embin

TRANSPORT & LOGISTICS

Vehicle Tracking & Reporting Unit

Custom Hardware Design | Embedded Firmware | Cellular Connectivity | Companion Configuration Software

CLIENT

A technology solution provider for the transport industry, building fleet-tracking systems for logistics operators.

THE PROBLEM

The client's logistics customers needed to know where a vehicle was on its route at any given time, but the obvious answers — GPS trackers with continuous data plans, or manual driver check-ins — were either too expensive to fit across a whole fleet or too unreliable to trust. They needed something that sat quietly in the vehicle, cost very little to run per month, and kept reporting even on routes where signal strength came and went.

WHAT WE BUILT

We started from the constraint that mattered most: cost per vehicle, every month, for the life of the fleet. That ruled out always-on data connections, so we designed the unit around event-driven reporting instead of continuous tracking — the device only needs to "speak" when something has actually changed. We built the circuit board, the firmware that watches for the vehicle crossing into a new zone along its route, and a desktop tool the client's own staff could use to configure each unit before it went into a vehicle. The firmware was written to be resilient to patchy coverage — if a report doesn't go through, the unit holds onto it and retries, rather than silently dropping it.

WHAT IT DOES

- ✓ Watches continuously for the vehicle moving from one zone to the next along its route
- ✓ Sends a short, low-cost update to the control centre the instant a zone change is detected — with no driver involvement at all
- ✓ Retries automatically if a report doesn't go through on the first attempt, so updates aren't lost on weak signal
- ✓ Runs on basic cellular signal without needing a continuous data connection, keeping monthly running costs low across a whole fleet
- ✓ Ships with a desktop configuration tool so the client's team can set up and roll out each unit themselves, without an engineer on-site

OUTCOME

The client got a tracking unit they could deploy across their entire fleet without the per-vehicle running costs of a data-plan tracker, and without asking drivers to do anything. Hardware, firmware, and configuration software arrived as one package from one team, so the client didn't have to integrate parts from separate vendors before they could ship it to their own customers.

Embin Technologies Pvt. Ltd.

Unit 507, Sarita B, Prabhat Industrial Complex,
W.E. Highway, Dahisar (E), Mumbai – 400 068, India

www.embin.com
contact@embin.com