

The Best Defense

As U.S. Army bases upgrade their telecom networks, a Tellabs solution saves money and energy.

BY DENISE CULVER

Launched a decade ago, the U.S. Army's Installation Information Infrastructure Modernization Program (I3MP) is designed to modernize information networks in Army facilities worldwide. One of the program's primary missions is to bring secure, state-of-the-art technology advances to the military.

Using the Campus Area Network (CAN) Design Guideline from 2006, the Army deploys a traditional data network architecture consisting primarily of large core routers, Layer 2 distribution switches and Workgroup Layer 2 access switches. Now, new field-proven technologies have emerged, which can offer the Army much greater efficiency in the core transport and access layers.

These new technologies presented Tellabs with an opportunity to bring innovation to the Army. So Tellabs proposed a new architecture for I3MP based on Tellabs® Optical Enterprise, which combines the Tellabs® 7100 optical transport system with Tellabs® 1100 fiber access systems to slash CapEx by 25% to 40% and reduce OpEx by as much as 80%.

CHALLENGING THE STATUS QUO

"The Army was not getting the best use out of their network bandwidth, utilizing only 5% to 10% of their link capacity," said Rob Rice, vice president of Tellabs Government Systems. "Additionally, when deployed, DWDM was being used as just a dumb pipe for router interconnect. We were able to show the Army how they could take advantage of more service intelligence in their transport network to gain multiple areas of efficiency, while still offering scalable bandwidth. For example, the Tellabs® 7100 system handles Layer 2 switching very well, so we encouraged them to look at alternative options for their architecture."

Similar innovation opportunity existed in the access network. "Although it was a mature technology, the Army had not previously considered GPON as an access solution. But we were able to prove that its high-density, passive nature and all fiber-based infrastructure greatly enhanced the cost savings provided by the Tellabs 7100 system," Rice said.

Compared with the Army's existing I3MP architecture, the Tellabs approach dramatically reduces energy consumption and space requirements. The solution features carrier-class hardware for 99.999% or greater service availability, highly survivable network protection mechanisms and tight security features to meet the mission critical needs of Department of Defense (DoD) customers. As an added bonus, both native TDM and native packet services can be delivered on the same platforms, offering



the option to eliminate overlay networks and operate a simplified network based on one converged solution.

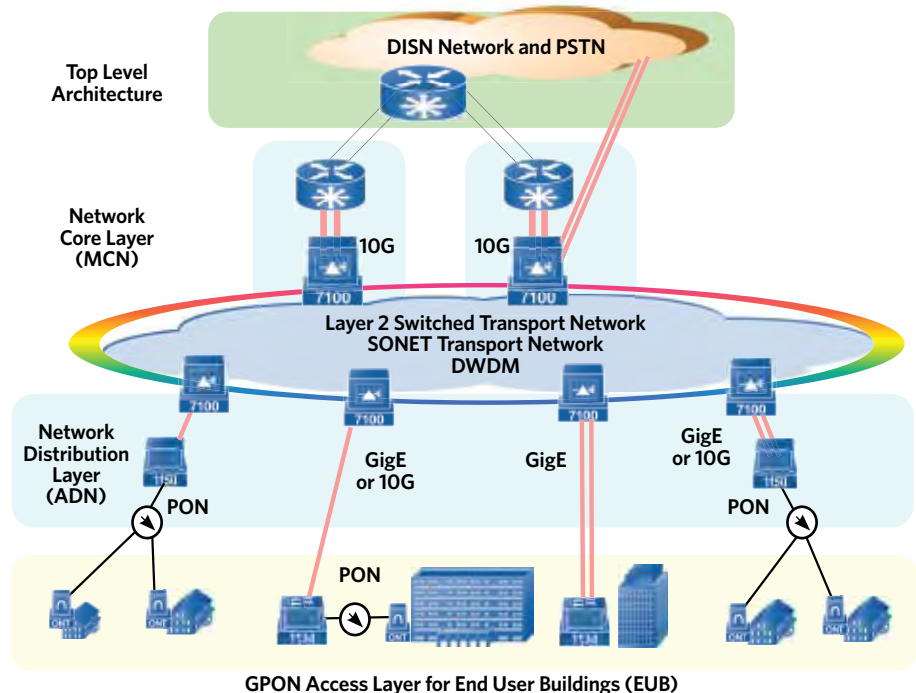
Upon learning the complete capabilities of Tellabs® Optical Enterprise, the Army wanted to take advantage of the benefits that this technology offered. "As they considered various solutions, Tellabs stood out for its ability to provide both the access and transport pieces of the overall architecture," Rice said.

GOVERNMENT CERTIFICATION

The Tellabs® 7100 system ROADM and "ADM on a blade" technology had already been approved for military use under the U.S. Department of Defense Joint Interoperability Test Command (JITC).

JITC ensures that products used by

TELLABS OPTICAL ENTERPRISE



the military are secure, operate optimally in a multi-vendor environment, deliver exacting levels of performance under duress and offer unique features and functionality required for national security. Tellabs currently is working to obtain JITC certification for its entire solution, including high-bandwidth 40G transport interfaces to stay ahead of the curve in bandwidth demand.

"This will enable the Army to meet its goal of designing state-of-the-art networks that are efficient, interoperable, scalable, manageable and reliable while realizing tremendous cost savings," Rice said.

How much are the savings? By Tellabs' calculations, the switch to Enterprise could save the Army up to 80% on power to operate the systems, supporting its green initiative, as well as up to 90% of the space currently used in its telecom closets. Tellabs® Optical Enterprise also can lower CapEx by 25% to 40%.

GAINING TRACTION AND SETTING THE STANDARD

In July, the Army awarded General Dynamics and Tellabs an Army base modernization project. In the first phase, the Tellabs® 7100 system will be deployed as a six-node network that transports pure data communications between the White Sands Missile Range in New Mexico and Ft. Bliss in Texas.

The two contiguous military installations encompass almost 3,200 square miles. Together, they constitute the largest military installation in the United States. The Tellabs® 7100 systems there will become operational early in 2010, laying the foundation for the bases to take advantage of these benefits.

The Army isn't the only party that will benefit. Tellabs is the first GPON fiber access vendor to complete testing and pursue final JITC certification, which puts the company in an enviable competitive position, Rice said.

"Tellabs is the Army's first exposure to GPON technology," Rice said. "We have very strong technical differentiators. We will set the standard for any other

GPON vendor that wants to sell to the U.S. Department of Defense."

That exposure comes via the Tellabs® 1150 Multiservice Access Platform (MSAP), which houses the OLTs that support up to 7,500 users, and through the Tellabs® 1134 MSAP, which supports almost 2,000 users.

"The army needed both platforms because they intend to deploy this technology in both large and small offices," Rice said.

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"We started with our existing GPON technology, which really wasn't customized for an enterprise or for Army bases," Rice said. "We reworked it to meet the needs of end-users at military bases and civilian agency offices so it would effectively replace legacy Layer 2 switches."

That redesign was no small task.

"Our engineers had to incorporate new software into the GPON platforms to fulfill specific DoD applications," Rice said.

LOOKING AHEAD

General Dynamics is the first integrator to bid the Tellabs® 7100 system for an Infrastructure Modernization (IMOD) program, but Rice doesn't believe it will be the last.

General Dynamics was convinced that Tellabs had the best solution, and its bet paid off.

"The contract established Tellabs as a provider of optical equipment for the Army," Rice said. "It has made the rest of the integrator community take note of who we are. They, too, can win IMOD opportunities within the Army with Tellabs® 7100 systems."

In addition to its tremendous potential for the military's ongoing work to upgrade

TELLABS® OPTICAL ENTERPRISE APPLICATION

Here's an overview of the solution's key benefits:

- **Reduced Total Cost of Ownership.** Cuts energy consumption by up to 80% to support green initiatives, reduces space requirements up to 90% at the access layer and lowers capital expenses on the data network by 25% to 40%.
- **Bandwidth Scalability.** The solution minimizes CapEx immediately while executing a grow-into-it strategy: Deploy what's needed today, then incrementally expand as bandwidth demand grows, with capacity of up to 88 40G wavelengths.
- **Streamlined Operations.** Offers a seamless transition to carry packet and TDM traffic on the same platforms, eliminating separate overlay networks and further reducing CapEx and OpEx by as much as 70%.
- **A Phased Migration to VoIP.** Supports traditional POTS and VoIP simultaneously to enable customers to migrate the voice infrastructure at their own pace and save as much as 90% on end-user handset upgrades.
- **Fiber Topology Optimization.** Reduces construction costs, one of the most expensive pieces of modernization proposals, and takes advantage of the shortest distance to get connected to the dynamic optical network.

telecom networks at bases worldwide, the Tellabs solution also fits the needs of many enterprise customers who need to save money and lay a foundation solid enough to support their telecom needs well into the next decade. ■

➔ For more information about the Army's modernization project, download the Podcast at

www.tellabs.com/news/inspire

ADM: Add/Drop Multiplexer **CapEx:** Capital Expenses **DWDM:** Dense Wave Division Multiplexing **GPON:** Gigabit Passive Optical Networking **LAN:** Local Area Network **OLT:** Optical Line Terminal **OpEx:** Operating Expenses **RFP:** Requests for Proposal **ROADM:** Reconfigurable Optical Add/Drop Multiplexing **TDM:** Time Division Multiplexing