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San Diego: The Application of Advanced Technology for National Defense

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As the San Diego high-tech and life science sectors begin to grapple with the ever increasing implications of the September 11 terrorist attack, new uses for advanced technology are surfacing every day. More than any other region, San Diego is blessed with an excellent balance of biotechnology, telecommunications and information technology...three cylinders running smooth and efficient, driving the overall high-technology engine. Many of us, however, haven't paid sufficient interest in a robust fourth cylinder: the military. Recent events are bringing all four cylinders together with the potential of creating an even more powerful engine.

Here are just a few of examples of how San Diego is using innovative thinking to solve complex problems relating to the increased need for defensive and protective technologies:

HNC Software announced the potential use of its commercial credit card fraud software to track terrorist activities. For instance, financial transactions of foreign exchange students who are not attending school can be monitored for multiple, large cash withdrawals from ATM machines. Alerts can be generated based on these patterns. While there are all kinds of privacy concerns that surface, the application of HNC technology for national defense shows a trend toward the convergence or re-application of a given technology to address a different problem than what it was designed to solve.

Nanogen announced on October 10 that it has been awarded a three-year, \$1.5 million grant from the U.S. Army "to continue development of miniaturized electronic devices for isolating and detecting biological warfare and infectious disease agents from human blood samples." The company's microchip technology was initially created to dramatically speed up the process of DNA testing, and Nanogen has identified the ability of the same basic chip design to quickly perform blood tests - checking for potential bio-warfare distributed diseases. "Nanogen believes that its unique electronic microarray technology is particularly well suited to these development efforts," said Randy White, Chief Executive Officer of Nanogen in a report on the company's Web site.

Institute for Soldier Nanotechnologies (ISN) - A new U.S. Army request for proposals has been issued to create and host the ISN. It was issued to U.S. universities, and University of California, San Diego (UCSD) was specifically contacted to respond - others include MIT and Georgia Tech. The premise is that nanotechnology will allow the fabrication of materials and systems that will dramatically improve the survivability of the soldier of the future. Imagine clothing that is impervious to extremes of weather, offers "armor-like" protection, with a variety of biosensors that monitor and react to internal (human physiology) and external (biological and chemical threats) factors. Think CAL(IT)² meets the seamstress. For more information about the ISN, contact Rich Bailey with UCSD's Jacob's School of Engineering at 858-822-3491.

CONNECT is playing a pivotal role in the convergence of advanced technology for purposes of national defense. The Center for Commercialization of Advanced Technology (CCAT), a public-private collaborative partnership between academia, industry, and government, has been created for the explicit purpose of facilitating the commercialization of technologies in the area of crisis and consequence management. One important aspect of CCAT is that companies are being challenged (and funded through grants) to adapt existing technology for defense needs. Technologies that don't immediately appear oriented for defense often have broad applications - seamless communications systems, antennas, sensors, CDMA modems, and many more. The organization is accepting solicitations for grants of up to \$70,000 through October 31 at <http://www.ccatsandiego.org>.

National Defense Industrial Association (NDIA) San Diego chapter provides an ethical forum for liaison of government and industry for the purposes of national security. San Diego is uniquely positioned with military acquisition command, air stations, laboratories and test ranges. "There's no place else in the

country where we have this combination of resources," said Mike Woiwode, President of NDIA's San Diego chapter. "We also have technical companies and financing is here, too." Woiwode commented that after the September 11 terrorist attacks, "the public is much more aware of the government's #1 priority - to provide for defense." More information about the NDIA in San Diego is available at <http://www.ndia-sd.org>.

SPAWAR (Space and Naval Warfare Systems Command), headquartered in San Diego, is the Navy's acquisition command. A large part of what the organization does is provide and manage information that allows battlefield command and control decisions to be made. "The defense industry has been a mainstay in San Diego's economy for many, many years," said Roger Copeland, SPAWAR's Director of Corporate Communications, "and that is not likely to go away." He also said that San Diego is "in a position to show leadership, not just in these times - in any time - because of the diversity of industry in the area. We have our (SPAWAR's) principal customers very close to use." The upcoming "SPAWAR & Industry Conference 2001" (Oct. 31 to Nov. 2) will cover SPAWAR's vision of the future and business opportunities with the military. Event registration and information is available at <http://www.ndia-sd.org>.