



## ATTACHMENT J-10

### Sample Task Order (STO) # 2 – ENVIRONMENTAL DATA NETWORK

#### 1.0 Introduction

The Environmental Assessment Agency (EAA) recently signed Memorandum of Agreements (MOAs) with several South American countries for the purpose of collecting environmental and weather data from remote outposts to better support environmental trend analysis. The EAA requires a satellite-based communication network to backhaul data from remote sensor outposts that are installed in each country.

#### 2.0 Objective

The Contractor shall design, deploy, and sustain a satellite-based network to support data collection from sensors in remote locations within South America. The EAA will provide security for all equipment installed at each of the remote sites (e.g., fencing and motion-activated surveillance cameras). Each of the sites has a 20 x 20 feet concrete pad enclosed by 6 foot high security fencing. The Contractor will select the best technology and band for this solution.

The suites of sensors and motion-activated surveillance cameras currently installed by the EAA at each remote site will share power with the satellite terminal. The Contractor will need to provide solar power (to include battery back-up) for all equipment installed by the Contractor at four of the six remote sites including the remote sensors power over Ethernet (PoE). The daily duty cycle for the terminal transmitting will be approximately 5 min per day to transmit captured environmental and weather data. Each sensor and terminal will be programmed to communicate at different times at each location. This will minimize total system bandwidth needed and also take advantage of saving battery power for solar operation.

The estimated data transferred per day will be approximately 5 Megabytes (MB) per site. This 5 MB figure would include occasional agency personal use, sensor data collected, and possible motion-activated surveillance camera activity. The network must also provide a capability to share the remote sensor bandwidth and motion-activated surveillance camera bandwidth with occasional personnel operational needs. The remote sites are typically unmanned, but there will be short periods where EAA will send staff to sites to perform additional data collection or local maintenance for the sensors. The estimated usage profile for these agency personnel is not expected to exceed 3 hours per day, 5 days per year for each site. No additional bandwidth is required for personnel usage.



U.S. General Services Administration  
Federal Acquisition Service (FAS)  
Office of Information Technology Category (ITC)



### 3.1.2.2



- 3.2.1.2 The Contractor shall clearly explain their recommendation for bandwidth, stating assumptions, to ensure that only the necessary amount of bandwidth is leased. The Contractor shall implement configuration management, prepare engineering documents and reference manuals, and provide engineering and testing services for the Environmental Data Network.
- 3.2.1.3 The Contractor shall identify valid installation challenges and risks (excluding any items provided as (GFE), and provide realistic mitigation for each.
- 3.2.1.4 The Contractor shall discuss how their system incorporates reliability, availability, maintainability, security, network monitoring and interoperability.
- 3.2.1.5 The Contractor shall address system flexibility and optimization, accommodating potential future needs to support either new sites or higher per-site data transfer needs or spectral optimization to minimize bandwidth needs.



- 3.2.2.1 The Contractor shall procure, integrate, and deploy environmentally protected enclosure (cabinet or shelter) to each remote site that will house any satellite communications terminal and ancillary equipment that requires environmental protection. Each enclosure shall be designed to withstand the environmental rigors specific to each site with a minimum rating of the exposed components at Ingress Protection (IP) 65 or equivalent. The enclosure is only required to be large enough to support the satellite communications terminal and ancillary equipment requiring environmental protection provided by the Contractor. Sizing will be Contractor defined based on the solution or equipment selected.
- 3.2.2.2 The Contractor shall ensure that all components are interoperable. The Contractor shall connect the GFE sensor and GFE motion-activated surveillance cameras Ethernet connections to their equipment and verify operation at each site. These Ethernet connections will be located within the enclosure or shelter and should not have access from the outside environment.
- 3.2.2.3 The Contractor shall explain how the solution proposed meets the Government's Committed Information Rate (CIR) requirements.  
The remote Satellite



Site 5	Ciudad Bolivar, Venezuela	IP-based transport to backhaul data from sensors to the central collection point (440 kbps inbound, 440 kbps outbound)
Site 6	La Rinconada, Peru	IP-based transport to backhaul data from sensors to the central collection point (440 kbps inbound, 440 kbps outbound)
All Sites		The network must also provide a capability to share the remote sensor bandwidth with occasional personnel operational needs. Agency personnel will arrive to the sites with a laptop and require internet service connectivity throughput up to 440 kbps outbound and up to 440 kbps inbound. The CIR rate will not increase when agency personnel travel to the remote sites.
Inbound - Data transmitted by the satellite terminal to the Gateway		
Outbound - Data transmitted by the Gateway to the satellite terminal		
Note: The network CIR is 440 kbps inbound, 440 kbps outbound		

### 3.2.3 Managed Network Services

- 3.2.3.1 The Contractor shall provide turnkey satellite transmission capability that includes all necessary software, hardware, service, and maintenance support to all locations. The Contractor shall be fully responsible for assuring operational availability of the system.
- 3.2.3.2 The managed network services shall include space segment, teleport, and terrestrial components as necessary to ensure a complete end-to-end communications solution between the sensor systems and the Internet. All equipment delivered as part of the complex satellite solution shall be new equipment.
- 3.2.3.3 Central satellite gateway(s) - Contractor defined location(s) with connection to the Internet. Provide all internet access through a U.S. based internet Point of Presence.
- 3.2.3.4 Space segment coverage shall include all sites in South America. FSS solutions require the Contractor to provide maps with clearly depicted and labeled contour lines, demonstrating coverage across the required locations. Contour lines should clearly demonstrate satellite gain to noise temperature ratio (G/T), effective isotropic radiated power (EIRP).
- 3.2.3.5 The Contractor shall meet or exceed a 99.5% link availability for all required satellite links to and from each remote site.









3.2.5.6 The Contractor shall discuss maintenance support for all sites



### 3.2.8.3 The Contractor



Work is to be performed at contractor facilities and at remote sites in South America. All equipment shall be shipped from the Contractor's facility to the remote sites in South America after successful completion of testing. All travel expenses, shipping costs, taxes, customs fees and tariffs will not be evaluated as part of the price proposal.

#### 4.2 Period of Performance

The period of performance for this Task Order will be five (5) years. In addition to the CLINs priced by the Contractor during the 5-year period of performance (Years 1 through 5), the Contractor shall propose pricing for the two CS3 option periods: one (1) three-year option period (Years 6 through 8) followed by one (1) two-year option period (Years 9 and 10), and the FAR 52.217-8 six-month extension option.

In the first six months after contract award, the Contractor shall acquire, integrate, test, and deliver the requested capability.

#### 5.0 Government Support

##### 5.1 Government Furnished Equipment/Facilities:

- x Power (110 VAC or 220 VAC) will be provided at two of the sites: Puerto Williams, Chile and Ventiocho de Novembre, Argentina).
- x A complete sensor and motion-activated surveillance system will be provided for testing at the Contractor's facility. Upon successful completion of testing, all GFE will be returned to the Government. The GFE used for testing will be identical to the equipment at the remote locations.
- x An approved remote site where the Contractor will install the self-contained environmental enclosure and terminal equipment.
- x One sensor system has been installed at each of the six EAA site and has a standard Ethernet connection, the sensor system will require PoE: +5V / 250 mA or PoE IEEE 802.3af from the Contractor.
- x One motion-activated surveillance camera system has been installed at each of the six EAA sites and has a standard Ethernet connection, they will require PoE: +5V / 250 mA or PoE IEEE 802.3af from the Contractor.

#### 6.0 Security

The Contractor shall articulate processes and procedures to address the security requirements for personnel assigned to the task order. All Contractor personnel assigned to this task shall be US citizens and possess at least United States Moderate Background Investigation (MBI) public trust clearances.

The Contractor shall ensure that all controlled unclassified information is safeguarded in accordance with the guidance provided in DoDM 5200.1, Volume 4, Information Security Program: Controlled Unclassified Information (CUI).

