

Exhibit 1

1. Introduction

By the instant application (“Application”),¹ General Dynamics OTS (Aerospace), Inc. (“Applicant”) requests that the Commission grant a Conventional Experimental License to operate the facilities specified in the instant application.

2. Purpose of the Operation – Description of Research Project

The requested license will support the development and verification of GPS-enabled navigation systems for various Precision Guided Munitions (PGMs) and related hardware in a controlled laboratory environment. The projects focus on simulating real-world GPS satellite signals indoors to test receiver functionality, signal acquisition, and navigation accuracy without exposure to external variables. Radio communication (GPS signal re-radiation) is not the primary objective but serves as a supporting tool for broader system validation efforts across multiple programs.

The operations will support both IR&D and government contract activities. These operations include Hardware-in-the-loop (HWIL) testing and internal Research and Development (IRAD) efforts to ensure reliable performance of GPS receivers integrated into end products. Radio communication (GPS signal re-radiation) is not the primary objective but serves as a supporting tool for broader system validation efforts across multiple programs.

The requested authorization for the fixed, indoor GPS Source GPSRKL12-P110/3.3 re-radiator (operating on L1 at 1575.42 MHz and L2 at 1227.60 MHz with 30 dB amplification, 3.3V DC output, pass DC input/block DC output, and L1P passive antenna) is essential to provide stable, simulated GPS signals indoors. In our lab setting, direct satellite signals are blocked by building structures, making outdoor testing impractical for iterative development. The re-radiator captures live outdoor signals via the external antenna and re-transmits them at low- power indoors, enabling precise verification of receiver performance under controlled conditions. Without this, we cannot accurately simulate GPS environments for testing, which is critical for project milestones in PGM navigation system integration.

Existing communications facilities are inadequate. Existing facilities, such as standard GPS simulators or outdoor test ranges, are inadequate for our needs. GPS simulators generate synthetic signals but do not replicate live satellite constellations with real-time variations (e.g. multipath or atmospheric effects), leading to incomplete validation. Outdoor testing is logistically challenging, weather-dependent, and exposes sensitive hardware to uncontrolled environments, increasing the risks and costs. Our lab lacks RF-shielded enclosures (Anechoic Chamber) that would exempt licensing, and no alternative low-power indoor solutions provide necessary live-

¹ Applicant previously filed an experimental authorization under File No. 0251-EX-CN-2026, which was dismissed without prejudice. Applicant has updated its materials to clarify its intent to test the use of GPS re-radiators using a “fixed” station only. Applicant will not be using GPS re-radiators for any “mobile” applications.

signal fidelity without re-radiation. Thus, the requested facilities are required to advance programs efficiently and safely. The Applicant is not currently operating these facilities pending approval of this Application, as the Applicant ceased prior operations before submission of this Application.

3. Waiver of Station ID Requirements

A waiver of the Station ID requirements of 47 CFR §5.115(a) is respectfully requested.

4. Government Contract

As explained above, the operations will support both IR&D and government contract activities.

Accordingly, it is requested that:

- The Commission grant the license with an “XT” Station Class
- The Commission not include a Special Condition limiting operations to contract support

With respect to the contracts being supported, the following information is provided:

Customer/Agency: US Army
Contract No: W15QKN-18-9-1008 DOTC-19-04-INIT4268
USG POC: Greg Rodebaugh, 973-396-6181

5. Stop Buzzers

The following will be available by wireless telephone and will act as the “stop buzzer” if any issues arise during testing:

Nick Booker. Desk: (425) 420-9319 Mobile: (425) 476-5076

6. Responses to Items Listed at 8.3.28 of the Manual of Regulations and Procedures for Federal Radio Frequency Management

8.3.28 Use of Fixed Devices That Re-Radiate Signals Received from the Global Positioning System Except as otherwise authorized under Part 7.14, federal agencies and departments may, under the following conditions, operate fixed devices that re-radiate signals received from the Global Positioning System (GPS).

a. Individual authorization is for indoor use only, and is required for each device at a specific site.

Applicant: Yes, understood

b. Applications for frequency assignment should be applied for as an XT station class with a note indicating the device is to be used as an "Experimental RNSS Test Equipment for the purpose of testing GPS receivers" and describing how the device will be used.

Applicant: Yes, understood – the Station Class will be assigned by the FCC based on the information provided by Applicant.

c. Approved applications for frequency assignment will be entered in the GMF.

Applicant: Yes, understood – This is not an action item for Applicant – Applicant assumes this will be addressed by the relevant agencies.

d. The maximum length of the assignment will be two years, with possible renewal.

Applicant: Yes, understood – The license is being requested for a 2 year term

e. The area of potential interference to GPS reception (e.g., military or contractor facility) has to be under the control of the user. Areas beyond the range for potential interference are protected by the maximum power calculation described in f. below, and thus no further record notes are required for frequency assignments.

Applicant: Yes, understood

f. The EIRP must be such that the emissions are no greater than -140 dBm/24 MHz as received by an isotropic antenna at a distance of 100 feet (30 meters) from the building where the test is being conducted. The calculation for maximum EIRP shall be based on free space propagation with no allowance for additional attenuation (e.g., building attenuation) as shown below.

$$P_{Tmax} = P_R + 20 \log_{10} f + 20 \log_{10} (30 + d) - 27.55$$

Where: P_{Tmax} is the maximum permissible EIRP in dBm

P_R is the power received at 30 meters from the building (i.e. -140 dBm/24 MHz)

f is frequency in MHz (i.e. 1575.42 for L1, 1227.60 for L2, 1176.45 for L5)

d is the distance between the radiator and the closest exterior wall of the building in meters.

P_{Tmax} can then be converted to picowatts by using the formula: $P_{Tmax(pW)} = 10^{\left(\frac{P_{Tmax}}{10} + 9\right)}$

Applications requesting power greater than the P_{Tmax} calculated at $d = 0$ meters (i.e. 39.3 pW for L1, 23.8 pW for L2, and 21.9 pW for L5) must provide the distance from the transmit antenna to the nearest exterior wall so that reviewing agencies can determine if the requested power meets the maximum EIRP described above.

Applicant: See "Attachment 1" for demonstration of EIRP levels.

g. GPS users in the area of potential interference to GPS reception must be notified that GPS information may be impacted for periods of time.

Applicant: Yes, understood

h. The use is limited to activity for the purpose of testing RNSS equipment/systems.

Applicant: Yes, understood

i. A "Stop Buzzer" point of contact for the authorized device must be identified and available at all times during GPS re-radiator operations.

Applicant:

Nick Booker. Desk: (425) 420-9319 Mobile: (425) 476-5076

7. FAA Coordination

Applicant has initiated FAA coordination under TRK 260654. Applicant will supplement the file with the concurrence when it is received.

Attachment 1

GPS Re-Radiation Network Radiate Power Analysis

Below, please see Applicant's demonstration of compliance with GPS re-radiation requirements set forth in section 8.3.28 of the NTIA Manual of Regulations and Procedures for Federal Radio Frequency Management.

The figure below is provided by the manufacturer GPS Source:

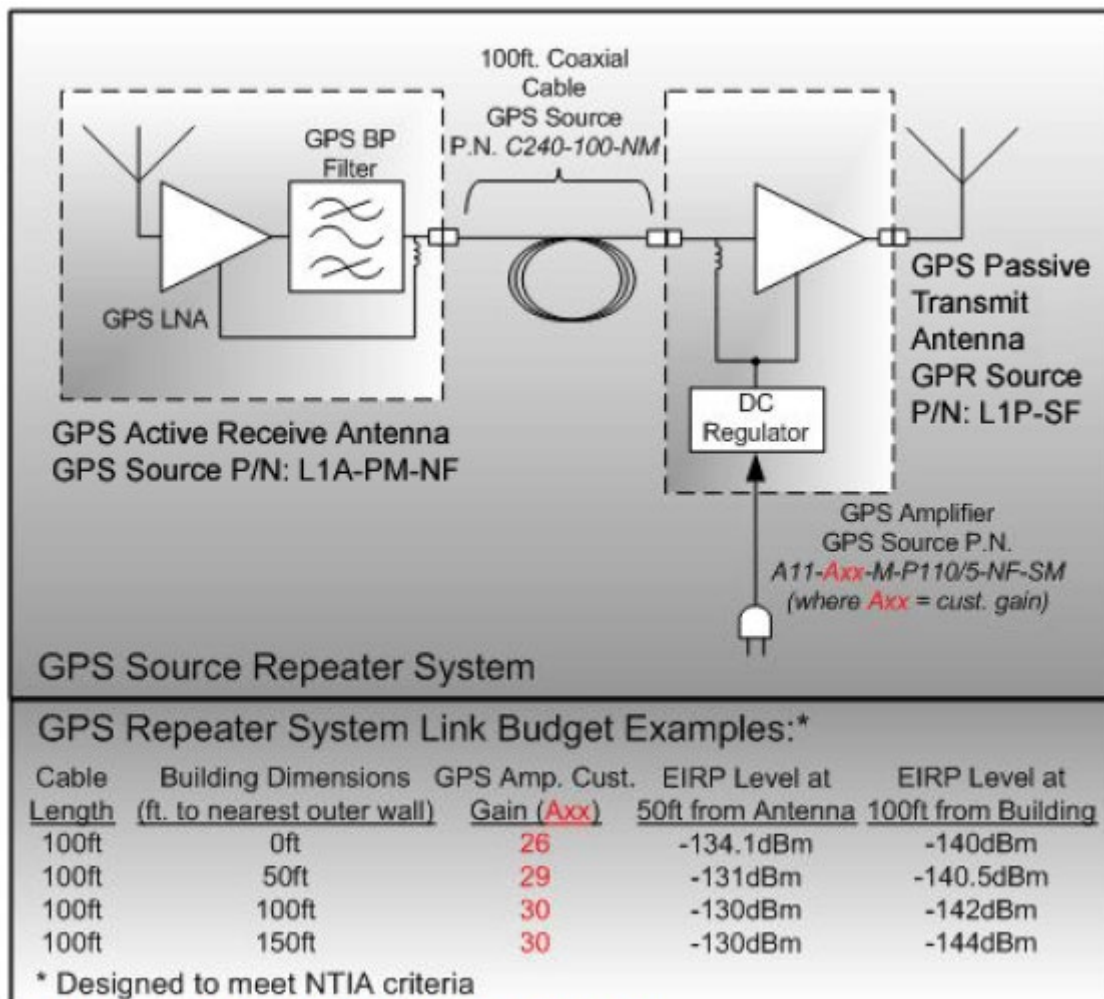


Figure 1. GPS Source typical Repeater System

Site Diagram

