

Request for Special Temporary Authority

Iridium Satellite LLC (“Iridium”) seeks special temporary authority (“STA”) for a period of one hundred and eighty (180) days, beginning July 1, 2021, and ending January 1, 2022, to transmit from its space stations to the Kentucky Re-Entry Probe Experiment (“KREPE”) in the 1618.725–1626.5 MHz band,¹ in the manner described below.

The KREPE research project developed by the University of Kentucky is designed to test atmospheric re-entry models and proposes to use three space capsules launched from the International Space Station (“ISS”). Each capsule will be equipped with a modem designed to communicate via the Iridium system during de-orbiting and eventual return to Earth. The University of Kentucky has applied for experimental authority covering transmissions from the capsules to Iridium’s space stations.²

Each of the three capsules will include a single NAL Research A3LA-RSP satellite modem. Each capsule will use a modem to relay communications via the Iridium system to KREPE mission control sometime after it is deployed and reaches approximately 85-78 km above the Earth. The capsules will be released from the ISS sometime within the 180-day STA period but will be battery-limited to an operating period of approximately 30 days. The 180-day STA period is necessary to accommodate scheduling uncertainties.

Iridium asks that the term of its 180-day STA commence on July 1, 2021, when the capsules are scheduled to be launched. To accommodate the spacecraft launch integrator’s requirements for getting the KREPE system to the ISS, however, Iridium respectfully requests that its STA request be granted no later than **April 1, 2021**.

There will be no change during the experiment in the operating parameters of Iridium’s space stations. For this reason, no operating parameters, other than effective radiated power and an emission designator, are shown in the form that this exhibit accompanies. The only change for which Iridium seeks an STA is adding the capsules as points of communication. Iridium’s Part 25 space station license does not cover space-to-space communications.

¹ Iridium’s constellation licensed under Callsign S2110 is comprised of 66 satellites, any one of which may be used as part of the experiment at any point in time.

² See OET File No. 1910-EX-ST-2020.