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***By Electronic Filing***

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, S.W.  
Washington, D.C. 20554

**Re: Gogo LLC Section 1.65 Letter  
File No. SES-MFS-20151022-00735, Call Sign E120106**

Dear Ms. Dortch:

Gogo LLC ("Gogo"), by its attorney and pursuant to Section 1.65 of the Commission's rules, 47 C.F.R. § 1.65, hereby updates the above-referenced application to modify Gogo's license for Earth Stations Aboard Aircraft ("ESAA"), which sought to add a number of satellites to the Gogo ESAA network (the "Gogo Modification"). Specifically, this letter provides corrections or clarifications regarding orbital debris mitigation matters for Yamal 300K and Yamal 401, technical parameters and market access issues relating to Yamal 300K, identification of satellites and administrations, and certain technical data. In addition, Gogo requests that the Commission hold in abeyance its request for authority to communicate with the AMC-1 satellite pending further developments.

Yamal Spacecraft Orbital Debris Mitigation Statements

The Gogo Modification sought authority to add the Yamal 300K and Yamal 401 satellites as authorized points of communication. In support of its requests, Gogo provided orbital debris mitigation statements relating to both spacecraft.<sup>1</sup> Subsequent to submitting the modification application, Gogo has had further discussions with Gazprom, the satellites' operator, and provides corrections and clarifications regarding these statements.

First, Gazprom has revised the tables regarding the residual propellant and pressurant that will be on board each spacecraft at its end of life. The updated tables are below and should replace the tables in Annexes 5.4.C and 5.4.D. In each table, the information that has changed from what was presented in the Gogo Modification is indicated by red, bold text.

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<sup>1</sup> See Gogo Modification, Annex 5.3.C, Yamal 300K Orbital Debris Mitigation Statement, and Annex 5.4.C, Yamal 401 Orbital Debris Mitigation Statement.

## Yamal 300K:

Item	Purpose	Tank Volume	Number of Tanks / Interconnected	Initial mass of item per tank	End of life mass / volume	Tank pressure rating / units	End of life pressure
Hydrazine (liquid)	Attitude control	26 liters BOL 0.7 liter EOL	Located in common tank and separated by internal membrane.	25 kg	0.7 kg/ 0.7 l	<b>8.1 atm</b>	NA (1)
Nitrogen	Pressurant	14 liters BOL <b>39.3 liters</b> EOL		<b>0.1325 kg in each tank</b>	<b>0.1325 kg in each tank/ 39.3 l</b>	<b>8.1 atm</b>	2.9 atm
Xenon	Orbit control	38 liters	2 / Yes	71 kg in each tank	<b>0.54 kg</b> in each tank	140 atm	2.6 atm <b>(2)</b>

(1) – Not applicable, as after hydrazine depletion, membrane-separator of hydrazine and pressurant is completely folded and hydrazine pressure is not guaranteed (at the worst, it does not exceed Nitrogen pressure)

**(2) – Indicated value corresponds to the minimum operating pressure for plasma thrusters. Following the satellite orbit-raising, the xenon tank venting operation will be carried out, so the value listed in the table can be taken as the worst case.**

## Yamal 401:

Item	Purpose	Tank Volume	Number of Tanks / Interconnected	Initial mass of item per tank	End of life mass / volume	Tank pressure rating / units	End of life pressure
Hydrazine (liquid)	Attitude control	26 liters BOL 0.7 liter EOL	3 Tanks / Interconnected  Fuel and pressurant are located in common tank and separated by internal membrane.	25 kg	0.7 kg/ 0.7 l	<b>8.1 atm</b>	NA (1)
Nitrogen	Pressurant	14 liters BOL <b>39.3 liters</b> EOL		<b>0.1325 kg in each tank</b>	<b>0.1325 kg in each tank/ 39.3 l</b>	<b>8.1 atm</b>	2.9 atm
Xenon	Orbit control	38 liters	4 / Yes	71 kg in each tank	<b>0.54 kg</b> in each tank	140 atm	2.6 atm <b>(2)</b>

(1) – Not applicable, as after hydrazine depletion, membrane-separator of hydrazine and pressurant is completely folded and hydrazine pressure is not guaranteed (at the worst, it does not exceed Nitrogen pressure)

**(2) – Indicated value corresponds to the minimum operating pressure for plasma thrusters. Following the satellite orbit-raising, the xenon tank venting operation will be carried out, so the value listed in the table can be taken as the worst case.**

In addition, Gazprom has confirmed that the residual pressure data presented for each spacecraft in the tables above assumes a temperature of 293K.

#### Yamal 300K Market Access and Operational Information

Gogo updates and corrects the information provided with respect to its proposed use of the Yamal 300K satellite as follows:

- Gogo proposes to use the beam on Yamal 300K designated “Northern Beam 1.” That beam provides coverage over certain parts of U.S. territory and adjacent territorial waters, and accordingly Gogo seeks Commission authority to use the satellite in U.S. airspace. Furthermore, Gogo deletes its request to use the 12.5-12.75 GHz band for downlinks from Yamal 300K because this spectrum is not used by Northern Beam 1. A revised copy of Annex 2 to the Gogo Modification reflecting these changes is attached.
- Subsequent to submission of the Gogo Modification, Panasonic filed a request for U.S. market access for the Yamal 300K satellite, including submission of a Schedule S and detailed technical information.<sup>2</sup> Gogo similarly requests U.S. market access for Yamal 300K and incorporates by reference the materials supplied in the Panasonic Amendment. Gogo also seeks any necessary waiver of Section 25.210(f) of the Commission’s Rules, 47 C.F.R. § 25.210(f). As discussed in the Panasonic Amendment, although the Yamal 300K satellite does not satisfy Commission requirements for full frequency reuse in the Ku-band spectrum that will be used for ESAA operations, Commission precedent supports grant of a waiver to permit U.S.-licensed earth stations to communicate with satellite capacity that would otherwise lay dormant.<sup>3</sup>

#### Identification of Satellites and Administrations

Gogo also provides the following information to correct certain data that was provided in items E21-E24 of the Schedule B filed with the Gogo Modification.

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<sup>2</sup> See *Panasonic Avionics Corp.*, Call Sign E100089, File No. SES-AFS-20160107-00003 (the “Panasonic Amendment”).

<sup>3</sup> See *id.*, Attachment A at 6-7 & n.7 (citing cases).

Satellite Name	ITU-R Name	ADMIN
JCSAT-2B	JCSAT-2R	Japan (J)
EUTELSAT 115 WB	MEXSAT-114.9 C-Ku	Mexico( MEX)
JCSAT-5A	N-STAR-A	Japan (J)
YAMAL 300K	NSS-19	Netherlands (HOL)
YAMAL 401	EXPRESS-7C	Russia (RUS)
ASIASAT-7	ASIASAT-CK	China (CHN)

In addition, Gogo notes that the correct licensing administration for the Eutelsat 117 West A satellite is Mexico.

#### Corrections to Form 312 and Schedule B

Gogo has also completed a thorough review of the data submitted with the Gogo Modification and updates the Form 312 and Schedule B submitted with the application as follows:

- In response to item 20 of the Form 312, Gogo specifies that the nature of service should be Fixed Satellite (box a), as ESAA is an application of the fixed-satellite service.
- The response to item E38 of the Form 312 Schedule B was incorrect for the AES1 terminal and should be changed to 35.48 Watts.

#### AMC-1 Satellite

Finally, Gogo asks the Commission to defer action on the request in the Gogo Modification for authority to communicate with the AMC-1 satellite pursuant to the regulatory framework set forth in Section 25.227(a)(1) and (b)(1). In its application, Gogo noted that because AMC-1 had only recently been relocated to its position at 129.15° W.L., efforts to coordinate the satellite with operations of adjacent spacecraft had not yet been completed. As a result, Gogo was not in a position to provide a letter confirming that operation of the Gogo ESAA terminals using AMC-1 was consistent with coordination agreements with satellites operated within six degrees of the AMC-1 orbital location.<sup>4</sup>

Pending completion of coordination efforts, Gogo proposed to operate its terminals with technical parameters that comply with the off-axis EIRP spectral density specified in

<sup>4</sup> See Gogo Modification, Narrative at 3.

Section 25.227(a)(1)(i)(A) in the plane of the geostationary satellite orbit (“GSO”).<sup>5</sup> Gogo requested any necessary waiver of Section 25.227(a)(1)(i)(B) relating to the off-axis EIRP spectral density of the Gogo antennas in directions other than along the GSO plane.<sup>6</sup>

Subsequent to filing of the Gogo Modification, efforts to coordinate Gogo ESAA operations using AMC-1 with adjacent satellites have continued. Once a coordination agreement has been finalized, Gogo expects to be able to update the Gogo Modification by supplying the coordination letter required pursuant to the regulatory framework set forth in Section 25.227(a)(2) and (b)(2). That will make the request in the Gogo Modification application for AMC-1 authority under the Section 25.227(a)(1) and (b)(1) framework moot.

Accordingly, Gogo believes that the most efficient approach would be for the Commission to suspend processing of the AMC-1 request in the Gogo Modification and hold that request in abeyance. Gogo asks that the Commission proceed with processing of the remainder of the Gogo Modification, as the other satellites discussed in the application have all been coordinated and therefore do not present the same issues as AMC-1.

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Gogo requests that the Commission update its records regarding the Gogo Modification to take the above information into account and seeks expeditious processing of the Gogo Modification with these updates. Please let me know if you have any questions regarding this matter.

Respectfully submitted,

*/s/ Karis A. Hastings*

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<sup>5</sup> *Id.*, Narrative at 3 & Annex 3.

<sup>6</sup> *Id.*, Narrative at 3 & 14-15.

**ANNEX 2:**

**Updated Spacecraft and Teleport Tables**

Satellite	Location	Beam Coverage Area	Tx (GHz)	Rx (GHz)	Use in US airspace?	Satellite Operator
<b>AMC-1</b>	129.15W	North America	14-14.5	11.7-12.2	Yes	<b>SES</b>
<b>SES-1</b>	101W	North America	14-14.5	11.7-12.2	Yes	
<b>SES-4</b>	22W	Europe	14-14.5	12.5-12.75	No	
<b>SES-6</b>	40.5W	East Atlantic Ocean	14-14.5	10.95-11.2; 11.45-11.7	No	
		West Atlantic Ocean	14-14.5	10.95-11.2; 11.45-11.7	Yes	
<b>Galaxy 17</b>	91W	North America	14-14.5	11.7-12.2	Yes	<b>Intelsat</b>
<b>IS-18</b>	180E	South Pacific	14-14.5	12.25-12.75	No	
<b>IS-14</b>	45W	North and South America excludes Brazil	14-14.5	11.7-12.2	Yes	
<b>IS-21</b>	58W	Brazil	14-14.5	11.7-12.2	No	
		South Atlantic Ocean	14-14.5	11.45-11.7	No	
<b>IS-22</b>	72.1E	Mobility from Mideast to Japan and to Australia	14-14.5	12.25-12.5	No	
<b>IS-19</b>	166E	Northeast Pacific	14-14.5	12.25-12.75	Yes	
		Northwest Pacific	14-14.5	12.25-12.75	No	
		Australia	14-14.5	12.25-12.75	No	
		Southwest Pacific	14-14.5	12.25-12.75	No	
<b>IS-904</b>	60E	Spot 1 - Western Russia	14-14.5	10.95-11.2; 11.45-11.7	No	
<b>Eutelsat 115WB (Satmex 7)</b>	114.9W	North America	14-14.5	11.7-12.2	Yes	<b>Eutelsat</b>
<b>Eutelsat 117WA (Satmex 8)</b>	116.8W	Central and South America	14-14.5	11.7-12.2	Yes	
<b>E172A<sup>1</sup></b>	172E	North Pacific and Northeastern Russia	14-14.5	10.95-11.2; 11.45-11.7; 12.2-12.75	No	

<sup>1</sup> This satellite is only used for communications with the Aerosat antenna system.

Satellite	Location	Beam Coverage Area	Tx (GHz)	Rx (GHz)	Use in US airspace?	Satellite Operator
<b>T-11N</b>	37.5W	Africa	14-14.5	10.95-11.2; 11.45-11.7; 12.5-12.75	No	Telesat
		Atlantic	14-14.5	11.45-11.7	No	
<b>T-18</b>	138E	Asia	14-14.5	12.2-12.75	No	JSAT
<b>JCSAT-2B</b>	154E	South Pacific	14-14.5	11.45-11.7; 12.25-12.75	No	
<b>JCSAT-5A<sup>2</sup></b>	132E	Japan	14-14.5	12.25-12.75	No	
<b>Yamal 300K</b>	183E (177W)	North Pacific Ocean	14-14.5	10.95-11.2; 11.45-11.7	Yes	Gazprom Space Systems
<b>Yamal 401</b>	90E	Russia	14-14.5	10.95-11.2; 11.45-11.7; 12.5-12.75	No	
<b>Asiasat 7</b>	105.5E	China	14-14.5	12.25-12.75	No	AsiaSat

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<sup>2</sup> This satellite is only used for communications with the Aerosat antenna system.