



2050
CliMobCity
Interreg Europe



European Union
European Regional
Development Fund

Smart Cities and Sustainable Development

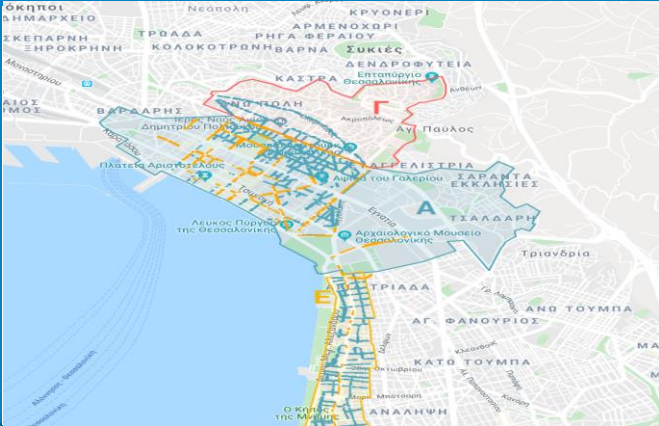
The Case of Controlled Parking of the Municipality of Thessaloniki

Panagiotis Vouellis

Thesi controlled parking system, Thessaloniki, Greece

1 December 2021





Smart Cities and Sustainable Development

The Case of Controlled Parking of the Municipality of Thessaloniki

www.thesi.gr



ΔΗΜΟΣ ΘΕΣΣΑΛΟΝΙΚΗΣ

SMART CITIES

TRANSPORTATION

- **Smart Parking**
- Traffic management
- New transportation standards
 - Electromobility



SERVICES FOR THE CITIZENS

- Citizen participation & communication
- Public services available online



WATER SUPPLY - WASTE

- Water conservation
- New standards for the management of urban and liquid waste



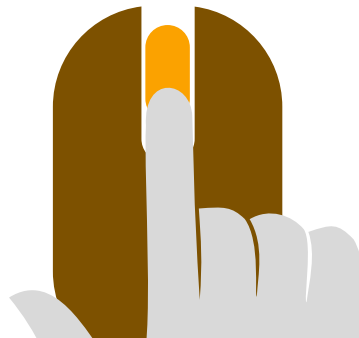
ENERGY

- Street lighting
- Energy efficiency in buildings
 - Smart meters and management



OTHER

- Remote learning and health care
- Skill development centers





Why Controlled Parking?

Traffic Management

Settlement of Traffic Issues – management and discouragement of long-term parking in the city center

Protection of The Urban Environment

Crucial decrease of city pollution through proper parking management and less car use

Smart Management & Statistics

Internet of Things (IoT) technologies offer the ability of smart management of the controlled parking systems with the achievement of scale economy as well as immediate tracing of traffic issues due to parking violations



SMART PARKING

PPP Project

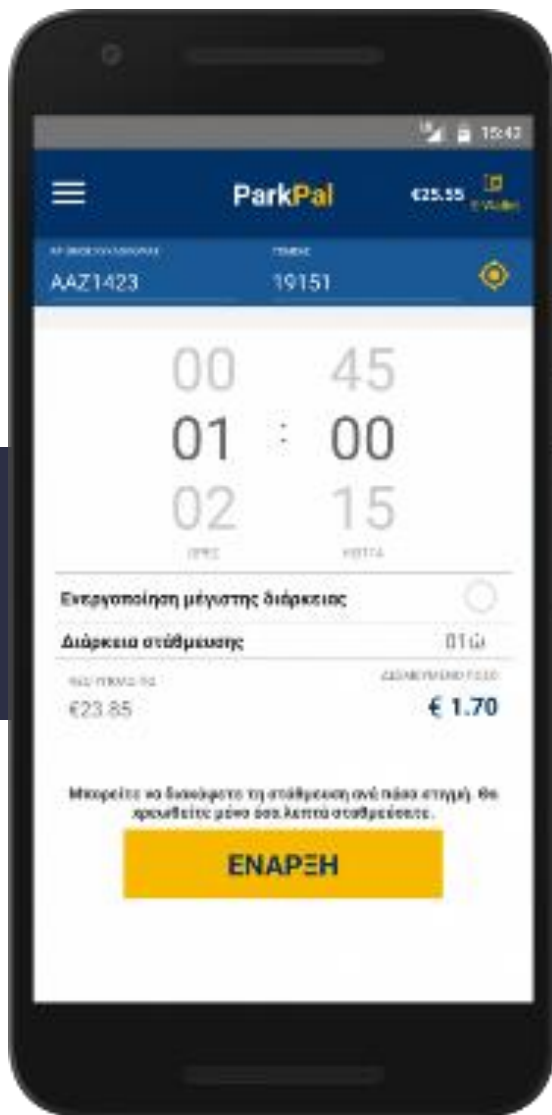
The ability to implement Controlled Parking Projects through Public Private Partnerships (PPPs) brings great value, since they cost nothing (installation & management) to the Municipality and on the contrary, deliver profits

Impart of Expertise

Training of public services employees in new and innovative services

Profits for the Municipality – Compensatory Measures

From the management of parking spots arise important profits for the Municipality



The main innovations in controlled parking



Parking payment via
mobile app



Efficient
enforcement with
license plate
scanning



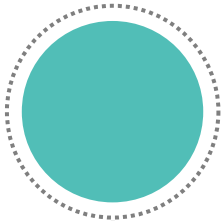
Payment receipts not
required to be placed
on the windshield



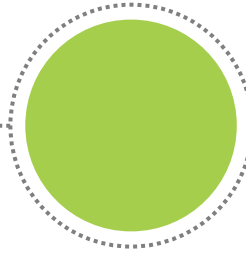
Remote parking
control

Innovation of THESi

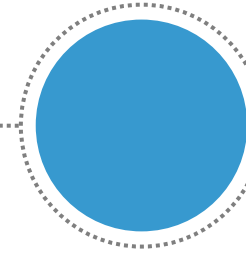
Residents



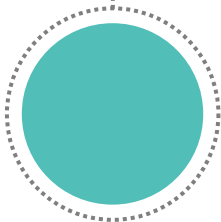
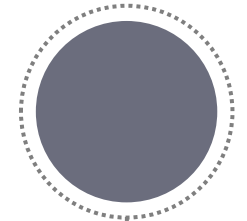
Parking Ri
Management



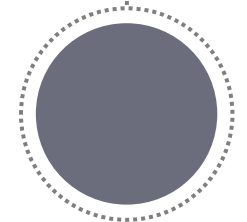
Enforcement



Equipment & Software



Visitors



Statistic Data

PROJECT SUCCESS =
STRATEGIC COOPERATION BETWEEN THE COMPANY AND
PUBLIC SERVICES (Local Authorities)
+ TRAINING + MONITORING + SUPPORT THROUGH NEW TOOLS

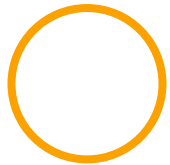
Major Goals



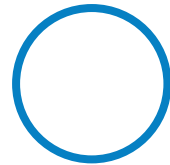


Our Solution

- ✓ Online application & registration for residents
- ✓ Smart parking payment: ParkPal app / IVR / SMS / POS
- ✓ Easy payment (e-wallet)
- ✓ Smart enforcement – IoT technology – Possibility to check and issue fines for all kinds of violations



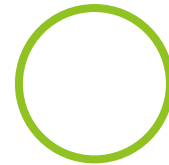
Compatibility and Protection



Easy Management



Easy to adjust & configure



Data analytics

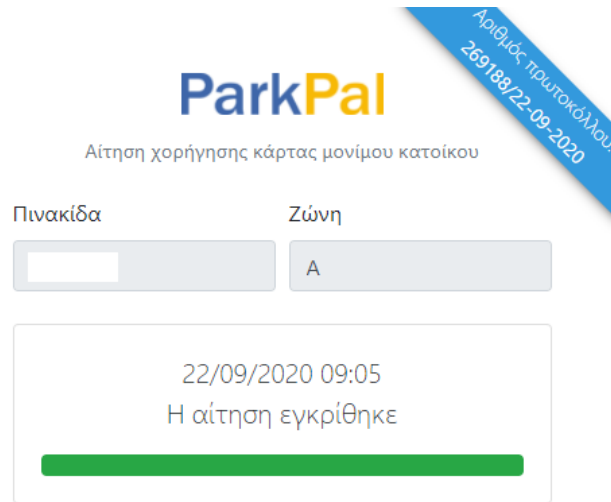


ParkPal System





Permanent Residents' Card Management System



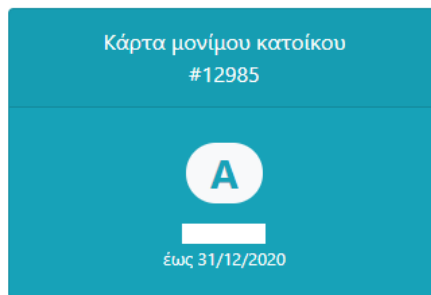
ParkPal
Αίτηση χορήγησης κάρτας μόνιμου κατοίκου

Αριθμός πρωτοκόλλου: 269188/22-09-2020

Πινακίδα

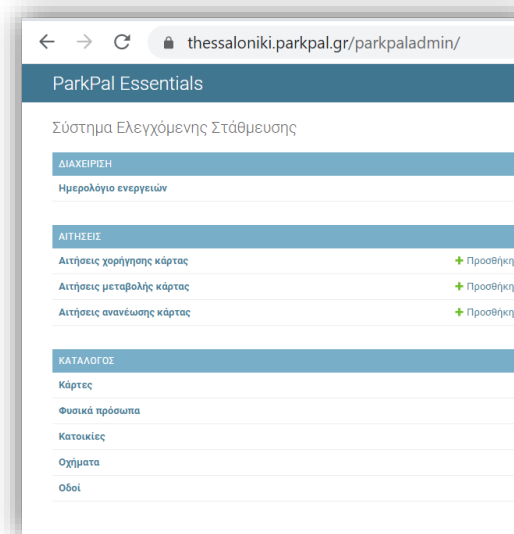
Ζώνη

22/09/2020 09:05
Η αίτηση εγκρίθηκε



22/09/2020 06:09
Η κάρτα παραδόθηκε!

- ✓ Organized CRM system for municipal communities
- ✓ Easy management for the issuing of permanent residents' cards
- ✓ Notifications by SMS & mail, when in need of extra documents
- ✓ Online tracking of the process for the issuing of the permanent resident's card





Parking Options

Parking for
unregistered
users



Parking for
registered users



Parking Options

Parking for
unregistered
users



Parking for
registered users



1. Car license plate number

2. Parking duration

Parking for
unregistered
users



Parking for
registered users



1st Parking Options for Unregistered Users

Scan & Pay

Τομέας / Sector: 17121



thessaloniki.parkpal.gr/pay

ParkPal

1st Parking Option for Unregistered Users

1

ParkPal Ελληνικά ▾

Πληρωμή στάθμευσης

Πινακίδα*

π.χ. NAB1234

Τομέας*

Δείτε τον στην πληροφοριακή πινακίδα κοντά στην θέση όπου σταθμεύσατε

Διάρκεια*

Email

Προαιρετικά, συμπληρώστε το email σας για να λάβετε βεβαίωση της στάθμευσής σας εφόσον η πληρωμή ολοκληρωθεί επιτυχώς

[Μετάβαση στην σελίδα πληρωμής](#)

2

Eurobank

Έχετε μεταφερθεί στο ασφαλές περιβάλλον πληρωμών της Eurobank.

Λεπτομέρειες Συναλλαγής

Επιχείρηση: PARKPAL
Ιστοσελίδα: <http://www.parkpal.gr/>

Ποσό Παραγγελίας
1.70 €

Συμπληρώστε την κάρτα σας:

Αριθμός Κάρτας

Ημερομηνία Λήξης Κωδ. Επαλήθευσης

Μήνας / Έτος CVV
 /

Όνομα Κατόχου

[ΑΚΥΡΩΣΗ](#) [ΠΛΗΡΩΜΗ](#)

3

ParkPal

Πληρωμή στάθμευσης

Η πληρωμή σας ολοκληρώθηκε και η στάθμευσή σας έχει ξεκινήσει!

Ημερομηνία	21/09/2020
Έναρξη	18:36
Λήξη	19:36
Πινακίδα	ABO1234
Τομέας	19151
Κόστος	1.70 €

4

ParkPal <no-reply@parkpal.gr>
Mon 9/21/2020 6:25 PM
To: Nikos (

ParkPal

Βεβαίωση στάθμευσης

Παρακάτω θα βρείτε τα στοιχεία της στάθμευσής σας η οποία πραγματοποιήθηκε επιτυχώς!

Περιγραφή	Ποσό
Πληρωμή στάθμευσης - Θεσσαλονίκη 18:25 - 19:25 Πινακίδα: AAA1234 Τομέας: 19151	1.70 €

Μην απαντήσετε σε αυτό το email.
Για οποιαδήποτε διευκρίνιση, μπορείτε να επικοινωνήσετε μαζί μας στο info@parkpal.gr.

Με εκτίμηση,
Η ομάδα της ParkPal

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2nd Parking Option for Unregistered Users

- ▷ Go to a Point of Sale
- ▷ Needed Info:
 - License number
 - Sector
 - Parking duration
- ▷ Pay
- ▷ Receive receipt

netlink

ΣΗΜΕΙΟ ΔΙΑΘΕΣΗΣ:
Test ArcPOS
ΤΣΙΜΙΣΚΗ 32 - ΘΕΣΣΑΛΟΝΙΚΗ

THESi
by ParkPal

**ΑΠΟΔΕΙΞΗ ΕΙΣΠΡΑΞΗΣ ΤΕΛΩΝ
PARKING PAYMENT RECEIPT**

Αριθμός κυκλοφορίας / License plate number:
ΚΜΕ 4844

Τομέας / Sector:
51451

Ώρα ισχύος στάθμευσης / Valid parking time:
10:45 – 11:45
27/11/2017

Κόστος / Cost:
1,70€

Για διευκρινίσεις, καλέστε τη γραμμή εξυπηρέτησης: 2310XXXXXX
For further assistance, please call the helpdesk: 2310XXXXXX

Ευχαριστούμε / Thank you

ΗΜΕΡΟΜΗΝΙΑ: 27/11/2017
ΩΡΑ: 10:44:56

Powered by
ParkPal

Parking Options

Parking for
unregistered
users



Parking for
registered users



Parking Options

1. Car license number
2. **sector (of parking)**
3. Parking duration

επιλογή χώρου
εγγραφή

After registration, parking becomes even easier

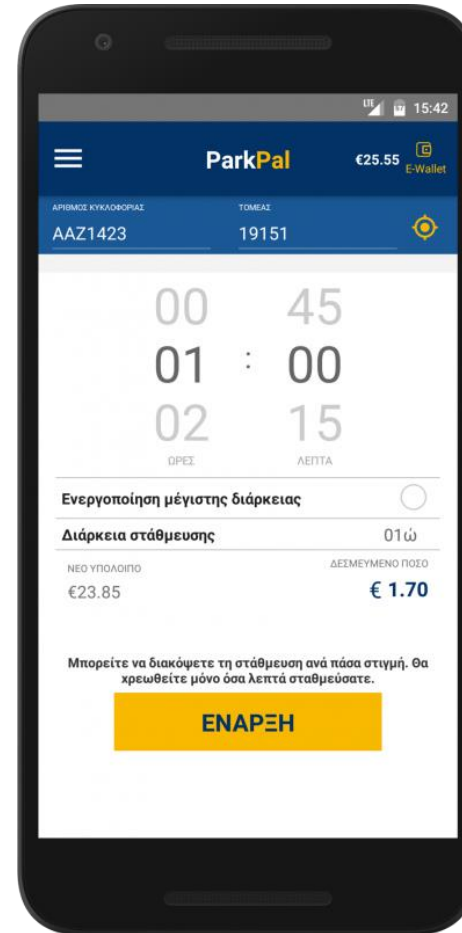
Στέλμηση
εγγεγραμμένων
χρηστών

SMS

Visitor Parking Spots

▷ Major Benefits

- Dynamic pricing
- Specified max duration – parking limit
- Charge per minute
- Multiple parking payment options through smart systems for registered or unregistered users
- Easy payment
- Payment history management
- Geographic location of parking sector
- Monitoring of all parking data by the administrator through the online dashboard



Security Measures



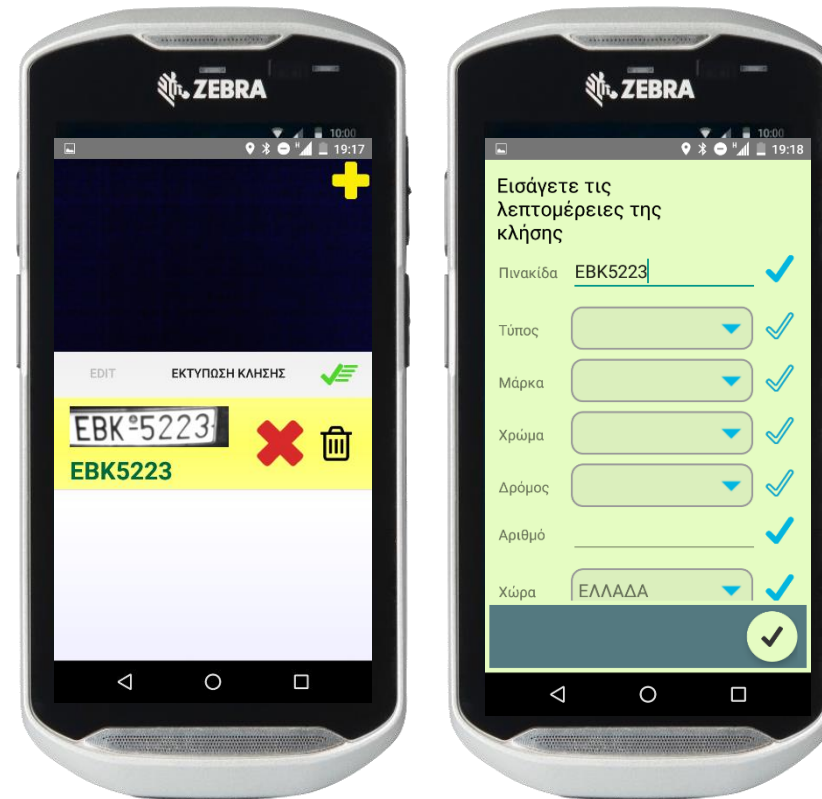
Fast & Efficient Check

- ▷ Software with artificial intelligence (A.I.)
- ▷ Plate scanning
 - Automatic recognition of license number
 - Correction in case of wrong digit
- ▷ Instant check result
 - Communication with Parking Rights Data Base

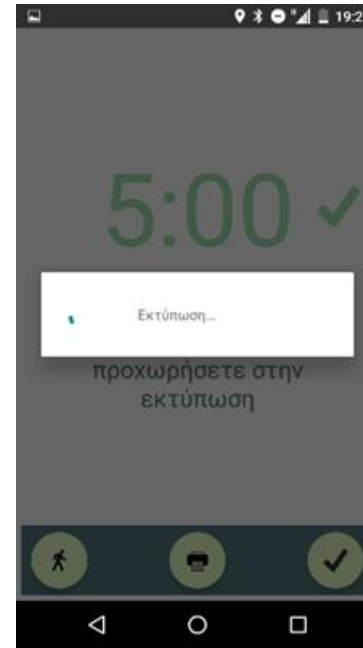
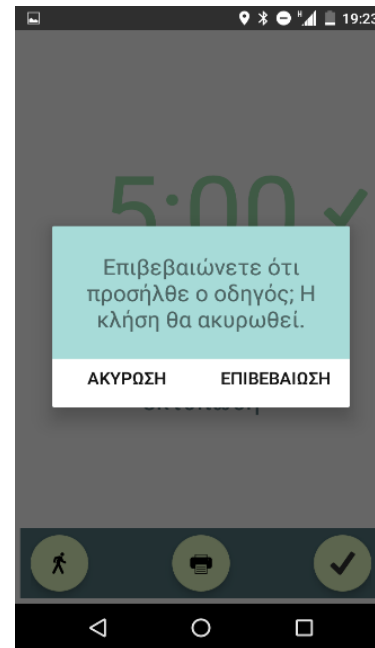
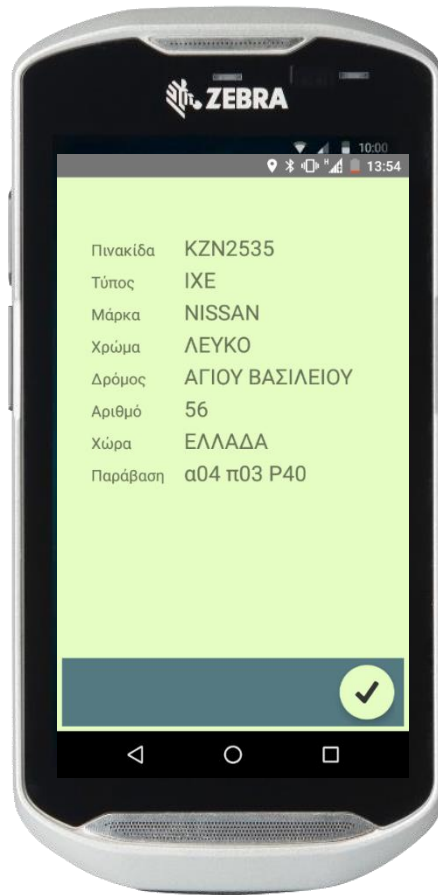


Fast Ticket Issuance

- ▶ After confirmation of parking violation
- ▶ Data to be filled:
 - Vehicle type
 - Vehicle brand
 - Vehicle color
 - Location/Street, number
 - Country
 - Fine type



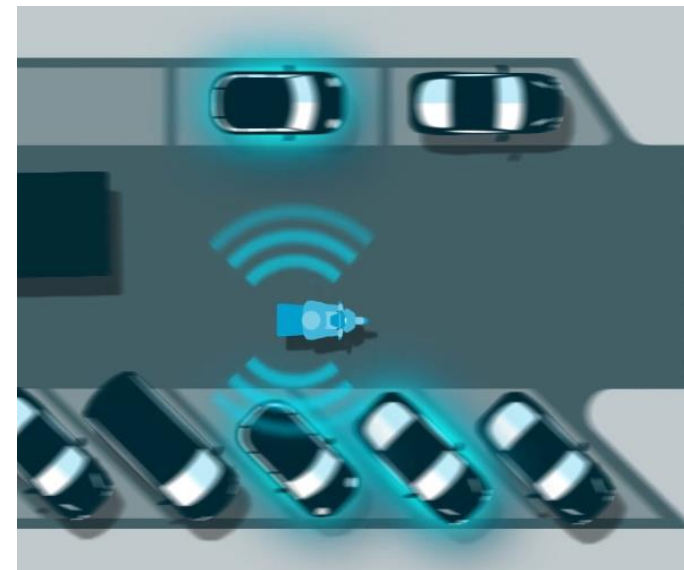
Review & Printing of Ticket



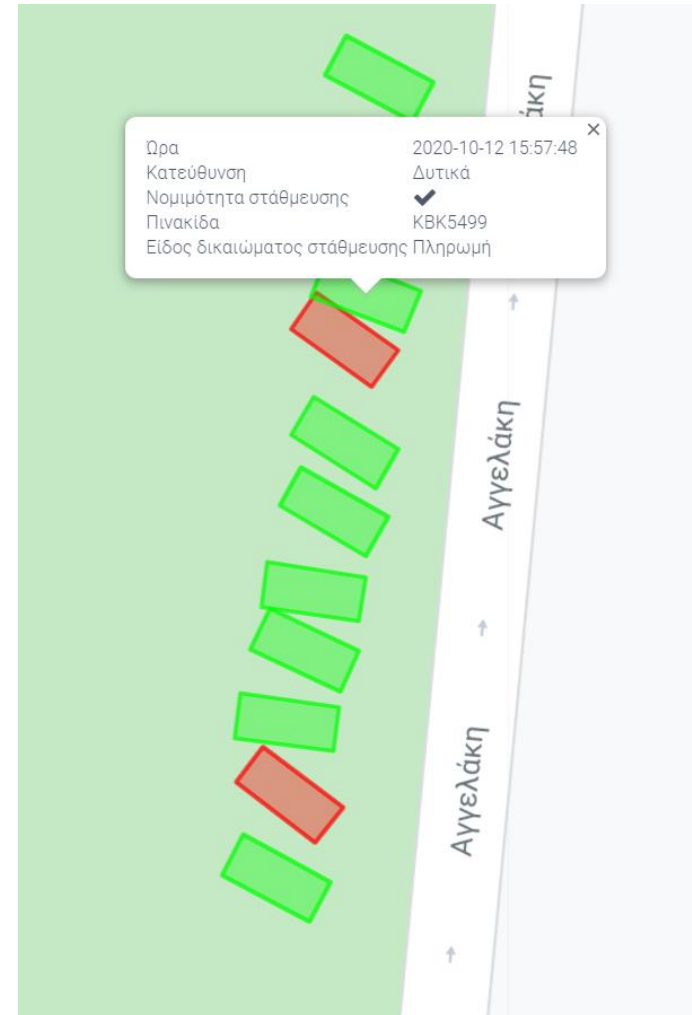
Zebra ZQ520

Enforcement scooter

- ▷ Scooters equipped with a license plate recognition system for instant enforcement checks
- ▷ 4 embedded cameras with wide-angle lenses and efficient recognition of either vertically or horizontally parked vehicles
- ▷ Efficient check of dozens of vehicles per minute
- ▷ Real-time monitoring of check results:
 - Through the Control Center
 - Through the PDAs of police officers



Enforcement Scooters



Control Center – Security Management

▷ Monitoring of all scanned vehicles

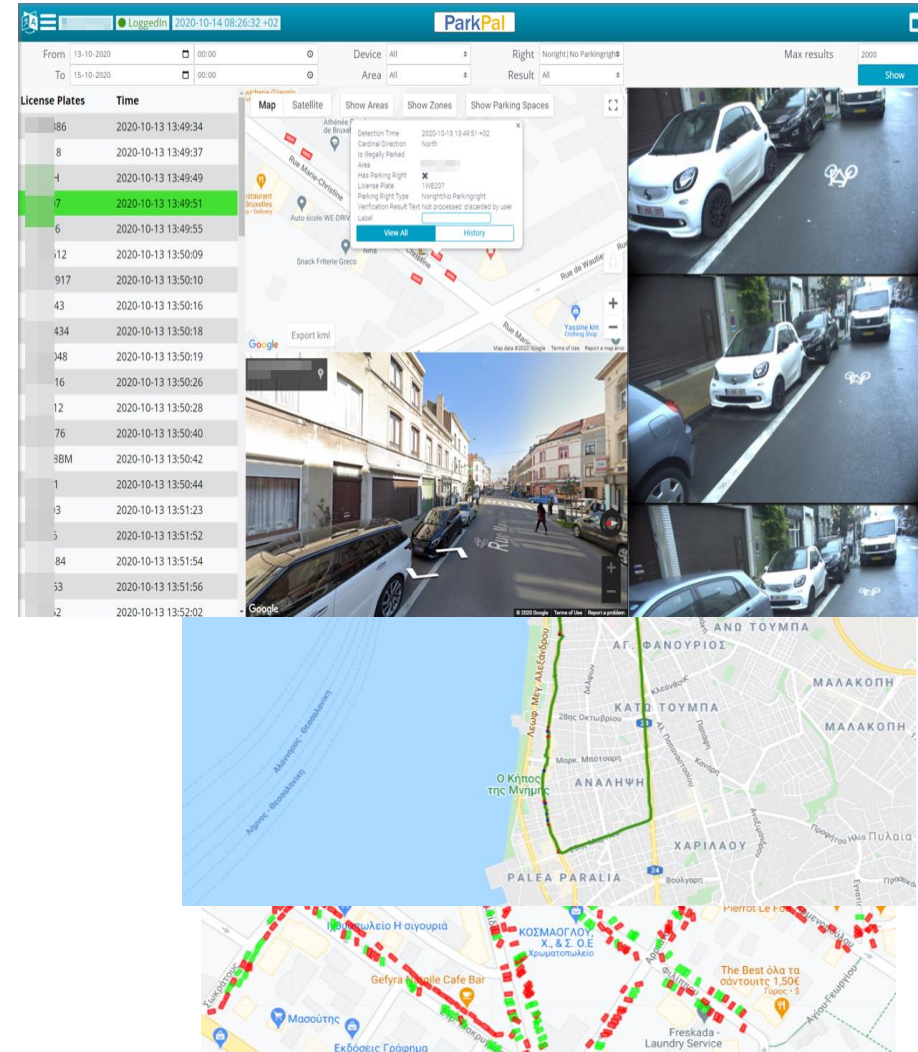
- In a list
- On a map

▷ Filtering

- Per hour
- Per device
- Per officer
- Per audit result

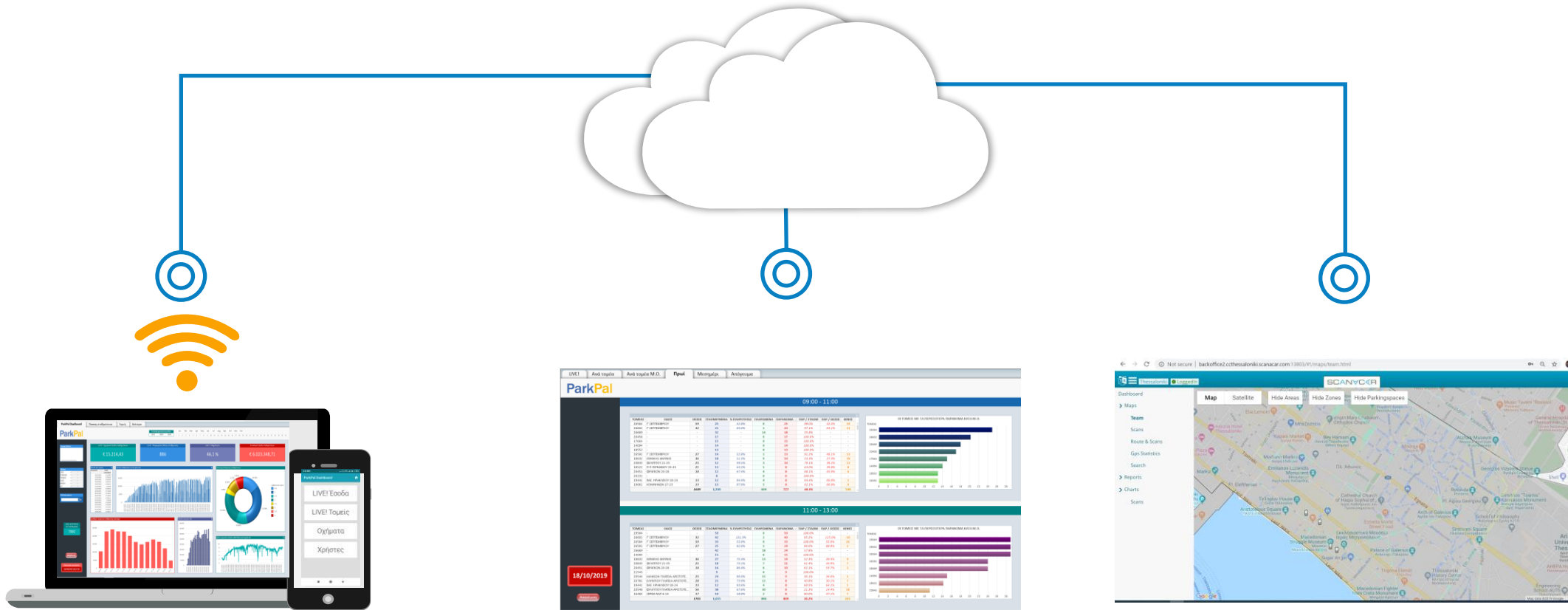
▷ Projection of all routes & checks of each officer

▷ Projection of every photograph accompanying each scan





Data analytics



Economic data & occupancy

Live dashboard

Illegality analysis

Detecting sectors with high violation ratings

Enforcement statistics

Online access and supervision

Monitoring of System Efficiency

- ▷ System efficiency
- ▷ Users' support rating
- ▷ Economic efficiency
- ▷ Graph examples:
 - Occupancy per day
 - Occupancy per street
 - Distribution of violation types
 - Parking sessions per hour
 - Parking sessions per sector
 - Earnings per month and year

Ενεργά φίλτρα

Φίλτρα

- ΩΡΕΣ
- ΠΙΝΑΚΙΔΑ
- ΤΟΜΕΑΣ
- ΟΔΟΣ
- ΗΜΕΡΑ
- Δ.Κ.

Επιλογή ημέρας

13/10/2020

ΩΡΕΣ ΛΕΙΤΟΥΡΓΙΑΣ ΤΟΥ ΣΥΣΤΗΜΑΤΟΣ

10624

Ανανέωση

Τελευταία ανανέωση:
13/10/2020 19:10:05

LIVE! Σημερινά έσοδα σταθμεύσεων

€ 14.592,97

LIVE! Πληρωμένες θέσεις στάθμευσης

828

LIVE! Πληρότητα

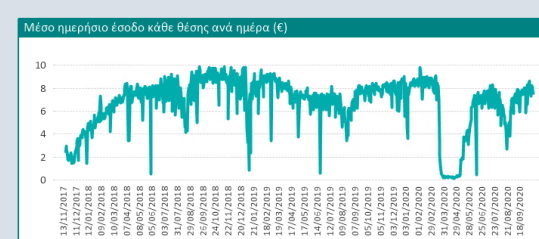
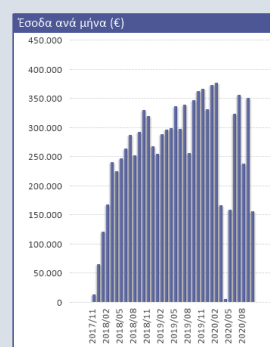
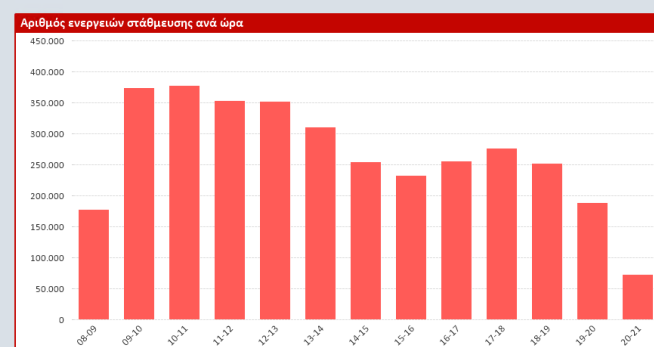
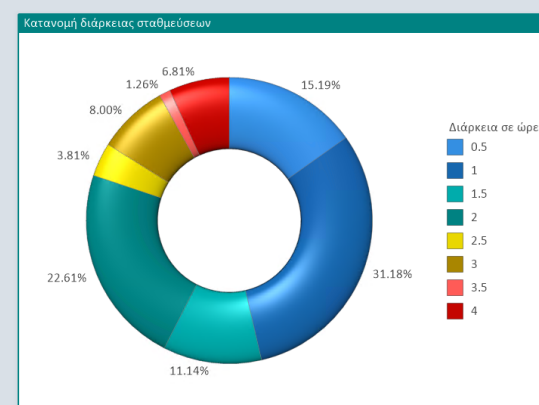
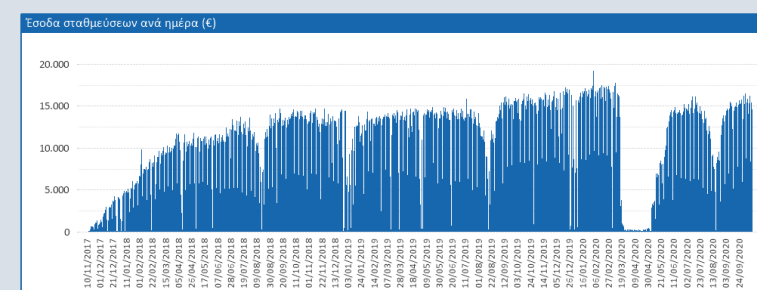
42.3 %

Συνολικά έσοδα σταθμεύσεων

€ 9.355.055,97

Έσοδα ανά ημέρα

Ημερομηνία	Έσοδα
13/10/2020	14.592,97
12/10/2020	15.374,66
10/10/2020	8.387,72
09/10/2020	16.148,07
08/10/2020	15.268,72
07/10/2020	14.047,95
06/10/2020	15.829,38
05/10/2020	15.369,73
03/10/2020	8.680,71
02/10/2020	16.449,06
01/10/2020	15.213,13
30/09/2020	12.858,40
29/09/2020	16.182,72
28/09/2020	13.373,59
26/09/2020	5.959,80
25/09/2020	15.719,84
24/09/2020	15.279,69



Thessaloniki ● LoggedIn
SCANVCOR

Λειτουργίες

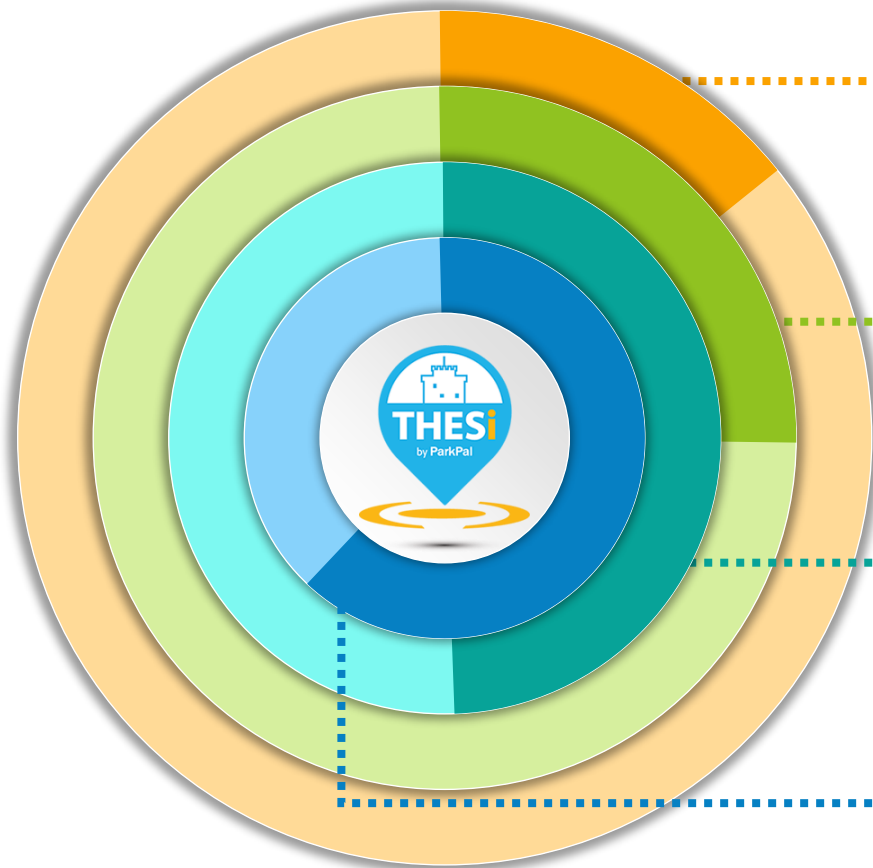
- > Χάρτες
- Ομάδα**
- Σαρώσεις
- Προηγμένες Σαρώσεις
- Διαδρομή Και Σάρωση
- Μοναδικές Σαρώσεις
- Gps Statistics
- Ψάξιμο
- > Αναφορές
- Σαρώσεις
- Μοναδικές Σαρώσεις
- Ψάξιμο
- > Διαγράμματα
- > Log

Συσκευή	Κατάσταση	Χρήστης
Pda47	ReadyToEnforce	ΡΕΝΤΑΣ
Pda38	ReadyToEnforce	ΣΑΚΑΛΙΔ
Pda6	ReadyToEnforce	ΠΑΠΑΔΟ ΑΧΙΛΛΕΥ.
Pda35	ReadyToEnforce	ΧΑΤΖΗΑΓ ΑΝΘΙΜΟ
Pda42	ReadyToEnforce	ΚΟΖΑΝΙ ΚΩΝΣΤΑ
Pda43	ReadyToEnforce	ΘΩΜΑΣ
ScanScooter1	ReadyToEnforce	Driver1
Pda50	ReadyToEnforce	ΚΕΤΙΚΙΔ
Pda26	ReadyToEnforce	ΜΠΟΥΖ ΣΠΥΡΙΔ

Προβολή 9 Συσκευές

Χάρτης
Δορυφόρος
Προβολή Περιοχές
Προβολή Ζώνες
Προβολή Χώροι
Στάθμευσης

Conclusions



50% of parking is paid online

Familiarization of residents & visitors with new technologies

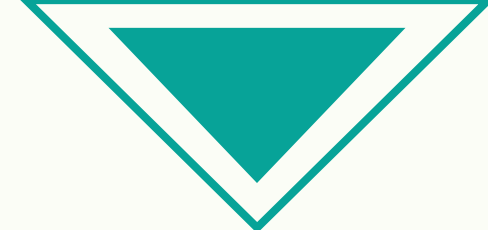
Enforcement of the spots for the permanent residents 24hr /7 days

Increase of enforcement efficiency

The Municipal Police, with the provided tools, have increased the checks by 30%, resulting in efficient regulation of traffic

Raise of Municipality's profits – Compensatory Measures

The Municipality's monthly profit has increased greatly, offering the opportunity to implement major transportation projects



THANK YOU FOR YOUR TIME!

www.thesi.gr

info@thesi.gr

