

STATEMENT OF WORK

TITLE: MATHEMATICAL MODELING FOR OCEAN SURVEY PROGRAM
DATE: 22 MAY 2002
CONTRACTOR: DR. STANLEY ZIETZ
SAP REQ. #: 7,000,003,527

1.0 INTRODUCTION

The Space and Naval Warfare Systems Center, San Diego, CA (SPAWARSYSCEN) is tasked to provide technical expertise in the continuing development of enhancements to the OSP Survey System installed on the United Kingdom's Ocean Survey Vessel (OSV) the HMS Scott. The Ocean Survey System (OSS) is a hull mounted sonar array and digital computer system which is used to map, record and display undersea topography or ocean bottom. This task is directed to the development of advanced image processing and mathematical modeling in support of the OSS program.

2.0 SCOPE

This task requires the contractor to utilize advanced image processing and mathematical modeling for the purpose of demonstrating advanced capabilities of the hull mounted sonar on the OSV, the HMS Scott. These efforts begin the process for implementing and improving the utilization and capabilities of the OSV multibeam sonar system. Development will occur primarily at the contractor's facility.

3.0 TECHNICAL REQUIREMENTS

This task provides support in advanced image processing and mathematical modeling for development of advanced capabilities for the OSV multibeam sonar system. CDRL A001

3.1 Areas of study include; (1) ocean bottom classification by multi-beam sonar; (2) development of image processing and segmentation algorithms to provide backscatter maps; (3) development of analysis algorithms for ocean bottom navigation; (4) multi-sensor fusion of sensor information (gravitational, magnetic, etc.) to enhance the ocean bottom navigation task. This task provides support for analysis of data utilizing the identified study techniques. CDRL A002.

3.2 The contractor shall provide demonstration computer programs of the study areas identified in 3.1 for use in the PC environment using Matlab and "C". Tasking includes consulting services in the running and utilization of the computer programs. CDRL A003.

4.0 GOVERNMENT FURNISHED PROPERTY

No Government Furnished Property is required for this Delivery Order.

5.0 TRAVEL

<u>From</u>	<u>Destination</u>	<u>Trips</u>	<u>Duration</u>	<u>Personnel</u>
Plymouth Meeting, PA.	San Diego, CA.	1 trip	21 days/trip	1 person

6.0 OTHER

6.1 SECURITY: All Contractor personnel assigned to the task order task must possess security clearances of SECRET and must be United States citizens. Data and information generated during the commencement of this task may require a SECRET classification.

6.2 PLACE OF PERFORMANCE: Work will be performed at the contractor's facilities at Plymouth Meeting, PA, at SSC San Diego, CA and other locations as directed by the TR.

6.3 INSPECTION AND ACCEPTANCE: All data and deliverables will be submitted for inspection and acceptance as instructed in the previously specified CDRL items. Contractor personnel will meet with cognizant Government personnel as directed/required throughout the Period of Performance. Review and inspection of the technical efforts shall be on a continuing basis, primarily based on the TR's review of deliverables. Final acceptance of the efforts expended shall be accomplished by the TR's review and approval of the reports/products described in the CDRL's.

6.4 PERIOD OF PERFORMANCE: Period of Performance of Delivery Order is upon award for a period of 52 weeks.

6.5 Technical Representative (TR) for Task:

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5/28/02
Date