

**Special Notice N00014-20-S-SN16**  
**Special Program Announcement for 2020 Office of Naval Research**  
**Research Opportunity:**  
**Electronic Warfare (EW) and Radio Frequency (RF) Surveillance Technology**

**I. INTRODUCTION**

This announcement describes a research thrust, entitled “Electronic Warfare and RF Surveillance Technology,” to be launched under the N00014-20-S-B001 Long Range Broad Agency Announcement (BAA) for Navy and Marine Corps Science and Technology which can be found at <http://www.onr.navy.mil/Contracts-Grants/Funding-Opportunities/Broad-Agency-Announcements.aspx>. The 20-S-B001 BAA remains open through 31 December 2020, or until replaced by a successor ONR Long Range BAA. The opportunity announced in this Special Notice will continue under the successor BAA, subject to the deadlines and other requirements set forth herein. The research opportunity described in this announcement specifically falls under the Electronic Warfare and RF Surveillance ONR Technology Areas (<https://www.onr.navy.mil/our-research/technology-areas>) within the Information, Cyber and Spectrum Superiority Department (Code 31). The submission of proposals, their evaluation, and the placement of research grants and contracts will be carried out as described in that Broad Agency Announcement.

The purpose of this announcement is to focus attention of the scientific community on (1) the areas to be studied and (2) the planned timetable for the submission of white papers and proposals.

## II. TOPIC DESCRIPTION

The proposed topic will explore and exploit the technical opportunities for discovery and invention in the areas of Electronic Warfare (EW) and RF Surveillance:

- The goal of EW is to control the Electromagnetic Spectrum (EMS) by exploiting, deceiving, or denying enemy use of the spectrum while ensuring its use by friendly forces. To that end, the Office of Naval Research (ONR) EW Discovery and Invention (D&I) program invests in Science and Technology (S&T) initiatives that will provide naval forces (including Navy and Marine Corps) with improved threat warning systems; Electronic warfare Support (ES); decoys and countermeasures against weapon tracking and guidance systems; and Electronic Attack (EA) against adversary Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR).
- The goal of RF Surveillance is to detect, track, and identify targets through use of EMS emissions reflected from targets of interest. The ONR RF Surveillance D&I program invests in hardware and algorithms that improve the sensitivity, tracking, and target identification capabilities of radar systems, and that improve Electronic Protection (EP) of our own C4ISR systems from intentional and unintentional interference.

The ONR Code 312 Electronic Warfare and RF Surveillance portfolios seek proposals to develop and demonstrate technologies for the next generation of systems in electronic warfare and RF surveillance. White papers and subsequent proposals should address technology developments in one or more of the following Research Opportunity Technical Areas 1-5.

### **Background:**

To fully enable spectrum superiority, naval forces (including the Marine Corps and Navy) must be able to control the Electromagnetic Spectrum (EMS) by exploiting, deceiving, or denying enemy use of the spectrum while ensuring persistent naval ISR capabilities. The advance of adversary intelligence, surveillance and reconnaissance (ISR) and EW capabilities across the full EMS (DC to daylight), and the proliferation of inexpensive, efficient processors and transceivers has eroded our advantages, created a contested and congested operational environment, and degraded our naval ISR capabilities. The FY21 EW and RF Surveillance D&I Special Notice seeks innovative solutions to overcome these technical challenges.

### **Technical Area 1 (TA1): Discovering and Denying Non-Cooperative, Reconfigurable, Agile, Ubiquitous Communication Links (e.g., 5G-NR Networks) (EW Focus)**

#### *Introduction:*

Next-generation communications will be commercially proliferated, encrypted, broadband, and feature channel / protocol hopping which enables significant increases in spectral occupancy across greater frequency ranges (e.g., 3-6 GHz and 20-55 GHz) while utilizing Cyclic-Prefix (CP) & Discrete Fourier Transform spread (DFT-s) Orthogonal Frequency Division Multiplexing (OFDM) techniques. Furthermore, these networks will have selectable subcarrier spacing from 15kHz to 200kHz with up to 3300 subcarriers simultaneously in use on one channel, enabling up

to 400Mhz of instantaneous bandwidth. The next-generation network standards are also frequency agnostic and subcarrier configurations can vary by band and service provider.

Within a small geographic radius, these networks will contain many hundreds of devices of different classes, all of which will operate in similar frequency bands. With no authenticated access, non-cooperative sensing of these networks is highly computationally intensive. In urban environments, expeditionary forces will face the unique situation of having to operate within this highly congested and contested EM environment. Naval forces must be able to quickly gain situational awareness, determine who is friend or foe, and to be able to tactically disrupt or deny known adversarial next-generation network nodes.

*Objective:*

TA1 seeks EW research projects to develop systems and/or algorithms to localize and classify (by group or unique entity) non-cooperative communications transmitters that share frequency bands, utilize simultaneous coding and spatial techniques, and that are reconfigurable and agile. TA1 seeks to leverage recent advances in receiver technology, signal processing hardware and cognitive algorithms to provide a portable solution to form an electronic support capability to determine the topology/architecture of a non-cooperative next-generation communications network utilizing the myriad of complexities described above.

It is anticipated that solutions will take into account relevant frequency bands of interest (3-6 GHz and 20-55 GHz), in addition to the diversity and reconfigurability of coding and spatial techniques, and will seek to discover, localize and identify individual handsets and base stations. Separate solutions will also look at ways to disrupt/deny known adversarial communications nodes and develop real-time vulnerability assessments of adversary next-generation communications networks.

Proposed electronic support efforts should provide a scalable hardware solution for non-cooperative ES functionality with the potential to simultaneously span the entire commercial frequency bands (e.g. 5G-NR) and provide a demonstration of this capability. The demonstration will provide evidence of a detection and identification capability against a diverse, realistic implementation of the protocol including many users and providers.

Proposed efforts should highlight the benefits of the approach over current state-of-the-art and specifically address metrics such as detection sensitivity, detection accuracy, detection/identification confidence, probability-of-intercept, Size, Weight and Power (SWaP), or any other metrics deemed relevant by the proposer.

**Technical Area 2-A (TA2-A): Enabling Wideband Sensing and Sense Making (EW Focus)**

*Introduction:*

Emerging adaptive, cognitive, multi-function and networked systems utilizing the electromagnetic spectrum are stressing for current electronic support (ES) systems and capabilities. Detecting signal sources with extraordinary frequency agility requires an ES receiver with comparable agility, or channelized banks of multiple receivers, to ensure a high probability of intercepting all components of the signal. This agility further complicates the

accuracy of automated classification systems that must sift through reams of parameterized pulse data, which becomes more complicated when numerous signals are present. Signal sources that employ spectral spreading techniques to keep signal power densities below the noise floor present further difficulties for traditional ES systems. Advances are needed in order to detect modern communication and radar systems that live "below the noise floor" and make sense of a complicated EMS environment. Current wideband ES systems require large amounts of computing hardware to detect signals, extract relevant signal parameters, and classify detections. Furthermore, wideband receivers and digitizers are the major drivers of EW system cost, especially at wider operating frequency bands. Finally, Naval forces do not always have the luxury of utilizing large systems composed of multiple racks of equipment with ample available power, as the military increasingly relies on unmanned platforms with tight SWaP constraints

*Objective:*

TA2-A seeks EW research projects that target key components as a subset of a scalable solution that will enable a highly sensitive wide-band ES capability against modern signals in an operationally relevant environment. These modern signals include low signal to noise ratio (SNR) signals below the noise floor, and spatially distributed, correlated signals such as those from multiple-input, multiple-output (MIMO) systems. Developed solutions will need to be able to ingest large amounts of sparse data and in real-time be able to separate out, and detect signals of interest. Proposed research topics may focus on ES components or subsystems from behind the antenna aperture all the way to processing hardware and software. Anticipated solutions could range from novel analog signal processing architectures, to novel signal conversion and detection architectures, to brain-inspired computational processing systems, and new algorithms to enable the detection of signals below the noise floor. Other potential solutions could include, but are not limited to: novel machine learning (ML) based algorithms combined with analog or digital compressive sensing methods (Nyquist-folding or other intelligent subsampling schemas) to de-interleave, identify, and characterize signals in a dense signal environment; real-time cyclostationary signal processing methods for signal detection, identification and characterization; or compact co-located processing units at digital elements within phased arrays for high-efficiency on-array signal characterization.

Proposed concepts shall introduce systems or methods for generating parameterized detections (i.e. ML-based "fingerprints" or signal descriptor words (SDW)) for signals within a receiver instantaneous bandwidth of 10 GHz or more, with a means to detect and characterize modern signals or sub-0 dB SNR signals. Novel direction finding (DF) methods for processing this class of signal data are also desired to localize most signal sources to within two degrees, and the most stressing signal sources (e.g, < 0 dB SNR, complex multipath, etc.) to within five degrees. Proposals that address front-end components such as array structures, active gain elements, or digital conversion components, should consider solutions that cover an *operating bandwidth* of more than 20 GHz. The operating bandwidth should cover operating frequencies that are relevant to military ES applications – anywhere from 1 GHz to 90 GHz. The receiver instantaneous bandwidth may be contiguous and tunable within the operating bandwidth, or it may be segmented in selectable band centers and channel bandwidths that are individually tunable within the operating bandwidth. Proposed concepts may also address distributed sensing solutions between multiple platforms.

Proposed concepts are expected to provide detail on key EW system metrics for the concept, such as SWaP, instantaneous bandwidth, operational bandwidth, sensitivity and any other metrics deemed relevant by the proposer. Solutions that focus more on the signal processing side may make assumptions about the type of digitized signal data provided by front-end conversion circuitry and architecture, but proposals must clearly state these assumptions and consider how it would affect the front-end antenna architecture SWAP-C. For example, digital conversion architectures exist for capturing the desired instantaneous bandwidth, or more, at Nyquist sample rates; however, scaling such architectures to a phased array size necessary to capture low-power signals in maritime environments, would be prohibitive in terms of cost and power consumption. Finally, each proposal should also describe how the novel effort compares to similar state-of-the-art technology.

### **Technical Area 2-B – Wideband Sense-making for Convergent Spectrum Applications (RF Surveillance Focus)**

#### *Introduction:*

Since both above-deck and below-deck space available for new sensing system antenna arrays and processing equipment is limited, there is a desire to do more with the same set of equipment, such as using radar systems for ES functions, or ES systems for radar functions. Typical requirements for radar, ES, and communications systems do not overlap. For these reasons, efforts to add these functions to a sensor system after it is designed leads to compromises in function / capability. Building multiple functions into a sensor system from the start still requires trades in capabilities, or more substantial development budgets.

#### *Objective:*

The aforementioned desired research focus area of TA2-A may result in processing hardware, algorithms, and other microwave system hardware that would also provide benefits to radar surveillance applications. TA2-B seeks to extend the objectives of TA2-A to also address capabilities for improving radar surveillance functions, which may include improvements such as (but not limited to) efficient wideband waveform pulse-Doppler processing, multiband radar, communications modes that support radar functions, or robust spectrum interoperability through intelligent sensing and system adaptation to the environment.

TA2 efforts focusing on TA2-B should discuss how the proposed effort would enable improved multifunction operations between the advanced ES applications of TA2-A and radar sensing functions in TA2-B. These discussions shall also mention how the proposed effort minimizes conflicting ES and radar capabilities without substantially inflating system size, weight, power, or cost.

### **Technical Area 3 (TA3): Enabling Full-Spectrum (DC to Daylight) Countermeasures and Effects (EW & RF Surveillance Focus)**

#### *Introduction:*

The use of the EMS has proliferated beyond just conventional RF technologies. In order for Naval dominance to continue in Electromagnetic Maneuver Warfare, the entire spectrum, from DC to daylight, needs to be fully addressed. Due to their unique properties and propagation

effects, ultrafast lasers have potential to produce effects in both the RF and Electro-Optical/Infrared (EO/IR) regimes simultaneously with multiple potential revolutionary DoD applications.

Ultrashort Pulse Lasers (USPL) are widely used in commercial applications, and there is interest in their potential for DoD specific applications. However, USPL systems today generally operate at short propagation ranges in controlled environments. The DoD has a need for ruggedness, reliability, maintainability, miniaturization, beam intensity, pulse parameter configurability, and propagation range from USPL source systems which cannot be met by today's technology

*Objective:*

TA3 seeks to explore revolutionary effects across the EMS that are potentially enabled by Ultra Short Pulse Lasers and to understand the key component technologies needed to deliver these capabilities robustly in an operationally relevant environment.

Specifically, EW research ideas are sought that explore and develop unique effects, or military applications, that utilize the properties of USPL beams such as non-linear focusing, filamentation, and broadband radiation generation. Potential application areas of interest include both ISR/C-ISR/Comms (e.g, antennas) and EW (e.g., full-spectrum countermeasures).

ONR desires that proposed concepts exploring novel military effects should include a proof-of-principle experiment, at least at the laboratory scale, by the end of the effort. If applicable, proposed efforts should also explore the effects of various pulse parameters (pulse width, repetition rate, peak power, etc.) on their proposed application. Finally, proposals shall also discuss how current laser technology and environmental conditions will affect the proposed concept. It is anticipated that some white papers and/or proposals addressing specific military effects under this TA will need to be classified; please follow the instructions below on how to provide a classified submission.

In addition, TA3 also seeks research ideas on how to reduce the SWaP, and increase the capabilities of USPL systems, by exploring new component technologies for improved pulse compression, higher bandwidth and higher repetition rate lasers at relevant wavelengths. Proposals that could potentially address USPL improvements are anticipated to include, but are not limited to:

- Innovative approaches to USPL systems and subsystems which improve their size, ruggedness, bandwidth, wavelength coverage (> 2 um), or other characteristics
- Innovative methods to improve the pulse generation efficiency of USPL sources
- Innovative approaches to adaptive optics to enable long-range beam propagation (including methods with and without beacons, algorithm development and modeling)
- New gain media which lead to increases in achievable power over existing media at traditional and longer (mid-IR) wavelengths.

Proposals focused on component technologies enabling advanced USPL systems shall discuss how their proposed concept will advance the state-of-the-art and enable future

ISR/Communications and EW applications. Proposals shall also specifically address metrics related to the proposal such as pulse repetition frequency, bandwidth, peak power, SWaP, etc.

#### **Technical Area 4: Compact, Multifunction High Frequency (HF) Systems (RF Surveillance Focus)**

*Introduction:*

The HF signal space is a critical frequency range in which military forces must operate and control. It is widely leveraged for sensing functions in over-the-horizon radar (OTHR) and for long-range communications. HF transmitter and receiver systems for EW, radar, and communications applications must operate over a wide range of frequencies to best exploit current propagation environments, often requiring multiple large antennas, or singular antennas that compromise on radiation efficiency over the HF band. HF antenna systems that support multiple functions also lack a robust means of full-duplex, wideband operation between various functions – this requires blanking receivers during transmit windows. Finally, the need for bulky HF antenna systems consumes limited space available on Naval platforms.

*Objective:*

Technical Area 4 seeks HF component technologies that improves multifunctional operations for HF ES systems, radar systems, and communications systems. Proposals are anticipated to include efforts that focus on:

- High-power, broadband active circulators;
- Tunable-filter / tunable antenna matching components;
- Adaptive antenna systems, arrays, and structures; or
- Other enablers for full-duplex, multifunction operations at HF.

Proposals shall discuss metrics related to the effort, including SWaP, radiation efficiency, power handling, etc.

#### **Technical Area 5: Component Technologies for Innovative Distributed EW (EW Focus)**

*Introduction:*

This Special Notice has targeted specific challenges that have been identified in realizing a future vision of Electronic Warfare where our forces can operate freely within a complex, congested, and rapidly changing EMS. While the focus of this Notice is on the preceding three technical areas, ONR recognizes that discovery and innovation can arise in unexpected ways.

Technical Area 5 allows a pathway to consider those concepts that do not fit neatly into Technical Areas 1-4 but offer truly transcendent advances in capability that push forward the vision for the future of EW.

*Objective:*

Technical Area 5 is open to explore additional innovative EW concepts that would fundamentally transform the Navy's current EW capabilities (attack, support, protection).

In order to allow for diverse possibilities but limit responses to truly revolutionary ideas, TA5 proposed efforts should quantitatively describe how the proposed effort would realize a figure of merit (FoM) increase of 1000X over state of the art. In order to arrive at this FoM, proposers should quantify the benefits of their technology over existing technology. Individual FoMs of a concept may be combined/multiplied. For example, a conceptual multichannel, distributed receiver system-of-systems that provides 10 dB more dynamic range, 10x more beam-bandwidth, and 10x more instantaneous signal bandwidth would be responsive to this technical area.

Proposed efforts that do not quantify this 1000X benefit of their approach will be considered non-responsive.

### **III. WHITE PAPER SUBMISSION**

Although not required, white papers are strongly encouraged for all offerors seeking funding. Each white paper will be evaluated by the Government to determine whether the technology advancement proposed appears to be of particular value to the Department of the Navy. Initial Government evaluations and feedback will be issued via e-mail notification from the Technical Point of Contact. The initial white paper appraisal is intended to give entities a sense of whether their concepts are likely to be funded.

Detailed Full Proposals (Technical and Cost volumes) will be subsequently encouraged from those Offerors whose proposed technologies have been identified through the above referenced e-mail as being of “particular value” to the Government. However, any such encouragement does not assure a subsequent award. Full Proposals may also be submitted by any offeror whose white paper was not identified as being of particular value to the Government or any offeror who did not submit a white paper.

For white papers that propose efforts that are considered of particular value to the Navy but either exceed available budgets or contain certain tasks or applications that are not desired by the Navy, ONR may suggest a full proposal with reduced effort to fit within expected available budgets or an effort that refocuses the tasks or application of the technology to maximize the benefit to the Navy.

White papers should not exceed 5 single-sided pages, exclusive of cover page and resume of principal investigator, and should be in 12-point Times New Roman font with margins not less than one inch. White papers shall be in Adobe PDF format (preferred) or in Microsoft Word format.

The cover page should be labeled “White Paper for ONR 2020 Research Opportunity: “Electronic Warfare Technology” and include the following information: title of the proposed effort, technical point of contact, telephone number, and e-mail address.

The 5-page body of the white paper should include the following information:

- (1) Principal Investigator;

- (2) Relevance of the proposed effort to the research areas described in Section II;
- (3) Technical objective of the proposed effort;
- (4) Technical approach that will be pursued to meet the objective;
- (5) A summary of recent relevant technical breakthroughs;
- (6) A brief program plan and schedule summary with a one year base period and option years for continuing the effort; and
- (6) A funding plan showing requested funding per fiscal year.

A resume of the principal investigator, not to exceed 1 page, should also be included after the 5-page body of the white paper.

To ensure full, timely consideration for funding, white papers should be submitted **no later than** 6 September 2020. White papers received after that date will be considered as time and availability of funding permit.

ONR evaluations of the white papers will be issued via email notification on or about 21 September 2020.

#### **IV. ORAL PRESENTATIONS**

ONR requests that Project Managers (PMs)/Principal Investigators (PIs) provide an expanded oral presentation from those Offerors whose proposed technologies have been identified as being of "particular value" to ONR. The purpose of the oral presentation is to provide greater detail than can be contained in the White Paper and to permit the evaluation panel to ask questions to better understand particular aspects of the proposed effort. However, any such request does not assure a subsequent award. Any Offeror whose White Paper technology was not identified as being of "particular value" to ONR will not be invited to make an oral presentation. The requested oral presentations will coincide with the annual ONR EW Science & Technology (S&T) Review, currently scheduled for 29-30 September 2020. Due to current limitations presented by the COVID-19 pandemic, the oral presentations may need to be virtual. The time, location, and briefing format of the oral presentations, if requested, will be provided at a later date via email notification.

ONR evaluations of the oral presentations will be issued via email notification on or about 5 October 2020.

#### **V. FULL PROPOSAL SUBMISSION AND AWARD INFORMATION**

Full proposals should be submitted under N00014-20-S-B001 by 30 October 2020. Full Proposals received after that date will be considered as time and availability of funding permit.

ONR anticipates that both grants and contracts will be issued for this effort.

Full proposals for contracts should be submitted in accordance with the BAA instructions at Section IV, Application and Submission Information, item 2.b, Full Proposals and item 6, Submission of Full Proposals for Contracts, Cooperative Agreements, and Other Transactions.

Technical Proposal/Content shall be single spaced and not exceed 15 pages. The cover page, resumes, bibliographies, and table of contents are excluded from the page count. For contract proposal submission, all submissions should be submitted electronically per section VIII unless submitting a classified proposal. Classified submissions can be mailed.

Full proposals for grants should be submitted in accordance with the instructions at BAA Section IV, Application and Submission Information, item 5, Submission of Grant Proposals through Grants.gov. All full proposals for grants must be submitted through [www.grants.gov](http://www.grants.gov). The following information must be completed as follows in the SF 424 to ensure that the application is directed to the correct individual for review: Block 4a, Federal Identifier: Enter N00014; Block 4b, Agency Routing Number, Enter the three (3) digit Program Office Code 312) and the Program Officer’s name, last name first, in brackets (Green). All attachments to the application should also include this identifier to ensure the proposal and its attachments are received by the appropriate Program Office.

ONR plans to allocate \$15-20M dollars for efforts related to the Technical Areas in this Special Notice. The period of performance for projects will be one to three (1-3) years. Proposed multi-year efforts are requested to be structured with a base effort of 1 year, followed by option years pursuant to a program review on an annual basis. It is anticipated that multiple awards will be made in Technical Areas 1-5 based on the quality of the proposed efforts. White papers are strongly encouraged from all offerors seeking funding.

Although ONR expects the above described program plan to be executed, ONR reserves the right to make changes according to program priorities and funding availability.

Selected proposers will be notified by November 2020. Selected projects will have an estimated award date of ~~February 2021~~February 2021.

## VI. SIGNIFICANT DATES AND TIMES

Event	Date	Time
White Paper Submission Date	6 September 2020	5:00pm Eastern
Notification of White Paper Evaluation*	21 September 2020	
Oral Presentation - Invitation Only*	29-30 September 2020	
Notification of Oral Presentation* Evaluation	5 October 2020	
Full Proposal Submission Date	30 October 2020	5:00pm Eastern
Notification of Selection: Full Proposals *	November 2020	
Awards *	February 2021	

Note: \* These are approximate dates.



## VII. POINTS OF CONTACT

In addition to the points of contact listed in the Long Range BAA, the specific points of contact for this announcement are listed below:

Technical Point of Contact:

Kevin Leonard, Electronic Warfare Program Manager, kevin.r.leonard@navy.mil

Please copy:

Adrien Fairweather, Program Analyst Contractor Support, adrien.m.fairweather.ctr@navy.mil

Business Point of Contact:

Stephen Hughes, Contracting Officer, stephen.t.hughes@navy.mil

## VIII. ADDRESS FOR THE SUBMISSION OF WHITE PAPERS AND FULL PROPOSALS FOR CONTRACTS

White Papers/Full Proposal:

Unclassified white papers and full proposals should be submitted electronically to onr.ncr.312.list.fct@navy.mil by 5:00PM EST on 6 September 2020 (white paper) and 30 October 2020 (full proposals). Files exceeding 10MB in size should not be emailed, but instead transmitted via a file transfer service, for example DoD SAFE, <https://safe.apps.mil>. If you will be using DoD SAFE, please request a Drop-Off link from Ms. Adrien Fairweather, [adrien.m.fairweather.ctr@navy.mil](mailto:adrien.m.fairweather.ctr@navy.mil), at least 7 days prior to the submission deadline.

Classified White Papers/ Full Proposals:

Classified white papers and proposals up to the general service (GENSER) Secret level should be mailed via traceable means, with the outer envelope addressed to the Office of Naval Research, Attn: Document Control Unit, ONR Code 43, 875 N. Randolph St., Arlington, VA 22203-1995. The inside envelope should indicate the classification level and be addressed as: Office of Naval Research, Attn: Dr. Kevin Leonard, ONR Code 312, 875 N. Randolph St., Arlington, VA 22203-1995. If you will be mailing a classified white paper or proposal, please send Ms. Adrien Fairweather, [adrien.m.fairweather.ctr@navy.mil](mailto:adrien.m.fairweather.ctr@navy.mil), an unclassified email to notify her of your submission.

## IX. SUBMISSION OF QUESTIONS

Any questions regarding this announcement must be provided to the Technical Points of Contact and/or the Business Point of Contact listed above. All questions shall be submitted in writing by electronic mail.

Answers to questions submitted in response to this Special Notice will be addressed in the form of an Amendment and will be posted to the following web pages:

- Federal Business Opportunities (FEDBIZOPPS) Webpage – <https://www.fbo.gov/>

- Grants.gov Webpage – <http://www.grants.gov/>
- ONR Special Notice Webpage - <http://www.onr.navy.mil/Contracts-Grants/Funding-Opportunities/Special-Notices.aspx>

Questions regarding **White Papers or Full Proposals** should be submitted NLT two weeks before the dates recommended for receipt of White Papers and/or Full Proposals. Questions after this date may not be answered.