



ISTANBUL
METROPOLITAN
MUNICIPALITY

Sustainable urban mobility

MORE FOR FUTURE: ISTANBUL CASE

İSA CERRAH

ISTANBUL METROPOLITAN MUNICIPALITY

ANKARA, OCT, 2015

İSTANBUL



10/22/2015

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- I. GENERAL INFORMATION OF CITY / sustainable urban mobility;
- II. MUNICIPALITY'S ROLE IN TRANSPORTATION MANAGEMENT / the legal framework
- III. BEST MOBILITY PRACTICES / solutions and recommendations

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I. GENERAL INFORMATION of CITY

TRANSPORTATION STATISTICS IN ISTANBUL:

- Area : 5.461 Km²
- Population : ~ 14 Million
- Daily Trips : ~ 20 Million
- Number of Vehicles : ~ 3,4 Million
- Vehicles Added to the Traffic Daily : ~ 400 Veh.
- Transportation (Headway) Network Length : 27.000 Km
- Railway Network Length : 142 km (96 km is under construction)
- Daily Trips Between Continents : ~ 1.1 Million
- Number of public buses : 6.255
- Number of ferries : 469



II. MUNICIPALITY'S ROLE in TRANSPORTATION MANAGEMENT

- ❑ **Istanbul Metropolitan Municipality (IMM) holds a very important place in local administration organization of Istanbul. It is responsible for wide variety of areas including transportation, environment, etc.**

- ❑ **Responsible for operating the function of «Transportation Systems Coordination Branch» which serves as the highest consulting authority in regulating and organizing the citywide transport. Besides, it is also mainly responsible for:**
 - **Regulating and controlling the activities of operating all transportation systems,**
 - **Controlling and planning the transportation projects, providing and producing required technical and statics analysis for the planned and ongoing projects,**
 - **Rehabilitating and improving traffic controlling facilities and traffic flow directions.**



III. BEST MOBILITY PRACTICES

- 1. MARMARAY PROJECT**
- 2. METROBUS (BRT SYSTEM)**
- 3. AKYOLBIL - Satellite Tracking and GPRS Fleet Control Management System**
- 4. ISTANBULKART**
- 5. TRAFFIC CONTROL CENTER**
- 6. TRAFFIC DENSITY MAP / SMART PHONE APPLICATION**
- 7. PARKING GUIDANCE SYSTEM**
- 8. EDS RED LIGHT VIOLATION DETECTION SYSTEM**
- 9. METEOROLOGIC SENSORS**
- 10. TRANSPORTATION APPLICATIONS FOR DISABLED CITIZENS**

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1) MARMARAY PROJECT

- ❑ **Capacity:** 75.000 passengers per hour in one way.
- ❑ Approximately **300.000 people per day** are using Marmaray.
- ❑ **5 stations have already started giving service** to public 1,5 years ago.
- ❑ **42 stations in total.**
- ❑ **Total length:** 77 kms. After completing construction for all line in 2017,
- ❑ It will be able to pass the city through EAST-WEST direction on one line.

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KAZLIÇEŞME

YENİKAPI

SİRKECI

ÜSKÜDAR

AYRILIK ÇEŞMESİ



Marmaray projesi

Istanbul Boğazı karayolu geçiş projesi

AVRUPA
YAKASI

Kazlıçeşme

Yedikule

Yenikapi

Beyoğlu

Sirkeci

Üsküdar

ANADOLU
YAKASI

Haydarpaşa

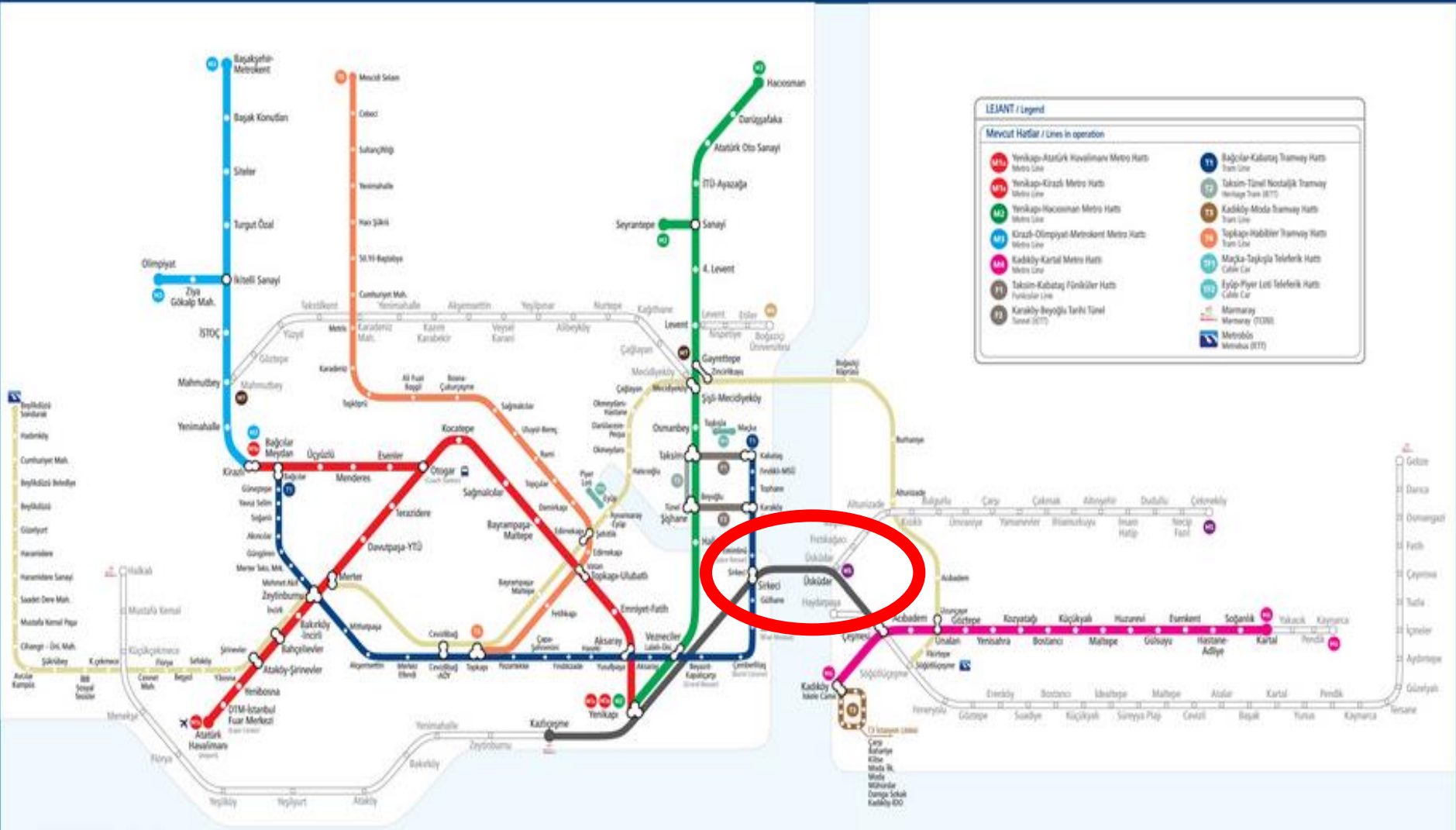
Göztepe

Söğütluçeşme

Marmara Denizi



CONNECTING CONTINENTS



3) AKYOLBIL - Satellite Tracking and GPRS Fleet Control Management System



AKYolbil is a web-based system for fleet tracking/guidance and passenger information.

In order to provide line monitoring, line management and line optimization in highway public transportation, all the buses and BRT system are equipped by GPS.

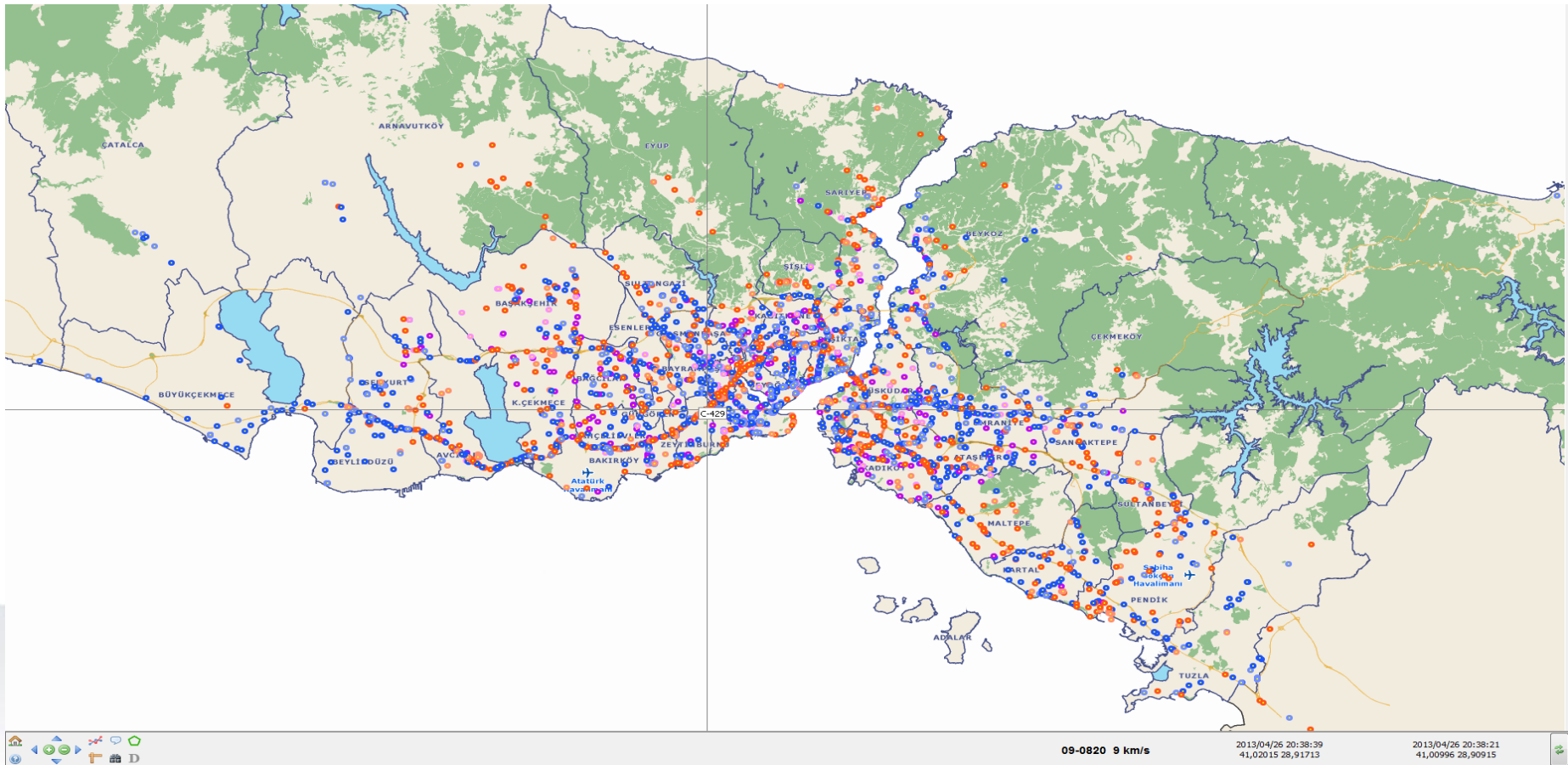
Bus arrivals are determined and displayed on LCD screens at the bus stops. For the disabled, voice assistance is also available.

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FLEET MONITORING & CONTROLLING

All the buses are being monitored by GPS and the data is sent to the center. It is possible to monitor the buses as topologically line based. And It is also possible monitoring the departure and arrival times of buses.



ELECTRONIC FARE COLLECTION SYSTEM of ISTANBUL

- ❑ AKBİL, was a contact based technology and used touch on memory.
- ❑ Today, its technology has been updated to contactless smart card, called as Istanbul card.
- ❑ It's also compatible to NFC.

1995- Akbil

- The First Electronic Ticket of Turkey

2003- Integrated Ticketing

- Akbil is valid for the complete journey:
- Buses, trains, subways, ferries!

2009 - istanbulkart

- Mifare based Contactless Smartcard, istanbulkart
- Electronic Tickets for single journeys: birGeç, ikiGeç, beşGeç, onGeç were being used

2010- NFC Ticketing

- NFC ticketing test transitions began

2012- City Card Integration

- istanbulkart for all municipality services such as parking, cultural activities, restrooms etc.

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4) ISTANBULKART

❑ A media in the **Electronic Fare Collection System** which is a secure, fast and accurate information management system that provides users pre-paid travelling in the mass transportation modes.

❑ Istanbulkart is the contactless smartcard that is available to be used in the municipal services of Metropolitan Municipality.



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- ❑ Being a user friendly system with its contactless working property, Istanbulkart can fit in a wallet and be used easily.
- ❑ It is highly secured against counterfeiting.
- ❑ Its large memory storage capacity enables multiple applications and a flexible structure. It allows different scenario buildings according to the fare policy.
- ❑ Istanbulkart is up to the international standards for contactless smart cards.
- ❑ The technology which is being used is the first and only in Turkey and one of the first ones worldwide.

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CURRENT ITS ELEMENTS in ISTANBUL



Traffic Control Center



Call Center



CCTV



Measurement Systems



Image Processing



Signalization



Meteorologic Sensors



Web Applications



Mobile Applications



VMS



Lane Control Systems (LCS)



Electronic Detection System (EDS)



Tunnel Management System



Parking Guidance System

5) TRAFFIC CONTROL CENTER (TCC)

- ❑ Dedicated center to monitor & control traffic flow & provide 24/7 real-time traffic info. to citizens.
- ❑ Center where ITS solutions are developed using collected traffic data for efficient traffic management
- ❑ Route advising to drivers & passengers & pedestrians (6000 calls per day)
- ❑ Informing related departments about incidents on the roads
- ❑ Entering appropriate traffic info to variable message signs.
- ❑ In addition Live broadcast is provided to 10 TV channels and 36 radio stations in a day.

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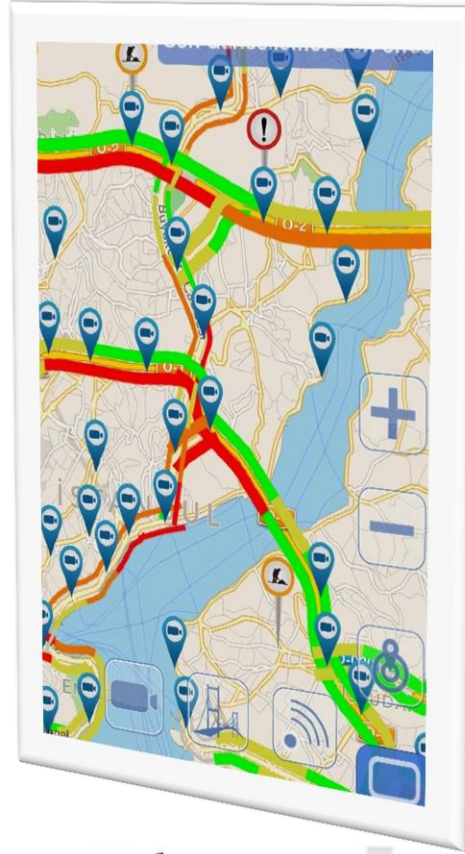
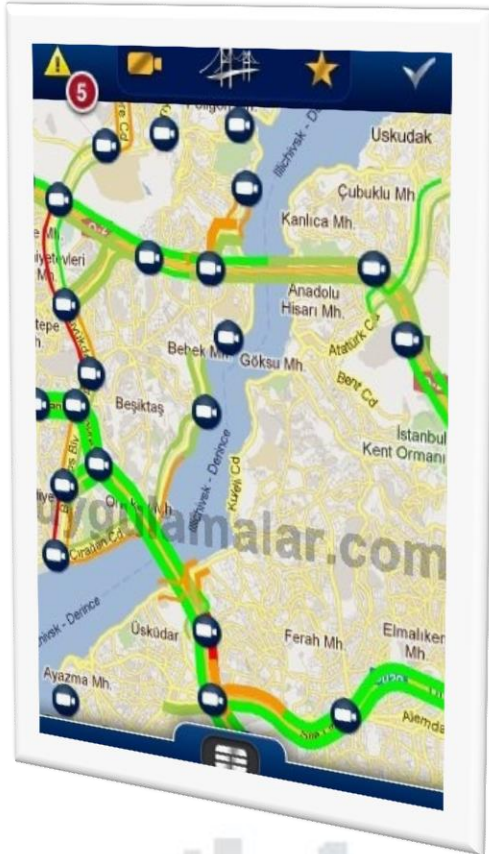


6) TRAFFIC DENSITY MAP / SMART PHONE APP.

- ❑ Real time traffic density map-speed ranges illustrated with different colors
- ❑ Actual information about road infrastructure/maintenance works/sudden speed changes/warnings related with traffic/traffic statistics



MOBILE TRAFFIC INFORMATION – IBB CepTrafik



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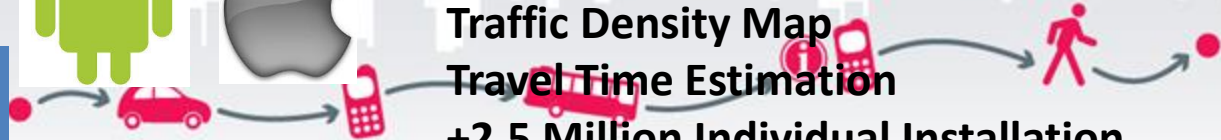


Traffic Cameras

Traffic Density Map

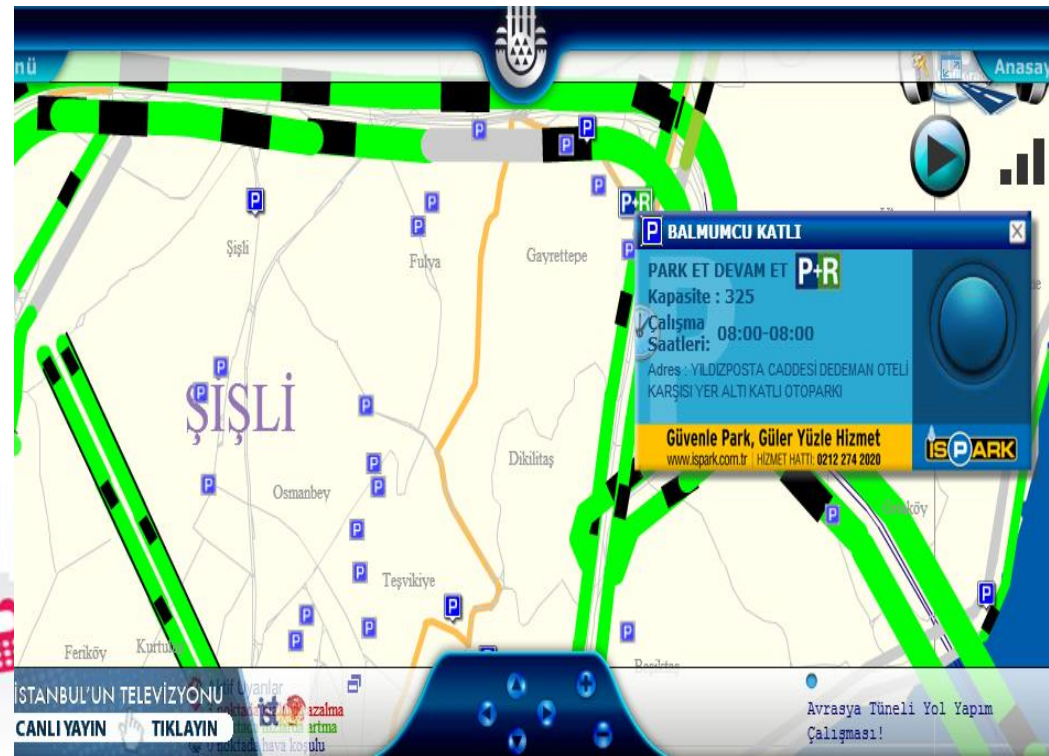
Travel Time Estimation

+2,5 Million Individual Installation



7) PARKING GUIDANCE SYSTEM

- ❑ A mobile application integrated to Traffic Density Map and Mobile Application.
- ❑ It provides **real time data about the capacity and availability** of municipality's parking areas all over the city.
- ❑ At first, the project started in a pilot area with 4 information charts on the road, providing required data to public.



8) EDS RED LIGHT VIOLATION DETECTION SYSTEM

İstanbul Büyükşehir Belediyesi

EDS Elektronik Denetim Sistemi

TRAFİK MÜDÜRLÜĞÜ

Sıra No:	1517714	Makbuz No:	
Kavşak NO:	2313	Araç Tipi:	Ticari Oto
Kavşak ADI:	SİLAHTAR	Araç Rengi:	Sarı
Tarih/Saat:	17.11.2008 14:26:54	Marka:	Fiat
Loop NO:	L2	İthal Tipi:	47/1-B
Kamera NO:	C1	PLAKA:	34



Kamera NO: C1 Detay 17.11.2008 14:26:54



Kamera NO: C1 17.11.2008 14:26:54 Kamera NO: C3 17.11.2008 14:26:54

❑ On the commonly used junctions Electrical Detection System was established.

❑ In this system the Red Light Violations are automatically detected by the cameras.

❑ The detected violations are sent to the police and the fines are posted to the violator's house automatically by this system.

9) METEOROLOGIC SENSORS

Automatic Road & Weather Observation Sensors (RWOS)



- ❑ 28 RWOS within metropolitan area & 6 RWOS in tunnels,
- ❑ Broadcast of real time road & weather condition info. (by VMS, VTS, SMS & internet)
- ❑ Prediction of ;
 - ✓ road surface freezing time ,
 - ✓ its thickness ,
 - ✓ amount of rain / snow fall which are vital in some cases.

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10) TRANSPORTATION APPLICATIONS FOR DISABLED CITIZENS

- IN OLD SHIPS DISABLED CITIZENS ARE ABLE TO TRAVEL WITH THEIR ATTENDANTS FOR FREE.***
- OVERPASSES ARE ACCESIBLE VIA RAMP AND/OR LIFTS.***
- AUDIO TRAFFIC SIGNALIZATION SYSTEM***
- FOR THE LAST TERM PURCHASES, IT IS A MUST FOR PUBLIC BUSES BEING ACCESIBLE.***
- ACCESIBLE RAIL SYSTEMS, BUSES AND SEAPORTS FOR DISABLED PEOPLE.***

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2) METROBUS (BRT SYSTEM)

My friend from IETT will give more detail information for BRT system which carries averagely 700.000 people per day.



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**THANK YOU VERY MUCH FOR YOUR KIND
ATTENTION!**

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