



Enabling Global  
Connectivity



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## Intelligent remote monitoring solutions that help integrate and control power grids

The AST Group (AST) provides intelligent satellite solutions for power grid construction and systems integrator IELCO and its customer, a publicly owned national electric utility company in Ecuador.

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### ABOUT THE CUSTOMER

IELCO is a power grid construction and systems integrator that provides grid control and metering solutions to public owned nationwide electric utility company in Ecuador. Their customer aims to deliver a public service of distribution and commercialisation of electric energy.

### THE CHALLENGE

Ecuador is crossed by the Andes mountain range and is known for its diverse geography making it especially difficult for utility companies to monitor and maintain power grids. A high percentage of IELCO's customer's distribution network faults are transient due to lightning strikes, surges or unexpected objects in contact with power lines.

Many years ago, IELCO identified the opportunity to provide its customer with remotely monitored intelligent solutions that could help integrate and control the grid in rural Ecuador from the customer's existing SCADA control centres. After trying a variety of wireless communication solutions like cellular and VSAT, they kept looking for a lightweight, cost-effective satellite solution which could work in the highlands as well as at the coast and in the very humid Ecuadorian rainforests.

### THE SOLUTION

The AST Group was recommended to IELCO by manufacturer Hughes to provide the satellite solution for this project.

AST's expertise in applying IP satellite communications to machine-to-machine (M2M) and their Intelligent Global IP network capabilities made it possible to deliver a robust working solution on time and within budget. As GSM data is not reliable for this type of critical application and the customer's objective is to improve electric grid uptime – satellite is the only option.

### KEY FACTS

#### Diverse Geography

Close proximity to the Andes mountain range

#### Remote monitoring

To integrate and control the electricity grid in rural Ecuador from the customer's existing SCADA control centres.

#### Real-time fault detection

Real-time connectivity enables remote service

Simple close-open operation enables fault detectors and reclosers to connect to the existing SCADA control centres in real-time, the customer will then be able to attempt service restitution remotely on the connected recloser without the need to deploy a maintenance team to the fault site which can be hours away.

### Hardware

AST provided Hughes 9502 hardware and an Inmarsat BGAN M2M solution with public IP access for a proof of concept at Santa Elena, on the pacific coast.

The proof of concept proved a success, IELCO was then challenged to implement the first commercial solution at Sucumbíos, consisting of a group of reclosers that would be monitored and controlled remotely from Lago Agrio and other regional substations. The Hughes 9502 terminal was chosen because it is lightweight, robust, easy to install and very discrete on the electricity post.

### Communications

With network security, visibility and uptime being crucial, AST's IT and Support teams implemented a state-of-the-art secure VPN network connection between the customer located in Sucumbios and AST's INTEGRA Global IP Network via the New York Point of presence (POP). The POP offers the most optimum path for traffic by enabling the INTEGRA Global IP Network to inter-connect with providers at multiple locations. This gives AST resilience should a provider have an issue, to still be able to deliver customer traffic. Language barriers, time zone differences and network devices from various manufacturers added extra complexity to the implementation.

### Remote monitoring

IRIS Terminal Manager provided IELCO with real-time terminal information, location, remote data session start/stop, remote terminal restart, log file retrieval, and firmware updates. The customer can access up-to-date usage data 24/7 via the My AST Portal to better understand, control and optimise airtime costs.

## THE BENEFITS

What IELCO value the most from AST is their comprehensive support and expertise – from evaluation and hardware advice of the appropriate technology, through inhouse testing and proof of concept, to project implementation, someone at AST was always available to support and guide them, and in their native language (Spanish).

AST's 24/7 Global Customer Support was contacted out of business hours more than once by the customer for critical service requests and received an instant and accurate response.

**Wherever you are, whatever your remote connectivity requirements, AST has a solution. To discuss how we can take you further with one of the friendly team call +44 (0)1493 440 011 or email [info@theastgroup.com](mailto:info@theastgroup.com)**

## KEY FACTS

### IRIS Terminal Manager

Providing IELCO with real-time terminal information

### Hardware

Hughes 9502

### M2M

Inmarsat BGAN M2M solution

### State-of-the-art

Secure VPN network connection