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GSM/GPS · GREECE

Connected Vehicle Radio Data Receiver

Custom Hardware Design | Embedded Firmware | Cellular & GPS | In-House Protocol Stack | Companion Configuration Software

CLIENT

A Greece-based technology solution provider for the survey industry.

THE PROBLEM

The client's survey work depended on broadcast radio data combined with location information — but collecting that combination from vehicles or homes in the field, and getting it back to a central server, meant either a permanent data connection (expensive and unnecessary if the server only needs the data occasionally) or someone physically retrieving it later (slow and impractical at scale).

WHAT WE BUILT

We designed a device that sits with a radio receiver, continuously capturing the broadcast data it receives alongside GPS location — building up a combined picture of "what was being broadcast, where, and when." Rather than pushing that data out constantly, the device holds it and uploads to the remote server over the cellular network only when the server requests it — avoiding the cost of a permanent connection while still making the data available centrally whenever it's needed. We built this on our own lightweight in-house networking stack, which was a better fit for occasional cellular uploads than a heavier general-purpose stack would have been. We also built a desktop configuration tool so the client's team could set up parameters on each unit themselves as they deployed more of them.

WHAT IT DOES

- ✓ Continuously captures broadcast radio data alongside GPS location at the point of installation
- ✓ Holds combined radio and location data on the device until the remote server requests it
- ✓ Uploads requested data to the remote server over the cellular network — no permanent data connection required
- ✓ Runs on an in-house, lightweight networking stack suited to occasional cellular uploads rather than continuous connections
- ✓ Includes a desktop configuration tool so the client's team can set up parameters on each unit during deployment

OUTCOME

The client's survey customers gained a way to collect radio and location data from the field and retrieve it centrally on demand, without paying for permanent connectivity on every deployed unit — with their own tooling to configure units as the deployment grew.

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