

# Data and Compressed Voice over Satellite

## Case Study

### Data and Compressed Voice over Satellite Africa



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Toby Korall, Senior Product Line Manager, RAD Data Communications

#### Challenge

Connect voice and data between remote regions where terrestrial communications lines are unavailable or too expensive

#### Solution

Vmux voice compression gateways are deployed together with satellite broadcasting equipment to reduce bandwidth and maximize use of the satellite network

#### Benefits

- Fast and reliable deployment of communications lines for provisioning services and generating new revenues
- Maximizes limited satellite link bandwidth, requiring fewer links and saving money
- Compact size suitable for joint deployment with satellite equipment where space is limited
- Supports wide range of user applications: GSM backhaul, offshore call centers, inter-regional corporate connectivity; communications for temporary sites, military bases and offshore drilling

### ***RAD Delivers Cost-Effective Satellite Communications Solutions in Africa***

#### ***Vmux Compression Gateways are Deployed to Reduce Voice Bandwidth for Satellite Link Transmissions***

In many areas of the world, the rapid growth of voice and data communications usage has outpaced the deployment of network infrastructures. This is especially true in Africa, where for reasons of geography, history and topography, the laying of copper or fiber landlines has been slow and in many cases, prohibitively expensive. To overcome this situation, many local carriers and enterprises in Africa resort to satellite links for their communications transport needs.

Satellite networks are an effective, yet expensive, way to quickly open reliable lines of communications over great distances. Thus, satellite network operators and users require a way to make satellite links more cost-effective for transporting voice and data communications between remote locations. They need a solution that maximizes the amount of voice traffic that can be transported over the available link bandwidth, yet still support the necessary features to preserve high voice quality and associated signaling.

#### ***Field-Proven Experience with Major Satellite Service Providers***

RAD's Vmux voice trunking compression gateways are the ideal product solution. These devices have now been successfully deployed together with equipment from Intelsat, Eutelsat and other major satellite service providers, in several applications in Africa. In these installations, the Vmux ensures that the costly satellite links are utilized as efficiently as possible. Toby Korall, Senior Product Line Manager at RAD Data Communications explains: "Vmux lets satellite service providers offer customers a more attractive complete solution, one that enables them to maximize the traffic that can be supported cost-effectively over their satellite links."

An example of this solution is an MSC-to-BSC cellular backhaul application for a mobile network operator based in Nigeria. The operator wanted to backhaul traffic from a BSC site in the city of Benin to their MSC site in the commercial capital of Lagos. Vmux devices were deployed at each of the sites together with the satellite transceiver equipment from Intelsat. Here the Vmux gateways compressed the multiple E1 voice trunks from the BSC/MSC communications equipment down into a single E1 for transmission over the Intelsat satellite network connection between the two distant locations. "The operator was



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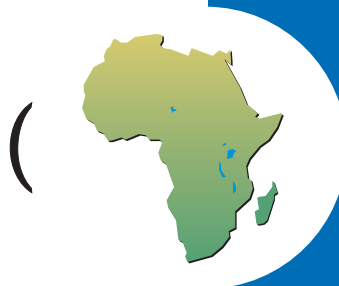


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Noam Dor, Senior Sales Manager for Africa and Middle East,  
RAD Data Communications



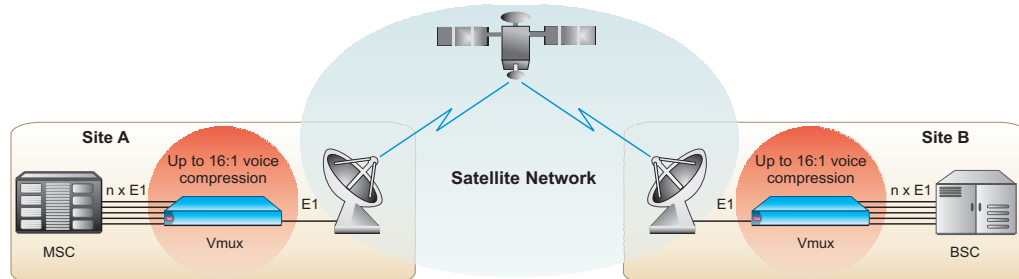
very pleased with the fast installation and smooth operation of the Vmux devices and encountered no problems connecting it to the Intelsat equipment,” says Noam Dor, Senior Sales Manager for Africa and Middle East at RAD.

### **Vmux Delivers 16:1 Voice Compression**

Using RAD’s advanced voice optimization methods together with the company’s patented TDM over IP (TDMoIP®) technology, the Vmux provides a voice compression ratio of up to 16:1, while still maintaining high voice quality and transparently supporting all PBX features and national signaling protocols. The Vmux is available with IP, E1/T1 or n x 64 kbps serial network ports, allowing connection to satellite modems with both Ethernet/IP as well as TDM-based data interfaces. Together, these features enable enterprises, mobile operators and service providers to require less bandwidth for transporting their voice payloads over different types of satellite links, while reducing infrastructure costs by converging their voice, fax, modem and Ethernet data traffic using a single device.

Using satellite links with RAD’s Vmux gateways suit a wide range of communications applications:

- Cellular backhaul, including BSC-to-MSC, MSC-to-MSC and MSC-to-PSTN
- Call centers
- Corporate connectivity between sites in different regions or countries
- Television broadcasts of special sport or news events
- Temporary site communications, military bases, offshore drilling



**Vmux maximizes satellite links in GSM BSC-to-MSC backhaul application**



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