

# CHIPS

## MAGAZINE



January - March  
2006



### THE NAVY AND MARINE CORPS TEAM

*Assisting Our Friends and Allies Around the World*



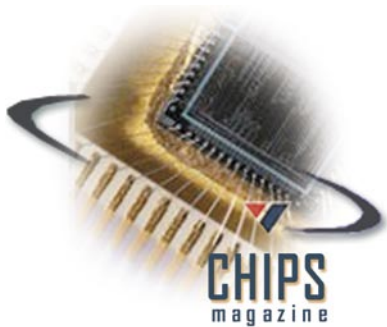
**SHARING INFORMATION, TECHNOLOGY, EXPERIENCE**

# Features

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Page 6

*"Naval Expeditionary Combat Command will develop the expeditionary Sailor to work in the near-coast, near-inshore, and inland waterways to provide a secure maritime environment for the flow of forces and logistics."*

Adm. John B. Nathman  
Commander, U.S. Fleet Forces Command  
Commander, U.S. Atlantic Fleet



Page 8

*"...Trident Warrior 05 provides essential insights into the systems and associated techniques, tactics and procedures that are fundamental to delivering FORCENet to our operational forces."*

Rear Adm. Kenneth William Deutsch  
CNO Net-Centric Warfare Division (N71)



Page 12

*"Space is the indispensable lifeline for a forward-deployed, 21st century Naval Force."*

Rear Adm. Victor See Jr.  
Director, Communications Systems  
Acquisition and Operations Directorate,  
National Reconnaissance Office  
Commander, SPAWAR Space Field Activity  
PEO Space Systems



Page 18

*"All of our people are benefiting from Task Force Navy Family and many are using its services. Simply knowing that TFNF is available is a great relief because we know that the Navy cares."*

Capt. Fred Mingo  
Commanding Officer, SPAWAR Systems  
Center New Orleans



# CHIPS Jan - Mar 2006

Volume XXIV Issue I

- 
- 4 **Editor's Notebook**  
By Sharon Anderson
- 5 **From the DON CIO**  
By Dave Wennergren
- 6 **Interview with Adm. John B. Nathman**  
Commander, U.S. Fleet Forces Command  
Commander, U.S. Atlantic Fleet
- 7 **Department of the Navy Announcement**
- 8 **Interview with Rear Adm. Kenneth William Deutsch**  
CNO Net-Centric Warfare Division (N71)
- 10 **Interview with Capt. Sinclair M. Harris**  
Commodore Amphibious Squadron Four
- 11 **Interview with Canadian Navy Cmdr. Paul Dempsey**  
Commanding Officer HMCS Montreal
- 12 **Interview with Rear Adm. Victor See Jr.**  
Director, Communications Systems Acquisition and  
Operations Directorate, NRO  
Commander, SPAWAR Space Field Activity  
PEO Space Systems
- 16 **Find Your Role, Do Your Part**  
By JO1 (SW) Mike Jones
- 18 **Interview with Capt. Fred Mingo**  
Commanding Officer, SCC New Orleans
- 22 **DON CIP 101 – Maintaining Mission Assurance**  
By Don Reiter
- 23 **TFNF Still Assisting Navy Families**  
By Lt. Enid Wilson
- 24 **Carrier Strike Group Twelve Sponsors Fleet/Joint/  
Coalition Testing of Open Standards Chat Tool**  
By Cmdr. Danellé Barrett
- 28 **Cryptographic Log-on ... Coming Soon**  
By James Mauck
- 29 **Multi-User ECP Automated Review System**  
By John Rogers
- 30 **The Office of Naval Research and the Naval Research  
Laboratory Experimentation in Underwater Acoustic  
Communications Research**  
By U.S. Navy Reserve Cmdr. Michael T. McCord
- 32 **USMC Plan for Information Technology Management**  
By U.S. Marine Corps Col. Paul Hilton
- 34 **Life in and around the Green Zone**  
By Andrew Poe
- 35 **FORCenet Engineering Conference Announcement**
- 36 **Leveraging Biomedical Knowledge to Enhance  
Homeland Defense, Submarine Medicine and  
Warfighter Performance at Naval Submarine Medical  
Research Laboratory**  
By Capt. (Dr.) J. Christopher Daniel
- 40 **Unlicensed Radio Frequency Devices**  
By the DON CIO Spectrum Team
- 42 **The Lazy Person's Guide to  
Controlling Technologies - Part III**  
By Retired Air Force Maj. Dale J. Long
- 44 **CHIPS Article Submission Guidelines**
- 45 **Under The Contract**  
By the DON IT Umbrella Program Team

On the covers: The Navy and Marine Corps team assisting in humanitarian aid around the world and in support of the global war on terror. All cover photos are U.S. Navy official photos available from Navy NewsStand.

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## Editor's Notebook

The theme for this issue of *CHIPS* has more to do with people than technology — a huge shift in focus for the Navy's information technology magazine. Recently, Chief of Naval Operations Adm. Mike Mullen said that technology should be incidental to the mission — that Sailors should be at the center of the naval enterprise. He said that technology is the catalyst, but the power comes from people and how they team together to make things happen. "We have the best Navy in the world not because of the stuff we have — but because of the people we have," Adm. Mullen said.

This was ably demonstrated by the Navy and her sister services in the rescue and recovery operations in New Orleans and the Gulf Coast — and the continuing assistance to Pakistan through the Combined Disaster Assistance Center (DAC) Pakistan (PAK). DAC-PAK, led by U.S. Navy Rear Adm. Michael LeFever, is comprised of a force of more than 800 U.S. military personnel assisting the government of Pakistan in providing medical care, airlift capabilities and construction support to the victims of the devastating Oct. 8 earthquake that killed an estimated 75,000 people in the mountainous region of Kashmir.

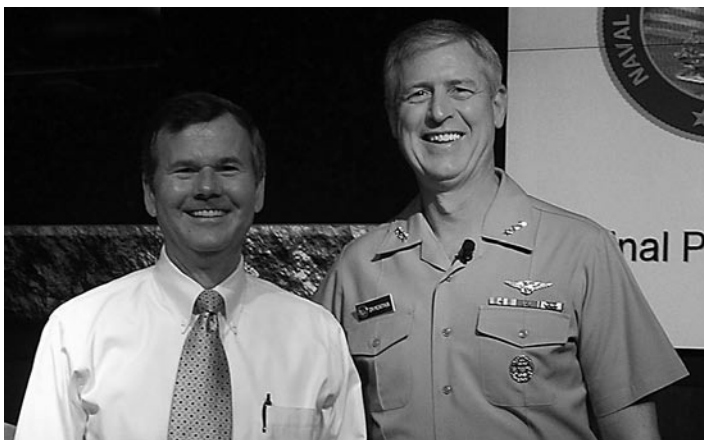
On the home front, I talked with Capt. Richard Callas, commanding officer of USS *Iwo Jima* (LHD 7), about how the ship's crew generously assisted in humanitarian relief efforts in New Orleans and the Gulf Coast. Another highlight was talking with Capt. Fred Mingo, commanding officer of the Space and Naval Warfare Systems Center New Orleans, about how he and his employees valiantly continued operations in the face of Hurricanes Katrina and Rita. You will find their fascinating stories in this issue.

In December, the *CHIPS* staff were keen observers of the exciting Trident Warrior 2005 experiment and met with many members of the AUSCANNZUKUS (Australia, Canada, New Zealand, United Kingdom and United States) alliance.

It's a privilege to meet so many good people committed to the mission and values of the U.S. Navy.

Welcome new subscribers!

Sharon Anderson



*Royal New Zealand Navy Commodore Pat Williams, New Zealand Defense and Naval Attache to the United States, and U.S. Navy Rear Adm. William Rodriguez, Acting Commander, Space and Naval Warfare Systems Command (SPAWAR), at the execution meeting for Trident Warrior 2005 (TW05), Dec. 1 in Norfolk, Va.*



*In the operations center onboard USS Iwo Jima (LHD 7) during TW05, 2nd Fleet's Cmdr. John Gray (left) and Cmdr. Rex Rolls explained 2nd Fleet's distributed staff concept with reach-back elements for optimizing situational awareness.*

*Right: Watchstander, OCS (SW) Douglas Moody onboard USS Iwo Jima during TW05. At left: SPAWAR Systems Center Charleston Executive Director James Ward and Commander, Naval Network Warfare Command Vice Adm. James McArthur at the TW05 Working Group session in the Tidewater Node of the FORCENet Composeable Environment (FnCE) October 2005. The FnCE is a network of SPAWAR labs providing end-to-end testing of subsets of FORCENet systems.*





*Strategic Plan and Excellence Awards Showcase DON IM and IT Successes*

The Department of the Navy has embraced a culture of transformation that is evident in the Department's many successes over the last year. Some of these successes are summarized in the new DON Information Management (IM) and Information Technology (IT) Strategic Plan for FY 2006 – 2007. The IM and IT mission, governing principles and the six goals with applicable success stories, support the vision of a Naval warfighting team armed with the secure, assured, accurate, and timely information to fight and win. I encourage you to read the Strategic Plan, available on the DON CIO Web site at <http://www.doncio.navy.mil>, and make it the keystone document that drives planning and execution for your IM and IT initiatives this year.

Several specific Navy and Marine Corps successes have been recognized as particularly noteworthy. We recognized these achievements with the DON IM/IT Excellence Awards, which were presented at WEST 2006, co-sponsored by AFCEA International and the U.S. Naval Institute, held in January in San Diego, Calif. The winning teams and individuals listed below embody the spirit of DON IM and IT excellence.

- Capt. Fred Mingo, for his exemplary Leadership and commitment to people and mission as commanding officer of the Space and Naval Warfare Systems Center New Orleans, in the preparation and superb response to Hurricane Katrina.
- CWO2 Arthur DeLeon from Headquarters Marine Corps for Leadership in achieving a superb level of efficiency and positive operational impact in spectrum management.
- Tactical Training Group Pacific Network Centric Warfare Syndicate for Knowledge Superiority in its training and mentoring efforts to increase the effectiveness of information and knowledge flows throughout the Strike Group.
- Information Assurance (IA) Workforce Working Group Training Tiger Team for Workforce Management for launching an IA training initiative affecting virtually every command across the Department, to transform how we train, certify and manage the IA component of the IM/IT workforce.
- Cyber Condition ZEBRA Crisis Action Team led by the Naval Network Warfare Command for Mission Assurance in increasing the security of Navy legacy networks by eliminating known vulnerabilities, improving the IA architecture, enforcing policy compliance and accelerating migration to Enterprise networks.
- SPAWAR IT Networks Support Team for the USS Ronald Reagan for Efficiency in the technical repairs, upgrades and testing that enabled critical infrastructure improvements to the ships IT networks.
- The Medical Readiness Reporting System Team for Innovation in implementing improvements that have allowed the Navy Reserve to lead the way in individual medical readiness reporting and immunization tracking and reporting.
- Task Force Navy Family's Knowledge Management Team for Knowledge Superiority in quickly establishing a suite of tools to assess the needs and provide assistance to more than 26,000 Navy families affected by Hurricanes Katrina, Rita and Wilma.

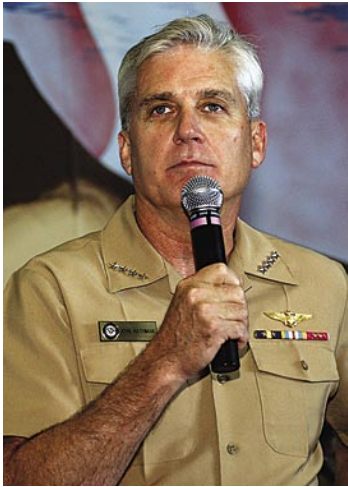
As we look back over the last year, we celebrate our past successes, but do not rest on them. We look forward to building on these successes as we continue to chart the course for effective information management for the Naval warfighting team.

Happy New Year!

Dave Wennergren



**DEPARTMENT OF THE NAVY - CHIEF INFORMATION OFFICER**  
**W W W . D O N C I O . N A V Y . M I L**



# Admiral John B. Nathman

## Commander, U.S. Fleet Forces Command

## Commander, U.S. Atlantic Fleet

*The challenges of the last few months with the continuing global war on terror, and rescue and relief operations on the Gulf Coast and in Pakistan have shown that Navy capabilities are versatile and agile. In view of the Navy's superb response, CHIPS asked Adm. Nathman to talk about the Fleet Response Plan (FRP) and lessons learned from humanitarian assistance efforts and the global war on terror.*

*CHIPS: Will there be changes to the Fleet Response Plan in view of the lessons learned from the diversity of requirements the Navy responded to in the last year?*

**Adm. Nathman:** The Navy's response to taskings both in combat operations and the most recent domestic humanitarian aid and disaster relief missions were timely and effective. The Fleet Response Plan meets both rotational and surge needs. We continually review lessons learned from all quadrants in order to evaluate the Navy's responsiveness to any tasking and adjust as necessary. For instance, we are expanding the FRP idea from the original strike group focus to include all types of deployable forces.

*CHIPS: In view of the outstanding job by the armed services in relief efforts, do you think the services will play a more prominent role in natural disaster preparedness and recovery operations?*

**Adm. Nathman:** Defending the U.S. homeland and conducting major combat operations, as well as the ability to respond to natural disasters always influence our planning. As I noted in response to your last question, we will study closely all the lessons learned from Katrina and, if indicated, make recommendations to our chain of command regarding training and readiness matters.

*CHIPS: Do you see the Navy's role in homeland security and defense expanding?*

**Adm. Nathman:** The Navy is already heavily engaged in homeland defense. A forward-postured Navy is an essential component of defending American soil and American interests. Most agree our nation reaps big dividends by having U.S. Navy ships forward deployed. Homeland defense benefits from ensuring stability on the seas and in protecting against would-be aggressors from entering the United States via the world's oceans.

*CHIPS: You mentioned in your October 2005 brief to a U.S. Naval Institute audience in Norfolk, Va., that you are looking at providing Sailors with more Marine-like skills. What kind of training would this be?*

**Adm. Nathman:** Naval Expeditionary Combat Command will

develop the expeditionary Sailor to work in the near-coast, near-inshore, and inland waterways to provide a secure maritime environment for the flow of forces and logistics. These expeditionary Sailors will bridge the gap between the 'blue water' Navy and the Marine Corps' offensive force capability to provide an enhanced secure maritime environment for coastal operations.

The term 'expeditionary' captures the essence of U.S. national security strategy this past century and takes on added importance in view of the ongoing global war on terrorism — countering military threats overseas rather than on American shores. Additionally, it extends from traditional environments into the littoral and brown (riverine) water — and any areas where there is a need for maritime influence.

The Marines have always been, and remain, the nation's Naval Infantry. The concept of providing expeditionary Sailors with additional skills to cope with the threats of the post 9-11 world is simply meant as a way to ensure our Sailors can get their jobs done with little to no outside assistance.

*CHIPS: What do you think are the focus areas for the Navy to sustain global maritime dominance?*

**Adm. Nathman:** America's combatant commanders are signaling a growing need for two broad categories of capabilities from the U.S. Navy: (1) deterrence, influence and shaping, and (2) maritime security. Every free nation has an interest in keeping the sea lanes open and safe. The U.S. Navy plays a lead role in this important task around the globe. It is important that the world sees our Navy as capable and responsive, and it is equally important we continue to work with allied countries to maintain a partnership that keeps the sea lanes open.

*CHIPS: You talked about maritime security being a common interest among nations worldwide. Can you talk about some of the initiatives to promote security in this area?*

**Adm. Nathman:** The U.S. Navy is able to strengthen maritime domain awareness with our partners, and we do this through regional maritime security initiatives. Some of these focus on improving interoperability with coalition partners, with other agencies and non-governmental organizations, for example.

“It is paramount we find innovative ways to decrease the time it takes to go from design to production and also ways to afford the numbers of ships and aircraft the nation will need for the 21st century.”

– Adm. John B. Nathman

When you sit back and think about the entire global maritime domain, it is clear that we need a broad, cooperative network of maritime nations to assure security in this particular domain.

*CHIPS: You mentioned the Navy’s ability to dissuade and deter potential adversaries. How does the Navy do this?*

**Adm. Nathman:** The U.S. Navy is optimally poised to positively influence maritime nations. The key to successful dissuasion and deterrence is having the capability and credibility to deliver overwhelming effect if necessary. This really translates into having a highly trained Navy that is visible, forward deployed and ready to carry the fight at short notice.

*CHIPS: Can you talk about the current Quadrennial Defense Review?*

**Adm. Nathman:** The Quadrennial Defense Review will address many complex issues, and those entrusted to make the final decisions understand the enormous consequences for the future of our nation. For instance, they realize the necessity to look beyond Iraq. As the clout of some regional powers increases, so does the need for American forces to influence, dissuade, deter and, if necessary, dominate. The QDR itself will provide a roadmap that will help shape the size and capabilities of tomorrow’s Navy.

*CHIPS: What are your thoughts on building the future fleet including air assets and shore infrastructure?*

**Adm. Nathman:** Today, the Navy faces tremendous challenges in building ships and aircraft that will be both effective and affordable. It is imperative our nation keeps a strong industrial base that can turn out quality products to our Navy.

A key concern continues to be quick advances in technology. It is paramount we find innovative ways to decrease the time it takes to go from design to production and also ways to afford the numbers of ships and aircraft the nation will need for the 21st century. We will also need a deeper understanding of our installations readiness. We have developed a 25-year plan capable of supporting Sea Power 21, the Integrated Global Presence and Basing Strategy and the Fleet Response Plan.

*Photo of Adm. John B. Nathman taken in the Gulf of Mexico Sept. 7, 2005. Adm. Nathman addressed the crew of the Nimitz-class aircraft carrier USS Harry S. Truman (CVN 75). During his visit to Truman, Nathman thanked Sailors for their continuing efforts in providing hurricane relief along the U.S. Gulf Coast. U.S. Navy photo by PH3 Lilliana LeVende.*

CHIPS

## DON IM/IT Sessions

at

### AFCEA Transformation TechNet

May 8-10, 2006 in Hampton, Va.

The Department of the Navy Chief Information Officer (DON CIO) will be leading Information Management (IM) and Information Technology (IT) sessions at the AFCEA Transformation TechNet Conference in Hampton, Va. The general conference is scheduled for May 9-10 with DON CIO sessions starting a day earlier on May 8.

Due to the location in fleet concentration areas, the DON CIO has decided to use two conferences — WEST in San Diego and Transformation TechNet in Hampton — as opportunities to communicate DON IT guidance and initiatives through tracks and sessions as part of these conferences.

The DON CIO-led sessions will be open to all attendees and topics to be addressed include: Enterprise Software, Software Asset Management, System Integration Services, the DON IM/IT Workforce, Enterprise Architecture, Data Management, Information Assurance, IT Performance Measurement, Knowledge Management, Telecommunications, Spectrum, Wireless, and guidelines for ordering software using the DON IT Umbrella Program.

Additionally, there will be an IM/IT Community Town Hall meeting with Mr. David Wennergren, DON CIO.

During the conference, the DON CIO will be presenting the second round of the 2006 DON IM/IT Excellence Awards. The first round of the 2006 awards was presented at WEST in San Diego (see the DON CIO column on page 5 for a list of winners). These awards, formerly called the DON eGov Awards, recognize excellence in IM, IT and knowledge sharing among Navy and Marine Corps teams and individuals.

The conference will be held at the Hampton Roads Convention Center. There is no cost for government and military personnel for the general conference, but registration is required. The agenda for the DON CIO-led sessions and the DON IM/IT Excellence Award nomination criteria are available on the DON CIO Web site at <http://www.doncio.navy.mil/>.

The overall conference agenda and registration details for events as required, are available by accessing the AFCEA Transformation TechNet Web site at <http://www.afcea.org/events/transformation/>.

Please join us!

CHIPS

# Interview with Rear Admiral Kenneth William Deutsch Chief of Naval Operations, Net-Centric Warfare Division (N71)



CNO N71 provides Navy Space and Electronic Warfare Leadership, Vision, Policy and Resources in support of Naval, Joint and Combined Operating Forces. As the resource sponsor for Trident Warrior 2005 (TW05), the Navy's annual FORCENet Sea Trial experiment, CNO N71 rigorously examines the independent analysis of the TW experiments to make strategic resource allocation decisions for building future warfighting capabilities. CHIPS asked Rear Adm. Deutsch to talk about some of the areas of TW that are under particular scrutiny.

Rear Adm. Deutsch: First let me thank you for the opportunity to discuss the great things that we are doing in FORCENet with respect to experimentation. In my role as a resource sponsor, experimentation helps form the budget process by providing an assessment of how both material and non-material solutions impact warfighting effectiveness. In the current fiscally constrained environment, the Navy needs this type of information before making investment decisions.

My focus is on the systems and processes that empower commanders to make better decisions faster and to see the effects of those decisions more rapidly. For example, looking at the improved battlespace awareness that Global Hawk can provide, the fusion of information that Network Centric Collaborative Targeting (NCCT) facilitates, how to better integrate our allies and the increased reliability, flexibility and throughput that Automated Digital Network System (ADNS) Increment IIA delivers. More importantly, I am interested in putting in place the relevant processes that optimize these advances in technology.

*CHIPS: Can you talk about some of the things that you would like to see improved in the fleet regarding joint operations?*

Rear Adm. Deutsch: The CNO's Guidance for 2006 emphasizes 'Jointness.' There is an increasing requirement for interoperability and cooperation among the services, interagency, international partners and non-governmental organizations. This will require overcoming the current impediments to seamless joint operations like the lack of an accurate Common Operational Picture (COP) that provides a level of situational awareness for the warfighter across all U.S. Navy joint partners, including the need to improve the capability to select, receive and display Blue Force Tracking data.

We need to provide the warfighter with a capability to identify and track friendly forces in assigned areas of operations. We also need to improve the ability to collaborate in a timely manner across all elements of the 'Joint' force. This drives the need to modernize both security policies, which govern information sharing, and delivery of supporting systems.

*CHIPS: What are some of the ways that N71 works with the AUSCANNZUKUS (Australia, Canada, New Zealand, United Kingdom and United States) Naval C4 organization?*

Rear Adm. Deutsch: The AUSCANNZUKUS Supervisory Board is made up of flag officers drawn from the national policy or operational requirement authorities from each of the AUSCANNZUKUS nations. This Board meets annually to endorse policy and resource allocation proposed by the C4 Committee, and provides top-level guidance to the organization.

As N71, I chair this Supervisory Board, which provides an effective forum for sharing knowledge between allied nations, allowing risks to interoperability to be quickly identified and new technologies that can ameliorate these risks to be taken forward. AUSCANNZUKUS has been closely involved in the development of coalition Internet Protocol (IP) networking over the past few years, taking the lead role in the development of the Allied Maritime Tactical Wide Area Networking guidance publication, Allied Communications Publication 200 (ACP200), experimentation and several standardization documents.

*CHIPS: What are some of the technologies that our partners will be evaluating? How did you work together during TW05?*

Rear Adm. Deutsch: The AUSCANNZUKUS Experimentation Working Group (EWG) designed and executed 18 coalition initiatives focusing on three thematic areas that are considered critical for conducting networked information sharing with our Coalition partners:

- Extending the information sharing network to non-satellite fitted units through Line of Sight (LOS) networking technologies;
- Ensuring applications that are critical to the warfighter operate effectively across the LOS networks; and
- Validating policies and procedures for operating in an Allied Maritime Tactical Wide Area Network (AMT WAN) through ACP200.

Using a combination of satellite and LOS technologies, we formed a robust tactical network that connected nine coalition warships, literally, across the globe. From HMNZS Te Mana, off the coast of New Zealand, through HMS Iron Duke alongside Portsmouth, England and into virtual platforms in Sydney, Australia and Auckland, New Zealand, all connected seamlessly to Canadian and U.S. ships operating off Norfolk, Va.



“... Trident Warrior 05 provides essential insights into the systems and associated techniques, tactics and procedures that are fundamental to delivering FORCENet to our operational forces.”

– Rear Adm. Kenneth William Deutsch

In addition, specific areas evaluated were Subnet Relay (SNR), HF IP, JPEG 2000 Interactive Protocol (JPIP) imagery transfer, Sigaba Interop Express (encrypted e-mail) and Peribits WAN Accelerator. We also validated doctrine within the guide for the Allied Maritime Tactical Wide Area Network contained in Allied Communications Publication 200.

*CHIPS: Given the emphasis on coalition operations, do you think that interoperability has improved when the U.S. Navy works with coalition navies in global operations?*

Rear Adm. Deutsch: Before I answer that, I must point out that, if history tells us anything, it is that successful coalition interoperability will be critical to the success of future Navy missions. As N71, I am committed to continuing to build on our existing ability to work with all our potential partners. However, we should recognize that not all our potential coalition partners will have the same C4 technical capability as the U.S. Navy nor are they all as politically willing to work closely with the U.S. Navy.

Our future FORCENet architecture must recognize this reality and be flexible enough to accommodate partners at the level we find them. This in effect means a range of C4 solutions to allow partners to interoperate at the appropriate level. Some nations will seek integration with the U.S. Navy, others will interoperate at a lesser capability.

In answer to your question, I believe that maritime C4 interoperability between the U.S. Navy and its partners is probably at its highest level ever. This is a result of many years of evolutionary developments including traditional military messaging and deployment of improved interoperable tactical data links, combat identification and secure voice systems.

I would particularly note the growth at sea of interoperable IP-based networks such as the Combined Enterprise Regional Information Exchange System (CENTRIXS) over the last five years.

Through bilateral and multilateral efforts, such as Coalition Warrior Interoperability Demonstration (CWID) and Trident Warrior exercises or real world operations, we continue to investigate and develop new ways of working with our partners.

*CHIPS: How do the coalition navies rate our efforts to improve interoperable communications?*

Rear Adm. Deutsch: You will have to ask our allies to report on their assessment of our efforts. We have, however, put money



*Some of the AUSCANNZUKUS members who participated in TW05 from left – Canadian Navy Lt. Cmdr. Rob Sibbald, C4 Interoperability Project Officer AUSCANNZUKUS Naval C4; Canadian Navy Lt. Cmdr. Ken Dufour, Directorate Maritime Requirements; Australian Royal Navy Warrant Officer Andrew Kirkpatrick, Officer in Charge Defense Communications; Royal Navy Lt. Cmdr. Steve Beaumont, Fleet CIS-N6 Interoperability; and Royal New Zealand Navy Lt. Cmdr. Murray Tuffin, Director of Naval C4I at a TW05 planning session October 2005 in Norfolk, Va.*

into this area recently in response to lessons from Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF), and hopefully our efforts are recognized! From discussions I have had with allied flag officers, we believe that key areas to improve in the medium term include:

- Building a coherent combined and joint common operational picture.
- Improving allied blue force situational awareness.
- Achieving data standardization between nations.
- Strengthening the allied IP network by establishing multiple paths and removing single points of failure.
- Growing our overall network capacity.
- Migrating over the next five years to new military messaging systems.
- Improving information flow between national and coalition domains by developing better cross-domain solutions.

*CHIPS: What is your overall assessment of Trident Warrior 05?*

Rear Adm. Deutsch: Pending completion of the data collection and analysis and subsequent formal Military Utility Assessment (MUA), at first look, TW05 appears to have been a very successful experiment, demonstrating the ability to form, connect and sustain a five-nation Coalition Task Group to successfully support a tactical global war on terror (GWOT) scenario.

There are major benefits to putting technologies and processes into an at sea experiment such as the opportunity for interaction between the systems developers, technical experts and shipboard operators. Most significantly, Trident Warrior 05 provides essential insights into the systems and associated techniques, tactics and procedures that are fundamental to delivering FORCENet to our operational forces.

CHIPS

# Interview with Capt. Sinclair M. Harris Commodore Amphibious Squadron Four

Commodore Harris talks about COMPHIBRON Four and the 24th MEU and their role in Trident Warrior 2005

Commander, Amphibious Squadron Four is responsible for the tactical employment of the ships from the Iwo Jima Strike Group. Under Commander, Second Fleet these ships participated in TW05: USS Iwo Jima (LHD 7), USS Nashville (LPD 13), USS Philippine Sea (CG 58), USS Bulkeley (DDG 84), USS Cole (DDG 67) with the 24th Marine Expeditionary Unit - Special Operations Capable (MEU-SOC). Allied partners from Australia, Canada, New Zealand and the United Kingdom participated in Trident Warrior 2005 (TW05) in port and underway in the Virginia Capes Operating Area. Allied ships included HMS Iron Duke (pierside Portsmouth, England), HMCS Fredericton, HMCS Montreal, HMNZS Te mana and HMNZS Waka (operating in coastal areas off New Zealand and a shore-based mock-up in Sydney, Australia to simulate HMAS Perth).

**CHIPS:** COMPHIBRON Four has a challenging schedule. Is it hard on the crew to participate in an experiment like TW05?

**CDRE Harris:** It does add more to the plate of all the Sailors in the Iwo Strike Group given the many competing requirements from disaster relief efforts in support of Joint Task Force Katrina, to completion of basic and intermediate training events to prepare for deployment, but the Space and Naval Warfare Systems Command (SPAWAR) team have been working well with the ship's force to make the installation process very smooth.



U.S. Marine Corps Lt. Col. Michael Saleh, operations officer, 24th Marine Expeditionary Unit (left) and Capt. Sinclair Harris, commodore, Amphibious Squadron Four at a Trident Warrior 2005 planning conference Oct. 18, 2005.

The crew likes the new technologies, some of the new technologies have been onboard six months or more. It's also a good chance for the crew to train.

**CHIPS:** There are multiple players in the TW05 looking at 120 objectives. What are some of your objectives?

**CDRE Harris:** Our main goal is to support the testing of the new FORCEnet systems by operating as much as possible in the way we will during normal operations and allowing the observers to glean all the data possible. This is the first time that the Iwo Jima Strike Group has sailed together, so we look at this as Group Sail 'Zero' and will concentrate on three objectives on a not to interfere basis with TW05 objectives: (1) Ring out communications issues between units and begin to build cohesion between the ships that will make up the Iwo Jima Strike Group; (2) Maximize the amount of Marine aircraft flight deck qualification possible; and (3) Continue individual unit level training progress.

**CHIPS:** How well did you work with the 24th MEU?

**CDRE Harris:** The missions that we used to test the FORCEnet systems in TW05 are ones that commonly call for the MEU and am-

phibious squadron to work in a supporting-supported relationship. Marine Air and Special Ops units would perform missions that we plan together with the MEU command element on the Iwo. Thus, the MEU-PHIBRON team will generate a demand signal for information that we need for mission planning and execution.

**CHIPS:** How were communications with the AUSCANNZUKUS (Australia, Canada, New Zealand, United Kingdom and United States) navies during TW05?

**CDRE Harris:** I knew things were going well with the network when I saw the same situational awareness picture on HMCS Montreal that was on the battlewatch screens on Iwo Jima.

**CHIPS:** How important is it to be able to work with the coalition?

**CDRE Harris:** It's vital to deploy with the coalition. You want to go to sea with the people that you would go to war with, especially our closest allies. You want to make sure that you have a common ops picture and mutual situational awareness. For communications we used CENTRIXS (Combined Enterprise Regional Information Exchange System) and the CNF domain for chat, e-mail and Internet browsing.

**CHIPS:** How does PHIBRON Four work with the 2nd Fleet staff?

**CDRE Harris:** We execute the missions and provide detailed plans as directed by the Joint Force Maritime Component Commander (JFMCC) who is Commander, Second Fleet.

After approval of our concept of operations (CONOPS), we keep the JFMCC apprised of how the operation is proceeding. In TW05, Royal Navy Commodore Steve Cleary, Deputy Director Second Fleet, was the JFMCC.

CHIPS

# Interview with Canadian Navy Cmdr. Paul Dempsey

## Commanding Officer HMCS Montreal

*Trident Warrior 2005 (TW05) provided an exciting opportunity to talk with members of the AUSCANNZUKUS (Australia, Canada, New Zealand, United Kingdom and United States) alliance, including the Commanding Officer of HMCS Montreal, Cmdr. Paul Dempsey and his staff during TW05 execution. Cmdr. Dempsey and his crew gave guests and TW05 stakeholders a tour of the Montreal and explained the significance of their participation in TW05 and the technologies they were testing for coalition interoperability.*

Cmdr. Dempsey: Canada is here to gain insight and a better appreciation into some of the products and technologies that the U.S. Navy is developing with the aim of improving coalition interoperability. Our goal is to ensure that Canada remains an effective coalition partner in whatever the operation may be.

At the operator level, TW provides HMCS Montreal the opportunity to provide feedback on the potential utility of the products under evaluation. When we see things that are working well, we can let our American friends know, but conversely, when things are not working as anticipated we can also give that feedback. In sum, Trident Warrior provides for a good exchange of information and excellent insight as to where the U.S. Navy is leaning in the development of new technologies.

*CHIPS: Is this the first year that Canada has participated in TW?*

Cmdr. Dempsey: TW05 is the first time that any allied nation participated. In TW04, AUSCANNZUKUS had observer status and was invited to fully participate in TW05. HMCS Montreal was a major portion of Canada's contribution to its AUSCANNZUKUS obligations. The invitation to AUSCANNZUKUS has been extended again and was accepted for TW06.

*CHIPS: How is this training going to benefit your sailors?*

Cmdr. Dempsey: Any time you get to sea the training is beneficial; it is 'hands-on'; it is operators using their skills. The thing that is really important is that our operators are developing their appreciation and understanding of the potential advantages that this technology brings to coalition operations. Maritime operations are often constrained due to limited bandwidth available for exchange of tactical information at sea. Once fully developed, the technologies on trial during TW will enable ships to take better advantages of the bandwidth available and thus, pass more information more quickly. And, by extension, we will be faster and more effective in delivering capabilities in support of the mission.

Ultimately, that is what this is about, bringing rapid effect for the desired end-state through superior technology. New and developing products, such as those being evaluated during TW, will better position the Canadian Navy to bring our capabilities to bear when required.

*CHIPS: Will the new technologies be affordable to other navies?*

Cmdr. Dempsey: I think it is clear that not all navies are created equally. There are large and small navies. There are resource



*On the bridge of HMCS Montreal Dec. 2, 2005 (L-R) – Canadian Navy Lt. Elise Cote, Assistant Combat Systems Engineering Officer; Cmdr. Paul Dempsey, HMCS Montreal Commanding Officer; Lt. Cmdr. Chris Peschke, Executive Officer; Lt. Richard Lane, Combat Officer; and Lt. Danny Croucher, Combat Systems Engineer Officer.*

constraints that some navies have to work under more so than other navies. And, there are different mentalities and different cultures. I think the U.S. Navy is one of the leading navies when it comes to exploring the potential of technology because of its available resources and the priority that leadership places on developing technical advantage.

For a smaller navy like Canada, the opportunity to be involved at this stage of product development enables us to leverage limited resources to optimum advantage. As well, I believe that similarly sized navies can realize value through Canada's participation in TW. As the potential of these technologies is realized, the Canadian Navy can act as a gateway or conduit to advance these technologies to other coalition partners facing similar challenges. The message that we send to other allied navies is a strong one. As a third tiered navy we understand the restraints and constraints that many medium size powers operate under. If we can take this technology and realize operational benefits, we can share our experiences and insight and thus, enhance coalition interoperability and mission effectiveness.

*CHIPS: What are some of your observations about TW05?*

Cmdr. Dempsey: I was particularly impressed with SNR (Subnet Relay). SNR has the proven potential of facilitating the rapid exchange of vast amounts of information between ships of varying capabilities. It was both a pleasure and honor for HMCS Montreal to participate in TW, and I look forward to continued cooperation between the Canadian and American navies. CHIPS

# Interview with Rear Admiral Victor See Jr.

Director, Communications Systems Acquisition and Operations Directorate,  
National Reconnaissance Office

Commander, Space and Naval Warfare Systems Command Space Field Activity  
Program Executive Officer for Space Systems

*CHIPS: I know that you are triple-hatted, can you talk about your work?*

Rear Adm. See: The first job that I have is Communications Director here at the National Reconnaissance Office. In that role I lead the acquisition and operations of the network that provides communications support to the National Reconnaissance Office and the director. We tie all the capabilities together that the NRO collects and all of that information rides our network. It's a space-terrestrial enterprise worldwide network. That is about all I can say at this level.

My second job is the commander of the Space and Naval Warfare Systems Command Space Field Activity. In that role I provide line leadership and management of all the Navy people that work at the NRO. I also coordinate naval space research, development and acquisition for the Navy. I have a group, the Naval NRO Coordination Group, which works for me and also serves as the primary interface between NRO programs and the OPNAV staff. They help interface 'big' Navy into national programs and also ensure that all the work that goes on here at the NRO is leveraged by the Navy.

My third job is the Program Executive Officer for Space Systems, and I report to the Assistant Secretary of the Navy for Research, Development and Acquisition, Dr. Delores Etter. I manage UHF SATCOM (ultra high frequency satellite communications) for the Navy and Department of Defense. The Navy is responsible for procuring unprotected narrowband UHF SATCOM capability. We have purchased UHF Follow-On (UFO) satellite systems which are all launched and in operation. We are currently under contract for the next generation UHF that is the Mobile User Objective System. We are procuring MUOS with the associated ground infrastructure and then interfacing through JTRS (Joint Tactical Radio System) terminals and teleports to provide UHF service in the future.

*CHIPS: It sounds like there is a complementary link between all of your different roles. How does this affect SPAWAR?*

Rear Adm. See: Because I have these three hats as a flag with dual naval and national responsibilities, I can provide insight into na-



**Rear Adm. Victor See Jr. in his office at the National Reconnaissance Office.**

tional systems capabilities and facilitate the implementation of the FORCENet architecture and delivery of space capabilities to the fleet. For national space programs, having a Navy acquisition flag in its senior executive ranks provides a direct link to leadership and ensures access to Navy's Space Cadre, people with a unique combination of technical skills, and space and naval operational experience. If you look at the Navy Space Cadre in the NRO, we hold a high percentage of senior leadership positions because the Navy Space Cadre is highly valued.

By triple-hatting the space acquisition flag, it allows me to have influence over relevant technology development and design — and acquisitions and operations of national security programs. All of these capabilities are provided for the national community

and for the Navy. We can influence national programs to provide the best support to the Navy in open ocean, littoral and Navy operations.

For SPAWAR, having a dual-hat (in SPAWAR and NRO) allows us to provide insight into all of the communications programs that we have in the national system which interface with the Navy FORCENet architecture and deliver space capabilities and connectivity for FORCENet and future naval networks.

*CHIPS: What has been happening with the Space Cadre?*

Rear Adm. See: There has been a lot of interest in the Space Cadre. The establishment of a DoD Space Cadre was directed under the 2002 Space Panel led by Secretary Rumsfeld before he became Secretary of Defense. There were some specific recommendations and one of them was that the services each needed to create a Space Cadre. The Navy Space Cadre was created in 2002 as a distinct body of individuals that have space expertise and are integrated into the active duty Navy.

Today, the Navy Space Cadre consists of officers, civilians and an enlisted corps who use space capabilities. We have a Navy Space Cadre advisor, Cmdr. Scott Margulis, who has been responsible for developing the Space Cadre plan. The Space Cadre Human Capital Strategy was published in December 2004. Now we are trying to expand the areas that the Space Cadre is involved in

including warfighter assessment; requirements articulation; science and technology; research and development; space system acquisition; and space operations.

There is a difference between the Air Force Space Cadre and the Navy Space Cadre. Air Force members come into the Space Cadre right from the start and spend the majority of their time in the Air Force in the space community. For Navy personnel, we are going to manage the Space Cadre similar to the way the defense acquisition community is run, where Navy operational individuals (these could be aviators, surface warfare officers, submariners or information professionals) have the education and an experience tour or postgraduate degree in space systems engineering or space operations. They can be designated members of the Space Cadre and then work in our Space Cadre billets spread throughout the Navy.

We are also looking at carrier strike group and expeditionary strike group billets for Space Cadre members. Vice Adm. James McArthur (Assistant Chief of Naval Operations for Information Technology and Commander, Naval Network Warfare Command (NETWARCOM)) has been very proactive in that he designated a fleet commander to be a space prototype as well as a carrier strike group to be the space prototype, which is CSG 8 under Rear Adm. Allen Myers.

*CHIPS: Would they be at the staff level?*

Rear Adm. See: We put a couple experienced Space Cadre members on his staff. We have also had the opportunity to get his staff and a lot of the commanding officers of the ships in his strike group into orientation briefings about national security space programs and the PEO Space Systems. We have sent his staff through a one-week course under the National Security Space Institute, which is the Air Force school that has been established to educate and train Space Cadre members across all the services. We have had a lot of interface with CSG 8, and they will be deploying soon and ensuring that they take the best advantage of all the space capabilities that are available.

*CHIPS: What about enlisted personnel?*

Rear Adm. See: The most immature part of the development of the Space Cadre is the enlisted membership. We are just beginning to bite off on that piece. Cmdr. Margulis is working with people in the bureau, both naval personnel and people in the national security space arena to identify enlisted Space Cadre billets and then figure the correct Naval Officer Billet Classifications for the qualifications to be in the Space Cadre. We have enlisted billets here in National Security Space as well as space enlisted folks at NETWARCOM and the Naval Space Operations Center. All of those billets and the people that fill those positions should have the opportunity to get the Space Cadre qualifications and educational training to be part of the Space Cadre.

*CHIPS: Will members keep their designation or will they rotate in and out of billets?*

Rear Adm. See: The Navy is going to manage this like you just

***“Space provides the ability to network dispersed units to communicate, navigate and see over the horizon, and it provides worldwide Maritime Domain Awareness.”***

***– Rear Adm. Victor See Jr.***

stated. Members will have an additional qualification designator in their record that says they are a member of the Space Cadre. But they will also have the ability to go in and out of Space Cadre positions because they have to maintain their opportunities for promotion within ‘big’ Navy. This means members have to go to sea, and to critical billets that are required within whatever their career field is. Members will still have the additional qualifications designator of a Space Cadre member, which means we can track them and when Space Cadre jobs are open, we have the ability to propose an individual to fill a position.

*CHIPS: How do you see Navy’s role expanding in space initiatives over the next several years?*

Rear Adm. See: The Navy Space Cadre is small when you compare it to the Air Force. We are trying to fill as many Space Cadre positions as possible and are looking at increasing Navy presence at more locations. This is a difficult task when the Navy is downsizing. I have had these discussions with the Chief of Naval Personnel as well as the Vice Chief of Naval Operations (VCNO) and CNO. They feel that small growth in the Space Cadre is good news for the future of the Navy because the Navy is such a large user of space capability. We are trying to expand the reach of the Space Cadre into new areas and programs. It is a very slow process right now because of the changes ongoing in the Navy with rightsizing.

*CHIPS: How is the size of the Space Cadre determined?*

Rear Adm. See: This is done by the Navy Space Cadre Advisor’s office in coordination with the Space Cadre Functional Authority, Commander, NETWARCOM, based on the needs of the Navy. Although not all communities are in a draw down, the Space Cadre does not own its billets. Space Cadre billets are drawn from many different restricted and unrestricted line communities. The Space Cadre community looks at its billets annually and works with the Navy to properly assign Navy Subspecialty Codes to the billets and Additional Qualification Designators to its Space Cadre members.

*CHIPS: The PEO Space is relatively new. Can you talk about some of the challenges and achievements that you have experienced?*

Rear Adm. See: PEO Space Systems is a little over a year old. It was established in June 2004. The primary mission of PEO Space Systems is to buy UHF SATCOM services for the Department of Defense. We have a new program, which is the Mobile User Objective System. The MUOS program contract was awarded in September 2004. The MUOS team and the prime contractor, Lockheed Martin, just completed our Preliminary Design Review Phase. The program is on cost and schedule. Now we are executing the Critical Design Review Phase. So MUOS today is executing to our plan, and we want to keep it on a successful path.

*CHIPS: I can't think of any program that is on cost and schedule.*

Rear Adm. See: We have many years to go, but today I am very happy with the way the program is executing and Lt. Gen. Robert Shea (Director, Command, Control, Communications and Computer Systems, the Joint Staff J6) is too. The UHF program is also very successful. It is probably the most successful space program we have had. We brought a few of the satellites in under cost and on schedule. We have had a very successful operational record. We want to keep that record going with the Mobile User Objective System.

*CHIPS: What value will it bring to the Navy and the DoD?*

Rear Adm. See: The warfighter requires a lot of communications. UHF communications are one of the big suppliers of connectivity for the future warfighter. MUOS has the mission requirement to satisfy mobile users — Army, Navy and Air Force — in net-centric warfare. Many of these capabilities will be satisfied by MUOS including Army comm on the move.

I met with Lt. Gen. Shea and his staff Nov. 21 (2005), to provide a program and risk assessment update. He is very interested in how MUOS is doing. He realizes that MUOS is critical to the future success of the mobile warfighter. The DoD, in general, relies a lot on UHF communications for operations.

*CHIPS: Do you see this as a transformational effort?*

Rear Adm. See: MUOS is considered part of the transformational communications architecture. The UHF SATCOM Constellation is going to tie into the transformational communications architecture through the Global Information Grid (GIG). Then everything that is available through the MUOS system will be accessible through the GIG. The way MUOS will interface with the GIG is through the Teleport Program. We have been working with PEO C4I and Space and the Teleport Program to ensure that we have the connectivity from MUOS to the GIG using JTRS radios.

*CHIPS: What is the relationship between the UHF program and MUOS?*

Rear Adm. See: UHF Follow-On is in the operations and maintenance phase of the program. It is managed by the SPAWAR Communications Satellite Program Office (PMW-146) under the leadership of Capt. David Porter and his team in San Diego. UHF Follow-On is operated by NETWARCOM's Naval Network and Space Operations Command (NNSOC, the old Naval Space Command). They are responsible for on-orbit maintenance and operations of the constellation and led by Capt. Mack Insch at Point Mugu. He works for Rear Adm. Gerald Beaman, Commander, NNSOC. The plan is for this same group to take on MUOS operations. They have been part of the program since we began.

*CHIPS: What is the schedule for delivery?*

Rear Adm. See: The first launch for the MUOS I vehicle is supposed to take place December 2009 for a March 2010 OOC (On-Orbit Capability). One-year launches are planned after that. We

are going to launch a total of five MUOS vehicles. It will be four operational vehicles with one on-orbit spare.

*CHIPS: Why do you think that space program estimates have been such a challenge to execute? How have you mitigated the risks associated with this program?*

Rear Adm. See: Space programs of late have suffered a lot of bad press. There are probably a couple of reasons why we have had so many issues with these programs. One is funding instability; the second one is requirements growth. You have an operational requirements document that says we need these capabilities, we put something on contract and then while we are in the development or design phase, the users come in and say we need more. We need these additional requirements filled. Many times the additional funding does not come with it. You wind up committing to capabilities that you cannot afford. There are also some issues with the lack of understanding between the government team and contractor teams.

Specifically, with respect to MUOS, we had a Component Advance Development (CAD) contract with a couple of prime contractors. This was a risk reduction phase that we did early in the MUOS contract. We looked at what technologies we needed to have a successful program. In the CAD phase, we looked at what technology readiness levels were needed for each of the technologies. Then we matured them to a level six, including subsystems and systems that we need for the UHF environment. UHF SATCOM is not a huge new technology jump. We also went with a good provider. Lockheed Martin is going to be using its proven 2100 commercial bus, which it has launched and operated many times. Lockheed has a good history.

The last thing that we did is put a legacy UHF Follow-On payload on the MUOS bus. This is a risk reduction strategy for the program because once the first MUOS vehicle is up, it will have a legacy operational payload. The users that are in operation at that time will be able to use this vehicle with their current terminals and radios as soon as the vehicle OOC is declared. We just finished the Preliminary Design Review and we are going into Critical Design Review. As long as we maintain funding stability and continue on with our risk reduction activities, we are confident that we are going to be able to keep on schedule.

*CHIPS: How does the MUOS fit in with the strategies for FORCEnet and the GIG?*

Rear Adm. See: When you go to the Transformational Communications Architecture (TCA) senior leadership team meetings, of which I am a voting member, MUOS is considered one of the key capabilities in TCA. GIG bandwidth expansion is going to be the worldwide network that carries all the information. It will create a ubiquitous bandwidth-available environment that all the warfighters can access. You will have a couple of satellite systems that are responsible for moving information from warfighters on the ground or at sea into space and then down to a GIG point of presence. MUOS is one of those systems that the TCA is counting on.

MUOS is the future DoD narrowband SATCOM system that we

have to deliver, and it is going to be providing a ten-fold increase in capability over what the UHF constellation provides today. It will provide a lot more bandwidth and accesses to the warfighters. MUOS also uses commercial technology. It has a new waveform and the spectrally-adapting wideband code division multiple access, or WCDMA, which is a commercial technology. We are using a lot of lessons learned in the commercial SATCOM industry that will help bring a lot more capabilities to the system.

I should talk about some of the activities that Capt. Porter has done with PEO Space Systems and the program. PEO Space Systems is a charter member of the FORCENet Coordination Council, which is designed to guide the implementation of FORCENet. FORCENet is the Navy's component of the GIG and is closely tied to the Army's LandWarNet and the Air Force's C2 Constellation, which comprise the other service components of the GIG. MUOS and NRO involvement in the development of the GIG ensures that MUOS is aligned with and supports the tenants of the GIG and the development of network-centric warfare.

We are working within the standards of what is required to connect to the GIG. We are aligned and in compliance with the vision for the GIG and TCA version 2.0. We are integrally tied to the approved architecture via the teleports and the JTRS radios. All of the information that rides the MUOS constellation will be available.

*CHIPS: How does this fit in with the CNO's vision of the future?*

Rear Adm. See: When the CNO had his Flag Officer Conference in October (2005), he put out his 2006 Guidance. If you read the fine lines in the 2006 Guidance, the CNO is asking for some specific missions to be satisfied. His vision is for the Navy to keep the sea lanes open and free. He wants a forward-deployed Navy that is surge-capable. He wants the Navy to be agile and lethal enough to deter and defeat any enemy in support of the joint force. All of the things that we are doing within Navy space, including national programs as well as PEO Space Systems, are vital to every aspect of the CNO's vision.

The CNO's vision requires net-centric connectivity in the implementation of FORCENet to be successful. The Navy is highly dependent on this connectivity and FORCENet. Because the Navy operates in dispersed units (it is not like they have a fiber optic cable tethered to the back of every ship), units have to be able to communicate and navigate, see over the horizon and provide worldwide maritime domain awareness.

Space is that key piece that allows the connectivity of all our forward-deployed units. All of the things we are doing under PEO Space Systems, MUOS and national security space programs are critical to the future operations of the net-centric, connected Navy in the 21st century.

*CHIPS: Americans are fascinated with space. Do you find that your enthusiasm has increased because of your space responsibilities?*

Rear Adm. See: For the last 15 years, except for one three-year tour, I have been working in space and have had opportunities

to do things that not many people get to do. My fascination has grown. I love the business that we are in. I love the opportunities presented to Navy personnel across the board and national security space programs. I think the future is bright. If I were 'King for a Day,' I would double the number of people in the Space Cadre. I know that is not possible right now. But we have a lot of opportunities. We are trying to keep up with the need as best we can.

*CHIPS: What should readers know about the Navy's role in space?*

Rear Adm. See: We have undertaken an aggressive communications plan with the help of Vice Adm. McArthur. We are making sure that we are communicating with the right people. We briefed Adm. Gary Roughead, Commander, U.S. Pacific Fleet; Vice Adm. Charles Munns, Commander, Submarine Force, U.S. Atlantic Fleet; and Vice Adm. Mark Fitzgerald, Commander, Second Fleet, on space capabilities. Vice Adm. McArthur has met with Adm. John Nathman, Commander, U.S. Fleet Forces Command and U.S. Atlantic Fleet to review the space way ahead.

It really is an education process. We work hard every day to make sure people understand where all of these space capabilities come from. You cannot just assume that it is always going to be there if you do not have qualified, certified, knowledgeable people working all of the processes that bring the capabilities to bear. We want to educate seniors within the Navy and make sure they understand how we can help them succeed in their mission.

*CHIPS: Do you think there are strategic advantages to space that have not been thought of yet?*

Rear Adm. See: Probably they have been thought of, but they may not have been developed, approved or funded. There are a lot of capabilities that many of the services and agencies are not taking advantage of yet. You have to be careful because space is not the answer to everything. You have to strike a balance between the inherent capabilities of a strike group as well as what space can bring to the battle and warfighter. I think we have come a long way in the past 20 years in incorporating space capabilities. I believe there is even more that we can do in the future. That is part of our mission — to help the Navy Space Cadre bring all these capabilities to bear so that the Navy can succeed in future missions.

What we are doing in Navy space and with our national space programs are vital to every aspect of the vision because in the age of network-centric operations the Navy is more dependent than ever on space. Space provides the ability to network dispersed units to communicate, navigate and see over the horizon, and it provides worldwide Maritime Domain Awareness.

Space is the indispensable lifeline for a forward-deployed, 21st century Naval Force.

*For more information about the SPAWAR Space Field Activity, PEO Space Systems and NRO Group go to the SPAWAR Web site at <http://www.spawar.navy.mil/>.*

CHIPS

# Find Your Role, Do Your Part

## *Navy ships provide vital humanitarian assistance to hurricane ravaged areas*

By JO1(SW) Mike Jones, USS Iwo Jima (LHD 7) Public Affairs

The humanitarian assistance and disaster relief efforts in New Orleans and the Gulf Coast carried out by USS Iwo Jima (LHD 7) and her sister ships USS Tortuga (LSD 46), USS Shreveport (LPD 12), USS Bataan (LHD 5) and USS Whidbey Island (LSD 41) in the wake of Hurricane Katrina were already underway when President George W. Bush took to the podium at Jackson Square in downtown New Orleans to address the nation on Sept. 15. By then, the ships had reached a steady battle-rhythm, and humanitarian assistance from the Navy ships and their crews to the battered city helped fuel the message behind the President's remarks: "Find your role and do your part."



*New Orleans (Sept. 20, 2005) - President George W. Bush receives a briefing in the wardroom aboard the amphibious assault ship USS Iwo Jima (LHD 7) during his third visit to the ship. Iwo Jima was pierside in New Orleans, La., in support of Joint Task Force Katrina. U.S. Navy photo by Photographer's Mate 3rd Class Christian Knoell.*

*"This crew has showcased a truly historic effort during this mission,"* said Iwo Jima Commanding Officer Capt. Richard S. Callas. *"They fulfilled what the President asked of them during his speech at Jackson Square. Every Sailor and Marine, without being asked or directed, found their role, and did their part."*

Since departing her homeport on Aug. 31, Iwo Jima emerged as the center of Joint Task Force Katrina and Federal Emergency Management Agency (FEMA)-led recovery and assistance efforts in the battered cities of Biloxi, Gulfport and New Orleans following Hurricane Katrina's landfall Aug. 29.

Within three days of receiving the order to sail to the Gulf Coast, Iwo Jima along with Tortuga and Shreveport steamed from Norfolk to anchorages off the coast of Biloxi, Miss., to join USS Bataan who was already on station conducting search and rescue operations and relief efforts with her helicopters and amphibious craft. Immediately upon arrival, the ships landed elements of Naval Beach Group Two to establish a beachhead for the delivery of much needed supplies to the battered community.

Even as beach crews were establishing a presence for the arriving Seabees of 1st Naval Construction Division, thousands of pounds of humanitarian supplies were delivered ashore on landing crafts. For the crew of Iwo Jima, especially those who called the storm-affected region home, the opportunity to assist was eagerly embraced.

*"We train and train and train to respond to any situation we're needed for,"* said Hospital Corpsman 3rd Class Jonathan C. Tillman who hails from Baton Rouge, La., *"For me, and a lot of my shipmates from this part of the country, the chance to help out in any way is one I would never pass up. I want to be able to say I did everything I possibly could to help out."*

Tillman departed LHD 7 with the first group from Amphibious Construction Battalion Two to begin operations to clear roads, repair bridges, open up harbor facilities and repair critical infrastructure to facilitate the follow-on delivery of relief.

Less than 24 hours later with the off-load complete, Iwo Jima was again underway and transiting up the Mississippi River toward New Orleans. Even before the ship moored at the city's Riverwalk Pier (normally reserved for cruise liners) Sept. 5, Iwo Jima's flight deck (referred to as the Jack Lucas Airfield after the Iwo Jima hero and Medal of Honor recipient) came alive as numerous aircraft from various military and federal agencies touched down. As one of the few full-service airfields in the area, Iwo Jima's flight deck conducted approximately 1,600 flight evolutions over the next two weeks, averaging 100 hits a day during the ship's mission in New Orleans.

*"What we did in one week might normally take nine,"* said ABHCS (AW) James C. Wright, Flight Deck Leading Chief Petty Officer.

Iwo Jima also contained the only fully-functioning medical and dental facilities in the area. With 85 additional medical professionals from the Portsmouth Naval Hospital, medical personnel performed 50 major surgical procedures — two of them life threatening, averaging 20 patients a day, who arrived by boat, ambulance and helicopter to receive medical care. Iwo Jima's dental team saw over 100 patients as well.

In addition to its flight deck and medical capabilities, much of Iwo's crew took time to assist the stricken community through many volunteer relief projects. Hull technicians (HT) and damage controlmen (DC) worked around the clock to assist dewatering efforts at local medical facilities, including the Medical Center of Louisiana's Charity Hospital.



*"This support from the Navy couldn't be better,"* remarked U.S. Coast Guard Intelligence Officer Norman Bond, who organized the assistance after contacting Iwo's Command Master Chief CMDCM (SW/AW) Jim Cox and DCC (SW/AW) Fred Clemmons. *"The waterline was almost at the top of the basement when they began dewatering,"* said Charity Hospital staff member Dr. Jeff Johnson. *"I am amazed at how fast they've been able to remove so much water. I didn't expect this much progress for months."* The dewatering team worked through the night, Clemmons added, removing water from the hospital at a rate of 1,900 gallons per minute.

That same group was able to repair the massive air conditioning system in the city's convention center, bringing much-needed relief to the 1,650 National Guard members living there. Also, members of Iwo Jima's Aircraft Intermediate Maintenance Department along with HTs from Engineering helped convert a baseball dugout into a decontamination station for relief workers of the Jefferson Parish Emergency Operations Center (EOC), headquartered in the field's adjacent gymnasium.

*"This team came out to our EOC to get an idea of what they could provide,"* said Jefferson Parish FEMA Strike Team Leader Dan Griffiths. *"We only had cold water showers at the time."*

The EOC, located at the Belle Terre Playground facility, was staffed by approximately 110 personnel from various state and federal agencies, including the U.S. Coast Guard, Army Corps of Engineers and regional fire departments. All 110 were housed in the adjacent J. Harry Walker III Memorial Gym, and until Iwo's Sailors arrived, were sharing three sinks and three toilets among them.

*"The installation of the additional sinks and showers has been an enormous morale boost for all the relief workers out here,"* Griffiths said. *"There is no doubt in anyone's minds [about] the contributions by these guys to help us in our mission of saving lives."*

*"It's like having the cavalry show up,"* said U.S. Coast Guard Chief Warrant Officer Allen Mordica. *"This makes getting the job done much easier."*

For the city's first responders, among them the 119th Military Police Company of the Rhode Island National Guard and U.S. Army 82nd Airborne Division, the ship provided a welcome relief to the tedious and often hazardous recovery efforts. Within hours of arrival, Iwo Jima began providing hot meals, hot showers and cool air conditioning to thousands of the city's first responders. In total, Iwo Jima served over 41,000 extra meals — averaging nearly 3,000 extra meals a day, 400 showers daily and laundry services for "tons of laundry" for their guests — all without additional manning. Nearly 8,000 Soldiers, Airmen, Marines, Coast Guardsmen, Sailors, civilians and National Guardsmen cycled on-board the "Hotel Iwo Jima."

Much of the crew devoted off-duty hours helping to clean the Riverwalk Terminal and surrounding areas, including the entire Riverwalk Plaza, and volunteered at a soup kitchen established at the base of the city's World Trade Center to provide hot meals for tens of thousands of first responders.



*New Orleans (Sept. 17, 2005) – Crew members assigned aboard USS Iwo Jima (LHD 7), cook for community workers in New Orleans during hurricane relief efforts.*

*U.S. Navy photo by Photographer's Mate Airman Amanda M. Williams.*

One of those first responders was Army Pvt. Trenton Graves, mobilized with E Troop, 82nd Calvary of the Oregon National Guard, deployed to assist with relief and recovery efforts in New Orleans earlier that month. His cousin is Iwo Jima's Fire Controlman 3rd Class (SW/AW) Dave Thalman. *"I got a call from my mom that Dave would be down here too,"* Graves said. *"As soon as I found out that his ship was down here, I tried to hook up with him."*

Graves and the rest of E Troop had been providing security and assistance around New Orleans and outlying parishes since the beginning of the month. Sept. 16 brought a welcome break: the Troop would stop by the volunteer-run food tent at the city's World Trade Center for a hot meal and a few minutes rest. As it turns out, Thalman was one of the many Iwo Jima Sailors volunteering at that very location that day.

*"It was great to run into him and see him again,"* Thalman said. *"I'm going to give him a tour of the ship and show him all the things we've been doing to assist down here as well."*

For the cousins, the reunion proved bittersweet amid the backdrop of ongoing hurricane recovery and relief work. *"It's definitely rewarding to know we're able to do something,"* Thalman said. *"And knowing I'm down here with family makes it worthwhile."*

By the middle of September, most of Iwo Jima's support efforts had wound down. The arrival of Hurricane Rita accelerated the ship's departure. Iwo Jima transited down the Mississippi into the Gulf late on Sept. 21 as Hurricane Rita quickly grew in strength and approached the area. Sailing within 250 miles of the hurricane's eye, Iwo Jima followed behind the storm's path, ready to provide immediate rescue and recovery assistance as the storm made landfall near the border of Texas and Louisiana.

A week later, after receiving orders to officially depart the Gulf of Mexico, the multi-purpose, amphibious assault ship steamed toward the Florida Keys and into the Atlantic Ocean. On Oct. 1, Iwo Jima off-loaded 650 Marines of the 24th Marine Expeditionary Unit (24 MEU) and First Battalion Eight Marines at Onslow Bay, N.C., then returned home to Norfolk, Va., Oct. 2.

*"Our time in New Orleans was an extraordinary opportunity to help out during a time of great need,"* Callas said. *"We didn't get a whole lot of direction or tasking other than to sail up the Mississippi and embark the Joint Task Force Katrina Commander, but in typical Navy fashion, we saw the need, found our own missions and did our part. We're grateful to have had the chance."* CHIPS



## Interview with Captain Fred Mingo

### Commanding Officer SPAWAR Systems Center New Orleans

*In the CHIPS Oct-Dec 2005 edition, we reported that the Space and Naval Warfare Systems Center (SSC) New Orleans was closed due to damage caused by Hurricanes Katrina and Rita. But we were wrong because only the SSC New Orleans buildings were closed! By implementing the Continuity of Operations Plan (COOP), SSC New Orleans was operating at full speed. Relocated personnel were working at alternate work sites before, during and after Katrina passed to continue the vital work of the center.*

*Today, approximately 86 of the center's government employees are working in the SSC New Orleans facility, with the remainder working at Naval Air Station Joint Reserve Base (NAS JRB) Fort Worth, Texas (20), Naval Education and Training Command (NETC), NAS Pensacola, Fla., (90) and SSC New Orleans Millington, Tenn., detachment (29). The remainder of the SSC New Orleans staff and contractors are either telecommuting from around the greater New Orleans area or from the SSC New Orleans Washington, D.C., detachment.*

*CHIPS finally caught up with SSC New Orleans Commanding Officer, Capt. Fred Mingo, in late December (on the run, between flights on his cell phone) to ask him about New Orleans personnel and center operations. Capt. Mingo was recognized with a Department of the Navy Information Management/Information Technology (DON IM/IT) Excellence Award in January for his exemplary leadership and commitment to people and mission in his superb response to Hurricane Katrina.*

**Capt. Mingo:** We have become a virtual organization. The rapid transition to a virtual organization has been one of our success stories. Right after the storm, the entire 504 and 985 area codes failed. Even though I was working from my COOP office at the SSC New Orleans Washington, D.C., detachment, I couldn't receive calls on my 504 area code cell phone. Most of our people were safely out of the storm area, but almost everybody had cell phones originating in the local area code so they couldn't receive calls. The complete failure of the phone system was one reason why it was so hard to find many of our people immediately after the storm.

**CHIPS:** *One of the foremost questions on everybody's mind is the welfare of your personnel?*

**Capt. Mingo:** We are very thankful that everybody made it through the storm safely with no loss of life or physical injury. Several have harrowing stories like swimming from their homes or getting out of their flooded homes at the last minute. Many, however, experienced tremendous personal loss, and they are now working with FEMA (Federal Emergency Management Agency), the Red Cross, their insurance companies and a host of other organizations to rebuild their lives.

Of the 225 civilian and military personnel that report directly to me, 94 have homes that are not habitable, 46 of which were totally destroyed; 76 have a home that sustained minor damage. Despite this loss, everybody has been touched by the generous outpouring of support they have received from their fellow shipmates, those at their temporary work locations, friends and strangers. Some are also saying that they are experiencing closer family ties as a result of this national disaster.

The Navy has really helped with Task Force Navy Family (TFNF). TFNF is providing a host of information and services from coun-

seling to championing issues that require changing Navy, Defense Department or higher policy. All of our people are benefiting from Task Force Navy Family and many are using its services. Simply knowing that TFNF is available is a great relief because we know that the Navy cares.

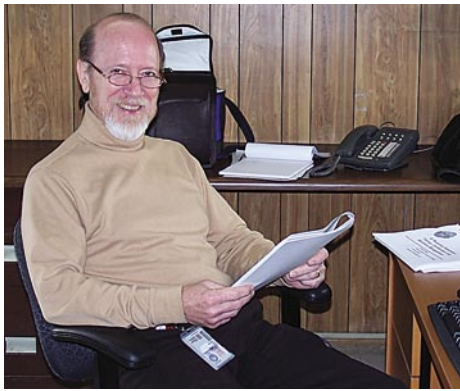
**CHIPS:** *Did you have an emergency plan prior to the hurricanes?*

**Capt. Mingo:** Yes, we did, and it was executed as planned. Our plan has been iteratively developing for more than seven years, and it is closely coordinated with the Navy Reserve and the Navy Standard Integrated Personnel System (NSIPS) program office.

Today, we (SSC New Orleans, Commander, Navy Reserve Force and NSIPS) have a well established team and have successfully executed our COOP several times, specifically last year for Hurricane Ivan and then earlier this year for Hurricane Dennis. Both times we successfully COOPed supported systems off-site while those systems without an off-site COOP requirement continued to operate from our SSC New Orleans server farm.

Unfortunately, the magnitude of the disaster resulted in our server farm dropping off the network before the generators ran out of fuel. As a result of this network failure, today we're in a new phase of our COOP. Customer requirements drove and fund our COOP plan. Before Katrina many of our hosted systems didn't require off-site COOP, but they became a high priority for restoration after the storm.

To restore these systems, we had to recover servers and then reconnect these systems to the network. We had people in our buildings about a week after the storm, but there was no power or air conditioning. We first flew in by helicopter, and then after the flooding subsided, we drove in, but it was a long and difficult trip, especially the first few weeks after the storm.



SSC New Orleans employees – Top row (L-R): Carlos Polk, director of the Human Capital Strategy Division, Mike Crouch, Robert Parish, Gail Freid, Claribel Diaz and Kim Lee. Bottom row (L-R): ITCS Christopher Pote, Zina Fleming, George Faughn and Harold Gobbel.



**“... Katrina brought out the best our team has to offer. It is an honor and privilege to have this opportunity to have served with and been a part of this inspirational team. “**

**– Capt. Fred Mingo, commanding officer, SSC New Orleans**

Our on-site recovery team started removing key servers and computers from the 100-degree buildings, hand-carrying everything, sometimes down five flights of stairs. There were more than 800 servers on our fifth floor operations deck and personal computers supporting more than 1,000 employees. The workforce included military, civilian and contractors at SSC New Orleans and our two other hosted program staffs: DIMHRS (Defense Integrated Military Human Resources System) and NSIPS. This was a huge, difficult recovery effort, considering the harsh working conditions, but our team was focused, despite whatever personal losses they may have experienced.

During recovery, our leadership team was locating our people, ensuring all were safe and assisting them in any way that they could. We identified off-site work and billeting locations that effectively and efficiently support our mission. Our various departments communicated using BlackBerries, e-mail, the Internet and conference calls.

**CHIPS:** *How long did it take you to get a full accounting of all personnel?*

**Capt. Mingo:** Just over three weeks for Hurricane Katrina and about a week for Hurricane Rita.

**CHIPS:** *Do you know when your building will be fit for occupancy?*

**Capt. Mingo:** We were hoping we would be back in our facility by early spring, but it will probably be early summer. We are in

leased facilities owned and operated by the University of New Orleans foundation. This arrangement means that coordinating restoration efforts are more complex.

**CHIPS:** *Can the city's infrastructure support a return to duty for SSC New Orleans personnel?*

**Capt. Mingo:** It depends. We are located on the University of New Orleans campus on Lake Pontchartrain. While this area did not flood, a lot of the surrounding area did. Right now people working at the facility have to bring their daily provisions from home. Life has also changed for areas outside the flood zone. Everything is crowded and traffic is terrible, especially for those driving in and out of the city at rush hour. Schools are also a huge concern for those with children.

**CHIPS:** *You and your leadership team have earned much praise for your superb COOP execution and commitment to personnel.*

**Capt. Mingo:** We have a very tight leadership team, and that was one reason that our command could continue to function throughout this disaster. Several personnel on our team did lose everything in Katrina, and their personal loss has helped our understanding for the loss others in the command have experienced. Our team talks and meets regularly not only to discuss operational issues but personnel concerns too.

Our December leadership meeting was significant to the entire command because it was our first meeting back in New Orleans.

In addition, we are hosting the SPAWAR Vice Commander, Rear Adm. (sel) Tim Flynn and Mr. Murray Rowe, the new Manpower, Personnel, Training and Education (MPT&E) chief information officer (CIO).

*CHIPS: Can you talk about some of the lessons learned from these natural disasters?*

**Capt. Mingo:** COOP is a command-wide effort requiring constant attention and support. You have to practice and stress COOP as a command priority. Paperwork drills won't do it. SSC New Orleans is an IT service support command, so we have two components to our COOP, one for our command operations and another for our customers' systems. For these systems we support, actually testing and going through drills that transfer real data, making sure that everything works and can sustain operations from the COOP environment is what it takes to have confidence in continuing operations.

One of our immediate lessons learned is that you need multi-channels for communications, especially for those members unable to access their NMCI e-mail accounts from home computers. Our contact lists quickly filled with multiple e-mail addresses and phone numbers as people moved from location to location.

At the command level, everybody on our leadership team had an NMCI BlackBerry with cell phone capability that was vital to command communications, especially during and immediately after the storm. BlackBerries worked very well for e-mail, text messaging and cell phones. EDS was very supportive throughout the storm. Because our e-mail accounts went over the 50 MB limit, I made a quick phone call to EDS and every team account was expanded to 250 MB within 30 minutes.

In addition to the efforts of our management team, we were greatly assisted by a team of Reservists at SPAWAR Headquarters who tracked many of our people down by persistence and creative associations between known contact information. As a command, we also employed the services and capabilities of the Navy's Global Distance Support Group or call center. I'm a fan of this capability because it enabled our leadership team to focus on the command mission. The call center staff would not only receive calls and e-mails from our personnel, but they would contact our personnel, if required.

Often the call center staff would call me to say they had spoken with an individual they thought required additional support or to say somebody from our command had asked me to call them. The lesson learned is that our personnel need to know this call center number and its capability before an emergency occurs. It should be standard across the Navy, like a master 911 number for anybody in the Navy. Consolidating this capability is one feature we're developing for Sea Warrior, but this is a significant effort that will take time to establish.

Naval message traffic was not available and didn't reach our command for months. Frequently, I would receive a call or e-mail notification referencing tasking that was outlined in a message or on a Web site, but we were not receiving this important

information. Consequently, we relied on verbal communications from our headquarters during daily conference calls. Immediately after the storm, many could not access the Internet, so we couldn't rely on Web sites for information.

Most of our non-COOPed systems requiring post-Katrina restoration supported manpower and personnel. We had to work closely with Navy Personnel Command to generate a customer driven prioritization list that was then signed out at the flag level. More importantly, we included supporting IT infrastructure on this list, to ensure the customer understood and supported the IT infrastructure component of the recovery effort.

At the Navy enterprise level, we need to provide enterprise-wide tools and capabilities for commands to easily track and communicate with their entire workforce: military, civilian and contractor. Commands also need to understand there are differences between military and civilian orders, entitlements, benefits and support processes. We often speak of a total force, but there are significant differences, especially regarding safe haven orders. Depending on how these policies are implemented could adversely impact morale.

Today, we're already incorporating lessons learned from Katrina, but we still have a long way to go because a command COOP must support emergencies well beyond hurricanes. Other natural disasters or terrorist actions don't provide advance lead time. This is only a start of our lessons learned, which continues to grow.

*CHIPS: Are some of your customers changing their systems requirements due to lessons learned from the damage to operations?*

**Capt. Mingo:** Absolutely! Going into this storm, we had a high degree of confidence with our command COOP processes, team and capabilities, but we also knew our customers didn't have off-site COOP requirements for their systems. COOP is critical when you have the centralized or Web-based systems that support mission critical operations, and manpower and personnel systems fall into this category. These systems require failover capability or flexibility to adjust mission requirements. When we're talking about manpower and personnel, the last thing we want to do is have a system failure that adversely impacts Sailor pay, administrative support, promotion status ...

It costs more to deliver this failover capability, but it's a reality of our mission support today. When we developed the New Order Writing System requirements, (*now referred to as the Navy Reserve Order Writing System – NROWS*), it included COOP because we needed to ensure Reservists could receive orders reliably, especially in time of crisis. NROWS serves as one of the pillars of the successful COOP we have in place today.

Post Katrina, restoring the Job Advertising Selection System (JASS), for example, was BUPER's number one priority. JASS advertises job assignments on the Web. It is part of the Sea Warrior capabilities, but the customer did not fund an off-site COOP capability. As soon as JASS went offline, BUPERS had to double detailer shifts, so it quickly became the top priority for system

recovery. From the IT infrastructure perspective, restoring JASS required replicating the SSC New Orleans network and boundary layer 2 (B2) capabilities at NAS JRB Fort Worth to host JASS on the network in a DMZ. (*Demilitarized zone, refers to a network area that sits between an organization's internal network and an external network, usually the Internet.*)

After Katrina, the MPT&E community realized that existing COOP requirements had to be expanded. Moreover, because we successfully executed our COOP and everything went according to plan, there is leadership confidence in our capabilities. Consequently, our task today is to ensure that we have the right COOP requirements integrated into the supported applications via the Program Objective Memorandum process.

*CHIPS: The safety of the staff and continuity of operations are the most important issues in any emergency.*

**Capt. Mingo:** Absolutely! Katrina highlighted that we still have a long way to go with regard to disaster preparedness. There has been and still is a lot of organizational change in the Navy resulting in matrix organizations that blur the lines of traditional command and control.

For example, because SSC New Orleans provides matrix support personnel to both NSIPS and DIMHRS, we had to clearly agree who was going to report and maintain contact data on each individual member. Sounds easy, but there isn't a system or tools to easily capture and then maintain this data over time, especially for commands with joint personnel.

*CHIPS: SSC New Orleans personnel are truly heroes to have met the challenge of meeting the command's mission under impossible circumstances.*

**Capt. Mingo:** Our people are simply tremendous and leading and working with them is a very rewarding and satisfying experience. Then, watching our recovery take shape, day by day has really been uplifting. There is never a dull day.

In addition to recovery efforts, we are also preparing for a major organizational change for our command. Effective Oct. 1, 2006, SSC New Orleans will transfer from the SPAWAR claimancy to merge with the newly formed Manpower, Personnel, Training and Education (MPT&E) Enterprise. We first started dealing with this command transition in February 2005, and the specifics are continuing to develop as the MPT&E Enterprise is transitioning to an IT shared services construct.

Essentially, SSC New Orleans will disestablish to form the nucleus of a new organization that will become the MPT&E Central Design Agency. While the details of this transition are still being worked, those within the MPT&E information technology domain have been asked to begin supporting this new MPT&E IT shared services construct as a virtual organization under the MPT&E CIO, Mr. Murray Rowe.

As a result of this and in addition to my responsibilities as SSC New Orleans commanding officer under SPAWAR, I have also

**SSC New Orleans provides customer support 24 hours a day, 365 days a year for nine systems:**

- Navy Standard Integrated Personnel System (NSIPS)
- Navy Reserve Pay Helpdesk
- Navy Reserve Order Writing System (NROWS)
- Job Advertising and Selection System (JASS)
- Medical Readiness Reporting System (MRRS)
- Inactive Manpower and Personnel Management Information System (IMAPMIS)
- Reserve Headquarters Support (RHS)
- Reserve Standard Training Administration and Readiness Support (RSTARS) (HP)
- Local base operations; electronic data warehousing and Corporate Data Maintenance (CDM), formerly known as the Personnel Pay Assistance Center (PPAC)

been acting as lead for the MPT&E IT operations and infrastructure division. In fact, many of our SSC New Orleans employees started working within this MPT&E virtual organization as well. Sounds confusing and it was, especially as we began our post-Katrina coordination and recovery, but there are benefits to this alignment and closer integration with our primary customer is one.

*CHIPS: Will your entire staff be in the new organization and all the systems that New Orleans currently supports?*

**Capt. Mingo:** That's the plan, but we're still working the details.

*CHIPS: What do you want readers to remember about SSC New Orleans operations and personnel?*

**Capt. Mingo:** The devastation around New Orleans and the Gulf Coast is overwhelming. One of our program managers captured the magnitude best when he explained that not only did he lose his home and family possessions, but he lost his childhood memories, a remark that I have heard others make several times. In this case, he, his wife, and their families were born and raised in Chalmette; now everything they had is gone. Fortunately, they found a new home, and he's working from Millington as his wife and family are settling on the north shore of Lake Pontchartrain, but their lives have forever changed.

Knowing the extra effort our people have gone through to make sure that the mission is successful — despite their personal losses is amazing — it's a tribute to their strength, resiliency and positive attitude. I have met many that have lost everything, but they're coming back to pick up the pieces and rebuild. It's like running a marathon and, at this point, we're just beginning. But our motto is 'rebuilding...one day at a time.'

I have spent over 14 of my last 16 years stationed in New Orleans so hurricanes and evacuations are nothing new. Even before Katrina, this tour had become my most rewarding due to the quality, professionalism, humor and commitment of our people. Katrina brought out the best our team has to offer. It is an honor and privilege to have this opportunity to have served with and been a part of this inspirational team. CHIPS

# DON CIP 101 - Maintaining Mission Assurance through Effective Critical Infrastructure Protection

By Don Reiter

*In 1999, the Department of the Navy Chief Information Officer (DON CIO) assumed the collateral duties of the DON Critical Infrastructure Assurance Officer (CIAO) and has developed products and tools to support warfighter mission assurance.*

*Fielded in June 2004, a Web-based course on critical infrastructure protection (CIP) puts into action the education and outreach guidance of Secretary of the Navy Instruction (SECNAVINST) 3501.1 and recent homeland security directives.*

The past hurricane season brought dramatic and tragic reminders that threats to DON assets come from acts of nature as well as terrorists. Hurricane Katrina was the most catastrophic in a series of devastating storms that severely damaged the southern U.S. coastal areas of Alabama, Florida, Louisiana, Mississippi and Texas.

But key elements of the DON CIP Program course can show you how to respond to and recover from any disruptive event. The Web-based course is available to Department personnel worldwide through Navy Knowledge Online (<http://www.nko.navy.mil>) and MarineNet (<http://www.marinenet.usmc.mil>). The CIP course is designed to prepare current and prospective commanders and their staffs for their CIP and mission assurance related responsibilities. The course was designed in close collaboration with Navy and Marine Corps subject matter experts.

In addition to providing guidance for establishing and executing response and recovery mechanisms, the course addresses actions that should be taken before and after response and recovery activities. Such actions include identifying assets critical to warfighter mission assurance, assessing their vulnerabilities (and associated risks) to disruptive events, remediating those



*Gulfport, Miss. (Sept. 1, 2005) – The family housing area onboard Naval Construction Battalion Center Gulfport, Miss., shows considerable damage from Hurricane Katrina. U.S. Navy photo.*

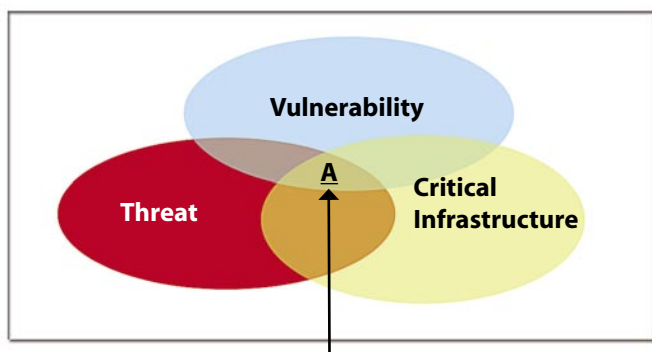
vulnerabilities to enable continuity of operations, and determining future reconstitution of damaged assets after response and recovery have been achieved. Assessing asset vulnerability risk, illustrated in Figure 1, is one of the steps covered in module three of the CIP Program course: “Reacting to Potential Threats.”

Another course module addresses remediation. Its importance was illustrated by the Naval Mobile Construction Battalions in preparation for Hurricane Dennis. The preventative measures undertaken by the Seabees to protect the lives and property of residents were instrumental in avoiding further damage.

Throughout the course, specific case studies discuss the role of Navy and Marine Corps personnel in achieving an effective CIP posture. The multifaceted procedures of the Integrated Vulnerability Assessment are explained, with the resultant remediation and consequence management chain of events that may follow critical asset vulnerabilities identification. Interactive scenarios are presented in which students are asked to make decisions within the threat situations they could encounter. Immediate feedback is provided on whether the student made the correct decisions and why.

Each student also learns about the DON CIP initiative and the tools available to assist Department personnel maintain warfighter mission assurance. In addition to commanders and their staffs, the lesson suite, made up of four separate modules, is recommended for a wide range of DON personnel, including installation commanding officers; executive officers; senior public works and facilities officers; security officers; chief information officers; and regional commander staffs.

With its wealth of useful information and guidance, the DON CIP Program course can help protect DON personnel and assets against future threats in whatever form they may appear.



*Figure 1. Once an asset's criticality and vulnerability are assessed, the risk posed by a specific threat can be assessed as illustrated above. Remediation/mitigation efforts to reduce or minimize impact should be focused in area A.*

Gulfport, Miss. (July 8, 2005)  
 – U.S. Navy Seabees set up  
 a barrier to retain loose  
 topsoil in preparation for  
 the arrival of Hurricane  
 Dennis onboard Naval Con-  
 struction Battalion Center  
 Gulfport. U.S. Navy photo  
 by Photographer's Mate 1st  
 Class Sean Mulligan.



## TFNF Still Assisting Navy Families

By Lt. Enid Wilson, Task Force Navy Family

Nearly four months after Hurricane Katrina came ashore along the U.S. Gulf Coast, Task Force Navy Family (TFNF) continues to provide assistance to active-duty, Reserve, Department of the Navy (DON) civilians and retirees recovering from the hurricane's devastating effects.

In response to needs communicated through TFNF Command Liaison Officers from affected commands to TFNF headquarters, a series of briefs on the Federal Emergency Management Agency (FEMA), Small Business Administration, insurance law and bankruptcy were conducted Dec. 10–15 in New Orleans, Gulfport, Pascagoula and Pensacola by Navy Reservists who are attorneys in their civilian careers.

According to Judge Advocate General Cmdr. Kevin Whitmore, the purpose of the briefs was to arm Navy families with information. "Our hope is that people attending these briefs will leave here today empowered," Whitmore said.

During the Naval Construction Battalion Center Gulfport presentation, Whitmore recommended individuals dealing with insurance adjusters and claims "keep a disaster journal, including details, dates, times and names of what you've been told, and by whom."

"The Navy Legal Service Office (NLSO) in Gulfport is standing by to help," said Lt. Brett Bowlin, Officer in Charge of the NLSO in Gulfport. "Bring your checks or insurance contracts into the Naval Legal Service Office here on base, and if you have questions about it, we can look over it."

Navy families affected by hurricanes Katrina, Rita or Wilma can obtain immediate personnel-related assistance through the Navy's toll-free number, 877-414-5358, or obtain further information by visiting Task Force Navy Family Web site at [www.navy.mil/tfnf.html](http://www.navy.mil/tfnf.html).

Community Support Centers (CSC) are another resource for hurricane-impacted personnel and families. The CSC staff can provide one-on-one consultation, assistance with evacuation allowances, emergency assistance, military family hotlines, emotional support, school and community information, and all other appropriate assistance. For a complete list of contacts at CSCs, please visit the Task Force Navy Family Web site or call 800-372-5463.

Navy family members can also contact the Task Force Navy Family Ombudsman Resource Center for questions or referrals relating to any needs as a result of hurricanes Katrina, Rita or Wilma by calling 866-345-8179.

For related news, visit the Task Force Navy Family Navy News-Stand page at [www.news.navy.mil/local/hurricane/](http://www.news.navy.mil/local/hurricane/). CHIPS

DON CIP Program Course consists of four sequential courses outlined below:

DON CIAO – 5862-1/Marine Corps DI5500 A: Beginning the CIP Process

Introduces CIP and the CIP Event Cycle with detailed information on the first phase: Analysis & Assessment. Lesson Goal: student will be able to identify:

- The main events in the evolution of CIP and the steps of the CIP Event Cycle
- The factors that determine mission critical assets
- The types of assets assessed in the CIP process
- The purpose and components of the Naval Integrated Vulnerability Assessment

DON CIAO – 5862-2/Marine Corps DI5500 B: CIP Remediation - Reducing Known Vulnerabilities

Explains the concept of remediation and takes the student through the remediation process. Lesson Goal: student will be able to:

- Identify the purpose of remediation
- Identify and apply the steps in the CIP remediation process

DON CIAO – 5862-3/Marine Corps DI5500 C: Reacting to Potential Threats

Discusses how to use the knowledge gained from mission critical assets to appropriately react to threat indications and warnings. Lesson Goal: student will know how to:

- Identify the elements of CIP Indications & Warnings
- Update a list of mission critical assets
- Identify the techniques used to mitigate the threat to mission critical assets
- Apply available resources to mitigate the threat to a mission critical asset

DON CIAO – 5862-4/Marine Corps DI5500 D: Consequence Management (CM) Planning

Describes the CM planning process and the specific plans required. Lesson Goal: student will be able to determine whether a current and accurate CM plan exists, and will know how to:

- Identify the process used to create an integrated CM Plan
- Apply the steps in the CM Process to update an existing CM plan
- Identify the components of each of the four plans that make up a CM Plan

To access the DON CIP program courses:

1. Log in to NKO.
2. Click on the e-Learning link, which will take you automatically through one screen to the Welcome page for e-Learning.
3. Click on the link for the DON CIP Program in the "What's New Listing."

You can access MarineNet via NKO or directly. Eligibility information is verified against the Defense Enrollment Eligibility Reporting System (DEERS). If you are registered in the DEERS, you will likely have access to courses on MarineNet.

Don Reiter is the Lead for the Department of the Navy CIP Program. CHIPS

# CARRIER STRIKE GROUP TWELVE SPONSORS FLEET/JOINT/COALITION TESTING OF OPEN STANDARDS CHAT TOOL

By Cmdr. Danelle Barrett

Commander, Carrier Strike Group (COMCARSTRKGRU) Twelve initiated and executed a successful combined fleet, joint and coalition test for an open standards chat capability over the NIPRNET Oct. 19, 2005.

Group Twelve secured the participation and assistance of U.S. Joint Forces Command (USJFCOM), U.S. Pacific Command (USPACOM), Commander, Pacific Fleet (CPF), the Defense Information Systems Agency (DISA), NATO Supreme Allied Command Transformation, U.S. Air Force Command and Control, Intelligence, Surveillance and Reconnaissance Center (AFC2ISRC), Naval Postgraduate School (NPS) and Space and Naval Warfare Systems Command (SPAWAR) to demonstrate tactical chat interoperability using open standards compliant solutions with two of its units underway.

## Tactical Chat Challenge in the Fleet

The impetus for the test was the lack of open standards chat tools in the fleet, and the proliferation of stovepipe systems that inhibit interoperability with joint and allied partners. Chat is used in the classified tactical environment by watchstanders and fleet personnel for command and control, and to coordinate logistics, communications and administrative matters. However, it is not used at all on the unclassified side due to known security vulnerabilities with existing chat programs.

Afloat naval units primarily use mIRC (Internet Relay Chat) on Windows workstations, Microsoft Chat on IT-21, and Zircon chat on the Global Command and Control System-Maritime (GCCS-M) as tactical chat tools behind the fleet SIPRNET.

Sametime Meeting Chat is in limited use on the SIPRNET and the Combined Enterprise Regional Information Exchange System (CENTRIXS) among fleet units and coalition partners over separate circuits. Some units also use Multi-Level Secure Chat, government-developed software based on the Dabble protocol (not an open standards protocol). The Defense Collaborative Tool Suite (DCTS) is the approved Department of Defense (DoD) integrated set of off-the-shelf-applications, primarily Microsoft-based, used for collaboration.



*Combat Information Systems Officer on USS Enterprise, Lt. Cmdr. Mark Guzzo, and IT2 Laketa Youngwallace and IT1 (SW) Mahogany Moore (right) of Carrier Strike Group Twelve participating in a chat demonstration.*

While DCTS tools conform to open standards for video and text chat, the clients from different products are not interoperable “out of the box.” Additionally, DCTS is not bandwidth friendly, so it is not used by naval units. Some flagships also use InfoWorkSpace (IWS), which requires significant bandwidth and expensive client licenses.

The primary tool used for day-to-day tactical chat operations by the fleet is IRC. However, IRC has inherent security vulnerabilities and limited active commercial development. This hodgepodge of noninteroperable options poses challenges to fleet command and control and shared situational awareness. Therefore, beginning June 2005, COMCARSTRKGRU Twelve, with the significant aid of its aforementioned partners, began planning a fleet, joint and coalition test of open standards Extensible Messaging Presence Protocol (XMPP) tactical chat on the unclassified network.

## Government and Industry Support for XMPP

XMPP is an open standards protocol for chat with data in Extensible Markup Language (XML) format. As with any emerging technology or standard, government and industry support is key to proliferation in commercial products, maturation, growth and development of the standard. XMPP has that support. Nov. 30, 2005, the DoD Information Technology (IT) Standards Council (ITSC) unanimously approved the inclusion of XMPP as a mandatory standard in the DoD IT Standards Registry (DISR).

This is significant because it makes XMPP the only approved instant messaging standard approved by the DISR. Government agencies that the DON collaborates with are preparing to use XMPP. For example, the Department of Homeland Security announced in September 2005 that it was moving to XMPP chat.

The Department of the Navy Chief Information Officer (DON CIO) provides the DON voting representative on the ITSC. Additionally, the Internet Engineering Task Force (IETF) formalized core XML streaming protocols as an approved instant messaging and presence technology under the name “XMPP.” Major commercial supporters and users of XMPP chat include: Hewlett-



The Department of Defense Information Technology Standards Council (ITSC) unanimously approved the inclusion of XMPP as a mandatory standard in the DoD IT Standards Registry (DISR).

Packard; Jabber, Inc.; Oracle; Sun Microsystems; AT&T Corp.; EDS; Sony; Antepo; Apple; Hitachi; and more. In August 2005, Google announced that its instant messaging capability would be XMPP compliant. There are commercial and open source client and server implementations of XMPP running on Solaris, Windows, Linux, HP-UX, Mac OS X, Palm OS, Windows CE, Symbian OS and any platform capable of running Java Standard (J2EE) or Micro (J2ME) Editions.

Use of an XML-based chat solution will allow the Navy to leverage XML cross domain data guards (e.g., the USJFCOM XML data guard, part of its Cross Domain Collaborative Information Environment project currently in testing with the National Security Agency). This will provide multi-use of a single guard tool for XML relational databases, XML chat and Extensible Hypertext Markup Language (XHTML) data for improved interoperability with other open standards compliant products, which will eliminate the need for the proprietary cross-domain tools currently in place.

### Test Objectives, Architecture and Metrics for Success

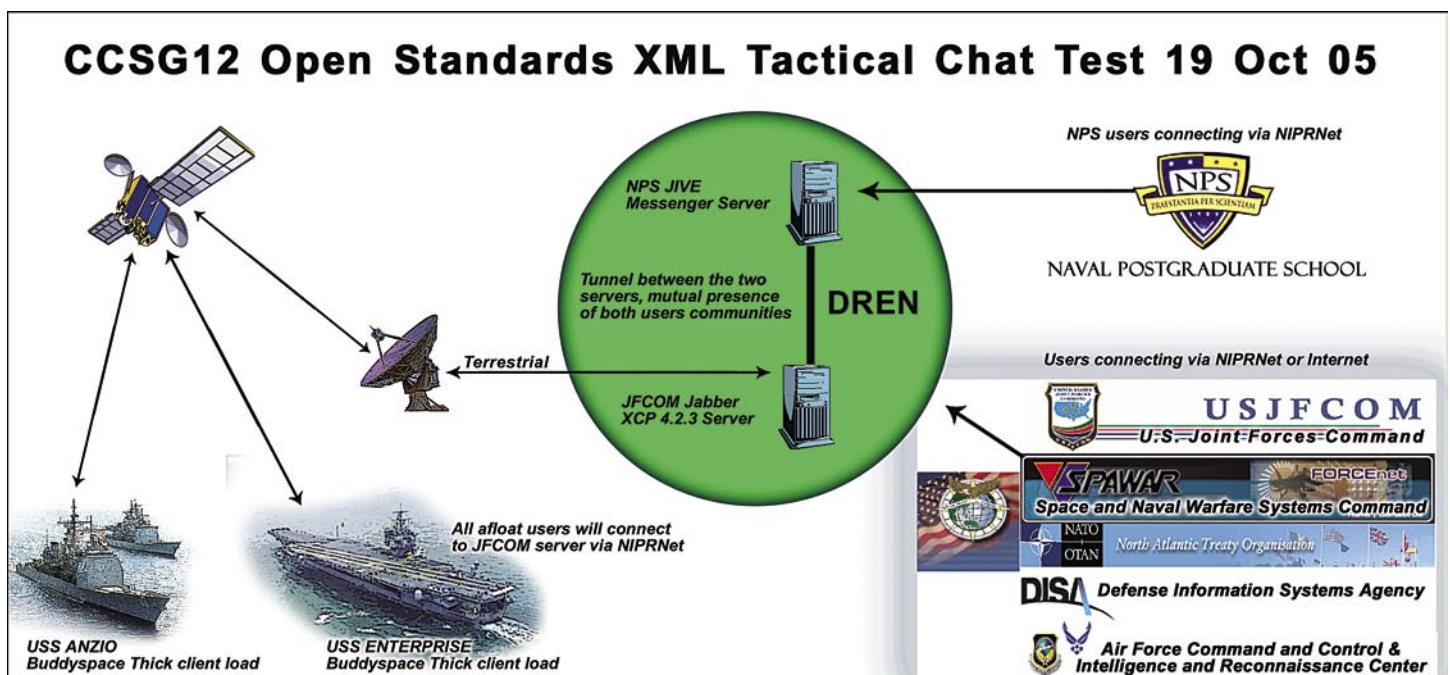
COMCARSTRKGRU Twelve assembled a test team and coordinated work issues in preparation for testing and approvals to load the chat client software aboard USS Anzio (CG 68) and USS Enterprise (CVN 65). USJFCOM and NPS provided engineering support and equipment ashore to host the test. DISA and SPAWAR assisted in getting the afloat clients through Preferred Product List (PPL) testing.

COMCARSTRKGRU Twelve was adamant about ensuring that all the proper processes and procedures were followed during the testing for loading the client software afloat. These processes included: Shipmain (configuration control), PPL, Interim Authority to Operate, requests for temporary exemption to the Unclassified Trusted Network Protect Policy, etc. Often fleet units load software or install systems without approval because personnel do not know the correct approval processes or the processes may be too cumbersome. This causes configuration management problems for the system commands (SYSCOMs): SPAWAR, Naval Sea Systems Command (NAVSEA) and Naval Air Systems (NAVAIR), which can result in performance or security vulnerabilities on existing shipboard networks and systems.

COMCARSTRKGRU Twelve identified four main test objectives:

- ✓ Connect and federate the Jabber Jive and Jabber XCP 4.2.5 servers at NPS and USJFCOM respectively, and ensure presence of users and persistence between users on both servers.
- ✓ Load and test different XMPP compliant chat clients at several joint and coalition commands, including units at sea. The mix of clients needed to include thick (client/server) and Web-based clients. Interoperability out of the box among the various clients had to be verified.
- ✓ Hold a chat session with all participants for approximately two hours. Monitor bandwidth for afloat connections and other locations where data could be collected. Analyze bandwidth data to determine functionality of clients in a bandwidth disadvantaged environment, specifically on both large and small ships at sea.
- ✓ Collect subjective data from users about the functionality and performance of the different XMPP client types to determine acceptable and unacceptable user experiences.

Figure 1. Architecture for Carrier Strike Group Twelve chat test.



Metrics for success were established which included:

- ✓ Shipboard bandwidth utilization does not increase significantly (more than five percent).
- ✓ A minimum of two XMPP compliant chat tools successfully interoperate.
- ✓ Chat clients afloat are able to easily connect and function with server ashore.
- ✓ Chat tool is available 100 percent of the time during the test period assuming a stable satellite link.
- ✓ Chat tool is user friendly and intuitive for operators (judged using a survey).
- ✓ Two open standards compliant chat servers are connected with presence of users established.

The test architecture (see Figure 1) included federating two servers together and establishing user presence and persistence for the chat session. USJFCOM was running the Dell PowerEdge 2650 Server and Dual Core 3.0 GHz central processing units (CPU) with four gigabytes of memory. Software included Red Hat Enterprise Linux 3.0 and Jabber XCP 4.2.5.

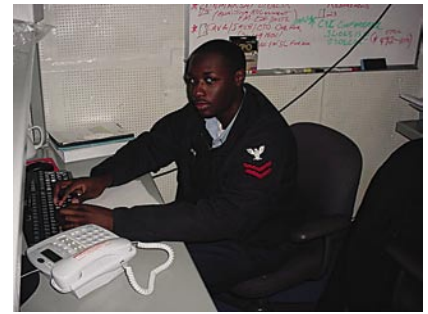
The NPS server was running on an Intel Mobile Pentium III P3 750 MHz dual processor with one gigabyte of memory. The operating system software was Fedora Core 3 Linux and the XMPP server used Jive Messenger 2.3.0. Both servers operated within the Defense Research and Engineering Network (DREN).

The servers were connected using the XMPP standard server protocol over Transport Control Protocol (TCP) on port 5269. Clients at the Naval Postgraduate School connected to the NPS server. All other clients, including afloat units, connected to the USJFCOM server.

Client software used included:

- USJFCOM: BuddySpace 2.5.1 Pro with USJFCOM enhancements.
- USPACOM and COMPACFLT: BuddySpace 2.5.1 with USJFCOM enhancements.
- NATO: BuddySpace 2.5.1 Pro with USJFCOM enhancements and Jabber SSL Web Client in nonpolling mode.
- Air Force: Jabber Web Client in polling mode over ports 80 and 443; Jabber Web SSL Client in nonpolling mode over ports 5222 and 5223; and BuddySpace 2.5.1 Pro with USJFCOM enhancements.
- NPS: Exodus thick client 0.9.1 on Windows XP and iChat 3.0.1 on Mac OS 10.4.
- SPAWAR: Jabber Messenger 3.0.2.2 thick client, Jabber SSL Web Client and Jabber Web SSL Client.

*IT2 Sherod Cooper of Carrier Strike Group Twelve participating in a combined fleet, joint and coalition test for an open standards chat capability conducted over the NIPRNET Oct. 19, 2005.*



- USS Enterprise: BuddySpace 2.5.1 Pro with USJFCOM enhancements.
- USS Anzio: BuddySpace 2.5.1 Pro with USJFCOM enhancements.

## Findings

The test conducted Oct. 19, 2005, was totally successful with more than 15 participants from different locations afloat and ashore following a scripted scenario with specific testing criteria. The test results showed that open source chat met the objectives and metrics for success. Four of the users involved in the test were underway on Enterprise and Anzio.

It was important to test the capability on a large ship with more bandwidth and redundant satellite links as well as on a smaller, more bandwidth disadvantaged platform. The test was conducted under normal operations. No special measures were taken to restrict user activity or increase bandwidth on the unclassified network. Because Web clients consume more bandwidth, they are ineffective for use at sea. A thick client solution remains the best alternative for afloat units.

On Enterprise with hundreds of personnel online and only 786 KBps of bandwidth, the BuddySpace thick client performed as good or better than the existing chat program. The same was true on Anzio which had only 128 KBps of bandwidth. In the after testing survey, all afloat users rated it five on a scale of one to five with one being the lowest level of satisfaction. Because the chat entries in BuddySpace were time stamped and persistent, re-entering the chat room posed no loss of situational awareness — an important feature for tactical chat.

Bandwidth utilization is always a concern for afloat units. The results of this test showed that the bandwidth used is supportable by existing satellite links and is comparable or better to existing tactical chat programs. Over the one and a half-hour test period, server bandwidth monitoring captured 10 Mb of client-server data communications for chat and instant messaging. Test participants received up to 600 KBps of TCP message communications from the server.

The most active users sent up to 100 KBps of TCP message communications to the server. The data amount varied with the time users entered and the amount of one-to-one messages. From these estimates, it was determined that passive users averaged 0.11 KBps, while active users averaged 0.13 KBps. Current work by USJFCOM and NPS on compression algorithms for tactical XML chat will only improve bandwidth efficiencies.

The authentication, time stamp and persistent session features in the BuddySpace client were useful from an information assurance perspective. It is not recommended that any chat server afloat be Public Key Infrastructure (PKI) enabled until a mechanism is put in place for non-DoD personnel without certificates to connect.

Recent events such as the tsunami and Hurricane Katrina relief efforts demonstrated the requirements for this type of collaboration via unclassified networks. Because future military collaboration will almost always include coalition partners, other agencies, industry, academia and non-governmental organizations, requiring PKI certifications will most certainly be a limiting factor.

The federation of the servers worked extremely well. Because the Navy will operate any chat architecture in a distributed, federated manner, demonstrating presence of users and their status is an important feature. The Navy must continue to improve synchronization and chat data compression capabilities to ensure efficient use of afloat bandwidth.

In preparation for testing, it was discovered that there is no one place to identify all of the required processes and approvals for loading software afloat. A Rosetta Stone is practically required to identify all the approvals and how to obtain them. As the team worked its way through these processes, more would emerge adding to the bureaucracy for temporary installations for testing initiatives.

For example, a requirement surfaced in September 2005 to add the software to the DON Application Database Management System (DADMS) for Functional Area Manager approval. Fortunately, the requirement was waived so the test could be conducted on time. It was observed that these processes were not easy, nor did they encourage controlled fleet-sponsored innovation and experimentation.

## Recommendations

In keeping with consolidated COMCARSTRKGRU Twelve, COMCARSTRKGRU Ten, COMCARSTRKGRU Eight and Commander, Expeditionary Strike Group One messages issued Oct. 17, 2005, which state the fleet operational requirements for open standards solutions for the fleet and implementation of collaborative tools across the naval enterprise architecture, the following recommendations were made by COMCARSTRKGRU Twelve.

- Commander, Naval Network Warfare Command (NETWARCOM) consider a policy making XMPP the approved open standards chat protocol for the fleet and shore Navy, and approve XMPP port use through the fleet firewalls and proxy servers.
- Navy FORCENet and SYSCOM engineers develop a consolidated plan to implement a distributed, federated, XMPP compliant chat solution for the fleet and eliminate non-XMPP chat programs. Each ship should have its own XMPP chat server so it can continue operations internally during periods when disconnected from the satellite link. Replication and synchronization of chat server data should be carefully engineered.

- Navy FORCENet and SYSCOM engineers should leverage work done by NPS and USFJCOM to apply compression algorithms to XML chat, which will improve bandwidth efficiencies afloat. Current research and testing achieves XML chat compression by a ratio of 3:1 without noticeably increasing latency of the chat session.

- NETWARCOM work with the SYSCOMs to collectively consider using BuddySpace, the open standard, open source freeware developed by USFJCOM based on the Jabber Instant Messaging model as the software for afloat forces.

- Navy representatives to the DISA Global Information Grid (GIG) Net-Centric Enterprise Services (NCES) Working Group support only XML compliant, bandwidth friendly solutions for the follow-on to DCTS.

- Continue to test XMPP and other open standards compliant collaborative tools in a joint, coalition and interagency environment. The continued development of joint capabilities around open standards should drive Navy solutions particularly when the Navy doesn't have an existing capability.

- Consider XMPP chat and all collaborative tools as enterprise services. Ensure the Navy Marine Corps Intranet (NMCI) adopts XMPP as its instant messaging and text chat solution and that an improved XMPP client be installed on all NMCI workstations. This is particularly important for embarkable staffs moving between the NMCI and afloat network enclaves.

As the Navy continues to put into place key components of the FORCENet architecture, adherence to open standards collaborative tools, such as those tested during this exercise, will ensure maximum interoperability in future warfighting, peacekeeping and humanitarian relief operations.

*Cmdr. Danelle Barrett is assigned to the Standing Joint Force Headquarters, USPACOM. Barrett was the former communications officer on COMCARSTRKGRU Twelve.*

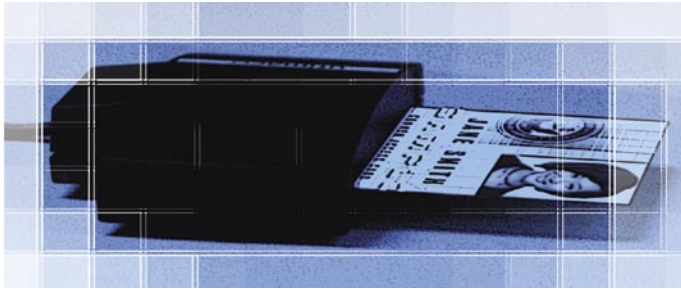
*The following individuals were part of the XMPP test team and were instrumental in its success: USFJCOM – Ms. Monica Shephard, U.S. Army Maj. Edward McLarney, Boyd Fletcher, Sean Mullin and Brian Raymond. DISA – Diane Boettcher. SPAWAR – Perry Powell, Omar Amezcua, Dennis Magsombol, LorRaine Duffy and Ed Monahan. AFC2ISRC – Charles Martin and Brian Mulkey. NPS – Dr. Don Brutzman, Don McGregor and U.S. Marine Corps Maj. Adrian Arnold. NATO – U.S. Navy Cmdr. Eric Kukanich and Mark Lovering. PACOM/CPF – U.S. Marine Corps Col. Kevin Jordan. CPF – Bob Stephenson, Jim Rogers and Rob Thompson. USS Anzio – Lt. j.g. Christopher Miller and Petty Officer Steven Kelley. USS Enterprise – Cmdr. Carrie Hasbrouck, Lt. Cmdr. Mark Guzzo, Ensign Bill Young and Petty Officer Giacomo Mannino. COMCARSTRKGRU Twelve – IT1 (SW) Mahogany Moore, IT2 (SW) Laketa Youngwallace and IT2 Sherod Cooper.*

CHIPS

# Cryptographic Log-on ... Coming Soon

By James Mauck

Cryptographic log-on (CLO) is a process that uses the Common Access Card (CAC) and embedded Public Key Infrastructure (PKI) certificates to authenticate a user's workstation and network. It replaces the username and passwords used today for identifying and authenticating users. To log-on cryptographically to a CLO-enabled workstation, users simply insert their CAC into their workstation's CAC reader and provide their six to eight-digit Personal Identification Number (PIN).



The Secretary of Defense has embraced public key cryptography as a critical component of Defense-in-Depth and contributor to the overall Department of Defense (DoD) information assurance (IA) strategy for protecting its information and networks. DoD Instruction 8520.2, "Public Key Infrastructure and Public Key Enabling" (available on the DON CIO Web site at <http://www.doncio.navy.mil>) establishes the requirements for PK-enabling all e-mail, private Web servers and networks.

Today, users typically identify themselves to the network with their username. The network authentication process requires that users prove they are actually who they claim to be. Authentication evidence can be provided by something unique, such as a password, CAC, PKI-certificate or biometric fingerprint. Providing more than one form of evidence increases the strength and assurance of the user's identity.

Cryptographic log-on uses "two-factor" or strong authentication and provides a higher level of assurance than traditional passwords. Multiple recent network defense exercises have shown that passwords are becoming a weak link because they are easy to share, not hard to gather through social engineering efforts and are easy to break using advanced password cracking tools. CLO mitigates many of the risks associated with passwords because to masquerade as a user, a potential attacker must physically have control of a user's CAC and know his or her PIN.

Cryptographic log-on is the first step toward a future single (or reduced) sign-on environment in which we will need fewer passwords — passwords we won't have to manage, remember, change every 90 days or call the help desk to have reset. Expanded use of PK-enabled portals and Web servers will further eliminate the need for traditional username and password authentication.

By using the PKI credentials you provided during the CLO process at the beginning of your network session, PK-enabled portals and Web servers will transparently perform the authentication

and access control functions on your behalf. Insert your CAC, enter your PIN, and you are done. The benefit of single (or reduced) sign-on is multiplied when a compromise occurs because by revoking a user's PKI certificate, a user's access is terminated in any environment relying on that certificate for access control.

The Navy Marine Corps Intranet (NMCI) will lead the way within the Department of the Navy for CLO enablement. Within the NMCI there is already a small pilot group successfully using CLO. Larger scale, capability proof-of-concepts will commence in spring 2006 for the Navy at the Space and Naval Warfare Systems Command in San Diego, Calif., and for the Marine Corps at Quantico, Va. NMCI-wide CLO enablement will begin upon successful completion of those capability demonstrations.

Parallel efforts are underway within the Department's non-NMCI business and tactical networks to ensure they are afforded the same robust security enhancements provided by CLO. The infrastructure upgrades and improvements required to support CLO are being implemented enterprise-wide to support the Marine Corps Enterprise Network (MCEN), the Navy's ONE-NET and Integrated Shipboard Network System (ISNS) networks afloat.

You can prepare now for the change. Verify that you have your CAC, that it has all of the required certificates and that you know your PIN. If your CAC is locked or is missing certificates, visit your local RAPIDS (Real-time Automated Personnel Identification System) site or find the nearest site by linking to <http://www.dmdc.osd.mil/rsl/>.

If you do not already do so, keep your CAC with you at all times. Once you are enabled for CLO, you will not be able to use your computer without your CAC. Also, removing your CAC will lock your workstation and prevent anyone from using it while you are logged in.

Become familiar with using your CAC for signing and encrypting appropriate e-mail or when accessing PK-enabled Web sites. Review the PKI and CAC training modules on NMCI e-Learning available from your NMCI workstation by going to [http://training/mgen-img/library/html/crs\\_display.htm/](http://training/mgen-img/library/html/crs_display.htm/), select the "Catalog" tab and type in PKI. For PKI/CAC user information link to <http://www.nmci-isf.com/userinfo.asp/>.

*James Mauck is a contractor supporting the DON CIO Information Assurance Team.*

CHIPS

# Multi-User ECP Automated Review System

By John Rogers

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"Our office saved \$250,000 in paper costs in the first year of using MEARS."

- William F. Moeller  
Patriot Missile Configuration Manager

"MEARS has reduced our ECP creation and review process from 75 days to 10 days."

- Angela D. Smith  
U.S. Marine Corps AAV Program Office

The Multi-User Engineering Change Proposal (ECP) Automated Review System (MEARS) provides an automated engineering change process that could save your Navy program or agency time, money and effort.

Just imagine the possibility of beginning and completing a Configuration Control Board (CCB) in as little as one day. Without travel and other related ECP costs, your CCB members and subreviewers around the globe could log in to MEARS on the Web for electronic creation of ECPs, Request for Waivers/Request for Deviations (RFW/RFD), Specification Change Notifications (SCN) and Notice of Revisions (NOR), as well as online review, redlining, comment and disposition — and all in real-time.

MEARS is a government-developed and owned, Web-based software program that automates the engineering change process. A truly remarkable configuration management tool, MEARS expedites ECPs from creation to archives. MEARS, recently named a Best Manufacturing Practices Center of Excellence (BMPCOE) site by the Office of Naval Research Best Manufacturing Practices (BMP) Program (<http://www.bmpcoe.org>), is managed by the MEARS Program Office at the U.S. Army Aviation and Missile Command (USAMCOM) at Redstone Arsenal, Ala.

BMPCOE is a business process improvement think tank sponsored by the Naval

Operations Research Center, University of Maryland and the U.S. Department of Commerce. Originally deployed in 1992 to the Patriot Project Office, MEARS has been named a Department of Defense best of breed solution, and today supports 3,500 DoD, Department of Homeland Security (DHS), defense industry and foreign military sales customers throughout the world.

Defense and DHS MEARS customers include the program offices for the Patriot missile; Armed Reconnaissance helicopter; Multiple Launch Rocket System; Hellfire missile; Apache Longbow; Avenger; Test, Measurement and Diagnostic Equipment; Automated Test Equipment/Test Program Sets; CH-47 Chinook helicopter; Missile Defense Agency; Defense Contract Management Agency; U.S. Marine Corps; Naval Surface Warfare Center; Hercules; Bradley Fighting Vehicle; U.S. Coast Guard; and elements of the Department of Homeland Security.

MEARS handles unclassified documents and drawings, as well as those that are classified through the SIPRNET. MEARS is NMCI-certified (Navy Marine Corps Intranet) and links to the Joint Engineering Data Management Information and Control System (JEDMICS) and Configuration Management Information System (CMIS). MEARS, through Database Mapper, can also port data to other relational databases to avoid manual data entry.

A staff of one government program manager, five contractor developers and four contractor customer support personnel provide world-class customer service from their office located at USAMCOM Integrated Materiel Management Center.

MEARS and its customers are like family. Without exaggeration, we would be nowhere without our customers, and we treat them that way. We continue to develop and mold MEARS to meet the unique requirements of each customer.

## MEARS Software

MEARS consists of five components: MEARS Create, MEARS Review, MEARS System Utilities, MEARS Database Mapper and the new MEARS Reports module, which includes a custom report feature. MEARS has the capability to populate ECP data into Structured Query Language (SQL) CM databases and can interoperate with tools using an Extensible Markup Language (XML) schema.

MEARS utilizes the Computer-Aided Acquisition and Logistics Support (CALs) compliant text interchange format, Standard Generalized Markup Language (SGML), Hypertext Markup Language (HTML), XML and CALs-compliant graphics. SGML enables automated relational database loading and also enables hypermedia review of engineering change documents.

All documents are viewed with the Secured Socket Layer (SSL) and maintained on a Web server. Any user with access to the Internet and a Java enabled browser will be able to access a MEARS Web server with a validated login and password.

MEARS has been in production since the Windows version of MEARS was released in 1993 and was replaced with the first Web version of MEARS, 7.0, in December 1998. There were nine improved versions released between December 1998 and May 2004.

The current version of MEARS (9.4a) was released Nov. 17, 2005. Enhancements include the Specification Change Notice form; the ability to attach documents (MS Word, Excel, etc.) to comments; automatic e-mail notification on document disposition; and a key word search capability for ECP number, item nonmenclature or any key word.

MEARS receives no direct DoD funding; it relies totally on reimbursable dollars from government customers.

For more information about MEARS, go to our Web site at <http://mears.army.mil> to view an online demonstration, or phone the MEARS support desk at (256) 842-0864 or DSN 788-0864.

John Rogers is the MEARS program manager.  
CHIPS

# The Office of Naval Research and the Naval Research Laboratory Experimentation in Underwater Acoustic Communications Research

*U.S. Navy and Air Force Reservists integrated seamlessly in at-sea experiments in the past year on board NRL research vessels*

By U.S. Navy Reserve Cmdr. Michael T. McCord

Underwater digital acoustic communications (Acomms) with added networking capability is one of the leading research programs at the Naval Research Laboratory (NRL) — one that supports advances in the Sea Basing concept of the Navy's Sea Power 21 initiative. Radio frequency and laser communications have limited ocean range, but Acomms provide strategic communications at ranges up to 20 nautical miles.

The goal is to improve the technologies, used by the Office of Naval Research (ONR) and the Space and Naval Warfare Systems Command (SPAWAR), to enhance communications with submarines and between autonomous undersea vehicles. Improvements are delivered to the fleet in a series of milestones. ONR raises the bar each year for increased Acomms data rates, and we are in a continuous process of pushing technology advancements to meet these goals.

To this end, the NRL civilian staff teamed with members of the Navy and Air Force Reserves to take Acomms research to the ocean. Advances directly support future Navy capabilities for communications and networking between submarines, autonomous undersea vehicles, surface ships and test ranges. Applications for Acomms technology include rapidly deployable systems, minehunting and mine countermeasure systems, tactical communications, advanced weapon systems and undersea networking.

## Technical Description

NRL's research concentrates on understanding the underwater medium and developing techniques that improve the communications efficiency under less-than-optimal channel conditions.

Low signal-to-noise ratio, multipath, reverberation and motion-induced Doppler frequency shift are examples of adverse channel conditions that limit data rates and lead to higher bit-error rates. The

Acomms team tests new modulation techniques and evaluates the ability of new algorithms to improve communication rates.

The team also characterizes the ocean's acoustic channels so the theoretical maximum communication rate can be determined under varying conditions. For one-to-one acoustic data telemetry, focus is on achieving the highest data rate using phase-coherent acoustic communication techniques over a given bandwidth and a given set of acoustic channel conditions. For networking, focus is on the robustness of acoustic handshaking and maximizing channel capacity for multiple users.

Highly specialized equipment is used to conduct at-sea experiments. In a typical deployment, two subsurface systems are placed in the water column and moored about 30 meters below the surface. A third system, modified for towing behind the vessel, simulates an autonomous undersea vehicle for researching communications between submerged vessels.

The two moored systems are loosely tethered to surface buoys that provide radio frequency communications with the research vessel over a wireless local area network (LAN). To simulate an autonomous undersea vehicle, NRL developed a hydrodynamic frame for the Acoustic Communications Data Storage system. Controlled from the ship's lab, the two moored systems and the towed system conduct digital networking using underwater acoustic communications.

Space-efficient PC104 computers provide the brains and interface with acoustic projectors for transmitting and hydrophones for receiving. A typical experiment is conducted in three days and ends when the batteries are exhausted or the on-board 300 GB data storage drives are full.

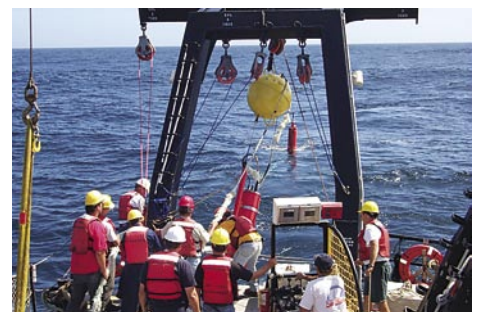
Communications between the moored Acoustic Communications Data Storage



*Program leader, Dr. Tsih C. Yang (right), a world-class expert in acoustic communications research, briefs the team in the Research Vessel Endeavor laboratory. Dr. Yang gave the reservist team an overview of the science mission, goals and anticipated results.*



*U.S. Air Force Maj. Richard Friedman and Navy Reserve Cmdr. Dan DiDomenico set up the wireless local area network equipment inside the Acoustic Communications Data Storage Subsurface Unit.*



*The team deploys the Acoustic Communications Data Storage Subsurface Unit. The operations area was about 70 nautical miles east of Delaware, located near the edge of the continental shelf. Operations areas are selected in the more challenging acoustic regions to better understand the effects of multipath, reverberation and Doppler.*

buoy systems and a NRL-chartered research vessel require temporary installation of a 2.4 GHz antenna. With special Federal Communications Commission (FCC) authorization, the wireless LAN operates with 6 watts of power, providing communications out to 8 nautical miles.

### The NRL Civilian Team

Dr. Tsih C. Yang leads one of the high-visibility research programs at NRL. He is a world-class expert in acoustic communications research. The team also includes signal-processing experts, Paul Gendron, Wen-Bin Yang and Jeff Schindall, with engineering services provided by Michael McCord.

Research results have appeared in more than 20 publications. Two patents have been granted with two more in process. The team has participated in eight at-sea experiments in various parts of the world under different sound propagation conditions.

Naval Reservists integrated seamlessly in several at-sea experiments in the past year on board NRL research vessels. Michael McCord, an NRL engineer (and Naval Reservist) coordinates the use of reservists in these experiments. Reservists are usually service members attached to units supporting the ONR or Naval Sea Systems Command. During the experiments, there were many long days, little time off and intense pressure to meet the schedule.

The weather was poor at times, creating challenges in port and at sea, but reservists stepped up to each task often suggesting improved ways of using the equipment, and always setting the highest example for their respective services. It was evident early on that they were making significant contributions to the program.

Naval Reserve Chief Fire Control Technician Jan Caban was eager to participate in the NRL experiment. *"I saw the opportunity as tremendously exciting — a chance to go to sea again, which I truly love ..."*

Naval Reserve Cryptologic Technician (maintenance) 1st Class Catherine Christian said the experience exceeded her expectations. *"... The team atmosphere*

*of the NRL research staff particularly impressed me. The other reservists onboard and the vessel's crew all became equally enthusiastic about the goals of the project. I'm sure it was this out-of-the-box approach that led the entire team to overcome multiple technical and weather challenges..."*

### The Excitement Begins

Typical at-sea experiments begin with a week of system preparations. University of Delaware-owned Research Vessel Cape Henlopen at 120-foot and 197 gross tonnage was not the usual ride for Navy officers and Sailors. The ride was rough because the Henlopen is a small vessel. But the mission was important, and it wasn't long before reservists got their "sea legs."

Equipment was installed in racks to facilitate system integration months before the experiment. This provided excellent protection for shipment and allowed quick set-up on board. Almost all the equipment used was purchased off-the-shelf and has proven to be dependable.

The Surface Acoustic Communications Data Storage unit contains the wireless LAN electronics and is loosely tethered to the subsurface unit. Fiber optic lines within the tether provide a 100Base-T network link to the subsurface unit.

Located near the edge of the continental shelf, operations areas are selected in the more challenging acoustic regions to better understand the effects of multipath, reverberation and Doppler. Among the challenges our team faced in the September 2003 experiment was rough weather in the Atlantic Ocean caused by the approach of Hurricane Isabel.

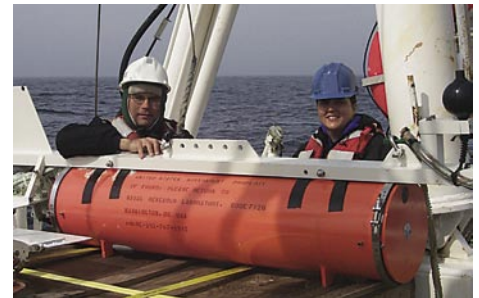
Conditions were so choppy that by the time we arrived on station, we had quite a challenge to deploy the Acoustic Communications Data Storage units. The difficulty was in standing still while the ship was rocking and having our hands free to conduct the experiment.

### Results

During this experiment, data from point to point transmissions were evaluated for high data rate (voice and video rate) acoustic telemetry. Data between moored and towed systems were evaluated for acoustic communication network-



*CTM1 Catherine Christian performs an Acoustic Communications Data Storage pressure vessel air evacuation.*



*Getting sensitive electronic systems into the water can be tricky from the deck of a rolling and pitching vessel. Lt. Derek Buzasi and Ensign Kim Pavlovic setting up the Acoustic Communications Data Storage towframe.*

ing. Some analysis was conducted at sea, but the bulk of the work is done in the lab. NRL has developed system performance modeling and prediction capability that incorporates site-dependent signal propagation characteristics.

Improved algorithms have been developed to mitigate environmental and platform motion effects on communications data rate and bit-error rate. Applications include reliable communications for submarines operating at tactical speeds and depths and robust networking capabilities between unmanned underwater vehicles.

We gratefully acknowledge the research funding provided by the Office of Naval Research. Results from the research is delivered to our ONR sponsor and published in science journals.

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*Michael McCord is an engineer in the Naval Research Laboratory, Code 7120 and a commander in the U.S. Naval Reserve.*

CHIPS

# USMC Plan for Information Technology Management

By U.S. Marine Corps Col. Paul Hilton

## Background

Responsibility and authority over all aspects of information technology (IT), including requirements definitions, procurement and governance, are influenced by an organization's traditions and business processes. Certainly within the Department of Defense (DOD), the Planning, Programming, Budgeting and Execution (PPBE) process governs all investments including IT. It was developed to acquire capabilities based on the National Military Strategy. However, IT procurement is further influenced by the expectations of legislation such as the Clinger-Cohen Act, Information Resources Management Act and Paperwork Reduction Act. Each of these elements, historical processes and more recent legislation, require the services and U.S. government agencies to organize processes and offices to assure appropriate acquisition and management of IT resources.

The Marine Corps serves as an example of how one military service is adapting its organizations to meet both the mandates of the PPBE process and the broad requirements of the Clinger-Cohen Act in the management of IT. This article will look at how the Marine Corps organizes its resources to procure and manage IT capabilities, and it will highlight some important IT goals that the Director, Command, Control, Communications and Computers (C4) has identified in the C4 Campaign Plan.

## Organization

First, it is important to recall that the Marine Corps is organized as a separate military service within the Department of the Navy (DON). Accordingly, the Marine Corps is assigned statutory roles, responsibilities and authorities by U.S. Code Title 10, to "organize, train and equip" the active and reserve forces. These responsibilities, while done in coordination with the Navy where appropriate, are separate military service responsibilities under the Secretary of the Navy. Accordingly, the landscape of authorities and organizations affecting Marine Corps IT can be viewed from two perspectives: one is an upward or the DON organizational view; the other is an internal or Marine Corps view.

In conjunction with the authority given the DON Chief Information Officer (CIO), the services still maintain separate responsibilities for IT governance. In recognition of the existing service authorities and to assist the DON CIO, the Secretary of the Navy appointed the Marine Corps Director of C4 to be the Deputy DON CIO (Marine Corps). Likewise, he has made a similar designation for the Navy. The Deputy DON CIO (Marine Corps) is responsible to the DON CIO (as well as to the Commandant of the Marine Corps (CMC)) for Clinger-Cohen activities and governance for the Marine Corps.

The DON CIO tasked his two service deputies to conduct IT Capital Planning and Portfolio Management to develop an information

management/information technology (IM/IT) architecture, manage the IM/IT workforce, and provide leadership and governance of IM/IT activities. This relationship with the DON CIO allows the Marine Corps flexibility to make IT management decisions based on our unique warfighting requirements, but with a close eye to interoperability and integration with naval IT. Viewing the Marine Corps internally, there are several other organizational entities with IT responsibilities and stakeholders within the IT enterprise. There are three primary organizations that have assigned responsibilities for leadership and governance of IT:

**Headquarters Marine Corps (HQMC) C4** – Plans, directs, coordinates and oversees C4 and IT capabilities that support warfighting functions.

**Marine Corps Combat Development Command (MCCDC)** – Ensures that all warfighting capabilities are integrated across the spectrum of Doctrine, Organization, Training, Materiel, Leadership, Personnel and Facilities (DOTMLPF) to produce integrated capabilities based on warfighting concepts, and to provide required capabilities to the operating forces and regional combatant commanders.

**Marine Corps Systems Command (MARCORSYSCOM)** – Serves as the Commandant's principal agent for acquisition and sustainment of systems and equipment used by the operating forces to accomplish their warfighting mission. Participates in DON Research, Development and Acquisition (RDA) "Virtual SYSCOM" efforts in conjunction with the systems commands: Naval Sea Systems Command (NAVSEA), Naval Air Systems Command (NAVAIR) and the Space and Naval Warfare Systems Command (SPAWAR). Other organizations and chartered boards and stakeholders in the processes of IT management include the following.

**Marine Corps Warfighting Lab (MCWL)** – Chartered under MCCDC to improve naval expeditionary warfighting capabilities across the spectrum of conflict for current and future operating forces.

**Marine Corps Operational Test and Evaluation Activity (MCOTEA)** – Responsible for the operational testing of all Marine Corps weapon systems and equipment (except for those that involve aircraft) to ensure that Marines in the operating forces receive the best possible weapon systems and equipment to successfully fulfill their warfighting mission.

**Marine Corps Tactical Systems Support Activity (MCTSSA)** – Provides technical support to the Commander, MARCORSYSCOM, and program managers to acquire and sustain C4ISR products for the operating forces.

**Marine Corps Network Operations and Security Command**



(MCNOSC) – Provides 24/7 enterprise support for the following “core” functions: information assurance, network operations, computer network defense, deployed support and network security.

**Marine Requirements Oversight Counsel (MROC)** – Advises the CMC on policy matters related to defining and validating requirements, reviewing major force structure initiatives and concepts validation.

**MROC Review Board** – Reviews topics and makes recommendations, and is a subordinate guiding body to the MROC.

**Advocates** – provide broad-based experience and direct representation to the MROC for each element of the Marine Air-Ground Task Force (MAGTF) and supporting establishment. Each advocate chairs an Advocacy Board and has several subordinate Operational Advisory Groups (OAG) that provide recommendations to the advocates on various topics including IT capabilities and requirements. For instance, the Director C4 chairs the C4 OAG, which is subordinate to the Command Element Advisory Board (CEAB). This forum allows the Director C4 to address long term, broad strategic issues with members of the C4 community, as well as short-term issues that have an operational impact. The C4 OAG provides input and recommendations to the CEAB, and the other advocates, by consulting and conferencing with the operating forces’ Command Information Officers (G6s).

*(As this article was written the Marine Corps concepts and process for advocates and advocacy were changing. In fact, the specific title of advocate is being dropped and different titles and roles for the former advocates are being worked. However, for IT, in many respects, the functional oversight role that advocates have traditionally held will continue. It is expected that former advocates will continue to exercise overall leadership and governance over a set of functional managers.)*

**Functional Area Managers (FAMS)** – Provide overall IT governance for an advocate in a specific functional area. Certainly one of the major objectives for the Navy and the Marine Corps is the development of a capability-based portfolio. In pursuing this objective, the Marine Corps is building its IT portfolio to enable business and warfighting missions; reduce legacy applications through standardization and version control; and minimize duplication on the desktop and servers.

To accomplish this the Marine Corps has assigned FAMS with responsibilities for managing functional portfolios. Each FAM performs the portfolio management duties under the authority of a Marine Corps advocate. Marine Corps FAM efforts must be in concert with the role of the advocates especially from a requirements and resourcing perspective. The FAM assignments are the clearest example of the melding of the more traditional Marine Corps approach to PPBE and the less traditional Clinger-Cohen activities within the DON.

## The C4 Campaign Plan

The Director C4 is responsible for setting the IT strategic direction, goals and objectives for IT. The seminal document publishing this vision is the C4 Campaign Plan. The Campaign Plan is

helpful for providing high level IT direction and priorities for all Marine Corps entities with IT responsibilities whether they manage existing capabilities or procure future capabilities. The C4 Campaign Plan is updated roughly every two years. It outlines the Marine Corps linkages to the DON-wide IT goals and objectives stated in the DON IM/IT Strategic Plan. It also outlines IT support to overall Marine Corps strategy as expressed in documents such as the Expeditionary Maneuver Warfare concept, Marine Corps 21 and CMC Planning Guidance.

The Campaign Plan is helpful for our industry partners because it describes what the Marine Corps IT environment is and, more broadly, what capabilities are required. Marine Corps IT capabilities need to be “edge” focused and expeditionary because of the nature of the Marine Corps mission. The normal Marine Corps environment consists of forward-based operations with constrained bandwidth, harsh climates and limited physical space for IT equipment. Equipment must be vehicle mounted or portable and capable of embarking via amphibious maritime prepositioned shipping or military airlift.

Further, the C4 Campaign Plan directs that procured IT systems must be able to operate where power is unreliable and supporting infrastructure is limited. Systems must be highly mobile, modular; capable of beyond line-of-sight; easy to install, operate and maintain; less manpower intensive; more user friendly; integrated and open standards-based; jointly interoperable; and designed with built-in security.

Beyond these stipulations regarding the operating environment, the C4 Campaign Plan describes a vision for a Marine Corps information environment that is “synchronized from the ground up to facilitate network integration and interoperability across the Marine Corps Enterprise Network (MCEN).” To that end, five actionable objectives were identified. They are: (1) Develop Marine Corps Enterprise IT Services (MCEITS), a Services Oriented Architecture (SOA) that is complementary but not duplicative of Net-Centric Enterprise Services; (2) Web-enable the Marine Corps; (3) Create a shared data environment; (4) Leverage innovation; and (5) Conduct network operations.

A revised C4 Campaign Plan is in the works, but certainly the main tenets mentioned above will not change. It will build upon the good work that has already been accomplished and point the way ahead. This article has described the general Marine Corps organization for the management of IT within the DON. It has mentioned the more prominent organizations and authorities that have input into the Marine Corps IT portfolio of capabilities. Finally, it has given a sampling of some of the characteristics expected of fielded IT systems from the C4 Campaign Plan.

The Marine Corps has melded together a flexible organization to provide IT capabilities within the PPBE process and the Clinger-Cohen mandates under the supervision of both the Commandant of the Marine Corps and the Secretary of the Navy.

*Col. Paul Hilton is the head of the Marine Headquarters C4 Network Plans and Policy Division.*

CHIPS

# Life in and around the Green Zone

By Andrew Poe

Supporting the active duty force in the global war on terror are an unprecedented number of government civilian and contractor personnel. They are subject to many of the same hazards and hardships as their active duty comrades ...

In late 2003, the Space and Naval Warfare Systems Command (SPAWAR) Systems Center Charleston (SSC), Special Communications Branch received a request from the Defense Information Systems Agency (DISA) to support its fast-track effort to build a high frequency (HF) radio network across Iraq. DISA selected the Special Communications Branch based on a recommendation from the U.S. Department of State due to our success in replacing the State Department's worldwide Emergency and Evacuation Network.

Our objective in Iraq was to stand up, as quickly as possible, an emergency communications network to link convoy communications between Baghdad and Kuwait City and along multiple supply routes throughout Iraq. In addition, the system had to provide mobile communications within the three regions of Iraq, 16 Coalition Provisional Authority sites, and communications in and around Baghdad city limits.

Since there was not a dependable long distance communications structure, we had to design and build a reliable Automatic Link Establishment (ALE) communications network from readily available off-the-shelf equipment. In HF radio, ALE provides the capability for stations to establish a contact between itself and the best HF frequency automatically without human intervention. ALE polls the network on each channel and stores the results in a memory matrix then uses the stored characteristics to establish a station-to-station connection. When not in use, each radio in the network constantly scans through its assigned channels "listening" for calls addressed to it.

## System Design

We started the project by buying radio components to install more than 220 sep-

arate systems. Since site surveys were impossible given the difficulties of intra-theater travel and the desperate need to get the network operational, two generic installation plans were developed: one for base and one for mobile stations.

We selected the Motorola Micom-2E series of base and mobile HF radios based on our success with the State Department network. Because a versatile, easily installed, rugged antenna system was required, we selected the B&W center-fed dipole antenna for base installations. For mobile installations, we chose the SGC Model SG-303 whip. The SG-303 is a high performance antenna, built to operate in rough terrain and extreme climatic conditions.

The whip antennas were installed in a variety of both light and fully armored vehicles. This turned out to be one of the most challenging aspects of the entire project. Cutting through the steel plate of fully armored vehicles to accommodate the antenna feedline was nearly impossible using a handheld drill, and we didn't have a plasma cutter.

Understandably, the drivers of the vehicles were not enthusiastic about our violating the integrity of the vehicles' protective shields. The problem was ultimately solved by convincing the manufacturer to modify the standard antenna mount and feedline. The modified unit allowed us to take a more circuitous route between the radio and antenna using existing openings in the armor plate.

## Equipment Kits

Bill of Material kits were designed for both types of installations. This approach simplified on-site logistics management, but more importantly, saved time since a field engineer only needed to pick up the appropriate kit to match the installation type.

Shipping anything to Iraq was never easy, but in the days following liberation it was nearly impossible. However, the staff of Code J023, Logistics and Transportation Branch, particularly Ms. Elizabeth "Betsy"



*Randy Kann installing a mobile antenna mount on an armored vehicle.*



*Andrew Poe awaiting transportation to Al Hillah command center at the Babil helicopter landing pad.*

Evans and Ms. Wanda Yantek, managed to move tons of our equipment. They shipped oversized antenna masts, dozens of heavy-duty 12-volt batteries and several hazardous material packages.

Using a combination of commercial carriers and the Air Mobility Command, they moved 39 separate shipments from Charleston, S.C., to Baghdad without loss or damage. Remarkably, the average delivery time, door-to-door, was less than 10 days.

In parallel with purchasing and shipping equipment, selecting and training the installation teams began. In addition to substantial technical training regarding the installation, operation and maintenance of the radio system, each field engineer was required to attend the State Department sponsored "Diplomatic Security Antiterrorism" course and the SPAWAR anti-

terrorism and security briefing. Some weapons and explosives training was also given.

There were many technically qualified candidates, but finding those willing to deploy for a projected 90-120 days in Iraq was challenging. Simply obtaining the travel documents, medical clearances and command approval for travel was a complex process. Nonetheless, we quickly had a cadre of field engineers ready to travel.

The first four engineers deployed early in 2004 and were quickly followed by four others. To date, the following engineers have deployed to Iraq: Ken Crawley, Dennis Ehney, Bill Collins, Randy Kann, Ron Chambers, Sam Caughey, Fred Bellamy and Andrew Poe. Will Terrell and Ralph DeMott are now in Iraq.

### On the ground in Iraq

I took off for Baghdad April 1, 2004, on a commercial flight from Charleston to Kuwait for three additional days of training and in-processing. At 0400 on the 5th, I was off to Baghdad but this time on a military C-130, with every seat filled. The most interesting part of the flight was the descent into Baghdad International Airport. The pilot rolled the plane in a 90-degree corkscrew dive to keep the plane inside controlled, safe airspace.

Even though it's only five miles from the airport to the Green Zone, it's probably the most dangerous road in Baghdad, and takes about 30 minutes of travel time because of numerous security checkpoints. To build the network, I had to travel between Al Faw Palace on one side of the Green Zone and the motor pool on the other with occasional trips outside the Green Zone to Regional Embassy Offices. Typically, project planning and staff meetings were held in the palace with vehicle installations completed in the motor pool. Base station installations were done in a variety of U.S. government buildings throughout Iraq.

Installing the HF system involved heavy manual labor — a lot of it. Ordinarily, I was on the roof of a building trying to erect a 30-foot mast with a 65-foot antenna connected to it. Difficult under any circumstances, but in 130-degree heat and a blistering desert wind, it was a challenge. Not

only were installations physically taxing, they were in hostile areas, and it was dangerous being exposed on top of the roof! Luckily, part of the installation process was working inside air conditioned buildings to set up, configure and test equipment with the other sites.

Equipment installations were required in each major city in Iraq, so safe transportation was a chief concern. Some cities could only be reached by military air and others by fully armored, escorted vehicles. Whatever the mode, getting transportation scheduled required early planning and the flexibility to travel on short notice. Any trip outside the Green Zone required wearing a helmet and body armor.

We successfully managed logistics issues and resolved technical and engineering questions across eight different time zones, but unscheduled downtime was a recurring problem. Despite our best efforts to efficiently schedule transportation, we could spend hours waiting for transportation to the next installation.

Ultimately, I spent six months in Iraq and learned some valuable lessons. On a personal level, I found that I could survive and succeed in a hostile and constantly changing environment.

On a professional level, I discovered the benefits of careful pre-deployment planning and real-time communications. In large part, the success of the project can be attributed to the support we received from the Special Communications Branch and DISA personnel in Iraq and Washington, D.C.

The initial push to activate the network was accomplished prior to June 30, 2004, when the Coalition Provisional Authority was dissolved and sovereignty returned to Iraq. While we continue to support the program, network ownership and operational control have transferred to the State Department.

*Andrew Poe is a computer scientist and engineer in the SSC Charleston Special Communications Branch.*

*Richard Dandridge, Errol Matthews, Kent Gramke and John Chap of SSC Charleston assisted with this article.*

## FORCEnet Engineering Conference

June 6 - 8, 2006

Norfolk, Va.



FORCEnet's architectural construct will transcend organizational boundaries and will integrate the widest possible collection of joint and coalition platforms, weapons and combat and control systems. Developing FORCEnet will require comprehensive lines of communications between U.S. military services, U.S. government agencies and coalition partners.

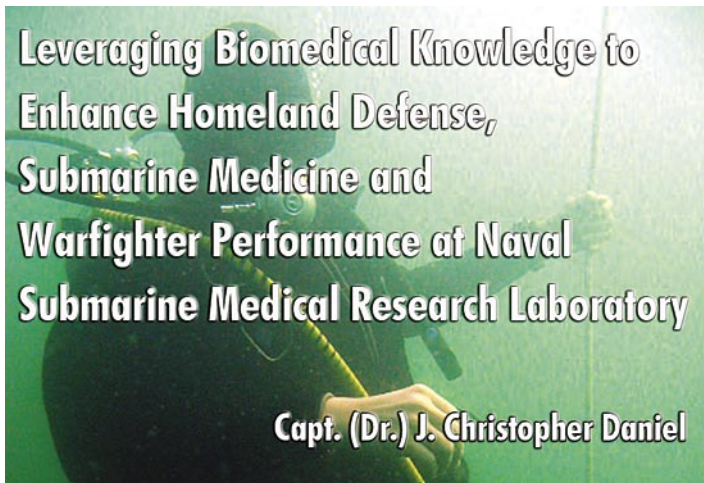
As such, the theme for the third FORCEnet Engineering Conference, sponsored by the Space and Naval Warfare Systems Command, will focus on "joint and coalition alignment."

The conference is designed to promote a collaborative environment for key engineering personnel in the Navy, Marine Corps, Army, Air Force, U.S. Joint Forces Command, Coast Guard, U.S. agencies and coalition communities to address FORCEnet related issues, processes, procedures and business rules.

The tentative dates and location for the FORCEnet Engineering Conference are June 6–8, 2006 in Norfolk, Va., at the Norfolk Waterside Marriott.

For information visit the FORCEnet Engineering Conference Web site at <http://www.nconfs.com/FnEngineeringConference/index.htm/>.

CHIPS



### **NSMRL on the Frontlines of the GWOT**

A Coast Guard Maritime Security and Safety Team, acting on a tip from a law enforcement agency, stakes out the water around a nuclear power plant. Suddenly, the Integrated Anti-Swimmer System detects a swimmer stealthily approaching. When a verbal warning delivered by an underwater loudspeaker does not halt the diver's progress, bursts of high-pressure air delivered through a submerged air gun create powerful low frequency impulses that cause disorientation and physical pain. The diver, startled and hurt, immediately surfaces and is captured, thus thwarting a planned terrorist attack.

Scientists from the Naval Submarine Medical Research Laboratory (NSMRL) were involved in the development and evaluation of these terrorist-thwarting devices. The lab provided many of the design parameters and performed much of the testing for the various components of the Integrated Anti-Swimmer System and the related Diver Interdiction System.

NSMRL's Dr. Ed Cudahy has studied the human bioeffects of underwater sound for many years to protect our fleet and Special Operations Forces (SOF) divers. In the last three years, he has applied his vast knowledge to evaluating and validating various elements of potential non-lethal anti-swimmer systems for safety and tested the effectiveness of deterrent sounds for the Joint Non-Lethal Weapons Directorate, Coast Guard and Navy.

The impact of this work is enhancing our nation's homeland defense and the protection of our nation's military assets. These are just two examples of the myriad operational applications of the research conducted at this Navy Medicine laboratory, located a few hundred yards from the waterfront at Submarine Base New London, Groton, Conn. *Why is NSMRL, whose mission is to protect the health and enhance the performance of our warfighters through focused submarine, diving and surface research solutions, on the frontlines of the global war on terrorism (GWOT)?* One must look at our history for the answer.

### **A Proud History**

In 1942, the Medical Research Section of the U.S. Submarine Base New London dispensary was tasked to provide "answers to problems in communications, vision, personnel selection, and environmental medicine which resulted from wartime demands on

the submarine force." Because of the critical importance of submarines during World War II, the lab's work quickly expanded to include studies on night vision, color vision and lookout training.

When the lab was officially established as a Medical Research Laboratory in 1946, its three-fold mission included: selection of personnel for training in the Naval Submarine School (SUBSCOL); instruction of hospital corpsmen (HM) and medical officers in Submarine Medicine; research in medical aspects of submarine duty and diving, including night and color vision; human engineering; and personnel selection methods. Although the mission of educating medical officers and independent duty corpsmen in Submarine Medicine now belongs to the Naval Undersea Medical Institute (also at Submarine Base New London), NSMRL continues to screen SUBSCOL candidates and perform submarine and diving research.

NSMRL has a proud history of valuable contributions to the Navy and to our nation's defense. In the 1960s, the Submarine Force established the appropriate mission duration in the new ballistic missile nuclear submarines based on NSMRL psychological research aboard USS Triton (SSN 586) during its circumnavigation of the globe.

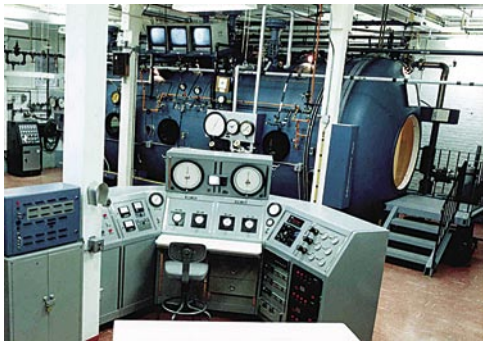
In the field of human vision, NSMRL's work has resulted in the Navy being able to safely and optimally utilize the talents of many personnel with less than perfect vision, through work that showed that these personnel performed as well as those with perfect vision by inserting refractive corrections into periscope optics. Other vision-related work resulted in the replacement of "rig for red" viewing in sonar and control rooms with low level white lighting, and the development of both the International Orange color (air-sea rescue red) for visibility and the Farnsworth Color Lantern Vision screening test.

Experiments by Drs. George Bond and Robert Workman at NSMRL in the late 1950s and early 1960s explored the feasibility of saturation diving, confirmed the suitability of helium-oxygen breathing mixtures, and ultimately resulted in landmark studies that proved it was possible to safely live and work for two weeks at 200 feet, first in NSMRL's "Genesis I" hyperbaric chamber (still in active use, see the photo on the next page) and then in "Sea Lab I" on the ocean floor near Bermuda.

Other studies in NSMRL's hyperbaric chambers produced many of the Navy saturation diving and decompression tables that are still in use around the world today. In 2005, the lab was honored with its first Meritorious Unit Commendation, an award long overdue, according to none other than the Navy's Surgeon General and Chief, Bureau of Medicine and Surgery (BUMED), Vice Adm. Donald Arthur, who himself authored six reports while serving at NSMRL.

### **Submarine Force Health Protection**

Today, the lab performs cutting edge research in health and safety, operational performance, and submarine survival and escape. Dr. Cudahy's work has its roots in protecting the safety of Navy divers, and much of NSMRL's work involves other health or safety efforts. The challenges posed by the submarine's unique



*Left – The Genesis Hyperbaric Chamber at NSMRL.*



*Middle – Air sampling wafer packages used to monitor atmospheric conditions aboard deployed submarines.*



environment and operating conditions place a premium on ensuring the safety and health of the crews. This includes the air they breathe, the physical and mental health risks of being submerged for long periods, the noise surrounding them, and tools to help them survive casualties at sea.

While underway, submariners are continually in a closed environment and the atmosphere must be closely monitored to ensure that it does not pose a potential hazard to the crew. While automated systems continuously measure levels of the most critical gases, including oxygen and carbon dioxide, the recycled nature of the submarine atmosphere means that possible contaminants must be monitored on a long-term basis. Even ordinary materials can give off harmful gases.

The Closed Living Space Environmental Concerns Working Group, in which NSMRL plays a key role, advises BUMED on biological, operational and engineering interactions of submarine atmospheric contaminants and recommends acceptable limits for these contaminants. These limits are generally well below comparable standards for shore environments.

The Submarine Atmosphere Health Assessment Program, an ongoing partnership between NSMRL and Naval Sea Systems Command (NAVSEA), has developed wafer-like sensors (see photo above) that measure levels of airborne contaminants during deployments. After the boat returns to port, the wafers are analyzed ashore, and the results are reported to the boat's commanding officer. The at-sea measurements are supplemented by analyzing additional compounds during comprehensive submarine atmosphere sea trials. Sampling techniques include using vacuum bottles to draw air samples over a brief time. For example, the atmosphere onboard USS Virginia (SSN 774) was recently tested during her sea trials to ensure that new equipment and products pose no hazard to the crew.

Submariners receive no sunlight while underway. During prolonged submergence, this can lead to Vitamin D deficiencies, another health risk that NSMRL has studied. One solution that would likely be popular with Sailors, liberty in a tropical port, is generally not feasible for operational reasons. A less exotic alternative is available: periodic large doses of Vitamin D.

Although all submariners are volunteers, there are high physical and psychological standards that all Sailors selected for submarine duty must meet. The Navy's Manual of the Medical Department mandates this special screening. NSMRL has been evalu-

ating Sailors' suitability for submarine service since World War II. Since 1986, NSMRL has been using SUBSCREEN, a self-report psychological test, to screen for potential risk factors, including claustrophobia, suicidal ideation and depression. Sailors who flag for one of these risk factors are referred to the base clinic for psychological evaluation. Based on the clinic's evaluation and recommendations, SUBSCOL command personnel decide whether to retain or release the individual.

About three percent of students are removed from the submarine force before going through SUBSCOL courses, saving both money and time. However, many who remain are ultimately unsuccessful in their Navy career. They leave for negative causes, are not promoted and do not finish their first enlistment. Using the lab's database of more than 30,000 former and current submariners, NSMRL has determined that a subset of the SUBSCREEN test effectively predicts which people are more likely to fall into the unsuccessful category. That information is now being used to determine whether early intervention in SUBSCOL can help reduce attrition.

NSMRL's expertise and experience in the realm of psychological screening was recently leveraged at the Naval Service Training Center, as part of the Navy's efforts to maximize its return on human capital. An initial test of NAVSCREEN, based closely on SUBSCREEN but generalized for use with incoming Sailors, was administered to a group of recruits at the Recruit Training Command. The Naval Education and Training Command will closely examine the results of this test for possible full implementation as a screening aid.

NSMRL determines the extent to which physical ailments, such as kidney stones, could impact a submariner's ability to deploy to sea. By allowing those at low risk to ship out, the Navy retains the services of highly trained Sailors and keeps careers intact.

An area of expertise and ongoing work at NSMRL that is relevant to other warfare communities is exposure to damaging levels of noise. Noise-Induced Hearing Loss (NIHL) represents the Veterans Administration's single largest bill for a service-related disability. Yet, despite the huge prevalence of this problem, Sailors notoriously do not use available hearing protection. To address this challenge, Dr. Lynne Marshall at NSMRL is currently developing a hearing-loss simulator for the Office of Naval Research.

This interactive device presents an auditory "picture" of what the future might sound like to a Sailor who doesn't use hearing

protection (and whose hearing has already begun the insidious NIHL decline, though the Sailor may not yet realize it). Experiencing the difficulty that someone with NIHL has in understanding phone conversations, appreciating music, hearing a baby cry or listening to whatever else matters most to each individual, could be a powerful motivator to change behavior.

A further advance in NIHL prevention may result from research that Dr. Marshall is conducting to see if otoacoustic emissions, minute sounds that the ear produces in response to external sound stimuli, can predict future hearing loss. Early evidence for this hypothesis was provided by research with USS Eisenhower (CVN 69) crew members. If additional research confirms these findings, the Navy could provide hearing protection targeted to specific individuals or transfer them to alternate, quieter work-sites. This technology could be particularly valuable for the submariner, who is in a continuous low-level noise environment while underway.

The Navy's submarine independent duty corpsmen must listen to crew members' hearts and lungs in this noisy environment, an especially challenging task using the traditional stethoscope. Mr. Joe Russotti, who has worked at NSMRL for more than 35 years, is currently working to develop an electronic stethoscope for military use, ensuring that *abnormal* heart and lung sounds are preferentially amplified. Like NSMRL's hearing conservation focus, this effort to improve diagnostic capabilities in noisy environments has found considerable interest in the Marine Corps and in other Navy warfare communities.

NSMRL is frequently tapped by the fleet to get short-term answers not requiring a formal research study. In the realm of onboard medical care, the lab recently issued specific recommendations regarding the availability of oxygen dedicated for medical use onboard submarines. A lab team is currently evaluating optimal stretcher designs for use in the narrow passages aboard a submarine.

## Improving Human Performance

With its work in Human Performance, NSMRL plays a leading role in researching ways for warfighters to perform their missions more effectively. One important component of performance is alertness. Trying to reduce fatigue and circadian rhythm (CR) disruption in the crew during submarine operations is one area of NSMRL research.

Lt. Cmdr. Loring Crepeau and HM2 Kevin Mathiau recently accompanied Sailors on USS Maryland Gold (SSBN 738) for a month underway, collecting physiological, behavioral, psychological and survey data as the crew followed an alternative watch schedule (see photo on page 37).

The Submarine Force for the past 40 years has utilized a "6 hours on, 12 hours off" watchstanding schedule. However, the pace of operations and the CR disruption inherent in this cycle means that crew members rarely get even six hours sleep per day. Moreover, the sleep they do get is of poor quality and fails to fully restore their performance. Because the submariner's "day" is 18 hours long, the CR pattern is constantly shifting — the equiv-

alent of flying eastward through six time zones every 18 hours — causing further loss of alertness.

In fact, CR disruption alone makes it highly likely that every crew member will stand watch at a low point in the natural sleep/wake (and thus performance) cycle. There is strong evidence that a watch schedule approximating a 24-hour day could provide immense benefits in alertness and performance; but the challenge is to find one that also accommodates the boat's operational requirements.

For the Maryland Gold trials, the Engineering Officer, Lt. Cmdr. Matthew Phaneuf, devised such a schedule. Supported by the boat's chain of command, the trial went off without adversely impacting the boat's normal routine, operations or drills. For this submarine, at least, the alternate eight hours on, 16 hours off watch schedule improved overall alertness, increased sleep quantity and quality, and was well received by the crew. NSMRL is now planning a similar sea trial aboard a fast-attack submarine.

Even a well-rested crew needs to maintain optimal situational awareness. What are the best ways to display information in the sonar suite and the command center, especially when coming to periscope depth in a multi-contact environment or during other highly stressful maneuvers, each of which requires rapid integration of multiple inputs to maintain situational awareness? NSMRL has addressed this issue in several ways. Mr. Russotti, in conjunction with Naval Undersea Warfare Center, Newport, R.I., has developed a unique signal processing and display technique for collision avoidance that more than doubles the distance at which a contact can be reliably detected.

This is accomplished by taking advantage of the human's binocular capability to compare different sounds arriving in each ear, similar to the "cocktail party effect" that allows you to hear your name when it is mentioned in a noisy room. Using the human auditory system's automatic ability to filter sounds improves target detection by almost seven decibels.

NSMRL's Dr. Tom Santoro, in collaboration with Dr. Greg Wakefield of the University of Michigan, is working to enable simultaneous auditory detection and tracking of multiple sonar contacts by creating a virtual 3-D environment using standard headphones. They have demonstrated that a critical transient sound can be detected from among 10 distractor sounds with 85 percent accuracy using this spatialized 3-D audio presentation, while a change in course in one of four steady-running sonar contacts can be detected with 90 percent accuracy.

In other sonar work, NSMRL and NAVSEA engineers have collaborated to upgrade sonar audio digital signal processing specifications. NSMRL has worked closely with manufacturers to develop new extended fidelity noise-canceling headphones allowing sonar operators to hear sounds much more clearly. These headphones are currently deployed on Virginia-class submarines.

A successful crew must do more than avoid fatigue and maintain situational awareness; it must achieve and maintain *situational*



SEIE suit

superiority at all times. Optimal command-level decision-making that keeps the submarine safe and stealthy and results in successful mission execution is a key focus area for Commander, Naval Submarine Forces (COMNAVSUBFOR).

NSMRL has studied situational awareness among submarine officers and is now partnering with Klein Associates, which has worked extensively on improving team decision-making in firefighters and personnel in hospital intensive-care units and other high-stress environments. NSMRL is also working with Micro Analysis and Design, Inc., which supports computer modeling and simulation technology for decision-making and human-computer interface design. Together with Submarine Development Squadron Twelve, NSMRL, its industry partners and the Human Performance Center are addressing critical aspects of command decision-making processes in submarines.

### Preparing for a Worst Case Scenario

New threats in the global war on terrorism have increased submarine operations in shallow waters near unfriendly coasts in operations sometimes involving Special Operations Forces. In fact, SOF insertion capability was a primary consideration in the development of Virginia-class submarines and the upcoming "SSGN" class, the group of former Trident class "SSBNs" (ballistic missile submarines) now undergoing conversion.

Despite the best efforts of a highly trained crew operating the most capable boat, unusual circumstances in littoral waters could cause a casualty that leaves a submarine disabled and submerged (DISSUB). Surviving SOF and boat crew members would then be forced to try to stay alive, possibly for days until rescue, or be faced with escaping from the boat and floating individually to the surface. Dr. Wayne Horn and his team at NSMRL have dedicated considerable effort in developing survival and escape equipment and procedures.

NSMRL is an integral member of COMNAVSUBFOR's Submarine Escape and Rescue Review Group, and is responsible for ongoing revisions for the Disabled Submarine Survival Guide, the Guard Book. Over the last decade, NSMRL has contributed to the deployment of numerous technological advances in use today, including: Submarine Escape Immersion Equipment (SEIE) suits (shown above); the Submarine Escape and Rescue Calculator, a PDA-based analytic software to facilitate Senior Survivor time-remaining determinations; portable gas analyzers; and passive carbon dioxide-scrubbing Battelle curtains, an underwater life-saver for stricken submarine crews.

Dr. Paul Weathersby and others at the lab are now also exploring the possibility of escape from depths greater than 600 feet.

Finding survivors who do escape can be difficult, and NSMRL is testing new infrared reflecting streamers to enhance detection of DISSUB survivors at sea.


COMNAVSUBFOR's goal is for the crew of a disabled and submerged submarine to have a survivable environment for up to seven days while awaiting rescue. With this in mind, in March 2003 and December 2004, the lab conducted survival exercises (SURVIVEX) with crew members on USS Dallas (SSN 700) and USS Salt Lake City (SSN 716), respectively. In these pierside exercises, conducted with Submarine Development Squadron Five, ship's power was shut off and external hatches were closed to evaluate DISSUB equipment and procedures.

The exercises confirmed the ability of the carbon dioxide-scrubbing curtains and oxygen release system to maintain a breathable atmosphere during DISSUB conditions. It appears that COMNAVSUBFOR's goal of seven-day survivability is definitely realistic in 2006. A surprising finding in these exercises has produced a new challenge for DISSUB research. Although it had been expected that a DISSUB would experience lower internal temperatures and create a risk for hypothermia, the opposite occurred. Survivex 04 was terminated early due to the increase in ambient temperatures and the resultant heat injury risk.

### Facing the Future

Technology has advanced greatly since the days of WWII diesel boats. SEIE suits have replaced the Momsen Lung, noise-canceling headphones have replaced old headsets, computers have increased sonar sensitivity. Despite these advances, both the human element and the undersea environment remain unchanged. The importance of maintaining health and safety and of improving performance remains as critical today as it was in 1942. As each challenge has been mitigated or solved, another has risen to take its place.

For more than 60 years, NSMRL has tackled the biomedical challenges of the Submarine Force and our nation's warfighters. Just as the fleet has come to expect, Naval Submarine Medical Research Laboratory's dedicated people remain ready to adapt, improvise and overcome the challenges of the future.



*Capt. (Dr.) J. Christopher Daniel is a Fellow, American Academy of Family Physicians (FAAFP) and commanding officer of the Naval Submarine Medical Research Laboratory.*

*For more information about NSMRL go to <http://www.nsmrl.navy.mil/>.*

CHIPS



# UNLICENSED RADIO FREQUENCY DEVICES

By the DON CIO Spectrum Team

Unlicensed devices are a category of equipment that does not require a license from the Federal Communications Commission or a frequency assignment from the National Telecommunications and Information Administration. They offer great opportunities to system designers and program managers because of their low cost and minimal administrative overhead. But there are important limitations that could affect your decision to use them.

## Authorization to Operate

Any device that uses the electromagnetic spectrum to perform its primary function can be described as spectrum dependent. These devices include transmitters, receivers, and, in some applications, a transmitter and receiver combined in the same unit called a transceiver.

Within the United States and its possessions, the two government agencies that authorize the use of the electromagnetic spectrum are the Federal Communications Commission (FCC) and the National Telecommunications and Information Administration (NTIA).

The FCC is empowered by Congress to provide authorization to the civil population, state and local governments and commercial users. The NTIA, an office within the Department of Commerce, is empowered by the president of the United States to authorize federal government spectrum users such as the FBI, Department of Homeland Security and U.S. military.

Every transmitter must have some form of authorization to operate. Radio and television stations, satellite uplinks, police and fire department radios, airport radars and microwave communications systems all require licensing from the FCC or authorization from the NTIA. However, unlicensed or non-licensed devices do not require an FCC license or NTIA frequency assignment to operate. Unlicensed devices are authorized by special sections of the rules.

## Part 15 Rules

The rules and technical specifications that apply to non-federal use of unlicensed devices are in Title 47 of the Code of Federal Regulations Part 15 (47 CFR 15). There are many parts to Title 47, each regulating a different type of radio operation. For example,

Part 11 regulates the Emergency Alert System, Part 59 discusses infrastructure sharing, and Part 97 covers the Amateur Radio Service. Part 15 regulates radio frequency devices and contains language specifically regulating the operation of unlicensed devices.

While there are other parts of Title 47 that authorize the operation of devices without a license, Part 15 is the most common, and the term "Part 15" has become synonymous with consumer unlicensed wireless devices.

Once the FCC has certified a device as Part 15-compliant, it may not be modified. Changing anything that affects the electromagnetic transmission of the device will void the unlicensed status. A change as simple as a different antenna will affect the electromagnetic characteristics and void Part 15 status.

While the FCC regulates non-federal uses of the spectrum, federal transmitters are regulated by the NTIA under the "Manual of Regulations and Procedures for Federal Radio Frequency Management," also known as the "NTIA Manual." Within the NTIA Manual, unlicensed devices are described in Annex K. Annex K mirrors the technical specification of 47 CFR 15 to a great extent, and rules concerning modification of unlicensed equipment apply equally to federal and non-federal users.

Those holding a license or frequency assignment to operate are protected from interference. If licensed devices receive interference from an unlicensed device, and it is reported to the FCC or NTIA, the federal government has the authority to order the user of the offending transmitter to stop transmitting.

Users of unlicensed devices do not have these protections and must accept any interference received, or they must modify



operations to eliminate the interference. Protection from interference is the single most important advantage of operating in a licensed portion of the spectrum. You must consider whether or not you can accept the risks of operating without these protections before choosing to use unlicensed devices.

Over the past few decades the growth in consumer electronics has led to an increased number of inexpensive devices built to operate without a license. Unlicensed devices are by far the most common form of transmitter available to the consumer. From wireless computer networks to garage door openers, electronic car alarms, to walkie-talkies, nearly all of today's electronic consumer devices are unlicensed.

Walk through the electronics department of any store, and you will see dozens of unlicensed wireless devices. The low cost and wide variety of these devices make them attractive for military commercial off-the-shelf solutions. But the benefits of unlicensed devices must always be balanced with the lack of interference protection.

Paragraph 7.8 of the NTIA Manual, "Purchase And Use of Non-Licensed Devices" says: "Federal Government agencies may purchase 'off-the-shelf' non-licensed devices that conform to the applicable edition of Part 15 of the Federal Communication Commission's (FCC) Rules and Regulations (47 CFR 15) without further authority from the Assistant Secretary." Just like our civilian counterparts, federal operators are not required to get a frequency assignment or license before operating a Part 15 device.



The next sentence of paragraph 7.8 says: "Non-licensed devices subject to FCC certification, notification or verification shall bear the appropriate FCC statement of limitations to operations." This means that somewhere on the device there should be a label stating that the device complies with Part 15 of 47 CFR. If the label doesn't say Part 15, but notes some other part of the FCC rules, get clarification from your spectrum manager.

There are other parts of Title 47 that authorize unlicensed use of a device, but they may not be applicable to federal users or they may have specific limitations that conflict with your mission. If it doesn't say Part 15, it probably isn't covered under Annex K, and you might not be authorized to use it.

The next few sentences of paragraph 7.8 contain the deciding factors for whether a Part 15 device is an appropriate solution for your particular requirement. The first part says: "The agency operating a non-licensed device that causes interference to an authorized radio service shall promptly take steps to eliminate the interference. Upon notification by cognizant spectrum management personnel that the device is causing interference, the operator of the non-licensed device shall cease all radiations from the device until the interference is eliminated."

This means that if your operation causes interference to another spectrum dependent device that is properly licensed or authorized, then you must shut down until the situation can be corrected. If there is no way for you to correct the situation you cannot continue to operate. Authorized users are under no obligation to modify their operations.

The last part of the paragraph continues on the same subject: "Agencies operating a purchased non-licensed device have no vested or recognized right to continued use of the device in any part of the radio frequency spectrum. Non-licensed device operations must accept any interference from any federal or non-federal authorized radio system, other non-licensed device, or industrial, scientific and medical equipment."

If you receive interference from users operating in accordance with their license or frequency assignment, and you cannot fix the problem yourself by either moving your equipment, adjusting your antenna, or some other means, you cannot ask the FCC or NTIA for protection. You must accept the interference even if it renders your equipment unusable.

When considering the use of unlicensed devices it is important to weigh the cost and availability with the lack of protection from interference. There are great benefits to Part 15 and other non-licensed devices because they are generally inexpensive and available from a wide variety of sources.

Part 15 devices continue to be a significant enabling technology behind the wireless revolution. Generally, these devices perform as well and, in some cases, even better than their licensed equivalents. However, you must consider all factors before choosing a non-licensed solution.

#### *Know the Rules*

*If you have a question about using an unlicensed device or to learn more about unlicensed devices please contact your local spectrum manager.*

*The FCC Part 15 rules can be downloaded from <http://www.fcc.gov/oet/info/rules/part15/part15-91905.pdf>.*

*The NTIA Annex K can be downloaded from <http://www.ntia.doc.gov/osmhome/redbook/K.pdf>.*

*The entire NTIA Manual is available online at <http://www.ntia.doc.gov/osmhome/redbook/redbook.html/>.*

*For more information, contact the DON Spectrum Team at [DONSpectrumTeam@navy.mil](mailto:DONSpectrumTeam@navy.mil) or [navyspectrum@navescen.navy.mil](mailto:navyspectrum@navescen.navy.mil).*

CHIPS

# The Lazy Person's Guide to Controlling Technologies

## Part III: Mastering the Desktop

By Retired Air Force Major Dale J. Long

We spend hours every day staring at a window that has evolved over the last 30 years from a low resolution, text-based interface to a complex graphical interface. Though this dates me a bit, I can remember when going from 40-character to 80-character width on a monochrome monitor was a big deal. The computing environment has changed since then. Perhaps I should not describe the progression from text to graphics as evolution because that would imply survival of the most useful and appropriate features.



This now brings us to Xerox PARC, where a team that included some SRI alumni drew upon these previous efforts and codified the windows, icons, menus and pointing devices (WIMP) system that became the foundation for the GUIs we are familiar with today.

Building on the Xerox PARC work, Apple Computer produced the first commercially successful GUI-based system: the Macintosh. Innovations included files on screen that looked like paper documents, file folder icons for directories and drop-down menus. The Macintosh also included a calculator, notepad and alarm clock applications that the user could place anywhere on the screen. The Mac's most unique feature was "drag and drop," which allowed users to easily move files and folders around with a mouse.

It might be more accurate to describe our modern desktop as a product of semi-intelligent design, a result of attempts at great innovation often impeded by technical compromises or ingrained bad habits. In this issue we will examine some of the quirks, idiosyncrasies and features that affect our desktop computing experience and examine why people often become frustrated with computers even when everything works as designed.

For some people Apple made deleting files entirely too easy. There was a trash can modification available that featured *Sesame Street's* Oscar the Grouch in a trash can. If you dropped in a file, Oscar would pop out and sing a line or two of his hit song, "I Love Trash." It was really cute.

### In The Beginning ...

There was text. And text with a command prompt was good enough for most of us, though learning arcane and often complex strings of text commands was a significant entry barrier to novice computer users. Predictably, there were people who wanted easier, more convenient ways to manipulate computer systems using pictures instead of words. The most famous early attempt at a graphical user interface (GUI) that most people are familiar with was the work done at Xerox Palo Alto Research Center (PARC). However, Xerox did not produce the first GUI. That distinction belongs to the U.S. Air Force Semi-Automatic Ground Environment (SAGE) project.

Actually, it was entirely too cute. Speaking from personal experience, you should never mix file deletions, singing characters and an unsupervised three-year-old (who knows how to turn on the computer by himself) — unless you are prepared to find every file on your hard drive in the trash can awaiting deletion.

SAGE was a system developed by the North American Aerospace Defense Command beginning in the 1950s to track aircraft over North American airspace through real-time monitoring. SAGE computers collected text-based information and displayed it on a video monitor as moving icons. If this sounds familiar, it may be because SAGE technology was also used to develop air traffic control systems. Another early GUI was Sketchpad. Developed in 1963, it was the principal antecedent of modern computer-aided drafting programs. It was the first full GUI, using an x-y point plotter to display geometric forms on screen.

The Macintosh was followed several years later by a similar interface developed for IBM personal computers: Microsoft Windows. Despite (or perhaps because of) its lack of a trash can, Windows rapidly became the world's dominant desktop GUI. At that point, the GUI revolution ended.

### GUI Stagnation

Try naming three things that have changed in GUI design in the last five years. Ten years? Fifteen years? For most people, the GUI invented by Apple and perpetuated by Microsoft is the only one they know. Mac users did experience some minor turbulence migrating from Classic to OS X, but it wasn't a big shift. If you are one of those rare people who use some flavor of Unix or Linux with Gnome or the Kopernicus Desktop Environment, you are still subject to the same defects inherent in commercial systems.

One other significant predecessor to Xerox PARC was the oNLine System (NLS) designed by Douglas Engelbart at the Stanford Research Institute (SRI) during the 1960s. The NLS was the first to employ hypertext linking a "mouse" (invented by Engelbart and Bill English) and framed windows.

Defects? What defects? Let's start with visual attention. Every interaction with your computer's GUI requires your visual attention. On the old text-based command line systems, if you could touch type you only had to look at one area of the screen: the command prompt. In those days there were no distracting cut/

paste icons or function buttons cluttering up the screen. We had focus and we could keep it.

Unfortunately, the GUI on almost every computer I have worked on in the last 15 years requires you to divert your attention from what you are working on to find whatever graphical widget or button you need to activate. As an additional penalty, once you are done with the icon or menu you then have to relocate whatever you were typing or reading before you got the urge to reformat the text. The same penalty applies to scrolling, cutting, pasting, zooming or any other activity that requires refocusing your visual attention while you work.



Microsoft did try to keep them consistent. However, at least on my screen, the Excel icon at the left side of the bar moves the Excel menu titles somewhat offline to the right of their counterparts in MS Word. Not a big difference, but enough that I have to change my focus to hit a menu item every time I use either program.

The main differences are within the drop-down menus. While the headings are similar, the internal choices are different. Granted this is probably because the programs do different things, but these differences are still an impediment to spatial navigation. The default menu preference compounds this complexity by only showing the menu items I have used most recently. While this is apparently an attempt to reduce complexity, it slows me down quite a bit if I need to find an item that is not immediately visible.

Given the complexity of toolbars and all those tiny little icons all over the screen, it is no wonder people have trouble concentrating enough to produce any written work more complex than simple bulleted text. The loss of visual attention caused by the GUI does not let us hold our train of thought long enough to produce much more than one sentence at a time.

### Navigation Hazards

Humans are capable of finding their way around by something called spatial navigation, which in general terms refers to how people learn to navigate through different environments using structured objects and landmarks. The longer you spend in a particular environment, the more familiar it becomes. Given enough time with a particular environment, what we learn through spatial navigation can eventually become reflex and muscle memory.

A good example of this is learning to drive a car. Beginning drivers usually fumble with things like finding the windshield wiper lever or overcorrecting on turns. Over time and with many repetitions, most will become somewhat proficient. When we drive a different car, most of us will fumble a bit with any controls that are different than the muscle memory we have developed, like trying to find the volume knob for the stereo or the fog light switch.

Now let's consider all the applications on your computer. Each time you use one it's like driving a different car. While the applications may have certain things in common, the functional equivalents of the stereo volume knob, wiper lever, etc., are all in slightly different places. Most people have a limit to how many different environments they can build up muscle memory for, so you may not spend enough time in any single application to become proficient.

### Office Follies

I will now illustrate how software interferes with spatial navigation with a few examples from Microsoft Office. Please do not consider this Microsoft bashing. Most applications suffer from similar foibles, perhaps even more so because of attempts to differentiate them from what Microsoft produces. I use Office as an example because it is familiar and arguably the most dominant force on our desktops today. For reference, and if you would like to follow along, I am using MS Office 2000 for these examples.

First: menus. If I open MS Word and MS Excel and stack their windows so their menu bars are right on top of each other, I see that

Once I have used a new item, my menu changes for the next few uses. If I do not use a function for a while it disappears from the menu, changing it again. Personally, I prefer having all the menu options visible all the time so it is always the same. (*You can turn off "Menus show recently used commands first" under Tools/Customize/Options.*)

Another difference between Word and Excel is how they deal differently with multiple file windows. If you open multiple documents in Word and later try to close one of them by clicking on the "X" button at the upper right corner of the screen, Word will only close that document. If you open multiple spreadsheets in Excel and then try closing any one spreadsheet with the same button, Excel will attempt to close all of them.

I have lost work on spreadsheets because I did not read the pop-up message asking if I wanted to save work on another sheet, clicked "No," and then watched helplessly as Excel closed sheets with unsaved work.

There are other things in Office, like differences in icon placement, size and interpretation that are not really showstoppers, but they can slow things down. Individually, they are barely noticeable and because we are used to them we do not normally notice the effect. Collectively, however, they can add up to a significant cognitive distraction.

There is a fine balance between consistency and choice. There are times I wish that operating system design were more totalitarian in how it governed human-computer interaction. If our GUI provided only one way to accomplish any given task, we would have an easier time learning to navigate our systems regardless of how we customized the arrangement of our desktops.

The closest personal example I can come up with is when I was stationed in England and had to learn to drive on the left side of the road with a car that had the steering wheel on the right side. It was unfamiliar and uncomfortable, and I went round a roundabout in Cambridge the wrong way (only once, though). But when I turned the steering wheel to the left, the car went left. The accelerator, brake and clutch were in the same relative positions as a car made for American drivers. Once I figured out which

control lever turned on the lights and which one turned on the windshield wipers, muscle memory eventually took over.

## GUI 2.0

Here are some GUI changes I would like to see.

Let's start with the menus. The first seven menus in MS Word, for example, have from 12 to 18 different line items, which are roughly twice as many options than the average human mind can handle at one time, if you believe cognitive scientists. The number of menu choices at any level should be reduced to five or six items. You will navigate faster with fewer menu options and have a better chance at building muscle memory.

Group things logically. In MS Word, why is the Tracking Changes function under the Tools menu instead of the Edit menu? Why are there both Customize and Options choices? Why is there an Insert menu and then an Insert sub-menu under Table?

Let users manage their own menus. One good example of a customizable application is the Microsoft Office 2000 Shortcut Bar. It is the only piece of screen real estate where I have relatively complete control within its configuration limits. It has my buttons, in my order, at the size and position I specify. I would really like the same control throughout the rest of the desktop. Finally, it just seems wrong that I have to shut down my computer by clicking the "Start" button.

## The Paths of Least Resistance

Screen ergonomics could benefit from a redesign. There are four points on a computer monitor that anyone can hit with the cursor without looking: the corners. After decades of GUI research and development, you would think at least one operating system or major software application would use the screen corners for something other than controlling a screensaver. Granted, you can hide some toolbars and bring them up by moving the cursor to that edge of the screen on Windows and Mac, but that functionality has nothing to do with the actual work you are doing.

Many smart people have spent lots of time debating whether computer systems should be application-centered or document-centered. Everyone tends to work one way or the other. If you open the application first and then retrieve the document you want, you are application-centric. If you use your file manager to open the file you want, you are document-centric. Operating system designers do their best to accommodate both styles.

Yet, neither concept includes using the only spots on the desktop you can hit with a mouse without losing visual attention. How about a spatial-centric system? How tough would it be to make an operating system or application that can open a list of recently saved files; save the current file; get information on the current document; check e-mail; open the Control Panel; or open a task list and switch applications by moving the cursor to a screen corner?

Better yet, let us choose the functions we want the corners to perform and add function keys to save and close instead of just save files. We can be trusted with this functionality.

However, the root cause of our problems is that ...

## GUIs Are Designed For Beginners

System designers devoted considerable time and energy developing an interface that beginners could learn to use within an hour. Making it easy for new users is what drove the appeal of personal computers and made them the dominant information processing force in the world.

However, we are not beginners any more. We should be moving to more sophisticated interfaces. We perpetuate the evolutionary stagnation of our computing environment by recycling familiar defects and pretending it is "user-oriented" or "user-centric" design. If companies really want to be user-oriented, they should start weeding out the defects not keep building them in.

## Closing Words

I do not believe small steps will work for evolving computer interfaces. What we need is another revolutionary change similar to moving from the command line to the GUI. This is what I think that means in practical terms. Let's say we see an image on a Web site we want to flip horizontally, shrink 50 percent and e-mail to a friend. Which of the following methods would you prefer?

Using our "modern" GUI: Right click on the image; save to file; open in a graphics program; use several mouse clicks to flip it; more mouse clicks to save it at 50 percent size reduction; open e-mail; attach the file; address the e-mail; and send.

Or right click on the image and say: "Computer, flip image horizontal, save image jpeg minus 50, e-mail saved image to Sills comma Dwight?"

The technology exists to do this now. So why don't we?

## Until next time, Happy Networking!

*Long is a retired Air Force communications officer who has written regularly for CHIPS since 1993. He holds a Master of Science degree in Information Resource Management from the Air Force Institute of Technology. He is currently serving as a telecommunications manager in the U.S. Department of Homeland Security.* CHIPS

### CHIPS Writing Guidelines

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## Enterprise Software Agreements Listed Below



The **Enterprise Software Initiative (ESI)** is a Department of Defense (DoD) initiative to streamline the acquisition process and provide best-priced, standards-compliant information technology (IT). The ESI is a business discipline used to coordinate multiple IT investments and leverage the buying power of the government for commercial IT products and services. By consolidating IT requirements and negotiating Enterprise Agreements with software vendors, the DoD realizes significant Total Cost of Ownership (TCO) savings in IT acquisition and maintenance. The goal is to develop and implement a process to identify, acquire, distribute and manage IT from the enterprise level.

In September 2001, the ESI was approved as a "quick hit" initiative under the DoD Business Initiative Council (BIC). Under the BIC, the ESI will become the benchmark acquisition strategy for the licensing of commercial software and will extend a Software Asset Management Framework across the DoD. Additionally, the ESI was incorporated into the Defense Federal Acquisition Regulation Supplement (DFARS) Section 208.74 on Oct. 25, 2002, and DoD Instruction 500.2 in May 2003.

Unless otherwise stated authorized ESI users include all DoD components, and their employees including Reserve component (Guard and Reserve) and the U.S. Coast Guard mobilized or attached to DoD; other government employees assigned to and working with DoD; nonappropriated funds instrumentalities such as NAFI employees; Intelligence Community (IC) covered organizations to include all DoD Intel System member organizations and employees, but not the CIA nor other IC employees unless they are assigned to and working with DoD organizations; DoD contractors authorized in accordance with the FAR; and authorized Foreign Military Sales.

For more information on the ESI or to obtain product information, visit the ESI Web site at <http://www.esi.mil/>.

## Software Categories for ESI:

### Business and Modeling Tools

#### BPWin/ERWin

**BPWin/ERWin** - Provides products, upgrades and warranty for ERWin, a data modeling solution that creates and maintains databases, data warehouses and enterprise data resource models. It also provides BPWin, a modeling tool used to analyze, document and improve complex business processes.

**Contractor:** *Computer Associates International, Inc.* (DAAB15-01-A-0001)

**Ordering Expires:** 30 Mar 06

**Web Link:** <https://ascp.monmouth.army.mil/scp/contracts/compactview.jsp>

### Business Intelligence

#### Business Objects

**Business Objects** - Provides software licenses and support for Business Objects, Crystal Reports, Crystal Enterprise and training and professional services. Volume discounts range from 5 to 20 percent for purchases of software licenses under a single delivery order.

**Contractor:** *EC America, Inc.* (SP4700-05-A-0003)

**Ordering Expires:** 04 May 10

**Web Link:** <http://www.gsaweblink.com/esi-dod/boa/>

### Collaborative Tools

#### Invoke Software (CESM-E)

**Invoke Software** - A collaboration integration platform that provides global awareness and secure instant messaging, integration and interoperability between disparate collaboration applications in support of the DoD's Enterprise Collaboration Initiatives.

**Contractor:** *Structure Wise* (DABL01-03-A-1007)

**Ordering Expires:** 17 Dec 06

**Web Link:** <https://ascp.monmouth.army.mil/scp/contracts/compactview.jsp>

### Database Management Tools

#### IBM Informix (DEAL-I/D)

**IBM Informix** - Provides IBM/Informix database software licenses and maintenance support at prices discounted 2 to 27 percent off GSA Schedule prices. The products included in the enterprise portion are: IBM Informix Dynamic Server Enterprise Edition (version 9), IBM Informix SQL Development, IBM Informix SQL Runtime, IBM Informix ESQ/C Development, IBM Informix ESQ/C Runtime, IBM Informix 4GL Interactive Debugger Development, IBM Informix 4GL Compiler Development, IBM Informix 4GL Compiler Runtime, IBM Informix 4GL RDS Development, IBM Informix 4GL RDS Runtime, IBM Informix Client SDK, IBM Informix Dynamic Server Enterprise Edition (version 7 and 9), and IBM Informix D.M. Gold Transaction Processing Bundle.

**Contractor:** *IBM Global Services* (DABL01-03-A-0002)

**Ordering Expires:** 30 Sep 06

**Web Link:** <https://ascp.monmouth.army.mil/scp/contracts/compactview.jsp>

#### Oracle (DEAL-O)

**Oracle Products** - Provides Oracle database and application software licenses, support, training and consulting services. The Navy Enterprise License Agreement is for database licenses for Navy customers. Contact Navy project managers on the next page for further details.

**Contractors:**

**Oracle Corp.** (DAAB15-99-A-1002)

**Northrop Grumman** - authorized reseller

**DLT Solutions** - authorized reseller

**Mythics, Inc.** - authorized reseller

**Ordering Expires:** 28 Feb 06

**Authorized Users:** This has been designated as a DoD ESI and GSA SmartBUY contract and is open for ordering by all U.S. federal agencies, DoD components and authorized contractors.

**Web Link:** <https://ascp.monmouth.army.mil/scp/contracts/compactview.jsp>

www.it-umbrella.navy.mil

**Special Note to Navy Users:** On Oct. 1, 2004, and May 6, 2005, the Navy established the Oracle Database Enterprise License, effective through Sept. 30, 2013. The enterprise license provides Navy shore-based and afloat users to include active duty, Reserve and civilian billets, as well as contractors who access Navy systems, the right to use Oracle databases for the purpose of supporting Navy internal operations. Navy users in joint commands or supporting joint functions should contact the NAVICP Mechanicsburg contracting officer at (717) 605-3210 for further review of the requirements and coverage.

This license is managed by the Space and Naval Warfare Systems Center (SPAWAR-SYSCEN) San Diego DON Information Technology (IT) Umbrella Program Office.

The Navy Oracle Database Enterprise License provides significant benefits including substantial cost avoidance for the Department. It facilitates the goal of net-centric operations by allowing authorized users to access Oracle databases for Navy internal operations and permits sharing of authoritative data across the Navy enterprise.

Programs and activities covered by this license agreement shall not enter into separate Oracle database licenses outside this central agreement whenever Oracle is selected as the database. This prohibition includes software and software maintenance that is acquired:

- a. as part of a system or system upgrade, including Application Specific Full Use (ASFU) licenses;
- b. under a service contract;
- c. under a contract or agreement administered by another agency, such as an interagency agreement;
- d. under a Federal Supply Service (FSS) Schedule contract or blanket purchase agreement established in accordance with FAR 8.404(b)(4); or
- e. by a contractor that is authorized to order from a Government supply source pursuant to FAR 51.101.

This policy has been coordinated with the Office of the Assistant Secretary of the Navy (Financial Management and Comptroller), Office of Budget.

**Web Link:** <http://www.it-umbrella.navy.mil/contract/enterprise/deal/Oracle/oracle.shtml>

## Sybase (DEAL-S)

**Sybase Products** - Offers a full suite of software solutions designed to assist customers in achieving Information Liquidity. These solutions are focused on data management and integration, application integration, Anywhere integration, and vertical process integration, development and management. Specific products include but are not limited to Sybase's Enterprise Application Server, Mobile and Embedded databases, m-Business Studio, HIPAA (Health Insurance Portability and Accountability Act) and Patriot Act Compliance, PowerBuilder and a wide range of application adaptors. In addition, a Golden Disk for the Adaptive Server Enterprise (ASE) product is part of the agreement. The Enterprise portion of the BPA offers NT servers, NT seats, Unix servers, Unix seats, Linux servers and Linux seats. Software purchased under this BPA has a perpetual software license. The BPA also has exceptional pricing for other Sybase options. The savings to the government is 64 percent off GSA prices.

**Contractor: Sybase, Inc.** (DAAB15-99-A-1003); (800) 879-2273; (301) 896-1661

**Ordering Expires:** 15 Jan 08

**Authorized Users:** Authorized users include personnel and employees of the DoD, Reserve components (Guard and Reserve), U.S. Coast Guard when mobilized with, or attached to the DoD and nonappropriated funds instrumentalities. Also included are Intelligence Communities, including all DoD Intel Information Systems (DoDIIS) member organizations and employees. Contractors of the DoD may use this agreement to license software for performance of work on DoD projects.

**Web Link:** <https://ascp.monmouth.army.mil/scp/contracts/compactview.jsp>

## Enterprise Architecture Tools

### Rational Software (AVMS-R)

**Rational Software** - Provides IBM Rational software licenses and maintenance support for suites and point products to include IBM Rational RequisitePro, IBM Rational Rose, IBM Rational ClearCase, IBM Rational ClearQuest and IBM Rational Unified Process.

**Contractor: immixTechnology,** (DABL01-03-A-1006); (800) 433-5444

**Ordering Expires:** 26 Mar 09

**Web Link:** <https://ascp.monmouth.army.mil/scp/contracts/compactview.jsp>

## Enterprise Management

### CA Enterprise Management Software (C-EMS2)

**Computer Associates Unicenter Enterprise Management Software** - Includes Security Management, Network Management, Event Management, Output Management, Storage Management, Performance Management, Problem Management, Software Delivery and Asset Management. In addition to these products there are many optional products, services and training available.

**Contractor: Computer Associates International, Inc.** (W91QUZ-04-A-0002); (800) 645-3042

**Ordering Expires:** Effective for term of the GSA FSS Schedule

**Web Link:** <https://ascp.monmouth.army.mil/scp/contracts/compactview.jsp>

## Citrix

**Citrix** - Provides a full range of Metaframe products including Secure Access Manager, Conferencing Manager, Password Manager, Access Suite & XP Presentation Server. Discounts range from 2 to 5 percent off GSA Schedule pricing plus spot discounts for volume purchases.

**Contractor: Citrix Systems, Inc.** (W91QUZ-04-A-0001); (772) 221-8606

**Ordering Expires:** 23 Feb 08

**Web Link:** <https://ascp.monmouth.army.mil/scp/contracts/compactview.jsp>

## Microsoft Premier Support Services (MPS-1)

**Microsoft Premier Support Services** - Provides premier support packages to small and large-size organizations. The products include Technical Account Managers, Alliance Support Teams, Reactive Incidents, on-site support, Technet and MSDN subscriptions.

**Contractor: Microsoft** (DAAB15-02-D-1002); (960) 776-8283

**Ordering Expires:** 30 Jun 06

**Web Link:** <https://ascp.monmouth.army.mil/scp/contracts/compactview.jsp>

## NetIQ

**NetIQ** - Provides Net IQ systems management, security management and Web analytics solutions. Products include AppManager, AppAnalyzer, Mail Marshal, Web Marshal, Vivinet voice and video products, and Vigilant Security and Management products. Discounts are 10 to 8 percent off GSA Schedule pricing for products and 5 percent off GSA Schedule pricing for maintenance.

**Contractors:**

**NetIQ Corp.** (W91QUZ-04-A-0003)

**Northrop Grumman** - authorized reseller

**Federal Technology Solutions, Inc.** - authorized reseller

**Ordering Expires:** 5 May 09

**Web Link:** <https://ascp.monmouth.army.mil/scp/contracts/compactview.jsp>

## ProSight

**ProSight** - Provides software licenses, maintenance, training and installation services for enterprise portfolio management software. The BPA award has been determined to be the best value to the government and; therefore, competition is not required for software purchases. Discount range for software is from 8 to 39 percent off GSA pricing, which is inclusive of software accumulation discounts. For maintenance, training and installation services, discount range is 3 to 10 percent off GSA. Credit card orders are accepted.

**Contractor:** *ProSight, Inc.* (W91QUZ-05-A-0014)

**Ordering Expires:** 19 Sep 06

**Web Link:** <https://ascp.monmouth.army.mil/scp/contracts/compactview.jsp>

## Quest Products

**Quest Products** - Provides a full range of Quest Software Enterprise Management products and services including training. Product groups include Application Management and Database Management (*code quality and optimization, performance and ability, and change and configuration*) and Windows Management (Active Directory, Exchange and Windows).

**Contractor:** *Quest Software, Inc.* (W91QUZ-05-A-0023); (301) 820-4200,

**Ordering Expires:** 14 Aug 10

**Web Link:** <https://ascp.monmouth.army.mil/scp/contracts/viewcontract.jsp?cNum=W91QUZ-05-A-0023>

## Telelogic Products

**Telelogic Products** - Offers development tools and solutions which assist the user in automation in the development life cycle. The major products include DOORS, SYNERGY and TAU Generation. Licenses, maintenance, training and services are available.

**Contractors:**

**Bay State Computers, Inc.** (N00104-04-A-ZF13); Small Business Disadvantaged; (301) 306-9555, ext. 117

**Northrop Grumman Computing Systems, Inc.** (N00104-04-A-ZF14); (240) 684-3962

**Ordering Expires:** 29 Jun 07

**Web Link:** <http://www.it-umbrella.navy.mil/contract/enterprise/telelogic/telelogic.shtml>

## Enterprise Resource Planning

### Digital Systems Group

**Digital Systems Group** - Provides Integrated Financial Management Information System (IFMIS) software that was designed specifically as federal financial management system software for government agencies and activities. The BPA also provides for installation, maintenance, training and professional services.

**Contractor:** *Digital Systems Group, Inc.* (N00104-04-A-ZF19); (215) 443-5178

**Ordering Expires:** 23 Aug 07

**Web Link:** [http://www.it-umbrella.navy.mil/contract/enterprise/erp\\_software/dsg/dsg.shtml](http://www.it-umbrella.navy.mil/contract/enterprise/erp_software/dsg/dsg.shtml)

## Oracle

**Oracle** - See information provided under Database Management Tools on page 45.

## SAP

**SAP Software** - Provides software license, installation, implementation technical support, maintenance and training services.

**Contractor:** *SAP Public Sector & Education, Inc.* (N00104-02-A-ZE77); (202) 312-3656

**Ordering Expires:** Effective for term of the GSA FSS Schedule

**Web Link:** <http://www.it-umbrella.navy.mil/contract/enterprise/sap/sap.shtml>

## ERP Systems Integration Services

### ERP Systems

ERP Systems Integration Services - Provides the procurement of configuration, integration, installation, data conversion, training, testing, object development, interface development, business process reengineering, project management, risk management, quality assurance and other professional services for COTS software implementations. Ordering under the BPAs is decentralized and is open to all DoD activities. The BPAs offer GSA discounts from 10 to 20 percent. Firm fixed prices and performance-based contracting approaches are provided to facilitate more efficient buying of systems integration services. Five BPAs were competitively established against the GSA Schedule. Task orders must be competed among the five BPA holders in accordance with DFARS 208.404-70 and Section C.1.1 of the BPA. Acquisition strategies at the task order level should consider that Section 803 of the National Defense Authorization Act for 2002 requirements were satisfied by the BPA competition.

**Contractors:**

**Accenture LLP** (N00104-04-A-ZF12); (703) 947-2059

**BearingPoint** (N00104-04-A-ZF15); (703) 747-5442

**Computer Sciences Corp.** (N00104-04-A-ZF16); (856) 252-5583

**Deloitte Consulting LLP** (N00104-04-A-ZF17); (202) 220-2960

**IBM Corp.** (N00104-04-A-ZF18); (301) 803-6625

**Ordering Expires:** 03 May 09

**Web Link:** [http://www.it-umbrella.navy.mil/contract/enterprise/erp\\_services/erp-esi.shtml](http://www.it-umbrella.navy.mil/contract/enterprise/erp_services/erp-esi.shtml)

## Information Assurance Tools

### Network Associates, Inc.

**Network Associates, Inc. (NAI)** - This protection encompasses the following NAI products: VirusScan, Virex for Macintosh, VirusScan Thin Client, NetShield, NetShield for NetApp, ePolicy Orchestrator, VirusScan for Wireless, GroupShield, WebShield (software only for Solaris and SMTP for NT), and McAfee Desktop Firewall for home use only.

**Contractor:** *Network Associates, Inc.* (DCA100-02-C-4046)

**Ordering Expires:** Nonexpiring. Download provided at no cost; go to the Antivirus Web links below for antivirus software downloads.

**Web Link:** <http://www.esi.mil>

**Antivirus Web Links:** Antivirus software available for no cost download includes McAfee, Symantec and Trend Micro Products. These products can be downloaded by linking to either of the following Web sites:

NIPRNET site: [http://www.cert.mil/antivirus/av\\_info.htm](http://www.cert.mil/antivirus/av_info.htm)

SIPRNET site: [http://www.cert.smil.mil/antivirus/av\\_info.htm](http://www.cert.smil.mil/antivirus/av_info.htm)

## Symantec - NEW!

**Symantec** - Provides the full line of Symantec Corp. products and services consisting of over 6,000 line items including Ghost and Brightmail. Symantec products can be divided into eight main categories that fall under the broad definition of Information Assurance. These categories are: virus protection, anti-spam, content filtering, anti-spyware solutions, intrusion protection, firewalls/VPN, integrated security, security management, vulnerability management and policy compliance. **Notice to DoD customers regarding Symantec Antivirus Products:** A DoD Enterprise License exists for select Antivirus products through DISA contract DCA100-02-C-4049 found below.

**Contractor:** immix Technology

**Ordering Expires:** 12 Sep 10

**Web Link:** <http://www.immixtechnology.com/esi/Symantec/> or <http://www.esi.mil>

## Symantec Antivirus

**Symantec** - This protection encompasses the following Symantec products: Symantec Client Security, Norton Antivirus for Macintosh, Symantec System Center, Symantec AntiVirus/Filtering for Domino, Symantec AntiVirus/Filtering for MS Exchange, Symantec AntiVirus Scan Engine, Symantec AntiVirus Command Line Scanner, Symantec for Personal Electronic Devices, Symantec AntiVirus for SMTP Gateway, Symantec Web Security (AV only) and support.

**Contractor:** **Northrop Grumman Information Technology**  
(DCA100-02-C-4049)

**Ordering Expires:** Nonexpiring. Download provided at no cost; go to the Antivirus Web links below for antivirus software downloads.

**Web Link:** <http://www.esi.mil>

**Antivirus Web Links:** Antivirus software available for no cost download includes McAfee, Symantec and Trend Micro Products. These products can be downloaded by linking to either of the following Web sites:

NIPRNET site: [http://www.cert.mil/antivirus/av\\_info.htm](http://www.cert.mil/antivirus/av_info.htm)

SIPRNET site: [http://www.cert.smil.mil/antivirus/av\\_info.htm](http://www.cert.smil.mil/antivirus/av_info.htm)

## Trend Micro

**Trend Micro** - This protection encompasses the following Trend Micro products: InterScan Virus Wall (NT/2000, Solaris, Linux), ScanMail for Exchange (NT, Exchange 2000), TMCM/TVCS (Management Console - TMCM W/OPP srv.), PC-Cillin for Wireless, Gold Premium support contract/year (PSP), which includes six POCs.

**Contractor:** **Government Technology Solutions**  
(DCA100-02-C-4045)

**Ordering Expires:** Nonexpiring. Download provided at no cost; go to the Antivirus Web links below for antivirus software downloads.

**Web Link:** <http://www.esi.mil>

**Antivirus Web Links:** Antivirus software available for no cost download includes McAfee, Symantec and Trend Micro Products. These products can be downloaded by linking to either of the following Web sites:

NIPRNET site: [http://www.cert.mil/antivirus/av\\_info.htm](http://www.cert.mil/antivirus/av_info.htm)

SIPRNET site: [http://www.cert.smil.mil/antivirus/av\\_info.htm](http://www.cert.smil.mil/antivirus/av_info.htm)

## Xacta

**Xacta** - Provides Web Certification and Accreditation (C&A) software products, consulting support and enterprise messaging management solutions through its Automated Message Handling System (AMHS) product. The software simplifies C&A and reduces its costs by guiding users through a step-by-step process to determine risk posture and assess system and network configuration compliance with applicable regulations, standards and industry best practices, in accordance with the DITSCAP, NIACAP, NIST or DCID processes. Xacta's AMHS provides automated, Web-based distribution and management of messaging across your enterprise.

**Contractor:** **Telos Corp.** (F01620-03-A-8003); (703) 724-4555

**Ordering Expires:** 31 Jul 08

**Web Link:** <http://esi.telos.com/contract/overview/>

## Office Systems

### Adobe

**Adobe Products** - Provides software licenses (new and upgrade) and maintenance for numerous Adobe products, including Acrobat (Standard and Professional), Approval, Capture, Distiller, Elements, After Effects, Design Collection, Digital Video Collection, Dimensions, Frame Maker, GoLive, Illustrator, PageMaker, Photoshop and other Adobe products.

**Contractors:**

**ASAP** (N00104-03-A-ZE88); Small Business; (800) 248-2727, ext. 5303

**CDW-G** (N00104-03-A-ZE90); (877) 890-1330

**GTSI** (N00104-03-A-ZE92); Small Business; (800) 942-4874, ext. 2224

**Ordering Expires:** 30 Apr 06

**Web Link:** <http://www.it-umbrella.navy.mil/contract/enterprise/adobe/adobe-ela.shtml>

The DoD Adobe Enterprise Software Initiative team is currently negotiating terms and conditions for a new DoD 4.0 CLP (Contractual License Program), which will take effect May 1, 2006. In order to synchronize the current 3.0 CLP maintenance customers with the new agreement, we have removed the maintenance SKUs from our current Adobe ESAs (Enterprise Software Agreements). We are asking DoD customers to delay their purchase of maintenance until the first six-month period of the new agreement, from May 1, 2006 through Oct. 31, 2006. During this timeframe, all DoD customers that own "legacy" software licenses, i.e., software purchased prior to the implementation of the new 4.0 CLP, will be able to purchase the Upgrade Plan (formerly the 3.0 CLP) for those licenses.

Please note that under the new 4.0 CLP, this initial six-month period will be the only opportunity to obtain Upgrade Plan coverage for legacy products. We do not anticipate that there will be any new product releases from now through April 30, 2006, so your upgrade exposure is minimal providing your products are at the current shipping version. Should you have any questions, please contact:

NAVICP contracting officer: (717) 605-2003

We will also be posting any new information and/or guidance to our DoD ESI Web site at [www.esi.mil](http://www.esi.mil). We appreciate your patience during this transition period and will be happy to provide any assistance you may need.

## Microsoft Products

**Microsoft Products** - Provides licenses and software assurance for desktop configurations, servers and other products. In addition, any Microsoft product available on the GSA Schedule can be added to the BPA.

**Contractors:**

**ASAP** (N00104-02-A-ZE78); Small Business; (800) 248-2727, ext. 5303

**CDW-G** (N00104-02-A-ZE85); (847) 968-9429

**Dell** (N00104-02-A-ZE83); (800) 727-1100 ext. 37010 or (512) 723-7010

**GTSI** (N00104-02-A-ZE79); Small Business; (800) 999-GTSI or (703) 885-4554

**Hewlett-Packard** (N00104-02-A-ZE80); (800) 535-2563 pin 6246

**Softchoice** (N00104-02-A-ZE81); Small Business; (877) 333-7638 or (312) 655-9167

**Softmart** (N00104-02-A-ZE84); (610) 518-4000, ext. 6492 or (800) 628-9091 ext. 6928

**Software House International** (N00104-02-A-ZE86); (732) 868-5926

**Software Spectrum, Inc.** (N00104-02-A-ZE82); (800) 862-8758 or (509) 742-2208

**Ordering Expires:** 30 Mar 07

**Web Link:** <http://www.it-umbrella.navy.mil/contract/enterprise/microsoft/ms-ela.shtml>



## Red Hat

**Red Hat (Netscape software formerly owned by AOL, not Linux)** - In December 2004, America Online (AOL) sold Netscape Security Solutions Software to Red Hat. This sale included the three major software products previously provided by DISA (Defense Information Systems Agency) to the DoD and Intelligence Communities through AOL. *Note: The Netscape trademark is still owned by AOL, as are versions of Netscape Communicator above version 7.2. Netscape Communicator version 8.0 is not part of this contract.*

August Schell Enterprises is providing ongoing support and maintenance for the Red Hat Security Solutions (products formerly known as Netscape Security Solutions) which are at the core of the DoD's Public Key Infrastructure (PKI). This contract provides products and services in support of the ongoing DoD-wide enterprise site license for Red Hat products. This encompasses all components of the U.S. Department of Defense and supported organizations that use the Joint Worldwide Intelligence Communications System (JWICS), including contractors.

Licensed software products available from DISA are the commercial versions of the software, not the segmented versions that are compliant with Global Information Grid (GIG) standards. The segmented versions of the software are required for development and operation of applications associated with the GIG, the Global Command and Control System (GCCS) or the Global Combat Support System (GCSS).

If your intent is to use a licensed product available for download from the DoD Download Site to support development or operation of an application associated with the GIG, GCCS or GCSS, you must contact one of the Web sites listed below to obtain the GIG segmented version of the software. You may not use the commercial version available from the DoD Download Site.

If you are not sure which version (commercial or segmented) to use, we strongly encourage you to refer to the Web sites listed below for additional information to help you to make this determination before you obtain the software from the DoD Download Site.

**GIG or GCCS users:** Common Operating Environment Home Page  
<https://coe.mont.disa.mil>

**GCSS users:** Global Combat Support System  
<http://www.disa.mil/main/prodsol/gcss.html>

**Contractor:** Red Hat

**Ordering Expires:** 06 Mar 07 (includes one one-year option)  
Download provided at no cost.

**Web Link:** <http://iase.disa.mil/netlic.html>

## WinZip

**WinZip** - This is an IDIQ contract with Eyak Technology, LLC, an "8(a)" Small Disadvantaged Business (SDB)/Alaska Native Corp. for the purchase of WinZip 9.0, a compression utility for Windows. Minimum quantity order via delivery order and via Government Purchase Card to Eyak Technology, LLC is 1,250 WinZip licenses. All customers are entitled to free upgrades and maintenance for a period of two years from original purchase. Discount is 98.4 percent off retail. Price per license is 45 cents.

**Contractor:** Eyak Technology, LLC (W91QUZ-04-D-0010)

**Authorized Users:** This has been designated as a DoD ESI and GSA Smart-BUY Contract and is open for ordering by all U.S. federal agencies, DoD components and authorized contractors.

**Ordering Expires:** 27 Sep 09

**Web Link:** <https://ascp.monmouth.army.mil/scp/contracts/compactview.jsp>

## Operating Systems

### Novell

**Novell Products** - Provides master license agreement for all Novell products, including NetWare, GroupWise and ZenWorks.

**Contractor:** ASAP Software (N00039-98-A-9002); Small business; (800) 883-7413

**Ordering Expires:** 31 Mar 07

**Web Link:**  
<http://www.it-umbrella.navy.mil/contract/enterprise/novell/novell.shtml>

## Sun (SSTEW)

**SUN Support** - Sun Support Total Enterprise Warranty (SSTEW) offers extended warranty, maintenance, education and professional services for all Sun Microsystems products. The maintenance covered in this contract includes flexible and comprehensive hardware and software support ranging from basic to mission critical services. Maintenance covered includes Sun Spectrum Platinum, Gold, Silver, Bronze, hardware only and software only support programs.

**Contractor:** Dynamic Systems (DCA200-02-A-5011)

**Ordering Expires:** Dependent on GSA Schedule until 2011

**Web Link:** <http://www.ditco.disa.mil/hq/contracts/sstewchar.asp>

## Research and Advisory BPAs Listed Below

Research and Advisory Services BPAs provide unlimited access to telephone inquiry support, access to research via Web sites and analyst support for the number of users registered. In addition, the services provide independent advice on tactical and strategic IT decisions. Advisory services provide expert advice on a broad range of technical topics and specifically focus on industry and market trends. BPA listed below.

**Gartner Group** (N00104-03-A-ZE77); (703) 226-4815; Awarded Nov 02; one-year base period with three one-year options.

**Ordering Expires:** 27 Nov 06

**Authorized Users:** Gartner Group: All DoD components and their employees, including Reserve Components (Guard and Reserve); the U.S. Coast Guard; other government employees assigned to and working with DoD; nonappropriated funds instrumentalities of the DoD; DoD contractors authorized in accordance with the FAR and authorized Foreign Military Sales.

**Web Link:** <http://www.it-umbrella.navy.mil/contract/r&a/gartner/gartner.shtml>

## Records Management

### TOWER Software - NEW!

**TOWER Software** - Provides TRIM Context software products, maintenance, training and services. TRIM Context is an integrated electronic document and records management platform for Enterprise Content Management that securely manages business information in a single repository through its complete life cycle. The TOWER TRIM solution provides document management, records management, workflow management, Web-based records management, document content indexing, e-mail management and imaging. The DoD Enterprise Software Initiative (ESI) Enterprise Software Agreement (ESA) provides discounts of 10 to 40 percent off GSA for TRIM Context software licenses and maintenance and 5 percent off GSA for training and services.

**Contractor:** TOWER Software Corporation (FA8771-06-A-0302)

**Ordering Expires:** 17 Feb 08 (5 Dec 10 if extended by option exercise)

**Web link:** <http://www.esi.mil>

## Section 508 Tools

### HiSoftware 508 Tools

#### HiSoftware Section 508 Web Developer Correction Tools

- Includes AccRepair (StandAlone Edition), AccRepair for Microsoft FrontPage, AccVerify for Microsoft FrontPage and AccVerify Server. Also includes consulting and training support services.

**Contractor:** *HiSoftware, DLT Solutions, Inc.* (N00104-01-A-Q570); Small Business; (888) 223-7083 or (703) 773-1194

**Ordering Expires:** 15 Aug 07

**Web Link:** <http://www.it-umbrella.navy.mil/contract/508/dlt/dlt.shtml>

**Warranty:** IAW GSA Schedule. Additional warranty and maintenance options available. Acquisition, Contracting and Technical fee included in all BLINS.

### ViViD Contracts

#### N68939-97-D-0040

**Contractor:** *Avaya Incorporated*

#### N68939-97-D-0041

**Contractor:** *General Dynamics*

ViViD provides digital switching systems, cable plant components, communications and telecommunications equipment and services required to engineer, maintain, operate and modernize base level and ships afloat information infrastructure. This includes pier-side connectivity and afloat infrastructure with purchase, lease and lease-to-own options. Outsourcing is also available. Awarded to:

**Avaya Incorporated** (N68939-97-D-0040); (888) VIVID4U or (888) 848-4348. Avaya also provides local access and local usage services

**General Dynamics** (N68939-97-D-0041); (888) 483-8831

**Modifications:** Latest contract modifications are available at <http://www.it-umbrella.navy.mil>

#### Ordering Expires:

Contract ordering for all new equipment purchases has expired. All Labor CLINS, Support Services and Spare Parts can still be ordered through 28 Jul 07.

**Authorized users:** DoD and U.S. Coast Guard

**Warranty:** Four years after government acceptance. Exceptions are original equipment manufacturer (OEM) warranties on catalog items.

**Acquisition, Contracting & Technical Fee:** Included in all CLINS/SCLINS

#### SSC Charleston Order Processing:

([como@mailbuoy.norfolk.navy.mil](mailto:como@mailbuoy.norfolk.navy.mil))

**Web Link:** <http://www.it-umbrella.navy.mil/contract/vivid/vivid.shtml>

### TAC Solutions BPAs

#### Listed Below

TAC Solutions provides PCs, notebooks, workstations, servers, networking equipment and all related equipment and services necessary to provide a completely integrated solution. BPAs have been awarded to the following:

**Control Concepts** (N68939-97-A-0001); (800) 922-9259, ext. 103

**Dell** (N68939-97-A-0011); (800) 727-1100, ext. 7233795

**GTSI** (N68939-96-A-0006); (800) 999-4874, ext. 2104

**Hewlett-Packard** (N68939-96-A-0005); (800) 727-5472, ext. 15614

#### Ordering Expires:

Control Concepts: 03 May 07 (includes two one-year options)

Dell: 31 Mar 06 (includes one one-year option)

GTSI: 31 Mar 06 (includes one one-year option)

Hewlett-Packard: 07 May 06 (includes one one-year option)

**Authorized Users:** DON, U.S. Coast Guard, DoD and other federal agencies with prior approval.

**Warranty:** IAW GSA Schedule. Additional warranty options available.

#### Web Links:

Control Concepts  
<http://www.it-umbrella.navy.mil/contract/tac-solutions/cc/cc.shtml>

Dell

<http://www.it-umbrella.navy.mil/contract/tac-solutions/dell/dell.shtml>

GTSI

<http://www.it-umbrella.navy.mil/contract/tac-solutions/gtsi/gtsi.shtml>

Hewlett-Packard

<http://www.it-umbrella.navy.mil/contract/tac-solutions/HP/HP.shtml>

### Department of the Navy Enterprise Solutions BPA

#### Navy Contract: N68939-97-A-0008

The Department of the Navy Enterprise Solutions (DON ES) BPA provides a wide range of technical services, specially structured to meet tactical requirements, including worldwide logistical support, integration and engineering services (including rugged solutions), hardware, software and network communications solutions. DON ES has one BPA.

**Computer Sciences Corp.** (N68939-97-A-0008); (619) 225-2412; Awarded 7 May 97

**Ordering Expires:** 31 Mar 06 (includes two one-year options)

**Authorized Users:** All DoD, federal agencies and U.S. Coast Guard.

**Web Link:** <http://www.it-umbrella.navy.mil/contract/don-es/csc.shtml>

### Information Technology Support Services BPAs

#### Listed Below

The Information Technology Support Services (ITSS) BPAs provide a wide range of IT support services such as networks, Web development, communications, training, systems engineering, integration, consultant services, programming, analysis and planning. ITSS has four BPAs. They have been awarded to:

**Lockheed Martin** (N68939-97-A-0017); (240) 725-5012; Awarded 1 Jul 97

**Northrop Grumman Information Technology**

(N68939-97-A-0018); (703) 413-1084; Awarded 1 Jul 97

**SAIC** (N68939-97-A-0020); (703) 676-2388; Awarded 1 Jul 97

**TDS Inc., a Centurum Company** (Small Business) (N00039-98-A-3008); (619) 224-1100; Awarded 15 Jul 98

#### Ordering Expires:

Lockheed Martin: 30 Jun 06 (includes one one-year option)

Northrop Grumman IT: 11 Feb 06 (includes one one-year option) Call the Project Management Office for extension information.

SAIC: 30 Jun 06 (includes one one-year option)

TDS: 14 Jul 06 (includes one one-year option)

**Authorized Users:** All DoD, federal agencies and U.S. Coast Guard

#### Web Links:

Lockheed Martin

<http://www.it-umbrella.navy.mil/contract/itss/lockheed/itss-lockheed.shtml>

Northrop Grumman IT

<http://www.it-umbrella.navy.mil/contract/itss/northrop/itss-northrop.shtml>

SAIC

<http://www.it-umbrella.navy.mil/contract/itss/saic/itss-saic.shtml>

TDS

<http://www.it-umbrella.navy.mil/contract/itss/tds/itss-tds.shtml>

## The U.S. Army Maxi-Mini and Database (MMAD) Program Listed Below

The MMAD Program is supported by two fully competed Indefinite Delivery Indefinite Quantity (IDIQ) contracts with IBM Global Services and GTSI Corp. The program is designed to fulfill high and medium level IT product and service requirements of DoD and other federal users by providing items to establish, modernize, upgrade, refresh and consolidate system environments. Products and manufacturers include:

	IBM Global Services	GTSI
Servers (64-bit & Itanium)	IBM, HP, Sun	Compaq, HP
Workstations	HP, Sun	Compaq, HP
Storage Systems	IBM, Sun, EMC, McData, System Upgrade, Network Appliances	HP, Compaq, EMC, RMSI, Dot Hill, Network Appliances
Networking	Cisco, WiMAX Secure	Cisco, 3COM, HP, Enterasys, Foundry

Ancillaries include network hardware items, upgrades, peripherals and software. Services include consultants, managers, analysts, engineers, programmers, administrators and trainers.

MMAD is designed to ensure the latest products and services are available in a flexible manner to meet the various requirements identified by DoD and other agencies. This flexibility includes special solution CLINs, technology insertion provisions, ODC (Other Direct Cost) provisions for ordering related non-contract items, and no dollar/ratio limitation for ordering services and hardware.

Latest product additions include WiMAX Secure Wireless Networking and DolphinSearch Datamining Software.

### Awarded to:

**GTSI Corp.** (DAAB07-00-D-H251); (800) 999-GTSI

**IBM Global Services-Federal** (DAAB07-00-D-H252); CONUS: (866) IBM-MMAD (1-866-426-6623) OCONUS: (703) 724-3660 (Collect)

**Ordering:** Decentralized. Any federal contracting officer may issue delivery orders directly to the contractor.

### Ordering Expires:

GTSI: 25 May 06 (includes three option periods)

IBM: 19 Feb 06 (includes three option periods)

**Authorized Users:** DoD and other federal agencies including FMS

**Warranty:** 5 years or OEM options

**Delivery:** 35 days from date of order (50 days during surge period, Aug-Sep) No separate acquisition, contracting and technical fees.

**Web Link:** GTSI and IBM: <https://ascp.monmouth.army.mil/scp/contracts/compactview.jsp>



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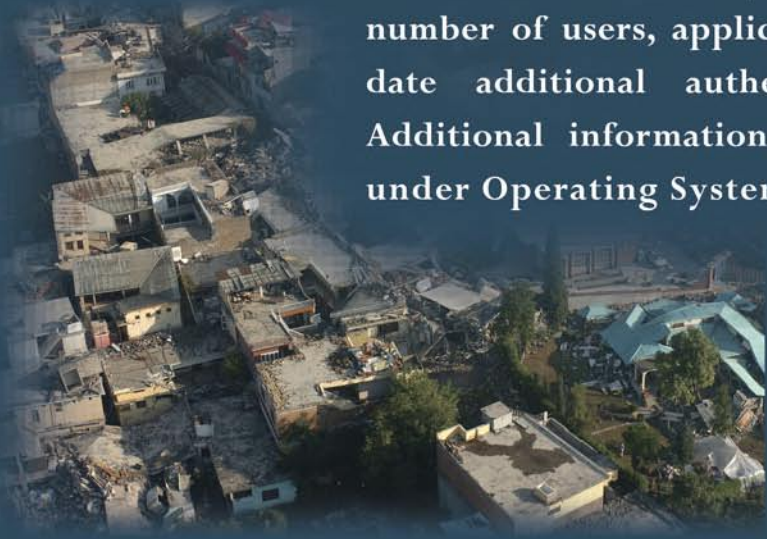
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**THANKS TO OUR CUSTOMERS FOR 17 GREAT YEARS!**

New! Novell Certificate Login (NCL) 2.0, a product used to improve network security by requiring two-factor authentication (CAC and PIN) as opposed to single factor authentication (password), is now available through the Novell BPA. NCL can be used with any operating system and can scale to any number of users, applications or locations. It can also accommodate additional authentication factors such as biometrics. Additional information can be found in the contracts section under Operating Systems - Novell.



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