

A Fourth Major Improvement to the Integrated Visual Augmentation System

Improving the Soldier's re-navigation process

ORLANDO, FLORIDA, USA, July 14, 2023 /EINPresswire.com/ -- As a Soldier performs land navigation, he has to

think about a lot of tasks beyond just the navigation, such as performing active surveillance, communicating with teammates, monitoring equipment, and many others. Some situations call for re-navigation, which is the process of navigating again. An example is when a Soldier remembers he saw something a while back that was suspicious (a possible target) and now must go back to investigate further. A further example is in training where the Soldier missed critical items along the route.

Re-navigating back to the possible target is easier said than done. In the fog of war, it is very difficult for a Soldier to recall specific details such as where he was looking at each timepoint during land navigation. On the return route, the Soldier is looking in the opposite direction from the initial route and everything looks different further complicating things. Even if the Soldier has a recording of his GPS coordinates over time, it can be difficult to find that possible target again.

In this press release, [TPMI](#) releases a fourth major improvement to the [Integrated Visual Augmentation System \(IVAS\)](#) wherein TPMI has patented a solution to this problem. In US Patent 11,442,534, a novel dataset is generated to assist the Soldier in re-navigation. By storing both a viewing angle of the IVAS headset and a GPS coordinate at each time point in the novel dataset, the Soldier can re-trace his steps via reversing his path along the same GPS coordinates he previously traversed, but also have the knowledge of the precise viewing angle at each GPS coordinate. This novel dataset is a game changer for the re-navigation process for two reasons.

First, consider the Soldier trying to find the possible target again. As the Soldier re-navigates in the reverse direction along previously traversed GPS coordinates, a red arrow digital object on the IVAS display can show precisely where the Soldier was looking at each of these coordinates. This will significantly help the Soldier find the possible target during his own re-navigation.

Second, consider Soldier "B" navigating a path previously traversed by Soldier "A". TPMI's

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| (12) United States Patent Douglas et al. | (10) Patent No.: US 11,442,534 B1 (45) Date of Patent: *Sep. 13, 2022 |
| (54) SMART GLASSES SYSTEM | (52) U.S. CL. G06F 3/0488 (2013.01); G06F 3/0484 (2013.01) |
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patented solution also provides Soldier "B" with a digital object on the IVAS display to indicate where Soldier A was looking at while Soldier A traversed GPS coordinates. This enables Soldier B to know precisely which areas were surveyed by Soldier A and when. This is a major step forward for surveillance because Soldier B will understand what Soldier A was looking at, what time it was seen and in what direction. This is particularly useful for elimination of improvised explosive devices (IEDs) wherein Soldier A has detected an IED and Soldier B, at a later time, comes to destroy it. This game-changing technology will coordinate efforts, improve surveillance and maximize efficiency of the fighting force.

TPMI aims to work with PEO Soldier to integrate this novel technology into the IVAS. This technology will be invaluable to a Soldier in combat because the Soldier has, via the dataset, perfect recollection of viewing angles and GPS coordinates so as to re-find critical targets.

About the author: Dr. Robert Douglas is a West Point graduate who: fought as an Infantryman in Vietnam with US units and a Vietnam recon company; worked in a combat development agency; studied nuclear war in the Joint Chiefs of Staff; patrolled in the desert for the UN in the Middle East with Russian war planners; and developed a system to assist Air Force space exercises. After leaving the service he spent over three decades in the defense industry rising from manager to vice president working programs ranging from sensors and missiles for Air Force aircraft to rubbing shoulders with Army scientists; to Army helicopters and combat vehicles as well as rapid target acquisition (RTA), night vision goggles and helmets sights.

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