

SERDP Funding Opportunities

- You can listen to the presentation two different ways:
 1. Listen to the broadcast audio if your computer is equipped with speakers
 2. Call into the conference line at:
 - U.S. & Canada +1 929 205 6099 or +1 669 900 6833
 - Conference ID 544 468 304
- If you have any questions or issues please contact the SERDP Office at 571-372-6565.

FY 2021 SERDP Funding Opportunities

Herbert Nelson, Ph.D.
Executive Director

Andrea Leeson, Ph.D.
Deputy Director



DoD's Environmental Technology Programs



Science and Technology

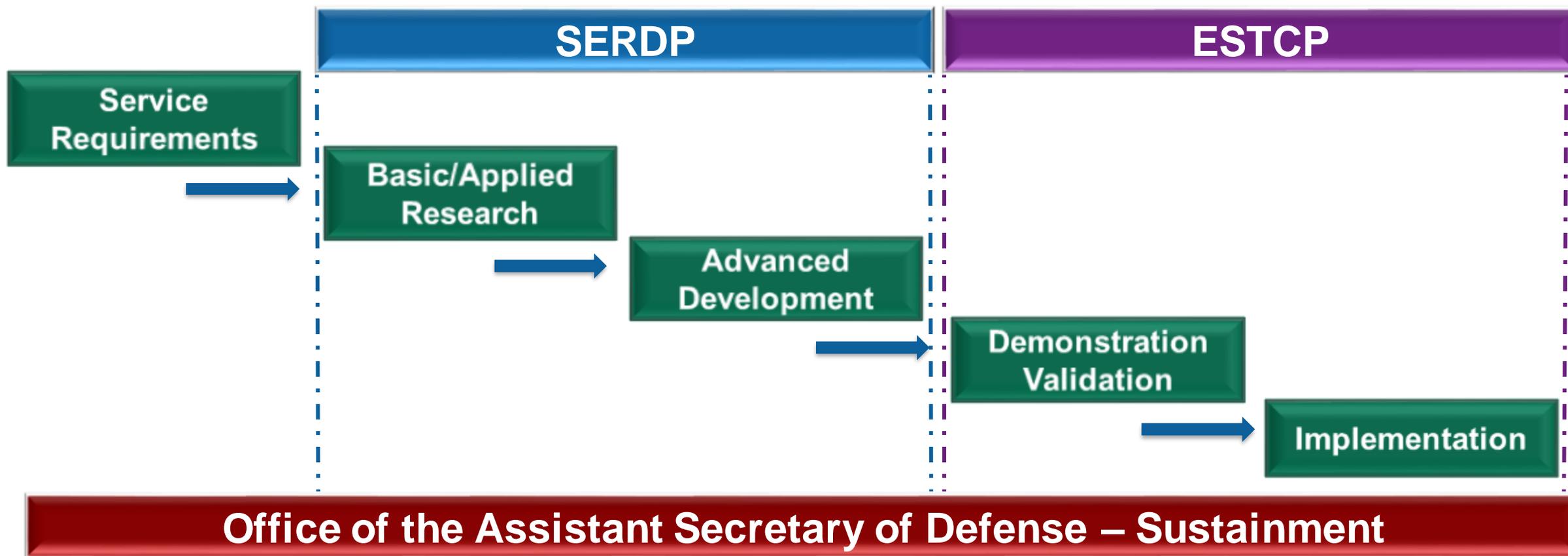


Demonstration and Validation

Strategic Environmental Research and Development Program (SERDP)

- Established by Congress in FY 1991
 - ◆ 10 U.S.C. Section 2901 - 2904
 - ◆ DoD, DOE and EPA partnership
 - ◆ 6.3 Program Element with statutory authority to support 6.1 through 6.3
- High-priority environmental science and technology areas that address
 - ◆ DoD unique issues
 - ◆ Environmental issues with large costs to DoD

Environmental Technology Development Process



Environmental Drivers

Sustainability of Ranges, Facilities, and Operations



**Threatened and Endangered Species
Maritime Sustainability**



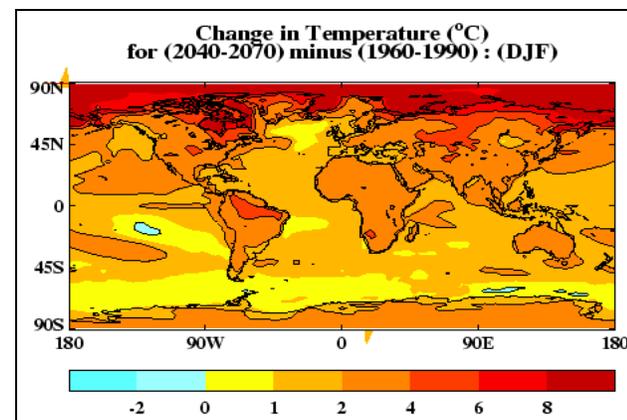
Toxic Air Emissions and Dust



**UXO & Munitions
Constituents**



Sustainable FOB



Changing Environment



Noise

Environmental Drivers

Reduction of Current and Future Liability

Contamination from Past Practices



- Groundwater, soils and sediments
- Large UXO liability
- Emerging contaminants

Pollution Prevention to Control Life Cycle Costs



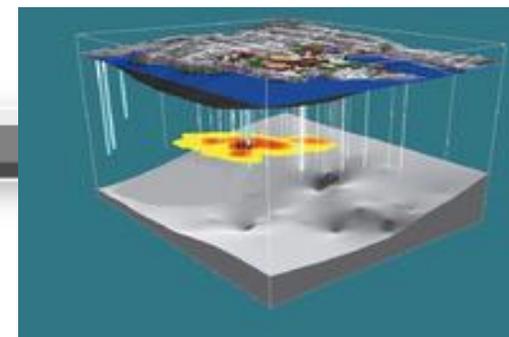
- Elimination of pollutants and hazardous materials in manufacturing maintenance and operations
- Achieve compliance through pollution prevention

Program Area Management Structure

Weapons Systems & Platforms



Environmental Restoration



Resource Conservation & Resiliency



Munitions Response

Strategic Process

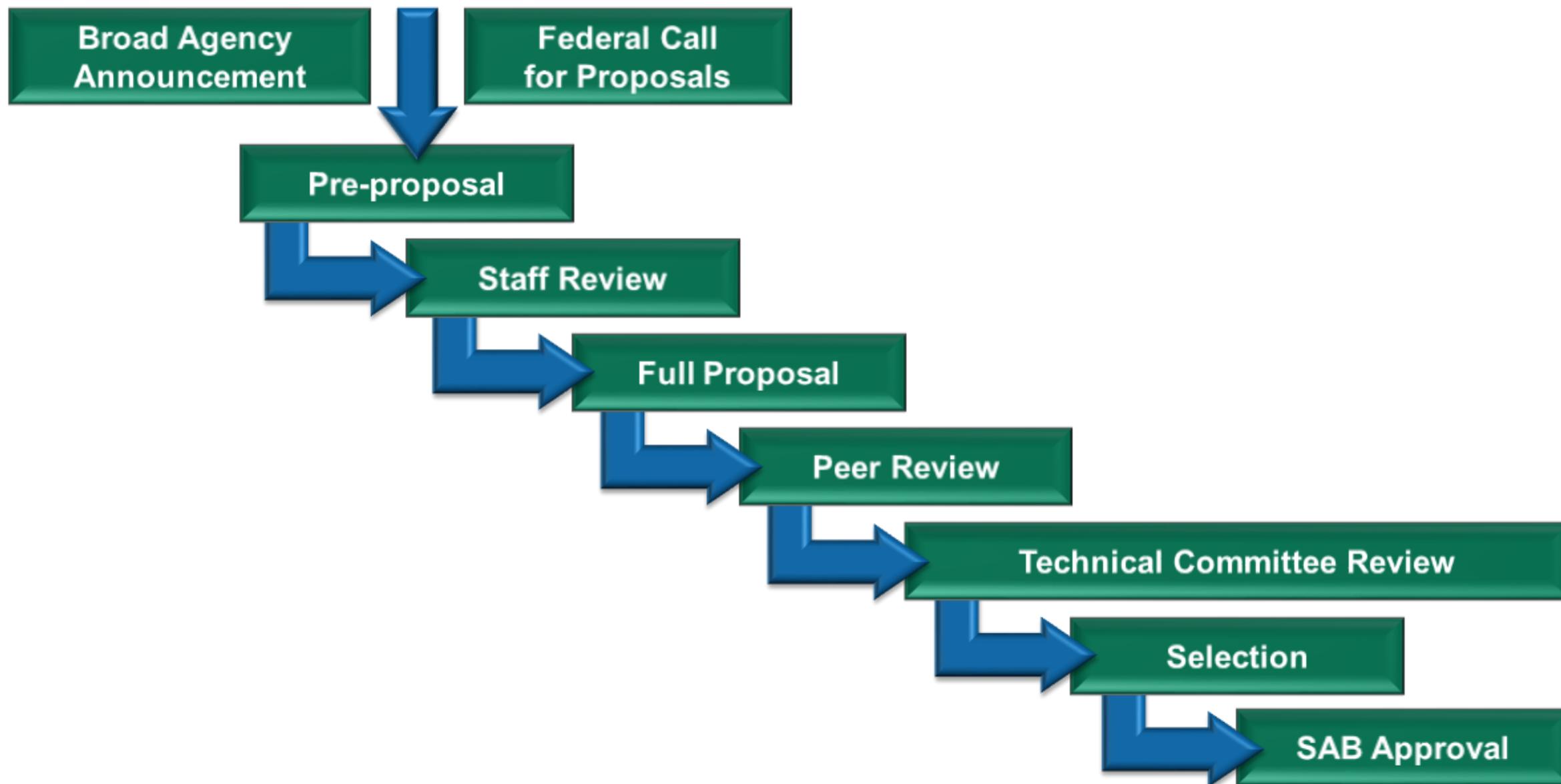


SERDP Solicitations

- Core Statements of Need (SON)
 - ◆ Multiple awards per SON
 - ◆ Multi-year proposals & limited scope proposals
 - ◆ Broad Agency Announcement (BAA)
 - Universities, industry, and non-governmental organizations
 - ◆ Federal Call
 - DoD and other Federal agencies

- SERDP Exploratory Development (SEED) SON
 - ◆ \$250K or less and approximately 1 year
 - ◆ Seeks innovative high-risk and high-payoff work
 - ◆ BAA and Federal Call

Core Solicitation Process



Core Solicitation Dates

January 7, 2020, 2:00 ET	Pre-proposals Due
Early February 2020	Full Proposals Requested
March 5, 2020, 2:00 ET	Full Proposals Due
July-August 2020	Selection Notifications Sent
September-October 2020	Present to Scientific Advisory Board
Spring 2021	Project Initiation

Visit the SERDP website for details
<https://www.serdp-estcp.org/Funding-Opportunities>

SEED Solicitation Dates

March 5, 2020, 2:00 ET	Full Proposals Due
July-August 2020	Selection Notifications Sent
Spring 2021	Project Initiation

Visit the SERDP website for details
<https://www.serdp-estcp.org/Funding-Opportunities>

FY20 Solicitation Success Statistics

Core	Pre-proposal to Selection	Full Proposal to Selection
FY20 SERDP BAA	14%	38%
FY20 SERDP Federal	17%	46%
FY20 SERDP All	15%	39%
SEED	-	Full Proposal to Selection
FY20 SERDP BAA	-	41%
FY20 SERDP Federal	-	25%
FY20 SERDP All	-	38%

Proposal Selection Criteria - Core

- Relevance (Pass/Fail)
 - ◆ Does it address the SON Objective?
 - ◆ Is it basic research, applied research, or advanced technology development?
- Technical Merit
 - ◆ Overall scientific and technical merit of the submission
- Personnel
 - ◆ Qualifications, capabilities, and achievements
- Cost
 - ◆ Reasonable for the technical complexity
- Additional Criteria for Full Proposal Evaluation
 - ◆ Transition Plan

SEED Selection Criteria

- Relevance (Pass/Fail)
 - ◆ Does it address the SON Objective?
 - ◆ Is it basic research, applied research, or advanced technology development?
- Technical Merit
 - ◆ Overall scientific and technical merit of the submission
 - ◆ Strong consideration will be given to innovation
- Transition Potential
 - ◆ Clear identification of the critical proof of concept
 - ◆ Identification of the future development path

Hallmarks of a Competitive Proposal

- Clearly Addresses the Statement of Need
- Demonstrates an Understanding of the State of the Science
- Hypothesis Driven Work
- Focused on the Technical Approach
 - ◆ Detailed approach
 - ◆ Clear experimental design

FY 2021 Statements of Need



Improved Understanding of Thermal Destruction Technologies for Materials Laden with Per- and Polyfluoroalkyl Substances (PFAS)

- Develop an improved understanding of the effectiveness and sustainability of thermal destruction technologies for treatment of materials laden PFAS.
- Develop technologies that improve the cost effectiveness and sustainability of how PFAS-laden materials are currently processed.
 - ◆ Develop a better understanding of incineration on materials of interest, as well as temperature requirements for destruction of PFAS.
 - ◆ Improve understanding of PFAS fate during thermal reactivation of GAC and other carbon-based sorbents.
 - ◆ Assess the fate and behavior of PFAS and co-contaminants during the production and processing of residual product streams from various treatment technologies.
 - ◆ Develop novel or modified sorbents that facilitate less intensive reactivation and more sustainable processes.

Improved Understanding of Processes Influencing the Effectiveness and Fate of Particulate Amendments

- Develop an improved understanding of the process influencing the effectiveness and fate of particulate amendments for in situ treatment of contaminants in groundwater.
 - ◆ Improve understanding of the distribution of particulate amendments in heterogeneous aquifers, and the efficacy of methods to improve distribution.
 - ◆ Assess the long-term adsorptive capacity of the amendments and the factors that may influence this capacity.
 - ◆ Determine the extent to which contaminants adsorbed to the amendments are biodegraded and the influence of contaminant, geochemical and microbiological factors on biodegradation kinetics and extent.
 - ◆ Elucidate the long-term adsorption capacity and potential for re-release of contaminants.
 - ◆ Determine the potential detrimental effects of amendments, such as transport of injected amendments into local monitoring wells or reduction in aquifer permeability.
 - ◆ Evaluate the extent to which these amendments influence back-diffusion of chlorinated volatile organic compounds.

Detection, Classification, and Remediation of Military Munitions Underwater

- Develop technologies to detect, classify, and remediate military munitions found at underwater sites.
 - ◆ Wide variety of aquatic environments.
 - ◆ Water depths up to 35 meters are of primary interest.
 - ◆ Specific need for systems that can operate in depths less than 5 meters.
 - ◆ Munitions of interest range from small projectiles and mortars to large bombs.
- Proposals addressing any aspect of munitions response for underwater sites will be considered, with particular interest in the following topics:
 - ◆ Wide Area and Detailed Surveys
 - ◆ Cost-Effective Recovery and Disposal
- FY 2021 SEED SON with the same technical requirements.

Advanced Biosecurity Tools for Controlling Invasive, Alien Terrestrial Species (IATS) in Support of Enhanced Strategic Mobility

- Develop technologies that can improve the efficiency of biosecurity efforts to control IATS found on military vehicles and cargo.
- Research to improve the wash-down and cleaning processes; streamline and enhance inspection processes; improve early detection and surveillance; provide biological, chemical, or physical controls; and/or enhance mitigation, interdiction, and management techniques for IATS.
 - ◆ IATS include but are not limited to flora, fauna, and pathogens.
 - ◆ The brown tree snake is not a species of interest for this SON.
 - ◆ Methods to control the Coconut Rhinoceros Beetle is of particular interest.
 - ◆ Research to identify, prevent, and mitigate IATS pathways and transfer will be considered.
 - ◆ Proposed technologies should pose minimum risks to human health and safety but raise the efficiency of IATS prevention measures.
 - ◆ Proposed technologies must ultimately be simple, rugged, and inexpensive.

Research to Improve Installation Infrastructure Resiliency Processes, Systems, and Tools

- Improve methods used to evaluate the benefits of resilience measures for new and existing built infrastructure.
- Improve tools that address infrastructure resilience to climate and weather extremes over the lifetime of building and infrastructure system function.
 - ◆ Tool improvement may include the integration and optimization of existing methods and means or the development of new methods and means.
- The ultimate intent is that this work would translate into improvements for installation and municipal planning practitioner decision making and ultimately improve the resilience of the DoD's infrastructure.

Conversion of Ammonium Nitrate Solutions to Useful Products

- Develop processes to convert ammonium nitrate solution (ANSOL) generated from energetic materials production into high value products with additional applications.
- Processes that convert ANSOL to a useful chemical solution are preferred; however, processes that convert ANSOL into a useful energy source would also be considered.
 - ◆ Technologies should be capable of processing ANSOL with variable chemical compositions, including concentrations of metals and solids.
 - ◆ Technologies should be capable of application at current production rates.
 - ◆ Must be explicit about the potential processing rate of the proposed technology and how it is envisioned it would ultimately be implemented at full scale.

Optimization of Advanced Battery Processing and Recycling Technologies

- Optimize advanced battery processing and recycling technologies in order to increase reclaimable efficiencies, reduce hazardous waste, and develop more effective and efficient transport of battery materials out of theater.
 - ◆ Development of in-theater battery de-energization and neutralization processes, novel recycling methods, and materials separation.
 - ◆ Examine potential second life reuse applications and markets for batteries to determine the viability of batteries with expired shelf life.
 - ◆ Investigation of processes to significantly decrease hazardous waste generation as a result of battery demilitarization and disposal processes.
 - ◆ Development of novel technologies for bulk transportation of hazardous battery materials.
- While there are substantive issues with lithium-based batteries, proposals that address other battery types are also of interest.

Development of Chromium-Free Post Treatment Sealers

- Develop chromium-free sealers for surface finishing processes.
 - ◆ High-performance sealers and pretreatments that could be applied across multiple processes.
 - ◆ One of the highest priority processes is chromium-free sealers for ZnNi or zinc plating.
- Sealers and pretreatments should be HAP-free and low VOC.
- Tests on candidate formulations include:
 - ◆ Adhesion of organic coatings.
 - ◆ Electrical conductivity for applications on electrical components.
 - ◆ Fatigue and hydrogen embrittlement testing for sealers used on high strength steels.

Structural Repair of Defense Assets

- Develop sustainable field repair technologies for damaged or corroded materials in advanced generation 5 and future aircraft composite and metallic structure and components.
 - ◆ Must restore component strength without compromising chemical and mechanical properties.
 - ◆ Could be used in the depot, in the field, or in-situ on the defense asset.
- Specific parameters of interest:
 - ◆ Capability: Repair of alloys, composites, or other structural materials. Timely repairs made in the field and in difficult-to-reach locations on the weapon system.
 - ◆ Performance: Performance characteristics of the repaired area should ideally be equivalent to that of the original material, but repairs that restore a significant proportion of the original properties would be acceptable.
 - ◆ Hazardous Materials: Should not introduce new hazardous materials or create hazardous wastes, unless the hazards can be properly contained.



December 3-5, 2019

Washington Marriott Wardman Park - Washington, D.C.

www.symposium.serdp-estcp.org

Questions?

SERDP Website

<https://www.serdp-estcp.org>

