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CHIPS

July - September 2010

Department of the Navy Energy Strategy

The Honorable Jackalyne Pfannenstiel
Assistant Secretary of the Navy for Energy, Installations and Environment

Rear Admiral Philip Hart Cullom
Director Energy and Environmental Readiness Division (N45) & Director Task Force Energy

Rear Admiral David W. Titley
Director Task Force Climate Change
Oceanographer and Navigator of the Navy

Green IT

CHIPS
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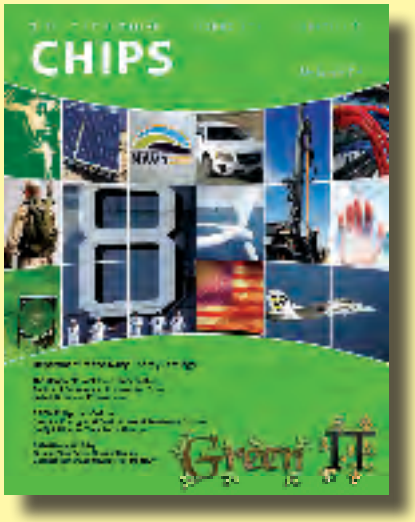
Cover

The Department of the Navy Energy Strategy will ensure energy security through secure, sufficient, reliable and sustainable energy for the fleet and shore facilities. The foundation of the DON Energy Strategy is environmental stewardship achieved through aggressive and effective conservation programs, use of efficient technologies and secure, sustainable alternative renewable fuels.



Green IT

❒ To the extent practicable, turn off monitors when not in use to reduce energy use;

❒ Switch to higher energy efficient technology, such as flat screen LCD monitors that use less than one-third the energy of equivalent size CRT monitors;

❒ Shut down workstations when not in use if there is no impact to user productivity, data access, data integrity, and/or security;

❒ Consolidate data centers, disaster recovery facilities, and server rooms, where practicable, to shrink footprint to reduce space; heating, ventilation, and air conditioning; security risks; and staff workload;

❒ Encourage telecommuting in accordance with applicable Department of the Navy and local policies; and

❒ Encourage, to extent feasible, for the command/business mission, standard location-wide, same day, all-employee alternative work schedules, such as 4 days per week with 10 hours per day (4110) or an alternating 5-day week and 4-day week with 9 hours per day (51419), to reduce utility and commuting energy emissions and costs.

— Department of the Navy Strategy for Green Information Technology Electronic Stewardship and Energy Savings Strategy Memorandum — issued April 23, 2009, and available from the DON CIO website at www.doncio.navy.mil.

Opposite page: BOSTON (July 4, 2010) USS Constitution fires a 21-gun salute toward Fort Independence on Castle Island during the ship's July 4th underway. The underway is one of the last major events of Boston Navy Week, June 30-July 5. U.S. Navy photo by Seaman Apprentice Shannon S. Heavin.

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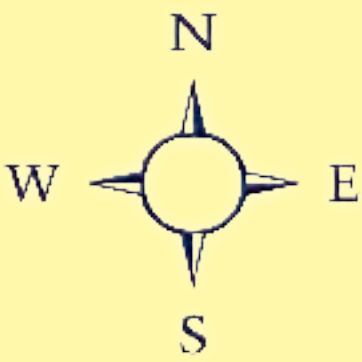

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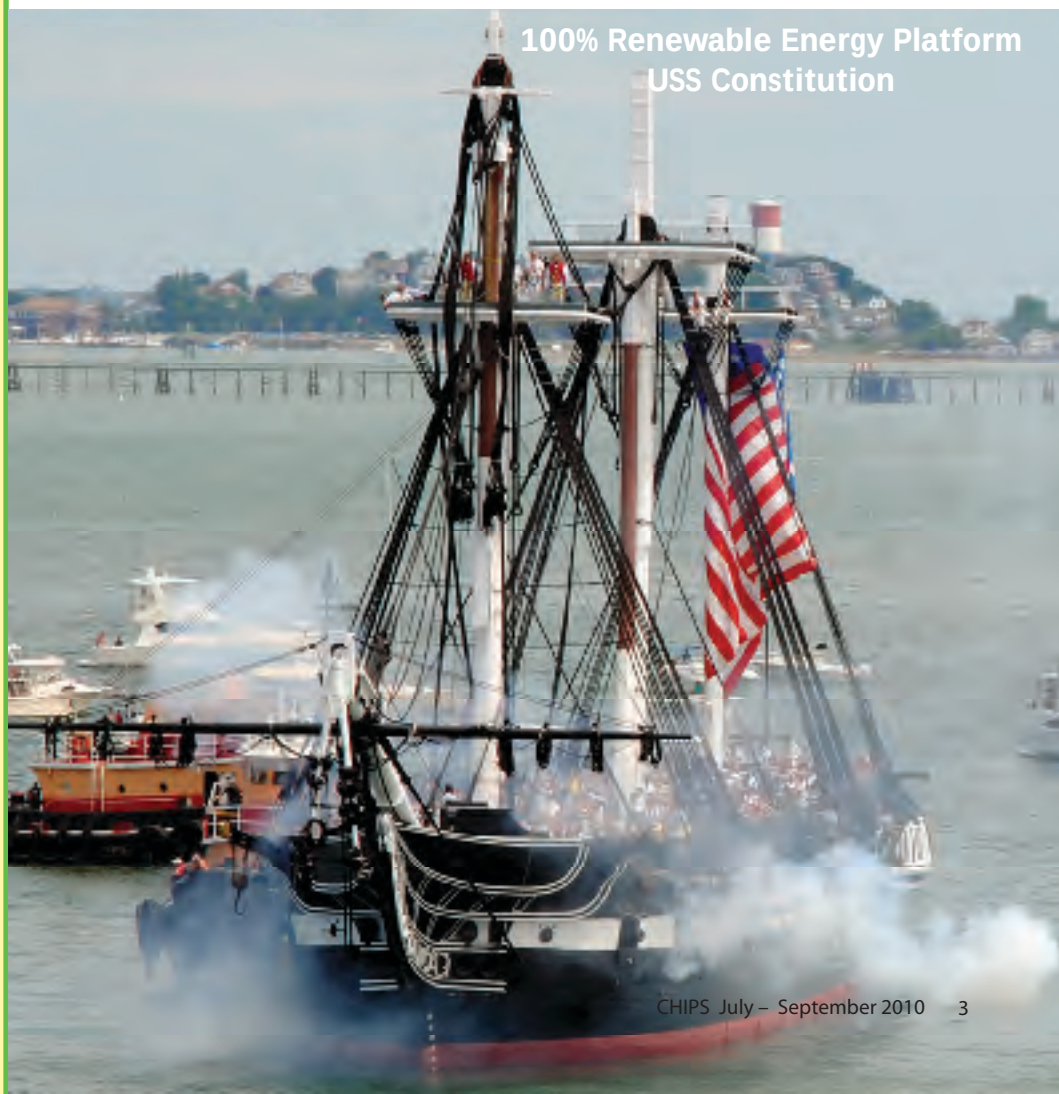


Editor's Notebook

Recently, I read a comment on a military blog that said something like: Thank heavens, the U.S. Navy is taking on energy reform because the rest of the country will follow. In this issue of CHIPS, you will see just how the Department of the Navy is leading the pack by pursuing sustainable, renewable energy technology, environmental stewardship and reduced energy consumption through aggressive policies and goals.

Energy strategists, such as Assistant Secretary of the Navy for Energy, Installations and Environment, the Honorable Jackalyne Pfannenstiel; Director, Task Force Energy Rear Adm. Philip Hart Cullom; and Director, Task Force Climate Change Rear Adm. David W. Titley share their knowledge and vision to ensure naval readiness and energy security. As you know, energy independence is a matter of national security and a strategic imperative.

You will be amazed at the many innovative approaches the department is using to facilitate energy reform that are already showing tangible results, such as telework, telepresence, research in biofuels and geothermal energy, green information technology, acquisition excellence, recycling, and many more initiatives that will lead to a significant reduction in the DON's carbon footprint and reliance on foreign fossil fuels.

A survey of communication methods for humanitarian assistance/disaster relief between military organizations, federal agencies, nongovernmental organizations and international groups is another focus area in this issue with a close look at the collaboration in Haiti between many disparate organizations in response to the horrific earthquake which struck Haiti in January.

Finally, we take a look at process improvement models and organizational changes at the Space and Naval Warfare Systems Center Atlantic in an interview with its senior civilian official and Technical Director Christopher A. Miller.

I'm interested in how you become energy reform leaders in your organization, as Rear Adm. Cullom said, it's the leadership at an individual command and each member of the workforce that are at the heart of change.

It really requires a cultural change in how we think about and use energy. "We need to treat energy with the same consideration as other critical resources in the department," said Assistant Secretary Pfannenstiel.

Welcome new subscribers!

Sharon Anderson

NORFOLK (June 10, 2010) A sample of the new "green roof" that will be added onto the Naval Legal Service Office at Norfolk Naval Station is on display during the ground breaking ceremony for the Green Roof Project. The green roof is expected to be completed by Thanksgiving and will be the first of its kind in Norfolk. The roof is expected to significantly reduce heating and cooling costs. U.S. Navy photo by Mass Communication Specialist 3rd Class Samantha L. Robinett.

MESSAGE FROM THE DON CIO

DEPARTMENT OF THE NAVY
CHIEF INFORMATION OFFICER
www.doncio.navy.mil

As I sit down to write my last CIO column for this great magazine, I cannot help but reflect on the last four years. So much change has occurred! We have truly become a net-dependent organization operating at net-speed! I joined the office of the DON CIO in March 2000 when my mentor, Dan Porter, brought me on board to work on e-business. Since then, I have been involved in several of the department's technological advances, from the acceleration of using the network to support the DON's mission to rolling out the Common Access Cards and moving many transactions to Web-based applications, to the development and deployment of the Naval Networking Environment (NNE) 2016 vision.

In June 2003, then DON CIO, Dave Wennergren, selected me to be his deputy, which expanded my role in the organization. I managed the office's broad portfolio of work and helped integrate the Navy and Marine Corps networks and move to enterprise solutions where appropriate.

In November 2006, while on active duty as a Navy Reservist in Iraq, Secretary Winter selected me to be the DON CIO. Being at the tip of the spear helped me gain a greater appreciation for the needs of warfighters, how IT/cyber supports their mission, and how our work supports those brave men and women. Although my time as the CIO has flown by rapidly, it has provided many lessons.

In parting, I'd like to share a few thoughts with you.

Speed to Decision. One of the first things I learned in theater, is that things move at a faster pace and decisions are made quickly out of necessity. Inside the Beltway, things move a bit slower. Current cyber threats outpace our acquisition cycle, and while the DoD 5000 grants a great deal of latitude for taking appropriate risks, we must improve upon our speed to deliver solutions more quickly.

Culture. The proud traditions of the Navy and Marine Corps are scripted in both regulation and policy, as well as unwritten processes. As we continue to move forward into the cyber age, we must recognize that changes are as much about managing and respecting the culture as the technology.

Web 2.0. While we have moved many of our processes to the network, we're only scratching the surface of the power of the Web. I believe that social networking and collaboration will fundamentally reshape how work gets done over time.

Cybersecurity. We must constantly manage the balance between collaboration and sharing information with the need to be secure. To do this, we need a cybersecurity investment model that will allow us to measure the effectiveness of our investments while ensuring that we are able to access information from wherever and whenever needed.

Lastly, the department is working hard to define decision making processes and accountability. Whether you call it governance or unity of command, we must be able to react to threats and opportunities far more agilely than we have in the past.

In the time I have been in the DON CIO, I've been fortunate enough to see many accomplishments that have resulted from the hard work of the DON IM/IT community, including the following.

Enterprise Networks. We have actively used networks to conduct our business and have moved toward network consolidation and acting like an enterprise. As we close the NMCI chapter and move toward NGEN/NNE 2016, we can become more effective and efficient through centralization while delivering the defendable security needed.

Enterprise Buying. Using the DoD CIO Enterprise Software Initiative, we have accomplished a great deal of consolidation across the department, resulting in hundreds of millions of dollars in savings.

Enterprise Architecture. In 2009, we released the first actionable and practical EA for the DON, which ensures the department's IT and National Security System (NSS) investments are aligned with and focused on achieving departmental goals and objectives. The DON EA also assists program managers in the development of their individual solution architectures.

Security. We have steadily raised the security bar through the successful deployment of CAC-based PKI, enabling cryptographic logon to DON networks.

Workforce. Through IT and IA training, certifications and core competencies, we have equipped our workforce for current and future challenges.

Proactive CCA. We have ensured the alignment of processes for reviewing IT/NSS investments for compliance with the requirements of the Clinger-Cohen Act and the DON acquisition gate review.

KM across the DON. We have moved from knowledge management as a concept to implementing KM. We have established KM positions on carrier strike group staffs, deployed the command KM course, and captured "retrospects" to educate units flowing into theater.

Critical Infrastructure Protection. We rolled out a program and self-assessment tool to allow individual bases to determine where they should invest energy to ensure operation of their facility in support of warfighter requirements.

I have enjoyed my entire tenure at DON CIO in each of my three roles. My time as the CIO has taught me many things that I will carry with me as I embark on my new adventure. My goals and objectives will remain unchanged: to securely deliver information where needed in the most efficient and effective way possible. I have been privileged and honored to work with a talented team — both within and outside of the DON CIO. As I move on to my new position, as director of strategy and policy, for U.S. Fleet Cyber Command/U.S. 10th Fleet, I look forward to continuing to support the warfighter — just from a different perspective.

– Robert J. Carey

Interview with The Honorable Jackalyne Pfannenstiel Assistant Secretary of the Navy (Energy, Installations and Environment)

The Honorable Jackalyne Pfannenstiel

Jackalyne Pfannenstiel was appointed Assistant Secretary of the Navy (ASN) for Energy, Installations and Environment by President Obama on March 5, 2010. In this position, Ms. Pfannenstiel is responsible for formulating department-wide policies, procedures, advocacy, and strategic plans; as well as overseeing all Department of the Navy functions and programs related to installations, safety, energy and environment. This includes effective management of Navy and Marine Corps real property, housing and other facilities; environmental, natural, cultural, and marine resources protection, planning, conservation and compliance, both ashore and afloat; safety and occupational health for both military and civilian personnel; timely completion of closures and realignments of installations under base closure laws; the U.S. – Japan agreement to realign U.S. forces in Japan and relocate 8,000 Marines and their families from Okinawa to Guam; and the development of the Department of the Navy's energy strategy, policies and guidance.

Ms. Pfannenstiel is former chairman of the California Energy Commission, a state regulatory body with authority over power plant licensing, building and appliance efficiency standards, and energy policy development.

ASN Pfannenstiel: Thanks for the opportunity to speak with you. I'm delighted and honored to be in this position. These are exciting times for the Department of the Navy as we move forward on a number of important initiatives, including some aggressive energy goals.

CHIPS: Your office's mandate is so broad, from conservation and housing, to safety, the environment, and the development of the department's energy strategy, policies and guidance; can you talk about your priorities?

ASN Pfannenstiel: Well, we do have a large portfolio, but that's what makes the job interesting. Just about everything we do has broad policy implications, and it's all important. It is, therefore, difficult to separate and prioritize among these key programs. That being said, my background is in energy, so I'll offer you my energy priorities. I have three and they are all — not surprisingly — directed to achieving the Secretary of the Navy's energy goals. First of all, I want the department to become as energy efficient as possible, both on our bases and throughout our operations. That means embracing renewable energy, conservation programs and efficiency technology. We need to foster investments, incentives and behavioral changes that will reduce our dependence on imported fossil fuels.

Energy reduction measures tend to have rapid paybacks, so we can reduce costs as we move away from fossil fuels. As well as reducing our overall use, the Secretary has set a goal of 50 percent of the bases being energy self-sustaining by 2020. I believe we can achieve this goal while operating our bases economically and maintaining them as desirable places to live and work.

Second, I would like the Navy and the Marine Corps to support the development of alternative energy through using our buying power, our land, our unique tactical needs, and our creativity to offer test beds for energy innovations.

Third, I would like to assure that energy is recognized throughout the Department of the Navy as a critical — and scarce — strategic resource. We need to treat energy with the same consideration as other critical resources in the department.

CHIPS: The Secretary of the Navy has said he believes that the Navy can be a leader in green energy. Do you have any thoughts on this?

ASN Pfannenstiel: We have the opportunity and the incentive to move away from fossil fuels and power our bases, ships and aircraft with green fuels. Under the Secretary's leadership, we've already made enormous strides in this direction. We commissioned the USS Makin Island, our first electric-drive surface combatant and tested an F/A-18 engine on biofuel. We will continue to find opportunities to apply these and many other promising technologies.

CHIPS: You and Agriculture Deputy Secretary Kathleen Merrigan kicked off the first of several energy forums in April to look at ways to increase biofuels production and meet the Navy's renewable energy needs. The forum comes as a result of the Memorandum of Understanding (MOU) recently signed by the U.S. Department of Agriculture (USDA) and the Department of the Navy to encourage the development of advanced biofuels and other renewable energy systems. Since the Secretary of the Navy has made reducing the department's dependence on fossil fuels a top priority, how soon do you expect to see tangible results from the MOU?

ASN Pfannenstiel: We're working with USDA to support President Obama's and the Secretary's initiatives to replace fossil fuels with energy from renewable sources.

We held an energy forum in Hawaii because that's where a key part of the USDA's biofuel is centered. With USDA funding, the Navy has been generating power from methane gas at a Kauai landfill at the Pacific Missile Range Facility.

We're also working with other partners, for example, with Hawaiian Electric and the Hawaiian Commercial & Sugar Company on a biofuels project in which USDA's Research Service and Natural Resources Conservation Service, the Office of Naval Research, and the University of Hawaii are assessing the most sustainable opportunities for producing advanced biofuels and renewable electricity from sugarcane and other biomass crops grown in Hawaii. We expect the first tangible results by this fall.

"I would like to assure that energy is recognized throughout the Department of the Navy as a critical — and scarce — strategic resource. We need to treat energy with the same consideration as other critical resources in the department."

The Honorable Jackalyne Pfannenstiel

CHIPS: What sort of baseline are you starting from?

ASN Pfannenstiel: The baseline for commercial production of non-food source biofuels is very low. Ethanol-based biofuels have been around for a number of years, but we are looking at other crops where new development opportunities are emerging.

CHIPS: You talked about energy usage on the bases. Are you going to mandate specifics for energy consumption, for example, Naval Station Norfolk will get 50 percent of its power from renewable and alternative fuels?

ASN Pfannenstiel: In addition to meeting the 'zero net energy' goal, half of our shore energy use needs to come from alternative sources by 2020. We'll achieve this through a combination of reduced energy use and increased use of alternative energy resources. The exact combination will be base-specific, depending on the base's access to renewable and alternative energy.

CHIPS: There are green alternatives for building materials and soft furnishings. Will the Navy mandate green products for its offices?

ASN Pfannenstiel: We've already started down that road and are making great progress. For example, all new buildings in the department must be certified Leadership in Energy and Environmental Design (LEED) Silver. In addition, the Marine Corps has a directive that all new roofs must be evaluated for solar panels. Where they make sense, they'll be part of the roofing project. These are excellent strategies, but I think we can go further. Where it is economically advantageous for us to raise our standards of energy efficiency, we should do so.

CHIPS: The Deputy Assistant Secretary of the Navy for Energy Office was recently established to develop and use proven business models and investment strategies that leverage public and private investment to achieve naval, defense and national energy goals. Can you talk about these business models?

ASN Pfannenstiel: We believe a combination of public and private resources will be necessary to develop alternative energy products. The department can grow the market for products and help provide opportunities for private investors. We've already begun discussions with venture capital firms about investment potentials that could work for both of us. We have a number of ongoing programs — such as leases on our properties, power purchase agreements and public-private partnerships — where we can provide sites or markets to leverage private investment. For example, we may be able to help Hawaiian Electric find pilot programs or test sites for biofuel power generation.

We're actively soliciting creative ideas on developing the renewables industry. What we've found is that there is a high level of interest in the private sector as this fledgling industry is looking for markets, test sites and new applications for renewable energy products.

CHIPS: Is there an understanding for continuing research and development in energy-related fields with a number of partners at this time?

ASN Pfannenstiel: There's a great deal of research and development in the fields of alternative and renewable energy. Much is happening in the public sector, for example at the Department of Energy (DOE) labs such as the National Renewable Energy Laboratory in Colorado. Also, universities are heavy players in the energy technology field. A sharing of research and development investment among federal and state agencies, universities, and the private sector would accelerate development and production of these alternatives.

CHIPS: Will energy concerns affect acquisition policies?

ASN Pfannenstiel: One of the Secretary's energy goals is to incorporate energy features into our contracts. On May 24 of this year, the Department of the Navy announced the intention to pilot a Preferred Supplier Program. This could bolster government contractors with exemplary performance in cost control, quality and energy efficiency — among other factors. Under this program, firms could be recognized for achieving energy efficiency targets.

CHIPS: Outreach to the Navy and Marine Corps to get the green energy message out is so important to change the culture.

ASN Pfannenstiel: That's absolutely true. An important part of my role is to stress that energy efficiency is fundamentally mission critical. Reducing our imports of fossil fuels will promote our energy security and independence. In addition, as we adopt alternative energy sources, we will be easing the logistics burden of transporting fuels into combat areas.

CHIPS: We've been talking a lot about energy, but lastly I want to ask you about your trip to Guam. Will you be working with the Joint Base Guam Program office and the Defense Department on the realignment of U.S. forces in Japan and relocation of 8,000 Marines and their families from Okinawa to Guam?

ASN Pfannenstiel: Yes, I'm working with others in the Pentagon, other federal agencies, and the leaders in Guam to develop plans for the relocation of the Marines. We're focused on ensuring that the necessary infrastructure for the Marines doesn't disrupt the island. In fact, this is an opportunity to build an infrastructure that will be a model for the Western Pacific. President Obama used the phrase 'One Guam, Green Guam' to describe our goal that the infrastructure 'outside the fence' is up to the infrastructure standards on the base. CHIPS

LEED standards can be found at: www.usgbc.org/. Go to www.navy.mil for more news about the DON's energy programs.

Talking with Rear Adm. Philip Hart Cullom
Director, Energy and Environmental Readiness Division, N45
Director of Task Force Energy


Rear Adm. Philip Hart Cullom

Energy consumption poses geopolitical, economic, and environmental challenges that call for aggressive technology and policy changes. The Department of the Navy is aggressively working on all fronts to ensure the U.S. Navy remains the largest, most versatile, most capable naval force in the world today.

To ensure readiness, the Chief of Naval Operations directed several initiatives last year to study the effects of climate change, energy consumption and savings. In December 2008, the CNO established Task Force Energy to:

- Raise visibility and awareness of energy as a strategic resource;
- Optimize energy considerations in budgeting and acquisition; and
- Recommend Navy-wide energy conservation, environmental stewardship, and alternative energy strategies.

Rear Adm. Philip Cullom, as the director of Task Force Energy, has been working across the fleet, aviation community and shore commands on several initiatives that include reducing tactical fuel consumption, increasing sources of renewable alternative energy, and promoting environmental stewardship.

CHIPS asked Rear Adm. Cullom to talk about the work of Task Force Energy and the Navy's Energy Strategy on June 3.

CHIPS: The U.S. Navy has had conservation programs in place for a long time, is there a new urgency to move more quickly now?

Rear Adm. Cullom: Yes. The early programs were a result of the first energy crisis back in the '70s so they are fairly longstanding. But it is pretty clear now that energy is definitely going to be our most precious resource for the next decade — if not the entire 21st century. In that regard, there may be significant challenges in the near term that may impact us with regard to three things: resource availability, price fluctuations in energy costs, but probably most importantly, a challenge to our combat capability with regard to logistics.

In the Navy and Defense departments, there are federal mandates that emphasize energy-related 'specs' in evaluating systems afloat and ashore. There is also a need to better answer a couple of things such as several presidential initiatives to reduce dependency on fossil fuels. At the Naval Energy Forum in October 2009, the Secretary of the Navy announced five goals: increase alternatives [fuels] afloat; increase alternatives ashore; sail the Great Green Fleet; acquisition excellence; and reduce non-tactical energy use. All of these goals and initiatives serve as drivers to change.

CHIPS: Can you talk about the Navy's Energy Strategy (Figure 1) and the government and research partners you are working with?

Rear Adm. Cullom: Certainly. The Secretary of the Navy and the Secretary of Agriculture signed a Memorandum of Understanding in February 2010 for the two departments to work together on energy problems. As you might presume, it really centers on biofuels. I have been working extensively with senior executives at the Department of Agriculture toward meeting the Secretary's goals on increasing alternative [fuels] afloat and sailing the Great Green Fleet.

There is also a Memorandum of Understanding in progress with the Department of Energy and the entire Department of Defense. We have long been in consultation with the other services about their energy programs to find areas of synergy.

You may recall the ARRA (American Recovery and Reinvestment Act) money that the services received in 2009. The services worked together to deconflict investments and identify which projects would be best for each service to champion. The Navy does a lot of great work on thinking holistically about what the Department of the Navy might fund, not only for the Navy, but for the Marine Corps as well. We have [projects] that cover ground equipment that are important for the Marine Corps infantry and the Marine Corps at large, as well as our Seabees, our explosive ordinance technicians and SEALs because there is a lot of commonality between the equipment the Navy and Marine Corps use. We fund research and development for that equipment, as well as some things that are more specific for ships and aircraft.

The Navy's energy strategy is really about combat capability. This is true for the projects we have funded under ARRA and in Navy funding for the next fiscal year. It's also about not funding something if it doesn't give us additional combat capability. The key legs are: efficiency, conservation and alternatives. What I mean by alternatives are, in essence, 'off-ramps' to petroleum for tactical platforms. Alternatives to shore [energy] are sources that reduce our reliance on the electrical grid; for example, increased use of geothermal energy, wind farms and solar panels to power bases.

We also have strategic imperatives; they are essentially fivefold: assuring mobility; protecting our critical infrastructure; expanding our tactical reach; lightening the load; and greening the footprint. Warriors at the pointy end understand that assuring mobility means being able to do the mission. Protecting our critical infrastructure means how to assure that all of our bases and infrastructure are able to support our combat capability to allow the ships, aircraft, submarines and other tactical fighting units to complete any mission. To do that you have to have power to ensure the critical infrastructure can support the missions and that the energy is protected.

"Greening the footprint means being a good environmental steward. By using alterative fuels and reducing energy usage, we are reducing greenhouse gases, lessening the Navy's dependence on petroleum, and reducing the risks associated with a volatile energy market. This is all achieved while remaining focused on the Navy's mission and ensuring combat capability."

Expanding tactical reach means making sure the energy investments we make allow planes to fly longer and further. It means making sure ships do not have to refuel every four or five days, but rather can potentially extend that by three to five times longer. From a logistics standpoint, by lightening the load we do not have as many fuel convoys snaking their way across long stretches of terrain, vulnerable [to attack]. Expanding tactical reach and lightening the load reduce the warriors exposure to threat and save lives.

Greening the footprint means being a good environmental steward. By using alternative fuels and reducing energy usage, we are reducing greenhouse gases, lessening the Navy's dependence on petroleum, and reducing the risks associated with a volatile energy market. This is all achieved while remaining focused on the Navy's mission and ensuring combat capability.

CHIPS: You mentioned alternatives to the electrical grid and biofuels — do you think the technology is mature enough and that the competition is robust enough to meet the Navy demand?

Rear Adm. Cullom: The Secretary of the Navy oftentimes uses the analogy of the 'Field of Dreams.' He said, and I'd like you to quote him: 'The market power of the Navy and Marine Corps is pretty big. Together, these two services consume about a third of the petroleum power used in the federal government. And the federal government consumes 2 percent of all petroleum that the United States uses. So it's like the reverse of Field of Dreams, if we come, they will build it. As we build demand, the supply will come.' (Remarks by The Honorable Ray Mabus, Secretary of the Navy, at the Johns Hopkins Applied Physics Lab, Climate and Energy: Imperatives for Future Naval Forces, March 23, 2010.)

The need is significant, and by 2020, it is going to translate to roughly 8 million barrels of biofuel per year to meet the Secretary's goal of alternatives afloat.

CHIPS: The Navy is working on a number of projects to reduce fossil fuel dependence and cut costs. For example, the new LHD, Makin Island, has a revolutionary hybrid propulsion plant. At high speeds

Figure 1.

it runs on gas turbine engines, and at lower speeds it runs on an electric drive, just like a hybrid car; the Navy is experimenting with silicone-based hull paint that is nontoxic and anti-fouling coating; and the Navy, successfully on Earth Day 2010 at Naval Air Station Patuxent River, Md., flew an F/A-18E/F Super Hornet, powered by a 50/50 blend of biofuel and standard petroleum-based JP-5 jet fuel. Are these just experiments or will these changes be operationalized within the fleet and how soon?

Rear Adm. Cullom: Our goal is to move from first steps — an experiment — into prototyping those experiments, determining the success of the prototype, and when they prove successful, replicating these successes to thereby change the fleet to where we need to be with energy in one or two decades. It really is about how these experiments translate into long-term changes for the Navy. (See Figure 2 for the Navy's Energy Profile.)

When we flew the Super Hornet, the 'Green Hornet' as we call it, it wasn't just a one-time flight so we could all declare success and say, 'Hey, look at us.' It was one of 15 test flights, the whole purpose of which was to certify that F/A-18 engine type on the 50/50 blend. The goal of that process was to be able to certify a drop-in replacement fuel for petroleum.

Our goal is to engineer the fuel, not the platform, or the engine. We're transforming the Navy we have and making it more resilient by enabling it to operate on more types of fuels.

Engineering the fuel and not the platform saves us money and gives us a lot more capability. And that is just the first of many steps we are planning to take over the next couple of years to give us those off-ramps to petroleum for the entire fleet (ships, aircraft, ground vehicles), not just the F/A-18. The goal is not to have just one source, for example, camelina which is what powered the Green Hornet, but other types of biofuel fuels. Second and third generation biofuels give us an optimal ability to have more than one type of fuel without the need for separate [fuel] tanks or separate planes, so we can operate one day on petroleum if that is the only fuel available, or on biofuel, and preferentially so, if that's available.

This gives us redundancy and a multitude of sources. When we look at these second and third generation biofuels and the feedstocks, we chose camelina or an algae-type because we don't want to compete with a food source. We don't want something that takes massive amounts of energy to produce or requires a lot of land or water — both precious resources.

We want something that can be easily produced as a readily available fuel for the Navy. Another benefit is [that] we are removing greenhouse gases from the atmosphere to grow these feedstocks and produce fuel that is usable for the Navy.

CHIPS: That's remarkable! I didn't realize platforms would not change.

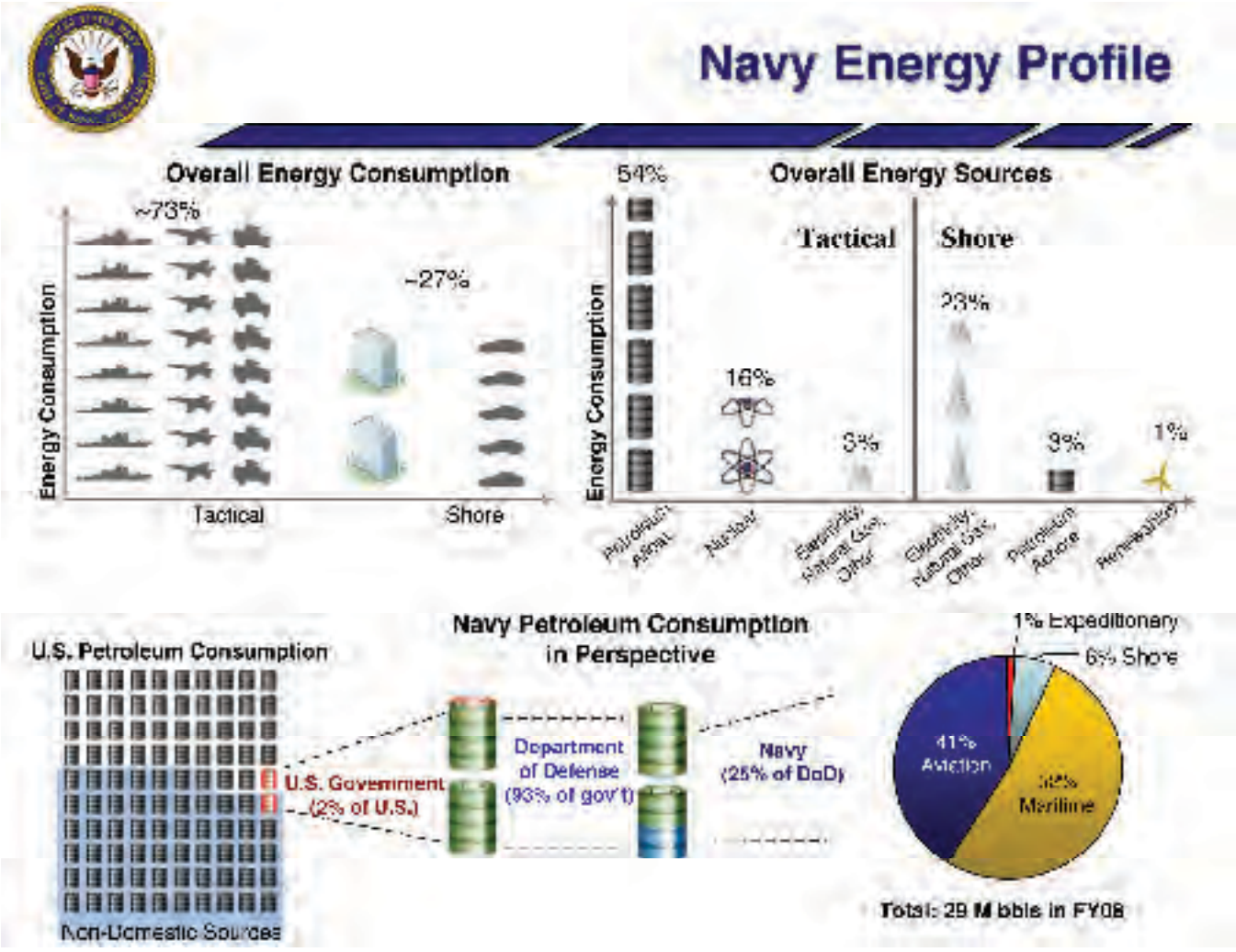


Figure 2.

EPEAT is a system that helps purchasers evaluate, compare and select electronic products based on their environmental attributes. Energy Star is a joint program of the Environmental Protection Agency and the Department of Energy helping to save money and protect the environment through energy efficient products and practices.

Rear Adm. Cullom: We looked at a lot of different alternatives. You could redesign an engine to run on a different kind of fuel, but you have to use scarce resources to reengineer the fleet that you have. That doesn't make much sense. What makes a lot more sense is using the fleet that you've got and try to figure out an alternative, renewable and sustainable fuel source.

That's not to say we are not going to do some engineering to our engines for the tactical [platforms] and unmanned vehicles to improve efficiency. The efficiency piece is almost more important than the alternative piece because efficiency is the barrel of fuel that is forever saved and the carbon GHGs (greenhouse gases) not emitted. That is great for the environment, produces long-term savings, and yields more combat capability — which is the most important thing.

CHIPS: Do you anticipate that energy considerations will drive budgeting and acquisition in the near term? Can you talk about how you are working toward an operational Great Green Fleet by 2016?

Rear Adm. Cullom: I'm not really the expert on acquisition; the Assistant Secretary of the Navy for Research, Development and Acquisition staff is working on that in regard to policy. They are better suited to directly address that question, but I will come back to some aspects of what we are doing inside the Navy lifelines. We are looking at an electronic environmental tool and getting as many of our electronic assets to be registered to EPEAT (Electronic Product Environmental Assessment Tool). (See Figure 3.)

Energy Star features on electronic assets will help. We are trying to be prepared to offer up as many good ideas as we can, like donating and recycling electronics at the end of life, or extending product life as much as we can (that is life cycle costing), and using multifunctional devices like printers [that are also fax machines and scanners]. That's what we are doing inside Navy lifelines to prepare for the policy that the Secretary of the Navy will come forward with for acquisition excellence.

We are budgeting for energy. There is a great place where

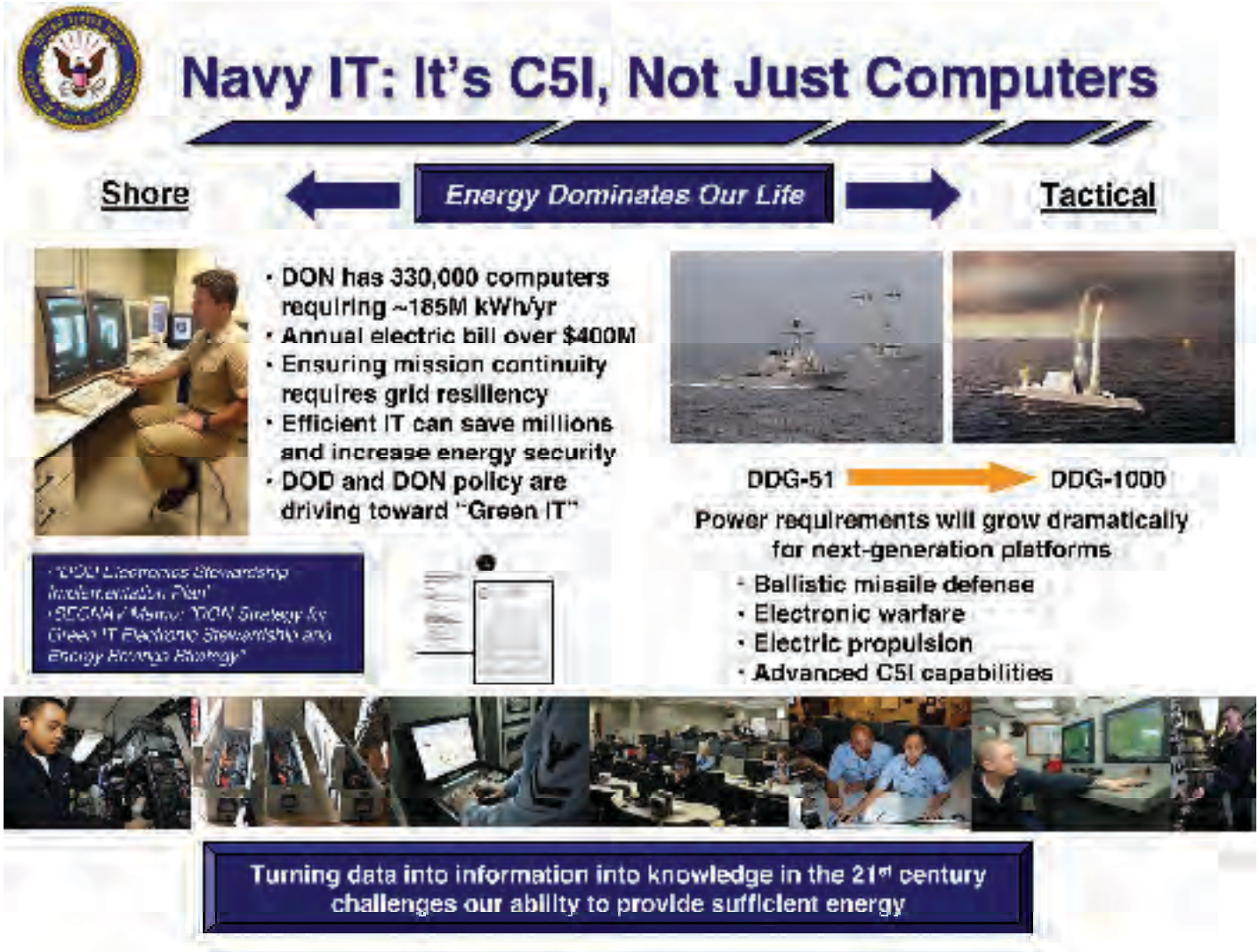


Figure 3.

energy and information intersect, specifically with regard to data and operations centers and how we collect, sort, manage, share and analyze information using the smallest energy footprint possible. Every one of those centers requires a significant amount of energy, and each year our need for more information puts pressure on the energy resources required.

If we look at the problem in the right way, we can minimize the energy footprint and make the data centers more resilient, improving our ability to protect our critical infrastructure. Information is an essential piece of our critical infrastructure.

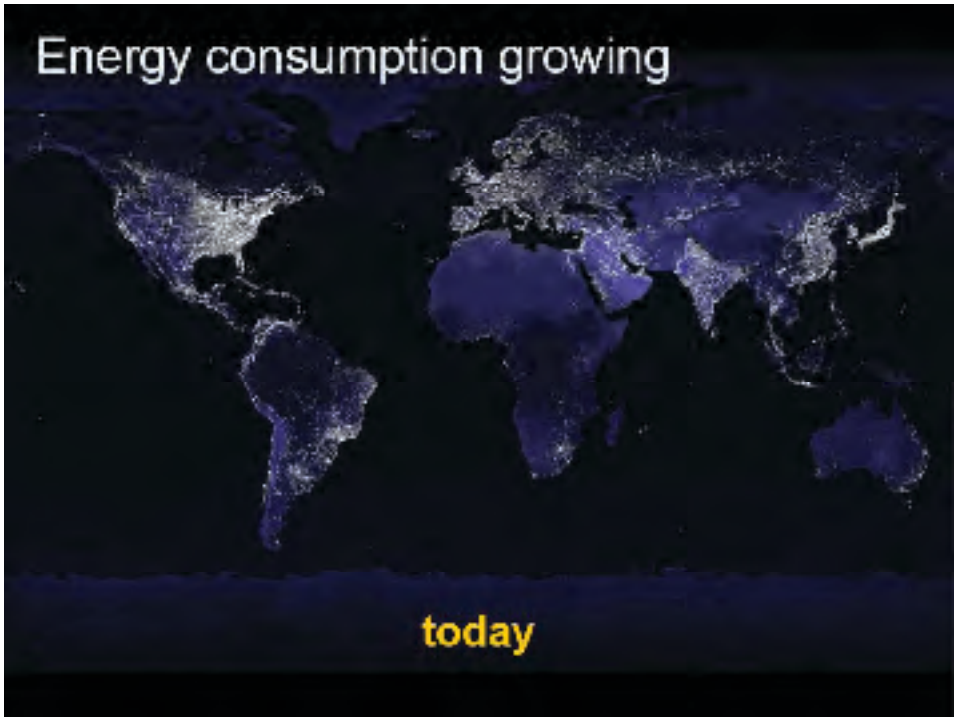
CHIPS: I read an opinion piece that said thank heavens the Navy is working on energy reforms because military organizations turn things around much more quickly than other government organizations. Do you think the Navy can lead in energy savings?

Rear Adm. Cullom: Absolutely. The Secretary of the Navy talks about the Navy leading the way — to be at the forefront of the changes. As an early adopter, the Navy can accelerate good ideas by experimenting, prototyping and then replicating those successes. When you are early adopters, like the Navy and Defense Department, it does point the way for the rest of government and the country. The Navy is determined to reduce its carbon footprint while at the same time ensuring readiness.

CHIPS: A report in the New Statesmen from May 13 cautioned that China is already leaping ahead in green technology while the United States is still dependent on foreign fossil fuels. Do we need to play catch-up?

Rear Adm. Cullom: I'm glad you asked that question because it is topical. Although China's command economy can move very swiftly, I am a firm believer that the United States has an incredible competitive advantage. That advantage is America's penchant to always look for new frontiers, particularly in our matchless ability to innovate. The American experience includes our diversity as a nation which always leads us to incredible ways to look at a problem. It's the source of our creativity.

Some people may say that we are behind, but some of the U.S. efforts underway today may actually be leading. As announced last November by President Obama and China's President Hu Jintao, the U.S. and China are also partnering together on many innovative energy initiatives to strengthen cooperation on clean energy. These partnerships advance U.S. technology in a growing Chinese market.



Figures 4 and 5.

CHIPS: How will the Energy Strategy affect individual commands and personnel?

Rear Adm. Cullom: Your readers might say what does this mean to me? As we look at the energy future and as Navy leadership looks at this, we hope that they are energized, no pun intended, to look at the way they do business and be able to inform the Navy to make good decisions and to understand that energy is at the heart of everything in the Navy.

CHIPS: So you want naval personnel to take

Environmental Stewardship Websites

- Currents, the Navy's Environmental Magazine (quarterly): www.enviro-navair.navy.mil/currents.cfm
- Department of the Navy Energy Program: https://navyenergy.navfac.navy.mil/
- Department of Defense Energy Support Center: www.desc.dla.mil/default.asp
- Environmental Quality Division: www.dt.navy.mil/sur-str-mat/env-qua/index.html
- Energy Star: www.energystar.gov/index.cfm?c=home.index
- EPEAT: www.epeat.net/
- Joint Service Pollution Prevention and Sustainability Library: www.p2sustainabilitylibrary.mil/
- Naval Air Systems Command Environmental: https://www.enviro-navair.navy.mil/
- Naval Safety Center: www.public.navy.mil/navsafecen/Pages/home.aspx
- Navy Environmental Sustainability Development to Integration (NESDI) Program: www.nesdi.navy.mil/
- Navy and Marine Corps Public Health Center – Environmental Health: www-nehc.med.navy.mil/Environmental_Health
- Navy Supervisor of Salvage and Diving, Pollution Abatement: www.supsalv.org/00c25_home.asp?destPage=00c25&pageId=25.1
- Scripps Institution of Oceanography: http://sio.ucsd.edu/
- Task Force Energy: www.facebook.com/pages/Washington-DC/Department-of-the-Navy-Task-Force-Energy/88666048006 or http://twitter.com/NavalEnergy
- Woods Hole Oceanographic Institution: www.whoi.edu/

Navy Environmental Policy

- Chief of Naval Operations Instruction (OPNAVINST) 5090.1C. Navy Environmental and Natural Resources Program Manual: www-nehc.med.navy.mil/environmental_health/opnavinst_5090_1C.aspx

energy reform as a personal mission. Do you think that the individual service member and Navy civilian can contribute?

Rear Adm. Cullom: Absolutely. Just the other day [May 28], I presented the CNO Environmental Awards to Navy commands. In the last year, the Navy has won two Presidential Energy Awards and eight Department of Energy Awards.

It's the leadership at an individual command that can make the difference in being able to do things better on both an energy front and environmental front. It gives us a competitive advantage, increases readiness, and makes us more energy secure.

I believe that individual Sailors and individual commands are at the heart of this. It really requires a cultural change in how you look at energy.

CHIPS: Do you think people understand that there is an urgency to becoming more energy secure?

Rear Adm. Cullom: No, they probably don't understand because how many folks still own an SUV? How many people are like frogs in a boiling pot? The temperature continues to rise, but they don't know it. The gas prices are going up again, but most people believe that there will be perturbations in demand, prices will go up, and they will go down. But the trend line is without question going up.

As long as the temperature doesn't go up too quickly the frog doesn't jump out of the pot; he boils to death. Will we as a nation boil to death before we figure it out? As you saw from the presentation I made about where energy consumption is today (Figure 4) and where it is going to grow to in 2030 (Figure 5), and where energy needs will grow in the world — it's surprising.

Some of these forecasts were even surprising to me, like the African continent, Eastern Europe, to portions of South America, to India and China, where the economies are growing dramatically. Those forecasts are drivers that create an increased demand on finite energy resources. Although petroleum is still found, it gets harder and more expensive to extract and use. It really makes issues more challenging because petroleum is not renewable or sustainable, and it continually adds to greenhouse gas emissions.

CHIPS: You are an enthusiastic spokesman for energy reform.

Rear Adm. Cullom: I have one-year old twin daughters. I want them to grow up in a world that I would like to grow up in. I don't think people realize how important energy is going to be for our grandchildren.

CHIPS: There are a lot of skeptics.

Rear Adm. Cullom: There are. As a baby boomer, my parents were of the 'Greatest Generation.' I certainly admire what they did to contribute to our way of life in the United States. I'm not so certain that the baby boomer legacy is as great unless we do some pretty significant things in the next few years. I don't want baby boomers to be the locusts that go through the field and consume all the seed corn.

We are known as the 'consumer generation,' and by eating all the seed corn we leave nothing for our children and grandchildren. I'd much rather have us be known as the 'regeneration generation.'

Keep in mind that philosophy piece, while never losing sight that we have a mission, whether it is flying a plane, driving a ship, diving in a submarine, or providing the combat support that is needed to glue it together. The commercial that talks about transforming data into information into knowledge is really true. At the end of the day, you can't make good decisions if the information is not brought together in the right way, and energy is a component of that and a critical combat capability.

Thanks. It was great talking to you today. CHIPS

Hold Your Breaches!

By Steve Muck

Another Missing Disk containing Personally Identifiable Information

The following is a recently reported personally identifiable information (PII) data breach involving the loss of media containing PII. Incidents such as this will be reported in each CHIPS magazine to increase PII awareness. Names have been changed or omitted, but details are factual and based on reports sent to the Department of the Navy Chief Information Officer (DON CIO) Privacy Office.

The Incident

In March 2010, a test lab received a package from a Navy activity that contained a hard copy annual report of data and possibly an unencrypted disk. Both items contained the same PII which included full Social Security numbers, dates of birth and names. A few weeks later, the test lab notified the Navy activity that the disk was not with the hard copy report and requested that the Navy activity resubmit the disk. A thorough physical and electronic search was conducted. The disk was not found, and there was no indication that any electronic information from the disk was uploaded into the system database. Almost two months after the discovery of the missing disk, the test lab declared that there was a potential loss of PII.

Key Points to Consider:

- Compact disks (CDs) and other portable storage devices carry inherent risks of data compromise, due to their size and portability, if proper safeguards are not followed.
- CDs are ubiquitous in the workplace, store significant amounts of data and are easily lost or misplaced.
- Activities that routinely download, handle and mail CDs must be especially diligent in applying controls and safeguards.
- A breach occurs when PII is known or suspected to be lost, stolen or compromised. The activity making this discovery has one hour to make an official initial breach report.
- All removable storage media containing PII must be encrypted with a data at rest (DAR) encryption solution.

Lessons Learned:

The following best practices should be considered whenever downloading information to portable storage devices.

- Ensure all portable storage devices that are used to store PII are properly labeled with: "FOUO, This device contains privacy sensitive data. Any misuse of the information may result in civil or criminal penalty."
- Avoid the need to provide duplicate sources of the same information. Making two copies for the sake of convenience should be eliminated.
- Encrypt all removable storage media if they contain PII in accordance with the departments of Defense and Navy policy. If an approved DAR solution is not available, use WinZip.
- Err on the side of caution when you suspect that PII may have been lost and report the PII breach to the proper offices within one hour.
- Destroy all CDs, other storage media and files containing PII when the data is no longer needed in accordance with the DON Records Management Manual (Secretary of the Navy M-5210.1).
- Establish written procedures and training to improve handling of PII on portable storage devices.
- Routinely delete unnecessary PII from all storage files in accordance with the DON Records Management Manual.
- Ensure packages containing PII in any form are sent via a service that tracks shipping and delivery. Follow up within 48 hours if a package exceeds its scheduled delivery date. CHIPS

Additional privacy information can be found on the DON CIO website at www.doncio.navy.mil. Steve Muck is the DON CIO privacy team lead.

Talking with Rear Adm. David W. Titley
Director of Task Force Climate Change
Oceanographer and Navigator of the Navy

Rear Adm. David W. Titley

In 2009, Rear Adm. David W. Titley assumed duties as oceanographer and navigator of the Navy. Rear Adm. Titley is also the director of the Navy's Task Force Climate Change as designated by the Chief of Naval Operations Adm. Gary Roughead. TFCC is a matrixed organization that runs across multiple Navy staff codes and warfare enterprises. Consisting of a flag-level Executive Steering Committee, led by the oceanographer of the Navy, and several senior level working groups, TFCC is tasked to make recommendations to Navy leadership regarding policy, strategy, force structure and investments relating to the changing Arctic specifically and global climate change in general.

TFCC invites advisory participants from interested joint and interagency stakeholders including U.S. Northern Command; Commander, Pacific Fleet; U.S. European Command; the Office of Naval Research; the National Maritime Intelligence Center; U.S. Coast Guard Headquarters; the National Oceanic and Atmospheric Administration; the Office of the Secretary of Defense; the office of the Chairman of the Joint Chiefs of Staff; and the Center for Naval Analyses.

Tellingly, Rear Adm. Titley gave his first interview as the director of Task Force Climate Change for the Pentagon's news service from Barrow, Alaska, above the Arctic Circle, July 28, 2009, near the heart of melting sea ice.

The consensus of scientific opinion is that the Arctic will be navigable for several months in the second half of the century. This could spark a race between nations for natural resources exploration and open up the area for increased commercial shipping and fishing. Globally, sea level rise and fresh water shortages will impact coastal military installations and present serious problems for many resource-challenged nations. These, and other potential outcomes, may increase the number of humanitarian assistance and disaster relief missions for the Department of Defense and could present national security risks as well.

CHIPS talked to Titley in a series of conversations. The first discussion was May 21; just hours after Vice Chief of Naval Operations Adm. Jonathan Greenert approved the Climate Change Roadmap. The second opportunity occurred May 27 at a media roundtable from the Pentagon.

CHIPS: Task Force Climate Change was established to assess the Navy's preparedness to respond to emerging requirements, and to develop a science-based timeline for future Navy actions regarding climate change. What has the task force accomplished so far?

Rear Adm. Titley: In a year we put together a strategy: two roadmaps that addressed the challenges. The first one, the Arctic Roadmap was signed in 2009, and I am very happy to tell you, and you are the first person in the media I've told this to, as of two hours ago, the VCNO Adm. Jonathan Greenert signed out the Climate Change Roadmap so that is literally hot off the press this morning.

CHIPS: That's exciting.

Rear Adm. Titley: It is for us on moving ahead. Both these roadmaps are structured very similarly. You will see the Climate Change Roadmap is very similar in the sense that we are making sure we have our strategy right, making sure that we have our partnerships right, that we understand the underlying science, assessments and predictions of climate change, and the components that will most impact national security in general and the Navy in particular.

Then we consider all of those components and that will result in a recommended investment strategy that will inform the Navy's future budget deliberations. I picked the word informed carefully because, as I'm sure you know Sharon, many, many items will inform the Navy's budget. The Navy has many requirements from different sources so climate change will be one consideration as we develop future budgets.

CHIPS: Will climate change have an impact on everything the Navy buys?

Rear Adm. Titley: This is what we need to understand. As an example, I'll go back to the Arctic, where we've had a roadmap in execution for about six months now. The Arctic Ocean is frozen all winter, and open a few months in the summer. It is a very harsh environment. So it would be easy to think that if we are going to operate in the Arctic we will need ice-hardened ships. But we really need to think through that carefully and do the analysis and things like war gaming to determine the value. Because when you work in six or more feet of ice, you can't go any faster than 2 or 3 knots. No surface ship can. So you lose one of the key characteristics of a surface ship and that is the mobility for commanders to move from one part of the battlespace to another.

We are contemplating building ships with modest ice-strengthening to work in what is called the marginal ice zone — just on the edge of the ice. Experts tell me that to ice-harden a naval combatant vessel would add about 25 percent to the existing cost of the ship. Take an Arleigh Burke destroyer, in very rough terms, it costs about $1 billion to build. If we were to build a guided missile destroyer for ice capability it would easily cost over $1 and a quarter billion for each one of those ships. As I'm sure everyone has heard, the Secretary of Defense has made himself crystal clear that the fiscal conditions for the next few years are going to be very, very tight. So this means that the Navy has to really understand how much value we would get for that ice-hardened ship — as an example.

We understand that the Arctic is changing, but we are focusing

on the challenge soon enough so we can pace this threat. We don't want to spend money before we have to, but conversely, we also do not want to find ourselves in what I would call a tail chase where the Arctic is changing faster than we can change the Navy.

CHIPS: Can you talk about other organizations and agencies that you work with?

Rear Adm. Titley: Right from the beginning we realized that, especially for the Arctic, but for climate change too, we need the United States Coast Guard and the National Oceanic and Atmospheric Administration (NOAA), as our partners. The Coast Guard has icebreakers in the Arctic today; they are learning how to operate icebreakers with some of the other vessels in the regions of Alaska north of the Bering Strait. It's not just our Coast Guard partners, but our Canadian partners, our Danish partners, our Norwegian partners, are very, very important.

NOAA has [established], under the leadership of Dr. Jane Lubchenco, the administrator for NOAA, a Climate Services Division. They are the source of much of the scientific data. We want a deep understanding of the great work that NOAA has done and the ability to have a very constructive and productive dialogue.

As I told CNO, we cannot and will not wait for perfect information about the future. Such information, frankly, just doesn't exist in any field. I would argue there is no successful organization that waits for that perfect information, but what we do want to understand is the most likely outcome, and what could be some wild cards that we should at least consider in planning so we can make the best informed decision using science as the basis of our decisions.

I have executive members of both NOAA and the Coast Guard on my Executive Steering Committee, which are basically one and two-star flag officers, and some very senior government civilians. Beyond that we are working very closely with a number of academic organizations. I almost hesitate to name them because I'll be sure to leave some out, but organizations such as Scripps Institution of Oceanography, Woods Hole Oceanographic Institution, Applied Physics Laboratory of the University of Washington, [the] University of Alaska in Fairbanks, just as an example, and by no means an exclusive list.

We are working very closely with the Office of the Secretary of Defense and the deputations. Deputy Assistant Secretary of Defense for Strategy Amanda Dory was instrumental in her leadership in ensuring the Quadrennial Defense Review addressed both the climate change and energy issues. We work with the Joint Staff, and we have been working with the Department of Interior and Department of Energy. Department of Energy Under Secretary for Science Dr. Steven Koonin has been very supportive of our efforts and generous with his guidance. Dr. Ralph Cicerone, president of the National Academy of Sciences and Chair of the National Research Council has been instrumental and helpful. If you add up everybody we have worked with it comes up to about 400 individuals representing over 125 different organizations.

CHIPS: I read that the Navy has many assets that can assist in understanding the changing climate. From a wide array of data-gathering sensors and platforms to supercomputer facilities that process data and create predictions, Navy assets are continuously working to provide comprehensive knowledge of the physical environment. Can you talk more specifically about these assets? Is there enough data to make accurate predictions and recommendations?

ARCTIC OCEAN – The Canadian Coast Guard Ship Louis S. St-Laurent makes an approach to the Coast Guard Cutter Healy in the Arctic Ocean Sept. 5, 2009. The two ships are taking part in a multi-year, multi-agency Arctic survey that will help define the Arctic continental shelf. This photo won first place in the Public Affairs Specialist category of the 2009 Coast Guard Photo Contest. U.S. Coast Guard photo by Petty Officer Patrick Kelley.

Rear Adm. Titley: As I mentioned, we will never get to absolute certainty in climate, but it is also true in weather forecasting, which I have done for about 40 years now. At very high resolutions you never know what it is going to be like in the future. But the world and the United States have provided tremendous contributions to this question. We have more than enough information to make rational decisions that will help us prepare for how climate change is going to affect us in the future.

The Navy has put a number of sensors and satellites up for operational purposes, but it turns out that they can also be used for climate change. Until very recently, the Navy was flying a radio altimeter satellite called GEOSAT Follow-on and that satellite, although not optimized for climate change conditions, helped contribute toward understanding both sea level rise and the warming temperatures and thermal expansion of the ocean.

As you probably know, the Navy is one of the contributors to an organization called the National Ice Center, NIC, and it can

be both the National Ice Center and Naval Ice Center. It is located in Suitland, Md., in the greater Washington, D.C., area. It is a partnership between Navy, NOAA and the Coast Guard. What the Navy provides, in addition to over 50 percent of the manpower, is the majority of skilled ice analysts and some of the leadership. Some of the new buoys we now produce can operate in both open water and in the ice. Ten or 15 years ago, buoys would stay on the ice for their entire lifetime. Now many of the buoys that we drop on the ice are probably going to end up in the water. So we design them so that when the Arctic refreezes, most of them will actually pop back up onto the ice. We have worked with the Air National Guard and the Coast Guard to help deploy those buoys.

The data that our ships collect, when it can be declassified, can go into the public record. Again, this data is simply another component of the overall data strategy.

CHIPS: Are you identifying additional data requirements based on the data you have now to fill gaps?

Rear Adm. Titley: That's very true. The scientific community is very confident about the large scale implications of climate change. What I mean by that is really that the global hemispheric scales, the multi-decadal data is very solid. But to paraphrase Tip O'Neill, who said 'All politics is local,' to some degree all weather is local too. What we need, to really inform operational decisions, is to understand what the climate will be like in specific regions of the Earth. What will the climate be in Southeast Asia, in Southwest Asia? How are the rainfall patterns in India and China going to change or are they going to change? Are tropical cyclones going to be more intense, will there be significantly more, or will they be about the same? That's a debate that is very active in the weather community as we speak.

So understanding the regional implications of climate change — how climate change will impact people, the Navy, and national security — on seasonal scales of one, two or three years are still open scientific questions. Not a week goes by and you can read that a researcher has figured out another component [to climate change data]. But I think there is still a lot to learn in these details. I want to stress that we understand that on a large scale the climate is clearly changing and will continue to do so unless humankind as a whole takes a different course with respect to carbon dioxide emissions.

CHIPS: About 5 percent of the Arctic has been charted. Has there been any discussion about charting areas of the Arctic that are navigable during the summer months?

Rear Adm. Titley: It absolutely needs to be done; it's very important. As you said only 5 percent of the Arctic has been charted to any kind of modern standard, and by that I mean a survey ship that has a global positioning system and multi-beam sonar. Fortunately for America, the United States Coast Guard Cutter Healy is not only a very capable icebreaker, but it is an exceptionally capable oceanographic and hydrographic survey ship. Healy has been able to work in the marginal ice zone, and the ice zone itself, and has taken some great measurements of the United States' extended continental shelf areas beyond 200 miles off the North Alaskan coast. I would be remiss if I didn't mention that the Healy works with the Canadian Coast Guard Cutter Louis S. St-Laurent, and this has been a tremendous partnership between Canada and the United States.

I had the opportunity to ride Healy last summer for a couple days and talk to the skipper, and he told me that when you have two icebreakers working together, not only do you collect better quality oceanographic and hydrographic data, but because you have another very capable ship nearby, you will take your vessel into survey places that you otherwise just wouldn't take it because of dangerous ice conditions. You just wouldn't put your vessel in a situation where you couldn't get out. But if you have a friend operating nearby, it really helps. So Healy and Louis St-Laurent have done good things.

In addition to that, you probably know that NOAA actually has the authority and responsibility for mapping United States coastal areas out to the exclusive economic zone which is about 200 miles away from the coast. We have been partnering with NOAA on a plan to start working in parts of the northern Bering Sea and Bering Strait as early as fall 2010. Those plans are not final so I can't confirm them, but I am quite optimistic that we will start working again with our NOAA partners to start mapping out more of the waters in what will likely become a critical strait for our country within a few decades.

CHIPS: You mentioned how climate change may affect the shipbuilding plan, but it could also affect fielded shipboard systems. I read something recently that said it could have an effect on ballistic missile defense. Is it too early to make these kinds of assessments?

Rear Adm. Titley: Absolutely not. In our Arctic and Climate Change Roadmaps you will see that we have something called a Capabilities Based Assessment. Basically, this is the ability to holistically look at these types of warfighting capabilities to understand which ones will be affected by changes in either the Arctic or changes in climate in general, and which ones may have much lesser implications.

I'll give you just one example. We are really quite confident that although the ocean is changing, it is not going to have much impact on our sonars. In submarine warfare the primary way we find submarines is with acoustics, so sonar will put noise in the water and basically listen for a return [ping] on a submarine. Almost half the carbon dioxide we are putting into the atmosphere is being absorbed by the ocean, and through a series of chemical reactions the net result is that the ocean becomes more acidic. I call that the silent partner to global warming.

Some people say that a more acidic ocean will change the way that sound is absorbed, and that is true. But at the frequencies where we use sonar, the change relative to all the other variables in anti-submarine warfare is actually quite minor. This is one area where thinking climate change through indicates that we probably don't have to spend money [on sonar changes].

But your comments on ballistic missile defense, how radars and communications gear would work, let's say up in the Arctic regions, are examples of things that are absolutely not too early to look at, and these are the things that the Capabilities Based Assessment will be examining.

CHIPS: There are many different opinions regarding global warming and climate change. For example, some say that the Arctic Sea

ice didn't melt as much in 2009 as it did in the previous two years. Some scientists say that changes in sea ice thickness are not due to climate change but changes in sea winds or as a result of the natural cyclical warming and cooling of the Earth over thousands of years. Are these possibilities?

Rear Adm. Titley: All of the above is true, and this is what makes understanding climate change difficult when we are trying to understand it on a relatively small scale, for example, in the Arctic and in time scales of a period of years. Simultaneously, understanding is complex, fascinating and sometimes frustrating because, just as you have identified, many, many components are all working on the natural environment at the same time. Some of these components all pull in the same direction and others push against each other or oppose each other.

You are right on the Arctic. One of the ways that you remove ice from the Arctic Ocean is that you actually blow it out. Sometimes, the winds will do this for two or three years out of every one or two decades. The winds in the Arctic Ocean set up so that ice is actually blown out into the Atlantic, and the ice goes down the east coast of Greenland.

What we are seeing though, when we take a look at the Arctic Ocean in terms of the extent of coverage and the thickness, is that the number has been on a steady downtrend for over 40 years. The Applied Physics Lab of the University of Washington has a great graphic (Figure 1) on its website that is very telling. There are variations — there could be a five-year cycle, 10-year cycle — but superimposed on that is this very long-term decline.

You are right, Sharon, there are natural forces working in this. There is something called the Milankovitch cycle. It is about a 100,000-year cycle, and in that cycle the Earth should be cooling. If there were absolutely no human interaction, the Earth would be cooling. But what we have superimposed on that is the greenhouse gases which tend to warm the Earth, the pollution humans put into the atmosphere, and the aerosols which cool the Earth. There are all these competing influences. But science is pretty clear that the greenhouse gases in the decadal and larger time scales are becoming the predominant influence, and that is why we are seeing this overall warming of the globe.

CHIPS: There are many climate change skeptics. Lord Christopher Monckton, former science adviser to Prime Minister Margaret Thatcher, compared melting sea ice to ice cubes melting in a glass of water — they don't make the water in the glass overflow. Likewise, Monckton said melting sea ice does not affect sea level. But isn't there already conclusive evidence that sea levels are rising?

Rear Adm. Titley: Yes, with respect to the sea level question you are absolutely right — the sea levels are rising. But believe it or not, Lord Monckton is also right. The sea level rise is not a function of the melting ice that is currently floating in the Arctic. You can do a simple experiment. On a summer day, like we are having right now in D.C., take your glass of ice water and make a little mark, and watch the ice melt. You will see that it's within

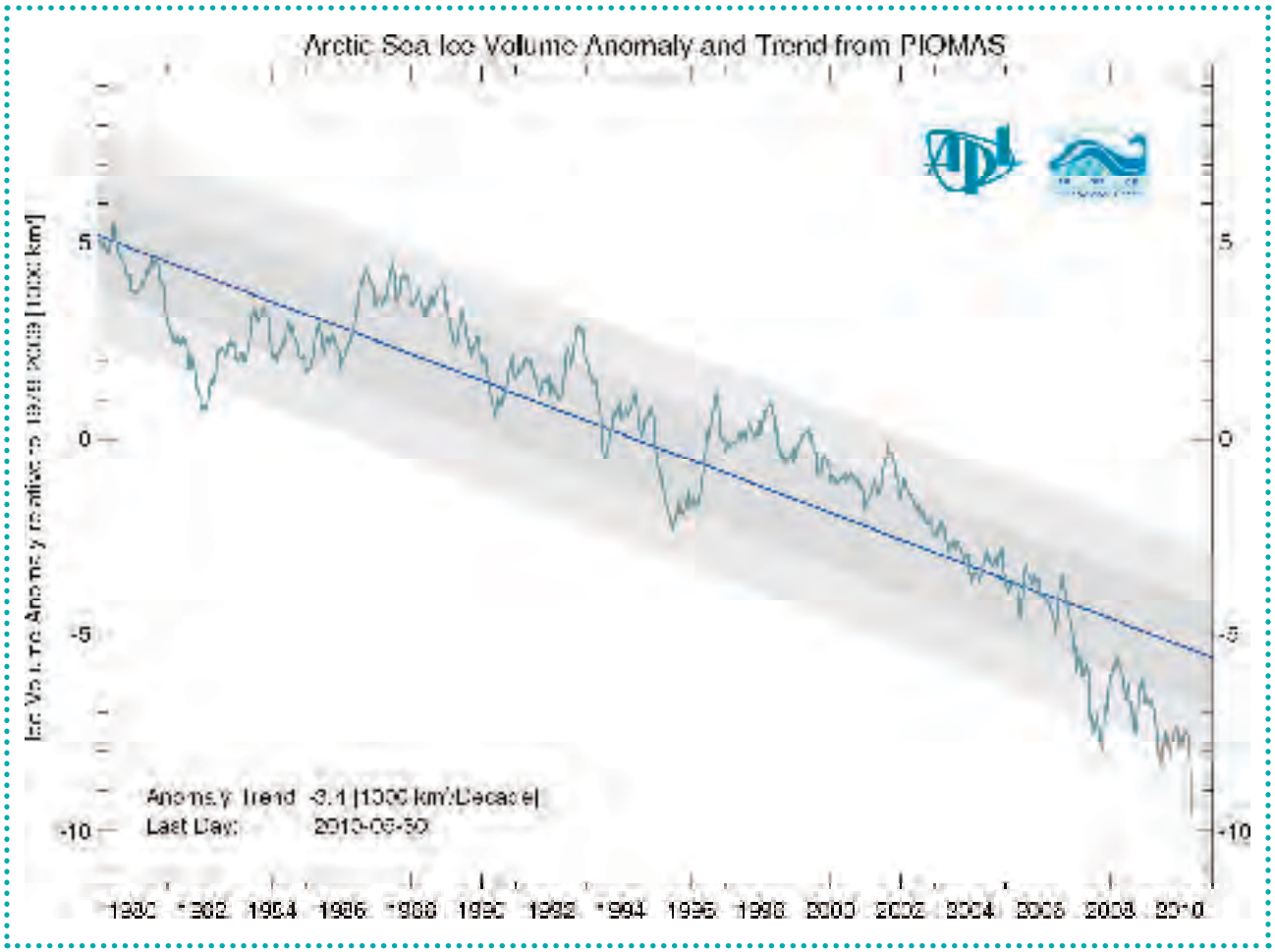


Figure 1.

"We are increasingly concerned that the sea level rise by the end of the 21st century may be on the order of 1 to 2 meters, so that would be about 3 to 7 feet in sea level rise. As a frame of reference, sea level rise in the 20th century was 20 centimeters or about 8 inches. So we are looking at a sea level rise between 5 to 10 times [greater than] what we saw in the last century."

the thickness of your mark, the level hasn't changed. What is changing that I believe Lord Monckton did not address in his statement are two things. One is that the ocean, as it warms, actually expands. We all know from our basic science classes that gas expands as it gets warmer, and it turns out that water also expands as it gets warmer. Now it is not a huge expansion, but think about how big the ocean is. One of the things that I don't think a lot of people understand is that 80 percent of the heat in the atmosphere-ocean system is actually in the ocean. The ocean is this huge, huge heat sink so ultimately a lot of the warming ends up in the ocean.

The other cause of sea level rise is that the glaciers have been melting, and of course the glaciers were not floating, so that is water that was not in the ocean that is added. What is of more concern to me is not so much the glaciers around Alaska or South America, but the ice sheet on Greenland. There are several independent scientific data sets that show that the amount of ice on Greenland is increasingly ending up in the water.

Some of the scientists from Woods Hole have really started to understand what is going on, along with Dr. Richard Alley from Penn State. It is a fascinating combination of glaciology (ice sheet stability, paleoclimates from ice cores) and oceanography.

Think of those ice fields like the flying buttresses on a medieval cathedral — that's what those glaciers were doing going down the Atlantic — they were grounded on the bottom of the ocean. As relatively warmer water gets up into the coast of Greenland the bottoms of those glaciers are melting. So what had been grounded into the seabed is now free floating. In any medieval cathedral, if you remove the flying buttresses the walls start spreading out — and that is what is happening to the Greenland ice sheet. It is starting to spread out and that means it gets into the water at a faster rate.

We are increasingly concerned that the sea level rise by the end of the 21st century may be on the order of 1 to 2 meters, so that would be about 3 to 7 feet in sea level rise. As a frame of reference, sea level rise in the 20th century was 20 centimeters or about 8 inches. So we are looking at a sea level rise between 5 to 10 times [greater than] what we saw in the last century.

Do the arithmetic: 20 centimeters divided by 100 years is roughly 2 millimeters a year. We are already seeing sea level rise right now at the rate of somewhere between 3 and 4 millimeters per year. So already in the year 2010 we can see that sea level rise is coming up roughly twice the rate of the previous century. This is going to be a big deal, not only for the Navy, but for many, many people who live in low-lying areas.

CHIPS: Can you talk about the Climate Change Roadmap?

Rear Adm. Titley: It is really quite similar to the layout of the Arctic Roadmap. We want to think through all the implications of climate change as they are related to national security. We will look at some of our overseas bases and places that we use with our allies. As an example, Diego Garcia is quite a low-lying island.

There may be some interesting geopolitical issues with sea level rise. Islands such as the Spratly Islands in the South China Sea and the Paracel Islands are claimed by five or six countries. They are low lying, and if they go under how does that change the dynamics of those disputes? Does it make the dispute go away if there is no land anymore? Or if one or more countries sort of piled rocks on top of the islands faster than the sea level rises to make an artificial island, can they claim exclusive economic zone [rights]. I don't know.

We want to think through these kinds of things so that the Navy is not caught by surprise. Using the best science that we can, we are going to look at scenarios. For example, if the rainfall patterns and distribution changes, especially in Asia where there are so many people living, what will be the impact? We will continue to work with the scientists in this country and other countries who are studying ocean acidification. We believe we have identified some things that are not going to be a big deal with acidification, but how will the living marine ecosystem respond? It's just unknown right now.

If the marine ecosystem does adapt and we keep the species and diversity that we have that will be very good. But what if it doesn't respond that way, and significant fisheries and shellfisheries collapse? There are about 1 billion people in the world today that get their primary protein from the sea, and if that source is lost, it could become a very big issue. We need to understand how that could potentially impact national security. Will it exacerbate existing instabilities? Is there anything that we can do?

CHIPS: You mentioned the dispute over the Spratly Islands and there are other land disputes as well. I noticed that the Navy recommends ratification of the U.N. Convention on the Law of the Sea Treaty. Could ratification be a stabilizing factor?

Rear Adm. Titley: Absolutely. CNO, in his testimony to Congress earlier this year, once again reiterated the Navy's support of and belief in the importance of the U.N. Convention on the Law of the Sea. Every Chief of Naval Operations for the past seven or eight years has gone to the Congress and testified to that effect. Secretary Clinton and NOAA Administrator Dr. Jane Lubchenco have testified that accession to Law of the Sea is important. Obviously, the Navy is a part of the executive branch of the government, and it is up to the White House and president to work with the Congress to tee up the legislation.

CHIPS: Is there anything else you would like to add?

Rear Adm. Titley: I appreciate the opportunity that you are giving the Navy to help us get the word out that Adm. Roughead sees climate change in general, and the Arctic specifically, as long term but very important challenges. We want to address these challenges in a timely fashion so that they do not become crises. I appreciate Adm. Roughead's leadership and vision. It is always easy in any organization to be consumed with the problem of the moment. These are not problems of the moment, but I would argue they are the challenges of the 21st century. We can start the serious thinking that will result in smart choices in our investment decisions to meet these challenges. CHIPS

Green IT in the Department of the Navy

An interview with Ms. Thuy Lindsey the lead for IT Service Management and Green IT on the DON CIO Naval Networks and Enterprise Services Team

The "Department of the Navy Strategy for Green Information Technology (IT) Electronic Stewardship and Energy Savings Strategy" issued April 23, 2009, builds on the goals set in Executive Order 13423: "Strengthening Federal Environmental, Energy, and Transportation Management" for federal agencies. Issued Jan. 24, 2007, EO 13423 established federal goals in the areas of energy efficiency, acquisition, renewable energy, toxic and hazardous chemical reduction, recycling, sustainable buildings, electronic equipment stewardship, vehicle fuel consumption, and water conservation.

The Navy is working on all fronts to meet the goals of EO 13423 and the Green IT Electronic Stewardship and Energy Savings Strategy. The DON Energy Program is on target to achieve the federal goals of the Energy Policy Act of 2005 and Executive Order 13423 for efficient use of energy and water resources and the increased use of renewable energy sources. The program avoids millions of dollars in annual commodity costs through innovation, investment in energy efficient technologies, and increased community awareness and participation. The DON has created a comprehensive energy program, with centralized resources and program management operating in partnership with regional and installation level resources and implementation. As a result of energy program initiatives worldwide, by 2008, the DON had avoided $400 million annually in energy costs, adjusted for inflation, compared to expenditures in 1985.

CHIPS asked Ms. Lindsey to talk about the DON's Green IT initiatives.

CHIPS: *The Department of Defense Electronics Stewardship Implementation Plan, issued Feb. 27, 2008, recommends using the Electronic Product Environmental Assessment Tool (EPEAT) (www.epeat.net/), a system that helps purchasers evaluate, compare and select electronic products based on their environmental attributes. The system currently covers desktop and laptop computers, thin clients, workstations and computer monitors. Are department personnel required to purchase electronics that meet specific environmental standards?*

Lindsey: We incorporate EPEAT into procurement specifications for new purchases and purchase EPEAT registered products when they are available and feasible. We have promoted the purchase of duplex capable printers and multifunction devices. Additionally, new IT procurements and equipment replacements should consider energy use in operation, standby and off modes.

CHIPS*: DoD's Implementation Plan also encourages users to take advantage of the Energy Star features that an electronic device may have. Results reported on the Energy Star website (www.energystar.gov/) indicate that Americans, with the help of Energy Star, saved enough energy in 2009 to avoid greenhouse gas emissions equivalent to those from 30 million cars — all while saving nearly $17 billion on their utility bills. Can the DON expect to see similar results? Is there a way to measure savings?*

Lindsey: Yes, the DON Strategy for Green IT Electronic Stewardship and Energy Savings, issued April 23, 2009, (www.doncio.navy.mil/PolicyView.aspx?ID=1022) requires that the department maintain an accurate and up-to-date inventory of IT devices and the energy specifications of those devices. It is important that the DON tracks the results to respond to the Office of Management and Budget Scorecards. This is the first step toward achieving the goals of Executive Order 13423, Section 2(h): 95 percent of electronic assets acquired are EPEAT registered; extend the useful life of electronic assets and 100 percent enablement of Energy Star features on electronic assets; and 100 percent reuse, donation, or recycling of electronics at end-of-life.

CHIPS: *Can you discuss the DON's ongoing efforts to achieve its energy strategy centered on energy security, energy efficiency and environmental stewardship?*

Lindsey: The federal government consumes only 2 percent of the total U.S. energy share. Of that 2 percent, the Defense Department consumes 93 percent, and the Navy consumes a quarter of the DoD's total share. The Navy is seeking alternative fuels at a competitive price. At the Naval Energy Forum in McLean, Va., in October 2009, Secretary of the Navy Ray Mabus, said he was committing 'the Navy and Marine Corps to meet bold, ambitious goals.'

These goals include considering the lifetime energy cost of the system when the Navy and Marine Corps award contracts during the acquisition process; by 2012, creating a 'Green Strike Group' composed of nuclear vessels and ships powered by biofuels and deploying that fleet by 2016; by 2015, increasing hybrid fuel and electric vehicles in its commercial vehicle fleet by 50 percent, and producing at least half the shore-based energy requirements from renewable sources; and by 2020, ensuring that at least 40 percent of the Navy's total energy consumption comes from alternative sources. They

are ambitious goals; however, they are imperatives for energy security.

The Navy partnered with the Department of Energy for implementation of the Net Zero Energy Installation program and continually examined operations aimed at fostering best practices for using energy more efficiently.

It is our belief that the IM/IT community can play a significant role in the overall DON energy strategy, particularly, in the area of energy efficiency. As the lead IM/IT executive for the DON, the DON CIO can support this effort not only through the policy process, but also by being an active advocate for IT strategies and solutions that will help the DON deliver on its energy agenda.

One of the attractive aspects of green IT is that there are often associated savings in cost and/or carbon offsets that pay dividends, in addition to the energy savings. Some examples include use of cloud computing, telework, alternative work schedules, compressed work schedules and telepresence. For example, Space and Naval Warfare Systems Center Pacific, comprised of more than 4,000 employees, has 90 percent of its people on alternative work schedules. Every other Friday, the command minimizes the consumption of energy and reduces significantly its carbon footprint on the environment.

CHIPS: *Why are the cloud computing and software as a service models considered energy efficient? Are there other technologies or service models that are energy efficient?*

Lindsey: Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources, for example, networks, servers, storage, applications and services, that can be rapidly provisioned and released with minimal management effort or service provider interaction.

There are three delivery models for cloud computing: (1) software as a service (SaaS), which provides business applications running on a cloud infrastructure accessible on a client device via a Web browser; (2) platform as a service (PaaS), which is the deployment via the cloud of user-developed applications, databases, or management systems; and (3) infrastructure as a service (IaaS), which is the provisioning of computing resources for users on a regular basis.

These service models are considered energy efficient because they reduce time to add capacity, reduce overhead, streamline operating system management, facilitate technological currency, and reduce cost. This is done by consolidating the numerous servers, data storage devices and related equipment that support the enterprise's computing requirements. A typical global enterprise has numerous servers in offices literally across the world. All this equipment not only uses power to operate, but also produces heat, which entails more power requirements for cooling.

By offloading this computing power onto the cloud, and consolidating it into a much more efficient architecture, the distributed energy draw is dramatically reduced. The cloud's computing centers are designed with energy and computing efficiency in mind.

The computing centers also run 24/7, so they can maintain higher usage rates as they meet the needs of different geographic regions throughout the 24-hour cycle. It is also cheaper to buy fewer, more powerful servers than many smaller ones. The end result is that you get more computing power with less energy used and less money expended per user than with the distributed model.

Consolidating in the cloud will also provide the foundation for server and desktop virtualization which will prove invaluable for teleworkers.

CHIPS: *What is the connection between cloud computing and telework?*

Lindsey: Telework has great promise in helping the DON reduce its carbon footprint. For it to be truly successful, however, the telework experience has to enable the remote worker to be productive. To accomplish that goal, accessing the network must be easy, and all the information and application resources that are necessary for personnel to do their jobs must be readily available.

The IT architecture must deliver that functionality. Much of the existing IT environment in the DON, as well as other organizations, was developed on a model where the user was presumed to be in close proximity to the network with remote use viewed as the exception. That paradigm is changing.

Cloud computing and virtualization make the user's physical location irrelevant for all intents and purposes while at the same time providing easy access to the required resources.

The DON, within the Naval Networking Environment (NNE) initiative, is active on two fronts in telework. First, through the DON CIO enterprise architecture team, the department is defining a target architecture that will enable a more effective remote user capability. Secondly, the team is assisting the Department of the Navy Assistant for Administration (DON/AA) with the DON telework policy. This will ensure that the proper guidance is in place so that teleworkers may be productive in a manner that also delivers information assurance.

CHIPS: *What is telepresence, and how does it play in the green IT agenda?*

Lindsey: Telepresence is the 21st-century methodology for remote collaboration. It delivers a high-quality, interactive environment that provides a near-real 'in-person' experience. As a result, telepresence is a much more attractive alternative to travel than the legacy video teleconferencing (VTC) technology that often sits unused. [Ed. Note, see "Going Mobile, Virtual Mobility Through Telepresence" in this issue for a detailed discussion.]

Consider the number of flights that DON personnel take just between Hawaii, San Diego and Washington. If just 5 percent of those trips could be replaced by telepresence meetings, the carbon offset would be significant. Even locally, there are numerous shuttle bus and car trips taken every day here in the National Capital Region between DON and DoD locations. A reduction in these trips would directly reduce our energy consumption and carbon contributions. As an added benefit, we would save travel money, increase productivity and decrease the hassles of travel for our personnel. CHIPS

Thuy Lindsey is the lead for IT service management and green IT on the DON CIO naval networks and enterprise services team.

FRCSW Lands DoD Environmental Award

Conformance to ISO 14001 standard leads to reduction in water and energy usage

By Jim Markle

In recognition of its consistent and effective environmental operations, Fleet Readiness Center Southwest (FRCSW) was chosen by the Department of Defense (DoD) to receive the 2010 Environmental Award in the Sustainability – Industrial Installation category. Thirty-four installations from all four branches of the armed services competed in nine categories.

Representing the Navy, FRCSW competed against Marine Corps Air Station at Cherry Point, N.C., Letterkenny Army Depot in Pa., and the Defense Supply Center in Columbus, Ohio, in the final Sustainability – Industrial Installation category.

"Organizations like ours used to strictly concentrate on conforming to the law. That's called compliance. And in that regard, there are environmental, safety and other related compliance laws. But as organizations mature, they strive to exceed compliance. That effort evolves into what we call sustainability," said environmental engineer Mark Weir of the FRCSW Environmental Program Office (EPO). With a staff of 13, the FRCSW EPO is a branch of the industrial compliance operations department (ICOD) and handles the command's environmental programs ensuring that local, state and federal regulatory requirements are met.

FRCSW's environmental efforts are based on the International Organization for Standardization (ISO) 14001, a framework of 17 environmental management elements designed to work in concert with an organization's management processes.

Facilities registered to the ISO 14001 are regularly audited to monitor and document environmental improvements and performance. The EPO established an Environmental Management System (EMS) in 1999 when the command became the first federal facility to register to the ISO 14001 standard.

After nearly 11 years, ISO 14001 auditors from QMI-SAI Global determined that FRCSW's Environmental Management System had achieved full performance to the ISO standard — a significant measure of sustainability. To achieve the best possible results and to ensure its EMS consistently operates as intended, FRCSW augments QMI's external audits with internal audit "sorties" of its own, usually targeting a single department at a time.

"Audit sorties are performed once a week. We'll pick a shop and look at how well they are conforming to the 17 elements of the ISO 14001. Then we generate an audit report and document any nonconformances," said deputy director for ICOD Michele Marien.

"Typically, we don't have a lot of nonconformance issues, but we'll have a lot of 'opportunities for improvement,' which means conformance to the standard, but that there are better ways to meet that requirement. The idea is to take the procedures that work best and spread them around. It's another way to build continuous improvement," Marien said.

During fiscal year (FY) 2009, FRCSW continued to garnish improvement in environmental stewardship and financial performance. Costs for the command's environmental programs were 16 percent less than those for FY 2008. In addition, the command's environmental stewardship program received no notices of violation or nonconformance during fiscal years 2008 and 2009. Further, FRCSW reduced its water consumption by 10 percent, industrial waste water by 18 percent, and hazardous waste was reduced by 7 percent. By streamlining and consolidating its waste collection and disposal procedures during FY 2009, the command reduced waste disposal by 50,000 pounds annually.

FRCSW projects targeting energy reduction in FY 2010 include: high bay lighting replacements throughout the command which will save an estimated $160,000; heating, air conditioning and ventilation upgrades that will reduce energy consumption by approximately $600,000; and reduction in air pollutant emissions by two tons per year through substituting ingredients currently used in paint stripping tanks.

"Our environmental achievements and selection to receive the DoD 2010 Environmental Award is a direct reflection on the culture of this command. It's a culture of innovation and continuous improvement that constantly strives to achieve better results," Marien said.

The DoD award presentations were made by Deputy Defense Secretary William J. Lynn III in a ceremony at the Pentagon in Washington, D.C., on June 2. The federal government "is committed to curbing greenhouse gas emissions, using renewable energy resources and promoting sustainable environmental stewardship," Lynn said at the ceremony.

Lucy Sapien, Fleet Readiness Center Southwest's energy and water conservation manager (left), and building maintenance manager, Lenny Romano, review a lighting chart of the command's building 94 hangar. Lighting installers from Progressive Lighting and Energy Solutions, pictured in the background, prepare to remove 1,000-watt high intensity discharge lamps which will be replaced with four-foot 300-watt fluorescent lamps. In addition to the approximate 30 percent energy savings, the new fixtures will be motion-sensor controlled, and feature a photo control sensor that will turn the lights off during periods of adequate sunlight. Photo by Joe Feliciano.

Under Secretary of Defense for Acquisition, Technology and Logistics Ashton B. Carter, who also was at the ceremony, recognized the efforts made by all the services to reduce fuel consumption.

As Navy's premier West Coast aircraft repair and maintenance facility, FRCSW maintains, modifies, or repairs more than 275 Navy and Marine Corps aircraft annually, including F/A-18 Hornet fighters, E-2C Hawkeye airborne early warning planes, C-2A Greyhound transports; and CH-53 Super Stallion and H-60 Sea Hawk helicopters. CHIPS

For more information, contact the Fleet Readiness Center Southwest public affairs office at (619) 545-3415.

Department of the Navy Enterprise E-mail in "The Cloud"?

By Michael Jacobs

"Cloud computing is a logical step forward to make computing more effective and efficient. It offers the ability to significantly reduce the cost of computing infrastructures and significantly reduce our IT footprint, while also improving services and security."

DON CIO Rob Carey, Military Information Technology magazine, February 2010

As is true of many large private corporations and organizations, as well as the Department of Defense, the Department of the Navy (DON) has invested heavily over the years in implementing and maintaining a traditional client/server-based enterprise e-mail capability. With the "recent" emergence of cloud computing and software as a service (SaaS) methodologies, the time is right for the DON to determine if it would be advantageous to transition its enterprise e-mail capability to a cloud computing/SaaS model.

There are benefits to be gained and risks to be managed, if and when the DON makes the decision to transition its e-mail capability to the cloud. The benefits would likely include a significant reduction in per-user cost for e-mail services for all DON employees and the ability to more centrally manage the information assurance (IA) posture of the entire department's e-mail services. The risks to be managed include those associated with ensuring IA and defense of the department's critical IT infrastructure. It is likely that many of these risks could be mitigated by judiciously selecting the appropriate mix of "public cloud" and "private cloud" approaches.

There are a number of emerging examples of large organizations beginning to plan the transition of their enterprise e-mail to a cloud computing/SaaS model. In June 2010, the General Services Administration (GSA) issued a request for proposal for cloud computing/SaaS based e-mail and collaboration services. The stated intent of GSA's transition to this model is to improve efficiency and reduce costs. A recent example of a non-DoD government organization transitioning its enterprise e-mail capability to a cloud computing/SaaS model is that of the city of Los Angeles, which is currently in the process of migrating 30,000 users to a cloud computing/SaaS based e-mail and office automation capability.

At this time, there are a number of major information technology (IT) infrastructure and services initiatives underway across the DON, including the Next Generation Enterprise Network (NGEN), Marine Corps Enterprise Network (MCEN), and Consolidated Afloat Networks and Enterprise Services (CANES). Each of these, as well as the overarching Naval Networking Environment initiative, provides an opportunity for the DON to pursue the most cost effective and robust path ahead for its enterprise e-mail capability. The cloud computing/SaaS model is definitely one to consider. CHIPS

Michael Jacobs is the director of enterprise architecture and emerging technology for the DON Chief Information Officer.

10 Minutes of Straight Talk with Adm. J. C. Harvey Jr. Commander, U.S. Fleet Forces Command

After his address to the Joint Warfighting Conference on May 11, Adm. J. C. Harvey, Jr., commander, U.S. Fleet Forces Command, answered questions from attending reporters. The following is an excerpt from that interview on a wide range of topics.

Commander, Fleet Forces Command Adm. John C. Harvey Jr. gives the luncheon address May 11 in Virginia Beach, Va., during the 2010 Joint Warfighting Conference. The conference provides a venue for engaging military professionals and industry leaders who are shaping the nation's military strategies and warfighting systems. DoD photo by Air Force Staff Sgt. Vanessa Valentine.

Q: In your remarks you emphasized that the most important asset the Navy has is its people. Why the emphasis?

A: It is based on my 37 years of service, my reading of history, and my take on the tenor of the times we are in. While we have had huge advances in all aspects of technology, in our weapons systems, and what our aircraft and ships can do, they are brought to life by people. They are just so much expensive junk without well-trained, properly educated people, who are also well led and motivated to do the right thing.

[Training] is at the heart of everything we hope to do; it gives our people confidence; it has got to be a firm foundation for everything we do as a joint force — otherwise the rest of it just comes collapsing down around us.

Q: What did you mean in your remarks when you said that the Navy is using "Industrial Age" personnel policies that need to evolve?

A: What I was referring to is the Defense Officer Personnel Management Act that governs how we promote officers throughout the services. It was passed into law in 1980 and began in development in 1971.

Compare the world of 1980 to the world of 2010. It's like comparing General Motors to Hyundai — there's no comparison. It is increasingly difficult to stay within that framework, which I characterize almost as a straitjacket, and still be responsive to the demands of the world as it is and how the force has to evolve in terms of its manpower and personnel policies.

Q: What personnel policy or program recommendations do you have? [Follow-up question added by request of CHIPS reporter.]

A: I believe it is incumbent for our personnel policies to continue to evolve and keep pace with the changing nature of our force and our people. I just mentioned the Defense Officer Personnel Management Act, but there are other policies and programs that we need to continue to keep our eye on and ensure they are delivering what is needed today to sustain the force.

Ensuring we give the best possible care to our returning service men and women who have been wounded in combat needs to be at the top of our list of things we must get right with regards to taking care of our people.

Programs that allow our Sailors to maximize their opportunities to continue their education are extremely important to our ability to man our increasingly technically oriented fleet. And I believe the Navy has its diversity policies right, and we need to continue to emphasize our diversity programs, now more than ever.

Q: You talked about the importance of training and maintenance, and training and maintenance are expensive. Would the money be better spent on developing more efficient technology?

A: The challenge has always been the balance between today's readiness versus tomorrow's capabilities. Today's readiness is based on the people we have and how well we train them.

I look at my job at Fleet Forces and I have been able to maintain the fleet. In the last two years, we have increased the amount of money that we spend on both training and personnel, and we have the right balance. I am very confident that we have what we need to do, and what we are expected to do. It is up to us to do it wisely and to do it well.

Q: In the last five years there have been a lot of mission changes in what naval personnel have to do, like counterpiracy operations, have there been training changes as well?

A: The training has always been on the books, but it wasn't as visible as it is now. The Navy's first overseas deployment in 1803 was for counterpiracy — that has always been a mission.

Our missions have never changed, and that is one of the wonderful things about the Navy. We've always been global; we've always been forward [deployed]. We have always been inherently expeditionary working as a strong partner with the United States Marine Corps projecting American power and presence wherever and whenever it's needed. That has been true since 1775; it will be true for the next 100 years.

It's the balance of activities that we have to focus on. How much emphasis we place on one against the other, and then a growth industry, if you will, on ballistic missile defense where we are taking on a significant mission the president has given us over the next five years for his adaptive approach to missile defense in Europe. A new mission for us, in a sense, but one we have been preparing for and working on for the last 5 to 10 years with our Aegis combat systems and missiles.

So we will be ready — it's a matter of emphasis and balance.

Q: The Secretary of Defense said [in his addresses to the Navy League Sea-Air-Space Exposition and at the Eisenhower Library] in May that we need to get rid of some high cost programs but develop different kinds of capabilities to deal with 21st century realities. How do you see the missions of the Navy changing?

A: I think our missions will stay very much the same. My read of the Secretary's words is that he is telling us to challenge our assumptions. When he looks at the cost curve for individual systems, be it a ship, aircraft, expeditionary fighting vehicle, a submarine … he is seeing costs significantly escalating. He is saying our overall budgets are not going to continue to rise, so how will we sustain a force structure that is going to cost us so much more.

The Secretary is taking us back to basics and telling us that we have got to challenge assumptions. The missions, I don't think will change, the method that we execute those missions may change dramatically. It is up to us, he has given us a challenge, and we have to meet that challenge. It is exactly the thing that we should be doing.

Q: With the 5th and 6th Fleets engaged in piracy operations and the rest of the fleet in the Arabian Gulf with operations in Afghanistan, can we really afford to shrink the fleet right now?

A: The fleet is not shrinking. We are on a path, with the most recent shipbuilding plan, to grow the fleet to the goal that our CNO has been talking about since he has been on the job for two and half years which is a 313-ship Navy. This most recent shipbuilding plan gives us 10 ships a year over five years. Now how we control the costs is certainly the challenge we have to face. I see the Navy, quite frankly, as being able to continue to grow modestly to that floor of 313 ships which we need to do the job around the world that is expected of us.

Q: Will the Navy be able to maintain the number of carriers we have now?

A: The law stipulates that we maintain 11 nuclear-powered carriers on active duty, and we shall certainly comply with the law. The shipbuilding plan enables us to do that with a temporary dip to 10 that has already been approved [by Congress] when we decommission the Enterprise before the newest aircraft carrier, Gerald R. Ford, comes online.

Q: Will the Navy continue to build the Gerald R. Ford class or will it be one of a kind?

A: When I look in the shipbuilding plan, the Gerald R. Ford [class] is in it, and we intend to keep building it.

Q: Can you talk about the JAGMAN investigation you ordered because of the engineering situation on the San Antonio, and are you looking at the entire class?

A: You order a JAGMAN when you want to be sure of the facts. There was a lot going on that ship since it deployed, and in that class of ship, and I needed to get a better handle on the exact findings of fact for the people side of the house and on the engineering side of the house.

I need to understand how operations were affected by those issues. That's why I ordered the JAGMAN to get that clear and unambiguous picture of exactly what the conditions of that ship are. That's what you use a JAGMAN for, to be sure that when you take your next steps that you take them on the basis of fact and not just the loudest opinion that's been expressed.

NEW YORK (May 30, 2010) Adm. John C. Harvey Jr., commander of U.S. Fleet Forces Command, speaks during a Sunset Parade aboard the multipurpose amphibious assault ship USS Iwo Jima (LHD 7). Approximately 3,000 Sailors, Marines and Coast Guardsmen are participating in the 23rd Fleet Week New York, which is taking place through June 2. Fleet Week has been New York City's celebration of the sea services since 1984. U.S. Navy photo by Mass Communication Specialist 3rd Class Ash Severe.

Q: You have talked about what leadership thinks, what do fleet Sailors say they want?

A: On my numerous visits to the fleet, Sailors tell me the same thing I said to an admiral when he came to visit when I was Ensign John Harvey on the USS Enterprise in the reactor department.

I said I want more and better training for myself and my people. I want more maintenance on my gear, and I want more time to train. That is eternal. If you went back to the Bonhomme Richard and asked fleet Sailors under Capt. John Paul Jones what they needed more of they would have said the same — more time to train, more money for maintenance, and more ammunition with which to train. That has not changed in 234 years, and I don't think it will change for another 234 years.

It is up to us [leadership] to make sure that we understand Sailors' needs; that we balance them with all the other needs that we have, and be sure that we get it right. When I order the fleet out, I want them to be ready and have the confidence they need to do the mission we've given them. Most of all, our Sailors want the tools, time and training they need to succeed, to accomplish the assigned mission — whatever it is. CHIPS

Visit Fleet Forces Command on the Web at www.cffc.navy.mil/ or on Facebook at www.facebook.com/usfleetforces/.

GOING MOBILE

Virtual Mobility Through Telepresence

By Mike Hernon

This column typically extols the virtues of enterprise mobility by promoting technologies that enable the workforce to remain productive while untethered from the desktop, regardless of location. However, with today's concerns regarding carbon footprints, not to mention the pressure to rein in travel budgets, there is a compelling interest in examining alternatives to the standard business trip. Luckily, advancements in video conferencing technologies have arrived that provide a "virtual mobility" capability that delivers a true alternative to getting on a plane for an important meeting.

Not Your Daddy's VTC

I suspect many readers were rolling their eyes at the suggestion that a video teleconference could be a viable alternative to a face-to-face meeting. It is true that most of the VTCs conducted today do not provide a quality experience — the images are often grainy and poorly lit; the sound sporadic and tinny; and there can be significant latency, rendering conversations difficult to conduct in a normal fashion. The ability to share or work on documents in this environment is also severely constrained. Additionally, the process of setting up, activating and maintaining a VTC connection often requires support staff to assist and remain on hand to troubleshoot any technical difficulties.

Due to these shortcomings, standard VTCs do not provide a platform that approximates a face-to-face meeting required for a truly productive, interactive and collaborative session between remote parties. As a result, VTCs are not viewed as an attractive option; and many VTC systems sit unused or underutilized.

The new generation of VTC technology, however, referred to generically as "telepresence," addresses these issues and delivers an experience that is stunningly different from a standard VTC. Visually, use of widescreen, high-resolution plasma displays — placed at eye level instead of hovering overhead — deliver full-size images and allow participants to truly look each other in the eye. Microphones and speakers are also of high fidelity, producing CD quality sound that is natural and with reduced latency. The tools to share documents, as well as work on them remotely, are light-years ahead of the standard VTC.

By leveraging these advances, telepresence delivers an immersive environment that is remarkably realistic and more easily supports collaborative efforts among remote parties. In a telepresence session you can easily read facial expressions and body language from the other parties as well as even subtle voice inflections.

Furthermore, the call set up and initiation requirements are handled automatically behind the scenes and integrated with Microsoft Outlook, so scheduling a telepresence session is as easy as issuing an invitation through Microsoft's calendar function.

As a realistic alternative to travel, the benefits of this virtual mobility capability could be significant for the DON in terms of its carbon footprint, cost savings, and for personnel who are able to avoid the hassles of traveling.

Carbon Impact

As a global enterprise, the DON has people on the move constantly. Much of this travel is, of necessity, by air, which delivers copious amounts of carbon into the atmosphere. For example, a typical flight for DON business is the Washington, D.C., to San Diego route, with one stop. For that round-trip flight of approximately 2,500 miles, the Union of Concerned Scientists (see "Getting There Greener," December 2008, www.ucsusa.org) estimates that 1,600 pounds of carbon dioxide would be expelled per traveler on a wide-body jet with medium efficiency. This is 18 percent of what a car of medium efficiency would expel in a full year in 12,000 miles of driving! (See www.terrapass.com for a carbon calculator covering various travel options.) Not included in these numbers are other carbon sources that travel necessitates, such as hotel stays, which may be relatively minor for any given trip, but add up over the course of multiple trips.

If you replaced five such trips with a telepresence session you would offset the carbon footprint from driving for a full year! When you consider the number of trips that Navy and Marine Corps personnel take in a year — many of which are much longer than 2,500 miles — the enterprise carbon offset that could be realized through telepresence would be a compelling number indeed.

Cost Savings

By going mobile virtually you not only save on carbon emissions, you save money as well. In 2009, the average business trip within North America was expected to cost $1,139, with international trips costing up to $3,556 (see American Express Annual Global Business Travel Forecast Oct. 22, 2008, http://home3.americanexpress.com/corp/pc/2008/aebt_forecast.asp). These numbers do

not include all the new fees that seem to arise each time a traveler checks in at the airport which now can easily total $200 or more on a round-trip.

Depending on the size of the command and number of trips avoided, the return on investment to pay for the telepresence equipment could be accomplished within a relatively brief period of time. As with carbon offsets, the aggregate cost savings across the enterprise would grow dramatically and accrue over the life cycle of the equipment.

Don't Travel, Be Happy

Lastly, in addition to carbon and cash, travel avoidance also saves tons of time. For the enterprise, avoiding travel time leads to increased hours engaged in productive, rather than idle, time. Perhaps more importantly, telepresence also has direct benefits for the erstwhile traveler. By avoiding the drudgery and lost personal time that travel invariably entails, people are able to spend more time at home engaging in those activities which are important to them.

Telepresence is likely to grow within government circles as it has within the corporate world. The benefits to the enterprise, the workforce, and the planet present a compelling case for its widespread adoption. CHIPS

Mike Hernon is the former chief information officer for the city of Boston and currently serves as an independent consultant. He supports the DON CIO in telecommunications and wireless strategy and policy. For more information, contact the DONSpectrumTeam@navy.mil.

Department of the Navy Enterprise Architecture v2.0.000

The Update

By Victor Ecarma

The Department of the Navy Chief Information Officer (DON CIO) is scheduled to release the DON Enterprise Architecture v2.0.000, on July 31, 2010. DON EA v2.0.000 will continue to ensure that programs, projects and investments are aligned with achieving departmental goals and objectives. It will also provide authoritative reference information, which can be used in the development of solution architectures to support and fulfill DON mission and capability requirements. This update includes additional Enterprise Reference Architectures, Segment Reference Architectures, and new and modified DON EA laws, regulations, policies and guidance (LRPGs) rules.

The department will begin assessing compliance with DON EA v2.0.000 on Oct. 1, 2010, through the Clinger Cohen Act Compliance and IM/IT Investment Review processes. Program managers must show compliance using the DON EA Compliance Assessment Tool (DECAT).

A listing of the content contained in DON EA v2.0.000 and information about DON EA policy and procedures can be viewed at https://www.intelink.gov/wiki/DONEA. CHIPS

Victor Ecarma provides support to DON CIO enterprise architecture throughout the DON. Mr. Michael Jacobs is the director of enterprise architecture & emerging technology.

The Architecture Product Guide

By Kimberly Brooks

The Department of the Navy Chief Information Officer (DON CIO) is scheduled to release an update of the DON Architecture Product Guide (APG) in December 2010. The initial version of the DON APG v1.0.000 was released Nov. 4, 2009. The DON APG v2.0.000 will focus on the development and maintenance of architecture viewpoints while incorporating style and format changes associated with the Department of Defense Architecture Framework (DoDAF) v2.0.

The updated DON APG will provide clarification to DON program managers on the architecture requirements associated with requesting and being granted Clinger Cohen Act (CCA) certification. This guidance will include information about the new DoDAF v2.0 viewpoints and their underlying data requirements, which must be implemented in a program's solution architecture to be compliant with the DoDAF v2.0 Meta Model.

The APG will also include the template and process for registering overview and summary (AV 1) information in the DoD Architecture Registry System.

The DON has established an APG Working Group which is currently seeking volunteers. CHIPS

Kimberly Brooks provides support to the DON CIO enterprise architecture & emerging technology team.

Mr. Michael Jacobs is the director of enterprise architecture & emerging technology.

A World Without Spectrum

By Thomas Kidd

Imagine a world without wireless devices: no radios, no televisions, no radar or satellite systems, no keyless car locks, and no cell phones. Except as the plot of a low budget "B" science fiction movie, this isn't something most of us could imagine. But what would the world be like without radio frequencies?

The RF spectrum is where nearly all commercial and military electromagnetic spectrum dependent systems operate. RF is the workhorse of the electromagnetic spectrum. Generally, RF is categorized as those frequencies between 3,000 and 3,000,000,000,000 hertz. It is unimaginable how modern civilization could survive without RF. Could the Navy and Marine Corps successfully conduct 21st century operations without RF?

To fully appreciate how RF is integrated into our lives, businesses, and our national security, we must imagine a day without RF. Forget about waking to a clock-radio playing music or the local news; the radio would be nonexistent without RF. Traditional over-the-air television, as well as cable TV, would also be out of service since both rely in part, or in whole, on RF frequencies.

The morning weather forecast is important to many people, and while we might think that we could simply use other media, such as newspapers, to provide daily weather forecasts, meteorologists heavily use RF for critical weather forecasting tools such as Doppler radar, weather satellites and remote wireless weather sensors. Without RF, the weather forecast would be much different. For example, on Sept. 8, 1900, more than 6,000 men, women and children lost their lives when a hurricane tore across Galveston, Texas. Advanced satellite capabilities were not available yet, and the storm came with little warning. Accurate predictions of when and where rain or snow will fall would be nearly impossible because satellite weather images would not be attainable.

As we go through our day without RF we would not have: automobile or satellite radios; the Global Positioning System (GPS); cell phones; traffic cameras (they are wireless); radar speed guns; or police radios. And while the absence of radar speed guns may be appealing to some people, imagine no radios enabling emergency services. Modern emergency response systems would be crippled without RF. In the first decades of the 20th century, police, fire and ambulance personnel could take hours to respond to an emergency. Without radio, public safety officers relied on primitive telephone call boxes to communicate. It wasn't until the 1930s that cities began to install two-way radios in police cars.

RF was a new technology when the Navy began broadcasting to ships in 1904, and this use of RF dramatically enhanced afloat safety. Today, the Navy and Marine Corps rely heavily on RF-dependent and RF-enabled capabilities. Thankfully, a sudden and total loss of RF is not likely. But, a new and increased use of spectrum worldwide is challenging the Department of the Navy's (DON) ability to ensure worldwide spectrum access and use for the Navy and Marine Corps. As a result, vital naval capabilities can be impacted due to increasing spectrum use by host nations.

Spectrum congestion in many areas of the world has reached a point where host nations are reallocating spectrum that once supported U.S. naval forces, to now support their own commercial and public use. The issue is serious, and the DON has implemented a number of requirements for the acquisition of spectrum-dependent equipment to attain the highest possible assurance that naval RF requirements are retained. These requirements address "spectrum supportability" and are mandated in DON as well as Department of Defense acquisition and spectrum management instructions.

Like a sci-fi movie where mankind is often complacent of the impending crisis, so too have we become complacent of our dependence on RF spectrum. The future of naval operations will include systems that are reliant on RF. And while we will never experience a day when RF stops working, we see too many days where critical RF systems are unusable because the DON does not have access to this vital resource. The DON CIO is engaged in strategic spectrum management to continually examine its dependency on RF investments in spectrum supportable systems and technology. CHIPS

Mr. Kidd is the director of strategic spectrum policy for the Department of the Navy. For more information, contact Mr. Kidd at DONSpectrumTeam@navy.mil.

Rear Admiral Janice M. Hamby Vice Director for C4 Systems, J6
talks about CWID 2010


Rear Adm. Janice M. Hamby

Coalition Warrior Interoperability Demonstration is a Joint Chiefs of Staff-directed annual event that engages cutting-edge information technology focused on operational shortfalls identified by combatant commanders and government agencies. Technologies are approved for participation because they address a new information sharing capability or might improve an existing capability.

Vice Director of C4 Systems, J6, the Joint Staff, Rear Adm. Janice Hamby talked about CWID 2010 at its conclusion in June.

CHIPS: The Secretary of Defense and the president have said that the cyber threat is one of the most serious economic and national security challenges that we face. Are there any technologies being tested in CWID that address these challenges?

Rear Adm. Hamby: One of the reasons the cyber threat is so critical is because we have grown to rely extensively on the 'connective tissue' that our networks provide for the daily conduct of our business. We need to be able to strike a sound balance between closing our networks off from the rest of the world and providing free transit of the information that is the lifeblood of our decision making process and our conduct of operations.

Initiatives that help add protection without restricting desired movement of information have value. CWID is positioned to help address these issues. Through a Federal Business Opportunities (FBO) announcement (www.fbo.gov/), industry was made aware of the environment in which their technologies would be employed and the need to address that balance in their offerings. Some of this year's offerings focus on helping move information between our military networks of different classification levels with greater ease without sacrificing security. Others provide capability to share information with partners in and out of uniform, again without unduly sacrificing network security.

CHIPS: Defense Secretary Gates and Joint Staff Chairman Adm. Mullen have said the military needs to focus on the development and deployment of technologies that will help win the fight that we are in. Are there any technologies being tested in CWID that could be rapidly deployed to Afghanistan?

Rear Adm. Hamby: We've worked hard to ensure the relevance of all of the technologies participating in this year's CWID, so one could argue they all have that kind of potential. Because CWID focuses on trials that are ready for fielding within six to 24 months it would not make sense to support inclusion of any initiatives that don't have immediate relevance.

Depending on outcomes and assessments, it's entirely reasonable that some of this year's trials could be rapidly deployed into Afghanistan based upon demand signal from the theater. The process for identifying candidates has that relevance as a primary goal. CWID deliberately looks at the gaps and shortfalls identified by combatant commanders (COCOMs), the services and agencies, so objectives based on those issues can be articulated to guide FBO announcement development and ultimately, trial selection.

CWID is a pretty constant effort. We're already at work drafting CWID 2011 objectives which will guide the types of trials participating in CWID next year. Some of the objectives for 2011 focus on coalition networks and systems that could be employed within a coalition environment. Senior-level CWID stakeholders also provide guidance to the Senior Management Group to shape the objectives. The plan is to focus CWID on operational technologies and concepts as a way to achieve relevant support to the warfighter.

CHIPS: Is there any one CWID technology

CWID 2010

Recent technology discoveries and advancements played a key role during Haiti earthquake relief operations. As a proving ground for new and emerging technologies, the Coalition Warrior Interoperability Demonstration (CWID) was among the first to assess one of the social networking applications that kept the lines of communication open after the disaster. During CWID execution, June 14-25, more than 32 Interoperability Trials (IT) demonstrated their technologies' potential to solve real-world information sharing problems for military and homeland security/defense forces, including first responders.

The CWID objectives for 2010 were developed by U.S. Joint Forces Command in coordination with U.S. Northern Command and the program's advisory combatant commands: U.S. Central Command and U.S. European Command.

While U.S. CWID is not an acquisition venue, the assessment results do inform acquisition processes and support system life-cycle milestone decisions allowing services and agencies to better use their limited resources. The demonstration results are published in an annual report which is provided to CWID stakeholders, DoD, government agencies and first responders.

Technologies may receive one or more of three assessment types during execution: warfighter/operator utility and technical performance; interoperability — the ability to exchange usable data across disparate systems; and information assurance, the capability to identify threats and enforce policies. Some developers demonstrate limited versions of their capabilities, just for the exposure CWID provides. These technologies are not formally assessed.

Assessments will be compiled in a Final Report published later this year. USJFCOM, in its role as the leader of joint capability development, coordinates assessment results to determine which CWID trials best meet defined requirements and have the potential to fill identified capability gaps.

USJFCOM is the permanent coalition task force location for the annual CWID event. CWID also took place at sites around the world and U.S. locations: Joint Systems Integration Center at USJFCOM; U.S. Army and U.S. Marine Corps at NSWC Dahlgren; Space and Naval Warfare Systems Center Pacific; Homeland Security and Homeland Defense, U.S. Air Force Electronic Systems Center at Hanscom Air Force Base; and Homeland Security and Homeland Defense and Maritime Component Command Center at North American Aerospace Defense Command and U.S. Northern Command, Peterson Air Force Base.

trial that you are most interested in, and what are your expectations for CWID?

Rear Adm. Hamby: It's not my place to advocate for a given technology at this point in the game. We need the assessment results to come forward without bias. But I would recommend a visit to the CWID website (www.cwid.org/) to review the range of technologies that are being trialed. There is plenty to be excited about with offerings that hold good promise to increase our ability to share information, represent information in an understandable way for a variety of mission areas, address security obstacles and to streamline our ability to execute command and control.

I'm definitely pleased with the great response from industry and partner nations to help us solve interoperability and information sharing capability gaps, particularly, in a coalition environment. It's not an overstatement to say that our ability to share information effectively, reliably and confidently can save lives, and we see potential in CWID 2010 to deliver on those objectives.

My expectations of CWID is that it will give us a rapid review of near-term technologies that we can leverage to meet critical information needs. It should amplify our understanding of the coalition information environment so that we can make decisions that complement our partner strategies for the future. And it should help our coalition partners develop strategies as well. In the fiscally constrained environment we all face, it's an imperative that we synchronize our efforts before we field capability. CWID helps us do that.

CHIPS: The J6 imperatives are to — Fight Upon Arrival, Achieve Holistic C4ISR Approach and Drive Information Culture Change — can you comment about the initiatives that fall under these objectives? It is interesting that Drive Information Culture Change is one of the imperatives — can you explain what it means?

Rear Adm. Hamby: Again, I don't want to jump the gun and imply any conclusions about the technologies offered this year, but I will offer examples which according to their descriptions should help deliver on these imperatives.

When we say 'fight upon arrival' we mean that when forces arrive in the AOR (area of responsibility) they should be able to immediately access required C4 (command, control, communications and computers and applications) as supporting tools for operations. They should not have to struggle with integration, connectivity or compatibility issues.

An example of a technology that could help with this is [the] Portable Systems Interconnect (PSI) Communications approach. It provides secure peer-to-peer interoperable communications in remote areas without infrastructure or service. According to its sponsors, PSI can be operational within 15 minutes to assist multiple agencies across jurisdictions. The PSI emergency phone systems were used during Hurricane Katrina and are currently in use by the Haiti government.

For the imperative of taking a holistic C4ISR approach, a possible enabler could be the Joint Mission Planning Software (JMPS) Virtual User Environment (VUE). It purports an ability to provide information access across multiple networks at different classification levels from a single workstation. This technology should allow the seamless and sustainable sharing of information across networks, reducing the inherent difficulties of juggling access to multiple specific networks in order to share information with partners and should allow users to focus on the planning effort, not on the network configuration.

When we talk about 'driving information culture change,' we are talking about making the shift in the way we think about information — how it can be employed, how it can be shared, how it can be more effective as a contributor to operational effects. We've preached net-centricity for many years, but we've not changed the way we approach information sharing.

Some of our younger folks have. They've embraced chat and collaborative sites to create force multiplier effects. We need to make sure we are working to provide the kinds of technologies that can be leveraged in the shift to the information network culture.

The Cross Domain Collaborative Information Environment (CDCIE) has enabled combatant commands to share information in the form of text, chat and whiteboarding with language translation across security domains. It's helping establish social networks comprised of teams who would have been viewed as too disparate in the past. And it's got potential for bridging Department of Defense and non-DoD networks, including coalition partners, other government agencies and non-governmental organizations, helping us move to a whole new view of who is part of the team and part of mission accomplishment.

I appreciate having had the opportunity to share some of the value of CWID with your readers. We work in an extremely complex and globally distributed environment, which makes our forces increasingly dependent on C4 to accomplish their mission. The challenge of sharing information with multiple nations, agencies, government and non-government organizations and private activities places a premium on developing adaptable C4 capabilities that operate in any situation, anywhere in the world.

Our current and future environment (fiscally constrained with rapid changes in technology, and expeditionary) requires intensive coordination with our mission and industry partners, and improved acquisition, requirements and development processes within DoD to establish and comply with interoperability standards, to acquire the right technology and to field warfighter capability when it is needed … not when it is obsolete.

The J6 strategy and imperatives keep us focused as we address these challenges in line with the Chairman's priorities. Events like CWID help us make the best decisions to implement that strategy and create the conditions for mission success. CHIPS

"When we talk about 'driving information culture change,' we are talking about making the shift in the way we think about information — how it can be employed, how it can be shared, how it can be more effective as a contributor to operational effects. We've preached net-centricity for many years, but we've not changed the way we approach information sharing."

Vice Director for C4 Systems, J6 Rear Adm. Janice M. Hamby

THE CLOUD AND ITS IMPLICATIONS TO NAVAL WARFARE

By George F. Hurlburt

STEMMING THE TIDE OF RUNAWAY IT

The realities of the past decades, fueled by Moore's law regarding the exponential advances in computing power, affirmed a need to stem the tide of runaway information technology (IT) within the Department of the Navy (DON). In essence, the DON's networks, hardware and software had to be brought under tight centralized governance to standardize the computing environment and ensure security. This very real need gave rise to innovations such as the Navy Marine Corps Intranet (NMCI) and the Functional Area Management (FAM) program to establish the Navy's application and hardware baselines. Insofar as these initiatives defined the DON's IT infrastructure and served to bridge the warfighter and the shore establishment, they served the department well.

These initiatives defined the realms of acceptable application support, provided required network elements culminating in a set of consolidated Network Operations Centers, defined acceptable server and storage management principles, established a homogenous database environment and made provisions for security measures in accordance with the Federal Information Security Management Act (FISMA). These initiatives paved the way for integrated procedures to support the management of the DON's overall configuration while providing a centralized approach to the distribution of IT resources extending from localized server farms, through the network, to desktop computers complete with a comprehensive technology refreshment and service desk approach.

The one commodity to miss scrutiny, however, was that of information which became a byproduct of the consolidation of the established infrastructure characterized largely by its physical environment and connectivity. The information resource took a necessary backseat to the requisite infrastructure management approach.

THE VIRTUAL "CLOUD" ENVIRONMENT

The latest trend — virtualization of the servers, databases and applications for access by remote users via network assets — represents a next logical step in the ever increasing efficiency required to support an enterprise as large and far ranging as the Department of the Navy. The virtual environment, often commonly known as the cloud, changes the governance paradigm significantly. It represents a consolidated approach to distribution through virtualization. In such an environment, however, the term "distribution" no longer can apply solely to infrastructure because the real distributed commodity clearly becomes information.

Virtualization supports shared services, which can significantly ease the security and system management burden through agile and improved federation, effective user management, and efficient access control through direct authentication, authorization and instant provisioning of both services and information upon demand. Moreover, this can all be done at a scale heretofore only imagined.

CHARACTERISTICS OF THE CLOUD

The cloud promises to deliver a dynamic intranet-optimized infrastructure for hosting all manner of applications at the edge. A number of vendors are already marketing cloud solutions involving platforms, storage, remote hosting, load balancing and other service-based features. The nature of these offerings tends to reinforce the salient point that, for the first time, information and information-based resources, may logically be billed on a per usage basis.

The cloud, however, poses a different form of threat from a security perspective. No longer can the physical network, hardware and software infrastructure be viewed as the focal point for exploitation of vulnerabilities. Rather, the policies and enterprise precepts governing the infrastructure come into sharp focus because

all applications are now consolidated and management policy becomes acute.

As external events occur, new threats mature, the environment changes, and the technology itself continues to evolve. The way the virtual community operates will migrate accordingly. Policy and procedures must also evolve. This migration is dynamic over time as different environmental vectors come and go. This important principle extends to the management of the information and its use as a means of regulating "need to know."

WEB SERVICES VERSUS SOA

Services will also migrate over time. It is important to note that there is a distinct difference between the concept of "Web services" and the notion of a service oriented architecture. SOA is an enterprise infrastructure enabler while Web services deal with service calls over the Internet. These lines will likely blur in the coming years. One attribute that both forms of service share is that they are liable to proliferate. As they do so, the cataloging and discovery of dynamically composable services will become an increasingly difficult problem. This discovery issue transcends existing metadata markup standards.

This dilemma can be solved using semantic techniques. Such techniques treat service-based semantics as small world phenomena. As such, words are reduced to valueless tokens. The resulting matrix relationship defines the association of any given token to all other tokens.

These relationships among tokens define which tokens link as hubs to other tokens to build meaningful context. Through these self-generating relationships, it is feasible to create living ontology, complete with self-generating metadata. Such an ontology permits SOA discovery where services must be allocated among various functional systems. Such a dynamic SOA composition environment will become common in the cloud.

CLOUD DYNAMICS

Not all clouds are warm and fuzzy. The cloud requires a new form of governance to maintain a benign cloud-like operation; otherwise, it could become the perfect storm.

Virtualization can be orderly, cost effective and manageable, but it is far more than a mere hardware consolidation. It must be capable of dynamic resource allocation and continual reprioritization.

As the cloud pushes capability to the edge, the definition of the edge itself is changing dramatically. Open source software is nearly normative for Web-based operating systems, servers and applications. Edge devices become smaller and more powerful by the day. As the edge pushes outward, new nontraditional players will become a part of the mainstream. This, in turn, will initiate new forms of working relationships, giving whole new meanings to net-centricity. People will definitely be in the loop and have influence over what would otherwise be a software-driven battlefield lacking human safeguards. The natural tensions these elements will create will call further attention to the murky legal issues. Service and application ownership will also come under close scrutiny.

Composable services and advanced application program interfaces (API) will allow today's staid applications to be treated as dynamic mash-ups. Data portability will become far more ubiquitous and the phenomenon of open social networking will continue to promote individual skills and abilities.

The notion of open software is here to stay, but it is becoming absorbed into the mainstream in interesting ways. The old juxtaposition of the cathedral (monolithic corporations) and the bazaar (independent, sharing artisans) is giving way to a hybrid model that serves to indemnify quasi-open software in ways that were impossible until recently.

INTERNET USAGE TRENDS AND THE CLOUD

Usage trends show that individuals of all age groups are involved with the Internet to varying degrees. E-mail has become essential as a universal tool. Many tasks, such as gaming, instant messaging, social networking, online profiles, and blogging tend to cluster at young age groups. These trends suggest that these emergent behaviors will be second nature for users over the next 20 years. Clearly, they are well suited to cloud computing and offer both danger and rare opportunity for managing the enterprise to optimize for interests and innate skills. Moreover, the use of social networks for professional purposes is growing significantly according to recent surveys. This suggests that individuals will become part of the fabric of the cloud, and relationships will be generated by affinity.

These trends strongly suggest that new reputation-based mechanisms will come into play as a means of conferring trust among users. This peer-based approval approach brings the field of human interoperability enterprise (HIE) into the equation of network and security management, making this field multidisciplinary and expanding it from its tradi-

tional infrastructure engineering-based roots.

INTERNET USAGE PATTERNS

Both the social network and Internet phenomena reveal that usage and human behavior tend to operate in seemingly random fashion which actually reveals patterns when viewed holistically. These patterns reveal linkages between participants, between communities, within an enterprise, across networks and among the edges. Similar patterns can appear among data and definitely within the semantics of the written and spoken word. A sophisticated security algorithm could be developed to detect subtle nuances in these patterns, identifying suspicious activity and signaling potential state changes requiring management awareness. This form of digital forensics is gaining growing acceptance.

UNSTRUCTURED DATA

This observation becomes more important as data continues to become far less pristine. Fueled by new computational immersion through Web 2.0 and similar collaborative applications, the amount of unstructured data in any given enterprise will eclipse and surpass the amount of structured data within this decade, according to International Data Corporation. This suggests that social networking is here to stay, but also tends to diminish the role and importance of the traditional database management system.

Ultimately, the prevalence of unstructured data extends to advanced visualization techniques which must be brought to bear to make sense of the mountains of data which can best be resolved visually. This also includes the growing realm of sensor fusion, particularly as sensors of various bandwidths, types and acuity continue to proliferate at the edges. Mash-up APIs will help facilitate this important visual push aspect of cloud computing.

KNOWLEDGE MANAGEMENT AND THE CLOUD ENVIRONMENT

All of the foregoing observations serve to predict the coming state of knowledge management. KM can no longer be viewed in isolation in the cloud environment. Knowledge may be defined as information applied in the context of the user. Unlike information, however, knowledge is not a specific commodity. Rather, knowledge is instantly synthesized from vast and growing reservoirs of semi-structured information. Of necessity, KM entails applied human resources management practices, if the organization is to optimize its workforce in a highly competitive environment.

Clearly, providing the appropriate context for heightened situational awareness definitely involves information management and the application of IT and communications systems. The cloud becomes the information broker to enable contextually sensitive KM, driven by natural affinities among users.

As human beings become increasingly integrated into the computational environment, the user becomes a vital component in the infrastructure. As users deal in the commodity of information to build contextually on their individual and organizational knowledge, the mandate to manage information overtakes the need to control the infrastructure necessary to provide rote services to users.

MANAGING AN INTEGRATED INFRASTRUCTURE

Given the cloud as a backdrop, the "Navy after Next" represents a significant departure from the state of affairs in IT as it is currently known. The challenge will no longer be the management and governance of the IT infrastructure, but rather the management of an integrated infrastructure composed of all the elements that comprise the Department of the Navy.

If the net-centric precept of power to the edge is to be brought to fruition, the decision making process must extend to the edge with the requisite knowledge applied when and where needed. This means that IT must be a part of the mainstream and not a separate entity to be managed exceptionally. This changes the notion of systems engineering to encompass a more holistic multidisciplinary approach extending to the human interoperability enterprise. To accomplish this end, the science and technology community has much to do to effectively help develop and articulate the requisite integrated capabilities. CHIPS

George F. Hurlburt supports the enterprise architect of Naval Air Systems Command. He has an abiding interest in applied complexity analysis, particularly latent semantic analysis. He retired after 38 years as a Navy civilian where he pioneered collaborative network architectures for the Department of Defense test and evaluation community.

For IT news and policy information, go to the Department of the Navy Chief Information Officer (DON CIO) website at www.doncio.navy.mil.

A Conversation with Mr. Christopher A. Miller
Technical Director, Space and Naval Warfare Systems Center Atlantic

Mr. Miller is the technical director and senior civilian official of SPAWARSYSCEN Atlantic. He is responsible for setting command-wide strategic goals and manages engineering and business operations for a workforce of more than 3,300 federal civilian and military employees, and more than 9,000 industry partners. With a total obligation authority of more than $5 billion, the center operates from its main campus in Charleston and several offices located in the continental United States and around the world.

Mr. Miller was appointed to the Senior Executive Service in May 2006 and has 14 years of federal service. He previously served as the Navy's Program Executive Officer for Command, Control, Communications, Computers and Intelligence (PEO C4I) and was directly responsible for more than 125 Navy C4I programs providing the warfighter integrated communication, information technology and intelligence systems that enable command and control of military forces. PEO C4I won the first-ever Assistant Secretary of the Navy for Research, Development and Acquisition (ASN RDA) Acquisition Excellence Award in the Major Acquisition Activity category for 2008, as well as recognition for the fiscal year 2008 Department of Defense Best Overall Continuous Process Improvement (CPI) Program for Echelon II organizations.

CHIPS asked Mr. Miller to talk about a few of SPAWARSYSCEN Atlantic's leading edge organizational initiatives in June.

Mr. Christopher A. Miller

CHIPS: The Department of the Navy is developing an energy strategy that emphasizes energy security, energy efficiency and environmental stewardship. This strategy recognizes that energy transformation is a national priority which will enable continued mission accomplishment. How does SPAWARSYSCEN Atlantic support this energy agenda?

Mr. Miller: We are extremely committed and are actively supporting the Navy's efforts. Our focus today is effectively communicating our efforts and creating awareness at the local level. We have developed an initial green strategy, and have started to implement various components of the strategy throughout SPAWARSYSCEN Atlantic. We've begun maintaining a SPAWARSYSCEN Atlantic 'Green Page' with informative links to the Navy energy strategy and approach to conservation. Our energy savings are estimated to be 396,864 kilowatt-hours per year as a result of our initiatives or an energy cost savings of $35,700.

We have formed a 'Technology Energy Team' that looks specifically at the equipment we purchase to use in labs, conducts initial lab energy audits, and identifies energy reduction initiatives. All of our new buildings are taking a very aggressive approach for energy efficiency. On May 10, 2010, we broke ground for our newest building that will be built in accordance with the Leadership in Energy and Environmental Design (LEED) standards for energy efficiency. It will be a fully certified Silver Level green building by the U.S. Green Building Council. Our other recent military construction (MILCON) projects, while not officially LEED-certified buildings, have also been built to those standards.

CHIPS: With the establishment of U.S Fleet Cyber Command/10th Fleet, how will SPAWARSYSCEN Atlantic engage with this new organization?

Mr. Miller: We've actually had a team across all of SPAWAR, which includes SPAWAR Headquarters, PEO C4I and the two Systems Centers — Atlantic and Pacific, working with Fleet Cyber Command/10th Fleet since it stood up. For their headquarters, we are helping them figure out how to build their Maritime Operations Center (MOC), which is their command center. We are looking at various kinds of tools and technologies they need to be able to operate and defend the network. While this command center will perform many similar tasks and functions as the other Navy MOCs, there are many unique aspects of the cyber domain.

It's important to remember that many of the things we do have been, and will continue, directly supporting them, like what we do with information assurance and our information operations programs. We are providing them with engineering studies and analysis to better understand their baseline requirements for cyber systems — both in the near term and in the

long term. We've had a long relationship with the information dominance community and look forward to having a continued relationship with 10th Fleet. This is a great opportunity for SPAWARSYSCEN Atlantic and all of Team SPAWAR.

CHIPS: You have a great blog and you mentioned the challenge of how to communicate and establish an organizational discussion effectively. How do you use social media to meet this challenge?

Mr. Miller: The blog is certainly proving to be an effective way to disseminate information and encourage discussion across the organization. I am amazed at how well it has been received. I try to focus on timely and relevant topics. I also ask open-ended questions on the blog, inviting comments and responding to comments so that a dialogue develops. I also make a point to respond to comments and show people that leadership is listening. Ongoing interaction is critical to an effective organizational discussion because it gets people engaged and excited. It's important to remember that blogs or social media tools are not just for public affairs or IT people. These tools and others need to be used and understood across the entire command.

CHIPS: How can leadership use social media tools to inform as well as get feedback from and respond to the workforce?

Mr. Miller: Leaders can use these tools to provide information and invite comments from the workforce. No single person can do all the work, make all the decisions, or read all the e-mail. We need an empowered and informed team that understands our command's priorities to be successful. Social media and other communications tools play an important role in making us successful.

These tools are great for interacting directly with people — especially, New Professionals and other recent graduates. People more and more are getting comfortable and are choosing to communicate with these tools — just look at the growth of Facebook and Twitter. Some things that make these tools good for leaders include the option to respond anonymously, which allows members of the workforce to make their points without fear of retribution. The ability to see each other's ideas facilitates collaboration and innovation across the command.

The availability of social media tools 24/7 allows the dialogue to take place informally when individuals have the time from anywhere in the world. An open exchange between leaders and the workforce with social media helps ensure that communications are clear and understood. It also tests whether messages are received as intended.

CHARLESTON, S.C. (May 10, 2010) Mr. Miller welcomes attendees for the ground breaking ceremony for SPAWARSYSCEN Atlantic's new Consolidated Engineering Facility. Below, from left, Mike Beaumeir, vice president of Suffolk Construction Company; Lt. Cmdr. Stephen Fichter of Naval Facilities Engineering Command Southeast; SPAWARSYSCEN Atlantic Technical Director Christopher Miller; SPAWARSYSCOM Deputy Commander Rod Smith; SPAWARSYSCOM Commander Rear Adm. Michael Bachmann; SPAWARSYSCEN Atlantic Commanding Officer Capt. Bruce Urbon; North Charleston Mayor Keith Summey; and Peter Wertimer from the Charleston Metro Chamber of Commerce Military Policy Council. Photos by Joe Bullinger/ SPAWARSYSCEN Atlantic.

CHIPS: The Defense Department and DON have embraced social media and have policies in place for its use. Is Facebook the application of choice? And are you requiring or encouraging every SPAWARSYSCEN Atlantic employee to establish an account?

Mr. Miller: Determining a social media 'application of choice' depends on your objectives when using it. If you want to interact in the external or public realm, Facebook and Twitter are applications that have broad reach and can help you disseminate information to millions of other users. On the other hand, if you want to interact in a secure environment, internal blogs and wikis are applications that have protected connections behind a SPAWAR firewall. Other applications, such as our soon to be deployed internal Expert Locator (based on an open source tool Elgg), will be of value if your objective is to locate a colleague with the expertise you need to tap into to do your work.

We encourage all employees to establish social media accounts, and we require that they manage their presence on them responsibly. They can open up new channels of professional communication and support our strategic aim to increase our knowledge base and become a learning organization.

CHIPS: On April 1, 2010, the Competency Aligned Organization/Integrated Product Team model was fully implemented across SPAWAR. Why has SPAWAR transitioned to the CAO/IPT construct and how will it operate?

Mr. Miller: In short, we are doing this for increased innovation, speed, and agility for our customers. CAO/IPT is about three key things: developing our people, making

sure that we have the right people supporting our projects, and innovation. We are executing CAO/IPT because our systems are becoming more complex, and we want to make sure that we have the right people, the right skills, and the best ideas. The model allows us to work in integrated product teams, where we pull together people with different skills from across the command. IPTs are the intersection of our people and tasking — in short, it's where we get the work done for our customers. By operating in an IPT fashion, we are more likely to spark innovation and new ideas. We are stronger as a command when we apply our collective abilities, talents and strengths in an integrated fashion.

We still have a lot of work to do, but this matrix approach will position us better for the future. Right now we are focusing on 'operationalizing' the CAO/IPT model — basically, how to make it work. We are also going through Enterprise Resource Planning (ERP) transition; we are getting ready to transition from the National Security Personnel System (NSPS) to the Science and Technology Reinvention Laboratory (STRL) personnel management demonstration system. These three changes are inter-connected, and we need to quickly figure out how to make them work together. We are going to continue to evolve our organizational thinking as we get smarter about the organization and our business systems.

CHIPS: With so many competing priorities, such as the Defense Base Closure and Realignment Commission (BRAC) actions, CAO/IPT, ERP, social media, and multiple process improvement efforts, how do you know it is not confusing or overwhelming to your workforce? How do you know what the correct balance of change is?

Mr. Miller: A key principle of successful leadership is effective communications — both informing and listening. It helps us make better decisions, do our work better, and develop the best workforce possible. I can't imagine a leader or organization ever being successful without effective communications. We are making an effort to get through these changes quickly, so that we can get back to normal operations.

I come back to the earlier discussion on communications — the way we are going to successfully achieve all these changes and have the correct balance is through an effective communications strategy. The workforce needs to know what is going on and provide us feedback when something isn't going right. Social media is helping us, but it's just a tool. Just as important, leadership needs to show action and improvement based on feedback. We can't afford for there to be a difference between our words and our actions.

We must treat and respect our people enough to be open, honest and transparent — especially, during transition periods like today. When our workforce has enough information to fully understand our command and its strategic objectives, they can make better decisions and produce better results. Leadership and communications are inextricably linked.

CHIPS: Do you believe that refreshing the workforce is important? Does SPAWARSYSCEN Atlantic have an active recruiting program?

Mr. Miller: Refreshing and continually developing our workforce is critical and a priority for us. When you look at our workforce demographics, you'll see a dip that is reflective of the post Cold War era where we slowed our hiring for many years. The pace of technology continues to be a challenge — Moore's Law didn't slow down after the Cold War. Our systems continue to get more and more complex and software intensive. These factors combined are making it critical for us to sustain and retain the best possible workforce. We are striving to find the right balance of New Professionals, who have new ideas and understand the new technologies, and experienced people who understand the processes, higher level system design and what our customers need.

Many of the jobs we are recruiting for today didn't exist 10 years ago. We have a great recruiting program, and we continue to evolve it as we learn more about the qualifications and certifications we need to meet the requirements of changing technologies. We are using every tool available to attract the right people. We are still doing the traditional career fairs, but we are also looking at other avenues to acquire experienced personnel, as well as opportunities to hire personnel leaving the military. We are also looking at increasing direct hiring authorities as we move into STRL, so we can hire the most qualified people. The bottom line is that we need a diverse workforce, and we need to continue to refresh our workforce as quickly as possible so we can continue to stay competitive.

CHIPS: You have talked about enhancing speed to capability by using continuous process improvement. How are you going to implement CPI?

Mr. Miller: CPI is a combination of tools and mindset. The tools we are embracing are used by the Department of the Navy as well as industry. We use tools such as Capability Maturity Model Integration (CMMI) and Lean Six Sigma, but the tools come and go. More importantly, it's a mindset that is focused on doing things better tomorrow than you did today. It's about fixing problems that frustrate you at work. CPI encourages innovation and creativity, and enables us to quickly adapt in a competitive and dynamic environment. It is about empowering our workforce to solve problems at their level of the organization and increasing our teamwork across the command.

CPI is a critical component in our CAO/IPT transition. Processes integrate components; they are the mortar within the bricks that build our organization. As part of CAO/IPT, we are establishing the competencies as process leads and owners. I will hold the global process owners accountable for improving process effectiveness and ensuring alignment with the voice of our customer. Leadership involvement is critical. Our leadership must help drive the CPI culture of good process development and team work.

We also have to get the workforce excited and empowered to make change. We are establishing an annual award for CPI so that we can recognize and celebrate our successes. Our strategic goal is to have one process, one tool and one owner to deliver quality, speed, agility and value to our customers. CHIPS

Mr. Miller was interviewed by Holly Quick, a regular contributor to CHIPS and employee of SPAWARSYSCEN Atlantic. Visit SPAWARSYSCEN Atlantic on Facebook at www.facebook.com/SPAWARSYSCENATLANTIC.

Embracing e-Learning: Green and Effective

By Mary Purdy

The Department of the Navy (DON), like many organizations, is experiencing critical cybersecurity and information technology (IT) skill shortages, increased competition for talent, and limited resources. As new challenges and opportunities related to virtual work, virtual leadership, and virtual learning arise, the DON looks for innovative learning strategies to help improve performance in the workplace.

Navy and Marine Corps commands and organizations provide several forms of training and instruction for their cybersecurity employees. Personnel attend school or commercial courses, in-house classes, or are provided with manuals and self-study guides. These traditional methods are effective, but they don't align to the department's goal to become "green."

One of the ways to reduce the carbon footprint for training is to limit the number of classroom training sessions, especially those that require travel. Another way is to use virtual classroom or self-paced e-learning to replace textbooks. As the DON replaces older technology with green IT, we need to reconsider the situations where it is advantageous to use e-learning courses or other forms of online instruction, instead of traditional training methods.

While there may be challenges in using e-learning in some situations, the benefits for expanding learning opportunities and controlling costs are real. The time is right for the DON command, control, communications and computers (C4), IT and cybersecurity workforce to strongly embrace e-learning to address critical learning requirements and support green IT initiatives.

E-Learning Course Offerings

The DON workforce has access to two centrally funded e-learning programs, so professionals can study wherever they have access to a computer and the Internet. The first program, SkillSoft, is funded by Navy Cyber Forces Command and the Marine Corps Training and Education Command. The second program, funded by the Defense Information Systems Agency (DISA), includes training developed in-house as well as the Carnegie Mellon Virtual Training Environment (VTE).

SkillSoft e-Learning Suite Alignment with DoD 8570.01-M Approved Certifications

SkillSoft's government representative works closely with the four services to ensure SkillSoft courses support the DoD Information Assurance Workforce Improvement Program (IA WIP). Content for CompTIA's A+, Network+ and Security+, along with International Information Systems Security Certification Consortium, Inc., (ISC)²'s CISSP, are currently part of the 3,000 e-Learning courses available.

In fall 2010, the EC-Council's Certified Ethical Hacker (CEH) and Information Systems Audit and Control Association's (ISACA) Certified Information Security Manager (CISM) course will also be available.

SkillSoft Additional OS Certifications

Personnel working at Information Assurance Technical (IAT) Level 1 and IAT Level 2 must also obtain appropriate computing environment certifications for the operating system(s) and/or security related tools/devices they support. SkillSoft supports numerous commercial IT certifications including:

- **Microsoft:** MCDBA, MCSA, MCSE, MCAD, MCDST, MCTS, MCITP;
- **Linux:** LPIC junior and intermediate level administration;
- **Cisco:** CCDP, CCNA, CCNP;
- **Sun:** Solaris 9 operating environments certification; and
- **Oracle:** DBA/OCA (10g and 11g), DBA/OCP (10g and 11g).

SkillSoft Test Prep

Courses: Self-paced, Web-based courses (averaging two hours in length) teach skills and knowledge required for certification exams.

Test Preps: Practice exams for learners to confirm test readiness in a simulated environment.

Mentoring: Online mentors, available via e-mail and chat to answer questions and provide learner guidance for certification preparation. Team mentors are full-time SkillSoft employees with more than 1,000 combined certifications and accreditations.

To register for SkillSoft e-learning classes go to https://navyiacertprep.skillport.com for Navy or https://www.marinenet.usmc.mil/ for Marine Corps.

DISA Training Support

The DISA Information Assurance Support Environment (IASE) hosts numerous Information Assurance education, training and awareness products. Computer-based training (CBT) courses include the DoD IA Awareness, Designated Accrediting Authority (DAA), and personally identifiable information (PII) courses and

Disadvantages of e-learning

- ❑ Unmotivated learners or those with poor study habits may fall behind.
- ❑ Lack of familiar structure and routine.
- ❑ Slow or unreliable Internet connections can be frustrating.
- ❑ Hands-on lab activities can be difficult to simulate.

Advantages of e-learning

- ❑ Self-paced courses enable incremental learning and can be scheduled around professional work schedules.
- ❑ Travel cost and time to and from school are eliminated.
- ❑ Learners can select learning material that meets their level of knowledge and interest.
- ❑ Learning modules can be used for refresher training and just-in-time support at work or home 24x7.

may be ordered at no cost to naval commands. More information is provided at http://iase.disa.mil/eta/index.html. This site also links to the Carnegie Mellon VTE.

Carnegie Mellon VTE

The manager of Immersive Learning Technologies at Carnegie Mellon University's Software Engineering Institute (SEI) works closely with DISA and the Department of Homeland Security to ensure the VTE supports the IA WIP. The VTE now has more than 450 training demonstrations, a resource library, more than 600 IA training videos, and approximately 100 hands-on virtual IA training labs with instructor support.

Courses include: ISC2's CISSP Prep; CompTIA Network+ Prep; CompTIA Security+ Prep; HBSS 3.0; HBSS 3.0 Manager's course; Cisco CCNA Survey; Introduction to IPv6; and Wireless Communications and Wireless Network Security. In 2010, the SEI will be adding CompTIA A+, CEH Prep, and Cisco security courses to VTE. To request an account, go to https://www.vte.cert.org/vteweb/.

While SEI courses are self-paced, they are not computer-based. VTE uses a combination of recorded classroom lecture and hands-on labs using virtualization technology so students can practice concepts discussed in a safe, sandboxed environment from home or office. Some features of the VTE Video Lecture, as shown in Figure 1, include: synchronized video, slide and transcript presentation; remembers where you left off; downloadable slides and transcripts; and online note taking.

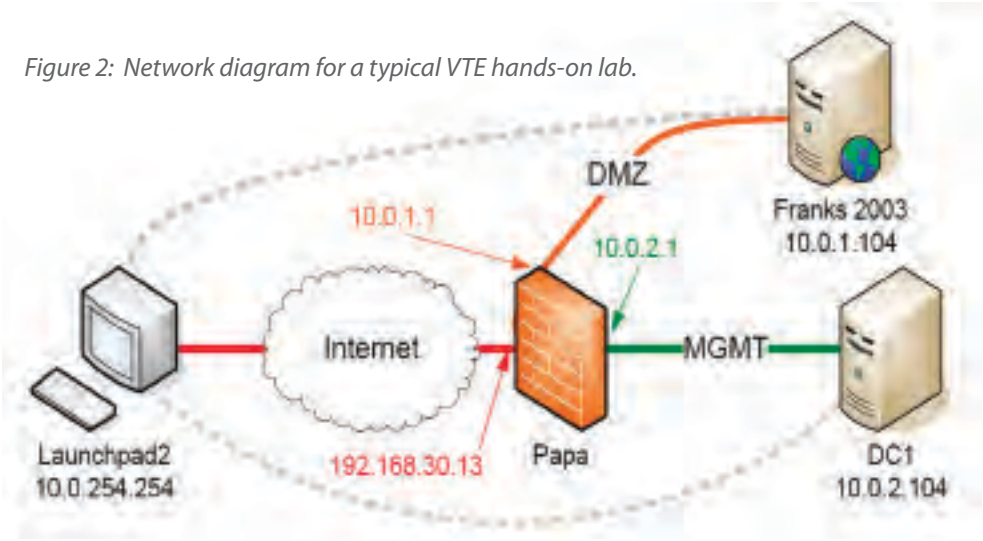
VTE labs are not simulations; students provision real servers in preconfigured networks, and access them in a Web browser without modifying their own computers.

Using the four virtual computers, as shown in Figure 2, professionals will have 100-plus available configuration choices such as firewalls, Web Exchange and attack/defend capabilities.

FedVTE

The Department of Homeland Security has announced the upcoming launch of the FedVTE as a resource for the entire Federal Information Systems Security workforce. FedVTE is a platform clone of the Carnegie Mellon VTE and will contain the same course material. It will be accessible through the Internet. Access by DON IA professionals will be coordinated through a Navy or Marine Corps office of primary responsibility. All existing Carnegie Mellon VTE accounts and course progress will be migrated to FedVTE when it is live. Expect a launch announcement toward the end of 2010.

Figure 2: Network diagram for a typical VTE hands-on lab.



Moving Forward

Every DON cybersecurity/IA professional must become part of the standard DoD IA workforce through commercial certification. The commercial certification comes with a currency requirement, and the DON requires technical currency to be achieved through continuous learning (per Secretary of the Navy Manual 5239.2). Therefore, the DON's requirement for additional training will continue to grow, proving a need to shift to more online learning.

The cost savings and green benefits of e-learning should not be understated. For every e-learning course taken on the Web by one of the DON's 33,000 IA professionals, naval commands can save between $1,000 and $5,000 for each one-week course. Since the DON is championing a green strategy, this is a great opportunity for cybersecurity professionals to "go green." CHIPS

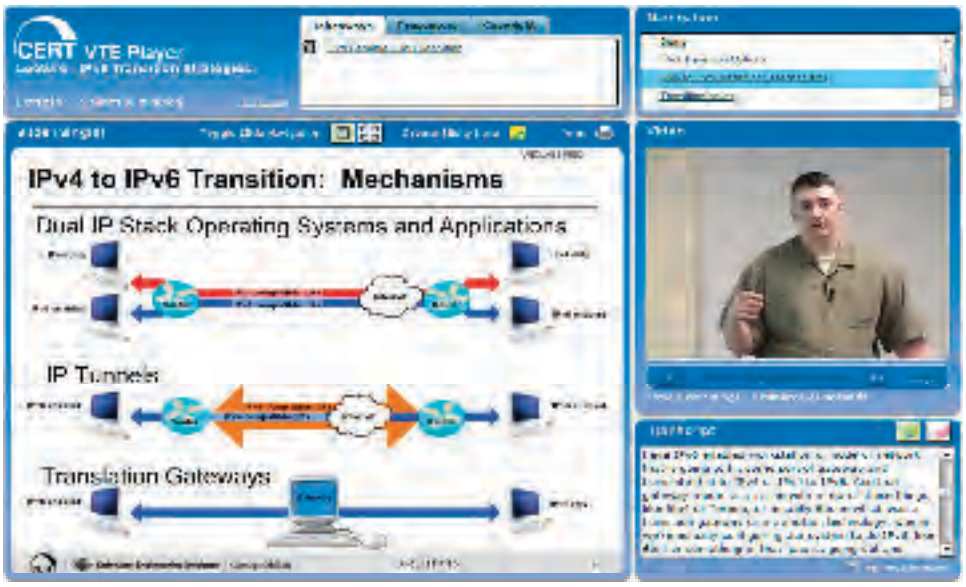


Figure 1. VTE Lecture Interface.

Mary Purdy has a GIAC Security Leadership Certification (GSLC), and is the cybersecurity/IA workforce management oversight and compliance manager supporting the DON CIO Cyber/IT Workforce Team.

STAR-TIDES

Haiti earthquake response teams use STAR-TIDES model to facilitate coordination and relief operations

The STAR-TIDES network promotes distributed collaboration among public-private, whole-of-government and transnational participants

By Dr. Linton Wells II and Lou Elin Dwyer

In the days immediately after the Jan. 12 earthquake in Haiti, the Transformative Innovation for Development and Emergency Support (TIDES) research project team was on the ground and ready to help catalyze knowledge sharing for relief efforts between U.S. Southern Command (USSOUTHCOM) and a global community of civilian technologists dedicated to the use of geographic information systems (GIS) tools in crisis response.

TIDES is a research project at the Center for Technology and National Security Policy (CTNSP) at the National Defense University (NDU) in Washington, D.C. It conducts research, provides analysis, and is dedicated to open source knowledge sharing to promote sustainable support to populations under severe stress.

TIDES is part of a broader research effort called STAR (Sharing To Accelerate Research). The global STAR-TIDES network (star-tides.net/) promotes distributed collaboration among public-private, whole-of-government and transnational participants. The project is headed by Dr. Lin Wells, the director of CTNSP.

The Ushahidi Haiti Project, at Tufts University, field representatives. Sabina Carlson, in the background, is showing a community group in Haiti how to use a GPS device.

Within hours after the earthquake, TIDES reached out to members of the STAR-TIDES network, including non-governmental organizations (NGOs), commercial firms, the Defense Department, and the International Network of Crisis Mappers (CM*Net)/GIS community, to help align the many efforts that were underway to gather and share data for Haiti relief.

A few days after the earthquake, Dr. Wells met with USSOUTHCOM representatives in Miami, Fla., to discuss an open source engagement strategy.

"It was clear that the open source technology community would have a lot to offer, but it was critical to find ways to bridge these capabilities to USSOUTHCOM," Wells said.

The command leaned very far forward and designated points of contact for unclassified information sharing through the "Open Source Team." USSOUTHCOM also set up a Haiti humanitarian assistance/disaster relief (HA/DR) group on the All Partners Access Network (APAN) platform to facilitate collaboration with nontraditional civilian participants "outside the wire." APAN lets users customize experiences, join collaboration groups, connect with people, and easily share information.

Shortly after the earthquake, individuals and teams from open source civilian technology communities, as well as large and small businesses, began leveraging a wide array of distributed expertise through a global network of volunteers. Using a variety of open source tools and social media-enabled approaches took advantage of the collective wisdom of large disparate groups. This approach, also known as crowdsourcing, was used to a greater extent than in any other previous disaster to accelerate insight into what happened where, who needed help, and who could provide it.

There were several circumstances in Haiti that facilitated direct private sector engagement because of the absence of many of the usual government coordination channels. These may or may not be available in future crises, but enough examples emerged to suggest new tools for public-private and transnational cooperation (also termed C2G — citizen to government) to enhance situational awareness and target responses in many cases.

Several examples from Haiti highlight the value of civilian knowledge sharing. Many organizations, public and private, commercial and nonprofit, collaborated to set up the short message system (SMS) 4636 code to provide information to disaster relief centers and bring help quickly to the Haitians. The service allowed survivors

Using a variety of open source tools and social media-enabled approaches took advantage of the collective wisdom of large disparate groups. This approach, also known as crowdsourcing, was used to a greater extent than in any other previous disaster response ...

to report their needs and location by simply texting on their cell phones. The 4636 code (see Figure 1) was also used to push vital news and information back to the survivors and provide translations.

After the earthquake, relief workers were overwhelmed by messages in Kreyòl (Creole) which exceeded their translation skills. By using Skype, text messaging and other tools, colleagues reached out to Kreyòl speakers around the world for translation support.

To interpret messages like, "People trapped in building by school next to fountain," a distributed network with local knowledge of Port-au-Prince converted such information into street addresses, which were then converted to GPS coordinates, which were passed to search and rescue teams. "One of the people thus rescued came by an NGO center later to thank them for saving him. Such things made it all worthwhile," Wells said.

Graduate students from The Fletcher School of Law and Diplomacy, at Tufts University, monitored an operations center around the clock to keep data current and to link to imagery processed at the San Diego State University (SDSU) Visualization Laboratory (Viz Lab).

The U.S. Coast Guard launched medical evacuation (medevac) helicopters based on data compiled by Fletcher students, using the open source situational awareness tool Ushahidi. Developed in Kenya, Ushahidi allows anyone to gather data via SMS, e-mail or the Web, and visualize it on a map or timeline. The data from Ushahidi were superimposed on imagery processed at the Viz Lab, and overlaid with an open source collaboration tool called OpenStreetMap (OSM).

Imagery from satellite and aircraft was rapidly distributed, updated with on-the-ground mapping capabilities and fed back to the responders to help target high-need areas. Another very important resource in Haiti was the rapid availability of free imagery — and the willingness to share it.

"The individuals, government organizations, volunteer groups and companies who brought this together deserve great credit, and the use and integration of such

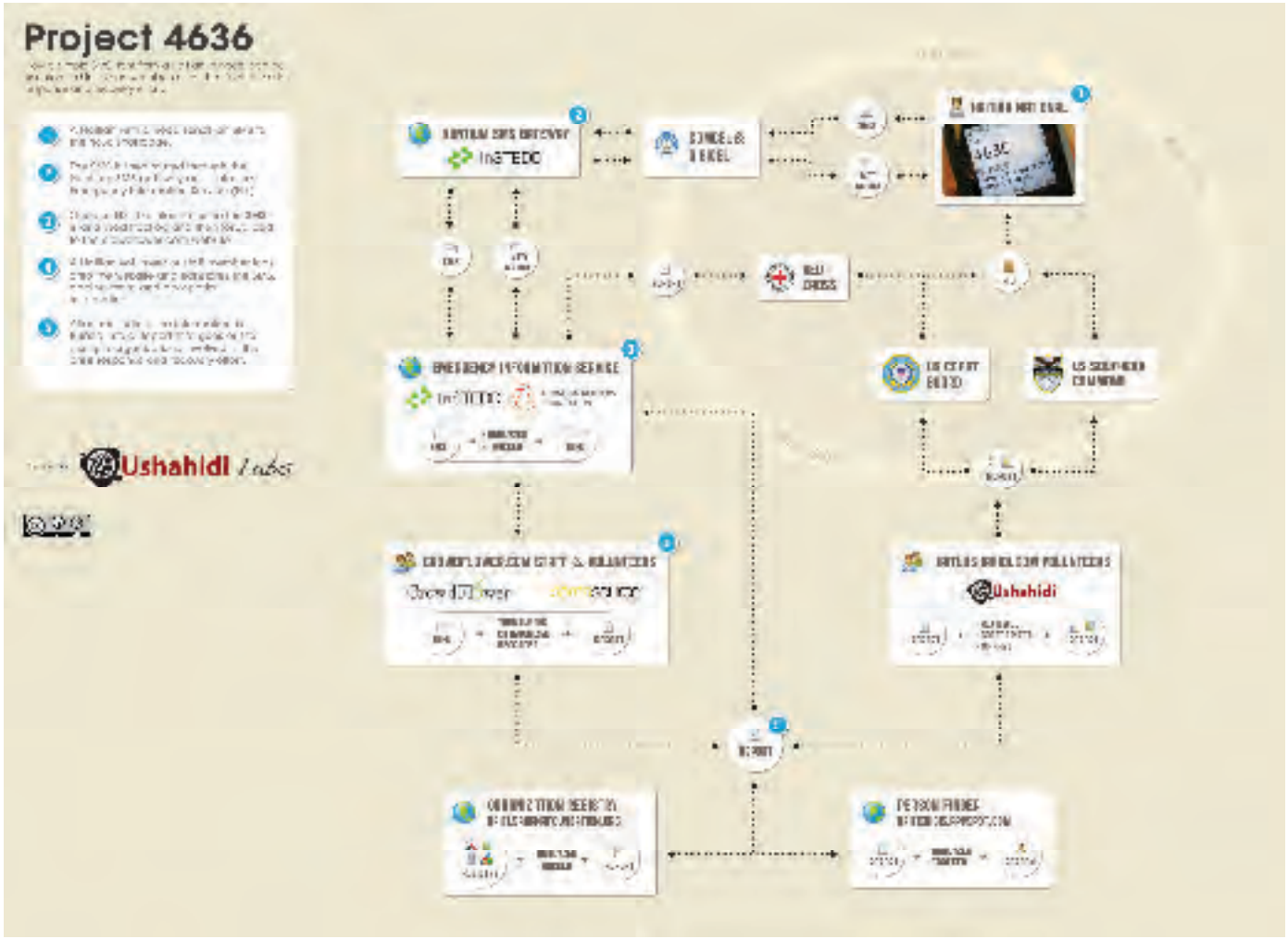


Figure 1. Ushahidi Haiti Project: the short message system (SMS) 4636 code.

STAR-TIDES has three goals:
❒ Enhance the ability of civilian coalitions (business, government and civil society) to operate in stressed environments;
❒ Extend the military's ability to work with civil-military mission partners in these circumstances; and
❒ Economize by identifying low-cost logistical solutions and improved sources of supply.

Desired Capabilities
❒ Fast. Delivery, set-up, using local materials wherever possible;
❒ Agile. Multi-use, Reconfigurable; and
❒ Effective. Sustainable, secure, low-cost.

Key Infrastructures: shelter; water; power; integrated combustion and solar cooking; cooling/heating; lighting; sanitation; and information and communications technology.

technology should be expanded in future disasters, both in the U.S. and abroad. Haiti can serve as a baseline to understand what could be possible and build infrastructure capabilities," Wells said.

The collaborations that took place in Haiti were made easier because many of the individuals providing assistance already knew each other. For example, many of the individuals had built ties through the 2000 to 2006 series of Strong Angel demonstrations and the many activities of the Synergy Strike Force.

Strong Angel is a series of civil-military demonstrations focusing on disaster response. The Synergy Strike Force is a volunteer team that supports humanitarian relief and stabilization efforts in post conflict environments such as those in Jalalabad, Afghanistan. The SSF is comprised of individuals with various technical skills and access to a wide range of social networks.

Quarterly experimentation, conducted under the auspices of the Naval Postgraduate School (NPS), TIDES and others, also helped to promote interactions among the CM*Net and government participants in the months prior to the Haiti earthquake.

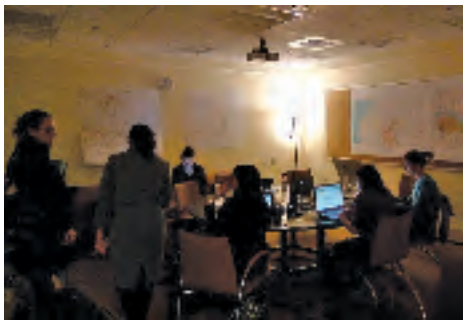
For example, in August 2009, a team of geographers, NGO field staff members, government employees and software developers participated in field experiments at Camp Roberts in California. The experiment called RELIEF, or Research and Experimentation for Local and International Emergency and First Responders, included a mix of thought leaders from the open source software community, industry, the military and NGOs that typically provide humanitarian information technologies such as: OpenStreetMap; Walking Papers; Google; InSTEDD (Innovative Support to Emergencies, Diseases and Disasters); Development Seed; Sahana; GeoCommons/FortiusOne; TerraPan Labs; NPS's Hastily Formed Networks Lab; and SDSU's Viz Lab, as well as observers from the Harvard Humanitarian Initiative (HHI), NDU and the Federal Emergency Management Agency (FEMA).

Many of the lessons learned in Haiti can be applied toward enhancing the resilience and ability of the United States to cope with a disaster.

There are multiple international disaster relief strategies making it hard for governments, NGOs, private voluntary organizations, and others to respond in a coordinated way to a crisis. TIDES is working with a number of diverse players to apply many of the lessons learned in Haiti to other stressed environments, such as natural and manmade disasters in other regions, for Afghanistan stabilization and reconstruction, and within the United States. For instance, many of the same groups that worked together in Haiti also cooperated in relief efforts in response to the Chilean earthquake in February.

Senior government officials are beginning to frame a "Grand Challenge" related to the development of an information platform that would enhance America's disaster preparedness and response capacity by increasing the nation's resilience by extending better information sharing capabilities to the American people before, during and immediately after a disaster. A wiki has been set up to help frame the challenge at: http://platformchallenge.pbworks.com.

TIDES researchers view the collaboration that emerged out of Haiti as an exceptional global effort, but there is still a lot of work to be done in coordinating HA/DR operations among disparate multiple organizations. CHIPS



The Ushahidi Haiti Project. Graduate students from The Fletcher School of Law and Diplomacy, at Tufts University, monitored an operations center around the clock to keep data current and to link to imagery processed at San Diego State University's Visualization Laboratory (Viz Lab). Above, Fletcher students in Ushahidi Lab's situation room where students worked from February through May on the project.

For information regarding the development of the SMS 4636 code for Haiti relief go to: http://star-tides.net/node/623.

For an example of applying the lessons learned in Haiti to other stressed environments, see "From Haiti to Helmand" at: http://star-tides.net/node/641.

Linton Wells II has served in the Department of Defense for 47 years. During 26 years as a naval officer he served on a variety of surface ships. Before coming to NDU, he spent 16 years in the Office of the Secretary of Defense, serving last as the Principal Deputy Assistant Secretary of Defense (Networks and Information Integration). After focusing on the STAR-TIDES project he became director of CTNSP in April 2010.

Lou Elin Dwyer is a program specialist with National Defense University.

A Survey of Communication and Collaboration in Support of Operation Unified Response

Winners and losers in effectively sharing information between many disparate organizations

By Lt. Cmdr. Pablo Breuer

The earthquake in Haiti was undoubtedly a tremendous human tragedy, and for communicators, it represented an enormous challenge to conduct operations on a truly combined basis. Operation Unified Response (OUR) provided a unique opportunity for data sharing between the Department of Defense, State Department, Haitian government, multinational military forces, civilian doctors from a multitude of nations, and non-governmental organizations (NGOs). All of these organizations required real-time, full mesh, two-way, mission-critical communications within a country whose communications infrastructure had just been decimated. This situation was exacerbated by the fact that the initial center of gravity for this operation was the USNS Comfort (T-AH 20), which was at anchor off the coast of Haiti, with very limited communications capabilities. This operation validated some of our preconceptions about multilateral communications and taught us some new lessons.

CARIBBEAN SEA (Feb. 21, 2010) A surgical team performs an open reduction internal fixation femur surgery aboard the Military Sealift Command hospital ship USNS Comfort (T-AH 20). Doctors aboard Comfort have performed 782 surgeries since arriving off the coast of Haiti. More than 1,200 medical professionals and support personnel aboard Comfort are assisting in Operation Unified Response after a 7.0-magnitude earthquake caused severe damage in and around Port-au-Prince on Jan. 12. U.S. Navy photo by Mass Communication Specialist 3rd Class Matthew Jackson.

Medical Triage

The immediate need upon arrival of USNS Comfort was to conduct medical triage for critically injured Haitians. During the first 10 days on station, a helicopter loaded with patients landed on Comfort at an average of every eight minutes. While the air traffic control tower and pilots are accustomed to talking to each other via radio, there remained the issue of tasking. An Air Tasking Order (ATO) was drafted nightly, but the reality was that as many as six mobile triage sites were set up daily to support 22 field hospitals. These triage sites were little more than an open area suitable to land a helicopter with a team consisting of a trauma doctor, expeditionary communications team and field security team.

The doctors on the ground, mostly from NGOs, were responsible for providing feedback to the operations center aboard Comfort which provided tasking to the helicopters via the tower. Although there were many NGOs taking part in OUR, Comfort primarily worked with nine of them providing medical support services.

The medical regulating control officer, a senior chief corpsman aboard Comfort, would direct the helicopter to the appropriate shore or sea-based hospital depending upon the medical needs of the patient and the availability of care at the hospital. This tasking included everything from medical evacuations (medevacs) and American citizen (AMCIT) evacuations to redeployment of triage teams, and distinguished visitors movements. This highly dynamic operational environment required timely and accurate communications with civilian and multinational military forces and NGOs, as well as a historical record of the operations.

Voice/Text

Forget landlines; Haiti has none to speak of. Like many developing nations, Haiti's cellular infrastructure is far superior to its landline infrastructure. However, during the first week of OUR, the severely degraded cellular network was unable to meet the demand placed on it by the Haitians and the thousands of relief workers trying to coordinate a relief response. Landline phone calls routinely took 30 minutes or more to place, and more often than not, cellular-placed calls were dropped after a few minutes due to the heavy load on the cellular network.

Short message service (SMS) texts were the primary command and control (C2) channel in the first few days of the operation. SMS texts are short in length, provide a legal record (log), require very little bandwidth, and enable guaranteed delivery. These are the minimum standards required for any mission-critical C2 platform. More importantly, SMS uses open standards and requires no specialized equipment or software; anyone with a cell phone or Web browser can use it. Due to its positive attributes, SMS continued to be a primary C2 channel throughout the operation. From a strategic communications perspective, the networks used for SMS are viewed as communal so there was no perception that the United States or the Defense Department was attempting to "take over relief operations."

Also, there were many challenges in attempting to use traditional military radio communications because of the lack of radios, batteries and chargers to meet the requirements of 22 field hospitals and the many NGOs, and because there was a concern among multinational partners and NGOs that the U.S. military would take control of the relief mission, military radio communications were used almost exclusively for flight and navigational safety.

E-mail

Just as in most military operations, e-mail was a critical C2 application during OUR. One of the lessons learned, however, is that the Navy's e-mail solutions were not as easy to access compared with commercial applications, such as Gmail or Hotmail, due to the rapid pace of mobilization, lack of infrastructure and high

overhead involved with military communications.

The rapid mobilization (and subsequent turnover) of reservists, NGOs and other government organizations (OGOs) meant that even aboard ship, information technology departments had a hard time keeping up with the administrative overhead of creating and deleting accounts.

Administrative overhead includes: verifying that required information assurance training has been completed and that unauthorized group accounts are not created. Truth-be-told, a lot of retroactive IA training occurred, and group accounts were created. Communications professionals understand acceptable risk and mission first. More difficult challenges occurred for Navy Marine Corps Intranet users and for those boots on ground.

Personnel with NMCI accounts encountered long delays in receiving e-mail forwarded to the ship. However, a more serious issue involved ground forces using Broadband Global Area Network (BGAN) or Very Small Aperture Terminal (VSAT) portable super high frequency (SHF) terminals. The problems were twofold: an insufficient number of Common Access Card readers and bandwidth availability.

The insufficient number of CAC readers meant that NMCI e-mail could not be accessed because secure access could only be obtained via log in with a CAC. Even if there had been a sufficient number of card readers, Outlook Web Access was prohibitively bandwidth intensive. BlackBerry users were successful in sending and receiving e-mail once the cellular infrastructure returned to full capability, certainly, a critical means of communication for those fortunate enough to have them.

Chat

While SMS worked well in the early days, as Internet service providers restored capability and BGAN and VSATs became more prevalent, chat and Web services became more widespread. SMS works well enough, but cell phones are not ergonomically designed for intensive continuous use nor are their screens large enough for optimized viewing for long periods of time. Additionally, SMS is not well suited for group collaboration.

U.S. Army Forces Command (FORSCOM) set up a Web-based chat that was available to anyone requesting an account.

Rear Adm. Dave M. Thomas Jr. (left) Task Force 41 commander, speaks to Marines and Sailors of the medical team aboard USS Bataan, March 23. Thomas came aboard Bataan to thank the Marines and Sailors with the 22nd Marine Expeditionary Unit, and Sailors with USS Bataan for their efforts in Haiti. Local and national government leaders, the United Nations and non-governmental organizations took over primary responsibilities in support of Operation Unified Response after an earthquake devastated Haiti. Photo by Marine Cpl. Theodore Ritchie.

While having users that are not vetted is less than ideal for military operations, this Web-based chat allowed humanitarian assistance/disaster relief (HA/DR) operations to move more smoothly because it permitted access to a communications channel without the need to wait for IT personnel for connection.

In this case, the back-end software was Adobe AIR, but many products could have been as successful. The critical attributes of the tools that enabled success were: Web-based; open-standards using Jabber/XMPP; low bandwidth requirements; a log for an audit trail record; and open access enabled collaboration without the need for IT personnel intervention.

The Web-based nature of this chat version made it operating system agnostic. Users, regardless of whether they were using a Windows, Mac or Linux/Unix platform, could access the chat capability as long as they had a Web browser. Many cell phones have Jabber/XMPP clients so that was another connection option.

Using a nonproprietary open standard is a critical, but often overlooked, requirement. Incorporating an open standard frees users to choose their operating system and client. In other words, a change in vendors requires no additional overhead to remain compatible with the existing system. Allowing users to choose their own client actually reduces required bandwidth. By allowing users to use the clients already installed on the platform of their choice, there is no need to re-download the Java-based client every time a connection is made, greatly reducing the connection time and bandwidth requirements for each client connection.

For several reasons, logging communications during these events became crucial. When communicating medical information, it is essential that information is not misheard, garbled or otherwise misrepresented. By using chat over a TCP/IP connection, delivery is guaranteed and a historical record can be automatically created. Unlike voice, chat over TCP/IP auto-negotiates the next speaker/client so there is no concern that one party will "step on" the other.

Wikis

Web services used included chat, wikis/portals and social media. Wikis and portals became the primary source for collaboration among the various groups. Wikis and portals are interactive Web pages that allow users to collaborate and post and share documents.

Read and post access can be controlled or uncontrolled on a page-by-page basis. As an example of role-based controls, Combined Task Group (CTG) 41.8 used a wiki that would allow anyone on Comfort to view information, but only watch floor personnel could edit information. Commander Task Force (CTF) 41 also used a wiki to post information and share documents. A key to wiki success is the ease of use for authorized users to edit the information. For many wikis, editing content is as simple as clicking an "edit" button and typing using controls very similar to a word processor. In comparison with commercial wiki/portal capabilities, documents on Collaboration at Sea (CAS), a Navy-provided portal that rides the SIPRNET, are difficult to edit and maintain.

The wiki quickly became a hub for the

most up-to-date medevac status, CONOPs, and other watchstander essential information. Four different wikis were used: media wiki (CTF 41); OS X wiki server (CTF 48.1); Google Groups (U.S. Southern Command); and Microsoft Sharepoint (Commander, U.S. Fourth Fleet).

The following characteristics helped make some wikis more useful than others: low bandwidth required, including for cell phone users; open standards; easy to use editing tools; searchable content; and online help. The Google Groups wiki became unusable due to both the number and size of the images that were used to "dress up" the site. But the Google Groups wiki functionality could have easily been fixed if the site were set up to limit the size of file attachments. Microsoft Sharepoint proved unusable due to its high bandwidth requirements.

Social Media

Individuals, commands, government agencies and NGOs used Twitter and Facebook extensively. While the use of Facebook and Twitter were resounding strategic communications successes, there were also some problems. The DoD has started using social media as a communications medium, and there are lessons to be learned from the OUR mission.

One such example involved a volunteer nurse embarked on Comfort. Having never been in an operational environment, the nurse posted an update on her Facebook page that was ill-informed and mischaracterized the conditions of treatment aboard Comfort. Her post quickly found its way to high levels of government, and quite a bit of effort was spent in the following days correcting the misinformation. While certainly not done out of malice, this unfortunate incident highlighted one of the operational dangers of social media.

Communications personnel aboard Comfort were greatly concerned about Facebook use due to limited bandwidth. While the bandwidth available was usually sufficient to support Comfort's traditional mission, Comfort had more than 1,200 personnel aboard, including NGOs, volunteer doctors, Comfort's medical staff, and a CTG staff.

The fears proved mostly unfounded, however. Users were briefed on acceptable Facebook usage and the network congestion that would result from excessive Internet use. While Facebook and Twitter usage had to be limited to non-peak traffic hours, user awareness went a long way to reducing abuse and negatively affecting mission bandwidth.

Hybrid Systems

The DoD is expanding its use of Web-based technologies, including wikis, chat and social media, but these technologies become truly powerful when they are combined into hybrid communications systems. Each of the aforementioned tools has their own strengths and weaknesses, but leveraging their strengths mitigates many of their weaknesses as communications tools.

To some extent, these tools attempt to shore up some of their own weaknesses. Twitter allows SMS messages to be used for updates ("tweets") to individual accounts. Tweets can be submitted without a Web browser or specialized client. However, the number of cell phones that can be associated with a single account is limited. This limitation makes this capability less than ideal for a group or command account. How can this be solved? By using a hybrid system!

The Jabber/XMPP chat room option is fast, low bandwidth, and can be joined by virtually limitless users for collaboration. A weakness of chat, however, is that once a message scrolls off your screen, it may be lost unless you are logging all messages locally.

What if information that is posted in a chat room needs to be more permanently available? A hybrid system could be used so that information updated on one system (chat) could update information on another system (Twitter). A simple example would be to write an intelligent software agent that could look for key words or conditions and then use those entries to automatically update a Twitter or Facebook account.

For example, an important comment on chat might be that a medevac helicopter is down for maintenance. Certainly the helicopter maintenance officer would report that in chat, but if you weren't logged onto chat, you might never know. A tweet on a Twitter account is more permanent. Imagine that when the maintenance officer types this update into chat he precedes the update with "Tweet:"; this signals the software agent to automatically tweet everything after the colon. Now you have instantaneous updates for chat users and for users who are not in chat. Similarly, a software agent can scan for updates to a wiki and submit a tweet, chat message or SMS to notify all interested users.

Lessons Learned

Disaster relief efforts in Haiti provided a unique opportunity for data sharing among many disparate users. This unprecedented sharing of information validated some of our preconceptions about communications and taught us some new lessons. In the most succinct form, here are the winners and losers:

Winners

- Vendor agnostic open-standard products;
- Wikis;
- Jabber/XMPP chat;
- Social media;
- Low bandwidth applications; and
- Cell phone applications.

Losers

- Traditional military radio communications;
- Proprietary solutions;
- Bandwidth intensive applications;
- Bloated PowerPoint presentations;
- Large graphics files; and
- PKI-enabled e-mail.

I stopped at one of the larger field hospitals run by the U.S. Army that also included several NGOs. As I toured the hospital, I asked the colonel in charge about the hospital's communications capability. She beamed and showed me a makeshift system supported by a BGAN terminal with eight computers on a network. In the makeshift command post, the following applications were on the screen: two Gmail accounts used by watchstanders, one FORSCOM Web-based chat, one Web browser with Web-based chat, one Google Groups account, three Facebook accounts, one Twitter account and one Skype account. That hybrid of capabilities is a lesson learned and model for ad hoc communication and collaboration supporting future HA/DR operations. CHIPS

Lt. Cmdr. Breuer is serving as the N6 on the COMDESRON 40 staff located at Naval Station Mayport, Fla.

Knowledge Management in Haiti Humanitarian Assistance/ Disaster Relief Operations

By Cmdr. Rod Burley

Haiti (March 16, 2010) An aerial view of Port-au-Prince shows the proximity of homes, many damaged Jan. 12 in a 7.0-magnitude earthquake and subsequent aftershocks. Many U.S. and international military and non-governmental agencies are conducting humanitarian and disaster relief operations as part of Operation Unified Response. An estimated 230,000 Haitians died as a result of the earthquake, according to figures released by the U.S. Census Bureau June 28, 2010. U.S. Navy photo by Senior Chief Mass Communication Specialist Spike Call.

In January, Commander, Carrier Strike Group Two (CCSG-2) deployed quickly to U.S. Naval Station Guantanamo Bay (GTMO), Cuba, with follow-on movement to Haiti in support of Operation Unified Response (OUR) when Haiti experienced unprecedented destruction caused by the Jan. 12, 2010, 7.0-magnitude earthquake that devastated its capital city, Port-au-Prince.

Non-governmental organizations, U.S. military, government agencies, coalition partners and various other groups quickly responded to provide much needed relief. But challenges occurred immediately when the various disparate organizations tried to share information to coordinate and synchronize relief efforts.

The challenge CCSG-2 faced was deciding which network would work best to exchange information between the Navy and other organizations providing assistance. It was important to select a Web system that would ensure a seamless flow of information to everyone involved in the relief operations.

The Collaboration at Sea integrated Web-based management system on SIPRNET is normally used for strike group operations. However, this wasn't a typical strike group operation. The audience and partners for information sharing would go well beyond Navy units for the humanitarian assistance and disaster relief mission (HA/DR). Support would also be needed for other government agencies that work mostly on unclassified sites, and for NGOs who do not have access to the .mil and .gov domains.

Determining the target audience for information sharing proved to be key to CCSG-2's success. In this case, CCSG-2 had to consider both the military audience and the NGOs, such as Global Aid Network and United Charities International. Several options were considered, including the InRelief Web portal and All Partners Access Network (APAN), as well as various Navy-sponsored portal sites.

CCSG-2's first contact for assistance was with the InRelief Web portal team. The InRelief team established a portal page for posting content that provided collaboration tools needed to work with government and NGOs alike. Unfortunately, due to time constraints, initial testing determined the tool was not flexible enough to meet CCSG-2's needs, nor was the setup mature enough to allow a knowledge manager (KM) the functionality to quickly and easily manipulate the format and structure of the site without the need for reach-back support which was not feasible due to limited bandwidth.

The reach-back requirement was one of the biggest concerns. The tool allowed for Web gadgets, which are mini-applications, and file repositories to be added to the main part of the site, but it didn't allow changes to the sidebars, header and other areas of the page.

Based on lessons learned from relief operations following Hurricane Katrina, it was likely that operational requirements would change quickly and frequently; thus, functionality resident with KM boots on the ground was essential.

After working with the U.S. Second Fleet public affairs officer and KM, it was determined that CCSG-2 would put this site in its back pocket for future analysis and use. It was then that CCSG-2 learned that U.S. Fourth Fleet was using the APAN as its collaboration tool of choice.

Last minute notification about APAN failed to provide CCSG-2 with enough time to review the networking tool prior to arriving in Haiti so CCSG-2 departed Norfolk, Va., without a collaboration site. An account was established on APAN upon arriving in GTMO. However, after reviewing the site, it was determined that for military operations this would not be a good place to post CCSG-2's unclassified, but sensitive documents, like daily situation reports and battle rhythms.

APAN site users were mainly NGOs and citizens of all nations who blogged and posted personal accounts of their experiences on the ground. NGOs used APAN to coordinate relief operations. But a place was needed to post unclassified but sensitive documents for U.S. military

components to access and push/pull data as needed.

While in GTMO, Combined Task Force 48 (CTF 48), the Joint Logistics Hub, which tracked all material and personnel going to Haiti via air and sea, was established. Once established, search began for a network site. These efforts were hampered temporarily due to having to relocate to another part of the island a few days after arriving. After reestablishing the command center, a search for commercial sites and military portals resumed.

In the final analysis, it was decided to use the U.S. Southern Command headquarters' Sharepoint portal as CCSG-2's host. This was the most logical choice because USSOUTHCOM's portal hosted the Joint Task Force (JTF) Haiti commander and already contained numerous important documents.

USSOUTHCOM's Sharepoint portal is a Common Access Card (CAC)-enabled site that allowed for posting of unclassified but sensitive operational data, and it hosted links to both the APAN and InRelief sites used by the NGOs. Unfortunately, users must have a CAC to access the site which left most NGOs without access.

After several days of analysis and posting documents, determining the command battle rhythm, and beginning to break down the various processes leading to command decisions, CCSG-2 leadership departed for Haiti with a few staff members. The remainder of the staff stayed in GTMO until personnel reliefs arrived before proceeding to Haiti.

CCSG-2 became the Joint Force Maritime Component Commander (JFMCC)/CTF 41 after arriving in Haiti. A Combined Task Group 41 and CTF 48 portal presence was created on the USSOUTHCOM portal. Professional webmasters assigned to the USSOUTHCOM Theater Network Control Center were extremely helpful in establishing this additional site. They went out of their way to help the JFMCC get reestablished quickly to begin posting critical operational documents to the JFMCC site.

Strong coordination had to take place between the JFMCC, JTF Haiti command cells and USSOUTHCOM personnel to ensure that the appropriate data were being published in a timely manner to be relevant to operations.

Careful analysis of the data posted ensured that information wasn't duplicated. An update to operational tasking (OPTASK) information management (IM) was submitted to include JFMCC's portal site so that all of the operational participants knew where to find posted data.

PORT-AU-PRINCE, Haiti (March 16, 2010) Lt. Col. David Doyle, left, commanding officer of the 2nd Battalion, 325th Airborne Infantry Regiment of the 82nd Airborne Division, briefs Lt. Gen. Ken Keen, commanding general of Joint Task Force Haiti, on the internally displaced persons camps that are in his area of responsibility.

U.S. Navy photo by Senior Chief Mass Communication Specialist Spike Call.

As operations continued, a knowledge management working group developed between personnel at USSOUTHCOM and JTF Haiti. Through these working groups, there was much discussion about the use of APAN as the primary collaboration tool. Much of the roadblock to its use is the fact that it is open to everyone, and there is currently no means available to post "For Official Use Only" documents. Without a foreign disclosure officer present, it took a great deal of time for the disclosure process so that documents could be posted for the use of NGOs.

There was also much discussion about who the customer base was during this operation and the relevant information needed for their usage. JTF Haiti used APAN as a secondary means of posting data and providing important links to other collaboration sites. Almost two months into the operation, JTF Haiti made the JTF Haiti-APAN portal the default Web page on its network browser in an attempt to get troops to become more familiar with it.

Maintaining a presence on an operational portal with releasable data available to a public NGO portal would be the ultimate choice for success during HA/DR missions. Ensuring the two are linked, so that individuals who need the data can get to it easily and efficiently, will help facilitate its use. When multiple organizations try to establish separate portals it creates confusion as to where to find data and increases the chances of multiple postings with no version control.

To the maximum extent possible, if forced to use multiple portals for "need to know" issues, organizations should try to link features and functions from one to the other, but keep one authoritative repository for specific information and ensure those business rules are codified in the OPTASK IM. If there is not a required feature present on the portal an organization is using, rather than bringing in yet another portal, the organization should try to pull that feature in through links, feeds or Web parts.

Knowledge management operations were certainly a challenge for KMs at the task force and subordinate levels. Natural disasters can occur at any time in any area of responsibility requiring immediate HA/DR response. Being flexible enough to work around obstacles to communications is invaluable for meeting mission needs and ensuring success. CHIPS

InRelief
www.inrelief.org

APAN
http://community.apan.org

USSOUTHCOM
https://schqanon.southcom.mil

Cmdr. Rod Burley is the N6A/KM for Commander, Carrier Strike Group Two.

Talking with Capt. Peter Driscoll Jr.
Commodore, Destroyer Squadron 7

Capt. Peter Driscoll Jr.

Destroyer Squadron 7's mission is to conduct prompt, sustained combat operations at sea in support of U.S. national policy. The DESRON 7 commodore serves as the administrative commander, or immediate superior in command, of the ships assigned to the squadron. Each ship is equipped to operate in a high-density, multi-threat environment either independently or as an integral member of a carrier strike group or expeditionary strike group.

Capt. Driscoll hosted a group of employees from the Space and Naval Warfare Systems Command acquisition and engineering teams in April to help foster a continuing dialogue between the fleet and fleet support elements. Driscoll called such engagements mutually beneficial, and he explained that face-to-face discussion promotes better understanding of fleet interoperability and communications needs.

Q: *You hosted a number of SPAWAR employees in April for overnight operations aboard USS Gridley and a tour of USS Stockdale. Why?*

A: Every time I have done this it's been rewarding and effective because both parties benefit — whether it's bringing civilians from the community on board for a tour or exchanges with foreign navies, or bringing specialists from within the Navy who have not operated on a given platform.

We're used to working with the fleet installation teams and the in-service engineering agents, many of whom are retired Navy or military, and in some cases, spend more time at sea than they do in the office. Those folks engage with the fleet day in and day out. But many of the engineering folks are in positions where they're not required or given the opportunity to be shipboard, and there are other members of the organization who are in support functions.

Q: *Why was it important to have a diverse group of SPAWAR employees tour USS Stockdale?*

A: … We do not have many direct interfaces with the acquisition community, and, in some cases, that's good. Basic level research and development needs to happen on its own and not be disturbed by the gyrations of changing operational requirements and the 'now-now-now' of topics.

At the same time, these ships have very compressed schedules and we're trying to become increasingly more efficient and cost effective, and they only have so much time to train. We operate in separate lanes; there are some interfaces, but at the operator level, it's the fleet installation teams or the technical support folks who touch us directly.

Q: *Can you discuss technological related highlights, challenges or successes during your deployment?*

A: Our strike group returned in October 2009 from a 5th Fleet deployment, which was our second deployment in a little over a year. The carrier's and the embarked air wing's focus were largely on Operation Enduring Freedom and supporting U.S. and coalition troops on the ground.

The DESRON 7 staff had a unique deployment in that we served as Combined Task Force Iraqi Maritime. We were embarked aboard oil terminals in the northern Arabian Gulf, and we worked with the Iraqi navy and marines to provide security for those terminals through which all the Iraqi oil flows to market. That's about 1.6 million barrels a day, so it was a very intense, interesting mission.

The rest of the squadron was spread across the 5th Fleet AOR (area of responsibility), covering the full spectrum of missions including counterterrorism; counterpiracy off the Horn of Africa; maritime interdiction in the Red Sea; carrier escort in the Arabian Sea; maritime security operations; and a host of others.

One of the challenges in this type of disaggregated operation is executing command and control, day in and day out, with forces that are thousands of miles apart. It has to be persistent, and it has to be reliable. There is a significant demand on SATCOM because line-of-sight just won't get you there. There are big demands on all of our reach-back systems because now these ships are operating independently far from logistics support. Long-distance technical support, reach-back, logistics, and tactical command and control all became that much more important.

The readiness was good, but the challenge we had in the strike group, as we have elsewhere in the fleet, was variations between ships in weapons systems and data link systems. This is a continual management challenge as we develop new software releases and new baselines: to understand where there are interoperability challenges, what the workarounds are, and how they might impact you tactically.

Q: *As a commander responsible for many ships, how much do you depend upon communication to be operationally effective?*

A: I have a huge dependency on chat, e-mail and SATCOM, and that dependency is only growing. As we find more and more applications to enhance either our warfighting effectiveness or our readiness, we put an increasing demand on the bandwidth. Then you guys [SPAWAR engineers] find a way to expand that bandwidth.

The big challenge within the carrier strike group is to design applications that work across the strike group and up and down in echelon. So as we outfit the fleet headquarters and carriers and large-deck amphibs, we must also be able to deploy the same applications on the cruisers, destroyers and frigates.

The more applications that are Web-based reach-back, the more those ships are disadvantaged by not being able to get at the data if there's a disruption in

service. Knowing how to optimize the pipes to get the information is becoming more important.

Our ships have fewer people than even three years ago when I was in command. So you have fewer people responsible for more systems with less depth on the bench. One way to leverage things is by reach-back, but what if the network isn't working? There will always remain a core level of knowledge and a reliability you have to have; otherwise, the operational risk is too high. As you push manpower down and technical complexity up — there's a trade space there.

Another factor is that we have to understand interoperability implications because we have different versions and baselines in play within a distributed force. We have to be prepared to operate within an expeditionary strike group forward, an East Coast carrier strike group and a West Coast carrier strike group, or a destroyer in one group plugging into another. I think, in general, we do that well, because it's a standing requirement to combine seamlessly as a group.

PACIFIC OCEAN (Oct. 16, 2009) The guided-missile destroyer USS Gridley (DDG 101), right, and the guided-missile destroyer USS Howard (DDG 83) transit in the Pacific Ocean. Guided-missile destroyers support carrier, expeditionary and surface strike groups. The Ronald Reagan Carrier Strike Group is on a routine deployment operating in the U.S. 3rd Fleet area of responsibility. U.S. Navy photo by Mass Communication Specialist Seaman Oliver Cole.

DESRON 7 is currently part of the USS Ronald Reagan Carrier Strike Group. While deployed, the commodore serves as sea combat commander, reports to the strike group commander, and is responsible for overall planning and execution of surface and subsurface warfare, maritime interdiction operations, mine warfare and force protection.

DESRON 7 is composed of the following ships: USS Benfold (DDG 65), USS Decatur (DDG 73), USS Gridley (DDG 101), USS Halsey (DDG 97), USS Howard (DDG 83), USS Stockdale (DDG 106) and USS Thach (FFG 43).

Q: *What fleet-related trends do you see over the next three to five years that acquisition commands and resource sponsors should be aware of?*

A: [We need] a way to maximize what we have now, particularly on the destroyers and frigates. The continued disaggregation of our forces to meet demand signals for naval presence across the spectrum requires us to have connectivity of more and more seamless data connections.

During my career, our administrative and logistics networks have become operational. We have as many programs on the NIPRNET that we rely on for mission success as we do on the SIPRNET. Our pay and personnel, and a variety of other applications, are on the NIPRNET, so those are now tied into the mission and are operational in nature. Our data links and data transfer systems have now become fire control networks, so the quality of data that's required, and the latency of that data has to be persistent.

We have to have networks that are robust and that degrade gracefully. We can't have any single point of failure within the network or else all your combat power just becomes potential energy. We've been able to harness an awful lot of capability, but we need to be able to manage the associated vulnerability.

Q: *Any final thoughts?*

A: Fundamentally, the fleet appreciates [SPAWAR's] support because we could not operate without that support. The operational environment is getting increasingly complex and time sensitive, in terms of the decision space and the number of places across the battlespace.

The Navy and Marine Corps operators are brighter and more highly motivated than ever. They're probably younger than ever with greater responsibility over a larger, more complex portfolio. But they do not have the breadth or depth of experience that your engineers have that's been acquired over years in a complicated field.

We talked before about the importance of reach-back, but that assumes connectivity. So we have to have that, or another way to provide that support the old-fashioned way. …[W]e should leverage smart systems, which send data packets for people to analyze back on the beach, or …send engineering logs back to people on the beach to analyze, instead of requiring Sailors on board to do that. [But] we still have to have the ability to pick up the phone and send a message for someone to talk to us because we don't have another option.

The acquisition and requirements folks need to have an understanding of the environment the operator is working in, [and] … the mission sets they're trying to do today.

And the operators need to understand that when they put a demand signal on the system it has an implication in terms of 'do you want to get it fast, do you want to get it right, do you want the perfect solution or is 80 percent good enough?'

Capt. Driscoll was interviewed by Steven A. Davis from the Corporate Communications office of the Space and Naval Warfare Systems Command.

Team SPAWAR Provides Critical Maritime Technologies for Trident Warrior 2010 Maritime Domain Awareness Experimentation

By Andrea Houck

The Space and Naval Warfare Systems Command (SPAWAR) participated in Trident Warrior, an annual sea trial sponsored this year by U.S. Third Fleet and directed by U.S. Fleet Forces Command. Team SPAWAR, including program executive offices and systems centers, provided technology oversight for the experimentation's maritime domain awareness (MDA), information transport, command and control, information operations and other systems.

Navy Capt. Carl Conti, Fleet Forces Command director of experimentation (N9E), explained that Trident Warrior experimentation "provides an opportunity to introduce new technologies to the Sailor, refine them and make them better. It [experimentation] maximizes results, minimizes costs and saves the taxpayer a lot of money."

Trident Warrior's focus on at-sea experimentation expands capabilities by consolidating multiple streams of information into a secure environment so the warfighter can make the best tactical decision while in theater.

The information systems experimented and tested during Trident Warrior range from transmitting information between ships that are geographically dispersed, to increasing the volume of information that can be transmitted, and overall increases in the speed to respond to an emerging situation.

"The more data we can receive and transmit, the better we are and the more time we save," Conti said.

SPAWAR's Expanded Maritime Interception Operations (EMIO) Wireless device, for example, was tested during Trident Warrior 2006 and 2007. Conti noted it received a great deal of support from the military utility assessment.

EMIO Wireless now plays a key role in MDA by allowing vessel interdiction crews to automatically transmit identification information from a suspicious vessel to a Navy ship without having to manually pass the information back and forth. Prior to EMIO deployment, boarding teams might have to sail back and forth between the boarded vessel and their home ship to check databases. This process was not only time-consuming, but each transit added to the threat to naval personnel.

Using EMIO Wireless, the ship can transmit collected information to shore-based network operations centers to verify identities of interdicted crew members. Use of the Automatic Identification System allows the services to identify commercial vessels and, when paired with intelligence systems, the ability to detect anomalies and pirates.

The MDA focus area provides a balance between technology and procedural guidance to achieve increased situational awareness at the operational level of understanding. The All Partners Access Network is an enabling technology and was part of the experimentation. APAN is designed to enhance MDA and provides maritime partners a secure information sharing environment accessible from anywhere on the Internet. Dan Dunaway, MDA focus area lead, demonstrated APAN and said Team SPAWAR is heavily involved in the data sourcing for APAN.

Key experimentation this year also entailed testing communication alternatives in the event that satellite communications are denied. Early Consolidated Afloat Networks and Enterprise Services (CANES) capabilities are continually introduced, following in the footsteps of the Application Integration Early Adopter Initiative (AIEAI) installed earlier this year on USS Abraham Lincoln (CVN 72), which experienced significantly improved connectivity, bandwidth and network availability during January sea trials.

Dan Dunaway, MDA focus area lead, demonstrates the All Partners Access Network during Trident Warrior. Team SPAWAR is heavily involved in the data sourcing for APAN. Photo by Andrea Houck.

AIEAI, coordinated by the Tactical Networks Program Office (PMW 160) part of Team SPAWAR, represents a major shift in how software applications are employed aboard ships. By establishing a common computing environment, combat systems information officers can better manage hardware virtualization, software updates and patches, information security and standardized training.

According to Lt. Cmdr. David White, Lincoln's combat systems information officer, the enhanced network availability and capability had a significant impact on the crew's effectiveness.

Additionally, Trident Warrior examined humanitarian assistance and disaster relief efforts by providing commonly accessible tools that allow military, other government organizations, coalition partners and non-governmental organizations to share information when responding to a crisis.

When asked about the greatest benefits of Trident Warrior, Capt. John Funk, USS Bonhomme Richard's (LHD 6) commanding officer, said, "It's getting the engineers and the Sailors to collaborate together for technology development. At the end of the day, it's not all about the equipment, but it's about the Sailor and having a well-trained crew that's able to appropriately react."

This is the third time the amphibious assault ship Bonhomme Richard has participated in the Trident Warrior series of at-sea experimentation. CHIPS

Follow Team SPAWAR on Facebook at: www.facebook.com/spaceandnavalwarfaresystemscommand or Twitter at http://twitter.com/SPAWARHQ.

Andrea V. Houck is a communications specialist with the Space and Naval Warfare Systems Command.

NMCI Recognized by CIO Magazine as CIO 100 Award Honoree

International Data Group's CIO magazine announced June 1 that the Department of the Navy's (DON) Navy Marine Corps Intranet is a 2010 CIO 100 recipient. This recognition is based on NMCI's advancements in multi-layered Information Assurance (IA) capabilities and proven cyber-readiness due to the upgrade of classified services that meet the command and control (C2) support requirements of the DON.

The 23rd annual award program recognizes organizations around the world that exemplify the highest level of operational and strategic excellence in information technology.

"This year's CIO 100 awards draws well-deserved attention to companies that are not only innovating with IT but creating genuine business value as well," said Maryfran Johnson, editor in chief of CIO magazine and events. "These winning companies and their IT organizations are an inspiration to businesses everywhere."

The CIO 100 recognizes NMCI for the enterprise-wide IT advancements in IA and computer network defense capabilities that have enabled the DON to maintain a high level of security across the enterprise.

To consolidate and ensure network security, NMCI reduced the number of legacy applications migrated into the enterprise network and provided an improved environment to ensure their security accreditation and subsequent safe operation. NMCI reduced the number of legacy applications on the network from 33,000 to 9,000 approved applications. Today, more than 744 legacy networks have been transitioned.

Additionally, NMCI has evolved to meet expanded Navy requirements in the area of operational support for the fleet and C2 by upgrading the level of its classified services, providing greater capabilities for hosting C2 applications, agility in responding to fleet operational commanders, and providing high performance and security.

One of the strategic accomplishments was the successful implementation of the Maritime Operations Centers. MOC capabilities include a full range of military operations and enhanced response level for services both at the classified and unclassified levels, providing voice, video and data. Each of the MOCs are enabled to host approximately 20 C2 applications used to support and enhance performance of the fleet mission.

"NMCI is honored to be counted among the 2010 CIO 100 award winners," said Capt. Scott Weller, program manager for NMCI/ONE-Net. "This award recognizes the innovative approaches that the Navy Marine Corps Intranet has implemented as the first-of-its kind unified, flexible and functional IT platform that has helped the DON move to secure net-centric operations — business to battlespace. Today, NMCI is a stable, flexible, cost-effective, and most of all, secure IT platform for more than 700,000 Sailors, Marines and civilians in the continental United States, Hawaii and Japan. NMCI, with the prime vendor — HP, built NMCI into the largest intranet in the world — a massive transformation effort."

The NMCI has become the largest intranet in the world, connecting nearly 700,000 users on more than 360,000 workstations and laptops in more than 3,000 locations from major bases in the United States and Japan to single-person offices such as recruiting stations. NMCI has 24/7 enterprise level service with four Network Operations Centers, 52 server farms and three service desks.

NMCI's security posture is one of the strongest in the DON. It is the only Department of Defense network to have completely implemented and enforced the DoD cryptographic logon (CLO) mandate. The network has been able to quickly adapt to meet new cyber threats and meets Joint Task Force–Global Network Operations security standards. CHIPS

The recipients of this year's CIO 100 award were selected through a three-step process. First, companies submitted an online application detailing their innovative IT and business initiatives. Next, a team of judges reviewed the applications in depth, looking for unique practices and substantial results. Finally, CIO editors reviewed the judges' recommendations and voted on the final 100. Once the top 100 honorees were selected, several honorees were chosen to receive an additional special award. The recipients of this special award will be revealed at the CIO 100 awards ceremony at the Terranea Resort in Rancho Palos Verdes, Calif., Aug. 24 at the conclusion of the 12th annual CIO 100 Symposium® and Awards Ceremony.

NMCI Program Office's Jennifer Freed Named Women in Technology's 2010 Unsung Hero

Jennifer Freed

The NMCI Program Office is pleased to announce that Jennifer Freed, NMCI service delivery integrated product team lead, is the winner of a 2010 Women in Technology Leadership Award. Ms. Freed received the Unsung Hero Award for her unyielding dedication to improve the NMCI.

Ms. Freed is responsible for the end-to-end delivery of multiple strategic initiatives that have helped transition more than 700,000 DON personnel at 3,000 sites to NMCI. Most recently, she led NMCI's support of the DON's Haiti relief efforts by working with the supporting commands to expand the network and IT infrastructure to increase capabilities to those on the ground.

"Jennifer is driven, goal-oriented, and always puts the operational requirements of the United States Navy first. Her boots on the ground leadership of the NMCI recovery efforts after the earthquake in Haiti and the flood in Millington, Tennessee are two recent examples of her dedication and expertise," said Capt. Scott Weller, program manager for the NMCI and ONE-Net. "She does this without compromising her 'day job' that includes the smooth deployment of nearly 100,000 new laptop and desktop computer workstations each year."

"Receiving the Women in Technology's Unsung Hero award is truly an honor. It is wonderful to be recognized as having an impact on NMCI and my team. I am continually grateful to be able to come to work every day and do something that I love for an organization and mission that I believe is vitally important to the Department of Navy," Ms. Freed said. CHIPS

For more information, contact public affairs officer for PEO EIS at (703) 298-9690.

Trident Warrior 2010 Leads the Way in Maritime Experimentation

TW is designed to focus on the at-sea technical experimentation of more than 100 critical maritime technologies

By Robert Pursell

A team of experimenters, planners, data collectors and researchers gathered in San Diego, Calif., in June for the execution phase of Trident Warrior 2010, which is designed to validate advanced technology concepts when it comes to maritime experimentation of new technologies for the fleet.

TW10 is an annual sea trial event sponsored this year by Commander, Third Fleet and directed by U.S. Fleet Forces Command (USFF). Yearlong planning culminates with at-sea experimentation of more than 100 critical maritime technologies, as well as the development of new or enhanced doctrine and processes to aid maritime forces. The execution phase of TW10 was conducted ashore at commands located in San Diego, other California locations and Hawaii, and at sea on ships in the Southern California and Hawaiian areas of operation. This year's exercise differs from past Trident Warrior exercises because TW10 experimentation integrated with the 3rd Fleet–sponsored Rim of the Pacific 2010 (RIMPAC 10) exercise in the Pacific Ocean, to leverage the mutual use of networks, technologies, scenarios and platforms.

Navy Capt. Carl Conti, USFF director of experimentation, said the purpose of TW10 is to look at technologies and procedures and accelerate the process of getting them to the warfighter, sometimes, in as little as 18 months.

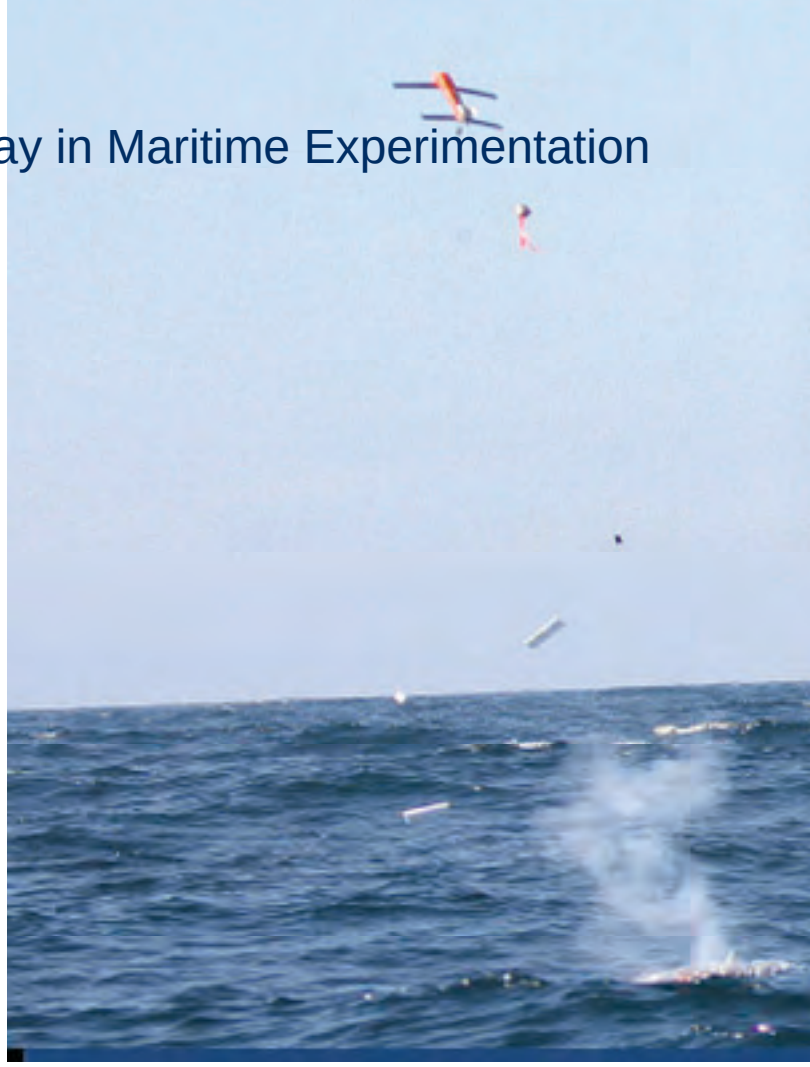
"We're exploring the art of the possible," he said. "Trident Warrior tests emerging technologies, tactics, techniques and procedures that increase the capability of the warfighter. We identify the problems that challenge warfighters in areas, such as maritime situational awareness, and once we identify those, we'll find solutions and get those into the hands of the warfighter as soon as possible. Trident Warrior is the venue we use to validate the effectiveness of those new solutions."

TW10 is a team endeavor; participation includes: 3rd Fleet, USFF, Space and Naval Warfare Systems Command, the Naval Postgraduate School, and ships and multiple aircraft from the U.S. Navy, U.S. Coast Guard and U.S. Air Force. Program executive offices and systems centers also provide technical and personnel support. Multinational participation includes: Australia, Canada, New Zealand, the United Kingdom, the Republic of Korea, the Republic of Singapore, France and Chile.

Conti said that having such a diverse group of participants can make a tremendous impact on the global maritime environment.

"Trident Warrior enables representatives from the defense industry, academia, government, DoD and partnering nations to come together to find these solutions. This builds relationships and will improve our ability to operate, communicate and fight effectively together during real-world military operations, humanitarian assistance and crisis responses."

TW10 assessed land and sea-based technologies organized into specific focus areas including: networks; coalition interoperability; information operations; command and control; intelligence, surveillance and reconnaissance; electronic warfare/fires; cross-domain solutions; information transport; and maritime domain awareness.



The deployment of the Submarine Launched Unmanned Aircraft System (UAS). This capability is designed for collection of intelligence, surveillance and reconnaissance in a complex littoral environment. Trident Warrior analysis determined if the submarine could successfully launch the UAS, control it and determine if the data sent back was sufficient to identify a potential target.

"This experiment is important because it allows us to take existing and emerging technologies to sea, put them through rigorous tests, and see what works and what doesn't so we can learn those lessons and make the appropriate changes," said TW10 director Cmdr. David Varnes.

One capability that TW10 assessed is called Autonomous Maritime Navigation which essentially allows a boat to steer itself. The high-tech software turns a manned vessel into an unmanned surface vessel (USV) with sophisticated sensors that can be programmed to conduct reconnaissance and surveillance during MDA missions using a combination of X-Band radar, stereo cameras, a global positioning system, an inertial measurement unit, a second camera array, and a marine VHF-based automatic identification system. TW10 experimented with two of these USVs to see how they performed together, looking at their agility, portability and flexibility.

TW10 experimented with another unmanned technology

known as Submarine Launched Unmanned Aircraft System (UAS). As part of the deployment of the Submarine Over the Horizon Organic Capabilities system, the Submarine Launched UAS utilized the submerged submarine's on-board trash disposal unit to perform an underwater launch of a canister containing a small Switchblade unmanned aerial vehicle. The system is designed for collection of intelligence, surveillance and reconnaissance in a complex littoral environment. The UAV is then controlled by the submarine's combat control system to investigate possible high value targets and identify the location to relay this information back to the submarine's weapons control system for action. TW10 sought to determine if the submarine could successfully launch the UAV, control it, and determine if the data sent back was sufficient to identify a potential target.

Maritime trafficking is another mission area that TW10 addressed while evaluating the Signals Warfare Maritime Electromagnetic Dominance capability. SWARMED has potential to provide the ability to detect small craft used for illicit drug smuggling, migrant trafficking and piracy. Typically, these vessels try to operate "under the radar" and are difficult to detect using traditional identification systems and methods.

TW10 assessed SWARMED's ability to detect rogue vessels based on their electromagnetic signature. The National Reconnaissance Office initially collected a range of data from four boats, including a self-propelled semi-submersible vessel, known as Pluto, pier side to determine the electromagnetic signature for each boat. This information served as the baseline for comparison with data collected from the same boats at sea in a realistic operational environment.

Surface and subsurface sensors on three different boats collected water sensor and ground truth data against target boats at different courses, speeds, headings and target aspects. Ground truth is a term used to capture the importance of verifying targeting data. In remote sensing, this is especially important to relate image data to real features and materials on the ground and in the maritime environment. Key electronic signatures were identified and several terabytes of data were collected for analysis.

TW10 also looked to the air for some of its experiments, such as with the Battlefield Airborne Communications Node (BACN) Intra-Flight Data Link (IFDL) Subsystem (BIS). BIS was developed in response to a warfighter requirement to share F-22 advanced sensor information with conventional fighter and operations centers. This low probability of detect/low probability of intercept communications system provides the data exchange between the fifth generation F-22 Raptor's Intra-Flight Data Link and various Link 16 air and ground participants, including fourth generation fighter aircrafts.

TW10 assessed the potential warfighting gains that tactics employed by BIS could offer against air and maritime surface threats. The culminating event included eight Hornets and two Raptors facing 16 opposing force aircraft in an electronic attack environment.

Lessons from earlier Trident Warriors have directly benefited the fleet. A number of the initiatives that were tested have been fielded aboard the ships that participated in Trident Warrior as "leave behinds," and the results of other initiatives have accelerated the procurement process to speed this technology to the warfighter.

"That's what we're trying to do here, find ways to use what we have more effectively, as well as trying to do it faster, because just going out and buying things is not necessarily the best way to do business," Conti said. "So, [we are] trying to find ways to make it faster, cheaper, better in hopes of saving some time, and more importantly, saving lives." CHIPS

Follow U.S. Fleet Forces Command and Commander, U.S. Third Fleet on Facebook or Navy News at www.navy.mil.

Robert Pursell provides support to U.S. Fleet Forces Command, Concept Generation/Concept Development (N9).

The Signals Warfare Maritime Electromagnetic Dominance (SWARMED) capability monitors small craft used for illicit drug smuggling, migrant trafficking and piracy. TW10 assessed whether the tracking system could collect information on small craft and archive that information for operational use in classifying small craft as potential threats.

The TW10 experiment control room, aboard USS Bonhomme Richard, is the nerve center for TW10 where experimenters, planners, data collectors and researchers track the many experiments within TW10.

Enterprise Software Agreements

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.

Additionally, the ESI was incorporated into the Defense Federal Acquisition Regulation Supplement (DFARS) Section 208.74 on Oct. 25, 2002, and DoD Instruction 5000.2 on May 12, 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 website at www.esi.mil/.

Software Categories for ESI:

Asset Discovery Tools

Belarc

BelManage Asset Management – Provides software, maintenance and services.

Contractor: ***Belarc Inc.*** (W91QUZ-07-A-0005)

Authorized Users: This BPA is open for ordering by all Department of Defense (DoD) components and authorized contractors.

Ordering Expires: 30 Sep 11

Web Link: https://chess.army.mil/ascp/commerce/contract/ContractsMatrixView.jsp

BMC

Remedy Asset Management – Provides software, maintenance and services.

Contractor: ***BMC Software Inc.*** (W91QUZ-07-A-0006)

Authorized Users: This BPA is open for ordering by all Department of Defense (DoD) components and authorized contractors.

Ordering Expires: 23 Mar 15

Web Link: https://chess.army.mil/ascp/commerce/contract/ContractsMatrixView.jsp

Carahsoft

Opsware Asset Management – Provides software, maintenance and services.

Contractor: ***Carahsoft Inc.*** (W91QUZ-07-A-0004)

Authorized Users: This BPA is open for ordering by all Department of Defense (DoD) components and authorized contractors.

Ordering Expires: 14 Nov 10

Web Link: https://chess.army.mil/ascp/commerce/contract/ContractsMatrixView.jsp

DLT

BDNA Asset Management – Provides asset management software, maintenance and services.

Contractor: ***DLT Solutions Inc.*** (W91QUZ-07-A-0002)

Authorized Users: This BPA has been designated as a GSA SmartBUY and is open for ordering by all Department of Defense (DoD) components, authorized contractors and all federal agencies.

Ordering Expires: 01 Apr 13

Web Link: https://chess.army.mil/ascp/commerce/contract/ContractsMatrixView.jsp

Patriot

BigFix Asset Management – Provides software, maintenance and services.

Contractor: ***Patriot Technologies Inc.*** (W91QUZ-07-A-0003)

Authorized Users: This BPA has been designated as a GSA SmartBUY and is open for ordering by all Department of Defense (DoD) components, authorized contractors and all federal agencies.

Ordering Expires: 08 Sep 12

Web Link: https://chess.army.mil/ascp/commerce/contract/ContractsMatrixView.jsp

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.*** (W91QUZ-04-A-0002); (813) 612-7352

Ordering Expires: Upon depletion of Computer Hardware, Enterprise Software and Solutions (CHESS) inventory.

Web Link: https://chess.army.mil/ascp/commerce/contract/ContractsMatrixView.jsp

Database Management Tools

Microsoft Products

Microsoft Database Products – See information under Office Systems on page 57.

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 the Navy project manager.

Contractors:

Oracle Corp. (W91QUZ-07-A-0001); (703) 364-3351

DLT Solutions (W91QUZ-06-A-0002); (703) 708-9107

immixTechnology, Inc. (W91QUZ-08-A-0001); Small Business; (703) 752-0632

Mythics, Inc. (W91QUZ-06-A-0003); Small Business; (757) 284-6570

TKC Integration Services, LLC (W91QUZ-09-A-0001); Small Business; (571) 323-5584

Ordering Expires:

Oracle: 30 Sep 11
DLT: 01 Apr 13
immixTechnology: 26 Aug 11
Mythics: 18 Dec 11
TKCIS: 29 Jun 11

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://chess.army.mil/ascp/commerce/contract/ContractsMatrixView.jsp

Special Note to Navy Users: See the information provided on page 58 concerning the Navy Oracle Database Enterprise License under Department of the Navy Agreements.

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 13

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://chess.army.mil/ascp/commerce/contract/ContractsMatrixView.jsp

Enterprise Application Integration

Sun Software

Sun Products – Provides Sun Java Enterprise System (JES) and Sun StarOffice. Sun JES products supply integration and service oriented architecture (SOA) software including: Identity Management Suite; Communications Suite; Availability Suite; Web Infrastructure Suite; MySQL; xVM and Role Manager. Sun StarOffice supplies a full-featured office productivity suite.

Contractors:

Commercial Data Systems, Inc. (N00104-08-A-ZF38); Small Business; (619) 569-9373

Dynamic Systems, Inc. (N00104-08-A-ZF40); Small Business; (801) 444-0008

World Wide Technology, Inc. (N00104-08-A-ZF39); Small Business; (314) 919-1513

Ordering Expires: 24 Sep 12

Web Link:
www.it-umbrella.navy.mil/contract/enterprise/application_integration/sun/index.shtml

Enterprise Architecture Tools

IBM Software Products

IBM Software Products – Provides IBM product licenses and maintenance with discounts from 1 to 19 percent off GSA pricing. On June 28, 2006, the IBM Rational Blanket Purchase Agreement (BPA) with immixTechnology was modified to include licenses and Passport Advantage maintenance for IBM products, including: IBM Rational, IBM Database 2 (DB2), IBM Informix, IBM Trivoli, IBM Websphere and Lotus software products.

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

Ordering Expires: 02 Dec 10

Web Link: https://chess.army.mil/ascp/commerce/contract/ContractsMatrixView.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); (703) 709-4610

Ordering Expires: 22 Sep 12

Web Link: https://chess.army.mil/ascp/commerce/contract/ContractsMatrixView.jsp

Microsoft Premier Support Services (MPS-2)

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*** (W91QUZ-09-D-0038); (980) 776-8413

Ordering Expires: 31 Mar 11

Web Link: https://chess.army.mil/ascp/commerce/contract/ContractsMatrixView.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 8 to 10 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: 05 May 14
Web Link: https://chess.army.mil/ascp/commerce/contract/ContractsMatrixView.jsp

Planet Associates

Planet Associates Infrastructure Relationship Management (IRM) Software Products – Provides software products including licenses, maintenance and training for an enterprise management tool for documenting and visually managing all enterprise assets, critical infrastructure and interconnectivity including the interdependencies between systems, networks, users, locations and services.
Contractor: ***Planet Associates, Inc.*** (N00104-09-A-ZF36); Small Business; (732) 922-5300 ext. 202
Ordering Expires: 01 Jun 14
Web Link: www.it-umbrella.navy.mil/contract/planet_assoc/planetassoc.shtml

Quest Products

Quest Products – Provides Quest software licenses, maintenance, services and training for Active Directory Products, enterprise management, ERP planning support and application and database support. Quest software products have been designated as a DoD ESI and GSA SmartBUY. Only Active Directory products have been determined to be the best value to the government and; therefore, competition is not required for Active Directory software purchases. Discount range for software is from 3 to 48 percent off GSA pricing. For maintenance, services and training, discount range is 3 to 8 percent off GSA pricing.
Contractors:
Quest Software, Inc. (W91QUZ-05-A-0023); (301) 820-4800
DLT Solutions (W91QUZ-06-A-0004); (703) 708-9127
Ordering Expires:
Quest: 30 Sep 10
DLT: 01 Apr 13
Web Link: https://chess.army.mil/ascp/commerce/contract/ContractsMatrixView.jsp

Enterprise Resource Planning

Oracle

Oracle – *See information provided under Database Management Tools on page 54.*

RWD Technologies

RWD Technologies – Provides a broad range of integrated software products designed to improve the productivity and effectiveness of end users in complex operating environments. RWD's Info Pak products allow you to easily create, distribute and maintain professional training documents and online help for any computer application. RWD Info Pak products include Publisher, Administrator, Simulator and OmniHelp. Training and other services are also available.
Contractor: ***RWD Technologies*** (N00104-06-A-ZF37); (410) 869-3014
Ordering Expires: Effective for term of the GSA FSS Schedule
Web Link: www.it-umbrella.navy.mil/contract/enterprise/erp_software/rwd/rwd.shtml

SAP

SAP Products – Provide software licenses, software maintenance support, information technology professional services and software training services.
Contractors:
SAP Public Services, Inc. (N00104-08-A-ZF41); Large Business; (202) 312-3515
Advantaged Solutions, Inc. (N00104-08-A-ZF42); Small Business; (202) 204-3083
Carahsoft Technology Corporation (N00104-08-A-ZF43); Small Business; (703) 871-8583
Oakland Consulting Group (N00104-08-A-ZF44); Small Business; (301) 577-4111
Ordering Expires: 14 Sep 13
Web Link: www.it-umbrella.navy.mil/contract/enterprise/erp_software/sap_products/sap_hdr.shtml

Information Assurance Tools

Data at Rest Solutions BPAs offered through ESI/SmartBUY

The Office of Management and Budget, Defense Department and General Services Administration awarded multiple contracts for blanket purchase agreements (BPA) to protect sensitive, unclassified data residing on government laptops, other mobile computing devices and removable storage media devices.

These competitively awarded BPAs provide three categories of software and hardware encryption products — full disk encryption (FDE), file encryption (FES) and integrated FDE/FES products. All products use cryptographic modules validated under FIPS 140-2 security requirements and have met stringent technical and interoperability requirements.

Licenses are transferable within a federal agency and include secondary use rights. All awarded BPA prices are as low as or lower than the prices each vendor has available on GSA schedules. The federal government anticipates significant savings through these BPAs. The BPAs were awarded under both the DoD's Enterprise Software Initiative (ESI) and GSA's governmentwide SmartBUY programs, making them available to all U.S. executive agencies, independent establishments, DoD components, NATO, state and local agencies, Foreign Military Sales (FMS) with written authorization, and contractors authorized to order in accordance with the FAR Part 51.

Service component chief information officers (CIO) are developing component service-specific enterprise strategies. Accordingly, customers should check with their CIO for component-specific policies and strategies before procuring a DAR solution. The departments of the Navy and Army released service-specific DAR guidance for their personnel to follow. Go to the ESI website at www.esi.mil for more information.

The DON CIO issued an enterprise solution for Navy users purchasing DAR software. See the information provided on page 58 under Department of the Navy Agreements. The Department of the Army issued an enterprise solution for Army users purchasing DAR software. See the information provided on the Army CHESS website at https://chess.army.mil/ascp/commerce/contract/FA8771-07-A-0301_bpaorderinginstructions(2)_ARMY.jsp. As of this printing, the Air Force has not yet provided a DAR solution.

Mobile Armor – ***MTM Technologies, Inc.*** (FA8771-07-A-0301)
Safeboot/McAfee – ***Rocky Mountain Ram*** (FA8771-07-A-0302)
Information Security Corp. – ***Carahsoft Technology Corp.*** (FA8771-07-A-0303)
McAfee – ***Spectrum Systems*** (FA8771-07-A-0304)
SafeNet, Inc. – ***SafeNet, Inc.*** (FA8771-07-A-0305)
Encryption Solutions, Inc. – ***Hi Tech Services, Inc.*** (FA8771-07-A- 0306)
Pointsec/Checkpoint – ***immix Technologies*** (FA8771-07-A-0307)
SPYRUS, Inc. – ***Autonomic Resources, LLC*** (FA8771-07-A-0308)
CREDANT Technologies – ***GTSI Corp.*** – (FA8771-07-A-0309)
WinMagic, Inc. – ***Govbuys, Inc.*** (FA8771-07-A-0310)
CREDANT Technologies – ***Intelligent Decisions*** (FA8771-07-A-0311)
GuardianEdge Technologies – ***Merlin International*** (FA8771-07-A-0312)
Ordering Expires: 14 Jun 12 (If extended by option exercise.)
Web Link: www.esi.mil

McAfee

McAfee – Provides software and services in the following areas: Anti-Virus; E-Business Server; ePolicy Orchestrator; GroupShield Services; IntruShield; Secure Messaging Gateway and Web Gateway.

Contractor: ***En Pointe*** (GS-35F-0372N)

Ordering Expires: 16 Sep 11

Web Link: www.esi.mil

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

NIPRNET site: https://patches.csd.disa.mil
SIPRNET site: https://www.cert.smil.mil/antivirus/av_info.htm

McAfee (formerly Securify)

McAfee (formerly Securify) – Provides policy-driven appliances for network security that are designed to validate and enforce intended use of networks and applications; protects against all risks and saves costs on network and security operations. McAfee integrates application layer seven traffic analysis with signatures and vulnerability scanning in order to discover network behavior. It provides highly accurate, real-time threat mitigation for both known and unknown threats and offers true compliance tracking.

Contractor: ***Patriot Technologies, Inc.*** (FA8771-06-A-0303)

Ordering Expires: 04 Jan 11 (If extended by option exercise)

Web Link: www.esi.mil

Symantec

Symantec – Symantec products can be divided into 10 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. This BPA provides the full line of Symantec Corp. products and services consisting of more than 6,000 line items including Ghost and Brightmail. It also includes Symantec Antivirus products such as 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; and support.

Contractor: ***immixGroup*** (FA8771-05-A-0301)

Ordering Expires: 12 Sep 10

Web Link: http://var.immixgroup.com/contracts/overview.cfm or www.esi.mil

Symantec Antivirus:

Notice to DoD customers regarding Symantec Antivirus Products: A fully funded and centrally purchased DoD enterprise-wide antivirus and spyware software license is available for download to all Department of Defense (DoD) users who have a .mil Internet Protocol (IP) address.

Contractor: ***TVAR Solutions, Inc.***

Antivirus Web Links: Antivirus software can be downloaded at no cost by linking to either of the following websites:

NIPRNET site: https://patches.csd.disa.mil
SIPRNET site: http://www.cert.smil.mil/antivirus/av_info.htm

Websense (WFT)

Websense – Provides software and maintenance for Web filtering products.

Contractor: ***Patriot Technologies*** (W91QUZ-06-A-0005)

Authorized Users: This BPA is open for ordering by all DoD components and authorized contractors.

Ordering Expires: 31 Aug 11

Web Link: https://chess.army.mil/ascp/commerce/contract/ContractsMatrixView.jsp

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.*** (FA8771-09-A-0301); (703) 724-4555

Ordering Expires: 24 Sep 14

Web Link: http://esi.telos.com/contract/overview

Lean Six Sigma Tools

iGrafx Business Process Analysis Tools

iGrafx – Provides software licenses, maintenance and media for iGrafx Process for Six Sigma 2007; iGrafx Flowcharter 2007; Enterprise Central; and Enterprise Modeler.

Contractors:

Softchoice Corporation (N00104-09-A-ZF34); (416) 588-9002 ext. 2072

Softmart, Inc. (N00104-09-A-ZF33); (610) 518-4192

SHI (N00104-09-A-ZF35); (732) 564-8333

Authorized Users: These BPAs are co-branded ESI/GSA SmartBUY BPAs and are open for ordering by all Department of Defense (DoD) components, U.S. Coast Guard, NATO, Intelligence Community, authorized DoD contractors and all federal agencies.

Ordering Expires: 31 Jan 14

Web Links:

Softchoice
www.it-umbrella.navy.mil/contract/enterprise/igrafx/softchoice/index.shtml
Softmart
www.it-umbrella.navy.mil/contract/enterprise/igrafx/softmart/index.shtml
SHI
www.it-umbrella.navy.mil/contract/enterprise/igrafx/shi/index.shtml

Minitab

Minitab – Provides software licenses, media, training, technical services and maintenance for products, including: Minitab Statistical Software, Quality Companion and Quality Trainer. It is the responsibility of the ordering officer to ensure compliance with all fiscal laws prior to issuing an order under a BPA, and to ensure that the vendor selected represents the best value for the requirement being ordered (see FAR 8.404).

Contractor: ***Minitab, Inc.*** (N00104-08-A-ZF30); (800) 448-3555 ext. 311

Authorized Users: This BPA is open for ordering by all Department of Defense (DoD) components, U.S. Coast Guard, NATO, Intelligence Community and authorized DoD contractors.

Ordering Expires: 07 May 13

Web Link: www.it-umbrella.navy.mil/contract/minitab/minitab.shtml

PowerSteering

PowerSteering – Provides software licenses (subscription and perpetual), media, training, technical services, maintenance, hosting and support for PowerSteering products: software as a service solutions to apply the proven discipline of project and portfolio management in IT, Lean Six Sigma, Project Management Office or any other project-intensive area and to improve strategy alignment, resource management, executive visibility and team productivity. It is the responsibility of the ordering officer to ensure compliance with all fiscal laws prior to issuing an order under a BPA, and to ensure that the vendor selected represents the best value for the requirement being ordered (see FAR 8.404).

Contractor: ***immixTechnology, Inc.*** (N00104-08-A-ZF31); Small Business; (703) 752-0661

Authorized Users: All DoD components, U.S. Coast Guard, NATO, Intelligence Community, and authorized DoD contractors.
Ordering Expires: 14 Aug 13
Web Link: www.it-umbrella.navy.mil/contract/powersteering/powersteering.shtml

Office Systems

Adobe Desktop Products

Adobe Desktop Products – Provides software licenses (new and upgrade) and maintenance for numerous Adobe desktop products, including Acrobat (Standard and Professional); Photoshop; InDesign; After Effects; Frame; Creative Suites; Illustrator; Flash Professional; Dreamweaver; ColdFusion and other Adobe desktop products.
Contractors:
Dell Marketing L.P. *(formerly ASAP)* (N00104-08-A-ZF33); (800) 248-2727, ext. 5303
CDW-G (N00104-08-A-ZF34); (703) 621-8211
GovConnection, Inc. (N00104-08-A-ZF35); (301) 340-3861
Insight Public Sector, Inc. (N00104-08-A-ZF36); (443) 306-7885
Ordering Expires: 30 Jun 13
Web Link: www.it-umbrella.navy.mil/contract/enterprise/adobe-esa/index.shtml

Adobe Server Products

Adobe Server Products – Provides software licenses (new and upgrade), maintenance, training and support for numerous Adobe server products including LiveCycle Forms; LiveCycle Reader Extensions; Acrobat Connect; Flex; ColdFusion Enterprise; Flash Media Server and other Adobe server products.
Contractor:
Carahsoft Technology Corp. (N00104-09-A-ZF31); Small Business; (703) 871-8503
Ordering Expires: 14 Jan 14
Web Link: www.it-umbrella.navy.mil/contract/enterprise/adobe-srvr/carahsoft/carahsoft.shtml

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:
CDW-G (N00104-02-A-ZE85); (888) 826-2394
Dell (N00104-02-A-ZE83); (800) 727-1100 ext. 7253702 or (512) 725-3702
GovConnection (N00104-10-A-ZF30); (301) 340-3861
GTSI (N00104-02-A-ZE79); (800) 999-GTSI ext. 2071
Hewlett-Packard (N00104-02-A-ZE80); (978) 399-9818
Insight Public Sector, Inc. (N00104-02-A-ZE82); (800) 862-8758
SHI (N00104-02-A-ZE86); (732) 868-5926
Softchoice (N00104-02-A-ZE81); (877) 333-7638
Softmart (N00104-02-A-ZE84); (800) 628-9091 ext. 6928
Ordering Expires: 31 Mar 13
Web Link: www.it-umbrella.navy.mil/contract/enterprise/microsoft/ms-ela.shtml

Red Hat/Netscape/Firefox

Through negotiations with August Schell Enterprises, DISA has established a DoD-wide enterprise site license whereby DISA can provide ongoing support and maintenance for the Red Hat Security Solution server products that are at the core of the Department of Defense's Public Key Infrastructure (PKI). The Red Hat Security Solution includes the following products: Red Hat Certificate System and dependencies; Red Hat Directory Server; Enterprise Web Server (previously Netscape Enterprise Server); and Red Hat Fortitude Server (replacing Enterprise Server). August Schell also provides a download site that, in addition to the Red Hat products, also allows for downloading DISA-approved versions of the following browser products: Firefox Browser; Netscape Browser; Netscape Communicator; and Personal Security Manager. The Red Hat products and services provided through the download site are for exclusive use in the following licensed community: (1) All components of the U.S. Department of Defense and supported organizations that utilize the Joint Worldwide Intelligence Communications System, and (2) All non-DoD employees (e.g., contractors, volunteers, allies) on-site at the U.S. Department of Defense and those not on-site but using equipment furnished by the U.S. Department of Defense (GFE) in support of initiatives which are funded by the U.S. Department of Defense.

Licensed software products available through the August Schell contract are for the commercial versions of the Red Hat software, not the segmented versions of the previous Netscape products 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 Red Hat product to support development or operation of an application associated with the GIG, GCCS or GCSS, you must contact one of the websites listed below to obtain the GIG segmented version of the software. You may not use the commercial version available from the August Schell Red Hat download site.

If you are not sure which version (commercial or segmented) to use, we strongly encourage you to refer to the websites listed below for additional information to help you to make this determination before you obtain the software from the August Schell Red Hat download site (or contact the project manager).

GIG or GCCS users: Common Operating Environment Home Page
www.disa.mil/gccs-j/index.html
GCSS users: Global Combat Support System
www.disa.mil/gcssj

Contractor: ***August Schell Enterprises*** (www.augustschell.com)

Download Site: http://redhat.augustschell.com
Ordering Expires: 14 Mar 11
All downloads provided at no cost.
Web Link: http://iase.disa.mil/netlic.html

Red Hat Linux

Red Hat Linux – Provides operating system software license subscriptions and services to include installation and consulting support, client-directed engineering and software customization. Red Hat Enterprise Linux is the premier operating system for open source computing. It is sold by annual subscription, runs on seven system architectures and is certified by top enterprise software and hardware vendors.
Contractors:
Carahsoft Technology Corporation (HC1028-09-A-2004)
DLT Solutions, Inc. (HC1028-09-A-2003)
Ordering Expires:
Carahsoft: 09 Feb 14
DLT Solutions, Inc.: 17 Feb 14
Web Link: www.esi.mil

Operating Systems

Apple

Apple – Provides Apple Desktop and Server Software, maintenance, related services and support as well as Apple Perpetual Software licenses. These licenses include Apple OS X Server v10.5; Xsan 2; Apple Remote Desktop 3.2; Aperture 2; Final Cut Express 4; Final Cut Studio 2; iLife '08; iWork '08; Logic Express 8; Logic Pro 7; Mac OS X v10.5 Leopard; QuickTime 7 Pro Mac; and Shake 4.1 Mac OS X. Software Maintenance, OS X Server Support, AppleCare Support and Technical Service are also available.
Contractor: ***Apple, Inc.*** (HC1047-08-A-1011)
Ordering Expires: 10 Sep 11
Web Link: www.esi.mil

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: www.disa.mil/contracts/guide/bpa/bpa_sun.html

Research and Advisory BPA

Research and Advisory Services BPAs provide unlimited access to telephone inquiry support, access to research via websites 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 (N00104-07-A-ZF30); (703) 378-5697; Awarded 01 Dec 2006

Ordering Expires: Effective for term of GSA contract

Authorized Users: All DoD components. For the purpose of this agreement, DoD components include: the Office of the Secretary of Defense; U.S. Military Departments; the Chairman of the Joint Chiefs of Staff; Combatant Commands; the Department of Defense Office of Inspector General; Defense Agencies; DoD Field Activities; the U.S. Coast Guard; NATO; the Intelligence Community and Foreign Military Sales with a letter of authorization. This BPA is also open to DoD contractors authorized in accordance with the FAR Part 51.

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

Department of the Navy Agreements

Oracle (DEAL-O) Database Enterprise License for the Navy

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) 605-5659 for further review of the requirements and coverage.

This license is managed by the Space and Naval Warfare Systems Center (SPAWARSYSCEN) Pacific 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: www.it-umbrella.navy.mil/contract/enterprise/deal/oracle/oracle.shtml

Data at Rest Solutions BPA - Navy Agreement only

The DON CIO has issued an enterprise solution for Navy users purchasing DAR software. Visit the DON CIO website at www.doncio.navy.mil and search for "Data at Rest" to read the new policy. The DON awarded MTM Technologies a BPA for purchase of the DON Mobile Armor software bundle. For Navy users, all purchases of DON enterprise DAR solutions must be executed through the enterprise BPA, which can be found on the DON IT Umbrella Program website at www.it-umbrella.navy.mil. Procurement of other DAR solutions for Navy users is prohibited.

Navy Enterprise BPA for DAR Users:

Mobile Armor – ***MTM Technologies, Inc.*** (N00104-09-A-ZF30)

Web Link: www.it-umbrella.navy.mil/contract/mtm/mtm.shtml

Visit our Web sites:

www.it-umbrella.navy.mil

www.itec-direct.navy.mil

www.esi.mil

www.chips.navy.mil

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