LASER INTERFEROMETER GRAVITATIONAL-WAVE OBSERVATORY (LIGO)

Site Solicitation Announcement

The California Institute of Technology (Caltech) solicits proposals from interested parties who will provide land on which to build and operate the Laser Interferometer Gravitational-Wave Observatory (LIGO). LIGO will be a national facility, open to the scientific community for research at the frontiers of physics and astronomy. A proposal by a team of scientists at Caltech and the Massachusetts Institute of Technology (MIT) to develop and construct the LIGO has been approved by the National Science Board (NSB), and construction and operation of LIGO are to be funded by the National Science Foundation (NSF). The NSB has authorized the LIGO Project to conduct a public search for two suitable sites in the U.S. to accommodate the LIGO facilities. The LIGO Project intends to evaluate all sites proposed as a result of this solicitation in order to identify the best available locations for this unique national facility. As part of this process, the LIGO Project may contact federal, state or local governmental organizations and include consideration of available land under their control and management.

Construction of the LIGO facilities ($\sim$ \$200M) is expected to start in FY 1992, to be completed in about 5 years, subject to the availability of funds appropriated by the U.S. Congress. LIGO will be developed, built, and operated by Caltech and MIT for the scientific community. Occupancy will include a permanent local staff of about 10–20 people, and about 10 visiting scientists. LIGO is an environmentally benign facility and generates no industrial pollutants.

Site Requirements

LIGO will consist of two widely separated gravitational-wave detector facilities in the United States. Each facility includes an L-shaped vacuum system, with arms of 2.5 miles length, made of 4-foot diameter steel pipes with access ports, containing laser interferometric sensor systems. The vacuum pipes provide for straight optical paths along the full 2.5-mile length of each arm. A semi-cylindrical reinforced-concrete vault enclosure protects the vacuum pipes. Located at the vertex of the two arms, and at the midpoint and outer end of each arm, are buildings housing most of the equipment for laser interferometric sensor systems.

Principal requirements of individual sites are as follows:

1. The site must allow the construction of a flat L-shaped foundation slab, 20 feet wide and 2.5 miles long on each arm, which supports the vacuum pipe and its concrete-arch semi-cylindrical enclosure. Foundations for the vertex building, the two midpoint buildings and the two end buildings along each arm will lie in the same plane as the pipe support foundation. A level layout is scientifically best; the elevation difference between the vertex building foundation and either end building foundation may not exceed 40 feet.
2. The site must permit construction of the five major buildings and ancillary structures. The vertex building is 80,000 sq. ft. in area and the midpoint and end buildings are 6500 sq. ft. each. All are 55 feet high above the foundation plane.
3. The layout must avoid earthquake fault lines, floodplains, wetlands, and should minimize road or waterway crossings.
4. The site requires road access for construction and for operation.

5. The site must accommodate a service road adjacent to the 2.5 mile x 2.5 mile system to provide access to entry points along the arms and to the five buildings.
6. The site requires a power hookup with a minimum capacity of 1 MW, delivered to the vertex building.
7. The site requires water supply and waste disposal facilities sufficient for sanitary needs of permanent staff and visitors (20–30 people). (The scientific equipment consumes a negligible amount of water and generates no liquid or solid wastes.)
8. The site must have geotechnical features that provide good drainage characteristics and soil properties to assure a minimum of foundation settlement (less than 1 inch) after construction. Maximum building foundation load will be 2000 lb. per sq. ft.
9. The LIGO site must be remote from sources of man-made noise, but within convenient commuting distance of housing, schools, and shopping for its resident staff. Convenience of access to an airport for visiting staff will be considered.
10. Costs to be paid by the LIGO Project for all site preparation work required to provide a suitable graded base for foundations and roads (including provisions for drainage and erosion control), and utility connections (power, water, sewer, telephone) may not exceed the budgeted cost of $2,500,000 per site.

Proposal Guidelines

Interested parties are invited to submit a letter summarizing the offer that is being made together with a brief description of how each of the principal site requirements of the previous section will be met. In addition, the submission must include the following supporting material:

1. A map indicating the proposed location of the LIGO site(s).
2. A topographic map (USGS 7.5 minute series, original color copies) with a sketch of the proposed layout(s) for the LIGO arms (2.5 mi x 2.5 mi "L"). (Attach sketches of the elevation profile along each of the 2.5 mi long arms.)
3. Readily available geotechnical data that may be useful in evaluation of site potential.
4. Available data on climate (temperature, wind, precipitation) and environmental risks (earthquakes, landslides, floods, windstorms).
5. A description of the proposed access for utilities and transportation.
6. A description of present ownership and land use of the site.
7. A statement describing the land to be provided, including the proposed price, if any, for sale or lease of the land (any proposed lease must be for a minimum duration of 25 years), and how the proposer will secure transfer of the land to the Government or Caltech.
8. A discussion of potential future urban or commercial development that may encroach upon LIGO requirements.
9. A statement on expected environmental or procedural issues which may affect a timely construction start.
10. A commitment to cooperate in the acquisition of additional geotechnical data needed for construction if the site should be selected for further evaluation.
11. A statement describing any additional support the applicant is prepared to provide.
12. A statement of the period of validity of the submitted offer (180 days minimum).

These submissions will be evaluated for their technical feasibility, scientific suitability, and costs. Subsequently, sites will be paired, based upon scientific requirements including separation and orientation. Additional investigations of these pairs may be conducted. Analyses and recommendations will be submitted to NSF who will make the final selection of sites. Site pairs may be ranked, without any discussions with the proposer, on the basis of initial proposals received. Therefore each initial proposal should contain a proposer's best terms from a cost and technical standpoint. Sites other than those resulting from this solicitation may also be considered. Proposers are advised that NSF may release to the public a list of those who propose and the sites proposed in response to this solicitation. This solicitation does not commit Caltech or the Government to pay costs incurred in the preparation or submission of a proposal or in making necessary studies or obtaining information for its preparation.

Proposal Delivery

The original plus four copies of the proposal, including the letter offer, supporting material, and a list of the names, titles, and telephone numbers of the persons authorized to represent the proposer should be mailed to:

LIGO Project
Mail Code 102–33
Attention: LIGO Site Solicitation
California Institute of Technology
Pasadena, CA 91125

The deadline for receipt of all materials is 4:00 P.M., March 1, 1991. Proposals received after this deadline may not be considered if this would disrupt the ongoing review process.

Inquiries

Any prospective proposer desiring an explanation or interpretation of this Solicitation should request it in writing. Oral explanations or instructions will not be binding on the LIGO Project. Any written information given to a prospective proposer concerning this solicitation will be furnished promptly to all other interested parties if that information is necessary to submitting proposals or if the lack of it would be prejudicial to any other prospective proposers. Therefore, prospective proposers are invited to indicate their desire for notification by writing to the address given below.

Inquiries about this solicitation should be directed to:
LIGO Project
California Institute of Technology
Pasadena, CA 91125
FAX (818) 304–9834 or (818) 795–1547

Site Selection Criteria

The sites chosen should permit the highest level of research productivity and overall effectiveness for the LIGO facility, at a reasonable cost of construction and operation, and

with minimal adverse impact on the environment. Proposals will be evaluated against both technical criteria and cost considerations, using the following criteria:

1. Science Impact

(a) Local Parameters
   i. Site topography affecting LIGO facility critical parameters (angle between arms, arm length, slope of arms).
   ii. Natural and man-made ground vibration spectra.

(b) Global Parameters
   i. The two-site requirement.
   ii. Distance between sites.
   iii. Relative alignments of U.S. sites.
   iv. Geometry (location, and alignment) of site triplets (two U.S. sites and a European site).

2. Construction Cost Impact

(a) Topography (required earth movement)
(b) Soil and subsurface conditions
(c) Hydrology and drainage
(d) Climate
(e) Environmental restrictions
(f) Accessibility (roads, rail, etc.)
(g) Site utilities installation (power, water, sewage, etc.)
(h) Proximity of soil waste and borrow areas
(i) Local labor costs

3. Site Availability and Acquisition Costs

4. Existing Support Infrastructure

(a) Accommodations for resident staff (housing, schools, shopping, etc.)
(b) Accommodations and access for visiting staff (lodging, transportation, etc.)
(c) Local technical support (vendors, maintenance, fabrication, etc.)

5. Operations Cost Impact

(a) Cost of power
(b) Cost of local labor
(c) Heating and cooling requirements
(d) Maintenance requirements
(e) Travel time and costs for visiting staff

6. Risk Factors

(a) Environmental risks (earthquakes, landslides, floods, windstorms, etc.)
(b) Potential future man-made noise from development

7. Security of Facility and Access for Visiting Staff

8. Local Contributions—Financial or Other

LIGO Site Solicitation Announcement Mailing List

Mr. Michael D. Antonovich, Chairman
Los Angeles County Board of Supervisors
Hall of Administration, Room 869
500 West Temple Street
Los Angeles, CA 90012

Mr. Richard W. Jones, Deputy Director
Montana Small Business
Development Center
1424 9th Avenue
Helena, MT 59620-0401

The Honorable George A. Sinner
Governor of North Dakota
Office of the Governor
600 E. Boulevard, Ground Floor
Bismarck, ND 58505-0001

The Honorable Cecil D. Andrus
Governor of Idaho
Office of the Governor
State Capitol
Boise, ID 83720

The Honorable E. Benjamin Nelson
Governor of Nebraska
Executive Suite
P.O. Box 94848
Lincoln, NE 68509-4848

Mr. Robert E. Marriott
South Carolina State Development Board
P.O. Box 927
Columbia, SC 29202

cc: Mr. Jim Hawkins, Director
Idaho Department of Commerce
700 West State Street
Statehouse Mail
Boise, ID 83720-2700

cc: Dr. M. A. Massengale, President
University of Nebraska
Varner hall
3835 Holdrege
Lincoln, NE 68583-0745

cc: Dr. Richard Burnette, Executive Director
Barnwell County Economic
Development Commission
P.O. Box 898
Barnwell, SC 29812

Ms. Carol Meyer, Executive Vice President
Garden City Area Chamber of Commerce
201 East Laurel
Garden City, KS 67846

Mr. William E. Garcia, Cabinet Secretary
State of New Mexico
Joseph M. Montoya Building
P.O. Box 20003
1100 St. Francis Drive
Santa Fe, NM 87503

Mr. David Patterson
Tennessee Technology Foundation
P.O. Box 23184
Knoxville, TN 37933

Mr. Louis L. Smart III, Executive Director
Livingston Economic Development Council
P.O. Box 1330
991 Government Drive
Denham Springs, LA 70727-1330

cc: Dr. Ponziano M. Ferraraccio, Acting Director
New Mexico Research & Development Institute
Pinon Building, Suite 358
1220 South St. Francis Drive
Sante Fe, NM 87501

The Honorable Norman H. Bangerter
Governor of Utah
Office of the Governor
Salt Lake City, UT 84114

The Honorable John R. McKernan, Jr.
Governor of Maine
Office of the Governor
State House Station #1
Augusta, ME 04333

cc: Mr. Jonathan Krebs
Southwestern Public Service Company
P.O. Box 1261
Amarillo, TX 79179

Mr. John D. Wagoner, Manager
Department of Energy
Richland Operations Office
P.O. Box 550
Richland, WA 99352

cc: Dr. Terry Shehata, Associate Director
Maine Science & Technology Commission
State House Station 147
Augusta, ME 04333

Dr. Larryl Matthews, Director
Engineering Research Center
New Mexico State University
Corner of Espinoza and Stewart
Engineering Complex One
Las Cruces, NM 88003

cc: Dr. H. H. Yoshikawa
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

The Honorable Ray Mabus
Governor of Mississippi
P.O. Box 139
Jackson, MS 39205

cc: Mr. Justin R. Ormsby, Executive Director
Rio Grande Council of Governments
1014 North Stanton, Suite 100
El Paso, TX 79902

cc: Mr. Jeff Grover
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

cc: Dr. Ralph E. Powe, Vice President
for Research
Mississippi State University
P.O. Box 6343
Mississippi State, MS 39762

Dr. Benjamin R. Ware, Vice President
for Research
Syracuse University
304 Tolley Administration Building
Syracuse, NY 13244-1100

Dr. Paul A. Vanden Bout, Director
National Radio Astronomy Observatory
Edgemont Road
Charlottesville, VA 22903-2475

cc: Mr. David DeBlanc, Programs Coordinator
Mississippi Technology Transfer Office
Building 1103
Stennis Space Center, MS 39529

cc: Dr. Peter Saulson
Syracuse University
201 Physics Building
Syracuse, NY 13244-1100

Mr. Steve Schmitz, Director
Division of Economic and
Community Development
2nd Floor West
Herschler Building
122 West 25th Street
Cheyenne, WY 82002

From wea@ligo.caltech.edu Fri Jun 21 11:03:09 1991
To: stan@ligo.caltech.edu
Subject: FYI

Patti Pratt (Hall Daily's office) just called me about a piece of trivia regarding the list you just furnished them for the next letter. In reviewing her list of addressees, I suggested adding Ormsby for New Mexico, since I suspect that he was the initiator behind the Las Cruces proposal, and I furnished her with a name for North Dakota (J. Eslinger of the Governor's office).

CALIFORNIA INSTITUTE OF TECHNOLOGY

102-33 E. BRIDGE LABORATORY
PASADENA, CALIFORNIA 91125

LIGO PROJECT
Telephone (818) 356-2129
Fax (818) 304-9834

November 12, 1990

U.S. Department of Commerce
Commerce Business Daily
P.O. Box 5999
Chicago, IL 60680

Subject: Publication of LIGO Site Solicitation Announcement

Gentlemen:

The California Institute of Technology (Caltech) requests that the attached LASER INTERFEROMETER GRAVITATIONAL-WAVE OBSERVATORY (LIGO) SITE SOLICITATION ANNOUNCEMENT be published in the Commerce Business Daily at your earliest convenience. We are acting under authority from the National Science Foundation (NSF), in compliance with a resolution of the National Science Board (NSB), authorizing a public solicitation of LIGO sites. Details may be found in the first paragraphs of the attached announcement.

The text of the submitted announcement contains dated passages, and we have written the announcement with the assumption that it will be published on or before Monday, November 19, 1990. If this is not possible, or should you require additional information in order to publish, please contact the undersigned at (818) 356-4481 or (818) 356-2129 as soon as possible. We have been advised that you need no information beyond the attached text, but we have taken the liberty of furnishing responses for your standard entry format items on the second page of this letter, should they be of value to you. In particular, we desire that no telephone contact be published, in order to discourage other than written responses to the announcement.

If you wish to confirm our authorization to publish this announcement, please contact Dr. Richard Isaacson, Program Director of Gravitational Physics at the NSF, at (202) 357-3464.

Please confirm receipt of this announcement and indicate the publication date, by telephone or, if you prefer, by FAX (818-304-9834) to the undersigned. Thank you.

Sincerely,

William E. Althouse

cc: R. Isaacson, NSF
R. Vogt, Director, LIGO Project

CBD Format Item Entries

1. P!! (Presolicitation Notice/Procurement)
2. 1112!! (Date we mailed this letter)
3. 90!!
4. N/A!!
5. 91125!!
6. A!! (This solicitation is inseparable from the R\&D project it serves)
7. LIGO Project, California Institute of Technology, Pasadena, CA 91125!!
8. A – LASER INTERFEROMETER GRAVITATIONAL-WAVE OBSERVATORY (LIGO) SITE SOLICITATION ANNOUNCEMENT!!
9. N/A!! (This is the only public solicitation we are making)
10. 030191!! (Responses are due March 1, 1991)
11. N/A!! (We prefer that no telephone contact be published)
12. N/A!!
13. N/A!!
14. N/A!!
15. N/A!!
16. N/A!!
17. (Solicitation Announcement, attached)

qured components, subassemblies, and supporting hardware. During this task, performance characteristics are defined over the entire engine design operating envelope and a life assessment conducted for all critical components to include detailed stress analyses and temperature predictions. The Long-Lead-Time Material task includes life procurement of long-lead-time materials, forgings, and castings required for the proposed JTDE hardware fabrication. The Fabrication/Hardware Procurement task includes the effort necessary to procure/fabricate/finish machine all new components and refurbish any existing, previously tested components or core engine hardware. Assembly and Instrumentation includes the assembly and instrumentation of the engine or major component rig to an extent necessary to measure engine component/performance and structual parameters, and minimize the risk of demonstrator engine/component rig testing. Both engine and Major Component Rig Testing tasks focus on the efforts necessary to conduct testing. These tasks require testing in accordance with government approved instrumentation and test plans. These plans detail the proposed location and quantities of instrumentation, and the test sequences and pretest predictions of engine and/or component performance. Test facilities must be suitable for the test and assessment of highly instrumented engine or major components. Proposed goals and performance assessment parameters for the engine or major components are based upon the general IHPTET performance goals. The classified goals and performance assessment parameter guidelines are available to contractors having proper security clearance upon request of the PRDA Supplemental Package. The Post Test Assessment task includes the effort necessary to disassemble the JTDE and document and present to the Government at a teardown review the test results, instrumentation failures, and component damage that occurred as the result of testing. *The Logistics Support Analysis (LSA/Life Cycle Cost (LCC)) task involves a preliminary* LSA showing the reliability and maintainability of the components, materials, and technologies unique to JTDE, and a LCC analysis program to show the LCC payoff of the JTDE technologies relative to an established baseline. In the development and testing of the JTDE demonstrator, a system safety analysis task should be performed and documented. The system safety analysis will include the contractor in-house installation, operation, and maintenance instructions for the necessary equipment and facilities required for the planned testing under this program. The Low Observable Features task could involve the fabrication and test assessment of engine integrated technologies which provide improvements to propulsive capability and have the potential to reduce engine/aircraft signature levels. A Structural Component/ Engine Demonstration task is a focused data gathering effort to help provide a structural assessment of a major JTDE engine component involving a detailed pretest component life assessment, additional component engine instrumentation and a post test component life evaluation. The Structural Audit task includes risk assessment for at least two (2) of the most critical life-limited components. For each of these components, the contractor shall develop a Structural Activity Network, Structural Audit Checklist, and Materials Data Bank Checklist along with the supporting analysis and/or test results. The risk assessment results would be presented at the Detailed Design and Post Test Assessment Reviews. An Error Band analysis and Criteria Point calculations are not required. Materials characterization is not a chargeable subtask of the structural audit. The Configuration Definition/Long-Range Planning task consists of the following efforts: the definition of potential Air Force/Navy long range propulsion requirements which coincide with the three IHPTET phases, definition of the conceptual designs which target the technologies supporting the potential systems, the comparison of the conceptual designs of advanced technology engines based on Phase II and Phase III technologies against an 1985 baseline propulsion unit, the payoff studies quantified for Phase II and Phase III technologies identifying propulsion related enhanced weapon system capabilities (i.e. fuel consumption, life cycle cost, take-off gross weight reduction), and addressing enhancements in the areas of durability, maintainability, and reliability. The offeror shall establish technology development/transition plans based on the results of the long-range-propulsion requirements. The above tasks shall be subject to the following constraints, where appropriate: *(a) Each task shall be part of the offeror's existing* Air Force-coordinated Advanced Turbopropulsion Plan (ATPP). (b) government reviews shall be held at the end of the preliminary and final design tasks with government approval required to proceed in each instance. At these reviews, the contractor shall review any reliability and maintainability problems as well as discuss Life Cycle Cost analysis status. (c) A government review shall be held to approve the instrumentation and test plans before proceeding with demonstrator testing. (d) Demonstrator performance goals shall be specified by each offeror and shall represent performance which is characteristic of IHPTET man-rated turbine engine goals. (2) DELIVERABLE ITEMS: The following data items shall be required by the Government: (a) R&D Status Report DI-A-3002A. (b) Photographic Plan DI-S-30559/T. (c) Project Planning Chart DI-MGMT-80507A/T. (d) Video Tape Presentation DI-ILSS-80090/T. (e) Test Plans/Procedures DI-NDTI-80808/T. (f) U.S. Air Force (USAF)-Owned Aviation Fuel Stock Report DI-MGMT-80791. (g) Maintainability Status Report DI-MNTY-80823. (h) Material Research And Development Report DI-MISC-80563. (i) Test Reports DI-NDTI-80809/T. (j) Presentation Material DI-A-3024A/T. (k) Technical Operating Report (TOR). Detailed Research Plan DI-S-30559. (l) Subsystem Design Analysis Report DI-GDRQ-80567. (m) System Safety Hazard Analysis Report, Preliminary Hazard Analysis DI-SAFT-80101/T. (n) Contract Work Breakdown Structure DI-A-3023/T. (o) Technical Operating Report (TOR). Structural Audit Checklist DI-S-30559/T. (p) Contract Funds Status Report (CFSR) DI-F-6004B/T. (q) Cost/Schedule Status Report (C/SSR) DI-F-6010A/T. (r) Scientific and Technical Reports, Interim Report DI-MISC-80711/T. (s) Scientific and Technical Reports, Final Report DI-MISC-80711/T. (t) Conference Minutes DI-A-7089/T. (u) Cost Data Summary Report (DD Form 1921) DI-F-6006/T. (v) Functional *Cost Hour Report (DD Form 1921-1) DI-F-6007/T. (w) Still Photo Coverage* DI-MISC-80169. (x) Informal Technical Information. Contractor's Voucher DI-S-30593. The above detailed data item requirements are set forth in the supplemental package. (3) TOTAL CONTRACT PERIOD ANTICIPATED: The total length of the technical effort, including all options, and processing/completion of the final report is estimated to be 53 months. (4) EXPECTED AWARD DATE: August 1991. (5) GOVERNMENT ESTIMATE: The minimum total program estimate for the JTDE program is $83,600,000. The projected fiscal year funding profile is: FY91 - $2.5M, FY92 - $16.9M, FY93 - $20.4M, FY94 - 22.2M, FY95 - 21.6M. (6) TYPE OF CONTRACT: Cost Reimbursement - No Fee is desired. (7) SECURITY REQUIREMENTS: The security classification guidance for this work will be governed by the Security Classification Guide: Projects 668A/681B/3066 - Air Breathing Turbine Engine Aircraft and Missile Propulsion, dated 1 Sep 1989. The contractor will require access to and generation of classified data up to and including Secret/LIMDIS in support of this work effort. Any extracts or use of such data will require the contractor to apply derivative classification and markings consistent with the source from which the extracts were made. Compliance with TEMPEST evaluation of all equipment and test facilities used in this effort must either be completed or in process. Offerors must be capable of assembling, *instrumenting, storing and testing classified demonstrator hardware as well as the* generation and storage of classified data. Offerors to this PRDA shall include in any offer their assigned "Commercial and Government Entity Code," (i.e., Federal Supply Code for Manufacturers - a five digit code assigned by the Commander, Defense Logistics Service Center, Attn: DLSC-CGC, Federal Center, Battle Creek, MI 49016). Reference DODM 5000.12. (8) GOVERNMENT FURNISHED PROPERTY/INFORMATION: Category I petroleum products will be supplied as GFP, if it is in the best interest of the Government. Government-owned turbine engine hardware and components developed under existing or previous contracts will be furnished, if available and if their use is necessary and practical in the performance of technical tasks under this effort. (9) SIZE STATUS: Firms responding should indicate whether they are or are not a socially and economically disadvantaged business, whether or not they are woman-owned business, and should also indicate their size status. (10) NOTICE TO FOREIGN OR FOREIGN-OWNED FIRMS: Foreign nationals are excluded as prime contractors in this procurement. (11) PUBLIC LAW 98-94: Since Public Law 98-94 is applicable to this program, offerors must prepare a DD Form 2345, Export-Controlled DOD Technical Data Agreement, and forward it to: Commander, Defense Logistics Service Center, ATTN: DLSC-FBA Federal Center, Battle Creek, Michigan 49017-3084. (12) This PRDA reflects our commitment to Total Quality (TQ). We will be looking for your support and commitment to TQ in the form of defect free proposal preparation the first time. (13) PRDA CONTACT POINTS: Questions on technical issues may be referred to the AF JTDE group leader, Mr Michael Barga, 513-255-2767, WRDC/POTP, Wright-Patterson AFB OH 45433-6563 and/or the Navy program manager, Mr Rick Bonafede, 609-896-5745, NAPC PE-34, Trenton NJ 08628. Questions on contractual and cost issues should be directed to: *Mr Norman Pfeifer, AF contracting officer, Propulsion System Program Of*fice, 513-255-5044, ASD/YZKC, Wright-Patterson AFB OH 45433-6503 and/or Mr Patrick J. McLaughlin, Navy contracting officer 202-692-1722, Naval Air Systems Command, AIR 21427, Washington DC 20361-2170. Note: Offerors may, up to the published proposal submission cutoff date, contact the individuals listed for clarification of technical/contractual issues and cost response format. Up to two joint Air Force/Navy meetings to discuss offeror's questions on the requirements can be initiated by the offeror by contacting Mr Michael Barga. An Ombudsman has been established for this acquisition. Potential offerors *are invited to contact ASD's Ombudsman, Col. George R. Winters, ASD/CY,* Wright Patterson AFB, OH 45433, at (513) 255-1427, with concerns. Note: Offerors are advised that only contracting officers are legally authorized to commit the Government. All responsible sources may submit a proposal which shall be considered by the agency. (0319)

LIGo Project, California Institute of Technology, Pasadena, CA 91125

A -- LASER INTERFEROMETER GRAVITATIONAL-WAVE OBSERVATORY (LIGO) SITE SOLICITATION ANNOUNCEMENT Due 030191. The California Institute of Technology (Caltech) solicits proposals from interested parties who will provide land on which to build and operate the Laser Interferometer Gravitational-Wave Observatory (LIGO). LIGO will be a nationally facility, open to the scientific community for research at the frontiers of physics and astronomy. A proposal by a team of scientists at Caltech and the Massachusetts Institute of Technology (MIT) to develop and construct the LIGO has been approved by the National Science Board (NSB), and construction and operation of LIGO are to be funded by the National Science Foundation (NSF). The NSB has author*ized the LIGO Project to conduct a public search for two suitable sites in the U.S. to* accommodate the LIGO facilities. The LIGO Project intends to evaluate all sites proposed as a result of this solicitation in order to identify the best available locations for this unique national facility. As part of this process, the LIGO Project may contact federal, state or local governmental organizations and include consideration of available land under their control and management. Construction of the LIGO facilities (a $200M) is expected to start in FY 1992, to be completed in about 5 years, subject to the availability of funds appropriated by the U.S. Congress. LIGO will be developed, built, and operated by Caltech and MIT for the scientific community. Occupancy will include a permanent local staff of about 10-20 people, and about 10 visiting scientists. LIGO is an environmentally benign facility and generates no industrial pollutants. Site Requirements. LIGO will consist of two widely separated gravitational-wave detector facilities in the United States. Each facility includes an L-shaped vacuum system, with arms of 2.5 miles length, made of 4-foot diameter steel pipes with access ports, containing laser interferometric sensor systems. The vacuum pipes provide for straight optical paths along the full 2.5-mile length of each arm. A semi-cylindrical reinforced-concrete vault enclosure protects the vacuum pipes. Located at the vertex of the two arms, and at the midpoint and outer end of each arm, are buildings housing most of the equipment for laser interferometric sensor systems. Principal requirements of individual sites are as follows: 1. The site must allow the construction of a flat L-shaped foundation slab, 20 feet wide and 2.5 miles long on each arm, which supports the vacuum pipe and its concrete-arch semi-cylindrical enclosure. Foundations for the vertex building, the two midpoint buildings and the two end buildings along each arm will lie in the same plane as the pipe support foundation. A level layout is scientifically best; the evaluation difference between the vertex building foundation and either end building foundation may not exceed 40 feet. 2. The site must permit construction of the five major buildings and ancillary structrures. The vertex building is 80,000 sq. ft. in area, and the midpoint and end buildings are 6500 sq. ft. each. All are 55 feet high above the foundation plane. 3. The layout must avoid earthquake fault lines, floodplains, wetlands and should minimize road or waterway crossings. 4. The site requires road access for construction and for operation. 5. The site must accommodate a service road adjacent to the 2.5 mile x 2.5 mile system to provide access to entry points along the arm and to the five buildings. 6. The site requires a power hookup with a minimum capacity of 1 MW, delivered to the vertex building. 7. The site requires water supply and waste disposal facilities sufficient for sanitary needs of permanent staff and visitors (20-30 people). (The scientific equipment consumes a negligible amount of matter and generates no liquid or solid wastes.) 8. The site must have geotechnical features that provide good drainage characteristics and soil properties to assure a minimum of foundation settlement (less than 1 inch) after construction. Maximum building foundation load will be 2000 lb. per sq. ft. 9. The LIGO site must be remote from sources of man-made noise, but within convenient commuting distance of housing, schools, and shopping for its residential staff. Convenience of access to an airport for visiting staff will be considered. 10. Costs to be paid by the LIGO Project for all site preparation work required to provide a suitable graded base for foundations and roads (including provisions for drainage and erosion control), and utility connections (power, water, sewer, telephone) may not exceed the budgeted cost of $2,500,000 per site. Proposal Guidelines. Interested parties are invited to submit a letter summarizing the offer that is being made together with a brief description of how each of the principal site requirements of the previous section will be met. In addition, the submission must include the following supporting material: 1. A map indicating the proposed location of the LIGO site(s). 2. A topographic map (USGS 7.5 minute series, original color copies) with a sketch of the proposed layout(s) for the LIGO arms (2.5 mi x 2.5 mi "L"). (Attach sketches of the elevation profile along each of the 2.5 mi long arms.) 3. Readily available geotechnical data that may be useful in evaluation of site potential. 4. Available data on climate (temperature, wind, precipitation) and environmental risks (earthquakes, landslides, floods, windstorms). 5. A description of the proposed access for utilities and transportation. 6. A description of present ownership and land use of the site. 7. A statement describing the land to be provided, including the proposed price, if any, for sale or lease of the land (any proposed lease must be for a minimum duration of 25 years), and how the proposer will secure transfer of the land to the Government or Caltech. 8. A discussion of potential future urban or commercial development that may encroach upon LIGO *requirements.* 9. A statement on expected environmental or procedural issues which may affect a timely construction start. 10. A commitment to cooperate in the acquisition of additional geotechnical data needed for construction if the site should be selected for further evaluation. 11. A statement describing any additional support the applicant is prepared to provide. 12. A statement of the period of validity of the submitted offer (180 days minimum). These submissions will be evaluated for their technical feasibility, scientific suitability, and costs. Subsequently, sites will be paired, based upon scientific requirements including separation and orientation. Additional investigations of these pairs may be conducted. *Analyses and recommendations will be submitted to NSF who will make the* final selection of sites. Site pairs may be ranked, without any discussions with the proposer, on the basis of initial proposals received. Therefore each initial proposal should contain a proposer's best terms from a cost and technical standpoint. Sites other than those resulting from this solicitation may also be considered. Proposers are advised that NSF may release to the public a list of those who propose and the sites proposed in response to this solicitation. This solicitation does not commit Caltech or the Government to pay costs incurred in the preparation or submission of a proposal or in making necessary studies or obtaining information for its preparation. Proposal Delivery. The original plus four copies of the proposal, including the letter offer, supporting material, and a list of the names, titles, and telephone numbers of the persons authorized to represent the proposer should be mailed to: LIGO Project, Mail Code 102-33, Attenbon: LIGO Site Solicitation, California Institute of Technology, Pasadena, CA 91125. The deadline for receipt of all materials is 4:00 P.M., March 1, 1991. Proposals received after this deadline may not be considered if this would disrupt the ongoing review process. Inquiries. Any prospective proposer desiring an explanation or interpretation of this Solicitation should request it in writing. Oral explanations or instructions will not be binding on the LIGO Project. Any written information given to a prospective proposer concerning this solicitation will be furnished promptly to all other interested parties if that information is necessary to submitting proposals or if the lack it would be prejudicial to any other prospective proposers. Therefore, prospective proposers are invited to indicate their desire for notification by writing to the address given below. Inquiries about this solicitation should be directed to: LIGO Project, California Institute of Technology, Pasadena, CA 91125. The deadline for receipt *of all materials is 4:00 P.M., March 1, 1991.* Proposals received after this deadline may not be considered if this would disrupt the ongoing review process. Inquiries. Any prospective proposer desiring an explanation or interpretation of this Solicitation should request it in writing. Oral explanations or instructions will not be binding on the LIGO Project. Any written information given to a prospective proposer concerning this solicitation will be furnished promptly to all other interested parties if that information is necessary to submitting proposals or if the lack of it would be prejudicial to any other prospective proposers. Therefore, prospective proposers are invited to indicate their desire for notification by writing to the address given below. *Inquiries about this solicitation should be directed to:* LIGO Project, California Institute of Technology, Pasadena, CA 91125. FAX (818) 304-9834 or (818) 795-1547. Site Selection Criteria. The sites chosen should permit the highest level of research productivity and overall effectiveness for the LIGO facility, at a reasonable cost of construction and operation, and with minimal adverse impact on the environment. Proposals will be evaluated against both technical criteria and cost considerations, using the following criteria: 1. Science Impact. (a) Local Parameters. i. Site topography affecting LIGO facility critical parameters (angle between arms, arm length, slope of arms). ii. Natural and man-made ground vibration spectra. (b) Global Parameters. i. The two-site requirement. ii. Distance between sites. iii. Relative alignments of U.S. sites. iv. Geometry (location, and alignment) of site triplets (two U.S. Sites and a European site). 2. Construction Cost Impact. (a) Topography (required earth movement). (b) Soil and subsurface conditions. (c) Hydrology and drainage. (d) Climate. (e) Environmental restrictions. (f) Access-

The Commerce Business Daily (USPS 966-360) is published daily, except Saturdays, Sundays and holidays, for $261 a year (1st Class mailing) or $208 a year (2nd Class mailing) by the U.S. Government Printing Office, Washington, DC 20402. *Second Class postage paid at Washington, DC and* additional mailing offices. POSTMASTER: Send address changes to Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9373, with entire mailing label from last issue received.

sibility (roads, rail, etc.) (g) Site utilities installation (power, water, sewage, etc.). (h) Proximity of soil waste and borrow areas. (i) Local labor costs. 3. Site Availability and Acquisition Costs. 4. Existing Support Infrastructure. (a) Accommodations for resident staff (housing, schools, shopping, etc.) (b) Accommodations and access for visiting staff (transportation, etc.) (c) Local technical support (vendors, maintenance, fabrication, etc.) 5. Operations Cost Impact. (a) Cost of power. (b) Cost of local labor. (c) Heating and cooling requirements. (d) Maintenance requirements. (e) Travel time and costs for visiting staff. 6. Risk Factors. (a) Environmental risks (earthquakes, landslides, floods, windstorms, etc.) (b) Potential future man-made noise from development. 7. Security of Facility and Access for Visiting Staff. 8. Local Contributions - Financial or Other. (318)

Directorate of R&D Contracting, WPAFB OH 45433-6503

A -- UNIQUE MULTI-SPECTRAL COUNTERMEASURE TECHNOLOGY SOL PRDA 91-03 PKRE DUE 013191 POC Lt Robert Frey, Contract Manager or Mr Lytus Jordan, Contracting Officer at (513)255-2206/5252!. ADDUnique MultiDSpectral Countermeasures Technology PRDA #91D003DPKRE. A. The Wright Research and Development Center, Electronic Warfare Division (WRDC/AAWWD3) is interested in receiving proposals (technical and cost) on the research effort described below. Proposals in response to the PRDA shall be submitted by, 31 Jan 1991. 1500 hours, addressed to: Aeronautical Systems Division, Building 7, Area B. Attn: Lt Robert Frey, ASD/PKREC, WrightDPatterson AFB, Ohio 45433D6503. The proposal must remain valid for 150 days. Proposals submitted shall be in accordance with this announcement. There will be no formal Request for Proposal (RFP) or other solicitation request in regard to this requirement. Offerors should be alert for any PRDA amendments that may be published. Respondees should consider instructions contained in the "Proprietary Information" and "When and How to Submit Proposals" sections of the Air Force Stytems Command Unsolicited Proposal Guide. AFSC Pamphlet 70D5, copies of which are available by writing to HQ AFSC/DPAL, Andrews AFB, D.C., 20334-5000. AFSC Form 91, Policy Agreements, do not apply to PRDAs. Proposal preparation should follow all guidance found in the above referenced sections of AFSC Pamphlet 70D5, except for guidance which could only be applied to unsolicited proposals, e.g., paragraph 6.d. The accompanying cost proposal/price breakdown shall be supplied on an SF1411, together with supporting schedules and shall contain a personDhour breakdown per task. Copies of the above referenced forms may be obtained from the Contracting Office cited below. Proposals must be submitted in an original plus three copies. The selection of one or more sources for contract award will be based on a scientific and engineering evaluation of your response (both technical and cost aspects) to determine the technical merit of your proposal in response to this announcement. New and creative solutions are of primary interest and will be ranked most heavily in the evaluation process. Additional criteria for selecting proposals under this announcement are as follows: (a) The soundness of the approach proposed to accomplish the scientific and technical objectives of the contract, (b) The competence and availability of experienced engineering, scientific, and other technical personnel, (c) The offeror's overall experience (including past performance), and (d) The availability of necessary research and development facilities. Cost is ranked as the second order of priority. No further evaluation will be used in source selection. The technical and cost information will be evaluated at the same time. The technical proposal shall be limited to thirty (30) double spaced single sided 8 1/2" x 11" pages and must include a discussion of the nature and scope of the research and the technical approach. Additional information on prior work in this area, descriptions of available equipment, data and facilities, and resumes of personnel who will be participating in this effort should also be included. The goal of the cost proposal is not more than 100 double spaced single sided 8 1/2" x 11" pages. Proposals should reference the above PRDA number. The Air Force reserves the right to select for award any, all, part, or none of the proposals received. The contractor's proposal shall include a Statement Of Work detailing the technical tasks to be accomplished under this effort. The contractor's proposal (or any part thereof) may be incorporated by reference and used to supplement the Air Force Statement of Work. This announcement is an expression of interest only and does not commit the Government to pay for any response preparation cost. The cost of preparing proposals in response to this PRDA is not considered an allowable direct charge to any resulting or any other contract. It is, however, an allowable expense to the normal bid and proposal indirect cost as specified in FAR 31.205D18. BDDSpecific technical requirements and other information follow: (1) REQUIREMENTS: The technical proposal must include an outline and full discussion of the nature, scope, and tasks of the research and any subsequent hardware development, the method or technical approach and the expected results. The contractor shall provide the personnel, facilities, and equipment necessary to design, develop, and demonstrate new and innovative active electronic combat techniques and concepts. This shall include information on prior work/experience in the field, description of available facilities and resume of key personnel who will be participating in the effort. The proposed techniques and concepts shall include one or more of the following operational capabilities: electronic RF decoys, IR decoys, support countermeasures from other platforms, synergistic onDboard/offDboard approaches, management of countermeasures resources, and countermeasures against advanced threats. An example of a new countermeasure concept is a decoy which generates radiation patterns which closely resemble the aircraft at all aspect angles. These concepts shall provide application to one or more of the following threat domains: radio frequency, laser, infrared, electroDoptical, and ultraviolet. The proposed techniques and concepts shall offer potential for improvement over existing capabilities. The techniques and improvements shall be reliable, maintainable, available, and affordable while aiding in the survivability of Air Force combat and combat support aircraft. Results of the proposed active countermeasure research together with our inDhouse capability shall help insure that there are no surprises in terms of threat lethal weapon capabilities that cannot be countered or neutralized. The techniques and concepts shall show potential for operational weapon system applications within the next five to fifteen years. (2) DELIVERABLE ITEMS: The following deliverable data items shall be required: (a) Project planning Chart, DIDMGMTD80507A (monthly), (b) R&D Status Report, DIDAD3002A (monthly), (c) Scientific and Technical ReportsDInterim Report, DIDMISCSD80711/T (ASREQ), (d) Scientific and Technical ReportsDFinal Report, DIDMISCD80711/T (draft and reproducible final), (e) Performance and Cost Report, DIDFNCLD80912 (monthly), (f) Contract Funds Status Report (CFSR), DIDFD60048/T (quarterly). The following items shall be required if software development is involved: (a) Software Requirements Specification, DIDMCCRD80025A/T, (b) Software Design Document, DIDMCCRD80012A/T, (c) Data Base Design Document, DIDMCCRD80028A/T (ASREQ), (d) Software Test Plan, DIDMCCRD80014A/T, (e) Software User's Manual, DIDMCCRD80019A/T, (f) Software Programmer's Manual, DIDMCCRD80021A/T (ASREQ), (g) Research & Development Computer Software, DIDED30149. All data and software shall be delivered with unlimited rights. (3) TOTAL CONTRACT PERIOD ANTICIPATED: An estimated 24 months of technical effort and 5 months to process the final report. (4) EXPECTED AWARD DATE: 3rd Quarter 1991. (5) GOVERNMENT ESTIMATE: 2.5 personDyears of effort. (6) TYPE OF CONTRACT: Cost Plus Fixed Fee. (7) SECURITY REQUIREMENTS: It is anticipated that work performed under this contract may be classified up to and including the SECRET level. The WRDC/AAW Electronic Warfare Security Classification Guide, 1 March 1989, will be the governing Security Classification Guide. In the event the Offeror contemplates the generation of or the processing of classified data at the SECRET level or higher in the performance of this program effort, the Offeror must supply a TEMPEST Plan with the submission of the proposal. (8) GOVERNMENT FURNISHED PROPERTY: None. (9) SIZE STATUS: For the purposes of this acquisition, a small business has 500 or fewer employees. Firms responding should indicate whether they are or are not a socially and economically disadvantaged business, whether or not they are a womanDowned business, and should also indicate their size status. (10) NOTICE TO FOREIGNDOWNED FIRMS: Such firms are asked to immediately notify the Air Force point cited below upon deciding to respond to this announcement. This action is necessary to begin review and clearance procedures. Foreign contractors should be aware that restrictions may apply which could preclude their participation in this acquisition. (11) PRDA CONTACT POINT: Questions on technical issues may be referred to the project engineer, Stephen J. Winick, WRDC/AAWWD3, WrightDPatterson AFB OH 45433D6543, (513)255D4174. Questions on TEMPEST issues may be referred to ASD/SCNZ, Attn: Mr George Chichuk WrightDPatterson AFB OH 45433D6503, (513) 255D2064. Questions related to contract/cost issues should be directed to: Directorate of R&D Contracting, ASD/PKREC, Attn: Lt Robert Frey WrightDPatterson AFB OH 45433D6503, (513) 255D2206. Offerors are advised that only contracting officers are legally authorized to commit the Government. All responsible sources may submit a proposal which shall be considered by the agency. (0319)

Rome Air Development Center, Directorate of Contracting/PKRD, Griffiss AFB, NY 13441-5700

A -- SLCSE ENHANCEMENTS AND DEMONSTRATION PROGRAM Sol F30602-91-R-0013 Contact James R. Milligan, AC315-330-2054, Program Manager. RFP to be released no sooner than 15 days from publication of this notice. Design and implement enhancements to the Software Life Cycle Support Environment (SLCSE) within the first twenty-seven (27) months of the effort. Concurrently with this task, the offeror will also be tasked to productize and support the enchanced SLCSE, and demonstrate its capabilities within the context of various Air Force/Government software development and post-deployment support missions in an overall effort not to exceed five (5) years. Specifically, the offeror shall (1) implement enhancements to the SLCSE framework (i.e., user-interface/executive and database subsystems), as well as consequential enhancements to the SLCSE tool'set, for improved usability, functionality, performance, efficiency, extensibility, and maintainability of the SLCSE to various user/customer organizations (i.e., Air Force, Government, and Air Force/Government contractor organizations, including Air Force Logistic Command Air Logistic Centers), and (3) develop and implement a Business/Marketin Plan, a Service/Support Plan, a Staffing Plan, and a Financial Plan which, in combination, will effectively result in productization of the enhanced SLCSE. Offerors shall have the following quatrifications: (1) Knowledge of and experience with the system software development life cycle specified by DOD-STD-2167 and DOD-STD-2167A, and with the development of software in accordance with ANSI/MIL-STD-1815A. (2) Knowledge of and experience with human-engineered, graphics-oriented user interfaces, and with the X-windows industry standard. (3) Knowledge of and experience with Entity-Relationship models, relational database management systems, and the Standard Query Language (SQL) industry standard. (4) Knowledge of and experience with heterogeneous computational networks, and with the issues, problems, and solutions to problems concerning the interoperability of systems, subsystems, tools, databases, environments, etc., within such networks. (5) Knowledge of and experience with the Software Life Cycle Support Environment (SLCSE). (6) Knowledge of and experience with evolving prototype software products to production-quality levels, and exploiting them in the commercial and government marketplace. (7) This technology area is subject to export control restrictions, therefore only qualified U.S. contractors may receive technical data related to this effort. A technical library relating to the subject area of this acquisition is available for review by offerors during proposal preparation period. The library is located at RADC, Bldg. 3, Griffiss AFB, NY. Access to the library may be gained by contacting James Milling, Area Code 315/330-2054, at least forty-eight hours in advance. The library contains technical data subject to export control. Prior to review, offeror must submit a copy of its approved DD Form 2345, "Military Critical Technical Data Agreement", along with a letter from the Data Custodian designated on that form, authorizing access by whomever will be reviewing the library. The DD Form 2345 and letter of Authorization should be submitted to RADC/COEE, Attn: James Milligan, Griffiss AFB, NY 13441-5700. The product classification code for this effort is B731. A Small Business is defined as 500 people or less. All responsible sources may submit a proposal which shall be considered. Requests for copies of the solicitation must be in writing, contain Commercial and Government Entity (CAGE) number, (formerly FSC No.), and a copy of the most recent approved DD Form 2345. No telephonic requests will be considered. Responses must be addressed to the attention of Gary Mancuso/PKRD and reference Code B-1-3321. (317)

Directorate of R&D Contracting, WPAFB OH 45433-6503

A -- ELECTROMAGNETIC MATERIALS CHARACTERIZATION SOL F33615-91-R-5603 DUE 011291 POC Anthony W. Evendge, Contract Negotiator, ASD/PKRRB 513-255-5051 Robert S. Kline, Contracting Officer, ASD/PKRRB, 513-255-5051. 17. The Directorate of R&D Contracting intends to issue RFP No. F33615-90-R-5603 for the purpose of developing, maintaining and improving techniques for appropriate fabrication, processing, and characterization of various artificially structured semiconductor materials, nonlinear optical materials, and high temperature superconductor materials. The work will be performed at the Wright Research and Development Center (WRDC) Materials Laboratory, using Government furnished facilities and equipment. This research program will consist of three primary tasks: Task I- Surface Preparation/Thin Film Deposition/Processing Development, Task II- Characterization/Analysis Development, and Task III- Modeling/Theory. The Government Furnished Equipment includes state-of-the-art apparatus for sample preparation, epi-layer film deposition, photoluminescence, photoreflectance, CV/DLTS, Hall-Effect, SIMS, and scanning Auger microscopy. The total program requires the full time participation of eleven (11.5) professional scientists and ten (10) technicians. It is intended that this research program will complement and help provide direction to other ongoing inhouse and contractual research programs in electronic materials fabrication, growth, processing, and characterization. The advance notice was published previously under Sources Sought PKRR-91-5 on 90 AUG 31. Information is required in your response as to whether your firm is considered a small business, small-disadvantaged business, or woman owned business. For this item, the general definition to be used to determine whether your firm is small is as follows: "A small business concern is a concern that is independently owned and operated, is not dominant in the field of operation in which it is bidding on Government contracts and, with its affiliates, the number of employees does not exceed 500 persons." "Concern means any business entity organization for profit with a place of business in the United States, its possessions, Puerto Rico, or the Trust Territory of the Pacific Islands, including but not limited to an individual, partnership, corporation, joint ventures, association, or cooperation." A Security clearance will be required of all bidders or offerors. Small and disadvantaged firms are encouraged to participate as prime contractors or as members of joint ventures with other small businesses and all interested contractors are reminded that the successful contractor will be expected to place subcontracts to the maximum practicable extent with small and disadvantaged firms in accordance with the provisions of Public Law 95-507. Businesses requesting copies of this solicitation must furnish representation with their request as to whether they are a small disadvantaged business. Request for copies of the solicitation should be received in writing by the issuing office no later than ten days from the date of this listing in the Commerce Business Daily. Telephone requests will not be honored. Foreign and foreign-owned firms are to immediately notify the contact point cited above upon making a decision to respond to this announcement. The RFP is scheduled for release on or about 90 DEC 12. Respondees to this synopsis shall include in any request their assigned Commercial and Government Entity Code (i.e. Federal Supply Code for manufacturers, a five digit code assigned by Commander, Defense Logistics Service Center, Attn: DLSC-FBAA, Federal Center, Attn: DLSC-FBAA, 74 N. Washington Ave., Battle Creek MI 49017-3084). All responsible sources may submit a proposal which shall be considered by the agency. (0319)

The University of Iowa, Purchasing Department, Iowa City, IA 52242

A -- INTENSIFIERS Sol UOI-GA26-0003. Due 113090. Contact Point, T.D. Robertson, 319/335-1693. Contracting Officer, W.F. Chadima, 319/335-0391. The University of Iowa requests proposals from qualified and responsible organizations to provide image intensifier tubes (intensifiers) to be used in an Earth-orbiting spacecraft. The intensifier is to be of the proximity-focused type using microchannel plates (MCP). Quantum efficiency of the photocathode at wavelengths of 400 to 700 nm must be equal or maufacturer experience must demonstrate that the quantum efficiency of the photocathode will not decrease by more than 30% after drawing a total charge density of 50 microcoulombs/cm^2. Clear aperture diameter of the intensifier must be 25 mm and the required range of MCP electron gain is to be 5,000 - 1,000,000. Phosphor yield must exceed 100 photons per incident electron of 5000 electronvolgs energy, with a short persistence time in which the emissions are reduced by more than 100 within 10 ms of loss of input signal. The phosphor emission spectrum is to be limited to 25 nm (FWHM) at a mean wavelength no shorter than 500 nm. The 3-year mission radiation environment in excess of 10^8 rads requires the use of proven radiation-hard optical materials for the front and rear windows. Prior to submitting a formal proposal, offerers are requested to submit an initial proposal (IP) of not more than five (5) pages in length, presenting the proposed work and an estimated cost. The purposes of the IP is to alleviate unnecessary work on the part of the offerer. Acknowledgement of receipt of an IP will NOT be issued. Those whose IPs are found consistent with the needs of The University of Iowa will be requested to submit an official proposal. Such an invitation does not assure that the submitting organization will be awarded a subsequent contract. This effort will be a subcontract under a prime contract awarded by NASA/Goddard Space Flight Center. The University of Iowa encourages responses from small, disadvantaged, and women-owned businesses. Please submit initial proposals to: Mr. T.D. Robertson, Department of Physics and Astronomy, The University of Iowa, Iowa City, IA 52242. (317)

U.S. Army Strategic Defense Command, ATTN: CSSD-CM-CD, P.O. Box 1500, Huntsville, AL 35807-3801

A -- DASG60-90-0174 INDUSTRY BRIEFING ON THE ENDOATMOSPHERIC/EXOATMOSPHERIC INTERCEPTOR (E2I) OPERATIONAL CONCEPT SOL DASG60-90-0174 POC Patricia Cribbs, Contract Specialist, 205-722-1187/Robert B. Joiner, Contracting Officer, 205-722-1187. This classified briefing is scheduled from 0900 to 1500 on December 12, 1990, at the Rocket Auditorium, Building 7120, Redstone Road, Redstone Arsenal Alabama. Recommend using Redstone Road, Gate 3, off of South Memorial Parkway. The classification of this briefing is SECRET/NOFORN NATIONALS ALLOWED/U.S. PRIME AND SUBCONTRACTORS ONLY. The purpose of this classified briefing is to explain the Endoatmospheric/Exoatmospheric Interceptor (E2I) Operational Concept and the tentative contracting acquisition strategy to industry relevant to this acquisition. Contractors should note that a Secret Clearance will be required to attend this