ANTI-COVID PEOPLE COUNTING SOLUTION TO ENSURE SAFETY ON TRAMS

SUMMARY

With one wave of Coronavirus changing another and the vaccination process taking longer than most of us would like to, certain measures are being sought after to help ensure safety in public places and help restore the usual routines as much as possible. Debates on securing the public transport network are at the top of the agenda as not having safe access to public transport for a long time makes it problematic for people to meet their essential needs, including traveling to the vaccination points.

CHALLENGE

The challenge with the safety in public transportation comes from unpredictable occupancy which makes it difficult to ensure the distance requirements are met. It is necessary not just to accurately and reliably count the passengers on the vehicle in real-time but also to be able to communicate this information to the outside world for analytics and to enable the passengers to efficiently plan their trips. Undoubtedly, the connection continuity is a must in such a solution and the network should work reliably in a moving vehicle all around the city.

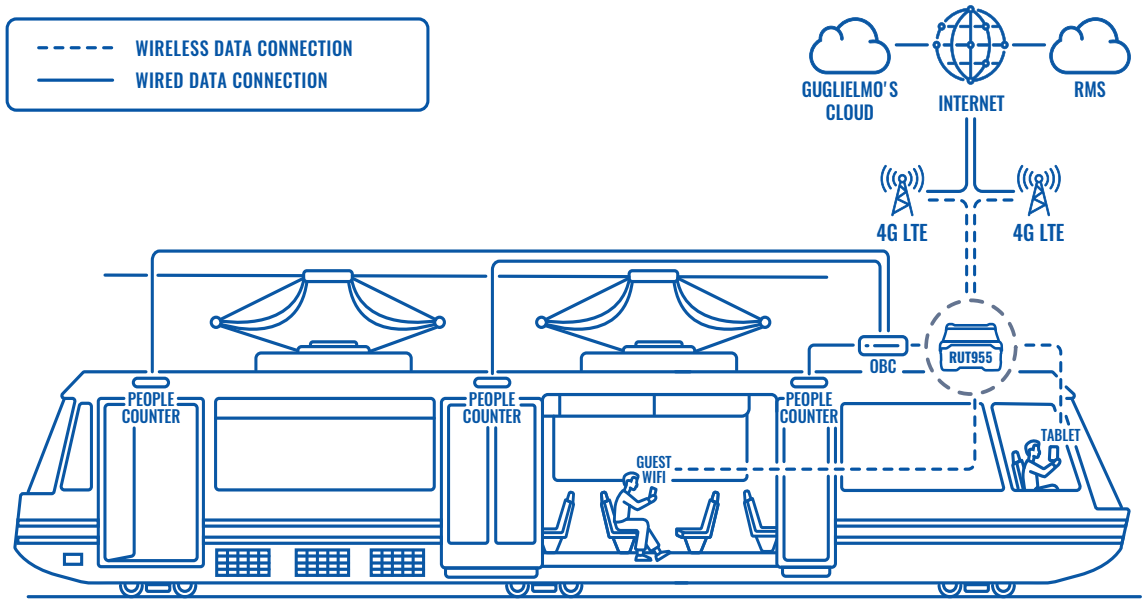
PARTNER - GUGLIELMO

Guglielmo was founded in Italy in 2004, drawing on its previous experience in designing telecommunication networks for the leading Italian telcos. Guglielmo has always operated as a technology provider in telecommunication networks, designing and developing full-stack software solutions. Recently, Guglielmo has started its journey to becoming a 360° technology provider, and today the company portfolio includes smart working management systems to track and count people within buildings, transportation systems, and event B2C products.

SOLUTION

Guglielmo created an Anti-Covid People Counting System which officially became a part of the Neapolitan public transport network services. People counter avoids overcrowding by counting onboarding passengers through a set of six Eurotech people counting sensors installed at each door.

TOPOLOGY



The data is then pushed via MQTT to the Teltonika Networks dual SIM 4G RUT955 router. On the RUT955 MQTT broker, the real-time occupancy data is buffered and provided through a dedicated private WIFI network to the drivers' tablet for monitoring of the passenger flows.

At the same time, the data is sent to Guglielmo's Cloud via MQTT protocol over the 4G connection. In the Cloud, the data is used both for analytics purposes and to inform the passengers regarding the occupancy in real-time via mobile application. This allows to reliably and precisely estimate the real-time and predictive occupancy of the trams.

Besides the safety benefit, the solution also offers a complimentary service - a free Guest WIFI Access through the Teltonika Networks RUT955 Hotspot and the Guglielmo's LUMEN proprietary AAA Service. These tools enable restricting user access rights to maintain the security of the network and enable the gathering of data for marketing purposes and business intelligence.

BENEFITS

- Reliable connection – RUT955 is a dual SIM 4G router, which means that connection continuity can be ensured by using two different operator SIM cards.
- Industrial design – RUT955 is a rugged device that can sustain the vibration of a moving vehicle without compromising the quality of connection.
- Advanced software features – RUT955 comes with RutOS, which includes professional features like MQTT, Firewall, and multiple VPN services.
- Integrated Hotspot functionality – offering flexible configuration options for various access rights, data limits, and speeds.
- Remote management – if any issues occur, the device can be troubleshot and configured remotely, without a need to interrupt the schedule of the tram.

WHY TELTONIKA NETWORKS?

In the words of the Guglielmo representative, it was easy to choose Teltonika Networks for this solution since they already used RUT955 in other IoT projects. They liked that RutOS offers various customization options and enabled them to provide a simple web service that can be used by the driver of the tram via a mobile app. Besides, Teltonika Networks offers solid industrial-grade devices that include features necessary for professional use, like MQTT broker, or WIFI with a captive portal.