



BY TIMOTHY W. COLEMAN, EDITOR-AT-LARGE

With large modernization requirements facing the US Coast Guard (USCG) and an austere political environment taking its toll, finding the necessary cost savings to fit the Coast Guard's new budget and uphold operational efficiencies is paramount.

Achieving efficiencies while not reducing capabilities can be like a tightrope walk across the Grand Canyon. But the Coast Guard appears to be walking the line with some important efforts that are effective in enhancing maritime domain awareness while not breaching the budgetary dam.

One tool the Coast Guard has enlisted for achieving this balance is a technology developed by Hiperwall Inc., a University of California at Irvine spinoff established to commercialize a high-performance, low-cost video wall software solution.

Hiperwall affords public sector customers the ability to display large amounts of information at a single glance, resulting in more informed decision-making and improved image analysis. The firm provides a unique software-based video wall system that is hardware agnostic.

The value-add is Hiperwall's commercial off-the-shelf (COTS) solution that operates at tremendous speeds and includes integrated flexibility and versatile functionality to provide a visualization wall that connects multiple video feeds at an extremely high resolution into a one-stop visualization shop.

Coast Guard images shown on a Hiperwall display.

VISUALIZING Maritime Domain Awareness



Coast Guard Sector Los Angeles-Long Beach Command Center's Hiperwall solution for maritime domain awareness.

PHOTO COURTESY OF US COAST GUARD

Putting Hiperwall to the test

The Coast Guard's first trial with Hiperwall began in the fall of 2012 when the Coast Guard Sector Los Angeles-Long Beach (LA-LB) Command Center installed a Hiperwall solution. The center is responsible for overseeing and directing 11 Coast Guard missions, including law enforcement, search and rescue, pollution, aids to navigation and marine safety among others.

The Coast Guard's aim is to facilitate maritime domain awareness in an area covering more than 350 miles of coastline and extending more than 200 miles offshore, from Orange County to San Luis Obispo County in California and includes seven islands. The command center utilized the Hiperwall system to create a 220-inch

video wall displaying up to 10 video feeds customized by size, as well as a configuration in the LA-LB Sector Command Center.

"The Hiperwall system enables the sector command center to maintain situational awareness for real-time news feeds, display of harbor cameras, tracking of vessel activity and overseeing Coast Guard missions along 350 miles of coastline," USCG Lt. Cmdr. Juan Miguel Hernandez told *Homeland Security Today*. Hernandez is command center chief, sector Los Angeles-Long Beach. In addition, the system "provides the sector command center the ability to actively prosecute cases by prioritizing and arranging information feeds based on fluid operational requirements," he said.

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Hiperwall CEO Jeff Greenberg expanded on the scope of the firm's technological offerings. "Effective control room operation requires the ability to manage both the control system and local and worldwide data feeds," he told *Homeland Security Today*. "Our enhanced and embedded KVM [keyboard, video and mouse] feature empowers control room operators with more functionality to satisfy these requirements from any work location."

He also noted that they can advance the technology more quickly. "It's easier to 'rev' software than it is to 'rev' hardware, and because of that we have numerous features that aren't available in the older hardware-based systems," Greenberg said.

Maintaining situational awareness

Control alone is not the only embedded benefit of the system. "Every command center in the Coast Guard has to have a situational awareness display in order to assist them in prosecuting cases," Hernandez explained.

"Hiperwall software is a far more flexible solution than your conventional methods of displaying vast amounts of information onto multiple screens," he said. "Sector LA-LB utilizes two streamer PCs and connects them to an existing video matrix allowing any four video feeds from the command center floor to be processed and displayed for situational awareness, briefing or training."

The ability to individually define and customize information feeds is vitally important to the Coast Guard's efforts. In turn, this capability is a tangible benefit for operators and end-user customers.

"Sector LA-LB has complete control of what information to share for situational awareness, training and/or briefing multiple people at the same time," Hernandez said.

The low-cost upside

One very important tangible advantage of Hiperwall's COTS software systems is "its linear scaling with no big cost increments," Greenberg said.

Simplicity and cost-effectiveness is definitely good news for the Coast Guard's quickly diminishing wallet. The software solution enables fast and easy modernization that doesn't come with the complexity or cost problems generally associated with upgrading hardware solutions.

"We have eliminated the cost and complexity — putting video wall and distributed visualization within reach," Greenberg said, adding that the system's growth potential is unlimited. "The benefit of that is it eliminates the need to over-provision at the beginning," he said. "You start with just what you need, and as your needs grow, you can gradually get to it, and there are no balloon payments along the way."

The best of both worlds

Improved situational awareness and superior maritime domain awareness is no easy task, and the cost of achieving these objectives is never free. Even so, while seeking a solution that was flexible, customizable and effective, the Coast Guard has been able to achieve real cost savings through the use of Hiperwall's system.

"This solution is approximately 60 percent cheaper than your traditional multifunction, multi-display solution," Hernandez said.

Additionally, not only is the system more cost effective than traditional solutions, Hiperwall's offering is also cognizant of lifecycle cost implications, a critical reason the Coast Guard appears pleased with its decision.

"The Hiperwall software-based solution vastly decreased the need for additional costly hardware over other options that would have provided similar capabilities," Hernandez said. "Not only did Hiperwall provide a cheaper solution, they also provided a system that has minimum maintenance and is easy to understand."

Analysis

US Coast Guard Commandant Adm. Robert Papp warned in March 2013 during his annual State of the Coast Guard address that the Coast Guard is facing a "fiscal perfect storm." The overall Coast Guard budget is a rather paltry sum when put into the context of its mission. The Coast Guard has the smallest budget of all the services, but its responsibilities include monitoring more than 3.4 million nautical square miles of maritime territory, 95,000 miles of coastline and more than 360 ports.

Papp said the Coast Guard's contemporary budget "strategically allocates resources to best mitigate current and long-term operational risks, while investing in new cutters, boats, aircraft, systems and infrastructure necessary to ensure the viability of the Coast Guard in the future."

Today, the Coast Guard faces the most daunting and challenging fiscal operating environment in decades. Even after significant budgetary growth, the Coast Guard is facing a potential crisis.

So, as Congressional appropriators in Washington continue to argue over budgetary priorities, the Coast Guard needs to

continue identifying solutions like Hiperwall, which achieve both cost savings and operational efficiencies.

The Coast Guard will have to capitalize on technologies and cost-reducing innovation in order to maintain operational excellence and fully realize an effective modernization strategy. **HST**



Timothy W. Coleman is *Homeland Security Today's* Editor-at-Large. Based in Washington, DC, he's worked as an intelligence analyst and congressional staffer and co-founded two security technology startup firms, one of which was selected as *Entrepreneur Magazine's* "100 Most Brilliant Companies." He's written for *Forbes*, the *Washington Times*, *The Washington Post* and other notable publications.

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