

April 9, 2014

Ms. Marlene H. Dortch, Secretary,  
Federal Communications Commission  
Via Electronic submission at:

<http://apps.fcc.gov/ecfs/comment/view?id=6017603555>

Dear Ms. Dortch:

**GTek** Industries, part of **AZ-Tech International, Inc.**, is a certified SBA 8(a) Woman Owned Disadvantaged Business is pleased to submit this nonbinding Expression of Interest in the rural broadband trial outlined in Docket No. 10-90. We are very interested in participating in the Rural CAF Experiment Program to help connect un-served and under-served Americans to the Internet and establish proper levels of telecommunications.

**GTek** has conducted extensive threat and risk analyses of critical infrastructures for the Department of Defense and the Department of Energy (DOE). We have analyzed and transformed vast amounts of Cyber Terrorism data while providing resiliency and loss of energy supply studies for the DOE. We have performed Impact Analysis and Interdependency Logistics as well as Continuity of Operations (COOP) Energy Emergency Plans for the State of Maine. We have experience in designing and hardening missile systems as well as testing, maintenance and certification to Mil-spec Electromagnetic Pulse (EMP) survival standards. **GTek** operates a classified facility and is approved to safeguard highly sensitive information for the government.

**GTek** was recently awarded a Department of Energy (DOE) sole-source contract through the International Electricity Infrastructure Assurance Forum (IEIA) to conduct an engineering study investigating electrical grid mitigation and the cascading effects on communications, communities and government facilities. This report will be distributed to the DOE, its laboratories and grid operators throughout the United States, Canada, Britain, Japan, Australia and New Zealand. This engineering study will enable technological advances for sustaining broadband communication providers and preventing 911 call centers from going down. It will make it possible for urban based businesses in rural communities, such as West Virginia, Maryland and Pennsylvania, to maintain their data traffic, critical communications and electronic banking operations and to remain functional when normal power is lost to any threat.

Our past performance includes a variety of classified projects in the area of All-Hazard Critical Infrastructure Protection (CIP). All of the nation's Cyber communication infrastructure and the power grids they rely on are highly vulnerable to natural and man-made threats. **GTek** industrial control technologies are highly resistant to Cyber attacks and immune to weather, solar and nuclear threats. We are working with the States of Arizona, Colorado, Maine, North Dakota and Utah to educate, implement and provide superior security and a backup to the backup when normal and emergency options fail.

**GTek** has extensive experience in engineering and the design of smart industrial controls for Critical Infrastructure Protection. Current engineering evaluation assessments have been conducted on Cyber and SCADA network systems to determine criticality levels of communication and points of presence that must remain operational regardless of the potential or actual threat.

### Game Changing Technology

**GTek** holds multiple industrial patents and specifically a patent-pending on control technology impervious to Electromagnetic Pulses and Geomagnetic Destruction (GMD). **Genesis Mitigation Technology™** is embedded into the **Genesis Power Pod™** and is immune to solar weather (GMD) and EMP. We have designed hardened power modules that can be remotely located to restore power and communications to stricken urban and rural areas. When **Genesis** control systems are integrated into the early design phase, they prevent critical infrastructure systems from being incapacitated due to weather, solar or man-made events.

Pods provide uninterrupted power for sustaining ultra-high speed and secure communications to communities, cities, states, and entire regions. Pods will be installed along the proposed fiber-optic cable route to provide uninterruptable power for communications to the new network of cell towers and amplification points. Pods are designed to operate for months or years and to provide unmatched immunity by current performance standards. The Pod's advanced control system ensures power will always be available at each required node and that the fiber-optic networks they protect are fully safeguarded. The exact number of Pods required will be determined by an Engineering Study.



## Anticipated Benefits

**Genesis** technology improves capabilities by greatly enhancing the resiliency and intelligence of the fiber-optic network it supports. It offers an ultra-high secure emergency SCADA system that enables remote operators to maintain full control in an emergency. In the event this emergency connection is lost, the system has embedded intelligence to take command and perform on its own. The **Genesis Power Pod™** is engineered to withstand F5 tornadoes, Category 5 hurricanes, earthquakes and floods. The units automatically switch to internal power when normal external power is lost.

There is little to no additional cost to the FCC by integrating **GTek's** mitigation technology at this phase of the project. **GTek** will provide a turn-key solution with EMP/GMD protection for fiber-optic network support. As a result of years of experience conducting engineering analytical assessments and engineering research and development, **GTek** has become an authority on Electromagnet Pulse (EMP) and Geomagnetic Destruction (GMD) mitigation solutions. We provide EMP/GMD Mitigation Engineering Consulting, Power and Emergency Generator Studies, Failsafe Systems for Critical Infrastructure, Biomass Energy Solutions, Islanding and Black-start systems. We are experts in developing innovative and advanced science based mitigation solutions to defend against Cyber-threat and natural or man-made disasters.

## Services Offered

**GTek** will begin the project by conducting a comprehensive engineering study to identify the number, capacities, sizes, locations, loading, terrain surveys, uptimes, and other key metrics of the associated program. This study will be a comprehensive engineering document, complete with **GTek's** specific costs, delivered to the customer for its use as a project plan.

## Proposed Funding

**GTek** will make available its **Genesis Mitigation Technology™** for this program because of its unmatched ability to provide EMP/GMD immunity and communication sustainability against any high impact, low-frequency threats. This rural application would become a demonstration model of ultra-high communication resiliency for future systems installed anywhere in the world.

**GTek** would provide the following estimated services, systems and approximate costs to enable funding for such a project. Actual costs may vary based upon final requirements as determined by the formal Engineering Study.

No.	Item Description	Quantity	Price
1	Engineering Study	1	\$250,000
2	<b>Genesis Power Pod™ (Model 1280 A)</b> <ul style="list-style-type: none"> <li>• Approx size 8'Wx 8' H x 20' L</li> <li>• Withstand F5 tornadoes</li> <li>• Withstand Category 5 hurricanes</li> <li>• 60 KW internal capacity (120/208v)</li> <li>• 24 hour internal fuel supply</li> <li>• 18 U Rack space</li> </ul>	10 (Estimated based upon route and service areas)	\$3,500,000
3	Installation, testing & certification for turn-over to network operating company	1	\$350,000
<b>Estimated Total</b>			<b>\$4,100,000</b>

**Caveats:**

1. Site preparation, clearing, excavating, grading, blasting or other efforts required to access and prepare pad locations for mounting and permanent installations of **Genesis Power Pods™** will be set forth by the Engineering Study and are not included in this proposal.
2. Access between these locations may be mountainous, rugged and by the nature of the project, remote from normal roads, services, supplies, etc.
3. The mountainous terrain can be unpredictable and unexpected weather conditions may restrict normal access and impact proposed overall project schedules.
4. Monthly maintenance costs are highly weather and geographic location dependent and are not included in this proposal. Approximate annual costs could be \$122,500.
5. Shipping of all Pods is to be paid by the customer FOB to point of destination.

**Collaboration**

**GTek** has read the submission by Charles Manto of Instant Access Networks (IAN). We are very familiar with him and his work through our association with the FBI/InfraGard Electromagnetic Pulse (EMP) Special Interest Group (SIG). The collaboration that has been established between IAN and **GTek** will provide an unprecedented technology solution to the FCC to recover, restore and sustain 911 communication and financial networks to these rural based areas. This effort will become an advanced model for the nation. There is no other communication network that can provide this level of security and sustainability available today. We were pleased to be brought into this collaboration circle by Charles

Manto and would be honored to jointly work with his team and the FCC on this advanced project to raise the bar for all future communication installations in the country.

We are willing to answer questions, collaborate with and to speak with other like-minded service providers.

### **Estimated Project Timeline**

**GTek** would support the tentative phased implementation of the overall project schedule outlined by IAN of twelve (12) to eighteen (18) months as determined by the availability of funds.

### **Anticipated Benefits**

- Neighborhood, government and business streaming and interconnectivity would be safeguarded from all hazards.
- Unique EMP/GMD protection for emergency communications with public safety agencies and providers.
- Protection for 911 call centers, emergency responders and hospitals.
- Local government Continuity of Operations (COOP & COG).
- Operates on any source of available power indigenous to a given area (i.e. steam, oil, natural gas, solar, wind, wave, etc.)

## Company Information

### GTek Industries

Part of:

### AZ-Tech International, Inc.

*SBA 8(a) Woman Owned Disadvantaged Business*

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Clearances: Top Secret  
Safeguarding: Yes / Derivative Classifier  
Cage Code: **3J3R1**

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Engineering & Design  
Operations Center  
Manufacturing

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