

## **Fairfax Water Participating in Defense Threat Reduction Agency (DTRA)/SCC Research**

IAN DTRA-Approved Press Release

The Defense Threat Reduction Agency (DTRA)/SCC announces the beginning of a Small Business Innovation Research (SBIR) contract with Instant Access Networks, LLC (IAN) and its subcontractors as of March 28, 2016 entitled, "Accelerating Society-wide EMP Protection of Critical Infrastructure and Micro-grids". DTRA's request for proposals (RFP) was an invitation to small businesses to participate in a commercial R&D program to create EMP protected micro grids for critical infrastructure needed both on and off military bases and other defense critical infrastructure. The need was explained by DTRA as follows: "An electromagnetic (EM) attack (nuclear electromagnetic pulse [EMP] or non-nuclear EMP [e.g., high-power microwave, HPM]) has the potential to degrade or shut down portions of the electric power grid important to the DoD.... Restoring the commercial grid from the still functioning regions may not be possible or could take weeks or months."

A key task on this contract is to demonstrate how to accelerate the adoption of EMP-protected critical infrastructure and microgrids among civilian institutions that need to operate in island mode during a prolonged power outage. These critical suppliers to military bases include water utilities, hospitals, and emergency communications. The final report would include proposals for additional research in the improvement of component technologies that comprise an EMP-protected microgrid such as EMP shielding, energy generation, energy storage and energy savings technology. Those improvements can lead to performance and cost advantages that could make these microgrids competitive with grid provided power in some areas of the country and more easily funded in every location.

IAN set its own goal to gather collaborators who will fund EMP protected microgrids for water utilities, hospitals and emergency operations centers so that they don't have to find funds out of their capital budgets. Fairfax Water, a subcontractor to IAN in this contract, is a great example because of its critical role to many defense critical infrastructure applications in the national capital region and because of the attractive electricity rates it enjoys. Fairfax Water supplies Fort Belvoir and the surrounding areas with 163 million gallons of water per day. Though Fairfax Water lies outside the base, it is essential for base operations but likely to be vulnerable to EMP because of its dependence on civilian power grids that are not protected from EMP even though the local utility in this instance is otherwise extremely reliable. Protecting civilian infrastructure such as Fairfax Water is just as important as protecting the critical applications on the base.

IAN developed EMP-protected microgrids that included solar, wind and diesel power generation and control rooms independently tested to exceed military standards for EMP by 1000 fold. IAN subcontractors include Technology Assessment and Transfer (TA&T), a materials science R&D firm that will provide

technical assistance on electromagnetic shielding materials and components of energy storage systems; DC Fusion/ Power Analytics that will provide support for direct current microgrids and modeling software for the design and management of microgrids; Jaxon Engineering and Maintenance who will provide EMP testing support and EMP shielding manufacturing guidance; and Fairfax Water, who will provide water utility management guidance.

## About DTRA

### ***Defense Threat Reduction Agency/SCC***

Established in 1998, the Defense Threat Reduction Agency (DTRA)/SCC provides the Department of Defense's core intellectual, technical, and operational support expertise for countering threats posed by weapons of mass destruction (Chemical, biological, radiological, and nuclear) and high-yield explosives.

### **About Instant Access Networks, LLC (IAN)**

IAN is a veteran owned small business that provides research and development and consulting in the areas of critical infrastructure protection for information, communication and energy applications. Its CEO, Charles Manto, can be reached at [cmanto@stop-EMP.com](mailto:cmanto@stop-EMP.com)

### **About Technology Assessment and Transfer (TA&T)**

Technology Assessment and Transfer, Inc. (TA&T) is a Small Business Administration certified Woman Owned Small Business (WOSB) that specializes in high technology, developing and commercializing advanced materials for defense, bio-medical and industrial applications. TA&T strives to commercialize its innovations through cooperative development programs with end-users and technology licensing to interested third parties.

Primary areas of interest include magnetron sputtered, multilayer thin films for superior wear; erosion and corrosion resist coatings; low-cost chemical vapor infiltration of fiber reinforced ceramic composites; toughened monolithic transparent ceramics; laser gain materials; strengthened carbon foams; rapid prototyping of ceramics through stereolithography; direct manufacturing of ceramic micro-devices; and intelligent process control of advanced materials processes. For information contact: [info@techassess.com](mailto:info@techassess.com)

### **About dcFusion**

dcFUSION facilitates the integration of direct current renewable energy resources (such as solar photovoltaics, wind generators, energy storage facilities, fuel cells, etc.) into the U.S. and global electric energy markets. dcFUSION also brings much data center experience to its partnership with Power Analytics whose software suite— DesignBase, Paladin Live, Microgrid Power Management System (MPMS), and EnergyNet, software integrating transactions with the electric grid. For information call: (919) 848-6625

### **About Jaxon Engineering and Maintenance**

Jaxon is a distinguished leader in Electromagnetic Pulse (EMP) hardening and survivability. Jaxon is a woman owned, small business dedicated to achieving survivability goals for the United States and our Allies. Jaxon designs, builds, tests and maintains EMP hardened structures for government and commercial clients around the world. For information call: (719) 484-8750

### **About Fairfax Water**

Fairfax Water is Virginia's largest water utility and one of the 25 largest water utilities in the country, serving one out of every five Virginians who obtain their water from public utilities. Nearly two million people in the Northern Virginia communities of Fairfax, Loudoun, Prince William, Fort Belvoir, Herndon, Dulles, Vienna, Alexandria, Falls Church, and Fairfax City depend on Fairfax Water for superior drinking water. Fairfax Water has the lowest commodity rate in the Washington metropolitan region and is one of only a handful of water utilities in the country to receive an AAA rating from the top three financial rating services. For information contact: [PR@fairfaxwater.org](mailto:PR@fairfaxwater.org)