

# GROUNDED INFRASTRUCTURE SOLUTIONS

Smart Villages

Integrated Infrastructure Technologies

# Grounded Infrastructure Solutions: Who We Are

We are a cohesive group of companies and people that are key to establishing critical Infrastructure quickly and efficiently.

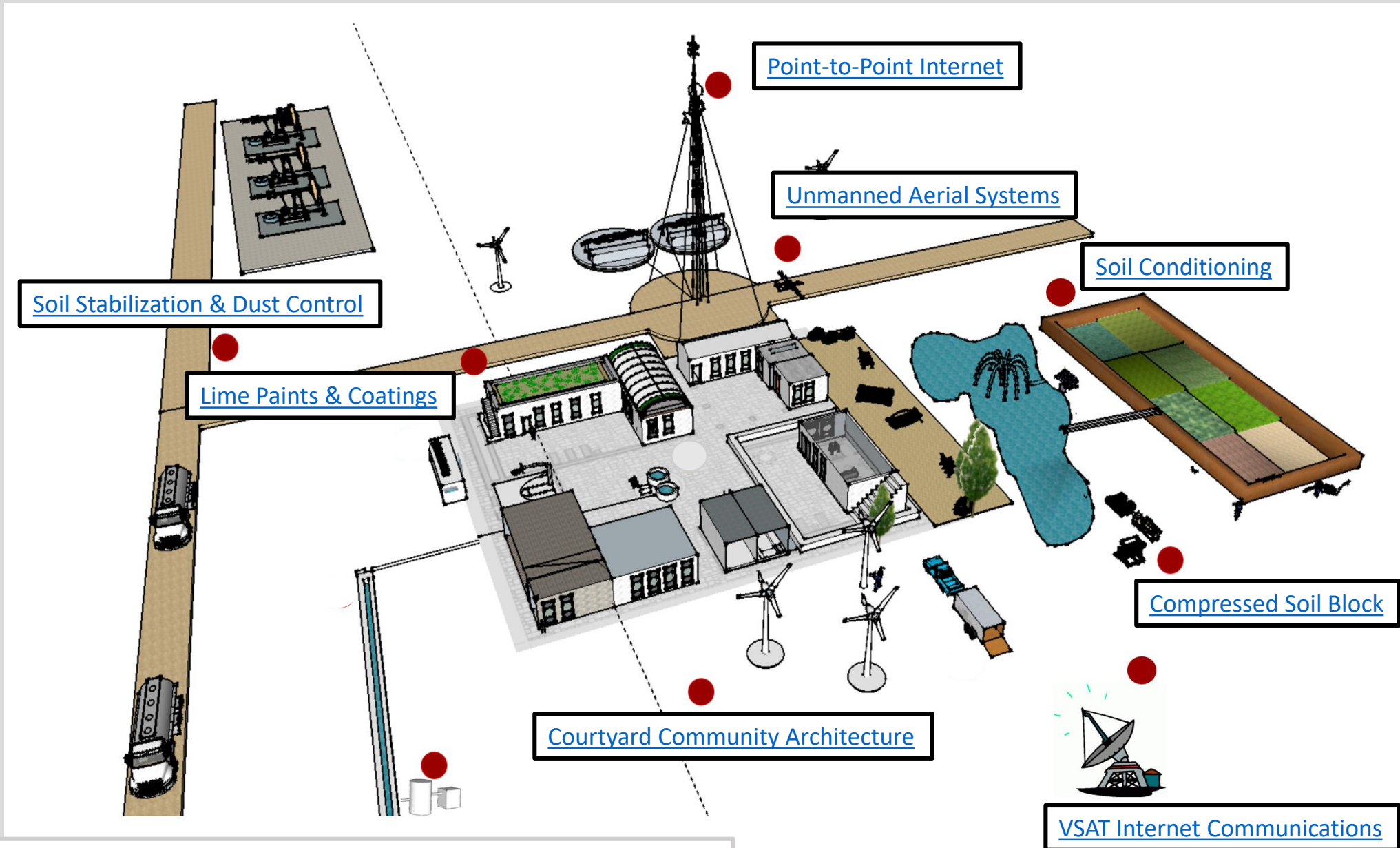
We include member specialists in different disciplines whose knowledge is critical to understanding natural resources and political environments.

## Advantages:

- All technologies are tried and tested
- Clients' ability to contract or consult directly with GIS member companies
- Structure maximizes response time and minimizes overhead cost
- Direct Access to professional advice in key areas of client interest
- Services are backed by executives with hands-on experience
- Broad-based network of business associates and contacts

Together these professionals have come together to design working communities, or “Smart Villages”, designed for rural and remote areas.

# Smart Villages



Smart Village Overview Video: <https://www.youtube.com/watch?v=HEM4aYUcuI8>

# Natural Resource Consulting



**AGRICULTURE**  
Multispectral Camera & Analysis



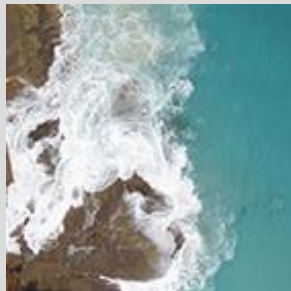
**MINING**  
Exploration and Analysis



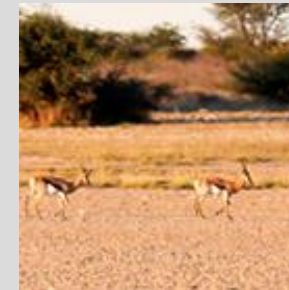
**GIS ANALYSIS**



**HUMANITARIAN AND EMERGENCY RESPONSE**  
Visual Overviews & Documentation



**UAV SURVEYING**



**ENVIRONMENTAL ASSESSMENT**

# Smart Villages: Where Infrastructure and Technology Meet

Using the design of courtyard communities, Smart Villages use...

- Rapid and low-cost, bio-polymer and enzyme stabilized roads
- Soil block and lime coated buildings and structures
- Local, natural water sources with On-site water filtration systems
- Wireless, Point-to-Point Internet (voice, video, and sensor)
- Rapid VSAT installation and global connectivity
- Mobile clinic medical resources w/ Tele-medicine
- UAV Runways and monitoring stations
- Fully transferable technology



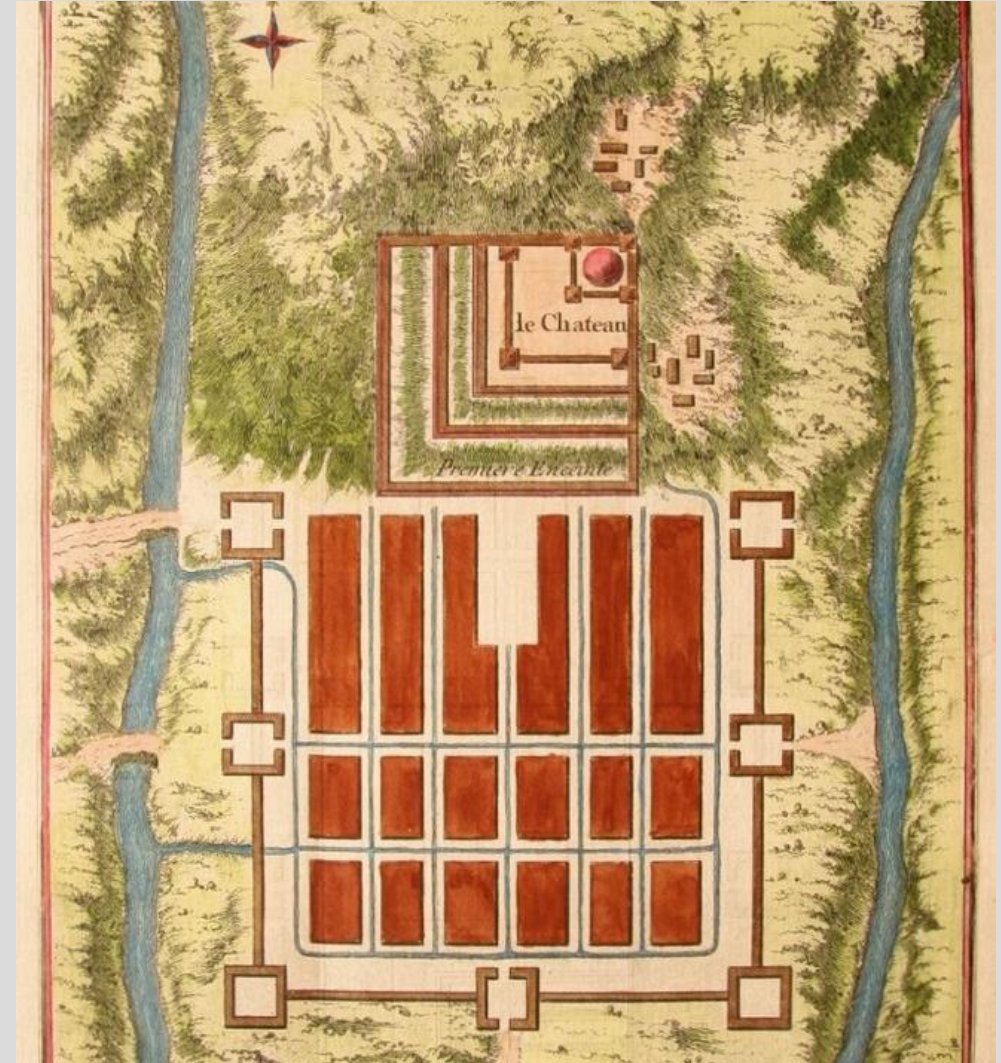
Keeping labor and logistics solutions local decreases initial and long-term expenses

# Courtyard Communities



- The courtyard walls stop wind and create shade, forming microclimate havens for plants and people.
- Courtyard homes offer residents total privacy within their walled gardens, while collectively forming urban streets and public squares.

# Courtyard Communities



# Dust Control and Soil Stabilization



Road-Hard is a new soil technology that uses natural, organic polymers to transform soil, sand, and road base into a hardened, water resistant platform.

- **Highly Effective**
- **Minimal Maintenance**
- **Affordable**
- **Environmentally Safe**
- **Easy to use**
- **Rapid Construction**
- **Logistically friendly**



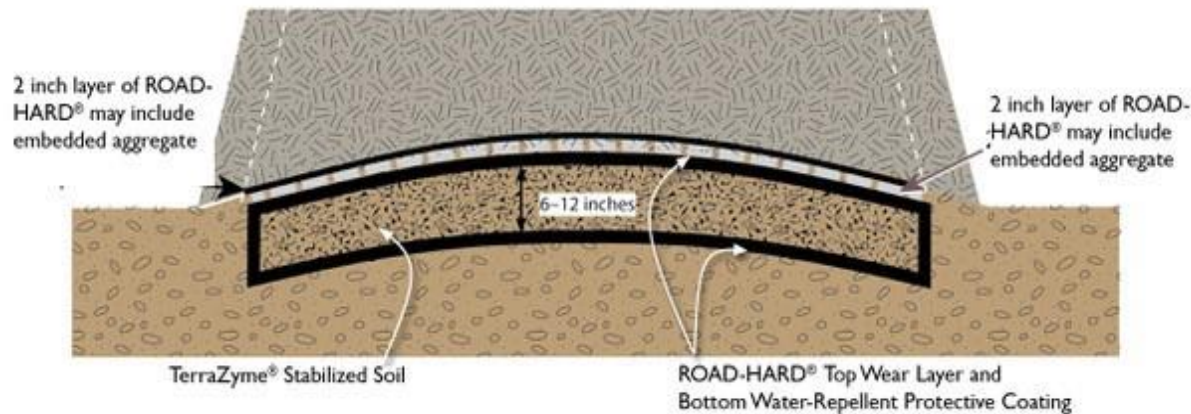
*Before: Untreated dirt road with severe rutting*



*After: Treated road—hardened and water resistant*

# Dust Control and Soil Stabilization

- Bio-polymer (ROAD-HARD ) and natural enzyme (Terra-Zyme) soil stabilizers build hardened, water-resistant roads, hardstands, and runways with unskilled labor.
- Dust is dramatically reduced in treated areas
- Road maintenance is simple and inexpensive



**ROAD-HARD®**  
NATURAL SOIL HARDENER  
WATER REPELLENT & DUST CONTROL

**TerraZyme**  
OPTIMAL SOIL STABILIZER

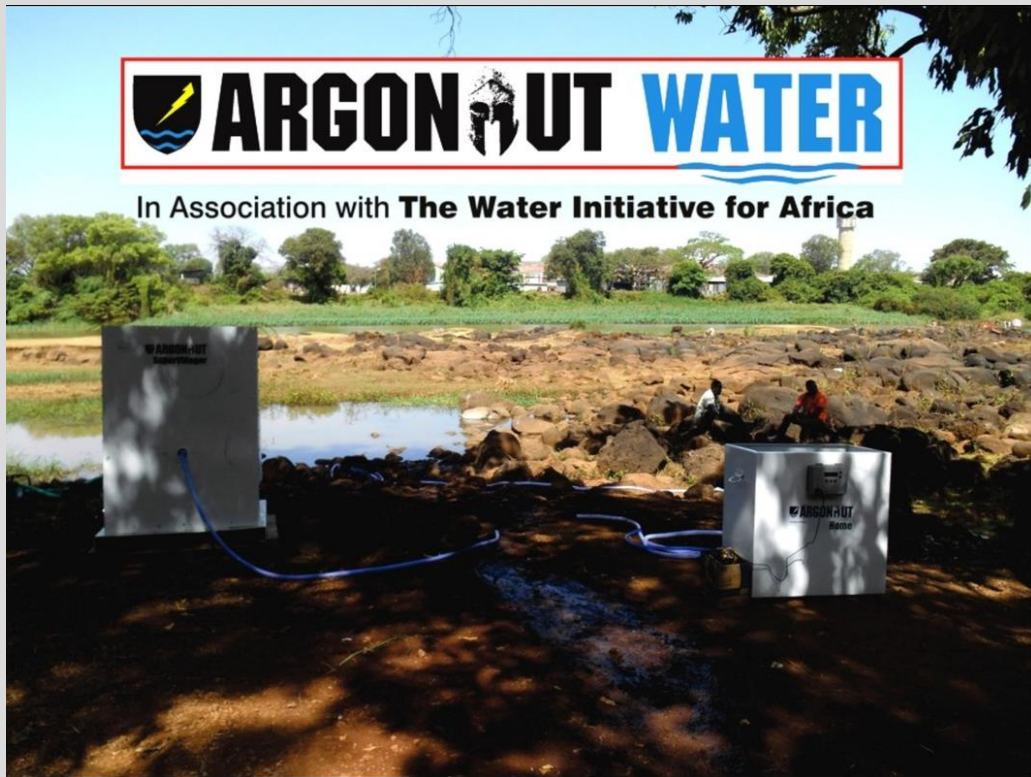
# Compressed Soil Block (CSB) and Lime Coatings

- CSB is durable and can be produced on-site, using local soil, minimal water and fuel resources
- Compressed soil's natural insulating qualities (equivalent of R-38) allows walls to breathe and keep a balanced temperature inside living areas. Lime plasters and paints protect from wind and rain.



# No-Filter Water Purification Systems

Argonaut specialize in a series of self-contained water and power systems that allow for more cost effective and reliable water purification



# Soil Conditioning and Erosion Control

U-Mate's product New Mex U-Mate is a humate soil conditioning product that promotes soil development, water holding capacity and plant growth and development

## Benefits of Humate:

- Carbon-building
- Biologically Stimulating
- Improved efficiency of fertilization
- Disease and pest management
- Hormonal stimulation and environmental stress protection

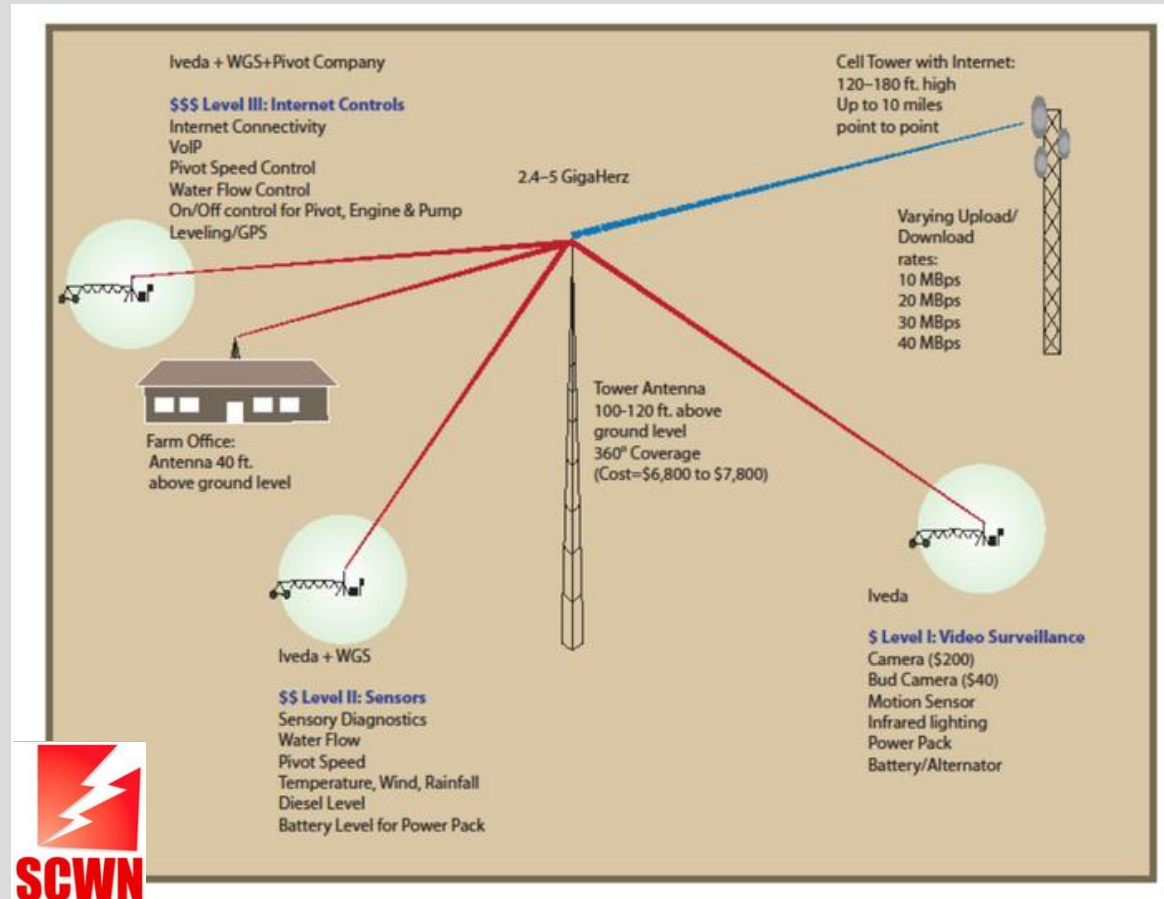


Application of New Mex U-Mate ®

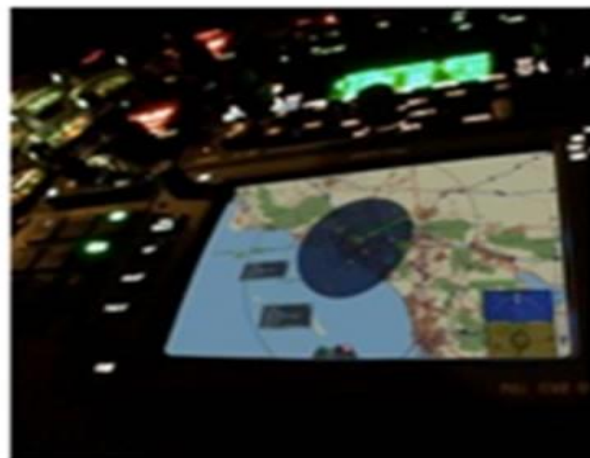


# Wireless Point-to-Point Internet and UAV Runways

- Sensor and video integration allow control stations to maintain 24/7 surveillance on crop conditions, water flow, and area activity.



- ◆ Intuitive Multi-Sensor Control, Visualization and Analysis
- ◆ Enhanced 3-D moving map with real-time video overlay
- ◆ High Def. camera & FLIR control, display & recording
- ◆ 3-D video viewing with street overlays
- ◆ SureFire™ RF signal visualization and mapping
- ◆ Automated sensor cross-cueing
- ◆ Time, space, sensor and subject information association
- ◆ Total sensor, aircraft and navigation situational awareness
- ◆ Coordinated Multi-aircraft or ground asset operations
- ◆ Plug and play new sensors



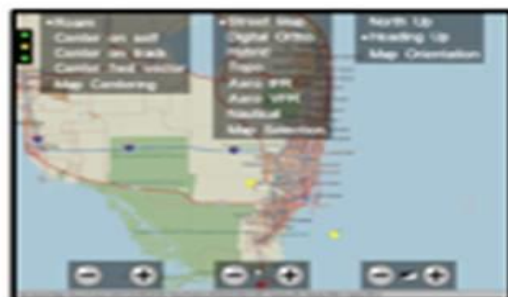
LOS/BLOS Data Links



Fully Cross-Coupled Sensors



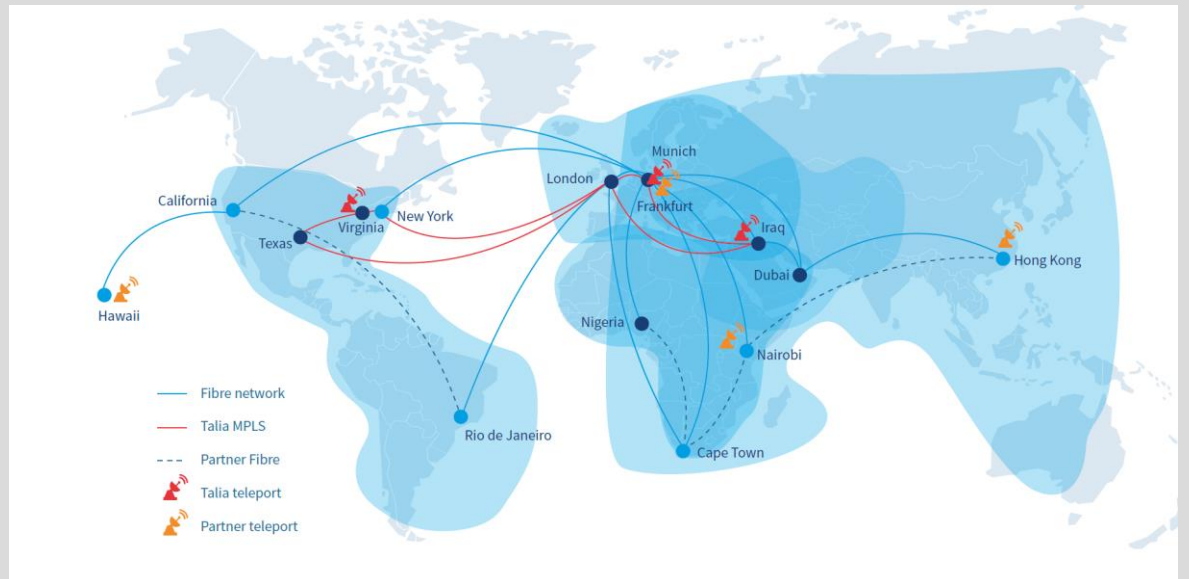
Rugged Lightweight Computers



Optional Cockpit  
Touch-screen Interface

# VSAT Communications and Global Connectivity

- Talia provides world-class solutions for today's global businesses
- Talia is a market-leading teleport, satellite and terrestrial network operator
- Provides secure global IP communications that allows enterprises to thrive
- Field engineers on the ground in many countries provide the extra level of hardware, software, and connectivity support that surpasses the competition.



# Demonstration & Training Facilities

**Location:** Clarkedale, AR; USA  
30 Minute Drive from Memphis, TN  
Airport

**Accommodations:** Multiple hotel  
and dining facilities

**Designated Area of Operation:**

- 44 acres, with water well in a remote area
- Offices with High speed WiFi
- Large sheltered work area
- Video security monitoring

**Equipment:** Heavy equipment and  
tools available



# G.I.S. Consortium Members

Click on each logo link for more information



# Professional Resources

- Architecture and Energy Design – David Cagle Architecture ([https://www.grounded-infrastructure.com/courtyard\\_communities.html](https://www.grounded-infrastructure.com/courtyard_communities.html) )
- Geology, Exploration and UAV – Global Venture Consulting, LLC (<https://aglobalventure.com/>)
- International Consulting – Gregory Copley (<http://www.strategicstudies.org/index.htm>)
- Logistics and Engineering – Technical Resources Group (<http://www.trgrp.net/>)
- Security Consulting – Michael L. Chaney: (<https://www.grounded-infrastructure.com/michael-chaney.html>)
- Agriculture – Jay Fisher: ([https://www.grounded-infrastructure.com/agriculture\\_uav\\_systems.html](https://www.grounded-infrastructure.com/agriculture_uav_systems.html) )
- Satellite VSAT Internet Communications - Joel Allen ([www.talia.net](http://www.talia.net))

For more detailed information on technologies and professional resources, please visit our website.

**Grounded Infrastructure Solutions**

[www.Grounded-Infrastructure.com](http://www.Grounded-Infrastructure.com)

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