Case Study

Voice Compression implementation into
Piraeus Bank Call Center

" …. The ROI of Vmux2100 supply was fast whereas the quality of voice communication remained in excellent levels …."

*Telecommunication Manager
Piraeus Bank*

ΤΡΑΠΕΖΑ ΠΕΙΡΑΙΩΣ

The Customer: Piraeus Bank Group is one of the most dynamic and active financial organisations in Greece today. Founded in 1916, Piraeus Bank went through a period of state-ownership and management (1975-1991) before it was privatised in December 1991. Since then, it has continuously grown in size and activities. Today, Piraeus Bank leads a group of companies covering all financial and banking activities in the Greek market (universal bank). Piraeus Bank possesses particular know-how in the areas of retail banking, small and medium-sized enterprises (SMEs), capital markets and investment banking, leasing and financing of the shipping sector. These services are offered through the Bank's nation-wide network and also through the electronic banking network of Winbank. The latter was launched in the beginning of 2000, as the first complete electronic banking service in Greece, offering a full set of services through four different channels of distribution (Internet, mobile phone, call centre and ATMs). At the end of September 2007, Piraeus Bank Group had a network of 690 branches (309 in Greece and 381 abroad) and its equity capital amounted to €3,315 mn. The clients' deposits, repos and retail bonds issued amounted to €21,398 mn, loans reached €28,138 mn and total assets were €40,420 mn.

RAD data communications

The Need/Solution: Piraeus Bank call center in Athens provides centralized call processing for a remote location. In order to minimize the E1 voice trunking links, connecting both sites, RAD's Vmux-2100 gateways were installed at each end. The Vmux 2100 were installed in a point-to-point configuration allowing the interconnection of two primary ISDN links (PRA's) through a single E1 link.

The compression techniques and voice transmissions (TDMoIP) allows Vmux to transmit in a transparent way all voice services keeping the voice communication quality in high level while minimizing the E1 voice trunking cost.

The Network Diagram:
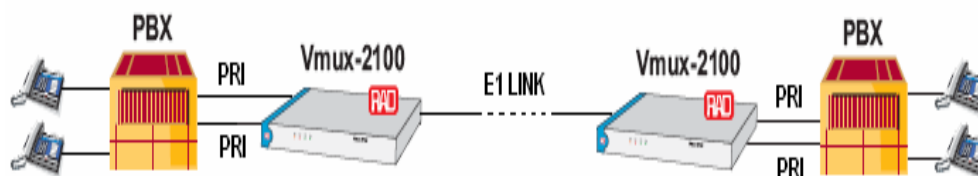
Learn more about our TDMoIP solutions at:
www.tdmoip.com

The system used: Vmux-2100™ uses state-of-the-art G.723.1, G.729A and G.711 voice compression algorithms for optimal cost/performance. It maintains toll quality voice while achieving the highest compression ratio for voice transmissions over TDM and IP networks. Voice activity detection and silence suppression allow the Vmux to dynamically utilize bandwidth for voice traffic and fax relay, resulting in very efficient bandwidth usage over fewer lines, while the signalling information is transmitted separately. Typical applications include satellite connectivity, cellular backhaul and trunking, international voice trunking, Wireless Local Loop and rural telephony. Vmux may be used in narrowband applications, wherever

there is a need to minimize bandwidth for voice transmissions, over any media (for example, satellite TDM or IP links). Vmux incorporates RAD's patented TDMoIP® technology to improve bandwidth utilization and provide a real migration path to IP. Separate TDM and Ethernet uplinks enable simultaneous transmission over both TDM and IP networks. With lower overhead than VoIP systems, Vmux frees 60% more bandwidth for additional voice or data, which is crucial on costly or low bandwidth links. Network integration is the key to maximum savings in the wide area network. Vmux-2100 converge voice, fax and Ethernet traffic over the same network link. By combining voice/fax capabilities with Ethernet data traffic over a single delivery network, operators can save significantly on the cost of running their networks. The compact, 1U high Vmux is a modular unit that can be installed in 19-inch racks. It has the smallest footprint of any TDM voice compression or VoIP product of equivalent capacity. The unit can be configured with up to four voice compression modules (16 E1/T1) and up to two power supply modules.

Tech info about Vmux 2100:

Vmux-2100 Supporting up to 496/384 Voice Channels over a Single TDM Link

Product Details

Main Link Module

Main link module includes a single Ethernet port (standard), with additional redundant E1, T1 or serial ports (optional)

Ethernet Port
- Number of Ports: 1
- Standards: IEEE 802.3, 802.3u, Ethernet 802.1p&q
- Data Rate: 10 or 100 Mbps, half duplex or full duplex, auto-negotiate
- Copper UTP Interface
- Fiber Interface: Multimode/single mode fiber interface supporting distances of up

E1/T1 Serial Ports
- Number of Ports: 2 (one active, one for backup)

Control Port
For direct connection of terminal, located on the main link module
- Standards: RS-232/V.24 (DCE)
- Data Rate: 9.6, 19.2, 38.4, 57.6 or 115.2 kbps

Channelized E1/T1 Main Link Module

2 or 4-port channelized main link module enables point-to-multipoint support over TDM networks

Voice Compression Modules
- Compression Algorithms:
  G.723.1 (5.3 or 6.4 kbps), G.729A (8 kbps), G.711 (a-law or μ-law)
- Silence Suppression:
  G.723.1, G.723.1A, G.729B
- Echo Cancellation:
  32 msec per channel as per G.168
- Fax Relay: Group III at 4.8, 9.6, 14.4 kbps
- Voice Band Data:
  Transparent support for modems
- Signaling Support:
  – Transparent CAS signaling, including R2 and E&M
  – Transparent CCS signaling, including ISDN, QSIG and SS7
  – Transparent to multichannel and proprietary protocols

- MF Signaling Support:
  DTMF, MFR2, MFC detection, generation and relay
- E1 Port Modules:
  Two (60 channels) or four (120 channels) E1 port modules
- T1 Port Modules:
  Two (48 channels) or four (96 channels) T1 port modules

General
- Power:
  Input (according to ordering):
  AC: 100 to 240 VAC, 50/60 Hz
  DC: –48 (–36 to –72) VDC
- Physical Dimensions:
  Height: 4.3 cm / 1.7 in (1U)
  Width: 43.5 cm / 17.1 in
  Depth: 24 cm / 9.5 in
  Weight: 7 kg / 15.5 lb
- Environment:
  Operating temperature:
  0 to 50°C / 32 to 122°F
  Storage temperature:
  –20 to 70°C / –4 to 158°F
  Humidity: Up to 90%, non-condensing