EFFICIENT PLANNING OF URBAN PUBLIC TRANSPORT SYSTEMS

HIGHLIGHTS

- When a city is planning its public transport system, the efficiency of that system lives and dies on the quality of its usage and demand data.
- To automate on-bus data collection, our versatile RUT956 joined forces with the FMB125 vehicle GPS tracker by Teltonika Telematics for optimal accuracy and connectivity.
- Relying on the router's reliable inter-device connectivity and the tracker's positioning precision, this solution ensures seamless, real-time data flow from the moving bus to the control room server.

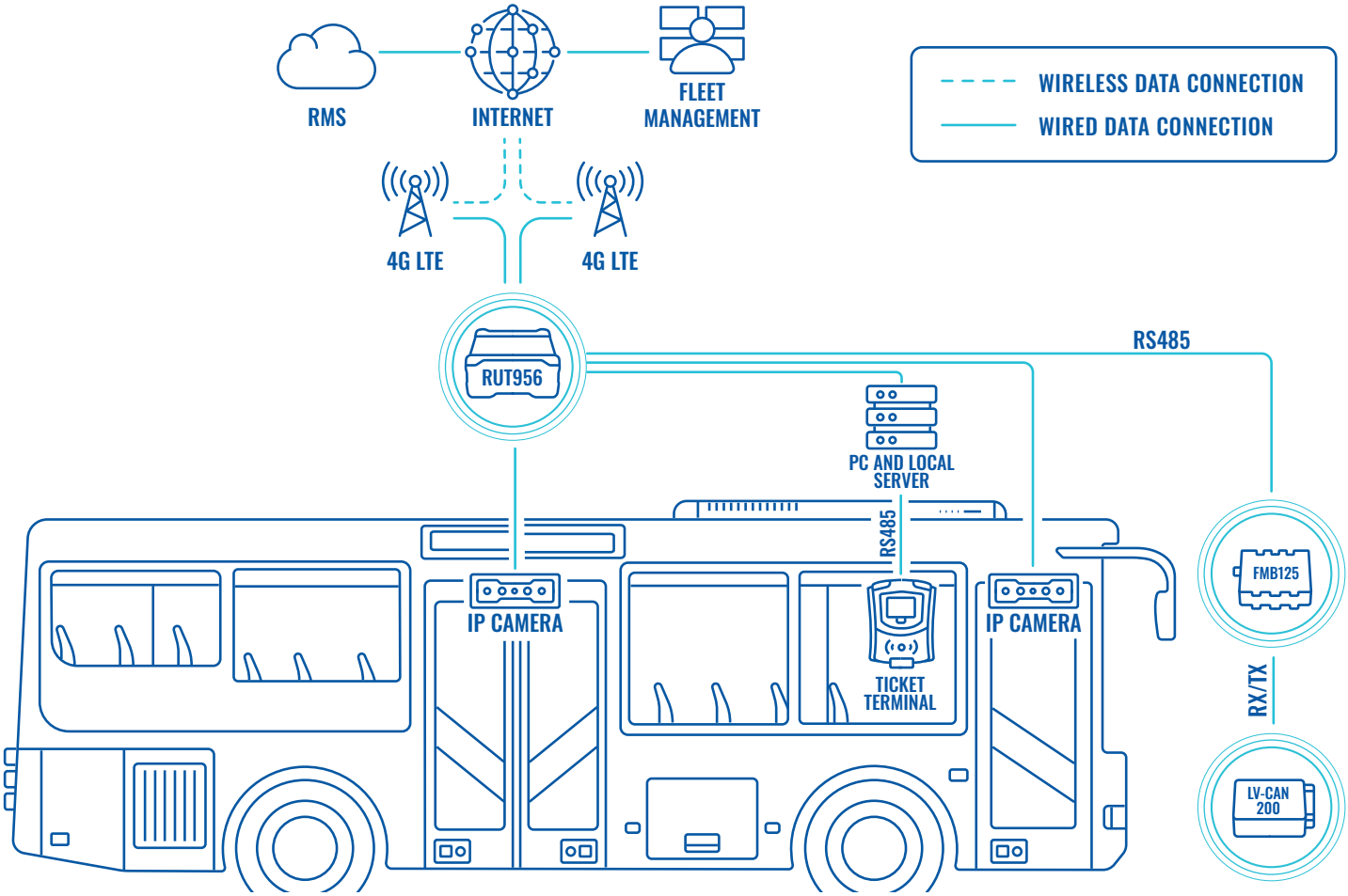
THE CHALLENGE – SISYPHUS TAKES THE BUS

Traffic jams are the worst kind of jam, with only a printer's paper jam giving it any real competition. As populations continue to grow, this problem will only exacerbate over time. Private vehicles are part of that, yes, but so are public ones. From a public transport perspective, every bus on the road is an added percentage to the road-clog statistic, and so the frequency of each bus line must be planned very carefully and reassessed frequently.

In theory, the primary variable for this planning is simple: how many people get on each bus? If you have the answer, you can simply crunch the numbers and allocate public transport based on actual demand. In practice, the sheer amount of data points makes continuously collecting and analyzing these numbers a Sisyphean task demanding significant human and financial resources.

Luckily, real life is not the same as Greek mythology (we have enough problems without Zeus throwing a tantrum every half an hour, thanks). Public transport planners can implement an automated system rather than continuously roll a boulder uphill. Considering the vast number of buses and their mobile nature, what would such an automated system look like?

TOPOLOGY



THE SOLUTION – EFFICIENT DATA FOR EFFICIENT PLANNING

An automated bus passenger count system would require a device for counting each passenger getting on and off the bus and a device for marking at which point on the bus's route they do so. These two devices would then need to communicate wirelessly with the control room server for the data to be processed in real-time. Alright, we got the theory down.

For our solution to fulfill these requirements, we teamed up with Teltonika Telematics and their specialized equipment. Internet protocol (IP) cameras are mounted on each entrance to the bus and connect to our RUT956 industrial cellular router via an Ethernet cable. Also connected to this router, this time via an RS-485 serial port using the 'Log Mode' function, is Telematics' FMB125 vehicle GPS tracker and LV-CAN200 vehicle CAN adapter. The bus's e-ticketing system is also integrated into the solution for added data reliability, and is connected to the router via an RS-232 cable – yet another of the many interfaces the versatile RUT956 is compatible with.

The cameras and ticketing system detect passengers getting on and off the bus, and the GPS tracker and CAN adapter track the bus's coordinates as the passenger count is changed. The data collected by these devices is then sent to the server in real-time via the secure and reliable internet connection provided by RUT956.

The final outcome? Efficiency meeting demand; a comprehensive, reliable, and automated stream of data with which to plan an optimized public transport system allocation with accuracy.