NIGHT VISION

The future battlespace will present ever-increasing challenges for warfighters tasked with operating under harsh conditions and in remote locations, often in extreme darkness. With its premier night vision systems, Elbit Systems of America ("Elbit America") ensures that warfighters can overmatch and achieve mission success under any condition.

Elbit America is a leader in image intensification technology that reduces tactical risk and enables soldiers to own the environment, building on a legacy and engineering for the future.

With its acquisition last year of Night Vision - based in Roanoke, VA since 1959 - Elbit America is prepared to set the course for future engineering advancement and enhanced capability development. The move brought two powerhouses together, uniting Elbit America's expertise in electro-optics with the Night Vision business' top-tier image intensification and head-borne system design.

Darrell Hackler, senior director of sales and marketing for Elbit America's Night Vision business unit, notes the company is historically the largest manufacturer of night vision products and inherits a long and successful history of delivering more "night vision systems to the U.S. military than anyone else."

"Now we're strong in all facets related to helmet-mounted visual augmentation technologies," Hackler said. "We're learning things today in the area of integrated displays for night vision systems that we didn't know a year ago, because of the added expertise."

Hackler called Elbit America an "engineering house" that is laser-focused on targeted research and development initiatives that will not only enhance current modernization programs, such as the U.S. Army's Enhanced Night Vision Goggle-Binocular ("ENVG-B") and the U.S. Marine Corps' Squad Binocular Night Vision Goggle ("SBNVG"), but could also address complex challenges for potential Special Operations Forces requirements.

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"We are a design house, not just a manufacturer," Hackler said. "We have more investment going into our R&D right now than ever before and we're an industry leader with our investments in future technology."

ENVG-B and SBNVG are critical modernization programs, with Elbit America working right alongside the customer to develop soldier-centric night vision devices designed to recognize threats faster with improved, integrated heads-up displays for enhanced situational awareness.

"The night vision goggle of the future needs to give you more capability while requiring less power with a lightened load for the user. We want users to keep their head up and eyes out on the battlefield, and still be able to receive information in the form of situational awareness or augmented reality, or in some cases be able to send out information such as targets and enemy locations," Hackler said. "That requires a lot of additional capability to be built into the goggles. We are giving the user more capability, and allowing them to improve their mission success, while keeping the size, weight and power down."
ENVG-B is the U.S. Army's future night vision system and is currently going through soldier testing. The system was developed from the ground up with a range of new overmatch capabilities, including wireless connection with rifle-mounted thermal weapon sights for rapid target acquisition and augmented reality tools, and enhanced thermal sensors and high-performance white phosphor image intensifier tubes for better low light scene contrast.

"We're excited to see the U.S. Army deliver this capability into the hands of soldiers. It's more capability for the soldier than in any previous night vision device, specifically in terms of fused imaging and situational awareness," Hackler said.

Elbit America is also in full production for SBNVG, the U.S. Marine Corps' next-gen night vision Program which enhances warfighter performance and agility with capabilities for overlaid image intensification and thermal imagery.

SBNVG builds on Elbit America's groundbreaking AN/PVS 31D lightweight night vision binocular with a new system

designed for maximum battery life, thermal target detection, and a close-focus range beyond current industry standards.

"We're very excited to be a part of this program. We're ahead of schedule. We've delivered a few thousand systems already. It's starting to get out into the field, and that's exciting," Hackler said.

The modernization breakthroughs in night vision capabilities also position Elbit America as an ideal partner ready to meet the SOF community's unique, forward-leaning demands for potential future systems.

"Special Operations Forces often drive technology needs and define capabilities," Hackler said. "We have some products in development that we believe are applicable to the SOF community and can meet their high demands. That's what we are striving to do."
Rawlin Brown, Elbit America's product line director for night vision systems, emphasized capabilities will continue to be enhanced with the goal of finding new opportunities to push both ENVG-B and SBNVG's warfighter effectiveness and expand even further.

"We're looking for creative ways to add capabilities to the systems the government is procuring now," Brown said. "I think there's a big opportunity to add value and selectively provide some of the augmented reality and artificial intelligence capabilities in a more modular way, so the customer doesn't necessarily need a full system upgrade. They can add some of those capabilities to equipment they already own."

In the near future, Elbit America is unveiling a series of prototype products designed to increase capability across its full night vision portfolio, while maintaining a commitment to reducing size, weight and power for these solutions.

"We're working on new sensors, new cameras, and new systems. The focus is always on seeing farther and seeing in extreme dark environments," Brown said. "We have technology under development that's going to enable, for the first time ever, some significant improvements in the context of size, weight and power and still hold or exceed current imaging capabilities."

The new technology will present significant advancements over current Gen 3 image intensifiers with potential benefits for all of Elbit America's night vision customers.

"We've gotten more out of the Gen 3 technology than we ever thought was possible," Hackler said. "But we're working on technology that we believe is going to have a significant increase in performance, to a level that this market has never seen before. We're very close to launching some prototypes utilizing that technology."

From working with the U.S. Army and Marine Corps to deliver next-generation night vision devices, to pushing the envelope on upcoming prototype sensors and cameras, Elbit America is poised to lead the way in delivering unprecedented capabilities for seeing farther and in greater detail.

With its legacy as a trusted manufacturer committed to user-centric engineering to a future focused on boundary-pushing breakthroughs, Elbit America remains the critical provider for U.S. military customers' night vision devices designed to ensure warfighters are safe, effective and operationally superior - allowing them to own their environment.