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SEA LITE BEAM DIRECTOR

STATEMENT OF WORK

5 November, 1998

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1.0 INTRODUCTION.

This Scope of Work (SOW) addresses the requirements for the Level of Effort Technical Support Services associated with the operation and maintenance of the SEA LITE Beam Director (SLBD) located at the High Energy Laser System Test Facility (HELSTF), a remote location on the White Sands Missile Range (WSMR), New Mexico. The contractor is currently accountable for the SLBD property under Space and Naval Warfare Systems Command Facility Use Contract number N00039-98-E-0012. Technical Support Services shall be provided by the currently in-place SLBD Field Test Team plus any negotiated personnel changes. Technical Support Services provided shall include performing day-to-day Operation & Maintenance (O&M) of the SLBD, developing specific upgrades and adaptations to the SLBD system, installing and integrating system modifications developed under this effort, and performing specific static and dynamic tests. The primary work site shall be at HELSTF. Secondary work sites may include other locations on WSMR or at off-range locations. All work performed will be subject to the resource limitations of this contract. SLBD Field Test Team shall support the Operations and Maintenance (O & M) contractor with integration of the SLBD activities and documentation into the O & M Support Contract (DASG60-99-C-0002).

1.1 Test Support

The contractor shall participate in the planning, development and execution of all SLBD testing performed at HELSTF. The government will retain final approval authority for all test plans. The contractor shall produce documents demonstrating the readiness of the SLBD and its associated equipment for a test, a plan for contractor support of the test. Testing may occur at any hour on any day of the week. Contractor flexibility in test accomplishment is expected.

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1.2 Preventive Maintenance

The contractor shall perform preventive maintenance for all SLBD equipment and systems under this contract. Should conflicts arise between planned test events and scheduled maintenance, the government shall retain final authority on conflict resolution.

1.3 Use of Current Plans and Data

The contractor when feasible and cost effective shall use plans and the data produced under previous or existing contracts in lieu of generating new plans or data, or duplicating past or on going efforts. These contracts include but are not limited to:

N00023-79-C-5369 (Sea Lite Beam Director)

N00024-84-C-5358 (SLBD Relocation and Field Operations)

N00039-87-C-0027 (SLBD Field Operations and SKYLITE Modifications)

N00039-92-C-0044 (SLBD Field Operations and SKYLITE Modifications)

DASG60-96-C-0053 (SLBD Field Operations and SKYLITE Modifications)

DASG60-96-C-0031 (SLBD O&M Subcontract)

1.4 Other Contractor and Liaison Support

The contractor shall provide support/liaison as required to the HELSTF Technical O&M, HELSTF Site Facilities Support and Systems Engineering and Technical Assistance (SETAC) contractors. The contractor shall negotiate associate contractor agreements as required in order to carry out the scope of this contract.

1.5 Operational Security (OPSEC) Plan and Innovations Documentation

The government shall furnish the contractor with a HELSTF Operational Security (OPSEC) Plan and the contractor shall comply with this Plan and in turn shall develop an OPSEC Plan for the contractor's assigned area and shall submit this

Plan to the government in accordance with CDRL 00E. The contractor shall provide innovations documentation as required by CDRLs 00F and OOG.

1.6 Environmental and Safety Compliance

The contractor shall report/submit to the government environmental information in accordance with CDRL 00H and safety information in accordance with CDRLs 001 and 002.

1.7 Control System Upgrade

The contractor shall develop a plan to upgrade the control system for the SLBD. And other system or equipment upgrades as assigned by the government. The goal of the plan is to modernize the system to facilitate more efficient operation. This plan shall be submitted in accordance with CDRL A016.

1.8 Government Furnished Equipment/Material

The contractor shall report on GFE/GFM in accordance with CDRL 003.

2.0 REQUIREMENTS

2.1 General.

2.1.1 Personnel Resources. The contractor shall provide all personnel and personnel support resources, except where explicitly indicated otherwise, to meet all requirements described herein associated with the operation and maintenance of SLBD equipment under this contract.

2.1.1.1 Personnel Expertise. The contractor shall maintain the expertise required to support all SLBD HELSTF test and development activities.

The allocation of technical skills shall include but are not limited to the following disciplines: system engineering, digital and analog electronic signal processing, computer software and firmware programming, control systems, optical

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engineering, mechanical and optical structures and mechanisms, hydraulic and pneumatic fluids, electro-optical systems design and fabrication, computer-controls systems design and fabrication, control console operations, instrumentation and data reduction, quality control, safety, security, electro-optical sensors, configuration management, property management, procurement, clerical and program management.

2.1.2 Engineering and Technical Services. The contractor shall provide engineering and technical services including research, analysis, development and installation of SLBD equipment and software in support of meeting the goals of a Technical Directive (TD).

2.1.3 Software Maintenance. The contractor shall maintain all SLBD software as defined in this statement of work (SOW), applicable documentation and addenda and make this available to the HELSTF O & M and HELSTF Facilities contractors.

2.2 Management and Administration. The contractor shall provide the minimum number of management, supervisory and labor personnel necessary to perform the day-to-day SLBD requirements of this contract.

2.2.1 Management. The contractor shall provide qualified personnel necessary to manage and perform all task orders and task directives in compliance with the terms and conditions of this contract.

2.2.1.1 Meetings. The contractor shall attend IPT meetings and provide membership on IPT committees as required by the SEMP to control performance under this contract. The contractor shall submit reports as required in accordance with CDRL 00C.

2.2.1.2 Reports. Reports to the government shall be made as required in accordance with CDRLs 004, 005, 00A, 00D. The contractor shall deliver photographs and video information as requested by the government.

2.2.2 Contract Administration. The contractor shall administer the work in compliance within the requirements of this contract.

2.2.2.1 Audits. The contractor shall perform and document, for government inspection, periodic internal audits of operations to ensure proper conformance with procedures and maximum utilization of resources.

2.3 Test Support. The contractor shall perform and is responsible for the operation and maintenance of both current and any future installed SLBD equipment and systems, furnished by the government, to support HELSTF test programs.

2.3.1 Test Requirements.

2.3.1.1 Test Support Services. In accordance with the HELSTF SEMP and COTR approved tasking documents, the contractor shall provide test support services, such as planning, scheduling, coordinating, controlling, performing and reporting, as required to support testing using the SLBD at the HELSTF Site or other locations as specified in the tasking document.

2.3.1.2 Test Procedures. The contractor shall prepare SLBD system and subsystem test procedures for designated tests; management of pre-test, test, and post-test activities in accordance with the procedures defined by the HELSTF SEMP.

2.3.1.2.1 Pre-Test Operations

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2.3.1.2.1.1 The contractor shall provide pre-test preparation support including the system test scenario, modification and reconfiguration of test equipment; installation and testing of new equipment; developing new or modifying existing Standard Operating Procedures (SOP) and Safety Standard Operating Procedures (SSOP); designing, configuring and operating data collection systems; and designing, installing and instrumenting test articles and providing data reduction support.

2.3.1.2.1.2 The contractor shall initiate and prepare all modification documentation required to configure SLBD equipment to meet the requirements of the TD.

2.3.1.2.1.3 The contractor shall contribute to the preparation of a Test Support Plan for each Customer and government approved Test Requirements Document.

2.3.1.2.1.4 The contractor shall assist the government and other support contractors in test planning activities as defined in the HELSTF SEMP.

2.3.1.2.1.5 The contractor shall present the SLBD equipment readiness status to support a test during test readiness reviews. The contractor shall plan, schedule and provide appropriate resources to support all designated SLBD HELSTF tests.

2.3.1.2.2 Test Operations

2.3.1.2.2.1 The contractor shall initiate, schedule, prioritize based on government direction, and perform all activities required to execute scheduled SLBD test operations.

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2.3.1.2.2 The contractor shall perform all SLBD testing in accordance with government approved Test Support Plans.

2.3.1.2.3 Post-Test Operations

2.3.1.2.3.1 The contractor shall perform post-test activities such as SLBD equipment and test article shutdown; data reduction and analysis; housekeeping and cleanup activities; and test reporting.

2.3.1.2.3.2 Upon completion of the last test in a series covered by a technical directive (TD), or when otherwise directed by the COTR, the contractor shall return the SLBD system and test articles to the configuration prescribed in the TD. Disposition of special test support equipment and other post-test activities shall be as prescribed in the TD, or as otherwise specified by the COTR.

2.3.1.2.3.3 Following a test, per COTR request, the contractor shall prepare a test report. The report shall be submitted in accordance with CDRL 00D. Photographs and/or videos shall be submitted upon request from the government.

2.3.2 Technical Directives. Technical Directives will be prepared by the government to task the contractor to perform certain tasks in support of the HELSTF Site.

2.3.2.1 Cost Estimates. The contractor shall provide informal and non-binding labor hours and cost estimates as requested to support each TD. Examples of anticipated TDs are:

- a) Modification of SLBD equipment.

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- b) Conduct Tests in accordance with government approved test plans.
- c) Equipment integration, validation and verification analyses.
- d) Development and design of proposed changes or new systems.
- e) Perform maintenance on SLBD systems.
- f) Development of software to support new or existing operational requirements.

The government will issue TDs for SLBD tests involving use of the MIRACL laser at least 60 days in advance of the desired test date, other test TDs may be issued up to forty-eight (48) hours in advance of the desired test date test.

2.3.2.2 Designated Representative. Not later than 10 days after contract award, the contractor shall designate in writing to the Contracting Officer (CO) names of individuals who will have the authority to respond to and sign TDs. Changes in designations shall be submitted in writing to the CO as they occur.

2.3.3 Work Scheduling. The contractor shall assist the government and other HELSTF support contractors in scheduling activities as described in the HELSTF SEMP, and/or as prescribed by the government. The government will provide site priorities to provide guidance to the contractor on resolving scheduling conflicts. The government will retain approval authority on all proposed schedules.

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2.4 Engineering and Technical Services. The contractor shall provide engineering and technical services as directed by the COTR signed TD. These services shall include but not be limited to development of plans, specifications and contract drawings, time and cost estimating, inspection of completed and in-progress work, interface control, equipment installation and testing, software development, studies, reviews, analyses, research, planning, training, cost estimating, and hardware design, development, and fabrication.

2.4.1 IPT Participation. The contractor shall participate in the Integrated Product Team (IPT) process as defined in the HELSTF SEMP.

2.5 Support Services. The contractor shall provide all technical management, operation, maintenance, repair and related services required to support SLBD HELSTF operations and tests.

2.5.1 Maintenance. The contractor shall maintain assigned SLBD equipment in a fully operational condition unless otherwise directed by the COTR. Maintenance requirements and related schedules shall be established by the contractor and approved by the government. The government will maintain a supply of spare parts, tools, test equipment, and instruments in support of maintenance. Any part, tool, test equipment, or instrument that is required by the contractor but is not in the current government inventory will be expeditiously acquired by the government and furnished to the contractor in a timely manner.

2.5.1.1 Preventive Maintenance Program. The contractor shall develop and implement a Preventive Maintenance (PM) Plan and Schedule that accomplishes as a minimum the following:

a. The contractor shall identify all periodic maintenance, repair, replacement, calibration and other like tasks (defined as PM tasks) necessary to maintain and otherwise keep SLBD systems in a fully operational condition.

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b. The contractor shall develop Detailed Maintenance Procedures (DMP) as required and directed by the COTR describing the work to be accomplished on the SLBD system by the contractor in the performance of all periodic maintenance, repair, replacement, calibration and other like tasks. The use of manufacturer's procedures in lieu of contractor-developed procedures is acceptable. The government acknowledges that the generation of detailed maintenance procedures is a labor intensive task and that due to the limited personnel resources of this contract, the generation of procedures required by this paragraph may impact the TD acceptance process.

c. The contractor shall develop lists of material and equipment required to support the SLBD PM task and establishment of a minimum and maximum stock level of tools, material and equipment required to support the PM tasks.

d. The contractor shall develop a recommended list of critical spare parts and equipment for all SLBD equipment applicable under this contract.

e. The contractor shall develop and adhere to a calibration program for all SLBD equipment requiring calibration. The contractor shall maintain a system for tracking calibratable items and their calibration status on site. This will be subject to government verification at unscheduled intervals. The government will provide all calibration lab or vendor services required by the contractor's calibration program.

f. The contractor shall conduct regular inspections for damage to, and for maintenance of, SLBD optical surfaces and windows. The contractor shall clean optical surfaces, check out electrical and electronic components and perform calibration checks. To assure the quality of the maintenance of the optical systems and components, the high standards of the optical industry for handling and preserving optical systems and components shall be followed. This includes the handling of optical components with protective gloves, use of experienced, skilled personnel, use of proper cleaning agents and procedures, and storage in a protective environment. The government will be responsible for

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the facilities in which the SLBD equipment resides. This includes clean room conditions and temperature and humidity control. The contractor shall photo document maintenance and test activities as required.

NOTE: All plans required by paragraph 2.5.1.1 shall be submitted by the contractor in accordance with CDRL 008.

2.5.2 Repair. Repair of SLBD equipment shall be initiated by the contractor so as to keep assigned SLBD equipment fully operational unless directed otherwise by the COTR. The contractor shall be responsible for all repair, and return to serviceability of all non-expendable and recoverable components except as provided herein. Repaired items shall be returned to service or placed in stock as appropriate.

2.5.3 Equipment Logbooks. The contractor shall maintain manual or automated history of the work performed under this contract. The histories shall be available for government review and archival in the HELSTF Technical Library. The contractor shall deliver these logbooks to the government in accordance with CDRL 007.

2.5.4 Systems Services.

2.5.4.1 Standard Operating Procedures (SOP). The contractor shall use existing SOPs (where they exist and are sufficient) for all SLBD operations. The contractor shall develop SLBD SOPs for government approval for operations for which procedures do not exist, that are not already addressed by an existing procedure in accordance with manufacturers' manuals or applicable documentation. Additionally the contractor shall identify areas where SOPs exist but are in need of revision, and submit revised SOPs for government approval. The contractor shall submit SOPs in accordance with CDRL 008.

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2.5.5 Additional Services. The contractor shall provide the following additional services:

2.5.5.1 Optical Equipment. The contractor shall perform SLBD optical alignment, optical and radiometric equipment set-up, calibration and measurement, data analyses, and instrumentation.

2.5.5.2 Ancillary Equipment. The contractor shall operate, as directed by the government, any ancillary equipment incident to the operation of the SLBD. The process by which the government will direct the contractor to perform under this paragraph will be the TD and therefore as accepted by the SLBD contractor.

2.5.5.3 As Directed. The contractor shall provide other services and support as directed and stipulated in a TD issued by the Contracting Officer's Technical Representative (COTR) and accepted by the SLBD contractor. This shall include contractor phase out as directed by the government.

2.5.6 Training and Certification. The contractor shall establish and maintain a continuing operator-training program for employee development, certification, and re-certification. This training shall be recorded in a HELSTF training database and shall include the following training plus any other training identified either by the contractor or the COTR and approved by the Contracting Officer:

a. Safety training, including the use of personnel protective equipment; industrial safety; and the use of fire protection equipment.

b. The contractor shall develop and implement a certification program that provides for the training and certification of achievement of the required level of qualification of personnel who must perform critical or hazardous

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operations. The contractor shall update the certification program to reflect new critical skills or functions.

2.5.7 Security Requirements. The contractor shall comply with the approved DD-254 applicable to this contract.

2.6 Configuration Management. The contractor shall assist the government in configuration management activities as set forth in the HELSTF SEMP. The contractor shall deliver applicable configuration management documents in accordance with CDRLs 009 and 00A.

2.7 Mission Unique Equipment. For normal, day to day operations and maintenance tasks the government will provide equipment and facilities necessary to perform this contract including maintenance except as specifically required by tasking documents. This equipment and facilities shall include, but is not limited to:

- a. All telephone,
- b. The IRIG timing signals to all instrumentation and computers at the site, which require time correlation of data, to include interfacing with contractor systems.
- c. Cryptographic support equipment used for transmission of classified data.
- d. All intrusion alarms.
- e. All fire protection
- f. All ADPE

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3.0 QUALITY ASSURANCE. The contractor shall maintain a Quality Assurance Program. The contractor shall submit a Quality Assurance plan in accordance with CDRL 00B.

3.1 Workmanship The quality of workmanship in the maintenance and modification of equipment shall be consistent with the workmanship established by the manufacturer of the item(s) or other applicable industry standard.

3.2 Inspection and Acceptance The contractor shall be responsible for the inspection of his work and shall establish and maintain a documented inspection program.

4.0 NOTES.

4.1 Abbreviations.

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| ADPE | Automatic Data Processing Equipment |
| AFTS | Air Flow Test Stand |
| AIMS | Analysis and Information Management System |
| AuASAM | Automatic Aimpoint Selection and Maintenance |
| BDI | Beam Diagnostic Instrumentation |
| BTA | Beam Transfer Area |
| BTS | Beam Transfer System |
| CAD/CAM | Computer Assisted Design/Computer Assisted Manufacturing |
| CAMAC | Computer Automated Measurement and Control |
| CCB | Configuration Control Board |
| CCTV | Closed Circuit Television System |
| CF | Cleaning Facility |
| CHEMLAB | Chemistry Laboratory |
| CMP | Configuration Management Program |
| CO | Contracting Officer |
| COTR | Contracting Officer's Representative |

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| CPR | Cardio Pulmonary Resuscitation |
| CRR | Contract Report Requirements |
| CS | Continuing Service |
| CW | Continuous Wave |
| D&V | Damage and Vulnerability |
| DI | De-Ionized |
| DII | Data Item Index |
| ECP | Engineering Change Proposal |
| EPA | Environmental Protection Agency |
| ETA | Effects Test Area |
| FTCB | Fluid Transfer Control Building |
| FSS | Fluid Supply System |
| G&A | General and Administrative |
| GFE | Government Furnished Equipment |
| GFP | Government Furnished Property |
| GSA | General Services Administration |
| HAMDS | Hazardous Atmosphere Monitor and Detection System |
| HEC | HELSTF Executive Controller |
| HELDAPS | High Energy Laser Data Acquisition and Processing System |
| HELSTF | High Energy Laser Systems Test Facility |
| HPOT | High Power Optical Train |
| HVAC | Heating, Ventilating, and Air Conditioning |
| I&C | Instrumentation and Control |
| ICD | Interface Control Document |
| ID-O | Instrumentation Directorate - Optics Division |
| IPT | Integrated Product Team |
| IRIG | Inter-Range Instrumentation Group |
| LPO | Low Power Optics |
| LPOT | Low Power Optical Train |
| LSTC | Laser Systems Test Center |

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| MDAC | McDonnell Douglas Astronautics Company |
| MEDEVAC | Medical Evacuation Helicopter |
| MIRACL | Mid-infrared Advanced Chemical Laser |
| MIS/TMIS | Management Information System/Technical Management Information System |
| MUSAHC | McAfee U.S. Army Health Clinic |
| NEC | National Electrical Code |
| NEPA | National Environmental Policy Act |
| NFPA | National Fire Protection Association |
| NMEID | New Mexico Environmental Improvement Division |
| NMGRT | New Mexico Gross Receipts Tax |
| OCLI | Optical Coating Laboratory, Inc. |
| OD | Operations Directive |
| O/H | Overhead |
| O&M | Operations and Maintenance |
| OEM | Original Equipment Manufacturer |
| OSHA | Occupational Safety Health Act |
| OSP | Operational Support Plan |
| PI | Program Introduction |
| PMCS | Power Meter Calorimeter System |
| PRS | Pressure Recovery System |
| PV | Public Voucher |
| QA | Quality Assurance |
| RCRA | Resource Conservation and Recovery Act |
| RN | Registered Nurse |
| RPO | Radiological Protection Officer |
| SCAPE | Self Contained Atmospheric Protection Ensemble |
| SC | Statement of Capability |
| SDC | Strategic Defense Command |
| SDCMP | Software Development and Configuration Management Plan |

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| SEMP | Systems Engineering Management Plan |
| SLBD | Sea Life Beam Director |
| SLEC | Sea Life Executive Controller |
| SOP | Standard Operating Procedure |
| SSOP | Safety Standing Operating Procedures |
| SO | Service Order |
| SOW | Statement of Work |
| TC1 | Test Cell 1 |
| TC3 | Test Cell 3 |
| TC4 | Test Cell 4 |
| TD | Test Director |
| TMDE | Test, Measurement, and Diagnostic Equipment |
| TR | Test Requirement |
| TRM | Test Resource Manager |
| TSA | Technical Support Area |
| UDS | Universal Documentation System |
| UNC/U | Unclassified |
| USASDC | U.S. Army Strategic Defense Command |
| WAO | Work Assignment Order |
| WOD | Work Order Designator |
| WSMR | White Sands Missile Range |