

Request For Special Temporary Authority

Harris Corporation (“Harris”) seeks to continue communicating command & control to the HSAT-1 satellite, as well as communicating telemetry and mission experiment data demonstrated aboard the HSAT-1 orbital testbed (cubesat) for a six-month period.¹ A full narrative of the mission experiment of the HSAT-1 cubesat is described in ELS File No. 0016-EX-CN-2016. HSAT-1 was launched on November 28, 2018 and was injected into a 505 km sun-synchronous orbit approximately 109 minutes after launch.²

The special temporary authority requested herein will allow Harris to continue performing S-band space-ground communications with the HSAT-1 cubesat. Specifically, the HSAT-1 cubesat communications include command and control, telemetry reporting, and delivery of mission experiment data. As Harris has previously explained, HSAT-1 cubesat’s mission is an experiment related to demonstrating state-of-the-art radio technology.³ The primary objectives are to: (1) assess the effectiveness of radiation mitigation techniques of the payload in the actual environment with continual performance and event monitoring, (2) assess the performance of a broad-bandwidth deployable antenna (BBDA) specifically designed for cubesats through on-orbit measurement, and (3) assess the effective coverage of Harris’ earth-to-space and space-to-earth tracking, telemetry, and control (TT&C) and payload experiment data communications through on-orbit demonstration of an S-band radio. Importantly, operation of the HSAT-1 cubesat is also a risk-reduction activity for demonstrating space-ground communications related to Harris’ USAV project.

Harris submits that grant of the requested special temporary authority is in the public interest, convenience, and necessity as it will allow Harris to continue performing critical S-band space-ground communications with the HSAT-1 cubesat.

¹ Harris has been operating pursuant to a special temporary authorization (“STA”) granted by the Commission on March 5, 2019. *See* ELS File No. 2051-EX-ST-2018; WI2XSR. Harris’s STA is due to expire on June 1, 2019. Harris understands from OET staff that, due to Federal uses in the S-band, Harris may not obtain a full experimental license for its operations at this time. Thus, at the suggestion of OET staff, Harris is filing the instant “new” STA application so that it may continue its critical communications with the HSAT-1 cubesat. The instant STA request seeks the exact same authority to communicate with the HSAT-1 as is currently authorized under WI2XSR (ELS File No. 2051-EX-ST-2018).

² *See* ELS File No. 2051-EX-ST-2018. A further extension of special temporary authority is necessary in this case because the launch of the HSAT-1 cubesat was delayed until late November 2018.

³ *See* ELS File No. 0016-EX-CN-2016.