

## Spotlight: The Security Network

# Local evolution: Maritime's many pieces are changing the industry

Source: *The Security Network*

An industry supporting 42,000 jobs and nearly \$8 billion annually in economic impact should hardly need an introduction. If you have not followed the region's maritime industry closely, though, it may be surprising how quickly it is building on the traditional images of bustling shipyards, tuna fishermen, the U.S. Navy and cargo ships docked at 10th Avenue Terminal.

Emerging from these stalwart sectors is a new face of the region that is changing the definition of maritime in San Diego. Maritime intersects with a diversity of industries — biotech, education, agriculture and alternative energy, among others — unique to San Diego or where it is developing competitive advantages that are poised to inject the local economy with hundreds of millions of dollars and thousands of new high-paying jobs.

That was the topic of conversation at two recent networking events hosted by the Center for Maritime Systems & Security (CfMSS), an organization at the heart of a regional effort to improve collaboration among the San Diego maritime community. The events featured maritime insiders from Hubbs-SeaWorld Research Institute, J. Craig Venter Institute, **SIDUS Solutions** (also representing the San Diego chapter of the Marine Technology Society), the Port of San Diego, **Chesapeake Fish Co.**, **Northrop Grumman** (also representing the San Diego Port Tenants Association), Scripps Institution of Oceanography, **Blue Horse & Trumpet Advertising** and The Security Network.

"Over the last 30 years San Diego has attracted an incredible number of world-class scientists, research institutes and entrepreneurs in an array of complementary industries," said Michael B. Jones, president and founder of CfMSS. "Many of these industries are focused on or dependent on our maritime infrastructure.

This is creating a groundswell of new maritime technology industries to enhance the exploration and utilization of the ocean for these industries."

### Putting the new maritime into perspective

There are several moving parts working together to make San Diego a center of excellence for maritime technology. The industry's evolution is similar to the rise of the local telecom and wireless industry in the '90s and early in this century.

Most San Diegans are fully aware that a significant portion of today's telecom and wireless innovation was born, bred and commercialized right here in our own back yard. All of the ingredients for success were at our fingertips: a significant Navy presence that required a continuous infusion of innovation to solve the rapidly escalating need to communicate quickly and securely in defense of our nation; world-class educational institutions that had the tools and the teachers to not only train the talent required for the innovation but the reputation to draw the talent here; and an entrepreneurial spirit supported by strong professional services and an active venture capital community.

During one of the events, Ken Neelson, head of environmental and microbial research at the J. Craig Venter Institute, aptly stated, "The maritime world represents multiple enormous opportunities — we are just scratching the surface. We need just a few Irwin Jacobs success stories in the field."

As with telecom and wireless, San Diego once again is on the brink of harnessing all the right ingredients and doing what we do best — collaborating at the highest level to nurture and grow a burgeoning maritime industry that will showcase San Diego as a center of excellence. In recognition of the region's success to date, CfMSS is anticipating potential

mission visits from the United Kingdom, France, Australia and Canada in 2009.

Discussion at the CfMSS events focused on three emerging sectors of opportunity in the region: aquaculture, alternative energy and scientific research.

### Emerging sectors

**Aquaculture:** Thirty-five years ago few people, if any, thought San Diego's fishing industry would include farming species such as striped bass, yellowtail and halibut in open-ocean pens just offshore. However, that is precisely the vision of the near future being outlined by Don Kent, president of Hubbs-SeaWorld Research Institute (HSWRI), a not-for-profit, scientific research institution dedicated to protecting and conserving marine resources while benefiting humans.

Kent detailed the opportunity to develop offshore aquaculture off the coast of San Diego.

"Eighty percent of our seafood is being imported into this nation, and half of that is farmed. Seafood production technologies developed here are being leveraged in other parts of the world," Kent said.

"This is negatively impacting commercial fisherman, and our ports and working waterfronts. Our region has the maritime technology, science and infrastructure to support a major aquaculture industry," he said.

HSWRI is currently pursuing permits for a 24-cage aquaculture operation 5 miles off Mission Bay that would bring in an estimated \$25 million annually to the local economy with an important regional economic multiplier effect utilizing the existing infrastructure. Over time, this could be expanded many fold. A similar technology off Baja California, Mexico, employs local tuna fisherman, and uses existing operations to process and distribute the product. San Diego has the same opportunity to repurpose its commercial fish-

ing industry and on-shore infrastructure, thus creating an economic base as the next chapter of the storied history of the fishing industry in San Diego.

**Alternative energy:** Ron Popham, AVP Industry and Trade Relations for the Port of San Diego, was quick to explain the impact alternative energy is having on the cargo industry.

The Port has an established cargo business built on containerized refrigerated bananas, project cargo such as turbine windmill components, steel, automobiles (one in every eight cars imported to the United States comes through San Diego), bulk construction materials such as sand and cement, and military cargo. One piece of the project cargo business emerged unexpectedly due to strong ties with the region's largest trading partners in Asia. What began as an initiative to import tires for heavy machinery from Asia three years ago has turned in a wind-powered boon for the Port.

"Southeastern California, the Southwest, Midwest and Texas are hotbeds for harnessing wind energy. Huge wind farms are being constructed consisting of towers, blades and power cells made primarily in Japan, Korea and China. These windmill structures are reaching heights of 25 stories. They asked if we could handle shipments of the giant sections three years ago, and we have aggressively pursued more of the business to a point where we currently are the largest import and distribution center for windmill components on the West Coast," Popham said.

Five years ago, the Port employed 100 dockworkers. With the influx of project cargo, that number has skyrocketed to 600 and is still climbing.

**Scientific Research:** From sources of alternative fuel to the cure and medication for the most stifling disease, the ocean contains a vast treasure chest of untapped opportunity. To

underline this point, J. Craig Venter, a modern day Charles Darwin, was cited in an article from *Discover* magazine: "Venter pulled a sample of water from the seemingly barren Sargasso Sea off the coast of Bermuda and isolated 1.2 million new genes and 1,800 never-before-identified marine microbes — a mother lode that already exceeds the number of genes from all species recorded in public databases."

San Diego is blessed to serve as the home to world-renowned organizations leading oceanic research into biomedicines and biofuels. The University of California, San Diego, the Scripps Institution of Oceanography and the J. Craig Venter Institute are drawn to our location, abundance of qualified scientists and maritime technology support system.

"Researching anything living in the sea creates many challenges. Some are fundamental, from the point of securing a specific sample of an organism to gaining access to a biologically diverse location," said Stephen Bennett, director of business development with Scripps.

Those research challenges have opened the door for technology innovations like autonomous underwater vehicles and advanced imaging sensors.

"Our scientists are forced to innovate in order to observe and measure things that haven't been seen before. Partners and neighbors in the local maritime community are crucial to these innovations and helping us link them to society," added Bennett.

### Tie that binds — marine technology moving ahead

As the leading maritime technology center in the United States, there are more maritime technology companies in San Diego than in any other spot in the country and most likely the world.

"The maritime technology cluster in San Diego is inti-

mately tied to the Navy, university and research labs in San Diego and sells products and services worldwide," said Leonard Pool, the president of SIDUS Solutions and past president of the San Diego chapter of MTS (Marine Technology Society). "San Diego is being recognized as a world leader in the maritime space. With more recognition and support from the city, the cluster can grow faster and further."

Maritime in San Diego is at a crossroads. Business leaders have demonstrated the ability to bring together a complex infrastructure of innovation. As the industry moves ahead, attendees at the CfMSS events agreed that collaboration is the key to identify and promote technologies, services and educational programs that will further the responsible and sustainable use of oceans.

"The maritime world is already very important for San Diego — the Port of San Diego and the Port Tenants Association in particular are doing a great job to promote the maritime community," Jones said. "However, looking forward, recognition and support in San Diego should be wider spread among city and county government and the general population in order for San Diego to take full advantage of the potential for significant number of jobs and wealth creation in new sectors in addition to continuing to grow the 'traditional' maritime industries. Capitalizing on great ideas and technology developed in San Diego and elsewhere, collaboration and good execution will be critical to achieving success."

"An organization like CfMSS is important as a connector between groups that may not operate in the same circles but have missions that are mutually beneficial to each other and influential in building this sector," said Dirk Mathiasen, vice president of operations for the Port of San Diego.

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# CfMSS

"Promoting Maritime Business & Security"

Center for Maritime Systems & Security presents

**BioFuels, BioMedicines & Farming from the Sea....**  
**and Maritime Technologies Needed to Develop Them**  
*The intersection of two San Diego growth industries*

**FRIDAY, JANUARY 23, 2009 - 7:30 to 10 am**

**NATIONAL UNIVERSITY (Aero Court campus) - 3678 Aero Court, SD 92123**

**7:30 - 8:30** - Meet & Greet period with Continental Breakfast served among maritime technology vendors that are Supporters of CfMSS.

**8:30 - 10:00** - Presentations, Panel Discussion and Q&A:

**Paul Jensen, Ph.D.** - Associate Research Scientist, Scripps Institution of Oceanography

**Don Kent, M.S.** - President, Hubbs-SeaWorld Research Institute

**Shannon J. Williamson, Ph.D.** - Dir. of Environmental Virology, J. Craig Venter Institute

The world's oceans hold the promise of miracle cures as well as abundant energy and food. Underwater bioprospecting is, however, difficult and expensive. New technologies such as deep sea ROVs will facilitate broader, faster and more extensive exploration. San Diego has world-class universities and research labs focused on the marine environment. It also has pioneering scientists such as Paul Jensen and Don Kent, biotech companies with a focus on natural products, and explorers such as Shannon Williamson who are attempting to understand the deepest ocean communities. San Diego is truly one of the world's leading biotechnology centers AND one of the world's leading maritime technology centers. **The Security Network** and **CfMSS** have organized this special gathering to promote collaboration between these two important communities. The reward will be faster discovery & development cycles as well as enhanced economic prosperity for San Diego, the country and the world.

**Learn more & register online**  
**at [www.CfMSS.org](http://www.CfMSS.org)**

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 Fostering Innovation Through Collaboration

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