

### Customer Profile:

The United States Air Force is a complex organization that relies heavily on communication processes. Their non-classified communications are often just as operationally important as the top-secret information that is passed around on secure, encrypted networks. Field operations that manage multiple aircraft in remote locations, for example, require personnel support and information systems that need to communicate back to bases all over the United States. Air Force bases as well as the Department of Defense need to know which operations are going on where and what's happening in real time. Specific data, like maintenance records, aircraft health, and mission details, need to be communicated, and USAF soldiers need to communicate with family and relatives when they have time off at remote sites. D-Link's EVDO networking solution for 3G helped the USAF devise flexible, rugged, reliable remote networks in a box so they can achieve all this and more.

"The Air Force offered us a system to do basically the same thing for roughly \$250,000. I was able to provide nearly the same connectivity, probably better connectivity and better uptime with the D-Link equipment. We've had 100% uptime since we've put this in place a year and a half ago. And we did it all for under \$1000."

- Aaron - Technical Sergeant,  
United States Air Force

## United States Air Force Saves \$249,000 with D-Link 3G Mobile Router for Wireless Cell Networks Solution

### The Challenge

In order to share, record and access Internet-based data from remote locations, the USAF needed to create portable Web connection hardware based on wireless 3G (EVDO, specifically). Even though these projects don't deal with classified information, they also needed WPA with AES and TKIP encryption to protect sensitive communications between Air Force operations and soldiers' friends and family.

"We wanted to give our staff autonomous access to Web-based resources, and Air Force and Department of Defense systems," said Aaron, Technical Sergeant for the USAF. "Personally, I've had a great history with D-Link, so we looked at the D-Link DIR-450 on a trial basis." The DIR-450 is a 3G mobile router that enables secure wireless 802.11g (108G) connectivity using a cellular signal. Aaron's group bought a router and tested it with their Verizon cell service and EVDO card.

### The Solution

The USAF ended up using several DIR-450's to set up remote base camps. The solution helps them stay in contact with the Air Force Rescue Coordination Center (AFRCC), local agencies, and friends and family.

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The Air Force chose the D-Link solution over another competitive enterprise system. "I didn't want to buy a large enterprise-type system," explained Aaron. "We use tax payer dollars, and I wanted to make sure that I wasn't buying more than we needed. Plus, the other option didn't provide the reliability that I needed."

"Every piece of networking equipment I have in my home is D-Link," continued Aaron. "None of it has let me down. I knew what I was going to get. It wasn't an unknown. And the DIR-450 got great reviews. The EVDO forums reviewed it and gave it stellar reviews along with a lot of other review sources."



## U.S. AIR FORCE

Aaron's group has three DIR-450's. One is used on their main base in Mountain View, California. The other two travel wherever they need them. The EVDO card and router run off of a portable generator. Aaron fashioned antennae that connect to the routers and amplify signals. The 8-foot antennae poles connect to the router via cabling and a 1000 milliwatt amplifier. Each antenna is mounted on top of command tents. A separate lightning strike protector is also mounted on the top of the tents. The remote mobile command post equipment includes 60 ruggedized laptops, and rugged Pelican protective cases that house the networking gear.



*The 3G Mobile Router DIR-450 from D-Link enables the US Air Force to easily create a secure wireless 802.11g(108G) network and provide access to the Internet using cellular signal on their main base in Mountain View, California.*



**DIR-450 3G Mobile Router  
for EV-DO Networks**

- Plug in Your 1xEV-DO Internet PC Adapter to Share Online Access
- Works Virtually Anywhere 1xEV-DO Cellular Service is Available
- Create a Wireless Network - Check E-mail, Go Online, and Share Files

“The coverage is awesome,” said Aaron. “One router covers our entire flight line, administrative offices, and outlying areas. The area is 700 feet wide by 2300 feet long and includes multiple aircraft, carts, and other heavy equipment. There’s quite a bit of power.”

“The installation went flawlessly,” continued Aaron. “No problems. We now have the ability to do things that we never thought possible just because of a tactical limitation. But, I can’t say never because we had something called Inmarsat – a satellite, microwave communication system – but that costs the taxpayer \$7000 dollars an hour. Our investment with the D-Link equipment and protective cases has been about \$1000. \$300 for mobile ruggedized equipment and \$700 for the routers. The cost of ownership is incredibly low. The initial investment is incredibly low. The return on the investment is amazing.”

#### **Efficiency and Intelligence Plus Welfare and Recreation**

ROI for the project was difficult to measure. “Our job is to make sure that we are ready, able, and prepared to perform combat or civilian search and rescue,” explained Aaron. “Ultimately, the American tax payer pays our salaries. So, we need to make sure we’re efficient and intelligent with our money. This D-Link solution allows us to do both.”

The field teams also gain welfare and recreation benefits. “When the business day is over, the guys can unplug the network box, and run it off the tactical generator in their living quarters,” explained Aaron. “Sometimes we’re in the middle of nowhere, it’s freezing cold, and they have nothing to do. With this solution, the guys can talk to friends and family, catch up on email, and so forth. It’s important, as a soldier, to have that connection wherever you are.”

Aaron recommends the solution for all kinds of government agencies involved in field work, including firefighters, police departments, search and rescue, and forestry. “These days, everybody needs to be connected to perform at their best.”