An aerial view of the 7 mile corridor to be surveyed by Crafton Tull.





CASE STUDY CORRIDOR MAPPING

microdrones®

How Crafton Tull employed both the mdLiDAR1000 and mdMapper1000DG to map a seven-mile corridor and save their customer more than 50 percent in the process.

CLIENT Crafton Tull

LOCATION Tennessee

DURATION 9 Days

Using conventional methods, this project would have taken about 12 working days in the field. The drone completed that part of the project in five. With the drone, Crafton Tull estimates they saved the client 66 percent in field work costs. Crafton Tull was approached by a client with a project to survey a seven-mile corridor of new highway construction in Tennessee, within a two-week period. Microdrones Integrated Systems were the best tools for the job.

Plan: The team planned 22 flights with multiple take-off and landing locations to complete the project—13 with the mdLiDAR1000 and nine with the mdMapper1000DG. Most of the initial planning was completed in their office before the team moved on to building flight blocks through the mdCockpit software. The ability to pre-build the blocks before stepping foot on site is just one of the ways using the mdLiDAR1000 saved them time.

Fly: Once on site, the two-person team flew the mdLiDAR1000 at 50 meters with 60 percent lateral overlap. They used the same take-off and landing locations for each flight, generally completing multiple flights from the same spot so the crew could monitor the UAS without having to move around.

Alignment way points were used at the beginning and end of each flight block to make sure trajectory and orientation are accurate during post processing. They also used a feature called terrain follow to ensure the drone stayed at a consistent height throughout the flight. This was critical to making sure the data stayed consistent when outputting point cloud or imagery and creating the deliverables.

The mdMapper1000DG workflow was basically the same for the flights that collected the ortho imagery, except the drone flew bigger flight blocks at 120 meters with a lateral and forward overlap of 70 percent which is key in top wind extraction for imagery.

Process & Visualize: Using the data gathered in the field from the Microdrones Integrated Systems, Crafton Tull was able to provide the client with a topographic survey, a classified point cloud and up-to-date ortho imagery to create a high-resolution surface model that could be used for quantity verification.