631W	NASA
NM, White Sands (WSGT-TDRS)	323059N1063631W	NASA
NV, Las Vegas	361245N1151004W	NASA
PA, Horsham	401210N0751028W	NASA
PA, Horsham	401209N0751029W	NASA
PTR, Mayaguez	181258N0670802W	NASA
SD, Sioux Falls	434410N0963721W	NASA
TX, Houston	293339N0950531W	NASA
TX, Kelly AFB	294800N0983600W	Air Force
VA, Chantilly	390045N0772540W	NASA
VA, Dulles	390051N0772538W	NASA
VA, Herndon	385732N0772234W	NASA
VA, Quantico	382952N0772223W	Navy
VA, Wallops Island	375538N0752831W	NASA
VA, Wallops Island	375530N0752835W	NASA
VA, Wallops Island	375644N0752740W	Commerce
VA, Wallops Island	375644N0752744W	Commerce
VA, Wallops Island	375645N0752738W	Commerce
VA, Wallops Island	375647N0752738W	Commerce
VA, Wallops Island	375647N0752743W	Commerce
VA, Wallops Island	375648N0752731W	Commerce
VA, Wallops Island	375648N0752736W	Commerce
VA, Wallops Island	375650N0752750W	Commerce
VA, Wallops Island	375651N0752743W	Commerce
VA, Wallops Island (SWAS)	375600N0753000W	NASA
WV, Fairmont	392600N0801200W	NASA