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WAVE OF DESTRUCTION

Tsunami Offers Defense-Firm Work
Contractors See Potential For Modifying Programs To Warn About Disasters

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WASHINGTON -- The tsunami lifted prospects for a new market for natural-disaster prediction systems, and U.S. aerospace and defense contractors see the opportunity to modify programs long sold to the Pentagon and intelligence agencies into new early-warning systems.

"There are a lot of processes and disciplines that have been developed for the military that can be applied to this," said Mike Keebaugh, president of intelligence and information systems for Raytheon Co., referring to an emerging global environment- and weather-monitoring system.

The tsunami has generated "enormous interest" in the need for earlier warnings, said retired Adm. Conrad C. Lautenbacher, head of the U.S. Commerce Department's National Oceanic and Atmospheric Administration. "This is the time to capitalize on that."

Raytheon, Boeing Co. and Lockheed Martin Corp. are among nine companies and organizations that belong to a group called the Alliance for Earth Observations, which backs the efforts of the U.S., members of the European Union and other nations and group to create a global Earth observation system. Following the tsunami in late December, six other countries joined the group, bringing its total to 58 nations

The global system would fuse information from existing national systems and close troublesome data "voids," such as the one that precluded warnings of December's deadly tsunami as it formed in the Indian Ocean. Other uses of the global observation system would be to provide better information on soil conditions and changing climate patterns that affect farming and to develop more rigorous global data on the effects of global warming.

It's unclear how big this market might be, though maintaining satellites can be a capital-intensive business. According to Adm. Lautenbacher's office, the four weather satellites that the U.S. maintains to monitor the globe cost a total of \$1.3 billion, plus \$650 million more a year to maintain and operate.

Ministers from the nations involved will meet in Brussels this month to give final approval to a 10-year plan to finance and develop the system. Initially, the plan will focus on linking existing systems and won't result in major new purchases.

But combining reporting from existing satellites and Earth-based reporting stations will require large-scale software integration and other systems engineering skills that the companies have

traditionally provided to the Pentagon and the Central Intelligence Agency. Companies like Raytheon, Mr. Keebaugh said, see a new, long-term market growing out of that effort.

Once the systems are knit together, nations will have a better view of the large reporting gaps. Some countries don't share seismic data with their neighbors, and some entire areas, such as Africa, report relatively little weather and climate data although the information they might provide could improve predictions elsewhere.

"We build sensors, data-collection systems and networks for data processing and dissemination," said Mr. Keebaugh, who believes that the products will be needed to close such gaps and to generate earlier warnings for weather and climate events.

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