The Aerospace Corporation
Experimental License Application
File No: 0677-EX-CN-2026

Explanation of Experiment

The Aerospace Corporation ("Aerospace") is a non-profit federally funded research and development corporation (FFRDC) which has, as part of its mission, the obligation to support experimentation in space. Aerospace is filing this application as part of its support for NASA under contract number 80GSFC24F0033.

This application is part of an engineering research project that will explore the impact of terrestrial radio operations on a proposed future NASA mission. This research will inform the design and operation of the future NASA mission.

This application seeks an extension of STA WA9XGM. The field testing was originally scheduled to last six months. Equipment unavailability and inclement weather have extended the testing period beyond the original planning, so Aerospace is filing this request for an experimental license.

Technical Synopsis

- Spectrum Needed: 24.25-24.45 GHz
- Emission Designators: 50M0F1N, 100MF1N, 200MF1N
- Time of Use: Limited to flight times
- Areas of Operation: area of operation is in flight above the transmitter
- Power Level and ERP: Maximum requested is 10 W, 10 W ERP
- Federal Contract Number: 80GSFC24F0033

Description of Operations

Aerospace is seeking this application to continue testing a radio sensor. The radio sensor is expected to be deployed on a future NASA satellite mission. The sensor operates – listens – in the 24.25-24.45 GHz band. The sensor is a passive RF device. The proposed test will put the sensor on an aircraft which will then fly over ground-based transmitters that Aerospace constructed and operated during the flights. This application seeks authorization for the ongoing operations of the ground-based transmitters. The experiments are delivering essential information on the impact of ground-based transmission in these bands on the weather sensing technology that NASA is preparing to deploy on its satellite. The results of the experiment will allow Aerospace to advise NASA on how to ensure that its satellite-based sensors are delivering accurate information.

In sum, the goal is to detect radio energy being perceived when the receiver is flown over the ground-based transmitter. The transmission is a generic 20 millisecond segment that repeats. The purpose is to find the radio energy, or actually to determine how NOT to find that radio energy, thus determining how to design the NASA weather sensing system.

Emissions

This application proposes the continuing use of three different emissions during the testing. Only one emission will be used at a time. If the system is set up for a 50 MHz wide transmission, the rest of the spectrum will not be in use. This is also true for the 100 MHz wide transmission. The 200 MHz wide transmission fills the requested band.

The system was designed to allow the transmitter to shift from one emission configuration to the next during a single flight, which will optimize the productivity of the flights.

It is possible to coordinate the time of use to avoid any potential for interference.

Limited Time of Use

The transmitters are only expected to be turned on when flights are scheduled. Those flights depend upon the availability of the aircraft and pilot, so there are likely to be days when the system is not in use at all.

On flight days, the radio is expected to be used for eight hours during the day.

Stop Buzzer POC

David Kunkee
310-469-2780
David.b.kunkee@aero.org

Conclusion

Aerospace Corporation is seeking an experimental license for the ongoing use of a ground-based transmitter. It will fly aircraft above the transmitter to see if the signal from the transmitter can be detected. The information generated from this experimentation will help Aerospace to design a weather sensing satellite for NASA that will avoid picking up signals from commercially operated systems that use the 24.25-24.45 GHz band.

If there are any questions about this application, please contact Anne Cortez, Esq. Counsel to Aerospace at 520-360-0925 or anne@washingtonfederalstrategies.com.