US Army Corps of Engineers®

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Automated Route Reconnaissance Kit (ARRK)

Compact and Flexible – *ARRK 5*

The U.S. Army Corps of Engineers (USACE) Reachback Operations Center (UROC) has developed the next generation in Automated Route Reconnaissance capabilities. Smaller and less complicated with fewer wires than previous versions of the ARRK, ARRK 5 provides a new, simple to use plug and play platform to rapidly execute mounted reconnaissance to support a wide range of contingency related assessments. Compared to traditional route reconnaissance techniques, soldiers and first responders can reduce time, minimize security risks, and acquire quantitative data sets in order for commanders and stakeholders to make informed decisions.

ARRK5 combines the power of an interactive touch screen computer with a headset, GPS, and a high-resolution digital camera.

Engineer Support to Information Collection and Reconnaissance

The ARRK can support numerous Combat Engineer and General Engineering Reconnaissance tasks. Examples include:

- Traditional Route Reconnaissance
- Pre-deployment Site Surveys
- Route Clearance
- Route Familiarization
- Trafficability Studies
- Convoy/ Maneuver Planning
- Aerial Assessments
- Port Assessments
- Pre-Post Natural Disaster Assessments
- Road Construction Planning (Rough Order of Magnitude)

ARRK has been repeatedly used in both civilian and military aircraft. ARRK 5 will continue to support the use of a high resolution DSLR camera and precision navigation sensors to provide geospatial image referencing.

Easy to Operate and Process Data

During a recon, photos, voice annotations and location are collected. Instead of relying on inertial sensor data which can be influenced by operator and driver behavior, ARRK 5 optimizes the use GPS data which is filtered using an innovative mathematical algorithm to analyze and compute slope and radius of curvature. Compared to previous versions of the ARRK, ARRK 5 produces windshield view photographs with 4 times the resolution of previously captured images. Route features such as bridges, intersections, obstructions and constrictions, can be added using the computer touchscreen. An operator with minimal training can collect, process and export route information. Once a recon is completed, operators may instantly view a chronological replay of pictures captured along the route, including a geo-referenced display of key features. Data can quickly be exported to an elevation profile, movie clip, shapefile and pre-formatted reconnaissance reports in accordance with ATP 3-34.81, Engineer Reconnaissance. The KMZ export feature provides the ability to share appropriate route information and pictures within Google Earth and other standard GIS platforms for easy and versatile data sharing and dissemination. Data may also be uploaded into the UROC Reachback Engineer Data Integration (REDi) system for online data sharing and archiving purposes.

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