

# SUCCESS STORY

## ▶▶▶ VALIDATING PRODUCT DELIVERY WITH GPS AND WEB TECHNOLOGIES

### PROBLEM

ADC is responsible for creating delivery routes for the largest distributor of telephone books in the U.S. ADC receives phone customer data from their clients for over 500 delivery areas annually, geocodes the addresses, and creates routes through an automated suite of programs called ADZMAR (Automated Delivery Zone Mapping and Routing).

Recently, the client expressed interest in placing a new form of delivery validation in place to track the efficiency of deliveries. This needed to be a method of validation that displayed the actual deliveries on a map. ADC's solution was a GPS delivery validation application.

### SOLUTION

Each delivery driver is given a small hand-held GPS "datalogger" that collects waypoints at the click of a button, and "mouse tracks" indicating the course traveled. ADC developed an open source JAVA application, designed to extract delivery data from multiple sources, convert them to KML files readable in Google Earth, and spawn Google Earth for visual validation and delivery confirmation.

Once a datalogger is returned from a delivery, it is connected to any PC with the application installed via a USB connection. The JAVA application is then launched, and all the waypoints and mouse tracks from the datalogger are extracted. If multiple dataloggers were used on a single delivery, the user is prompted to connect the second and third device. Once all of the GPS data has been extracted, it is converted into a KML file, which can be viewed in Google Earth. The application also converts the selected routes streets, which are stored on the PC, from a shapefile into KML.

Once completed, the application spawns Google Earth, which then zooms to the selected delivery route and displays the route streets, waypoints, and mouse tracks over the imagery. The user can then quickly view the distribution of GPS data with the aid of the route streets and buildings on the imagery and validate if the route had been delivered in full.

### RESULTS

With the public's continuing transition from traditional telephones to cellular phones, the client needed to improve its delivery verification process. With this application, they are able to verify if the deliveries have been made and identify potential problems long before they are reported to their clients.

