ONR's TechSolutions providing SEALs with new glasses that change lens color on the fly

EurekAlert

ARLINGTON, Va. - The Office of Naval Research's (ONR) TechSolutions department is set to deliver to Navy Special Warfare Command personnel later this year new protective eyewear that will eliminate the need for warfighters to stop to change out colored lenses to accommodate differences in light levels.

The Fast-Tint Protective Eyewear (FTPE) changes color quicker than transitional lenses commonly found at an optometrist's office. "Transition time is less than 0.5 seconds," said Stephanie Everett, ONR's TechSolutions program manager.

"Currently, warfighters are using a set of interchangeable lenses that require them to stop and manually switch lenses to adjust the goggles to a particular light environment," Everett said. "But they can't take the time to stop and remove and replace the lenses."

Instead, they often simply remove their sunglasses when moving inside, leaving their eyes unprotected. The FTPE was designed to enable them to maintain ballistic protection under all lighting conditions, without interrupting their operational tempo.

Liquid crystal solutions within the lenses contain customized dyes that transition to amber, blue, dark gray or clear when an electric charge is applied. Lenses can change color automatically as wearers move in and out of varying environments, or lens colors can be altered manually by pushing a small button on the side of the glasses. Additionally, the lenses meet the American National Standards Institute's ballistic impact safety requirements.

The request for new eyewear came to TechSolutions from warfighters in July 2009, and the project is almost complete. The initial delivery was for 30 pairs of the new eyewear, which have already gone out for evaluation with warfighters who will use them in training. "They will provide structured feedback on the glasses," said ONR's Command Master Chief Petty Officer Charles Ziervogel, who oversees the TechSolutions department.

After this evaluation, Special Operations Command (SOCOM) is expected to take delivery of the FTPE glasses. "SOCOM is buying 100 units based on the initial assessment and seeing the results from the current evaluation," Ziervogel said.

Last August, an earlier prototype was assessed, which led to design changes, which are incorporated in the current eyewear. "The user feedback made this prototype even better," Everett said.

Results from this round of assessments are expected in April, and the feedback will be forwarded to Ohio-based AlphaMicron. The company, along with Naval Surface Warfare Center Crane, Ind., was selected to develop FTPE.

"We expect additional minor design changes based on the results of the current assessment," Everett said. AlphaMicron will incorporate any changes into what will be close to a final product.

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