

■ CASE STUDY

Military Application: Voice over VSAT System

Troops in Afghanistan use NetPerformer to Phone Home

By:
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INTRODUCTION

As part of the United Nations humanitarian peacekeeping effort in Afghanistan, a number of European countries have stationed troops in the war-torn country. When an army is stationed far away from home for an extended amount of time, maintaining morale is a high priority for the generals in command. One way to insure high morale is to provide army personnel an easy and cost-effective way to call their loved ones back home.



The public-switched-telephone network (PSTN) in war-torn countries is far from reliable and very costly to use. Troops stationed in Afghanistan wishing to call home had a very tough time making calls. To overcome this problem, Sonema, a satellite systems integrator, proposed a voice satellite system using Memotec NetPerformer products.

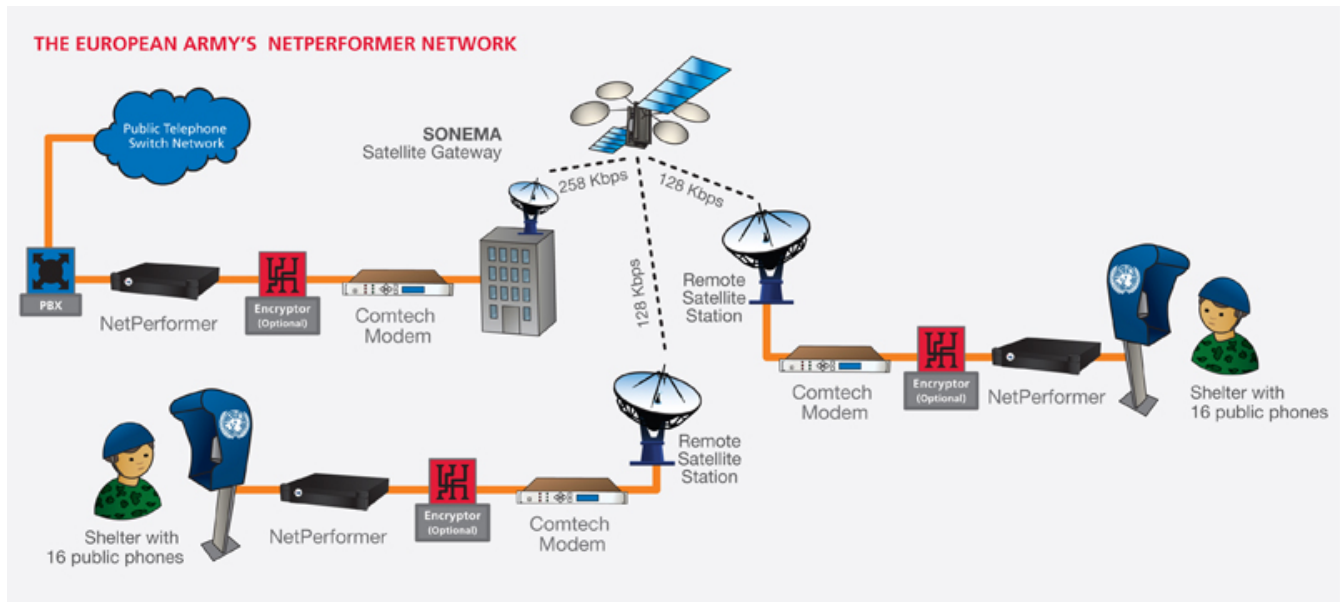
COMBINING TDM, SERIAL AND IP

NetPerformer is often employed in places like Afghanistan to provide data and voice communications to locations where terrestrial facilities are expensive,

unreliable or simply not available. NetPerformer combines TDM, Serial as well as IP access over microwave switches or satellite modem technology to provide cost-effective, voice and data communications to remote sites. In addition, if secure voice-data communications are required, then the NetPerformer can be deployed over external military-certified encryption devices through serial ports or digital T1/E1 interfaces. Sonema provided these turnkey systems by installing one NetPerformer station at Sonema's Gateway in Monaco and a number of remote NetPerformer throughout Afghanistan. At each remote location, 16 to 20 pay phones are housed in shelters available to army personnel 24 hours a day, 7 days a week.

Sonema provides the ability for the troops to place phone calls back to their families using pre-paid smart calling cards provided by Sonema on behalf of the European Defence Ministry. These phone booths are connected through NetPerformer back to the Monaco Gateway via satellite. In turn, the Monaco Gateway is connected to the PSTN through a PBX in Monaco to handle the calls originating from Afghanistan. In this way, the army personnel have direct dial-tone access to an international telephone network through Monaco (see figure on page 3)

Memotec and Sonema teamed to provide complete turnkey systems within a ten-week period. Services provided by Sonema included a technical feasibility study, site surveys of the troop camps and all civil works. Sonema ordered, supplied and installed all the Memotec NetPerformer equipment as well as all the Comtech SCPC modems, the RF transceivers, antennas, equipment shelters and PBX. As part of the turnkey service, Sonema also provided the required space segment using Panamsat's PAS4 C-band satellite. The Monaco site employs a 4.6 meter antenna and 20 watt C-band transceiver supporting a 256 KBPS outbound carrier, while the sites in Afghanistan use 3.8 meter antennas and 10 watt C-band antennas supporting 128 KBPS inbound carriers.



QUICK AND EASY TO INSTALL FOR GREATER MOBILITY

Since the army by necessity needs to be mobile, the NetPerformer satellite system must be quick and easy to install as well as provide for ease of expansion as the network grows. This along with the high voice quality was the reason Sonema proposed Memotec's NetPerformer product. Using state-of-the-art voice compression, Memotec's NetPerformer system compresses the voice calls from the standard 64 KBPS rate to just 8 KBPS per call. The voice calls are then multiplexed together for the most efficient use of trunk bandwidth.

EXPANDING SERVICES

The voice quality has proven to be of such high-quality that the European army, utilizing Sonema's NetPerformer network, is now selling pre-paid calling cards to other armies based in Afghanistan. According to Yves Dollo of Sonema, "As one indication of the success of the network, since network inception in 2003, Sonema has sold tens of thousands of pre-paid calling cards to the army. The equipment was not purchased outright by the customer, but was rather included as part of the service price and was paid for within the first year of operation."

In addition to the higher quality, using NetPerformer has reduced the cost of the calls by half in comparison to the standard PSTN. Due in part by the need as well as the great success of the network, Sonema's European army customer has expanded, in recent years, the NetPerformer network beyond Afghanistan to other army locations in Europe and Africa.

For more information about NetPerformer, contact MEMOTEC at +1-514.738.4781 and ask to speak to a NetPerformer expert, or send an email to communications@MEMOTEC.com.