Revised 9/11/2026 v4

1. EXPERIMENTAL PURPOSE AND RESEARCH OBJECTIVES

Innovation Technologies Consortium (ITC), operator of the FATHOMWERX Proving Ground (FPG), is requesting experimental authorization to support research, development, and testing of autonomous and unmanned systems in maritime environments.

FATHOMWERX Proving Ground (https://fpg.fathomwerx.com) is a public test range that supports U.S. Government, Department of Defense, and industry partners. The facility is designed to accelerate development of autonomous systems, including unmanned surface vessels, unmanned aerial systems, and distributed multi-vehicle operations.

Part of the testing focuses on data communications that support positive control, coordination, and the safe operation of unmanned systems. These systems rely on dependable radio links for command, telemetry, video, and communication between vehicles.

Testing will include multi-vehicle coordination, long-range control links, and performance of communications under varying environmental and operational conditions.

2. DESCRIPTION OF EXPERIMENTAL OPERATIONS

The proposed operations involve mobile radio transmissions associated with autonomous platforms operating within a defined coastal test area.

Radios will be installed on unmanned surface vessels, unmanned aerial systems, and shore-based equipment. These systems will support command and control as well as high-bandwidth data transmission such as video and sensor data.

Operations will include point-to-point links and multi-node networks, with platforms moving throughout the test area. Because systems are mobile, transmissions will not originate from fixed locations.

3. GEOGRAPHIC AREA OF OPERATION

The FATHOMWERX Proving Ground operates in the coastal region of Ventura County, California.

The offshore operations box is located fully within ocean waters offshore of Ventura County. Communications will therefore also occur while USVs are transiting between Ventura Harbor or Channel Island Harbor and the offshore operations area, including during ingress and egress from the harbors to the designated offshore box.

Additionally, temporary mobile stations will be utilized along the coast inside Ventura Harbor and Channel Islands Harbor waterfront areas, including from docks, parking areas, and other temporary staging locations adjacent to the water. No permanent installations are planned.

A temporary mobile station will also be utilized at the Serra Cross high-site area near Ventura at approximate coordinates (34°17'11.01"N 119°17'39.25"W) for operational support purposes. This would be a temporary/mobile deployment only with no permanent installation planned.

The average flight altitude for operations will be approximately 1,500 ft AGL.

4. INTERFERENCE MITIGATION AND SPECTRUM SHARING

ITC will take practical steps to avoid interference with existing spectrum users.

Transmit power will be limited to the minimum required to support operations within the defined test area. Spectrum monitoring tools will be used before and during testing to understand the RF environment.

All operations are conducted as scheduled, controlled test events with defined time windows, rather than continuous transmissions. Coordination and notification will be conducted, as appropriate, with relevant stakeholders such as the NTIA, U.S. Navy, FAA, U.S. Coast Guard, and local authorities.

Where supported by the equipment, radios may adjust frequencies or operating parameters to avoid interference.

5. QUALIFICATIONS OF APPLICANT

Innovation Technologies Consortium is a nonprofit organization based in Ventura, California focused on advancing innovation in defense and maritime technologies.

Through the FATHOMWERX Proving Ground, ITC provides a structured environment for test and evaluation, along with infrastructure to support prototyping and field experimentation with government and industry partners.

ITC has the technical and operational capability to safely manage experimental radio operations and associated test activities.

6. PUBLIC INTEREST STATEMENT

This work supports development of safer and more reliable autonomous systems operating in maritime environments. It also contributes to national defense efforts and the advancement of communications technologies needed for these systems to operate effectively.

Providing a controlled test range helps reduce risk while enabling real-world validation of emerging technologies.

7. SUMMARY

This request supports controlled experimental radio operations within a defined coastal test area to advance autonomous system capabilities.

Reliable communications are a core part of these systems, and testing them in realistic conditions is necessary to ensure safe and effective operation.

Innovation Technologies Consortium will conduct all activities responsibly and with consideration for other spectrum users.