AMAC (Advanced Mobile Asset Collection) was contracted through the OOCEA (Orlando-Orange County Expressway Authority) in Florida to provide a sign inventory and retroreflectivity analysis of all signs on the five major highway systems owned by the agency.

The project consists of State Routes 429, 528, 417, 414 and 408, with an approximate total of over 100 centerline miles (over 300 lane miles) and approximately 4500 signs.

By using multiple high sensitivity cameras, advanced lighting and algorithms, the AMAC van collected data as it traveled along each of the routes at highway speeds. Data was also collected for all post-mounted, overhead and rear-facing signs on main lines and ramps.

The AMAC van has an onboard computer connected to the high-accuracy RTK-supplemented GPS system. This system keeps track of the current location of the van in real-time, displaying to the operator a record of where the van traveled, as well as a track log of where the data collection was activated.

This live, heads-up display allows the operator to constantly monitor job progress, ensuring all streets are traveled. Real-time data is ported to a webpage displaying the vehicle position, as well as a cumulative track log of where the van traveled, the sections of road where data collection was activated, and a reference layer of all routes required to be surveyed. This allows a real-time update of work completed and remaining work.

The data was processed and delivered as a viewable data set showing a complete inventory of all agency-owned signs, along with the retroreflectivity values based on a human perspective of those signs. OOCEA will use this data for future sign maintenance and in determining which signs will need replacement.

Advantages of having measured retroreflectivity values for signs include a more accurate determination of the traffic sign’s remaining life expectancy. Using the collected numeric retroreflective values allows the data to be imported into analysis systems that incorporate sign sheeting material retroreflectivity degradation curves, as well as other environmental influences. This provides the basis for the most cost-effective and safety-orientated sign replacement program.