

Request for Renewal of Experimental Authority

Iridium Satellite LLC (“Iridium”) seeks renewal of its experimental authority to add the HALO-Net Free Flyer smallsat as a point of communication for its low-earth orbit satellite constellation. For the reasons set forth below, Iridium seeks experimental authority for a period of 24 months, beginning May 1, 2021.

Iridium’s requested license will enable it to support the HALO-Net Free Flyer, a 3U small satellite program run by the U.S. Navy. Because of delays attributable primarily to the COVID-19 pandemic and technical issues, the HALO-Net Free Flyer launch was delayed. It is now anticipated that the HALO-Net Free Flyer will be launched into low-earth orbit this year; it will operate for approximately 12 months following the launch. Iridium is requesting a 24-month license term to account for the possibility of additional launch delays.

The primary experiment on HALO-Net Free Flyer is the retroreflector array. The retroreflectors will be tested for survivability and the amount of light reflected from the small satellite to a telescope on earth. If successful, HALO-Net Free Flyer will generate data to validate optical propagation models and influence the design of future optical communication payloads for the Navy. A GPS receiver and advanced nano-satellite communications suite will permit transmission of positional information as well as a simple receive capability.

The HALO-Net Free Flyer will carry two Iridium model 9603 short burst data (“SBD”) modems that will be used to transmit to space stations in Iridium’s “Big LEO” constellation. NTIA’s authorization for these HALO-Net Free Flyer transmissions was included in Iridium’s initial experimental license application and is hereby incorporated by reference.

Iridium requests a renewal of experimental authority to transmit in the reverse direction, from its Big LEO constellation to the modems on the HALO-Net Free Flyer, in the 1618.725–1626.5 MHz band. The technical characteristics of these transmissions will be identical to the technical characteristic of Iridium’s already-licensed space station transmissions in the 1618.725–1626.5 MHz band.¹

Iridium’s space station constellation is licensed under Part 25 of the Commission’s rules, Call Sign S2110. Because Iridium will be operating under the parameters of its Part 25 license, no operating parameters, other than effective radiated power, were provided in Iridium’s original experimental license application or in the

¹ Iridium’s constellation is comprised of 66 satellites, any one of which may be used as part of the experiment at any point in time.

renewal form that this exhibit accompanies. The only change from Iridium's licensed operations under Part 25 is that Iridium will be adding the HALO-Net Free Flyer-based modem as a point of communication. Iridium's Part 25 space station license does not cover intersatellite communications in the 1618.725-1626.5 MHz band.