

Narrative in Support of Special Temporary Authority Application

General Dynamics Mission Systems, Inc. (“GDMS”), submits this Application for Special Temporary Authority (“Application”) to conduct testing of a new software defined radio (“SDR”). GDMS is a defense electronics manufacturer and integrator with deep domain expertise in land, sea, air, space, and cyber. GDMS provides mission-critical solutions to its customers who lead, serve, and protect the world we live in.

This experiment involves the evaluation of radio communications between uncrewed aerial systems (“UAS”) using commercial off-the-shelf (“COTS”) drone platforms equipped with test radios at three locations in the vicinity of Taunton, MA. The purpose of the experiment is to validate the performance of the SDR through assessment of drone-to-drone radio data links in an airborne operational environment. Test radios will be installed on COTS drones and operated in airborne configurations while additional radio units will be deployed at fixed ground locations to support the experiment. A ground station equipped with a radio emitter will be used to monitor transmissions and support situational awareness throughout the test. The test radios will transmit digital data consisting primarily of control and coordination messages between drone platforms. Data collected during this experiment will inform the development of reliable drone-to-drone communication systems capable of supporting autonomous coordination in complex operational environments, with direct applicability to government and military uncrewed systems programs.

All test operations will be conducted within a designated test area in accordance with applicable Federal Aviation Administration (“FAA”) UAS operating rules and Federal Communications Commission (“FCC”) experimental license regulations and conditions of authorization. Transmissions will be limited to the authorized frequencies, power levels, and emission types specified in this application and the UAS devices will not exceed 400 feet above ground level, pursuant to applicable FAA authorization. Operations will be supervised by qualified personnel to ensure compliance with all applicable regulations and to minimize the potential for interference with authorized radio services. Details regarding the proposed operation appear below. GDMS requests that the Commission grant the special temporary authority for the requested operations no later than August 30, 2026, for a period of 180 days.

Experiment Locations and Geographic Scope

GDMS will use transportable transceivers to establish air-to-air and air-to-ground communications links within the specified radius of the test area. Fixed and mobile operations will remain within the stated radius surrounding the designated center point, as reflected in the

application materials and as depicted on the map below. Transmissions will occur at the following locations within a 1.6 km radius of:

- 41° 54' 7" N, 71° 14' 47.3" W;
- 41° 55' 3.6" N, 71° 7' 56.9" W; and
- 41° 51' 53.6" N, 71° 3' 8.3" W.¹

GDMS will conduct testing only during the authorized period and only within the approved geographic areas.

Location Overview



Technical Information

Duration. The special temporary authority is requested for a period of 180 days from the date of authorization. This duration is necessary to allow sufficient time to complete all planned test events, account for scheduling dependencies and weather delays, and collect meaningful performance data across a range of operational conditions. Transmissions will occur only during active test operations. Individual test sessions are anticipated to last approximately one hour, with testing conducted intermittently on weekdays between 8am and 6pm. Transmitters will not operate continuously and are expected to maintain a low to moderate duty cycle during each test session.

¹ Due to formatting limitations in the Experimental Licensing System, the application form accepts coordinates only to whole seconds. The coordinates in this narrative reflect a more precise site location; any discrepancy is solely the result of rounding in the form.

Operating Parameters. GDMS seeks authority to operate under the following technical parameters:

Frequency Ranges	1695-1710 MHz 2400-2480 MHz 4550-4750 MHz 5725-5850 MHz
Necessary Bandwidth	3 MHz
Power Levels (Mean)	Transmitter output power: 23 dBm
Maximum Antenna Gain	1 dBi
Maximum EIRP	24 dBm
Maximum ERP	21.85 dBm
Modulating Signal	BPSK

RF Safety and Environmental Considerations

GDMS will comply with all applicable Commission rules governing human exposure to radiofrequency energy. The proposed operations involve an uncrewed aerial system with no onboard personnel, which inherently limits RF exposure risk. Personnel conducting the tests will be knowledgeable of RF safety requirements and will operate in a manner consistent with Commission rules.

Grant of the requested special temporary authority will not result in any construction or environmental effects requiring review under section 1.1307 of the Commission's rules.

Experimental Nature of Authorization

GDMS acknowledges that any authorization granted under part 5 is temporary and experimental in nature and confers no right to continued operation or to use any frequency beyond the scope and duration authorized. GDMS will not market, sell, or lease equipment, nor will it conduct any commercial service or market trial under this authority.

“Stop Buzzer” Contact Information

If GDMS is required to modify or terminate operations due to any interference concerns, the individual best able to respond promptly to such issues and to act as the technical and interference (“stop buzzer”) point of contact is as follows:

Grant Benson
Telephone: +1 (651) 509-5237
Email: grant.benson@gd-ms.com

This individual will be available during testing operations and will have the authority to suspend transmissions immediately if necessary to resolve any interference concerns.

Conclusion

Granting this special temporary authority would serve the public interest by advancing the development of reliable communications technologies for uncrewed aerial systems, which have broad applications in national defense, public safety, and critical infrastructure. The data collected will contribute to the domestic development of SDR technology for government and military uncrewed systems programs, reducing reliance on foreign-developed communications solutions. Authorization of this experiment supports the United States’ continued leadership in uncrewed systems technology and spectrum innovation. For the foregoing reasons, GDMS respectfully requests that the Commission grant the requested special temporary authority to permit the proposed operations consistent with part 5 of the Commission’s rules.