

Automatic Vehicle Location... ... “Black Box”

Overview

Automatic Vehicle Location (AVL) ‘black box’ allows businesses to track their vehicles through the use of such technologies as global positioning system (GPS) tracking.

AVL, along with other mobile data technology, such as electronic proof of delivery, is all about closing the “black hole” that often exists beyond goods out. GPS tracking provides high levels of visibility relating to vehicle security, schedule adherence, route adherence and driver performance - which in turn contributes to:

- Increased productivity - reduced leg times, reduced drop times, reduced mileage, more scope for back-hauls and adhoc collections, more productive output from drivers for the same paid hours
- Reduced fuel consumption - through accurate control of routes, reduced excessive idle and improved driving style
- Increased security - minimised deviation from route and unscheduled stops. Particularly effective where tracking is coupled with door sensors and wireless panic buttons
- Reduced night out / stop over claims and expenses
- Improved customer service - through improved planning and pre-arrival / lateness warnings
- Fleet rationalisation - a key by-product of improved productivity

Business Benefits

With these improvements in mind, the sort of business benefits the implementation of AVL has delivered to Opus Fleet & Distribution customers, through increased driver and vehicle visibility and control, include:

- Delivery time reduced from 40 mins to 25 mins
- 30% reduction in night outs / stop overs
- An average of 2.2 hours out of 10 hour shift identified as excessive idling
- Between 7% & 14% reduction in fuel consumption. (In the former instance, this was achieved in the first 8 weeks of the project - forecast as a £900,000 saving in first year across a 900 vehicle fleet)
- 30% productivity improvement in the transport process - through the compression of turn around times, leg times and more drops per vehicle per day through better visibility leading to better fixed route planning
- Route adherence - projected saving of approximately 2.7 million miles of road usage by vehicles (for the period of the 5 year contract)
- Security - reduction to 0% delivery shrinkage in 3 months
- Improved customer service with greater visibility of the supply chain allowing queries to be answered promptly with up to date information. 85% reduction in lead time to answer queries
- A 6% reduction in fleet size (4 out of 62 vehicles)



- ▲ CUSTOMER VISIBILITY
- ▲ SLA/KPI VISIBILITY
- ▲ DRIVER/LOAD SECURITY
- ▲ PLANNING ACCURACY
- ▲ FLEET UTILISATION
- ▼ FUEL
- ▼ LABOUR COSTS
- ▼ TURN AROUND TIME
- ▼ FLEET SIZE



AVL Unit - Key Features

- Local business rule-based control and monitoring; remote updates of rule-sets supported
- GPRS, GSM (or Mobitex) communications
- “Soft” telematics (over speed, harsh braking, excessive idling, unscheduled stops etc)
- CANBus/FMS interface supporting “hard” telematics - used to capture and filter vehicle telematics data such as revs (up to 32 parameters can be monitored)
- Dallas key interface - for driver, vehicle and even trailer identification
- Temperature monitoring (up to 8 sensors)
- 4 port serial switch - up to 4 peripherals can be connected and controlled (mobile data terminals, printers, etc)
- Battery and solar panel back-up options
- Wireless panic buttons - when pressed an alert and the last known location is sent back to the control centre monitoring the vehicle
- Analogue module - optional device that captures revs on non-CANBus vehicles
- Optional “privacy switch” for owner-driver type vehicles

Functional Summary

The AVL unit provides integral GPRS/GSM communications, GPS Satellite location and “business rule” controls. A variety of inputs, outputs and other vehicle monitoring capabilities are catered for. Business rules determine how often the vehicle is tracked and how certain events are evaluated by the AVL unit. These rules can be as simple as ‘tell me when you have arrived at/departed from a site’, ‘are the doors open when they should not be’, ‘tell me when you have been stationary with the engine running for more than so many minutes’, ‘tell me when you have deviated from a planned route or ‘tell me when you have made an unexpected stop’.

Rules and conditions can be mixed and matched with ease. Rule sets are downloaded to vehicles over air. Different rule sets can be allocated to vehicle groups or types.

Inputs on the AVL unit can monitor doors, ignition, temperature, wireless panic buttons and more. Outputs can control, for example, door locks, screamers and indicators.

Vehicle telematics are also supported, both in ‘soft’ and ‘hard’ formats. Soft refers to the ability to monitor over-speed, harsh braking and idling without connecting to the vehicle or engine.

Hard telematics are supported via a CANBus connection with FMS support, allowing monitoring of up to 32 vehicle and engine parameters, from revs to service indicators and more.

AVL GPRS tracking solutions have been fitted to vehicles working on Pan-European routes covering 14 main-land European countries (a list which is growing all the time).

All of the Opus Fleet & Distribution portfolio is modular - mobile data terminals (for proof of delivery applications) are also supported, using the Black Box’s built-in communications to send and receive data from the host.

Tracking data is displayed via street level mapping in the Transport Management Centre which allows the business to monitor, in real-time, delivery progress against plan.

The AVL tracking solution also comes with over 20 standard web-based reports and customers also have the option to develop their own custom reports.

