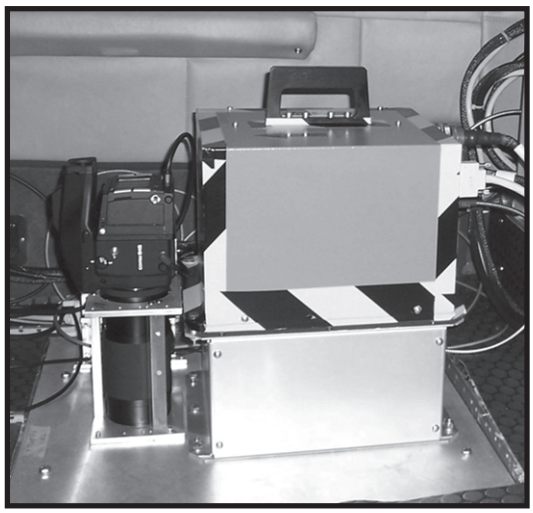
BuckEye Continues to Spiral to New Heights

By Ms. Karen Roberts

Born out of the need for a field-expedient change detection system to aid in spotting improvised explosive devices (IEDs), the BuckEye system has rapidly evolved from the initial prototype—based on electro-optical (EO) sensing—to a system using both high-resolution EO and light detection and ranging (LIDAR) imagery to produce highly detailed and accurate elevation data for better visualizing the battlefield.

BuckEye is a rapidly fielded, spiral development program of the United States Army Corps of Engineers®, Engineer Research and Development Center-Topographic Engineering Center (ERDC-TEC). BuckEye provides Soldiers with high-quality battlefield information through high-resolution imagery; geospatial intelligence; elevation data; intelligence, surveillance, and reconnaissance (ISR); and detailed maps of the urban area of interest.



Sensor Suite

The BuckEye system is fully functional. Platform independent, the aerial system operates on a variety of vehicles. The latest application of the BuckEye system is flying with the newly integrated LIDAR sensor, which creates high-resolution digital elevation models. Currently, the images are quickly compressed, georeferenced, and tied together to form a mosaic. During post processing, the submeter resolution color images can be correlated to the LIDAR data to create exceptionally accurate, high-resolution three-dimensional maps of cities. These high-resolution maps can be used to help Soldiers visualize threats on the battlefield, conduct

Urban Tactical Planner Image

BuckEye With LIDAR

mission planning, augment target folders, check on project status for the Corps's reconstruction projects, and gain a better understanding of the urban terrain.

BuckEye can be used to help increase security by capturing imagery throughout designated areas. This imagery gives the terrain a realistic look as to where features are in relation to the known landmarks. To a terrain analyst, BuckEye provides immense benefits with its imagery platform.

Army commanders are recognizing the benefits of having high-quality geospatial intelligence prior to executing their missions. The commander of the 1/25th Stryker Brigade Combat Team (SBCT) reported on one of these benefits. He said that Mosul is a teeming city of two million, making it easy for insurgents to hide and build vehicle-borne improvised explosive devices (VBIEDs) and IEDs out of sight. But the SBCT has the highest percentage of found VBIEDs and IEDs in Iraq, because it uses its assets to see first, before just running in, which was the way of the past.

Similarly, BuckEye is used to improve the Soldiers' situational awareness by providing them with highly accurate imagery that can be used to produce current, high-resolution reference graphics and image maps. It provides accurate and high-resolution geospatial information for terrain analysis, operating environment visualization, and change detection to assist the warfighter in achieving dominance of the battlefield.

BuckEye information is already being incorporated into the Urban Tactical Planner. According to the BuckEye program manager, the goal is to see the BuckEye system fielded with every Army terrain team to ensure that Soldiers have the edge they need to win the war.

Ms. Roberts is a public affairs specialist with the Engineer Research and Development Center–Topographic Engineering Center. She has been providing public affairs support to the Army for the past five years. She holds a bachelor's in social science and a master's in public affairs.