

# Final Call for Papers

**Firm Deadline for Receipt of Summary: September 30, 2011**

March 13 – 16, 2012  
Monterey, CA

The Department of Defense (DoD) and the Department of Energy (DOE) announce that the 30th Hardened Electronics and Radiation Technology (HEART) Conference will be held in Monterey, CA March 13 - 16, 2012. The HEART Conference provides a professional forum specifically for classified or sensitive research and development investigations. The HEART Conference and the HEART-published proceedings provide a unique, classified and export controlled colloquium for authors who desire the professional recognition associated with fully refereed publications. This type of publication is the choice for reporting superior, exclusive results. Of particular interest are experimental or analytical observations that are new and significant to the design, testing, or economics of hardened systems. Two types of technical papers are invited for consideration in the conference program. The first is classified up to the

level of Secret Restricted Data (no CNWDI); the second is unclassified but restricted by export control (ITAR). Papers of special interest, that are not classified or ITAR, will be considered on a case-by-case basis. Attendees must have security clearances certified by DoD and DOE officials to attend the classified sessions. ITAR attendees must be US citizens or U.S. resident aliens with a Permanent Resident Card (Green Card).

Based on the positive reception at previous conferences, demonstration space will be provided for those who are developing desktop computer programs in all radiation environment effects, and all related topic areas.

The HEART Conference will continue to provide a forum for research and development investigations in space radiation, nuclear, electromagnetic pulse phenomena, and EMP/HPM effects on systems and subsystems. The final program will have a balance of electromagnetics and solid-state physics phenomena. Papers on new and emerging technologies in related fields are also encouraged.

The technical program will consist of several technical sessions, a half day short-course tutorial, and invited papers. Current research and development results are solicited for presentation. Of particular interest are papers on the topics listed below. In addition to these specific technical areas, contributions are solicited in related technical areas.

The HEART Conference hotel and site for all ITAR sessions will be the Hyatt Regency Hotel & Spa in Monterey, CA. Classified sessions will be held nearby at the Naval Postgraduate School.

## Recent Topics

### Microelectronics and Circuit Hardening

- High Performance CMOS, SOI
- Hardening by Design
- Hardening by Process
- Non Silicon Electronics:
  - SiGe, SiC, Graphene, III-V materials
  - Carbon Nanotubes

### Commercial Technology in Survivable Systems

- Hardness Assurance Methodology
- Radiation Test Protocols & Standards

### Electro-Optics/Sensors

- Optical, IR, RF
- Integrated Sensors
- Inertial Navigation Sensors / MEMS
- Cryogenic Circuits, Superconductivity

### Transient EM Effects/Electromagnetics

- Directed Energy including Lasers and HPM
- Nuclear EMP, HEMP, IEMP, SGEMP, SREMP
- Battlefield Systems and C<sup>3</sup>I

### Hardened Systems and Survivability

- Radiation Environments and Criteria
- System Hardening/Validation Approaches
- System Optimization and Implementation
- Piece Part Implementation
- Hardness Assurance and Maintenance

### X-Ray and other Simulation Technology

- Pulsed Power Development
- Laboratory Sources: Radiation, HPM, DEW
- Persistent Radiation, Scintillation, Clutter, Other
- Radiation and EMP Simulator Advancements

### System Test and Certification

- Energy Deposition Measurements
- Energy Transport Analysis
- Testability
- Test and Analysis Methods
- HWIL Verification Methods

### High Performance Computing

- Advanced Simulation & Computing (ASC)
- Integrated Weapons of Mass Destruction Toolset
- Nuclear Capabilities Services (NuCS)

### Computer Demonstrations

- Computer Aided Design of Hardened Circuits
- Computational Aids, Tutorials

### Other Relevant Topics

- Space Environments
- Weapon-enhanced Space Radiation
- Spacecraft Charging
- Thermal Mechanical Stress
- Damage to Materials
- Space Experiments
- Radiation Detector Systems
- Radiation Technologies and Detection Systems
- New and Emerging Technologies

## Preparation of the Summary

Authors of prospective papers must submit five copies of an informative summary. Summaries may be up to four pages in length (including figures). The summary must furnish sufficient information to permit a meaningful review. Of particular interest are: (1) the purpose of the work, (2) significant results, (3) contribution to the state of the art. The level of classification can be up to Secret Restricted Data. (**CNWDI papers will not be accepted.**) ITAR papers are welcome. *Authors are encouraged to submit classified summaries if required to permit an accurate review of the paper.* The classification level or trade restrictions should be clearly marked on each page of the summary. *Paper titles, to be printed in the Conference Program, must be unclassified.*

If submitting paper copies, the summary must be typed on 8 1/2" x 11" white bond paper. Margins on all four sides shall be 1 1/4". The title shall be in capital letters centered at the top of the page. The names of the authors should follow. Electronic summaries will be accepted – note that use of proper encryption methods is required for ITAR summaries.

Summaries should be accompanied by a cover letter that gives the name, affiliation, address, and telephone number of each author. *Please identify the author who will present the paper.* Authors should determine whether a poster or an oral presentation is more appropriate and indicate a preference. If a computer desktop demonstration is proposed, please indicate the objectives of the program and the results the user may expect. Please identify the classification levels of the final paper and the conference presentation. Speakers presenting during the classified sessions (classified sessions will be held at the Naval Postgraduate School) must be cleared for Secret RD. Proof of U.S. citizenship allows access to ITAR material and is required for all other technical sessions. Include any other information you feel is pertinent for the paper review.

## Summary Requirements

Length: Up to four pages

Emphasis: Purpose, significant results, and contribution

Clearance: Speaker must be cleared for ITAR or SRD

Summary information required

- Summary with cover letter giving:
- Speaker's name
- Preference for poster, oral presentation, or computer demonstration
- Classification level of final paper and presentation
- Other pertinent information (i.e., DTRA or other Contract Number)

- Telephone and Fax numbers.

## Late News

A limited number of late-news papers, suitable for poster presentations, may be accepted. Summaries for late news papers will be considered up to February 1, 2012. (A two-page summary must be sent to the Technical Program Chair.)

## Deadlines for Summaries, Presentations and Publication

The deadline for receipt of summaries for consideration in the Technical Program is September 30, 2011. All summaries received on time and in proper format will be reviewed. Each summary must be approved by the appropriate sponsoring agency before it is submitted for HEART review. This approval process can take six to eight weeks and is the responsibility of the author(s). Acceptance of a paper by the Conference also entitles the author(s) to submit the paper to the JRERE. **The full paper, cleared for release, is to be submitted for review to the JRERE Guest Editor by June 1, 2012.** Subject to review, the paper will be published in a special HEART Conference issue of the JRERE. The IEEE Radiation Effects Steering Group and the IEEE Nuclear and Plasma Sciences Society Adcom have approved a process whereby JRERE papers can be published in the *IEEE Transactions on Nuclear Science* once classification or trade restrictions have been removed.

**The initial summary and sponsor approval must be received by September 30, 2011. No exceptions will be permitted.**

**Additional Instructions will be provided for the following:**

- HEART presentation
- Full paper for the JRERE

**Allow six to eight weeks for sponsor approval for each of the following:**

- Initial summary
- Presentation
- Full Paper for the JRERE

**E-Mail Summaries to: ed.quinn@tasc.com.**

**Please password-protect the summary and call Ed Quinn to provide the password: 571-642-6864**

If due to organizational restrictions the summary must be mailed, send 5 copies of the summary to:

TASC

Attention: Mr. Ed. Quinn (2011 HEART Conference)

8911 Terminal Road Suite 1000

Lorton, VA 22079

## 2012 HEART Conference Committee

### Conference Chair

Christine Coverdale  
Sandia National Laboratories  
505-845-8340  
cacover@sandia.gov

### Local Arrangements Chair

Todd Weatherford  
Naval Postgraduate School  
831-656-3044  
trweathe@nps.edu

### Industrial Exhibits Chair

Mike Tostanoski  
Aeroflex RAD, Inc.  
719-531-0800, x186  
mike.tostanoski@Aeroflex.com

### Steering Committee Chair

Dolores Walters  
L-3 Communications Jaycor  
858-404-7883  
Dolores.Walters@L-3com.com

### Awards Chair

Russell DePriest  
Sandia National Labs  
505-845-8141  
krdepri@sandia.gov

### Technical Program Chair

Jeff Johann  
NSWC Crane  
812-854-1876  
jeffrey.johann@navy.mil

### Short Course Chairs

Dr. James C. Petrosky  
Air Force Institute of Technology  
COMM: (937) 255-3636 x4562

Eric M. Nelson  
MS T087  
Los Alamos National Laboratory  
Los Alamos, NM 87545  
Phone: (505) 665-6350

### Finance Chair

Keith Avery  
Air Force Research Lab  
505-846-0210  
Keith.Avery@kirtland.af.mil

### Conference Coordinator

Anne Meadows  
ETC Services, Inc.  
720-733-2003 Fax: 720-733-2046  
etcservices@qwest.net

### Publicity Chair

Diana Wrobel  
Sandia National Laboratories  
505-284-8687  
dlwrobe@sandia.gov

### Co-Publicity Chair

Patricia St. John  
Sandia National Laboratories  
505-284-7773  
plstjoh@sandia.gov

### Personnel Security

Donna Dillon  
DTRA/OP-OSS  
703-767-3766 Fax: 703- 767-0888

### DOE/DoD Coordinators

Kenneth A. Mikkelson  
Sandia National Laboratories  
505-845-7044 Fax: 505-845-7819

Dexter Simmons  
DTRA/OP-OSS  
703-767-2758 Fax: 703- 767-8603

Marc Owens  
Air Force Research Laboratory  
505-846-1963 Fax: 505-846-2299

Steve Van Dyk  
Navy, Strategic Systems Programs  
202-764-1626 Fax: 202-764-2105

Clyde Elliott  
USASMD/ARSTRAT  
256-955-3757 Fax: 256-955-2264