

Marine Physical Laboratory

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E/O SYS5 Field Unit 9: Camera, Hardware Implementation and Development CFLOS Prediction Techniques

Final Report to
Office of Naval Research
Contract N00014-89-D-0142 (DO#4)
Sponsor: Office of Naval Research, Code 1214

Principal Investigator: Richard W. Johnson

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University of California, San Diego
Scripps Institution of Oceanography

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Technical Memorandum

To: John N. Starcher
ONR-RR/ACO

From: R. W. Johnson

Subject: N00014-89-D-0142
DO-04, Final Technical Report



A-1

This technical memorandum summarizes the completion of Delivery Order 04 under the terms of the above referenced contract, and UCSD proposals UCSD-90-1020, and UCSD-90-1121.

It should be noted that UCSD-90-1020 described the task to be accomplished under Line Item 0001 of DO-4, and UCSD-90-1121 described the task to be accomplished under Line Item 0002.

Line Item 0001: Proposal UCSD-90-1020, 9 Aug 89
E/O System 5, Field Unit No. 9

The contract task under this Line Item was to provide one E/O Camera, System 5, for installation as Field Unit No. 9, at sites to be mutually determined by the government and the Marine Physical Laboratory. Configuration modifications to enhance the system's mobility were to be implemented, and mobil deployment exercises were to be conducted.

During the performance interval, Field Unit No. 9 was redesignated Portable Unit No. 1. The external sensor assembly was modified to use a new liquid based temperature control system, and was mounted in a new enclosure which was fitted with heavy duty locking wheels, and leveling jacks.

Subsequent to assembly and check-out, the system was deployed to Madison, Wisconsin, for initial field test during January of 1990, and thereafter to Grayling, MI, during February of 1990. The system remained operational near Grayling until 23 March 90.

Data analysis of the initial field test data has been distributed as Optical Systems Group Technical Note No. 221, "Whole Sky Imager/Lidar Intercomparison Experiment." Data from the Grayling deployment was made available to the sponsoring agency, but was not made available for general distribution.

Portable Unit No. 1 is currently operational at the Marine Physical Laboratory, and is used in support of several cooperative programs.

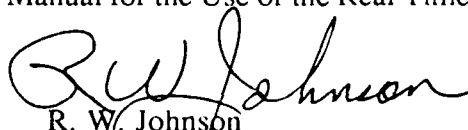
Line Item 0002: Proposal UCSD-90-1121, 10 Oct 89
E/O System 5 Camera; Hardware Implementation
and Development of Short Term CFLOS Prediction
Techniques

The contract task under this Line Item was to complete the fabrication and installation of hardware required to implement the LIMDAS, Laser Systems Test Center (LSTC) Imager Display and Analysis Sub-system, and to modify existing software to enable both automatic and/or interactive acquisition and display of video imagery.

During the performance interval, a computer based sub-system was developed to act as a slaved unit under the control of an existing E/O system 5, Whole Sky Imager previously installed. This sub-system and it's fiber optic communications link were installed at the HELSTF site, WSMR, NM, and put into operation in cooperation with the host technical team.

An extensive software package designated RTIMCLD (Real Time Cloud) was developed to operate the slave system under both interactive and automatic control. RTIMCLD has undergone several upgrades since its installation, and is currently operational.

The overall hardware/software system is fully described in the Optical Systems Group Technical Note No. 218, "Preliminary Operations Manual for the Use of the Real Time Cloud System."


R. W. Johnson
Principal Investigator

RWJ:cr
cc: P. A. Jordan
J. E. Shields/MPL