June 23, 2020

BY ELECTRONIC FILING

Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, DC  20554

Re:   Space Exploration Holdings, LLC, Call Signs S2983/S3018

Dear Ms. Dortch:

Pursuant to Section 25.170 of the Commission’s rules, Space Exploration Holdings, LLC (“SpaceX”) hereby submits its annual report for the above referenced non-geostationary orbit satellite system (“Starlink”). As of June 12, 2019, SpaceX began operation of the initial Starlink space station in its authorized orbit in compliance with the terms and conditions of its authorization.1 Since its last annual report, SpaceX has launched a total of 478 Starlink satellites. It has completed testing of all but the last 58 satellites (which were launched ten days ago), and hereby certifies that the space stations’ measured performance is consistent with SpaceX authorization and that they are capable of using all assigned frequencies.2

1. Space station(s) not available for service or otherwise not performing to specifications as of May 31 of the current year, any spectrum within the scope of SpaceX’s Part 25 license that the space station is unable to use, the cause(s) of these difficulties, and the date when the space station was taken out of service or the malfunction was identified.

   Over the past year, SpaceX has launched 478 Starlink satellites to an operational altitude of 550 km. As summarized in Table 1 below, only nine of those satellites – or less than 2% – have since suffered diminished maneuvering capability at an altitude above injection. These satellites will passively de-orbit in under two years on average. SpaceX uses a very low injection altitude for its satellites, which means satellites that lose maneuverability at deployment will demise in less than a month. SpaceX has also intentionally de-orbited five satellites over the past year, either to test the de-orbit process or because the satellite was not performing optimally. SpaceX will continue to upgrade its satellites to drive reliability of the fleet throughout the license term as it de-orbits and replaces older satellites with upgraded models.

---

1 See Letter from Patricia Cooper to Marlene H. Dortch, IBFS File Nos. SAT-LOA-20161115-00118 and SAT-MOD-20181108-00083 (June 12, 2019).

2 See 47 C.F.R. § 25.173(b). The space stations listed in Table 1 are not using their assigned frequencies except to perform TT&C functions.
<table>
<thead>
<tr>
<th>Count of satellites with diminished maneuverability slotted for de-orbit</th>
<th>Altitude of satellite [km]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>549</td>
</tr>
<tr>
<td>2</td>
<td>373</td>
</tr>
<tr>
<td>3</td>
<td>550</td>
</tr>
<tr>
<td>4</td>
<td>550</td>
</tr>
<tr>
<td>5</td>
<td>401</td>
</tr>
<tr>
<td>6</td>
<td>383</td>
</tr>
<tr>
<td>7</td>
<td>550</td>
</tr>
<tr>
<td>8</td>
<td>550</td>
</tr>
<tr>
<td>9</td>
<td>535</td>
</tr>
</tbody>
</table>

Table 1. Summary of Satellites With Diminished Maneuverability Above Injection

2. *Point(s) of contact for resolution of interference problems and for emergency response.*

Erik Babcock  
Manager, Satellite Operations Engineering  
+1 (310) 219-7858  
Erik.Babcock@spacex.com

SpaceX On-Call Satellite Operator  
Satellite-operators-pager@spacex.com

3. *Construction progress of authorized replacement satellites.*

Not applicable.

Should you have any questions, please direct them to me.

Sincerely,

William M. Wiltshire  
*Counsel to SpaceX*