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FEDERAL COMMUNICATIONS COMMISSION
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Application Narrative for Proposed Special Equipment Program

Proposed Program

Much of the work with which WHOI is involved is funded by the Office of Naval Research and the National Science Foundation. The science and engineering staff at WHOI collaborate on the development of equipment used to monitor ocean processes. For many years, systems have employed GPS for position and timing services. Among the projects funded are some, particularly in the case of the principal staff member making this request, associated with high resolution marine acoustics where an essential measurement is the travel time of acoustic signals in the water column.

Increasingly we are asked to develop instrumentation for making measurements that require that multiple systems operate synchronously in time, the PPS and clock signals signal for which are supplied by standard, single frequency commercially available GPS receivers. The testing of a multitude of these instruments requires that each simultaneously have access to the GPS signal. A GPS repeater will make testing, which often requires a significant amount of time to establish operational readiness of the equipment, a more efficient process by eliminating the cabling and antennas necessary to give each unit direct access to the roof of the building in which the lab resides.

Objective

The unit we propose to purchase is a GPS L1 repeater kit from Navtech GPS. We plan to mount the receiving antenna for this unit on the roof of the Bigelow building as shown in the elevation diagram. It will be cabled to the repeater situated in the 3rd floor laboratory of Bigelow room 306. Within this lab, the repeater would radiate the GPS signal to instruments under test. This will provide an improved testing capability over our present regime of outdoor testing which is unnecessarily time consuming and weather dependent.