



## U.S. Navy Damage Control Communications

### The CoCo Damage Control Communications Solution

In early 2008, CoCo Communications Corp. (CoCo) was asked to assist in improving Damage Control Communications onboard U.S. Navy ships during emergencies. The CoCo solution was used to successfully complete the U.S. Navy's Advanced Damage Control Communications Experiment FY08 and FY09.

The goals in 2008 were:

- Interoperable voice communication between ship board WIFCOM LMR, PDA Communicators, and the U.S. Navy fleet.
- Voiceless communications via soft button status messages to be displayed remotely throughout the ship and the fleet over a military accepted encrypted network.

After successful testing in 2008, CoCo was requested to expand on those requirements in 2009 to include portable cameras, integrated soft buttons and voice functionality that included an easy display of that information anywhere throughout the ship or fleet.

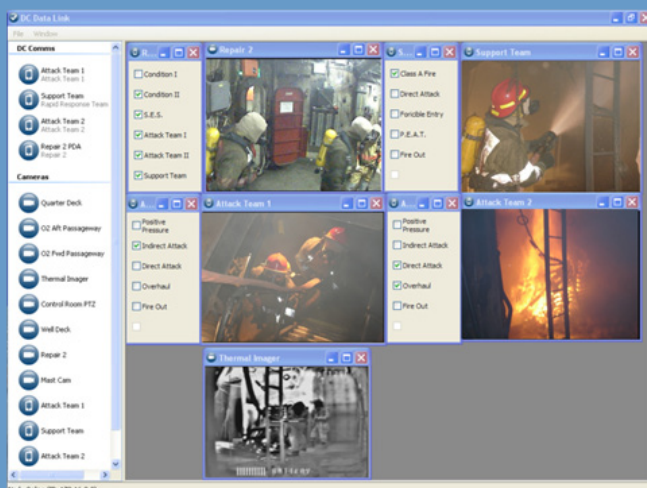
To complete these requirements CoCo expanded its CoCo® Communicator application. CoCo Communicator is a voice, video, and data softphone application designed for easy use on PDAs and PCs in mobile or tactical environments. CoCo created two custom applications that were integrated into CoCo Communicator:

- **DC Datalink (Damage Control Datalink)** - Simultaneous video streams from fixed cameras and CoCo Communicator PDAs are seen by the DC Datalink application located in DC Central (onboard ship) and on shore at the Naval Research Laboratory (NRL) in Washington DC.
- **DC Comms (Damage Control Communications)** - Soft buttons allow users to provide text based checklist status updates back to DC Central to augment voice and video communications.



***"The CoCo system is an awesome advancement, the console is easy to use and makes communicating faster and easier."***

- PSSN  
Damage Control Test  
Fire Attack Team 2 Leader  
PCU GRAVELY DDG 107



The CoCo DC Datalink application allows simultaneous video streaming from fixed camera assets and handheld devices to DC Central and NRL Washington D.C.

"Continuing to improve Damage Control (DC) techniques on Navy ships is an important Navy goal. The CoCo DC Comms system, which is a rapid deployable wireless system that enables secure, peer-to-peer, mobile ad-hoc networking capability for voice, data, and video imaging, has proven to be very successful in providing enhanced DC communication performance and real-time situation awareness during the conduct of damage control in a shipboard environment.

Many different communications technologies have been conceived and demonstrated in recent years, but few have improved capabilities or proved to be survivable in most DC environments. CoCo's solution significantly improves DC communications within the confines of a ship during DC action and supports Naval Power 21 and Sea Power 21 combat damage recoverability mandates."

-CDR, John Farley, U.S.N. (Ret.)  
Project Officer, ex-USS SHADWELL,  
Naval Research Laboratory (NRL)



## U.S. Navy Damage Control Communications

Boarding teams play a critical role in port security, harbor defense and coastal-warfare operations. A boarding party needs to rapidly set-up Tactical Edge Networks (TEN) that permit them to search for signs of dangerous and illegal materials, such as radiation, drugs, explosives, and other contraband while maintaining communications with headquarters and collaborating with remotely located experts.

### The CoCo Boarding Team Solution

The CoCo Boarding Team Solution for the U.S. Coast Guard, BT COMMS, is a wireless ad-hoc mesh network solution that mitigates traditional below-decks connectivity problems. BT COMMS works where traditional UHF/VHF voice radios do not, overcoming problems associated with conventional radio frequency repeaters. Our solution has been tested at the 2006 and 2007 Joint Interoperability Test Command's (JITC) DoD Interoperability Communications Exercise (DICE). BT COMMS will:

- Provide 100 percent connectivity in critical boarding areas during exercises on a variety of vessels.
- Is validated to the FIPS 140-2 certification standard and uses a cryptographic overlay mesh protocol that is loaded onto the system components, enabling scalable, mobile, secure and interoperable communication.
- Operate using 802.11 or other COTS radios enabling the transmission of voice, video and data.
- Are "transport agnostic" in that the mesh can incorporate any IP network technology (e.g., satellite, wireless, VHF, UHF or wired networks).
- Create a plug-and-play wide area adaptive network with global reach back capabilities.

Eliminate radio dark spots & line of sight obstructions: Ensure the safety of your boarding team by extending the backhaul connection from the "rail" to the most obscure nook or cranny.

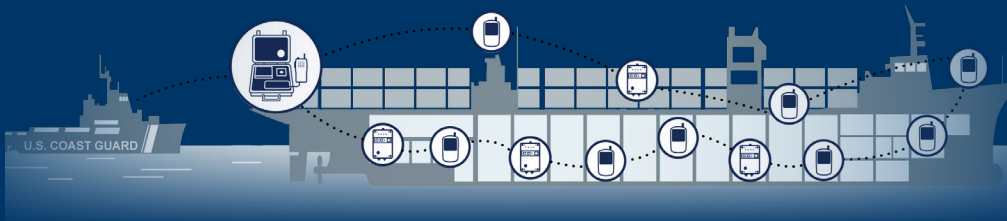
Extend your capabilities to the tactical edge of your network: Enable command and control to boarding teams for quick tactical response.

Enhance situational awareness to remote teams: Disseminate information gathered below deck during a boarding operation for real time decision making.



***"Regular VHF radio doesn't work below deck too well, but CoCo enables Coast Guard personnel to maintain 100 percent wireless connectivity."***

– LT Michael Doyal,  
U.S. Coast Guard



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