



AS THE PUBLIC TRANSPORT OPERATOR IN MARSEILLE AND ITS URBAN AREA, THE RTM RELIES ON AUTOMATIC PASSENGER COUNTING TO ADJUST THE TRANSPORT SERVICE TO THE CUSTOMERS' NEEDS.



BUS



TRAM



THE RÉGIE DES TRANSPORTS MÉTROPOLITAINS (RTM)

The RTM is the public transport authority for the Marseille urban area and several neighbouring communities.

In this region home to over a million residents, the RTM operates 96 bus routes, three tram lines, two subway lines, and several ferries.

In 2016, the RTM collected 163 million fares and provided more than 800,000 trips per day*.

The RTM employs 3600 people.

* Source: Load survey.

How Marseille adapts its public transport service to match demand

The RTM, being in charge of public transport for the Marseille urban area, devotes 2/3 of its budget to operations – rolling stock, drivers. As it is responsible for ensuring that its resources are used properly, the operator must offer service – arrival frequency, vehicle capacity – scaled as close to customer needs as possible.

Vehicle travel time and load

To adjust its offer, the RTM requires two essential pieces of information: the travel time and vehicle load (number of passengers aboard). The first comes from the operational support system (OSS). To get the second, the RTM deployed an Acorel solution, in the early 2010s, to automatically count the passengers in its buses and trams.

With this system, based on recording boarders and alighters, the RTM receives a representation of the average load (called the “line load graph”) on each bus and tram line that uses it, for five different types of periods: Winter/weekdays, Saturday, Sunday, school vacations, and summer.

Objective, reliable data

This gives RTM’s teams access to useful indicators to shape their strategy: Total load, peak loads, boarders and alighters at each stop, etc. “Counting gives us a realistic picture of demand, rich in information that help us improve our product,” explains Daniel Magliaraschi, head of the production methods department.

“Counting gives us a realistic picture of demand”

The passenger count data enables RTM to validate observations reported in the field by its staff, and to do so at a system-wide level. They are also more complete than ticketing data (which doesn’t include fare evasion) and more representative than origin/destination surveys (which are one-time by nature).



Lines 31 and 32 change to high-frequency

In early 2017, the RTM reorganized the schedules of buses 31 and 32, two lines that travelled along the same stretch of road with about fifteen downtown stops in common. The goal: offer a regular arrival frequency that is high enough for the very busy shared section and avoid having buses reaching the same stop at the same time.

To achieve optimal schedules, the RTM's teams made use of multiple kinds of data: Travel times provided by the OSS, origin/destination surveys, and load analyses produced by Acorel automatic passenger counting.

The hourly cost of a bus

On these lines, the load remains high all day long. The count data helped to accurately adjust the frequencies: 6 buses/hour at peak hours and 5 buses/hour between 10 a.m. and 4 p.m.

"Having one extra bus running each hour on a line costs €20 to €30,000 per year. The passenger counting data helps allocate resources where needed", says Daniel Magliaraschi.



"Counting helps allocate resources where needed"

DANIEL MAGLIARASCHI
Head of Production Methods, RTM

CHALLENGE

Get an accurate picture of the operations of a public transport system and how suitable service is (frequency, capacity) for user needs.

SOLUTION

An automatic passenger counting system to know the actual load of the buses and trams in service.

BENEFITS

Optimal sizing of the service offering on the transport system and better operational performance. Continual analysis of the impact of the improvements made.

Reliable data for the organizing authority

The RTM also uses Acorel passenger counting data as a permanent diagnostic of its operations and of the improvements it makes. *"We can report our actions to our organizing authority, the Aix-Marseille Provence metropolis, based on hard data",* explains Olivier Dechenaud, head of the marketing department.

Decision support

The counting data, which helps to better understand customers' habits, also serves to guide a number of decisions: the impact of a line diversion during maintenance, how usage carries over when a new line opens, where to assign more efficient vehicles, and the benefits associated with adding intersections or stops, etc.



"A permanent diagnostic for planning our routes"

OLIVIER DECHENAUD
Head of the Marketing Department, RTM



THE RTM'S ACOREL COUNTING DEVICE

400 buses

(out of 600) equipped with infrared or 3D video counting sensors.

4 tram cars

(out of 32) equipped with infrared sensors. 6 others to be equipped in 2018.

350 "line load graphs" produced

(70 lines, 5 standard periods).

Counting accuracy
above 98%.

The Acorel automatic counting solution relies on sensors installed at the vehicle doors, which record the number of passengers boarding and alighting in real time. The data collected, enhanced by other systems (OSS, GPS, etc.) are then processed and analysed by the software Focus Onboard, which produces standardised or custom reports.

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