



## FAGOR ELECTRONICS S. COOP.

# MEDELLIN CITY - METROPOLITAN TRANSPORTATION (BUS) MANAGEMENT Business Case

### 1. Summary

Client: Alianza MEI U.T.  
Location: Medellin City, Colombia.  
Vehicles: >400 buses in 1<sup>st</sup> stage.  
Industry: Urban Transportation (passengers).  
Vehicles make: Mostly HINO.

### 2. Introduction

Colombian second largest city, Medellin, has been immersed in a modernization process for the last decades, it has become from being one of the most dangerous cities in the region to be one of the most modern and safe options for doing business and living in Colombia. In order to comply with a Medellin ordinance, all urban transportation companies had to organize and coordinate operations among the city. This is how Alianza MEI (Medellin-Estrella-Itagüi) is born as the union of the most relevant companies of the city. Since the beginning of MEI operations they knew efficiency was a must for professionalization, and they started a long term plan for getting there. This plan included vehicles renovation, drivers professionalization and technology implementation for automated processes and control. This was not a task for beginners.

### 3. The problem

MEI needed a partner capable of providing an integrated technical solution for total control of:

- **Operation**, routes monitoring and traceability in terms of time tables compliance and historic reports.
- **Drivers**: efficiency, safety and comfort of the passengers on the journey (Drivers behavior).
- **Maintenance**: Total control in real time of parameters related with preventive and corrective maintenance of the units.
- **Passengers**: Integration with passengers count system preinstalled on the buses for full record of hop ins and hop outs.

That Partner was Skytracking, a pioneer local technological company who relies in Fagor Electronics for all of their Advanced Fleet Management related projects in Colombia.

### 4. Analysis

Fagor and Skytracking knew from a glance that for points 1, 2 and 3, the technological solution needed Squarell devices for connecting to the buses.



Squarell is the most complete and advanced solution for “listening” to every vehicles ECU. Fagor trust in no other solution when canbus interfacing is required.

The most important requirement made by the client was “One platform must fit all demands”, regarding the 4 point mentioned before. This platform was Fagor’s FlotasNet®.

Other options for MEI needed specific providers for each main requirement or the alliance and integration between technologies. Fagor was already prepared for the task, as most of their projects are based on tailored & integrated technologies for fleet management.

#### 5. How did Fagor solved the 4 main project requirements?

- **Operation:**

MEI needed an automated tool to assign the bus route to a vehicle and monitor it’s development in real time according to the loaded time tables. FlotasNet® also generates historic reports with the important KPI’s of every stop made by every bus in all routes, the result, total monitoring of Service Level Agreement.

- **Drivers:**

Each driver information is registered in FlotasNet®, then a personal pin is assigned to each driver. The driver is identified in the vehicle at the beginning of a route and then, all the information regarding to every specific route is related to the driver who made it. FlotasNet® generates valuable reports on every drivers performance and quality thanks to Squarell captured data. MEI has all the information needed to qualify their drivers, in term of time scheduling compliance and also in terms of how are they making use of the vehicles they drive.

- **Maintenance:**

Thanks to the canbus connection and FlotasNet® platform, the preventive maintenance of every unit is programmed and notified to the assigned manager, generating alerts with the desired anticipation and there for supporting a mechanical intervention in optimal time, no waiting, reducing “out of service” times and extending units operational lifetime.

- **Passengers:**

MEI customers are the passengers using the metropolitan bus service in Medellin, the responsibility on transporting people is top priority for MEI. The way that drivers operate the vehicle is directly reflected in passengers in two ways:

- **Safety:** The better they drive the safer the routs will be for the passengers.
- **Comfort:** Best practices on Eco-Driving delivers an increase on the comfort of the passengers.

Some of the data obtained from Squarell feeding FlotasNet® reports and modules are:

- Engine speed.
- Engine torque.
- Throttle position.
- Fuel used.
- Lts/ 100 Km.
- Time-outs.
- Brake applications.
- Harsh braking.

#### 7. Conclusions

Professionalization, requires innovation. Innovation requires technology implementation. No matter the field or industry, it’s a common demand.

Business Intelligence, Telemetry, Real Time, Accuracy, Telecommunications, Internet Of Things (IOT),... are all everyday use words for Fagor Electronics.

Hand by hand with Squarell, Fagor is leading the advanced Fleet Management Systems Industry, thanks to the accuracy and added value solutions adapted to every project.