

**Enhanced Undersea Weapons Hardware-in-the-Loop Laboratory**

**(EUWHILL)**

**Final Report for Contract N00014-12-1-1039**

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<b>14. ABSTRACT</b> The equipment requested expanded the Enhanced Undersea Weapons Hardware-in-the-Loop Laboratory (EUWHILL) system which is being used by students, scientists, and engineers at ARL/PSU. The equipment has been instrumental in providing an environment to become knowledgeable on the science and technologies required in the development of advanced weapons and helps to support technology development and transition for current and future programs sponsored by organizations such as the Office of Naval Research (ONR), DARPA, and The Naval Sea Systems Command (NAVSEA). The equipment purchased helps support increased demand for laboratory testing of vehicle hardware, reduced costly in-water field testing, and increased the speed of technology development.					
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## 1. Summary

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## 2. Instrumentation

The following information provides instrumentation part numbers and total cost.

<u>Item#</u>	<u>Description</u>	<u>Exp Cost</u>
1	PN: TDS2024C; Tektronics Oscilloscope, 200 MHz	\$ 8,386.25
2	PN: P5100A; Tektronics High Voltage Probe	\$ 341.34
3	PN: 190-202/AM; Fluke Scopemeter 2 Channel 200 MHz	\$ 2,767.50
4	PN 781058-01; NI PXIe-6368 X Series Multifunction DAQ	\$ 28,796.00
5	PN 192061-02; SHC68-68-EPM Shielded Cable	\$ 1,112.00
6	PN 781482-01; PXI-103x and PXIe-107x Side Handle and Rubber Feet	\$ 120.00
7	PN 781161-01; NI PXIe-1073 Integrated MXIe	\$ 2,798.00
8	Freight Charges for PO 930346PN 781058-01; NI PXIe-6368 X Series Multifunction DAQ	\$ 121.73
9	PN 780683-02; NI PCI-8512/2, CAN Interface, High Speed, 2 Port	\$ 3,090.00
10	PO 930760 FREIGHT CHARGESPN 780683-02; NI PCI-8512/2, CAN Interface, High Speed, 2 Port	\$ 18.79
11	AV-900 Power System Package	\$275,000.00
12	Dell Precision T5600E (2)	\$ 4,785.60
13	Belkin F1DC101HS Single rail rackmount	\$ 707.98
14	110' of MTQ-350-01 Single conductor cab	\$ 1,320.00
15	MSC Direct- T-Slot bolts, nuts and washers	\$ 529.39
16	200 HP AC Dynamometer System to include dynamometer, Torque Flange, Speed Sensor, ABB DTC Motor Drive, Flange to Bolt to Drive Shaft or Coupler, 15 ft Motor Cable, 30 ft Signal Cables, and Calibration Weight with Calibration Arm	\$124,200.00
17	Mustang Shipping	\$ 1,300.00
18	6'x9'x7' Baseplate (2)	\$ 35,376.00
19	Pelican Hardigg Ruggized Rack	\$ 3,547.90
20	Triangle Precision - Crossbars	\$ 1,305.00
	Total Equipment Expenditures	\$ 495,623.48
	Funds Received	\$ 495,492.00
	Fund Balance	\$ (131.48)