

All Benefit From DoD-Industrial Dual-Use Partnerships

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WASHINGTON, May 17, 2000 – The military needed a way to send messages around the world, and thus, the Internet was born.

Troops needed a better way to navigate, and thus GPS, the Global Positioning System, was born.

In both cases, one thing simply led to another. That's the underlying premise of "dual use technology."

Military research and development has led to the production of many items that are now part of everyday life. Instant coffee, powdered milk, digital watches, and lightweight graphite bicycles and tennis racquets all have military roots. In aviation, a long-term relationship between the military and industry has led to America's dominant role in the world market.

Today's home computers are now linked to the World Wide Web; and planes, boats, and privately owned vehicles feature GPS. In fact, because of new technology that allows the military to degrade GPS signals by region as situations may require, the Clinton administration recently lifted restrictions that immediately increased GPS' accuracy tenfold for users.

The Defense Department is expanding this link between the military and the civilian world through research and development partnerships with corporate America. Since 1997, DoD has initiated 283 joint projects to develop technology that can be used by both the armed forces and by private industry.

Kozaryn is on the staff of American Forces Press Service. This information is in the public domain at www.defenselink.mil/news on the Web.



A soldier prepares to heat a meal using a flameless ration heater being developed by the Army and TDA Research Inc. The heater may also be marketed commercially for camping and for school and workplace lunches.

DoD has invested about \$400 million through its Dual Use Science and Technology Program. Corporate America has invested another \$440 million in the program.

Maintaining technological superiority on future battlefields depends on DoD's ability to take advantage of advances occurring in commercial industry, according to Jacques Gansler, Under Secretary of Defense for Acquisition, Technology and Logistics. DoD wants to take advantage of the efficiencies, innovation, reduced cycle time, and lower cost technologies coming from the commercial world.

"Dual use is essential to the overall research and development effort of the Pentagon," Gansler said at a recent seminar on emerging technologies. "While government research and development remains important, we have to recognize that in many areas that are relevant to us – particularly information warfare and information-based systems for the warfighter – commercial developments are as important as perhaps any we make ourselves."

DoD oversees the Dual Use Science and Technology Program implemented by the Army, Navy, and Air Force. "We try to partner with industry to develop technology we both need," said program manager Dan Petonito. Ultimately, the goal is to reduce DoD's acquisition and logistics costs by using commercial products, he said.

DoD shares investment costs 50-50 with commercial partners. About 25 percent of the funds for a project come from DoD's \$30-million annual budget for the pilot program. Another 25 percent come from the Service laboratories. The balance comes from nonfederal sources, primarily industry.

Instead of designing technology specifically for the military, civilian officials incorporate defense considerations into commercial designs, Petonito explained. A company named Continental Teves, for example, partnered with the Army to develop an anti-lock brake system for medium-duty trucks. Continental Teves put up 75 percent of the project cost, and the Army put up the rest.

"For that 25 percent, they made sure that the system would not only work on medium-duty trucks, but also on the Army's Humvees," he said. "They actu-

ally incorporated some unique requirements that would not necessarily have been incorporated if they hadn't gotten that money from the Army."

Modifications to meet military needs are not necessarily costly if made during the design phase, Petonito said. "But to take that same system and then try to modify it for the Humvee later would not only cost considerably more, but you wouldn't have a commercial item anymore."

Upcoming joint development projects are aimed at producing affordable sensors, advanced propulsion, power and fuel efficiency, information and communications systems, weapons systems sustainment, environmental as well as medical and bioengineering technologies.

Along with the potential for military use, Petonito said, dual use technology has to have sufficient commercial potential to support a viable industrial base. "That's really the key. You can develop the technology, incorporate it into commercial products which support an industrial base, and then DoD can tap into it."

In lieu of standard contracting procedures, dual use program officials use cooperative agreements and other transactions.

"They give us a lot of flexibility and allow us to attract commercial companies," Petonito said. "We don't have to go through the federal acquisition regulations. For all intents and purposes, we can start with a clean piece of paper, sit down with an industry partner, and come up with our own terms for progress payments, audits, and intellectual property rights."

The Services and commercial firms are currently engaged in numerous development projects. Examples include:

- The Army and TDY Research Inc., are developing a flameless ration heater



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that could be used by servicemembers in the field as well as by civilians for camping, school, and workplace lunches.

- The Army's Night Vision and Electronic Sensors Directorate and Indigo Systems Corp., have developed a 6-ounce infrared camera about the size of a D cell battery that could be mounted on smart munitions to provide greater accuracy, on rifle sights and on helmets to provide night vision. DoD officials say the camera is already in high demand by civilian fire departments for its ability to see through smoke.

- The Army and Applications Tech Inc., are developing an optical character

recognition process that can translate Arabic and Farsi (Persian). The system incorporates several hundred military characters and the capability to translate low-quality documents such as those one might find in the field.

- The Navy, Boeing, and Northrop Grumman are developing a new method of manufacturing complex titanium parts for aerospace systems. Success would cut the cost of fabricated parts by 30 percent and cut the delivery times for both military and commercial components by 75 percent.

- The Navy and a team from the University of Connecticut, Stevens Institute of Technology, Rutgers University, Inframat, Robert W. Rigney and Associates, and A&Co, developed a new protective spray coating that is safe for the environment and uses existing commercial off-the-shelf equipment. In its first military use, the coating will replace hard chrome on a series of submarine components, but wide use is anticipated on ships, aircraft, and land vehicles because of the coating's ability to prevent various types of wear, corrosion, and erosion, thereby reducing maintenance costs.

- The Air Force and Raytheon Systems Co., are developing an antenna that can be used for weapon system delivery and for cellular communications. Telecommunications companies have already deployed about 5,000 of the antennas, DoD officials said.

- The Air Force and National Semiconductor have established the first high-volume commercial line of standard and radiation-tolerant electronic components used in military and civilian satellites. The project will reduce the cost of these components by up to 70 percent.

For more information about the Dual Use Science and Technology Program, visit www.dtic.mil/dust.