

ELECTRO-OPTICS

Defense Market Surges

The modern military requires electro-optical systems for soldiers, ground vehicles, and airborne units. By Kristin Lewotsky

Experts say we're living in the Age of Information, a reality that's reflected in our working lives, our private lives, and even in the ways we defend ourselves. Photonic technology is acting as the eyes and ears of the security and defense sectors, part of our modern military. "What's happening is that top-level budgets are not increasing dramatically, [but] there's been a change in what people are spending their money on," says Ray Rattray, analyst consultant at Frost & Sullivan (London, UK). Troop levels across Europe are dropping, he says, and the money is being spent on high-tech equipment to increase efficiency. "What people are talking about is rapid-reaction forces and being able to engage far away from your homeland quickly," he notes, "and that requires a different set of technologies."

The technology that can deliver is electro-optics. In Europe alone, Rattray says, the military airborne electro-optics market is set to grow at just over 6% annually over the next decade from its 2002 figure of \$400 million.

The money's flowing in the United States, as well. "We see about \$12.7 billion being spent on research and development for [electro-optical systems through 2012], and that's just on some of the leading ones we've identified [in the land- and sea-based area]," says Andrew Dardine, aerospace/defense electronics analyst at Forecast International (Newtown, CT). "The big thing right now seems to be night vision," he adds, noting that the U.S. Army plans to spend about \$250 million on night vision systems R&D through 2012. "For the military, these are absolutely critical and the demand for them is just increasing. There's a huge range of applications, from the individual soldiers to ground vehicles to aircraft."

Sensors for unmanned aerial vehicles (UAVs) are the biggest electro-optics

growth area in the European sector, with the percentage of cost attributed to electro-optical systems set to grow from the current 3 to 4% up to around 10%, according to Rattray. He also sees huge potential in sensor networks, such as UAV swarms. "You have one sensor looking at one small area and you can network them together and send the information to a ground base so you have a large area of common knowledge," he says. The trend toward integration is likely to manifest in other ways, for example in combining currently discrete reconnaissance and targeting systems into a single pod.

And the pods are spreading from jets to helicopters, notes David Rockwell, senior analyst, electronics, Teal Group (Fairfax, VA). "Wherever a helicopter doesn't have a FLIR [forward-looking IR] ball or an electro-optical system with IR [capability], basically the people flying are saying 'I want it.' Even utility helicopters that don't have them very well may get them." These aircraft sensor balls typically have FLIR and visible-band sensors and can cost \$100,000 to \$200,000.

Market growth breeds opportunity, of course. "It's more wide open than a lot of markets," Rockwell says, "because for the sensor balls it's not just Raytheon [Waltham, MA], Lockheed Martin [Bethesda, MD], and Northrop Grumman [Los Angeles, CA], but you've got L-3 Wescam [Burlington, Ontario, Canada] and FLIR Systems [Portland, OR]. The fact that you've got two strong, relatively young competitors to the old boys means you've got options because if you supply a better or cheaper subsystem or idea, it could very well find a market with a company that is competing against Lockheed Martin. There are more prime contractors to get involved with, and the market is still expanding in a large way." **oe**



ILLUSTRATION BY RANDALL NELSON