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UA software aids military in cataloging information

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During a six-month deployment, seamen on the USS Carl Vinson made about 14,000 log entries using UA-developed software that promises to simplify the way the **military catalogs information**.

The software, known as CommandNet, offers a "drop-dead easy" way of centrally organizing procedural log entries so they can be accessed by officers who need up-to-the-minute **information**, said Mark Adkins, director of research for the University of Arizona's Center for the Management of **Information**, or CMI.

Navy officials sought to standardize **information** technology programs and improve on the complex maze of phone calls, meetings and e-mails needed to assess the ship's activity and make decisions.

CommandNet combats this inefficiency with a centralized cache for **information** - a chronological series of log entries, or incidents, that can be categorized by security clearance, priority level and department.

"The key to CommandNet is to provide a systematic methodology of organizing **information** and present it in a manner that makes sense," Adkins said. "This technology shortens the decision-making cycle to increase situation awareness."

The CommandNet project began in 1995 with a \$1.3 million grant from the Defense Advanced Research Projects Agency, the central research and development organization for the Department of Defense, supplemented by \$500,000 from the Space and Naval Warfare Systems Center in San Diego.

Joining Adkins on the project are John Kruse, CMI research scientist, and Chris Steinmeyer, CMI senior programmer and computer science senior.

Over the past five years, Adkins spent more than 500 days at sea on Navy ships, and Kruse logged more than 300.

During their time at sea, Adkins and Kruse observed and researched the **information** needs of the Navy to understand the environment and its constraints on computer systems.

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For example, security requirements and low capacity for transferring **information** between computers prevent essentially all market software from being used on a ship.

"No commercial organization could function under those constraints," Adkins said.

The challenge was to provide the Navy with simple, effective software that would centralize **information** on a ship or among a fleet without changing the secure environment.

Much of the software on ships was designed by large companies that threw in more features than were needed. They were "functional but complex beyond most needs," Kruse said. "Simpler programs have greater user acceptance."

CommandNet is a Web browser that connects computer stations to a central server.

By streamlining the way the workstations interact with the server, CommandNet can operate under the "super-thin bandwidth" constraints on Navy ships.

For example, during prototype testing, the CommandNet computer on a ship in the Middle East could effectively access the server on the UA campus with a simple 56K modem.

The browser updates every minute, and the program is searchable and simple to use without any training.

"People in the Navy are taught from the lowest level to keep track of everything," Kruse said. "Sailors can just rock on this."

Currently deployed on six of the Navy's 12 carriers, CommandNet is flexible enough to be tailored to other branches of the **military**. Adkins envisions future applications in law enforcement and national security, perhaps even adapted to personal desk assistant type computers.

"CommandNet is a component of a new concept of coordinated **information**," Adkins said. "Why is a simple logging tool a big deal? Everybody does logs as routine, and with this they can extract key pieces of **information** and make it useful."

Capt. Scot Miller, who has worked with Adkins throughout the CommandNet program, said it offers a shared common awareness aboard a ship.

"It's simplistic yet has actually allowed a much greater understanding of how and what others are thinking," Miller said. "It doesn't seem very sophisticated, but a lot of work went into making it look like that."

In the long run, Miller said he hopes CommandNet will have a place in a more collaborative Department of Defense atmosphere.

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