## **G4M ADVISORY GROUP MEETING TAXI-SHARING SERVICE THESSALONIKI**

# Thessaloniki – Overview





~ 1.400.000 inhabitants & ~ 1.300.000 daily trips
~450.000 private cars & ~ 20.000 motorcycles
1 (+1) public transport operator for urban trips & 1.950 taxis
~35 public transport operators for extra-urban trips
6.433 kms of streets - 8,8 kms of dedicated bus lanes - 89,4 kms of ring road

197.696 parking places



# Thessaloniki – The problem





**Time Intervals** 



### Thessaloniki Pilot





# 'Shared taxis'

"The GALILEO 4 Mobility demonstration in Thessaloniki aims at reducing the traffic congestion in the city **center** by reducing the commuting trips from 2 zones located at the eastern part of the city, one suburb and one exurb. The tested mobility scheme is based on taxi/ride-sharing service provided by the TaxiWay association. Twenty taxis collect and transport individuals to the city center and back to their home combining the desired trip origins, destinations and timestamps. Similar trips are clustered together and realized with one vehicle to reduce the total vehiclekilometers traveled daily."





## **Shared Taxis – A trip**





A realized, morning, home-towork trip:

- 2 passengers
- Origin: Kalamaria suburb
- Destination: Thessaloniki city center



# Хартнатис

	Thermi	Kalamaria
Bicycle	0%	1%
Walk	0%	4%
Codriver/Lorry/Motorcycle	8%	7%
Car Trips Core	72%	37%
Bus Trips core	20%	50%



$\checkmark$	Comfortable and cost-effective "home to work"
	mobility solution for residents of the Municipalities
	of Thermi (A) and Kalamaria (B).

- ✓ Reduction of commuting trips
- ✓ Taxi/ride-sharing service (20 vehicles)
- ✓ 2 daily trips (morning / evening)
- ✓ **50-100 citizens**
- ✓ Users engagement campaign focusing on PrT users

Municipality	External	Exurb	Suburb	Urbancore (C)	Total
Thermi(A)	206	1.786	2.461	1.504	5.957
Kalamaria(B)	204	800	7.295	3.021	11.320
Total	410	2.586	9.756	4.525	17.277





## **Shared Taxis – Pilot Execution**



#### Timetable:

- ✓ <u>Pilot Start</u>: May 2019
- ✓ <u>Planned Duration</u>: 8 months
- ✓ <u>1st pilot phase</u>: May 2019-August 2019 (4 months)
- 2nd pilot phase (ongoing): September 2019- December 2019 (4 months)

#### **System Architecture:**

- Users create a profile stating the days, the time and the origin-destination of the desired trip via a mobile app
- Users' origins and destinations are clustered based on the trips' starting time.
- Taxi drivers receive the trip plan of each customer through their on-board smart devices.
- Each cluster is assigned to one vehicle, which picks up the users from the designated starting points and transfers them to their final destination



#### **Shared Taxis – Backend System**







## **Shared Taxis – Mobile Application**



... an easy way to request shared taxi trips!

#### **Functionalities include:**

- User profile creation (register or log in )
- Viewing and editing the personal profile
- Requesting round trips (recurring or one time)
- Enabling/Disabling/Deleting a trip request
- Monitoring trips in map view
- Accessing the trip history
- Misc. user management functions (password reset, log out e.t.c.)
- Logging Floating Car Data (coordinates, speed, time, orientation e.t.c.) during the trip





### **Shared Taxis – Data Collection**



#### **Users data:**

Personal demographics and demanded trips data (age, origin-destination, frequency of desired trips etc.) were collected from the questionnaire issued during the declaration of interest phase.



Eligible users can later modify their preferences via the mobile app. They can also use the app to record FCD for their trip, as well as to comment and rate each realized trip.

#### **Backend Data:**

The backend infrastructure records data for each trip (vehicle id, cluster id, participants who joined, desired start times and locations). It also monitors the location of the taxis that are assigned the trips and logs all relevant FCD (coordinates, instantaneous speed) to enable offline analysis and assessment of the service.

#### **Privacy Policy:**

Participating users are requested to agree explicitly that they permit CERTH-HIT to store and process the above data for the purposes of the Galileo For Mobility project.



## **Shared Taxis – Dashboard**



A **web-based data analytics dashboard** was developed for efficient monitoring of the system's operation and related metrics.

It is connected to the database and applies certain processing, filtering and aggregation procedures on raw data.

Real Number of Parks Sans	Carrena Hamber of Active Trip Requests	Total Number of Trips Descued
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https://galileoapi.imet.gr/dashboard



# **Shared Taxis – User engagement strategy**



Meeting with the municipalities of Kalamaria and Thermi aiming at organizing the dissemination plan of Thessaloniki's pilot (November 2019)



#### **Dissemination events**



• Thessaloniki International Fair (September 2018 & September 2019)

• Open Day HIT (November 2018)



<u>Info point</u> <u>kiosks</u>in Thermi and Kalamaria





## **Shared Taxis – User engagement strategy**







## **Shared Taxis – User engagement strategy**



#### ✓ 283 potential users are registered in the initial participation form

QUESTIONS RESPONSES 16	
Section 1 of 2	X I
δοδομόνων και δοκιμό υποοσαιίν	ιλογη
δεδομένων και δοκιμή υπηρεσιών	λογη
2. Ομμετοχή στη σημιουργια και συλ δεδομένων και δοκιμή υπηρεσιών κινητικότητας του Ι.ΜΕΤ.	αυλλογή δεδομένων και τότος και Δικτίων
2. Ομμε τοχή στη σημιουργία και συλ δεδομένων και δοκιμή υπηρεσιών κινητικότητας του Ι.ΜΕΤ. Ιωπλαρώνοντος τη παρακάτω φόρμα εκδρώνετε το ενδιαφέρον σος για συμμετοχή στη δουμή των εφαρφορών και υπρετοίων κοιτρικότητας του όντιτοίτου Βιώσωμς Κυητικό Μεταφορών Η κεινή συμμετοχή σος θύμας βορήσει στη βελτικόη και αναβάθμοη τω του Ιοττίτοτον και παράλλη αυτή διάδους τος τοι εφιό κυλ.	συλλογή δεδομένων και τητας και Δυττών ν παρεχόμενων υπηρεσιών
2. Ομμε τοχή στη σημιουργία και συλ δεδομένων και δοκιμή υπηρεσιών κινητικότητας του Ι.ΜΕΤ. Σιμήδρονοτο: τη προσάτω φόρα εκδηλώνετι το ενδιοφέρον σος για συμμετού το δουμή των εφορογών και υπρέστων κιστροτο του Ιοπτούτου Βιαυωρικ Κινητικό Μετοφορούν Η κοτρή συμμετού το σε μου συμμετού του	συλλογή δεδομένων και τητας και Δικτύων παρεχόμενων υπηρεσιών

✓ A User's initial assessment (baseline) before pilot's start through a questionnaire examines barriers, users' behaviour, preferences and expectations (March 2019)

# A second form where the potential users state details about the desired route was created



Διεύθυνση κατοικίας / Home address



## **Shared Taxis – Workshop**



#### Date: 13/06/2019

<u>**Goal</u>**: define metrics which help improve both the value proposition of taxi-sharing service and urban mobility planning.</u>

#### Location: HIT premises

**Participants**: Representatives of local involved parties (CERTH-HIT, Municipality of Kalamaria, Taxiway, Municipality of Thermi, OSETH) and WP5 leader Connected Places Catapult







For the trips realized until October 15<sup>th</sup> , 2019:

- Currently active users: 41
- Trips realized with the service: **2400**
- Individuals transported: 3127
  - Vehicle assignment delayed 26 times (<1%)</li>
  - Vehicle arrival delayed 600 times (19%)
- Mean trip speed: 21.30 km/h = 13.23 mph
- Mean trip distance: **10 km = 6.2 miles**
- Mean user rating: 4.58/5



## **Shared Taxis – Conclusions & Future Work**



#### Conclusions:

- So far, the communication with users and their feedback (system rating, telephone communication or comments in the app) is **encouraging**.
- Several questions from users related to future availability of the service.

#### Future work:

- Extraction and monitoring of all operational metrics of interest.
- Reporting of findings





# Thank you!

### **Questions?**

