

Interview with Rear Adm. Michael Sharp

SPAWAR Vice Commander

ASN (RDA) Chief Engineer

Acting DASN C4I/Space



The goal sounds simple enough: Provide warfighters with battlespace information that is optimally relevant, timely, accurate and usable. In reality, however, creating the architecture to align myriad frequencies, protocols and systems — all the bits and bytes that cut across platforms and warfighting missions — proves much more challenging.

It's a complex subject Rear Adm. Michael A. Sharp knows well because no matter which of the four hats he wears, questions regarding interoperability, integrated systems and capability-based acquisition are never far away.

As the Space and Naval Warfare Systems Command Vice Commander, Sharp has a vital role in developing FORCENet and network centric-capable systems for the warfighter. "FORCENet has become part of our language It is the standards and architectures that allow all of our individual programs to work together," explained Sharp, who has been Vice Commander since December 2002.

As the Chief Engineer for the Assistant Secretary of the Navy for Research, Development and Acquisition, Sharp implements capability-based acquisition for the Navy to develop systems that are born with net-centric potential. "The RDA Chief Engineer has always been looked at as an honest broker," said Sharp, who served as a nuclear attack submarine commanding officer earlier in his career. "When we're involved with an architecture, it allows us to determine what's best for the Navy — and not necessarily what's best for an individual systems command."

As the 30-year veteran prepares for retirement this fall, Sharp discussed with *CHIPS* what FORCENet development obstacles have been overcome and where capability-based acquisition is heading.

CHIPS: Could you tell us about your responsibilities in each of your assignments?

Rear Adm. Sharp: I actually wear four hats. But they're all very closely related, which is how I can manage to juggle them all. I am the third Chief Engineer for ASN (RDA), Assistant Secretary of the Navy for Research, Development and Acquisition. The first two engineers primarily operated out of NAVSEA (Naval Sea Systems Command) because they were physically located there. When I became the first SPAWAR Vice Commander to be located in Washington D.C., Secretary John J. Young, ASN (RDA), thought it would be a good fit for his chief engineer, and it's worked out very well.

The chief engineer job is focused on C4ISR. The challenge that SPAWAR has had is putting together a capabilities-based architecture. Capabilities-based products are a similar challenge for Secretary Young. We get Navy acquisitions organizations involved — NAVSEA, NAVAIR (Naval Air Systems Command), SPAWAR, MARCORSYSCOM (Marine Corps Systems Command) and NAVSUP (Naval Supply Systems Command) — but we also have to work in the joint arena because our Navy architecture must fit into the larger joint and coalition architecture. That is a mandate for FORCENet.

The chief engineer hat gives me a role in acquisition that I

wouldn't have solely as Vice Commander. Personally, it gives me the ability to operate in whatever swim lane I choose to.

The acting Deputy Assistant Secretary of the Navy position came up earlier this year when Dr. Dale Euler moved to U.S. Special Forces Command, and Secretary Young asked if I could take on that role.

It has fit quite well too because I'm looking at the specific attributes of the major command and control programs that I deal with. The focus is on how the programs fit into the acquisition and less on how they fit into the big picture of architecture development. We help develop acquisition strategy and documents, and support the PEO C4I and Space and the program offices. I'm also the Navy representative to the Base Realignment and Closure subgroup for C4I. That has given me some insight into where we are trying to go jointly.

CHIPS: When did that role come up?

Rear Adm. Sharp: I've been doing it for about a year. While I can't discuss the specifics of the deliberations, the BRAC process is based upon public law, and the Services are responding to military-value questions. The BRAC process includes measuring the capacity we have across the Services in specific capability areas — C4ISR in my case.

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Right now, each of the Services and we at SPAWAR are responding to a set of military value-based questions. We want to quantify attributes that constitute military value and decide what critical elements the Navy and the other Services will need over the next 20 years. The process will continue throughout the year, and then some time early next year each of these subgroups will work through their Office of the Secretary of Defense-led working groups and submit proposals that will eventually go to the Secretary of Defense.

The difference in this BRAC compared to the ones in the 1990s is that this round is being driven from the OSD level. Secretary of Defense Donald Rumsfeld really wants joint solutions, and while the Services are submitting their inputs, this year the process is being driven from the joint/OSD perspective.

It's an interesting process and I don't know what's going to come from it. What's also interesting is reading in newspapers and magazines what decisions are being made, because I'm on the inside and most of the articles and their conclusions aren't accurate.

CHIPS: So you're looking more at capabilities across DoD rather than specific billets or organizations?

Rear Adm. Sharp: We're looking at capabilities, but also examining capabilities-based acquisition. You can talk capabilities, but when you install it on a ship — it's still boxes and wires. You have to examine both. With BRAC, you can start with capabilities, but in the end it's still about facilities and people, and that's what makes it hard.

CHIPS: You mentioned how your roles complemented each other. How does your role as ASN (RDA) Chief Engineer complement your role as SPAWAR Vice Commander?

Rear Adm. Sharp: I'm located in Washington D.C., to represent SPAWAR at the Pentagon, the other systems commands and Services. This helps me, and I believe it helps SPAWAR stay aligned. One of the things I'm most proud of is as a motivator in the alignment we're seeing with FORCENet and NAVSEA's open architecture. This has been very successful in opening up avenues and moving toward a true alignment and a single document that not only covers the communications, command and control architectures that SPAWAR is working on but also the weapons information and management systems that NAVSEA is working on.

CHIPS: Can you talk more about your Chief Engineer role and organization?

Rear Adm. Sharp: We've developed a good skill-set in managing architectures. Anytime you put together an architecture across the Navy — NAVSEA, SPAWAR and NAVAIR — or jointly, you might get some local influence. Each systems command or Service wants to skew it toward their view. The RDA Chief Engineer has always been looked at as an honest broker. When we're involved with an architecture, it allows us to determine what's best for the Navy — and not necessarily what's best for an individual systems command.

On the capability-based acquisition side, we have a group called Large Scale Systems Engineering. One of the challenges we have, particularly in the C4ISR area, is how to build systems of systems, and this gets back to capability-based acquisition. A system is set up to fulfill a specific requirement. For example, there is a requirement for a specific radio in a specific spectrum that can talk to specific people. The program manager could do a perfect job designing the radio under the requirements. But then the radio doesn't work when you try to use it outside a specific architecture. There are interoperability issues because it wasn't built to talk to other people.

When you put a lot of these systems on a ship, for example, you can have some big problems. So through the LSSE, which is really a small group of people leveraging a large group of people in NAVSEA, NAVAIR and SPAWAR, we're getting people to see that we should be designing systems for the greater good, which may mean that we suboptimize a certain piece.

For configuration management, the Navy started what's called the common systems function list (CSFL). How do you build systems across the Navy and joint communities when each Service has a different language for different functions? CSFL will create a dialect and a set of functions that we'll all use. We've gone to Joint Forces Command to create a joint common systems function list. Our job is to manage it, once again as an honest broker, to ensure there's some configuration control and to ensure we're all working from the same sheet of music.

CHIPS: What are the major Navy, OSD and joint CHIPS programs you're involved with?

Rear Adm. Sharp: This kind of crosses all three so I won't try to categorize this: JBMC2 (Joint Battle Management Command and Control), JTRS (Joint Tactical Radio System), most recently JCC (Joint Command and Control), which is supposed to replace the GCCS (Global Command and Control System) family of systems. I've been involved in the next generation, joint tactical radio version of MIDS (Multifunctional Information Distribution System). I'm mostly involved with joint programs. This is really the way ahead because it's critical for the joint programs to stay on track and deliver as we all start planning from a budget standpoint to transition.

On the DASN side, I've gotten into the business process, DMIRS (Defense Military Integrated Resource System), NSIPS (Navy Standard Integrated Personnel System), TMIP (Theater Medical Information Program), which brings medical technology to our ships at sea.



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Above: Rear Adm. Mike Sharp at SPAWAR headquarters July 28, 2004, during the interview with CHIPS.

CHIPS: SPAWAR has been working hard to develop the architecture and standards for FORCENet. How do you evaluate the support FORCENet has from Navy leadership?

Rear Adm. Sharp: Support has been tremendous — starting with the Chief of Naval Operations and Sea Power 21. You get a tremendous amount of alignment when the CEO of any company stands up and says, 'This is what we're going to do.' Since then the message has stuck, and FORCENet has become part of our language. And over the past year, FORCENet has begun to develop its true meaning. FORCENet is really the standards and architectures that allow all of these individual programs to work together.

Let's say you want to shoot missiles from a surface ship in a littoral environment. You want them shot beyond the horizon of what the surface ship can control because there are mountains in the way. You will need the missile to be targeted by an aircraft or satellite, someone else to control that missile in-flight. There are a number of operational concepts out there that we can't quite do yet because the systems on these platforms weren't built that way. When a missile is built, it should have a standard set of communications links and radar capabilities so it can interoperate across different platforms and the different Services.

It's complex because you're talking about bits and bytes of software, radio frequencies, protocols and a litany of technical items. But that's what FORCENet will allow us to do. It's a discipline where requirements will be written to build systems that fit into this larger architecture that will allow us to get to capability-based acquisition. That's what FORCENet is.

CHIPS: How can SPAWAR improve the understanding of those who may not know what FORCENet is?

Rear Adm. Sharp: We have a set of maturing documents that examine the architecture and standards. We create documents that go out to industry partners and the other Services. Senior SPAWAR folks also get out every time we can to talk about FORCENet. This goes back to the support we receive from leadership. My boss on the acquisition side, Secretary Young, chaired two FORCENet executive committees that have brought together key representatives from resources, fleet and acquisition.

FORCENet will only succeed if the acquisition folks — from Secretary Young to the PEOs to the program managers — are onboard because it will require changing what the programs are doing. We're trying to do this incrementally so we don't break the bank, but getting the acquisition core onboard is critical to the success of FORCENet.

CHIPS: How do you gather the requirements for FORCENet?

Rear Adm. Sharp: SPAWAR's development of the FORCENet Implementation Baseline is a great example. On the acquisition side, we start with the requirements that the Navy or Joint Forces Command gives us. Then we look at the systems that are being built and figure out which ones can evolve to meet those requirements. Those are the systems we want to nurture and revise as necessary to become part of FORCENet.

We also look at legacy systems that will never be part of FORCENet, even though they may be providing critical capabilities to our forces today. We want to retire them as soon as we can and replace them with FORCENet-capable systems.

CHIPS: How do you stay close to the fleet and joint operations in gathering these requirements?

Rear Adm. Sharp: We have a lot of people in Norfolk who work intimately with NETWARCOM (Naval Network and Warfare Command), which is the voice of the fleet for C4I and the N6 for Fleet Forces Command. We have full-time people at NETWARCOM who make sure what we're doing fits in with the way ahead. We also have people proactively working with Joint Forces Command to ensure that the architectures we create are in line right from the beginning.

CHIPS: How do you work with the platform PEOs in gathering requirements and coordinating initiatives?

Rear Adm. Sharp: There are a number of challenges, but we're working more closely with the platform PEOs than ever before precisely because of these challenges. A platform requirement document can be very difficult to interpret – six UHF radios, three EHF radios, etc. Everything is in boxes because for space purposes that's how a ship is designed. Capabilities-based acquisition is key, but you need to know boxes, wires, connectors and how they all fit together when it comes to installing things on ships.

We're trying to influence the requirements process so the focus is less on boxes and more on required bandwidth, for example. Capability is very important, but it creates uncertainty in the shipbuilding process. How can shipbuilders bid something

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when they don’t know exactly what is going into the space? So that continues to be a challenge we’re working out with the platform PEOs.

Another challenge is the rapidly changing nature of information technology and communications, which is why I like this business. This creates uncertainty for a shipbuilder though, because it can increase cost. Every time a ship — it doesn’t matter what kind — overruns cost it makes newspaper headlines and makes things difficult. So we’re working on providing the right capability for the ship and at the same time minimizing the uncertainty for the shipbuilder. I’ve had meetings with both Dennis Bauman, PEO C4I and Space and Rear Admiral Charles Hamilton, PEO Ships, and we’re doing very well in trying to resolve some of these issues.

CHIPS: Do you see continued support for FORCEnet in the future?

Rear Adm. Sharp: Absolutely. FORCEnet is more than a bumper sticker. It’s the concept of interoperable and more capable systems that will allow our operators to be able to talk with whomever they need to at any time.

CHIPS: The Virtual SYSCOM was created to find common tasks among the systems commands, to reduce duplication and to create efficiency. How do you evaluate its progress and where it’s going in the future?

Rear Adm. Sharp: I think we’re going to find the Virtual SYSCOM to be a tremendous success story because developing common processes across the Sea Enterprise effort will reduce the cost of doing business. It’s proven to be a significant arena for vetting some of the issues between the SYSCOMs, which have traditionally been the technical authority, and the PEOs, which are the builders of products. Rear Admiral Kenneth Slaght’s work as the FORCEnet Chief Engineer across the Virtual SYSCOMs has been very successful.

We want to make sure the C4I products developed by NAVAIR and NAVSEA are built to an architecture that we all can use but not duplicated. The Virtual SYSCOM has matured considerably since it first started, and I believe it will be the way we implement FORCEnet and solve other challenges.

CHIPS: You have a lot of experience in the submarine community. Do you miss it?

Rear Adm. Sharp: Absolutely. The submarine force is unique because it’s a collection of relatively small ships with relatively

Rear Adm. Michael A. Sharp

Rear Adm. Michael A. Sharp is Vice Commander of the Space and Naval Warfare Systems Command. As Vice Commander, he is responsible for development, acquisition and life cycle management of command, control, communications, computers, intelligence, surveillance and reconnaissance systems for the Navy and select Marine Corps and joint service programs.

In May 2003, Rear Adm. Sharp was designated Chief Engineer for the Assistant Secretary of the Navy, Research, Development and Acquisition as an additional duty. In February 2004, Secretary Young appointed Rear Adm. Sharp to be acting Deputy Assistant Secretary of the Navy, C4I/Space as another additional duty.

Previously as the SPAWAR Chief Engineer, he reported as the Program Executive Officer for Mine and Undersea Warfare in Washington, D.C. In December 2002, the Chief of Naval Operations announced his assignment as the SPAWAR Vice Commander.

Rear Adm. Sharp was designated as an Acquisition Professional and attended the Defense Systems Management College Intermediate Acquisition Course prior to reporting to the USS Seawolf Combat System Program Manager as Assistant Program Manager for Operability. Other shore duty assignments have included: AN/BQG-5 Wide Aperture Array Program Manager and Seawolf Ship Control System Program Manager. He also served as the Deputy, Direct Reporting Program Manager (Advanced Technology) and the Advanced Tactical Data Links Program Manager (PMW 159). Following these duties, Sharp then served as the Submarine Communications Program Manager (PMW 173).

Rear Adm. Sharp reported as commanding officer of USS San Francisco (SSN 711) completing an extended Western Pacific deployment. He also served as executive officer of USS Swordfish (SSN 579).

Rear Adm. Sharp is entitled to wear the Legion of Merit with one Gold star, the Meritorious Service Medal with three Gold Stars, the Navy Commendation Medal with two Gold Stars and the Navy Achievement Medal with two Gold Stars.

Rear Adm. Sharp graduated from Oregon State University with a Bachelor of Science degree in chemical engineering in 1974. He earned a Master of Science degree in systems management from the University of Southern California in 1981 and is a 1999 graduate of the Advanced Management Program from the Harvard Business School.

small crews. You establish a tremendous camaraderie with that community, but I’m also very happy that I chose to go into the acquisition community at the end of my command tour.

For more information about the role of the ASN (RDA) Chief Engineer go to <https://asnrdacheng.navy.mil/>. For more information about SPAWAR go to <http://www.spawar.navy.mil/>.

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