sameva
Progressive Business Solutions

Live Asset Tracking

Company profile

This "Proof of Concept" project was done for U.S. Geological Survey (USGS). The USGS is a science organization that provides impartial information on the health of our ecosystems and environment, the natural hazards that threaten us, the natural resources we rely on, the impacts of climate and land-use change, and the core scientific systems that help us provide timely, relevant, and useable information.

Business situation

USGS needed facilitation to track desert turtles in real time and in a cost effective manner. Desert turtles are very elusive and shy creatures. They like to be always in hiding to avoid the scorching heat and predators. Aerial locators can provide a general location ranging to a certain distance, but cannot pinpoint on the exact whereabouts. So there was a need to devise some cost effective method to locate these creatures accurately.

Challenge

The main challenge in the existing solution was the bulky equipment and the ability to locate a specific animal in a given group. There was an urgent need to come up with a solution within a restricted budget as a Proof of Concept (POC) to demonstrate the feasibility of the solution.

Solution

Sameva as a technological partner with Stratum Global, a leading RFID solution provider, came up with an approach combining multiple techniques and different hardware. In this approach, the flagship product of Stratum Global "TagNet" was proposed to be tweaked to fit installation on small systems like laptops. Next Active Tag reader RFCode M220 was proposed to be integrated with the mobile Asset Track module with some enhancement. One of the key enhancements was to integrate the signal strength indication of the Active Tags. This would give the user an approximate indication of how far or near a particular turtle is from the user. The entire setup was proposed to consume inputs from three sources viz., onboard reader on the MC9090 RFID reader, active tag read events from active tag reader and finally push events from server as well. It was also proposed to add a new field to enter the field notes every time the animal was found. Yagi antenna was proposed to get the directional information of each animal. With all these information coming into the handheld device, the user would be able to locate any specific animal in the range.

Also an additional module specific to asset searching was modified to suit the live asset tracking. This module would help the user to search a specific live asset.

Benefits

The POC proved that the solution works as expected and meets the specific requirements. The entire approach both assimilated with the hardware and software together were tested for real time scenario and proved to be successful. The hardware was fitted in a custom backpack which could hold a laptop installed with the customized TagNet instance. Four directional antennas or portals were fixed into the backpack which would give the directional intelligence to each live asset. There was also a specific place holder for the active tag reader which would send the read events to the Symbol MC9090 handheld with the signal strength of each tag read.