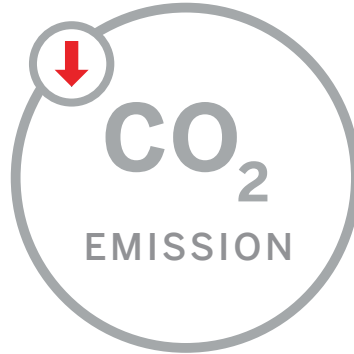# PARKTR ®

FINANCIAL
INSPECTION

EASY
MOUNTING

CO$_2$
EMISSION
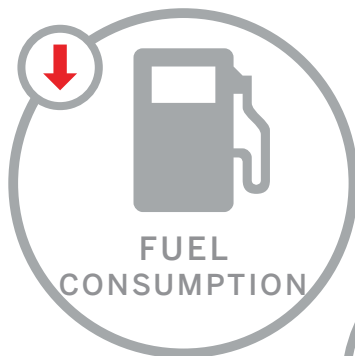
FINDING
A SPOT

ECONOMY

GREEN

TRAFFIC
ACCIDENT

FUEL
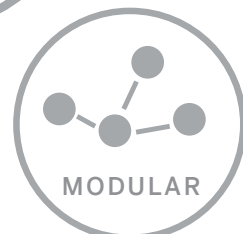CONSUMPTION

7/24
INFORMATION

EASY
MAINTENANCE

USER
FRIENDLY

SECURE

MODULAR

Economy

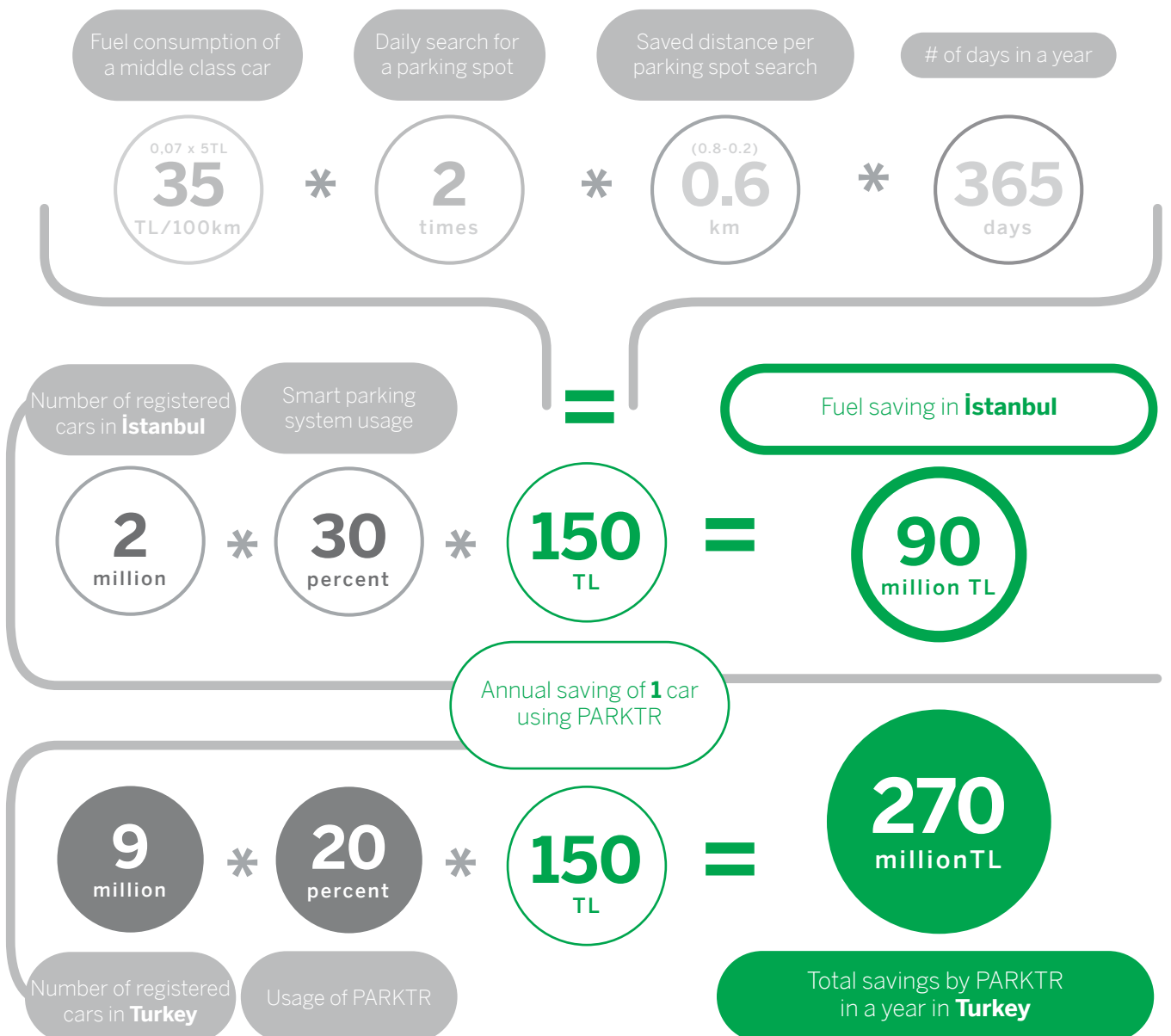Many crowded cities are trying to deal with the problem of the increased number of automobiles. For instance, parking capacity of Istanbul, according to the 2011 values is approximately **250k** parking spots in **2600** parking lots. However, according to the studies there is a vast need of **750k** parking spots.

ECONOMICAL LOSS

DEFICIENT FISCAL RETURN

ECONOMICAL

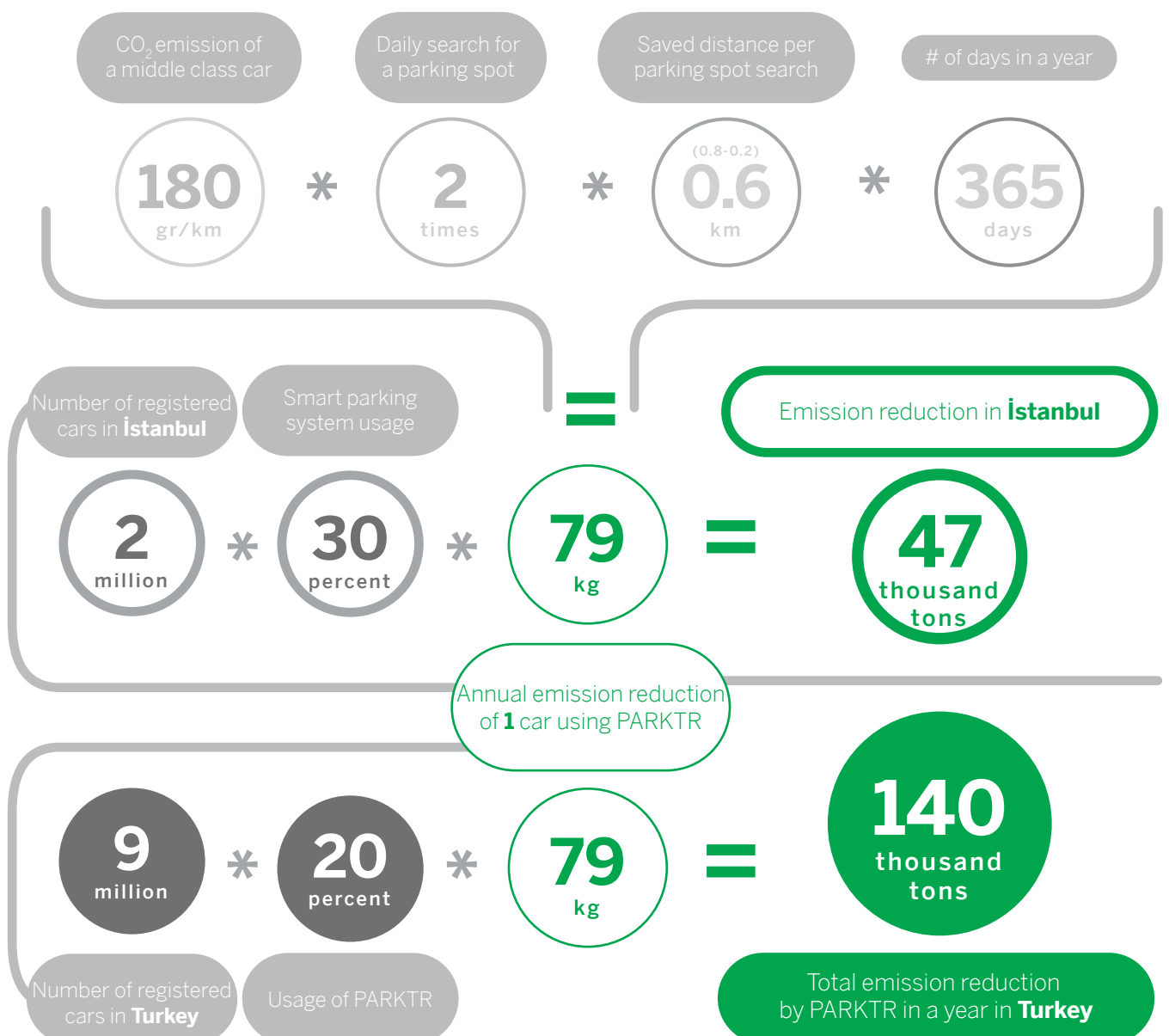INSUFFICIENT PARKING SPOTS

UNCHECKED PARKING

Fuel Consumption

According to the data taken from the government of Turkey, **15,8 million** ton gasoline is consumed by **16 million** vehicles. The number of automobiles which needs a smart routing solution for parking spots more than the other vehicles is about **9 million**. If the calculations are made assuming only **20%** of these automobiles use a parking spot daily, it's seen that **50.000** tons of gasoline which corresponds to **270 million** Turkish Liras would be saved every year.

Fuel consumption of a middle class car	Daily search for a parking spot	Saved distance per parking spot search	# of days in a year
0,07 x 5TL **35** TL/100km	**2** times	(0.8-0.2) **0.6** km	**365** days

* ... * ... *

Number of registered cars in İstanbul	Smart parking system usage		Fuel saving in İstanbul
2 million	**30** percent	**150** TL	**90** million TL

* ... * ... =

Annual saving of **1** car using PARKTR

Number of registered cars in **Turkey**	Usage of PARKTR		Total savings by PARKTR in a year in **Turkey**
9 million	**20** percent	**150** TL	**270** millionTL

* ... * ... =

Exhaust Emission

CO_2 emission of a car searching for a parking spot manually is **79 kg** more than a car using a smart parking system. If a calculation is made with only **20%** of the **9 million** registered cars in Turkey, it gives **140 thousand** tons.

CO_2 emission of a middle class car		Daily search for a parking spot		Saved distance per parking spot search		# of days in a year
180 gr/km	*	**2** times	*	(0.8-0.2) **0.6** km	*	**365** days

Number of registered cars in İstanbul		Smart parking system usage				Emission reduction in İstanbul
2 million	*	**30** percent	*	**79** kg	=	**47** thousand tons

Annual emission reduction of **1** car using PARKTR

9 million	*	**20** percent	*	**79** kg	=	**140** thousand tons
Number of registered cars in **Turkey**		Usage of PARKTR				Total emission reduction by PARKTR in a year in **Turkey**

Smart Cities

Traffic and **parking place search** is one of the main problems in urban life. These problems cause **stress** and **time loss** in addition to **extra fuel consumption** which results in hazardous air pollution. **Smart city** approach is an increasing trend in modern cities. Smart cities allow local goverments and citizens to have more detailed information about their city. This extra data helps to improve the cities by using the latest technology.

%30
Percentage of traffic caused by cars searching for a parking spot

15 minutes
Average time for finding a parking spot in big cities

Smart Parking Lots

PARKTR is created by ESETRON-TAMARA in order to find a solution fo ease the traffic problem which is one of the biggest problems in cities. In crowded areas of cities, **30% of traffic** is created by **cars searching for a parking space** and this search usually takes **more than 15 minutes.** Less fuel consumption, less air pollution and time saving is possible by this system.

Meet PARKTR

PARKTR Smart Parking System operates by installing sensors in parking spots. Valuable data is collected by these sensors such as **occupation state of the spot, weather conditions** or even **traffic density** if the sensor is placed on a suitable place. Received information is shown to users via mobile application and signposts. The system provides convenience in every aspect. The system also delivers a detailed report with the Management Console and with sub systems like integrated payment systems and ticket gates, it provides a complete solution.

Take a Look to PARKTR

ParkTR offers a **safer** experience by providing information on traffic and weather to its users. It is eco-friendly by reducing the fuel consumption and exhaust emission. Offers **customizable** solutions to help different businesses with different needs with a flexible management software. Has many patented innovative solutions.

Green
Saves time, reduces carbon emission.

Secure
Warns user when the car is moved without his/her knowledge.

Practical
Doesn't need cabling or a big hole in the ground.

Available Spots
Shows the nearest empty parking spot.

Weather
Can measure and show humidity, temperature, pressure, fog, frost...

Traffic
Can show the traffic density if installed on roads.

How Does It Work?

ParkTR offers three packages for a complete control:

Valet, **Guidance** and **Management**

Valet Package shows the nearest suitable parking spots via signposts with its customized hardware for parking lots and multistory parking garages.

Guidance Package gives user the information about parking lots. This information can be the number of available spots, the price and opening and closing hours. It can also draw the route on a smartphone or tablet.

Management Package reports the analytical and statistical parking data in certain areas. It also connects to the payment hardware.

Valet Package

This package can be arranged for **indoor and outdoor** situations and consists of three subsystems:

Sensor Module: Includes sensors and communication system.

**Gateway:** Collects data from 25-40 Sensor Modules.

Signpost: Shows suitable spots in the parking lot or on-street.

The information that is sent by **Sensor Modules** is received by **Gateways** wirelessly. Then it is shown on **Signposts** and sent to online servers.
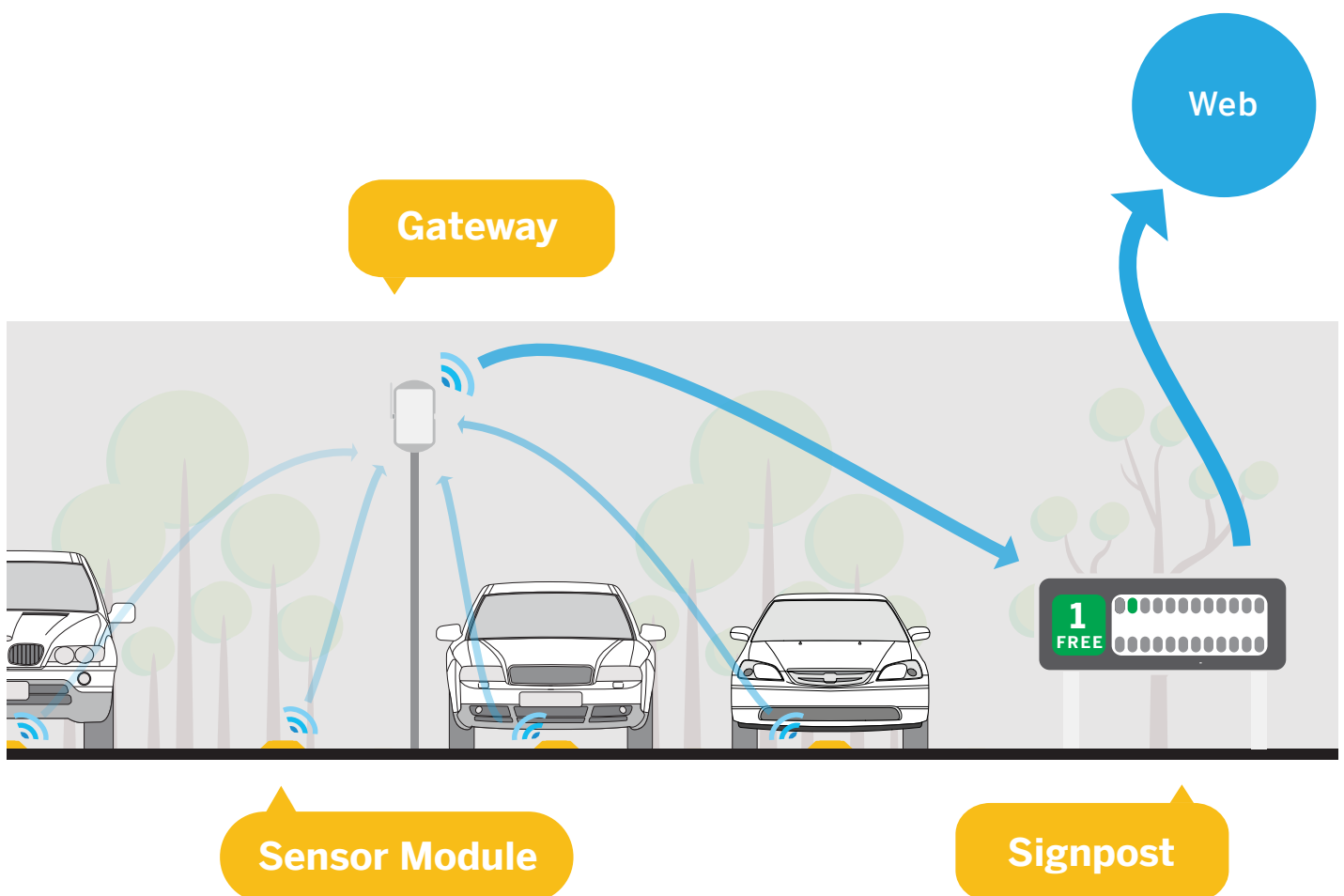
Valet Package indoors

Indoor sensor module detects the presence of the car from above. The data can be sent via wireless communication or cables to gateways and signposts. Gateways send the data to signposts and signposts can show the information directly and send it to the web simultaneously. **PARKTR** can show the locations of parking spots instead of just the total number for a row. More importantly with wireless technology, **cable need** and **installing time** reduces significantly.

Web

Sensor Module

1 FREE
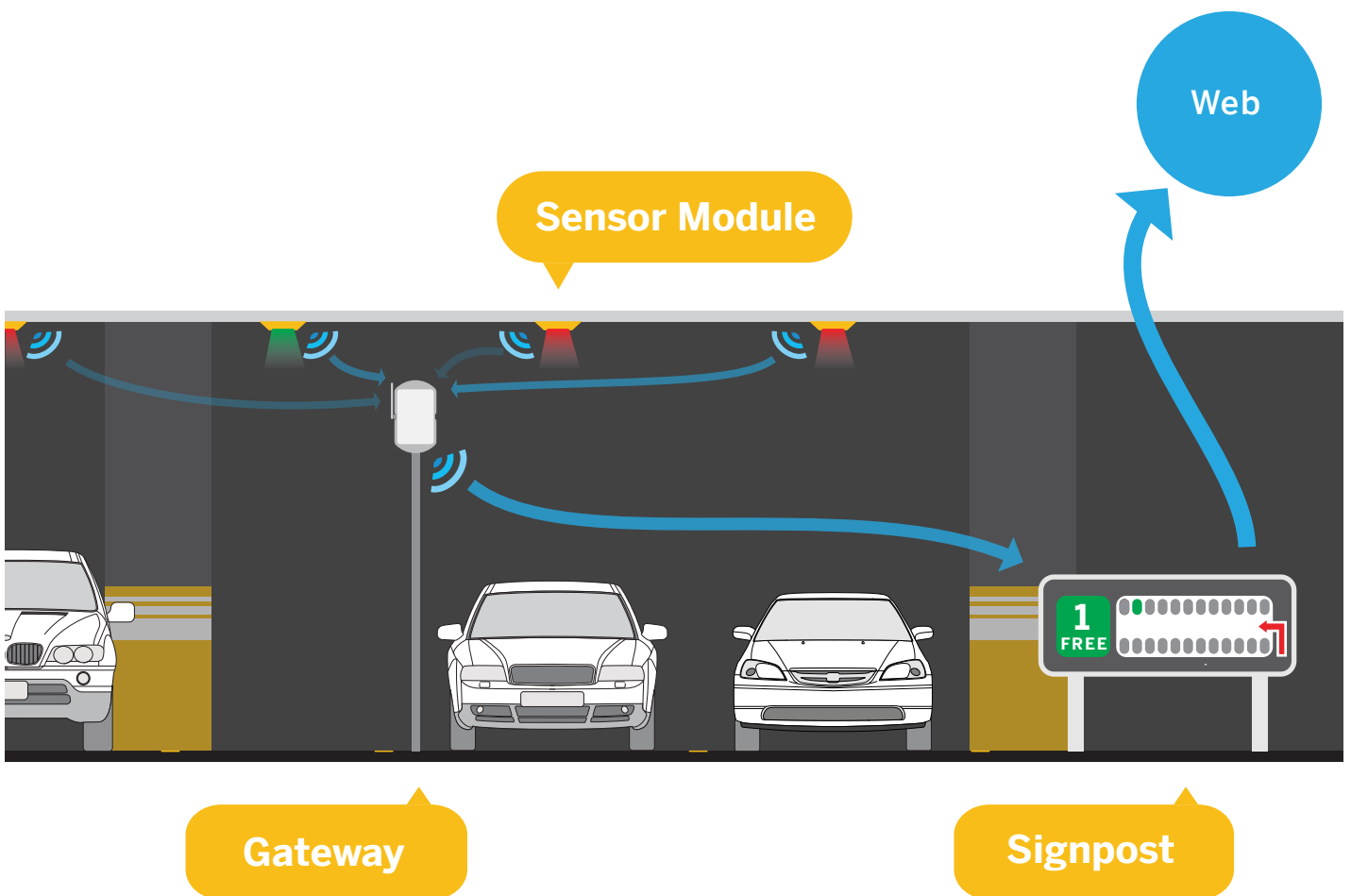
Gateway

Signpost

Valet **Package** outdoors

Outdoor sensor modules detects the presence of the car from below. Sensor module is mounted on the ground at each parking spot and the data is transmitted to gateways and signposts. Signposts can show this data directly and send it to the web. System doesn't require any cabling which results extremely easy installation. By this system, drivers can find nearest available parking spots by using signposts or the mobile app. The designed sensor modules are **waterproof** and **resistant** to outdoor temperatures.

Valet Package sensor modules

Sensor Module consists of an outer protective shell and electronics. For outdoor aplications, module is installed on the **floor** and for indoor applications, it can also be installed on the floor or to the **ceiling.** Sensor modules do not require any maintenance for at least 3 years. Due to its **low energy consumption** design, battery of the module doesn't need to be changed during this time. Special reinforced polyamide outer shell resists mechanical loading and impact forces as well as extreme temperatures.

Outdoor
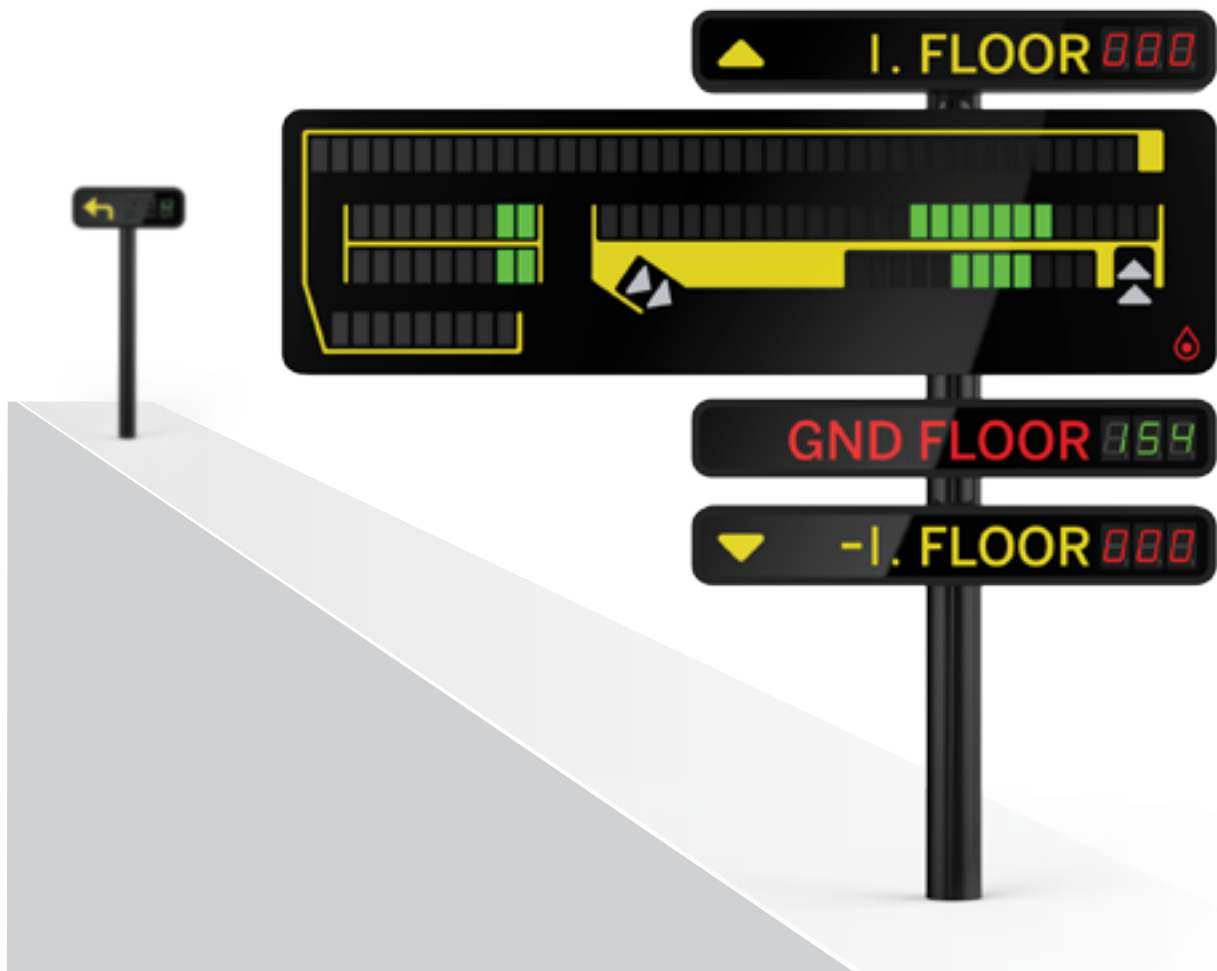sensor module

PARKTR

Li-Ion Battery

Valet Package gateways

Gateways collect data from sensor modules and send it to signposts. For outdoor applications, gateways are designed to be mounted on streetlight poles or utility poles. For indoor cases, gateways can be mounted to ceiling or columns. Indoor gateways works with AC power, however outdoor gateways can work with solar power. One gateway can communicate with a number of 25-40 sensor modules depending on the environment.

Indoor
sensor module

PARKTR

AC Power

Outdoor
sensor module

PARKTR

AC Power
Solar Panel

Valet Package signposts

Signposts are customized for implemented area by taking the plan and layout into considerations. Signboards communicates with gateways and displays the current occupation data. The signposts alse communicate with a server via internet so that the users and drivers can see the empty spots and the occupancy information of parking lots on the mobile app.

Management Package console

The Management Console has an advanced data collecting architecture. Parking information, temperature and every other sensory information sent from the modules is shown in details. Information such as daily, weeklyi monthly user numbers, each spot's occupation time, estimated monet that has to be collected and many other calculated data are shown in details.

Management Console Interface

Ticket Machines and Gates

Payment System
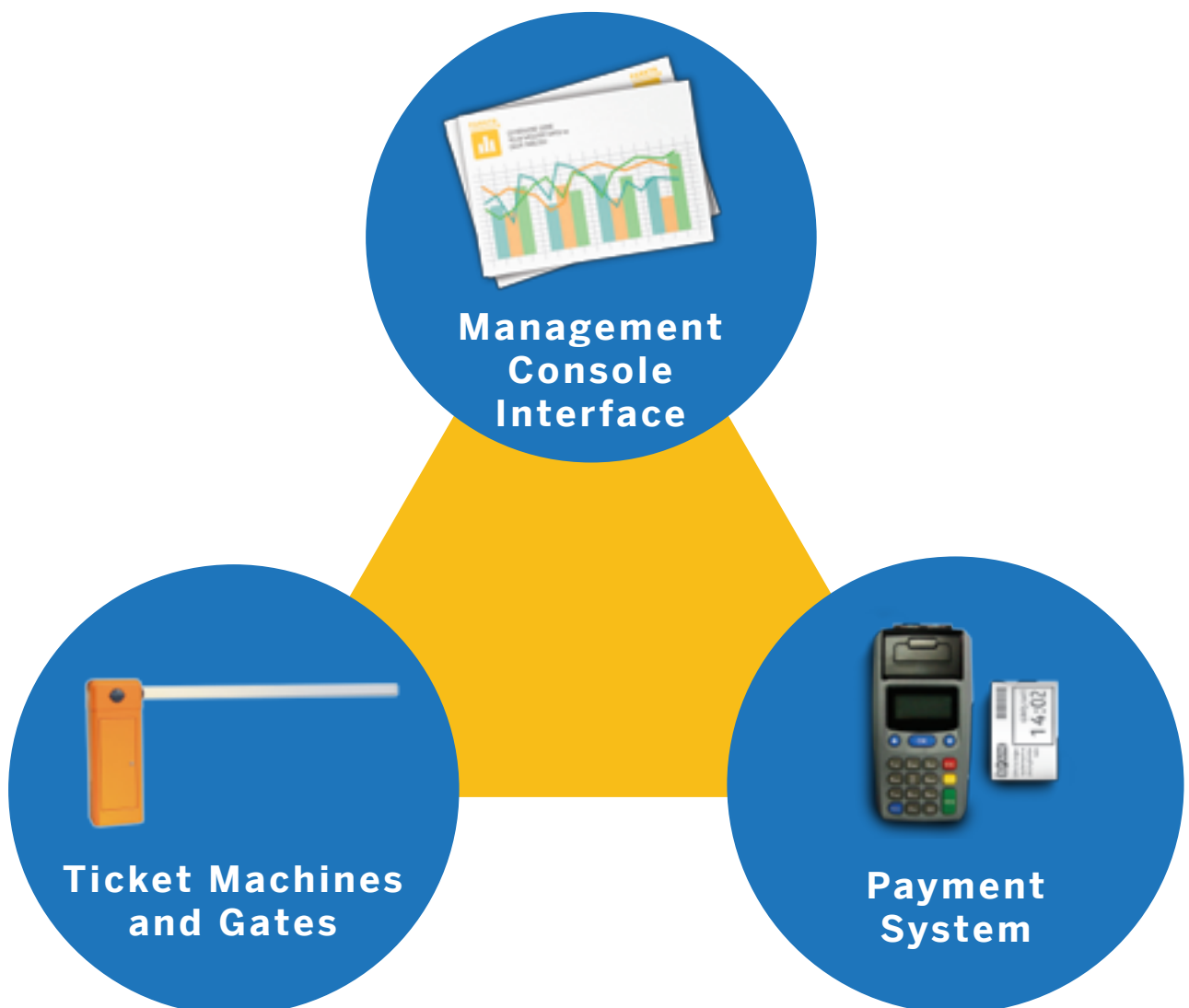
Guidance Package mobile application

Guidance package added to user package which allows users to see the empty parking spots from internet and mobile phones. Mobile application has some features such as, finding the nearest empty parking spot and navigating the user to that spot, a safety protocol which warns the user when the car moved without the presence of the its owner, and showing the parked location on the map to find the car easily.
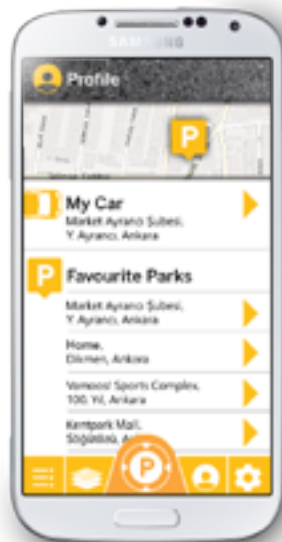
Green
Reduces fuel consumption and gas emission

Precise
Shows the occupancy of each parking spot

Easy Installation
No need for cabling

Customized Signpost Design
Signposts with plans and layouts

Mobile and Web Application
Reach the information from anywhere

Security
Matching owner and the car

Management Software
Manage the parking statistics in details

reach us for more

www.tamara.com.tr

tamara@tamara.com.tr

+(90) 216 418 92 94

tamara
electronics design