

Exhibit 1**Ref Section 4**

Frequencies, power and modulation types. These conform to 802.11b standard except for increased power (10 W).

Frequency (GHz)	Power			Emission	Modulating Signal	Bandwidth (kHz)
(A)	(B)	(C)	(D)	(E)	(F)	(G)
2.412	10 W	79.4W ERP	Peak	DSSS/OFDM D8D	Digital Data	22000
2.417	10 W	79.4W ERP	Peak	DSSS/OFDM D8D	Digital Data	22000
2.422	10 W	79.4W ERP	Peak	DSSS/OFDM D8D	Digital Data	22000
2.427	10 W	79.4W ERP	Peak	DSSS/OFDM D8D	Digital Data	22000
2.432	10 W	79.4W ERP	Peak	DSSS/OFDM D8D	Digital Data	22000
2.437	10 W	79.4W ERP	Peak	DSSS/OFDM D8D	Digital Data	22000
2.442	10 W	79.4W ERP	Peak	DSSS/OFDM D8D	Digital Data	22000
2.447	10 W	79.4W ERP	Peak	DSSS/OFDM D8D	Digital Data	22000
2.452	10 W	79.4W ERP	Peak	DSSS/OFDM D8D	Digital Data	22000
2.457	10 W	79.4W ERP	Peak	DSSS/OFDM D8D	Digital Data	22000
2.462	10 W	79.4W ERP	Peak	DSSS/OFDM D8D	Digital Data	22000

Exhibit 2.

Location of operations (Section 5c)

Location 1. Testing will take place from time to time in this location.

100 E. 17th st.

Riviera Beach Florida

33404

Actual testing will take place on and around the dock area which extends into Lake Worth Lagoon.

80°05143W, 26.77802N

Location 2

Testing will take place from time to time at this location.

1400 Northpoint Parkway

Suite 100

West Palm Beach Florida

33404

Indoors and in the surrounding parking lot area.

80°09981W, 26.76569N

Location 3

At sea test area. The largest portion of testing will take place from mobile unit to mobile unit in this location.

In the Atlantic ocean off the coast of West Palm Beach and Palm Beach Florida in an area bounded approximately by (26°55.8'N, 79°55.7'W), (26°55.8'N, 80°02.2'W), (26°31.5'N, 77°55.7'W), (26°31.5'N, 80°02.5'W). Testing will take place a minimum of one mile off shore. Refer to nautical chart below.

ADUUV AT-SEA OPERATIONS AREA

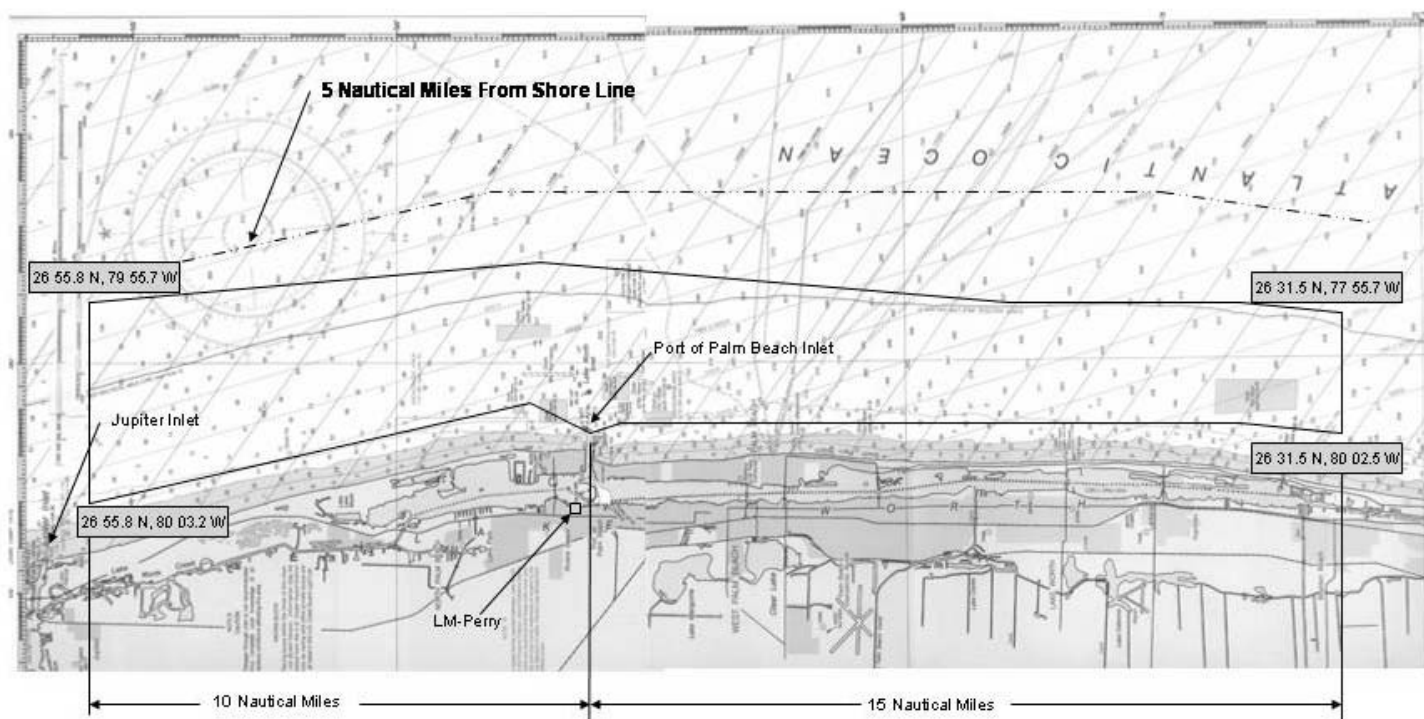


Exhibit 3:

Section 7

U.S. Government contract information.

Contract number N00024-03-C-6308

Naval Sea Systems Command

1333 Isaac Hull Avenue

Washington Navy Yard

Washington DC

20376

Contracting officer:

Mindy L. Daniel

202-781-2928

Information related to this contract is for official use only.

Distribution statement D: Distribution authorized to department of defense and dod contractors only. (Critical technology and administrative or operational use) (Oct. 2002). Other requests shall be referred to the program manager for unmanned undersea vehicles (PMS403).

This application is in support of the Advanced Development Unmanned Underwater Vehicle (ADUUV) project. This communication will be used for remote monitoring and control of an underwater vehicle, at sea, by a surface ship. This mode of communication, 802.11b, is a requirement of the contract. The proposed use of a directional antenna (on the ship) and increased power (on the ship and on the remote vehicle) is required to meet the range requirements of the contract. The installation on the vehicle will use a custom omnidirectional antenna mounted on a mast with a maximum height of 36 inches above the ocean surface. The ship installation will use an omni directional antenna and a directional antenna mounted approximately 20 feet above the ocean surface. This communication will be used to support testing of the vehicle during development testing prior and subsequent to delivery to the Navy.

Exhibit 4
Section 9

(a) The nature of the research project being conducted:

This project seeks to deliver an autonomous unmanned under water vehicle to the United States Navy. The requested communications facilities will support remote monitoring and control of the unmanned submersible vehicle during testing.

(b) The communications facilities are necessary for the research project involved. During development testing the ADUUV will operate autonomously under water. From time to time, the ADUUV will return to the surface to communicate with the mother ship. During these times the mother ship will send directions (mission plans) and other mission parameters to the ADUUV vehicle. The ADUUV vehicle will send accumulated sensor and performance data to the mother ship. Communications tests will take place at any of the locations listed in Exhibit 2 to verify operation of the communications system prior to at sea testing in order to reduce risk. This mode of communication is specifically required by contract.

(c) The existing communications facilities are inadequate.

This is a new communications facility.

This application will use standard, off the shelf 802.11b communications hardware and seeks only to allow a higher radiated power limit through the use of amplifiers and a directional antenna in order to meet the communications range requirements of the contract. The contract calls for communications at 10Mb/Sec at 1 mile and 1Mb/Sec at 10 miles.

Other communications facilities were considered.

Acoustic (through the water) communications were much too slow and limited in range.

Standard 802.11B communications were fast enough but limited in range due to low power and adverse propagation characteristics in the open ocean, close to the surface of the water and the fact that the vehicle antenna is mounted on a very unstable platform. More power was required to achieve acceptable range and throughput.

Various military radios (Singars, JTTRS) were considered but for reasons of cost, weight, availability, the requirement for crypto key loading, space, compatibility and power consumption, these were deemed unacceptable.