April 9, 2024

VIA ELECTRONIC FILING

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
45 L Street NE
Washington, DC 20554

Re: **Notice of *Ex Parte* Communication, Call Sign WW9XPI, DA No. 24-280**

Dear Ms. Dortch:

The Federal Communications Commission's Office of Engineering and Technology designated matters pertaining to the request of Space Exploration Holdings, LLC (SpaceX) to operate pursuant to Special Temporary Authority (STA) on an experimental basis under Call Sign WW9XPI as "permit-but-disclose" for purposes of the Commission's rules governing *ex parte* communications, effective March 20, 2024.[1] SpaceX's refusal to respond to the substance of Omnispace's well documented interference concerns based on a purported procedural limitation is therefore puzzling.[2]

SpaceX's failure to coordinate with Omnispace or to respond in a meaningful manner to Omnispace's requests is also contrary to law and policy. Under both international and domestic laws and regulations, experimental operations such as those SpaceX intends to conduct may only occur on secondary, non-interference basis relative to primary licensee like Omnispace.[3] The burden to demonstrate non-

[1] *OET Announces Permit-But-Disclose Ex Parte Status For Experimental License WW9XPI,* Public Notice, DA 24-280 (rel. Mar. 20, 2024).

[2] The body of the Public Notice designating matters pertaining to Call Sign WW9XPI for permit-but-disclose treatment references File No. 2479-EX-ST-2023 under Call Sign WW9XPI. This file number reference is incidental to the designation of WW9XPI for permit-but-disclose status under the FCC's *ex parte* rules. To the extent the file number reference is deemed relevant, Omnispace's communications concerning SpaceX's dual failure to coordinate with Omnispace and to operate consistent with the terms of its WW9XPI experimental operating authority apply equally to both application file numbers associated with Call Sign WW9XPI. Finally, to dispel any remaining procedural concerns and as a courtesy, Omnispace is serving a copy of this letter on SpaceX. *See* 47 C.F.R. §§ 1.1202(a)-(b); 1.1208.

[3] *See, e.g.,* ITU Radio Regulations, Art. 4.4 ("Administrations of Member States shall not assign to a station any frequency in derogation of the Table of Frequency Allocations in this Chapter or other provisions of these Regulations, except on the express condition that such a station, when using such a frequency assignment, shall not cause harmful interference to, and shall not claim protection from harmful interference caused by, a station operating in accordance with the provisions of the Constitution, the Convention and these Regulations."); 47 U.S.C. § 301 ("It is the purpose of this chapter, among other things, to maintain the control of the United States over all the channels of radio transmission; and to provide for the use of such channels, but not the ownership thereof, by persons for limited periods of time, under licenses granted by Federal authority, and no such license shall be construed to create any right, beyond the terms, conditions, and periods

interference also rests on the recipient of secondary, non-interference operating authority, not on the primary licensee.

As detailed in the attached correspondence, SpaceX emailed Omnispace less than two hours prior to launching satellites pursuant to its WW9XPI experimental operating authority. In its email, SpaceX contended, falsely, that Omnispace is not entitled to coordination and failed to provide the information Omnispace had identified as necessary to readily demonstrate that the interference effects that Omnispace experienced coterminous with SpaceX's past tests are attributable to the current ones conducted under Call Sign WW9XPI. SpaceX's also seems intent once again to conduct tests at an elevation hundreds of kilometers lower than the altitudes that the FCC has actually authorized SpaceX to operate.[4]

The FCC does not tolerate failures to coordinate with potentially affected operators, nor does the FCC tolerate an experimental authorization holder's failure to operate consistent with its FCC-specified operating parameters.[5] Omnispace's attached communications and this letter are intended to bring these matters to the attention of the Federal Communications Commission for further analysis and

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of the license."); 47 C.F.R. § 5.84 ("Operation of an experimental radio station is permitted only on the condition that harmful interference is not caused to any station operating in accordance with the Table of Frequency Allocation . . . .").

[4] SpaceX's experimental authorization permits certain operations conducted from satellites operating consistent with the terms of its Gen2 Partial Grant, as modified, which strictly limits SpaceX's operating authority to orbital altitudes of 525 km, 530 km, and 535 km. *See, e.g.,* SpaceX, Experimental Special Temporary Authorization, Call Sign WW9XPI, File No. 2479-EX-ST-2023, Condition 2 (eff. Dec. 20, 2023)("All operations of the Gen2 Starlink satellites must also comport with the Commission's decision in the SpaceX Gen2 Partial Grant, Order and Authorization, FCC 22- 91 (rel. Dec. 1, 2022), and the terms and conditions in the SpaceX Gen2 V-band Grant, ICFS File No. SAT-MOD-20230322-00062 (granted-in-part/dismissed-in-part Oct. 13, 2023, reissued Nov. 9, 2023). Except for the addition of testing authority specifically addressed in this grant of STA, operations must also comport with all terms and conditions of the SpaceX Gen2 modification, ICFS File No. SAT-MOD-20230207-00021 (granted-in-part/deferred-in-part December 1, 2023)."); SpaceX, Experimental Special Temporary Authorization, Call Sign WW9XPI, File No. 0519-EX-ST-2024, Condition 3 (eff. Apr. 1, 2024)(same). Multiple independent authorities and Omnispace's own observations, however, indicate that SpaceX conducted its last experimental operations under WW9XPI at approximately 360 km, many kilometers below SpaceX's authorized orbital altitude and contrary to the operating authority the FCC awarded to SpaceX. *Cf., e.g.,* Jonathan McDowell (@planet4589), X (Mar. 4, 2024, 2:03 AM), https://twitter.com/planet4589/status/1764547101969494427?lang=en (posting a plot of Starlink satellite altitudes and noting that "[t]he six test satellites for Starlink's direct-to-cell system were launched as part of Group 7- in Jan…. [and] are being operated at 360 km"). While SpaceX has sought to obtain FCC authority to operate in the range of 360 km, the FCC has not granted any such request. *See* Letter from David Goldman, SpaceX to Marlene H. Dortch, FCC, ICFS File Nos. SAT-LOA-20200526-00055 & SAT-AMD-20210818-00105 (Feb. 20, 2024).

[5] *See, e.g.,* 47 C.F.R. § 5.53 ("No radio transmitter shall be operated in the Experimental Radio Service in the United States and its Territories except under and in accordance with a proper station authorization granted by the Commission"); *see also, e.g.*, 47 C.F.R. § 25.117 ("no modification of a radio station governed by this part which affects the parameters or terms and conditions of the station authorization shall be made except upon application to and grant of such application by the Commission"); *FCC Opens Spectrum Horizons for New Services & Technologies*, Report and Order, 34 FCC Rcd 1605, 1610 ¶ 13 (2019) (noting that spectrum horizon licenses granted on a non-interfering basis may operate only following coordination and only following submission of a "detailed" and "sufficient methodology for preventing harmful interference").

enforcement.[6] As a U.S.-based company lawfully operating under the authority of a foreign notifying administration, Omnispace has also copied its notifying administration on this correspondence.

Sincerely,

/s/ Mindel De La Torre

Mindel De La Torre
Chief Regulatory and International Strategy Officer
Omnispace, LLC

cc: FCC staff shown in Attachment A
National Information & Communications Technology Authority (NICTA) of Papua New Guinea
Jameson Dempsey, Director, Satellite Policy, Space Exploration Technologies Corp.
David Goldman, Vice President of Satellite Policy, Space Exploration Technologies Corp.

Attachments

[6] The FCC has consistently reviewed and investigated notices of non-compliance with the Commission's rules and requirements by a wide range of concerned parties. *See, e.g.*, *Rocky Mountain Radar On Request for Inspection of Records*, Memorandum Opinion and Order, 21 FCC Rcd 12362, 12362 ¶ 2 (2006) (noting investigation of general complaint about a device marketer's potential violations of the FCC's device design rules); *Sinclair Broadcast Group, Inc.*, Notice of Apparent Liability for Forfeiture, 32 FCC Rcd 10853, 10853 ¶ 2 (2017) (noting investigation of anonymous complaint that broadcaster's violation of the FCC's paid-for broadcast programming rules); *Morgan County Industries, Inc.*, Memorandum Opinion and Order, 21 FCC Rcd 13712, 13713 ¶ 5, n.11 (2006) (noting investigation of complaint filed by a concerned individual regarding a broadcaster's license renewal application).

Attachment A

[redacted]

From: David Goldman <David.Goldman@spacex.com>
Date: Sunday, April 7, 2024 at 9:34 AM
To: Mindel DeLaTorre <mdelatorre@omnispace.com>, Jameson Dempsey <Jameson.Dempsey@spacex.com>
Cc: Julie Kearney <Julie.Kearney@fcc.gov>, Whitney Lohmeyer <Whitney.Lohmeyer@fcc.gov>, Ira Keltz <Ira.Keltz@fcc.gov>, Ram Viswanathan <rv@omnispace.com>, Amit Saluja <asaluja@omnispace.com>, Ron Olexa <rolexa@omnispace.com>, John Zukoski <jzukoski@omnispace.com>, Jeff Snyder <jsnyder@omnispace.com>, "merissa.velez@fcc.gov" <merissa.velez@fcc.gov>, Jeanine Poltronieri <jeanine.poltronieri@fcc.gov>
Subject: RE: SpaceX SCS Testing

Mindel,

Because your email goes to the merits of several open permit-but-disclose proceedings, we cannot respond on this email chain. While I believe we have already addressed on the record most of the issues you raise here, if you file an official ex parte with any additional concerns we can respond in accordance with the Commission's disclosure rules.

But if you are truly concerned about interference, good faith coordinate on behalf of our respective administrations would be a more productive path forward. That way we can learn more about Omnispace's actual operations and better understand your concerns.

From: Mindel DeLaTorre <mdelatorre@omnispace.com>
Date: Saturday, April 6, 2024 at 9:55 PM
To: Jameson Dempsey <Jameson.Dempsey@spacex.com>
Cc: David Goldman <David.Goldman@spacex.com>, Julie Kearney <Julie.Kearney@fcc.gov>, Whitney Lohmeyer <Whitney.Lohmeyer@fcc.gov>, Ira Keltz <Ira.Keltz@fcc.gov>, Ram Viswanathan <rv@omnispace.com>, Amit Saluja <asaluja@omnispace.com>, Ron Olexa <rolexa@omnispace.com>, John Zukoski <jzukoski@omnispace.com>, Jeff Snyder <jsnyder@omnispace.com>, "merissa.velez@fcc.gov" <merissa.velez@fcc.gov>, Jeanine Poltronieri <jeanine.poltronieri@fcc.gov>
Subject: Re: SpaceX SCS Testing

Dear Jameson,

It seems that the last night's launch was delayed until either tonight or tomorrow, giving Omnispace time to respond to yesterday's 11th hour notification to us.

While SpaceX may find it convenient to continue to deny that Omnispace is a potentially affected operator, Omnispace knows that it will be not just a *potentially* affected operator, but an affected operator if SpaceX launches a LEO system of up to 7,500 satellites that use a globally allocated MSS uplink band for SpaceX's D2C downlink. Omnispace has demonstrated time and time again in the SCS and G-block proceedings that the interference caused by SpaceX's D2C

1990-1995 MHz downlinks certainly will meet the threshold of harmful interference, but SpaceX continues to dismiss Omnispace's analysis by asking the FCC to trust that SpaceX can somehow defy the laws of physics.

Trusting SpaceX at its word is the height of irony since SpaceX's first batch of D2C satellites are still orbiting far below their authorized 530-550 km altitude despite assurances to the FCC that they are being orbit raised over a month ago. Further, based on the public record and private observation, testing is being conducted at an altitude and timeline not authorized by the current STA under which SpaceX may operate. While illegally operating, SpaceX continues to waste the FCC's time by repeatedly asking to change the altitude of its D2C satellites to 360 km even though the FCC has given its very cogent rationale for not permitting a mega-constellation to be at an altitude below the ISS – an altitude well-known to SpaceX.

Note that the following description of the location of the testing of the D2C satellites is woefully inadequate for SpaceX's LEO system that is operating on a *non-interference* basis:

> Testing will take place within the specific locations identified in SpaceX's Part 5 experimental special temporary authority. Those test locations will include, but are not limited to, SpaceX or T-Mobile facilities in and around Redmond, WA, Mountain View, CA, and Kansas City, KS. The *remaining test locations are listed in SpaceX's experimental authorization*, attached.

While I appreciate the specification of the Redmond, Mountain View and Kansas City sites in your email below, as you are well aware, the updated STA request includes the entire states of California, Texas, Washington and Hawaii. Given the breadth of the STA, Omnispace must be notified of where and when within these states the testing will occur, particularly given your vague description below:

> SpaceX intends to test at every pass of the satellites over the locations identified above, i.e., when the satellite is in view of the location, with each pass having a duration of approximately two (2) minutes. The exact times of the satellites' passes over the authorized testing locations will vary. Satellite identifiers will be available on Space-Track.org and CelesTrak.org and can be used to determine satellite passes.

Given that SpaceX never identified to us the first batch of D2C satellites in the January launch, so the only way to track the first 6 D2C satellites is using databases like the Space-Track.org and CelesTrak.org, Omnispace is well-versed in the use of these systems and notes your instruction to use them, but simply knowing the position of the satellites gives no indication of where and when and under what conditions they will be operating. Therefore, to ensure that SpaceX actually tests in good faith, we reiterate our request that the following information be provided to us:

- the Norad satellite catalog identification number for each satellite involved in the testing,
- daily test times and durations of the transmissions from each identified satellite,
- frequencies to be utilized by each satellite,
- waveform to be used (bandwidth and 7-character emission designator),
- ground test locations including user equipment locations for testing, and
- satellite antenna maximum gain in dBi and total transmit power in dBW into the antenna on a per illuminated spotbeam basis and the number of simultaneously operating spot beams for each satellite.

In addition, Omnispace requests that SpaceX provide the 360 degree radiation pattern of the spacecraft antenna as verified by a competent independent lab since SpaceX has not provided such information in its filings.

Please let me know if you have questions -- Mindel

Mindel De La Torre
Chief Regulatory and International Strategy Officer
Omnispace LLC
8255 Greensboro Drive, Suite 101
McLean, VA 22102 USA
Office: +1.202.930.5935

Mobile: +1.703.228.9697

From: Jameson Dempsey <Jameson.Dempsey@spacex.com>
Date: Friday, April 5, 2024 at 7:52 PM
To: Mindel DeLaTorre <mdelatorre@omnispace.com>
Cc: David Goldman <David.Goldman@spacex.com>
Subject: SpaceX SCS Testing

Dear Mindel,

Based on SpaceX's analysis, Omnispace is not a potentially affected operator in relation to SpaceX SCS operations in the 1910-1915 MHz and 1990-1995 MHz band. However, as a courtesy, we are providing you with the following information related to our testing, which is information identified in the notice conditions of our SCS authorizations.

Technical parameters: SpaceX's testing will operate within the technical parameters and specifications included within its Part 25 partial authorization and experimental STA (0519-EX-ST-2024), including:

- a maximum satellite EIRP of 58.0 dBW and a maximum EIRP density of -2.33 dBW/Hz using main beam antenna gains that may vary between 29.0 dBi and 38.0 dBi; and
- certified cellular phones, cellular probes, and link testers that comply with Code of Federal Regulations Title 47, Part 24 technical rules.

Per SpaceX's Schedule S and FCC authorization, SpaceX will adjust its satellite EIRP density so that the maximum PFD at any of the locations listed below does not exceed -80 dBW/m^2/MHz.

Locations: Testing will take place within the specific locations identified in SpaceX's Part 5 experimental special temporary authority. Those test locations will include, but are not limited to, SpaceX or T-Mobile facilities in and around Redmond, WA, Mountain View, CA, and Kansas City, KS. The remaining test locations are listed in SpaceX's experimental authorization, attached.

Timing: Initial check-out testing will take place during the first 10 days following launch, and experimental testing will take place throughout the experimental license term. Testing will take place every day, with the next launch expected to take place no earlier than 7pm PDT on April 5, 2024. SpaceX intends to test at every pass of the satellites over the locations identified above, i.e., when the satellite is in view of the location, with each pass having a duration of approximately two (2) minutes. The exact times of the satellites' passes over the authorized testing locations will vary. Satellite identifiers will be available on Space-Track.org and CelesTrak.org and can be used to determine satellite passes.

Stop buzzer: The contact information of the stop-buzzer personnel for this testing is: satellite-operators-pager@spacex.com or rf_interference@spacex.com. The email inboxes will be monitored 24/7 by shifts of different SpaceX personnel.

Sincerely,
Jameson

[redacted]

CERTIFICATE OF SERVICE

CERTIFICATE OF SERVICE

I hereby certify that on April 9, 2024, copies of the foregoing letter were served by first class U.S. mail upon:

David Goldman
Vice President, Satellite Policy
SpaceX Exploration Technologies Corp.
1155 F Street, NW Suite 475
Washington, DC 20004

Jameson Dempsey
Director, Satellite Policy
SpaceX Exploration Technologies Corp.
1 Rocket Road
Hawthorne, CA 90250

/s/ Mindel De La Torre

Mindel De La Torre
Chief Regulatory and International Strategy Officer
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