Application for Conventional Experimental License

By the accompanying application and pursuant to Section 5.59 of the Rules and Regulations of the Federal Communications Commission ("FCC"), Omnispace LLC ("Omnispace") hereby requests a license for operation of conventional experimental radio service stations for a period not to exceed two years.[1/] A license for operation of conventional experimental radio service stations is necessary in order to further test and develop a limited number of prototype terminals that will communicate with an existing Medium Earth Orbit ("MEO") satellite. Omnispace is currently conducting the experimental operations described below pursuant to Special Temporary Authorization ("STA") granted by the FCC under Call Sign WI9XEV (File Number 1174-EX-ST-2014). Omnispace has determined that additional testing is needed and so is applying for a conventional experimental license to continue those operations.

Description of Equipment and Testing

The MEO satellite with which the terminals will communicate, referred to as "F2," was launched in June 2001 by ICO Global Communications ("ICO"). F2 was registered under the Convention on Registration of Objects Launched into Outer Space by the United Kingdom (see Attachment 1). F2 has never been used for commercial services. In 2012, Omnispace bought the F2 satellite and proceeded with developing a business plan by which the satellite could be used for commercial services.

The F2 operates in two frequency bands: the Telemetry, Tracking, and Command ("TTC") frequencies and the payload frequencies. The TTC frequencies are in the C Band – *i.e.*, 5150-5250 MHz uplink and 7000-7025 MHz downlink – and are operated under the authority of the United Kingdom. The payload frequencies are in the S Band – *i.e.*, 1985-2015 MHz uplink and 2170-2200 downlink. In 2012, Omnispace entered into an arrangement with Papua New Guinea ("PNG") pursuant to which PNG registered the S Band frequencies with the International Telecommunication Union and authorized Omnispace to operate F2 using such frequencies. Primary satellite control is provided by Intelsat, Ltd. ("Intelsat") from its control center in Long Beach, California. The control signals are transmitted by fiber optics to a third-party-owned C Band uplink facility in Brewster, Washington. These arrangements were used by ICO before Omnispace acquired F2, and Omnispace continued the arrangements with Intelsat and the uplink operator. The S Band frequencies have not been in commercial operation. By this application, Omnispace proposes to transmit signals from the prototype terminals to F2 on the 1990.0-1990.6 MHz band and receive signals from F2 on the prototype terminals on the 2175.0-2175.6 MHz band.

The portion of the S Band that Omnispace proposes to use for receiving signals for purposes of testing the prototype terminals – *i.e.*, 2175.0-2175.6 MHz – is part of the Advanced Wireless Services ("AWS-3") band that the FCC recently auctioned.[2/] While some AWS-3 licenses have

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1/ *See* 47 C.F.R. § 5.71(a).

2/ *See Auction of Advanced Wireless Services ("AWS-3") Licenses Closes; Winning Bidders Announced for Auction 97*, Public Notice, 30 FCC Rcd. 630 (2015).

been granted to the winning bidders of that auction,[3/] other applications for the newly auctioned AWS-3 licenses remain pending.[4/] The only current active AWS-3 licensee impacted by Omnispace's operations is AT&T, which holds an AWS-3 license under call sign WQVN879 for the frequencies 1770-1780 MHz and 2170-2180 MHz covering Anchorage, AK. Omnispace's temporary use of the frequency band will likely discontinue before AT&T (or any other Auction 97 winner) commences use of the band, particularly because AT&T's initial build-out obligation is not until April 8, 2021. Moreover, because Omnispace will be receiving transmissions on the 2175.0-2175.6 MHz band, the risk of interference to AT&T's operations on the 2170-2180 MHz band is minimal. In any case, Omnispace has discussed the proposed operations described herein with the AT&T. As demonstrated through the letter included here as Attachment 2, AT&T has consented to Omnispace's operations on the S Band frequencies specified herein. In the event AT&T commences operations pursuant to its AWS-3 license before Omnispace's use of the frequency band ceases, Omnispace will coordinate its operations with AT&T and will cease operations immediately upon notification of harmful interference to AT&T's operations.

Although there are currently no Federal users of the 2155-2180 MHz band, there are non-Federal, incumbent Fixed Microwave ("CF") and Broadband Radio Service ("BRS") licensees in the band.[5/] Omnispace has determined that, in the frequency band in which it proposes to operate (2175-2175.6 MHz), there are 15 active CF licensees that have authority to operate temporary microwave facilities in either the state of Alaska or Washington (in which Omnispace proposes to operate) or on a nationwide basis. The signal from the satellite would be much weaker than any terrestrial microwave signal. In addition, the satellite signal is narrowband and contains less energy than would be present in the microwave signal. Furthermore, any elevation in the noise floor would be orders of magnitude below the levels that would create issues for the microwave licensees. Nevertheless, Omnispace has notified each of these licensees that it is seeking an experimental authorization to test at the particular locations identified in the Form 442. Omnispace also gave these licensees the technical parameters of its proposed operations. In the unlikely event that Omnispace's operations interfere with any incumbent user of the AWS-3 band, Omnispace will coordinate its operations and cease operations immediately upon notification of harmful interference.[6/]

[3/] *See Wireless Telecommunications Bureau Grants AWS-3 Licenses in the 1755-1780 MHz and 2155-280 MHz Bands*, Public Notice, 30 FCC Rcd. 2952 (2015).

[4/] *See id.* (noting that subsequent public notices will announce the grant of other applications); *Wireless Telecommunications Bureau Announces that Applications for AWS-3 Licenses in the 1695-1710 MHz, and 1755-1780 MHz and 2155-2180 MHz Bands are Accepted for Filing*, Public Notice, 30 FCC Rcd. 3795 (2015).

[5/] *See Amendment of the Commission's Rules with Regard to Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands*, Report and Order, 29 FCC Rcd. 4610, ¶¶ 194-196 (2014).

[6/] Omnispace previously notified the same licensees regarding its intention to operate under the STA, and no licensee raised an objection to the operations.

The other portion of the S Band that is to be used for prototype testing consists of frequencies in the Personal Communications Service ("PCS") band. Omnispace has discussed the proposed operations described herein with the sole licensee in the 1990-1990.6 MHz band – Sprint/Nextel. As demonstrated through the letter included here as Attachment 3, Sprint/Nextel has consented to Omnispace's operations on the S Band frequencies specified herein. Omnispace will coordinate its operations with Sprint/Nextel and will cease operations immediately upon notification of harmful interference to Sprint/Nextel's operations.[7/]

Upon grant of the requested license, Omnispace will conduct testing within a ten-mile radius of the remote locations listed below. Omnispace will deploy no more than three terminals at each of the following locations:

Location	Address	County	Coordinates
Anchorage, AK	1200 East 76th Avenue Anchorage, AK 99518	Anchorage	N 61° 09' 3.945" W 149° 51' 34.214"
Brewster, WA	66c Teleport Drive Brewster, WA 98812	Okanogan	N 48° 08' 49.704" W 119° 41' 33.712"

Because the F2 satellite is only visible in the United States a few hours each day, Omnispace will conduct testing at intervals of no more than two hours at a time. Total testing time will not exceed five hours each day for a period of no more than two years. Omnispace may later amend its application to include additional test locations. In the event that it does so, it will coordinate its uplink operations in the 1990.0-1990.6 MHz band with Sprint/Nextel and notify any other affected licensees in the 2175-2175.6 MHz downlink band.

Program Objectives and Contribution to the Development of the Radio Art

Omnispace's objective in conducting the research described above is to test the technical capabilities of prototype terminals with the F2 satellite. Upon successful completion of testing, which – as noted above – will occur on a non-interference and coordinated basis, Omnispace intends to pursue the manufacture of commercial terminals for deployment primarily in remote regions of the world. Services using F2 and the terminals are expected to reach and provide many benefits to individuals in remote locations and other service points around the globe. Accordingly, grant of this experimental license will foster the transformation of the unused F2 resource into a satellite with related terminals that can provide innovative services that will benefit the public.

If there are questions concerning this application, the FCC is asked to contact communications counsel for Omnispace, Benjamin J. Griffin of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. at 202.661.8720 or BJGriffin@mintz.com.

[7/] Sprint/Nextel has reported no harmful interference during Omnispace's operations pursuant to the STA.

Attachment 1

United Nations ST/SG/SER.E/398

Secretariat

Distr.: General
17 October 2001

Original: English

Committee on the Peaceful Uses of Outer Space

Information furnished in conformity with the Convention on Registration of Objects Launched into Outer Space

Note verbale dated 27 September 2001 from the Permanent Mission of the United Kingdom of Great Britain and Northern Ireland to the United Nations (Vienna) addressed to the Secretary-General

The Permanent Mission of the United Kingdom of Great Britain and Northern Ireland to the United Nations (Vienna) presents its compliments to the Secretary-General of the United Nations and, in accordance with article IV of the Convention on Registration of Objects Launched into Outer Space (General Assembly resolution 3235 (XXIX), annex), herewith encloses technical data concerning the launch of the satellites Skynet-4F (International designation 2001-005B) and ICO-F2 (International designation 2001-026A) (see annex).

V.01-87905 (E) 291001 301001

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Annex

Registration of objects launched into outer space by the United Kingdom of Great Britain and Northern Ireland*

Space object:	Skynet-4F
Owner/operator:	Ministry of Defence Defence Procurement Agency SAT IPT Cedar 3a, #130 MoD DPA Abbey Wood Bristol, BS34 8JH United Kingdom
Date of launch:	7 February 2001
Location of launch:	CSG Kourou, French Guiana
Designation:	2001-005B
Catalogue number:	IRON 5907
Nodal period:	1 sidereal day (1,436 minutes)
Inclination:	<4°
Apogee:	42,164 kilometres
Perigee:	42,164 kilometres
Orbital position:	6° East
General function:	Military telecommunication services
Notified:	28 September 2001
Disposed or decayed:	--
Disposal notification:	--
Accepted onto UK Register of Space Objects:	27 September 2001
Licence issued under the Outer Space Act 1986:	Licence issued to Astrium on 2 February 2001 to procure the launch of, and subsequently operate, the Skynet-4F satellite.

* The registration data are reproduced in the form in which they were received.

Space object:	ICO-F2
Owner/operator:	ICO Global Communications (Operations) Limited Huntlaw Building P.O. Box 1350 Fort Street Georgetown Grand Cayman Cayman Islands
Date of launch:	19 June 2001
Location of launch:	Cape Canaveral, Florida, United States of America
Designation:	2001-026A
Catalogue number:	26857
Nodal period:	351.2 minutes
Inclination:	44.91°
Apogee:	10,113.4 kilometres
Perigee:	10,109.1 kilometres
Orbital position:	--
General function:	Telecommunication services
Notified:	28 September 2001
Disposed or decayed:	--
Disposal notification	--
Accepted onto UK Register of Space Objects:	27 September 2001
Licence issued under the Outer Space Act 1986 (Cayman Islands) Order 1998:	11 June 2001

Attachment 2

William L. Roughton, Jr.
General Attorney

AT&T Services, Inc.
1120 20th Street NW, Suite 1000
Washington, D.C. 20036

Phone: 202.457.2040
Fax: 202.457.3073
E-mail:broughton@att.com

July 16, 2015

Joseph Bravman Ph.D
Omnispace LLC
21700 Atlantic Boulevard
Suite 240
Sterling, VA 20166

Re: Omnispace Experimental License Application

Dear Dr. Bravman:

It is our understanding that Omnispace LLC is seeking FCC authority for a two-year experimental license to continue testing prototype terminals with the F2 satellite launched by ICO Global Communications. Those tests have been ongoing since approximately February 2015 under a special temporary authorization. The tests will be conducted using the F2 payload frequencies in the S Band — i.e., 1990.0-1990.6 MHz uplink and 2175.0-2175.6 MHz downlink—at remote terminals in the U.S. The prototype terminals will be tested and operated in accordance with the parameters set forth in the Form 442, application for conventional experimental license that Omnispace has shared with us and plans to file with the FCC. The testing will be conducted on a non-interference basis and for intermittent periods of time. As an FCC licensee for the Advanced Wireless Service ("AWS-3") spectrum at 1770-1780 MHz and 2170-2180 MHz covering Anchorage, AK, we have no objections to the requested testing for a limited time in such band as described above and in the Omnispace application.

Omnispace agrees to cease operations in the licensed bands should AT&T advise Omnispace of harmful interference caused by its operations or if AT&T determines that it needs to make use of the spectrum.

Very truly yours,

William L. Roughton, Jr.
AT&T SERVICES, INC.
1120 20th Street, NW
Washington, DC 20036
(202) 457-2040 (phone)
Counsel for AT&T Inc.

Attachment 3

Sprint Corporation
12502 Sunrise Valley Drive
Reston, VA 20196

June 29, 2015

VIA EMAIL

Joseph Bravman Ph.D
Omnispace LLC
21700 Atlantic Boulevard, Suite 240
Sterling, VA 20166

Re: Omnispace Experimental License Request

Dear Dr. Bravman:

Sprint Corporation, on behalf of its wholly owned subsidiary, Nextel West Corp. ("Sprint"), hereby provides this letter of concurrence to Omnispace, LLC for a conventional Experimental Authorization ("Experimental"). Sprint understands that Omnispace is seeking FCC authority to continue to test prototype terminals with the F2 satellite launched by ICO Global Communications. The tests will be conducted using the F2 payload frequencies in the S Band – *i.e.*, 1990.0-1990.6 MHz uplink and 2175.0-2175.6 MHz downlink – at remote terminals in Brewster, Washington and Anchorage, Alaska. The prototype terminals will be tested and operated in accordance with the parameters set forth in the application for Experimental authorization that Omnispace provided and plans to file with the FCC. The proposed testing will be conducted on a non-interference basis and for intermittent periods of time, not to exceed an overall period of two years. This authorization will replace Omnispace's current STA under call sign WI9XEV.

Sprint concurs to Omnispace's requests for conventional Experimental authorization in Brewster, Washington and Anchorage, Alaska for testing of 1.9 GHz spectrum at 1990-1990.6 MHz for the additional two year period of time. Sprint is authorized under call signs WQKT258 and WQKT260, which covers these two testing locations as indicated in the application provided by Omnispace.

Accordingly, Sprint concurs to the secondary use of 1990.0-1990.6 MHz in Brewster, Washington and Anchorage, Alaska. If there are any questions regarding this matter or additional information is required, please contact the undersigned at (703) 433-4211.

Sincerely,

/s/

Robin J. Cohen
Senior Manager, Regulatory Affairs