



Transition

SBIR Topic Number:

AF93-039

Title:

Command and Control (C2) of Airlift Assets

Contract Number:

F19628-95-C-0013

Company Name:

ConnectedWireless Corporation (Formerly Systems & Processes Engineering Corporation (SPEC), Austin, TX

SBIR Technical Project Office:

Electronic Systems Center, Hanscom AFB, MA

Transition Office:

AF Expeditionary Battle Lab, Mountain Home, ID and US Navy Transportation Information Systems (TIS), NAVSEA – Indian Head – Surface Warfare Division

An example of Air Force supported SBIR technology that has been transitioned into an Air Force or other DoD system or subsystem or used by Air Force test ranges and facilities or maintenance depots.



Command and Control System Tracks Air Force/DoD Assets

- **Worldwide command and control of strategic airlift and refueling fleet is critical.**
- **A system was developed to track aircraft assets, cargo and crew both in the air and on the ground in near real-time.**
- **The SBIR supported tracking system has expanded its technology and applications and is now used by other DoD organizations for a number of asset tracking requirements.**

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Air Force Requirements

Faced with operations like Desert Storm and Iraqi Freedom the Air Force required a more effective means of providing Command and Control of its strategic airlift and refueling aircraft while transiting over remote and austere areas. Additionally, Air Force needed total asset visibility of the cargo and passengers being transported worldwide.

SBIR Technology

Using SBIR contracts, available commercial satellite communications (SATCOM), ConnectedWireless Corporation developed the Falcon Gateway System. This system is designed to "feed" the automated Command and Control (C2) Global Decision Support System (GDSS) providing effective mission management of the Air Materiel Command's fleet of airlifters, tankers and support aircraft with near-real-time aircraft/mission data including detailed cargo and passenger manifests.

With the success of the program, improvements were added that provided:

- GPS location of all aircraft assets worldwide
- A fully integrated Hand-Held Interrogator providing scanning of all 1D/2D Cargo labels, RFID Tags, and military ID cards
- And, a portable single-man/single-case "fly-a-way" version of the system to be used on all aircraft which lacked a cockpit-mounted system.

Air Force/DoD Technology Payoff

Immediately following the success of the SBIR Phase II, the USAF deployed the Falcon Gateway System aboard over 300 C-130, KC-10 and C-141 aircraft. During periods of Operation Iraqi Freedom the system was used to send over 30,000 messages per month between aircraft and critical Command and Control nodes providing an unprecedented level of connectivity, regardless of aircraft location worldwide. Air Mobility Command (AMC) used the system to provide a variety of aircraft mission data. "Registration", "Take Off", "Landing", "Three Hours Out", and "Free Text" messaging are all available message types between AMC's Tactical Airlift Control Center (TACC) at Scott AFB. Each aircraft system can also be set to deliver periodic "position reports" to the TACC, giving them precise location data for each tail number at any given time.

Recognizing the potential of this technology to provide total asset visibility of deploying ground forces, ConnectedWireless invested significantly to adapt the portable Falcon Gateway System to the U.S. Army's requirements. Following a successful field test in Nov 2002

in U.S. Army Europe, the Army fielded the newly designated Deployable Asset Visibility System (DAVS) to transportation units deployed in support of Operation Iraqi Freedom in Kuwait and Iraq. Designed to read/interrogate all forms of Automatic Identification Technology (AIT) and deliver that information to the RFID In-Transit Visibility Server, and Joint Deployment Logistics Module (JDLM), DAVS has given the Army a powerful theater distribution tool. For the first time, the Army has a fully deployable, single-case, single soldier "FedEx-like solution" to track shipments from "Factory to Foxhole" regardless of the austere location.

At about the same time ConnectedWireless was taking the DAVS solution to the Army, the USAF Expeditionary Battle Lab at Mountain Home AFB, Idaho contracted the company to provide two systems, designated as "DAVES" ("E" added for "expeditionary"), to help the Air Force Expeditionary Forces track items during rapid deployment. Also deployed to Iraq for operational testing, the DAVES capability enabled deployed forces to gather and transmit critical data such as passenger and cargo manifests from extremely austere sites. The results of this operational test are currently being evaluated.

Under the Advanced Technology for Ordnance Surveillance (ATOS) the Navy Research Lab contracted ConnectedWireless Corporation to adapt its Hand-Held Interrogator, initially developed under SBIR, to interrogate special radio frequency (RF) devices. The goal of the ATOS project was to provide ordnance managers the capability to accurately locate and determine the status of ammunition on a near-real-time basis while updating predictions of their future condition and performance. With the success of this "transition" project, ATOS is currently being evaluated to provide critical status of DoD Ordnance in storage, or pre-positioned stocks worldwide.

The impact from this basic Command and Control system that was originally funded through this SBIR has had a significant impact across DoD.

Company Impact

The Falcon Gateway and DAVS systems provided the impetus for the creation of ConnectedWireless, a wholly owned subsidiary of Systems & Processes Engineering Corporation (SPEC), the company that envisioned and executed the original SBIR contract. Growing rapidly with the concomitant rapid acceptance of these effective systems, ConnectedWireless Corporation has become a fast growing innovator in supply chain management hardware and software systems.



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