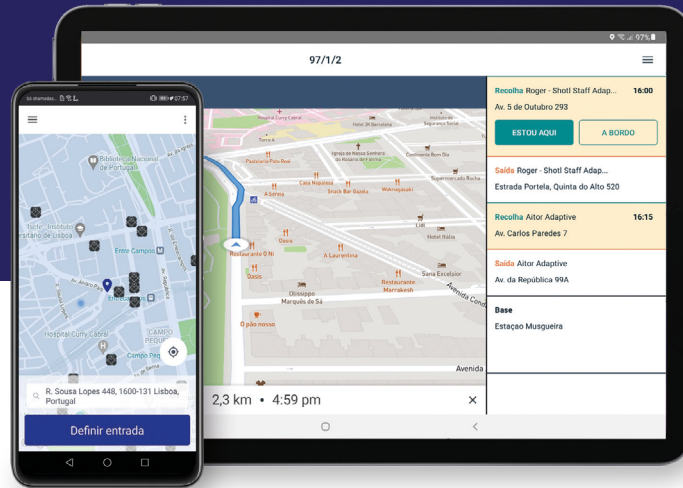# Persons with Disabilities

A major city in need of more inclusive mobility

You're waiting for your ride, the seconds ticking away before an important appointment on the other side of town. You call for an update. Again. Finally, it arrives and you board. And then sit there helpless while it detours all over town picking up other passengers before delivering you to your destination. Late.

This is an everyday occurrence for persons with reduced mobility (PRMs). With regular fixed appointments to keep— hospital, social services, work—they rely on transport for PRMs to be reliable. Unfortunately, however, scheduling complex PRM transport requests and respecting pick-up and drop-off times is extremely challenging for bus operators. And while most of us can fall back on alternative transit modes if our ride is late or doesn't show, PRMs just don't have that luxury.

This was the case when Swvl was called in to optimize PRM transport for Lisbon City Council bus operator Carris. And

Lisbon isn't alone: with global populations ageing, demand for PRM transport is only set to rise. And with it, the costs of providing the service.

Lisbon is one of many cities in urgent need of more efficient and affordable PRM transport solutions.

Disabled Passengers

Have a more reliable door-to-door service that takes the stress out of transit. Bus tracking via App and real-time pick-up and drop-off information mean they know exactly when their ride will arrive.

Bus Operator

Carris has a more efficient, digitized service that saves the time and effort involved in configuring services. It has become a pioneering, innovative service provider with better user data and analytics at its fingertips.

The Lisbon Council

Lisbon has successfully applied smart city technology to PRM transport, fulfilling its mandate to provide sustainable and accessible mobility for all its citizens, at no extra cost.

Bus Drivers

Get real-time information on passenger bookings and cancellations, as well as optimized GPS-guided routes to virtual stops right outside the door.

Solution

We adapted our on-demand solution to PRM transport, configuring a network of virtual door-to-door stops for maximum user comfort and convenience. For PRMs, respecting pick-up and drop-off times takes precedence over travel time, so we designed an algorithm and system that considers this balance appropriately. We also enabled bulk pre-programming of repeat rides. This saves time and improves efficiency for operators and ensures a more reliable service for passengers.

We provided the Passenger App, Driver App, Central Control Console, driver training, marketing materials and support. Lisbon City Council funded the service and, through Carris, provided vehicles, drivers and driver's tablets.

☑ **Passenger App**
get real-time pick-up and drop-off information from a reliable, personalized, door-to-door service that adapts to their needs, and a new channel to book, modify and cancel their routing needs.

☑ **Drivers**
can view all bookings in real-time and are directed to pick-up and drop-off points by the Driver App, which can also be used to control on-board capacity.

☑ **Algorithms**
constantly optimize all passenger bookings and vehicles routes to provide the best possible service for all users.

☑ **Transport Operators**
schedule and monitor operations in real time via the Control Panel and get detailed data and analytics on user needs and beha-vior, taking the guesswork out of getting it right
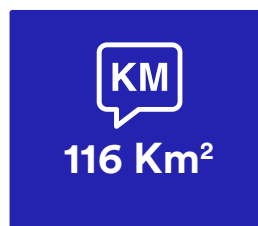
This project proved digital solutions can be applied to any form of mobility. We also learned important lessons about on-boarding and off-boarding time and requirements for PRMs, which are quite different to other transit users. This project gave us the opportunity to provide for these variable needs by incorporating them into our algorithm and system.
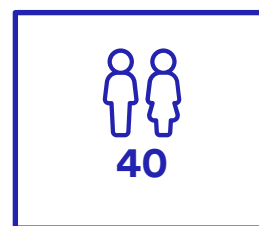
♿ *Lisbon has taken an important step away from traditional PRM transport planning and towards city-wide 21st-century mobility. Applying digital on-demand solutions to PRM transport means a fairer, more inclusive system for all.*
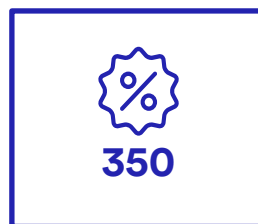
Results

- Pre-programming bulk rides and digitizing the system saves work for dispatch operatives. Now, they only have to monitor operations and review optimized routes and stops instead of creating them.

- Configuring a cloud of virtual stops allows us to provide a true door-to-door service and improve comfort and convenience for PRM users.

- Access via the Passenger App means users no longer have to spend time on the phone trying to find out where their ride is, book a new ride or cancel it. Now they, too, are part of the digital transport revolution.

KM
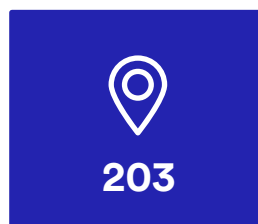**116 Km²**
Area covered

40
Passengers per day

%
350
PRM users

2
Wheelchair-adapted buses

203
Virtual stops

6
After 6 months of service

| Real Time | Pre Booking | Door to door | Data Analytics | Payments & Ticketing |

| PMR | AV | Maas API | White Label | Package Delivery |

To learn more about how Swvl can transform mobility in your area or to schedule a demo, please contact us.