



TEKZITEL

SMART PARKING

TURNKEY SOLUTION

*'Enabling automation through
scalable IoT technology'*



SOME USE CASES



MUNICIPALITIES & CAR PARK OPERATORS



BACKGROUND

Traditional methods in **identifying vehicle overstay**. Officers patrol time restricted areas, looking for overstay with dated chalking method and **issue infringement** notices. **Cars parked illegally** in spaces designated for **disabled, ambulances** etc. **Tedious, time consuming** and a **mundane** task and is **inefficient** as not all infringing vehicles can be identified.



SOLUTION

Get **real-time occupancy** data with inclusion of **overstay information/parking violations via email, mobile push alerts** or from a **dashboard**. Act on parking violations swiftly backed up by evidential data.



BENEFIT

- **Quick and accurate enforcement** of parking violations.
- **Increased revenue** based off accurate violation data.
- Patrolling officers can save **valuable time**.

MALLS & CITY CENTRES



BACKGROUND

Drivers often choose to go to a mall or city centre where they are **confident to find an empty parking space** but are then **disappointed once they reach their destination**. Space availability data becomes a driving factor and if the information is made available via a mobile application in real-time, the choice of a shopping destination becomes a whole lot easier!



SOLUTION

Parking sensors deployed provide management and shoppers with **real-time occupancy** information, **enabling malls to attract customers**. The data also will provide an **insight** to customer parking space **usage patterns which** will aid to determine **real estate usage**, helping decision making to expand/resize thereby **increasing revenue**.



BENEFITS

- **Advertisement notifications** via mobile application. Monetise parking spaces.
- **Mobile App guiding motorists** to an empty parking bay. Enhanced shopper experience.
- **Quick and accurate enforcement** of parking violations.

AIRPORTS



BACKGROUND

Airports are a **general hotspot for citizens** that leave their vehicle in **free short-stay parking bays**, this has become **cumbersome** for Airport officials as ticket **officers/wardens do not have the measure or technology** to identify these **motorists** that are **taking advantage** daily.



SOLUTION

Get **real-time occupancy** and **duration of stay data** enabling management to understand **driver behaviour** patterns. **Vehicle identity** of unauthorised parking captured via state-of-the-art technology and **quick enforcement** of vehicles that have overstayed.



BENEFIT

- **Instantly identify** which car is overstaying and direct them to **move to the longer-term parking lot**.
- Motorists **billed automatically** reducing time and effort.
- Capability to **pay for additional parking time remotely**.
- Mobile **application guiding motorists** to an empty parking bay.

TOW-TRUCK COMPANIES



BACKGROUND

Tow trucking companies are suffering daily from tow-truck vehicles that have **overstayed in company parking bays**, this is significantly **impacting** business **revenue** as **work-load efficiency is reduced** and an increase in **fuel consumption wasted** due to truckdrivers requiring to spend **additional time searching** for vehicles that has overstayed.

SOLUTION

Tow-trucking companies benefit from **real-time occupancy** alerts, **enable management** to efficiently direct their tow-trucks to parking bays where an overstay has occurred for **quick enforcement**. Real-time data also aids in **reducing fuel consumption wasted** searching for an empty parking bay.

BENEFIT

- **Quick** and **accurate enforcement** of parking violations.
- Eliminates the need for tow trucks to **continuously be on the move** to scan and find vehicles that overstay.
- **Minimize fuel consumption** and **time spent** by tow truck drivers.

UNAUTHORISED PARKING



BACKGROUND

The significant issue with any Government agency, Council, Car-park operator etc. is the capability to identify vehicles that have parked in an unauthorised parking bay, this issue is largely due to the lack of smart occupancy monitoring technology implemented .



SOLUTION

Sensors installed in special parking bay types (disability, ambulance, police etc.) **provide real-time occupancy** information, viewed via a **sophisticated dashboard**, enabling **alerts** to be sent off to **authority for quick enforcement** to act upon violators and **issue infringement notices/penalties** on the spot.



BENEFIT

- **Quick** and **accurate enforcement** of parking violations.

SOME METRICS



63%

DRIVERS

Have avoided going to a destination due to the challenge of finding parking.



30%

URBAN TRAFFIC

Is caused by drivers searching for parking.

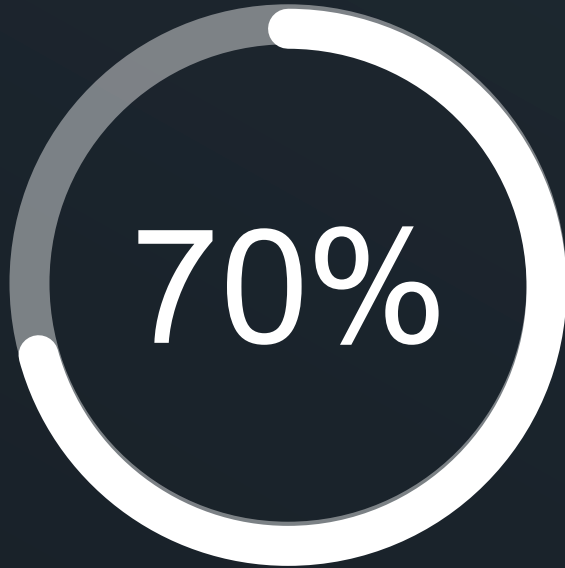


55
HOURS

WASTED

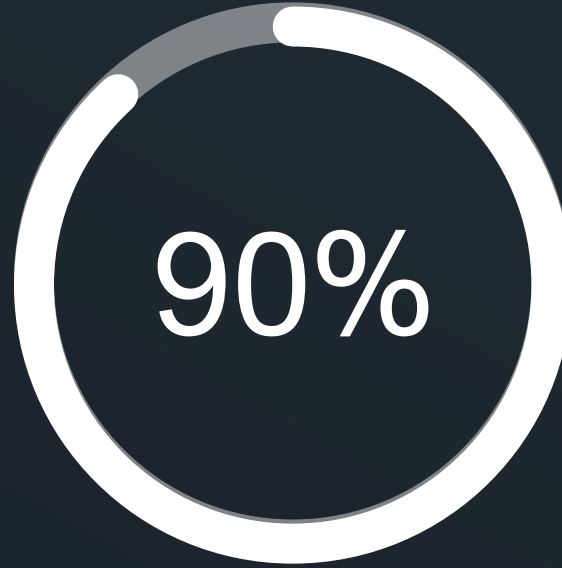
By the average driver, each year when trying to park.

ISSUE CAUSED BY LACK OF INFORMATION



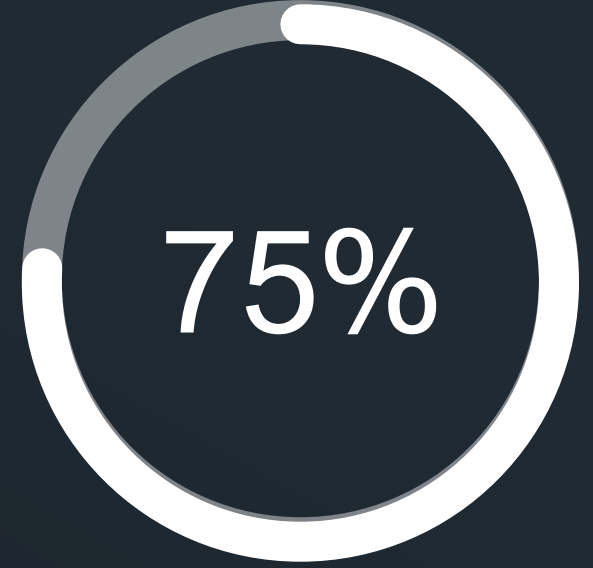
CONSUMERS

More than 70% of consumers would like real-time parking availability.



NAVIGATION

More than 90% of motorists want to be able to navigate directly to a parking space.



CONNECTED

More than 75% want parking solutions integrated into their car's dashboard.

SOLUTION

Introducing TEKZIPARK, the smart parking sensor built to stand the test of time, with a lifespan of up to 10 years. Integrated with dual-sensor technology to provide redundancy and enhanced accuracy. Can also identify vehicles occupying the parking spot.

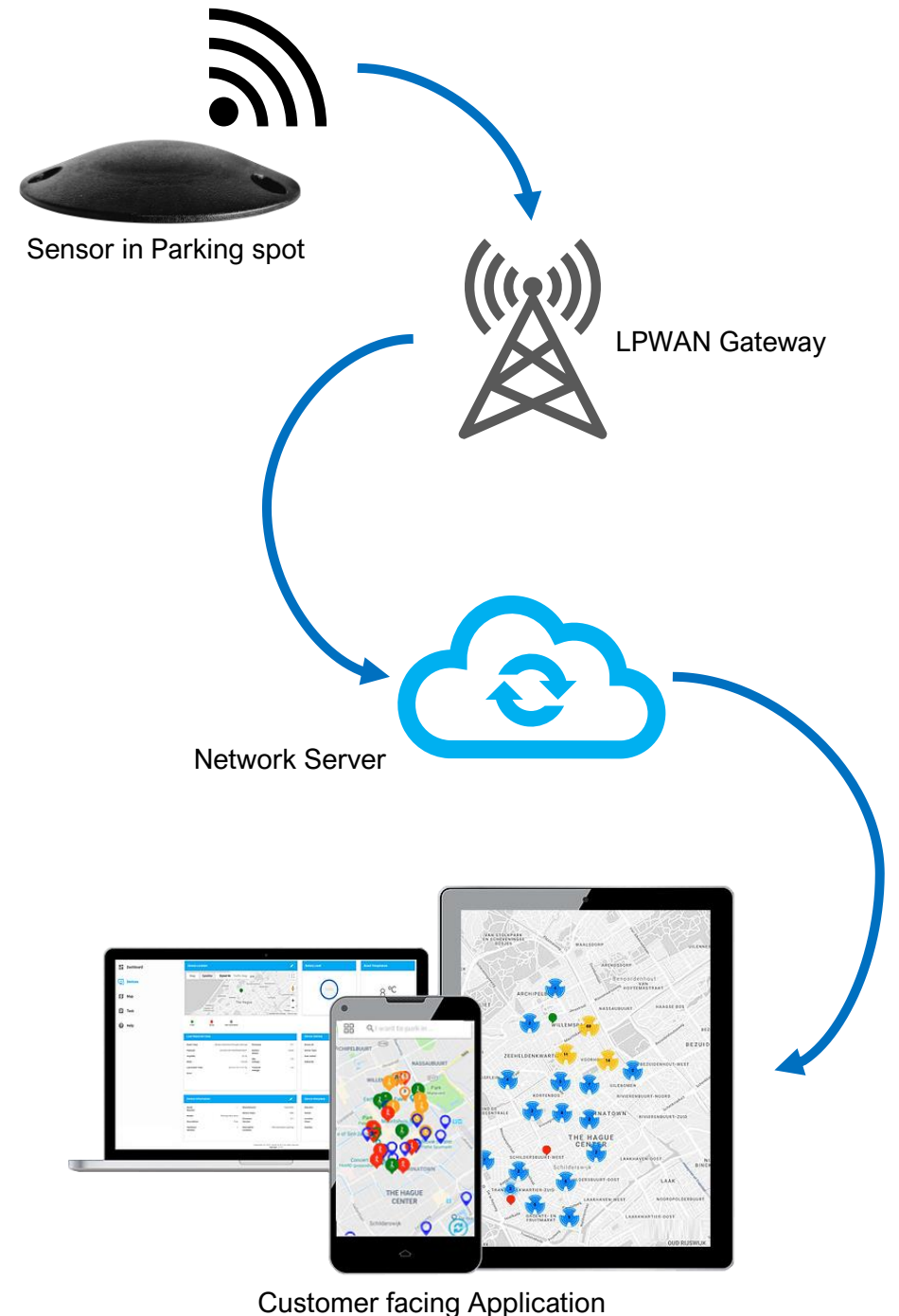
The sensor enables cities to deploy a new mobility and parking experience, using technologies that reduce traffic congestion, air pollution, road risks and parking operational costs. *But how?*

The figure on the right is an end-to-end smart parking solution for businesses that want to take on the next evolution of parking! The solution quantum leaps the motorist's user experience by guiding motorists from their location to an available parking space.

Using the latest blockchain technology, occupancy data from installed sensors coupled with smart desktop and mobile application provides municipalities, governments, councils with data analytics and for citizens to have the most efficient guided parking experience.

The solution features –

- Sensor Hardware – Deployed in the parking spot to detect parking space availability.
- LPWAN Gateway – Receives payload messages from the sensor hardware and relays the information to the network server.
- Network Server – Acts as an intermediate between the gateway and the application server.
- Application – Desktop and Mobile apps that customers use.



HARDWARE



DUAL-TECHNOLOGY

Magnetic field detection, coupled with RADAR sensing for vehicle presence, provides redundancy and enhanced levels of accuracy.



IDENTIFY VEHICLES

Vehicle identification feature enabled via BLE to support billing and localization functionalities.



FIRMWARE UPGRADE OTA

Over-the-air firmware upgrade enabled via BLE, eliminating the time spent for unmounting/re-mounting the sensor.



ENVIRONMENTAL RESILIENCE

Able to withstand heavy vehicle load (>15 tonnes), Polycarbonate body, flame retardant and UV stabilized. Operating temperature between -20 to +85 centigrade.

BATTERY

Last between 7-10 years.



CONFIGURABLE VIA DOWNLINK

Adapt easily with various environmental conditions or requirements, through downlink configuration.



PLUG-N-PLAY

Easy installation and setup!



TELEMETRY & CERTIFICATION

Enabled on Sigfox (supported by all regions) and LoRaWAN network. IP68 Certified and Sigfox class 0 certified.



VEHICLE IDENTIFICATION THROUGH BEACON SCANNING



In Car BLE Beacon

Advertise vehicle identity using Bluetooth beacon.

Parking Sensor

The sensor scans for beacons when it detects the parking space to be occupied.

Transmit Vehicle Information

Sensor transmits the occupancy and vehicle beacon ID to the application platform.

APPLICATION

The Parking Hero Portal is tailor-made to fit the specific use-case & requirement of any customer!

The solution reduces parking operations, patrolling costs & has a significant turn-over rate, thus increasing parking capacity & reduce overall cost.

ACCESSABLE CRITICAL DATA

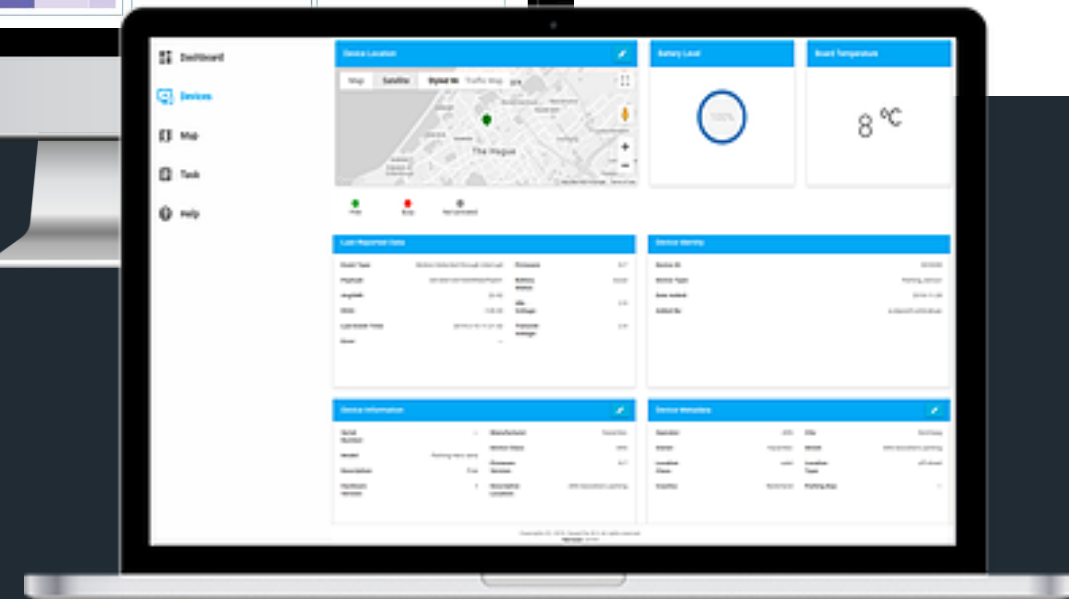
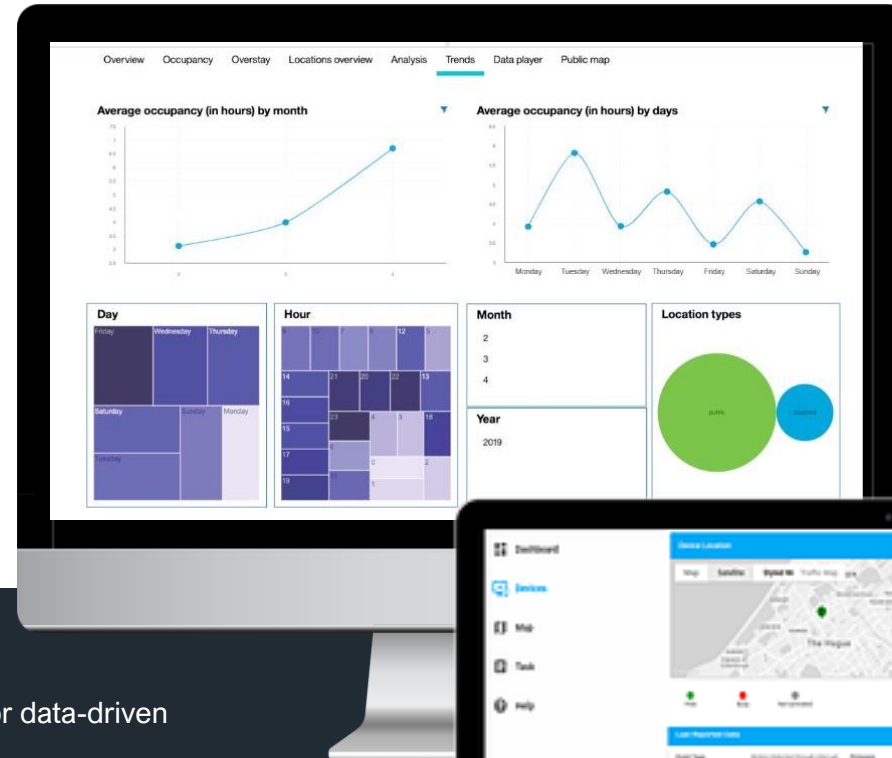
Providing management with 24/7 access to critical data which allows for data-driven decisions. The insights gained will aid in pricing & policy making.

QUICK SENSOR UPDATES

Capability to adjust parking sensors to a desired location(s) & ability to modify the type of sensor (public, disability, electric bays etc.).

DATA FILTERATION ON-THE-GO

Capability to filter a specific date-range either hourly, daily, monthly, quarterly or annually. Ability to choose a certain location or based off a parking bay type (disability, Taxi etc.)



PORTAL INSIGHTS

The Parking Hero Portal features various critical insights that are displayed on heat maps, graphs, charts, duration, turn-over & occupancy data.

API INTEGRATION

Compatible API that allows management to integrate data with websites, applications, dynamic messaging signs & any existing payment or parking systems.

INTIUTIVE DASHBOARD

The Parking Hero Portal is easy-to-use and intuitive, providing robust real-time monitoring of all parking sensors & other connected IoT devices.



MOBILE APP

The Parking Hero Application empowers motorists to reach the best and most efficient parking location(s) as fast and easily as possible.

The intelligent algorithm continuously measures and monitors street occupancy to guide motorists to an empty parking bay and keep parking revenues steady.

REAL-TIME AVAILABILITY

Sensors provide the application with real-time availability and location of both on-street and off-street parking places. Voice guidance system enabled for safety and convenience.

TARGET ADVERTISEMENTS & PROMOTIONS

Create loyalty programs for motorists by sending targeted advertisements and push notifications to app users when they enter the carpark.



CASHLESS, CONTACTLESS PAYMENTS

Enable motorists to pay for parking contactless and easier than ever before with payments made on-the-go by credit or debit card from a smart phone (iPhone/Android). Just click a few buttons and you are done!

QUICK ENFORCEMENT

Real-time warnings are sent to patrol agents via the Parking Hero Application or the Patrol System. The solution can monitor illegal parking scenarios such as vehicles parked in unauthorised areas or overstay.

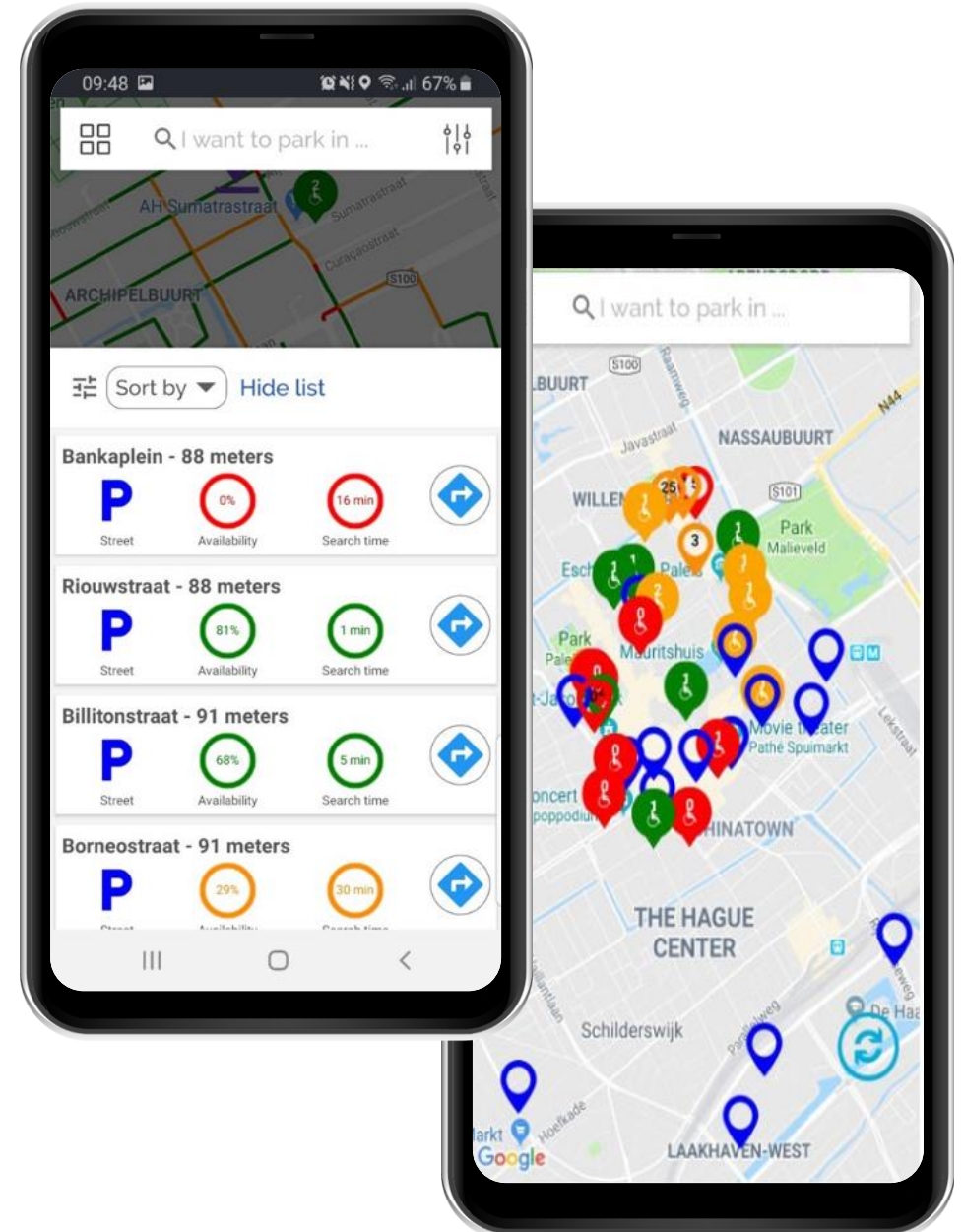
MULTI-TYPE BAY IDENTIFIED

Special street parking location(s) and availability are provided to the motorist in real-time. Special or reserved location(s) such as:

- Pick-up, Delivery or Tourist buses
- Disabled parking, Ambulance or Taxi
- Car sharing or Electric car station
- Truck parking designated on the highway

NAVIGATION IS KEY

Different colour codes will easily guide the motorist to street(s) that have the most availability. The level of occupancy shown is indicated by either high, medium or low, this allows the driver to make informed decisions on-the-go.



ADDED VALUE



VALUE FOR CITIES

- Optimize parking regulations based on unique insights
- Reduce air pollution and traffic congestion
- Digitize your parking management and enforcements



VALUE FOR PARKING OPERATORS

- Monetize any parking asset: on or off-street
- Let your customers pay via their channel of choice
- Powerful pricing, sharp enforcement and real-time charging of any parking transaction



VALUE FOR PARKING OWNERS

- Monetize your parking asset and generate new revenues
- Keep full control, trust and visibility over your parking transactions



VALUE FOR THE DRIVERS

- Stress free parking experience
- 50% time and energy saving while looking for a parking place
- Improved parking accessibility for people with disabilities

THANK YOU!

FURTHER INFORMATION, VISIT OUR SITE OR EMAIL THE BELOW:

[https://tekzitel.com/
contact@tekzitel.com](https://tekzitel.com/contact@tekzitel.com)