

PILOT TEST OF MADRID (PTM)

ASK IT PROJECT



**Improving accessibility through
advanced services based on ITS**

Nice, October 2006

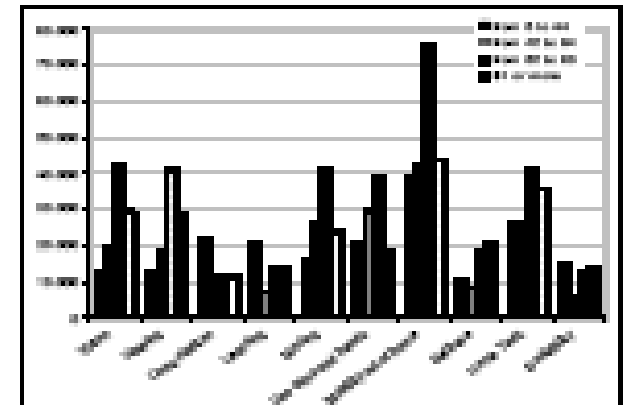
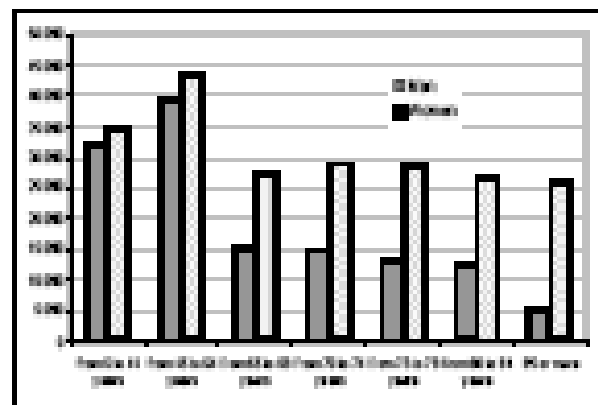
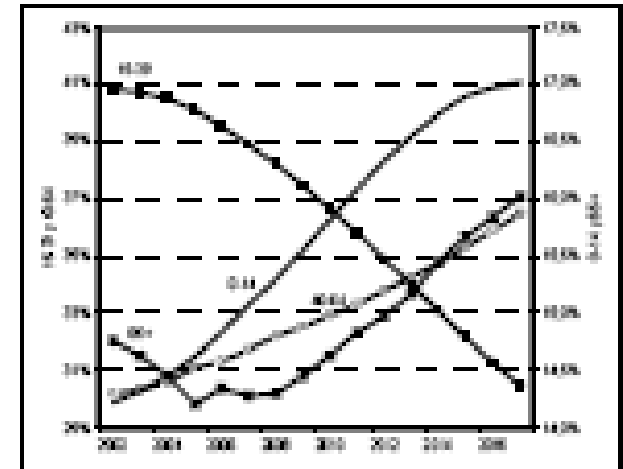
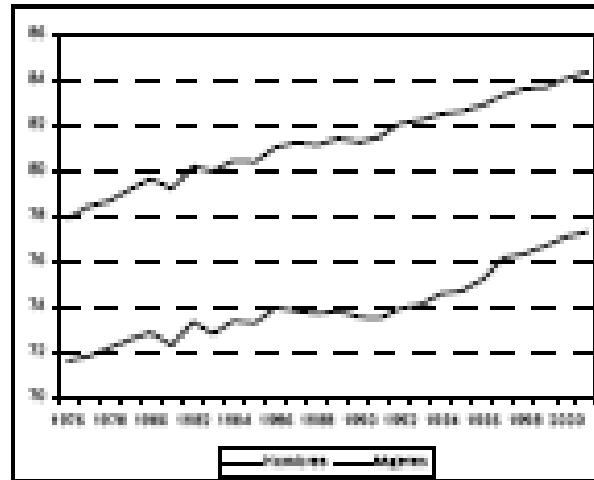
1. INTRODUCTION
2. PARTICIPANTS IN MADRID PILOT PROJECT.
3. MADRID PILOT CONFIGURATION.
4. A PRACTICAL EXAMPLE.
5. CONTRIBUTION REQUESTED TO DISABLE ASSOCIATIONS.
6. TIMETABLE.

1. INTRODUCTION

More than 300.000 people are identified in Madrid as MI person. Nearly 60% are over 64 years old.

Ageing plays an important role in relation to mobility impairments. But also social realities are changing: we no longer live on large family units, life expectation is increasing, demographic trends, etc (More than 800.000 people out of 5 million (15.7%)) have 65 or more and, as life expectancy is continuously growing, projects show a higher dependency.

All this figures show that groups that have, and will have in the future, difficulties for a full vital activity are relevant.



URBAN BUSES (E.M.T):

1924 out of 2007 (95,86%) of Low-floor buses

METROPOLITAN BUSES

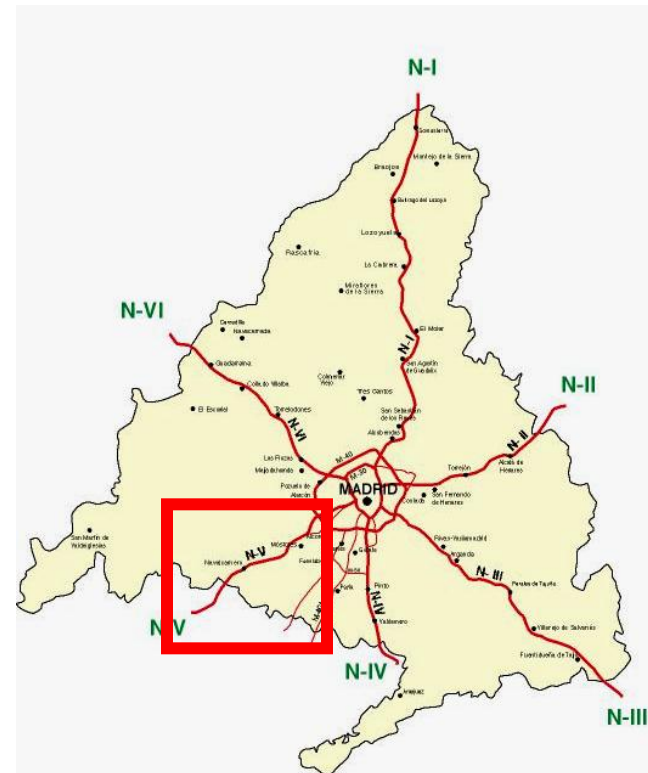
1240 out of 1850 (63.85%) of accessible buses

MADRID METRO

76 out of 227 (33,48%) of accessible stations

MADRID REGION

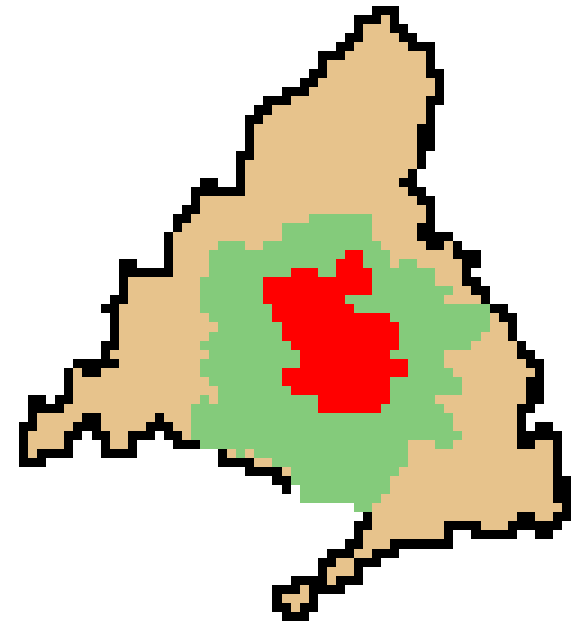
Madrid is one of 17 autonomous regions of Spain, formed up by 179 municipalities, with a big diversity of size and countryside, from flat areas to high mountains.



TERRITORIAL STRUCTURE

Madrid Region organisation and location of population, activities and socio-economic features show a well-defined functional structure:

- **Madrid city**, as the main municipality of the region, concentrates economic activities.
- **Madrid metropolitan ring**, which consists of a number of large and medium size entities around the municipality of Madrid, with strong relations with the central city.
- **Rest of the region**, with small and medium size municipalities.



Madrid city: A



Metropolitan ring: B1, B2, B3



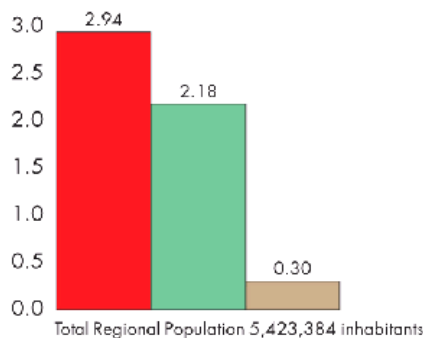
Regional ring: C1, C2.

POPULATION, SURFACE AND DENSITY

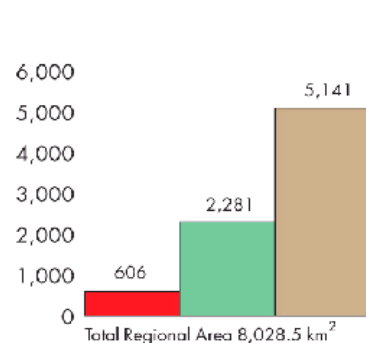
POPULATION OF THE MADRID REGION

	Municipalities	Population		Surface Area (km ²)	Pop. Density (inh/km ²) 2001
		1986	2001		
Madrid City A	1	3,058,182	2,938,272	606.4	4,846.2
- Central Core		1,029,010	931,787	42.0	22,185.4
- Urban Periphery		2,029,172	2,006,936	564.4	3,555.9
Metropolitan Ring B	49	1,533,184	2,182,688	2,280.7	957.0
Regional Ring C	129	189,206	301,973	5,141.4	58.7
Total	179	4,780,572	5,423,384	8,028.5	675.5

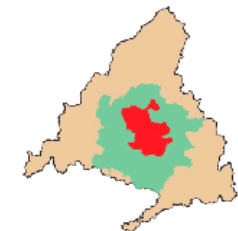
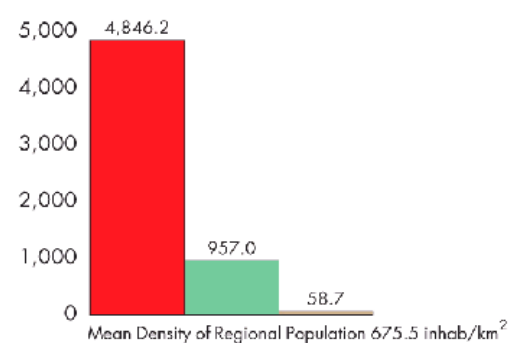
INHABITANTS (millions)



SURFACE AREA (km²)



DENSITY (inh/km²)



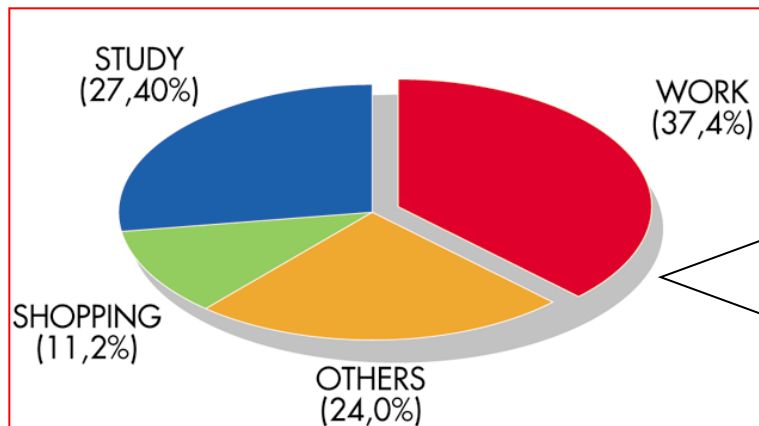
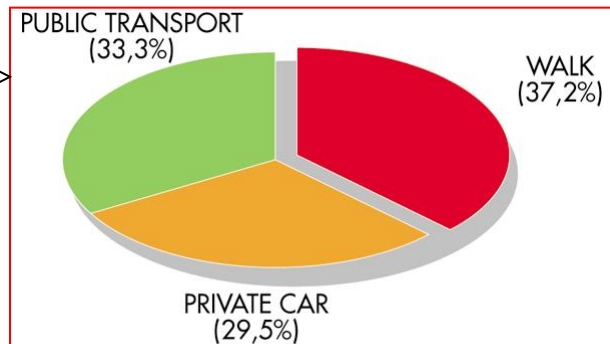
- Madrid City A
- Metropolitan Ring B
- Regional Ring C

GENERAL MOBILITY BY MODE AND PURPOSE

The total number of trips in the Madrid region during a weekday in 1996 was **10.6 millions**.

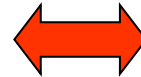
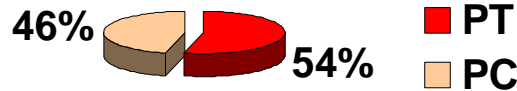
These trips can be distributed almost evenly in the three main modes: **walk**, **public transport** and **private cars**.

MODAL SPLIT OF TOTAL TRIPS IN MADRID



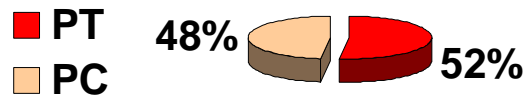
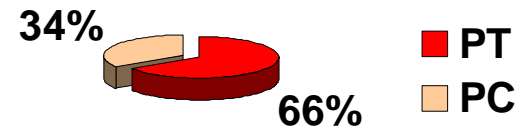
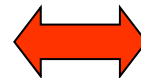
And are classified as follow by **purpose**.

MODAL SPLIT FOR MOTORISED TRIPS



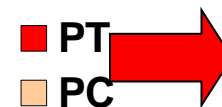
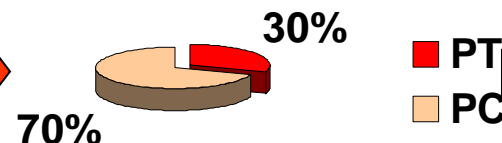
Modal split for motorised trips
54/46 PT/PC is slightly higher in public transport.

The use of PT for **inner movements within Madrid city** are clearly higher than PC, 66/34.



For radial trips between the **metropolitan ring and the central city** the distribution is quite equal 52/48, PT/PC.

Into the **metropolitan ring** the use of the car is predominant, 30/70.



MetroSur

PUBLIC TRANSPORT MODES

The public transport system in the region of Madrid consists of four modes:

- Two urban modes in the city of Madrid:

METRO

AND

BUS (EMT)

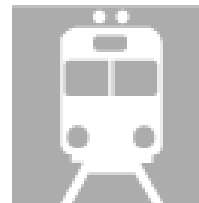


- Two metropolitan modes in the region:

BUS






AND

COMMUTER RAILWAYS (CERCANÍAS)



SUPPLY AND DEMAND OF PUBLIC TRANSPORT (2002)

PUBLIC TRANSPORT SYSTEM: SUPPLY & DEMAND 2002*

MODE	SUPPLY					DEMAND
	Nº Lines	Length (km)	Stations/ Stops	Nº Vehicles	Vehicle-km (millions)	Passengers (millions)
 METRO Underground	11+1	178.9	158	1,357	125.7	563.8
 E.M.T. City Buses Zone A	188	3,094	8,999	1,900	96.2	478.4
 Suburban buses Zones B and C	289	16,965	12,648	1,408	128.2	234.6
 City Buses Zones B and C	79	1,083	2,320	210	12.5	43.2
 RENFE CERCANIAS Suburban train network	9	335.7	92	888	101.8	193.7

* Underground (Metro) and suburban rail (Cercanías-RENFE) data are provided for the network. Data for the bus networks are provided for routes. Suburban rail data is for Cercanías-RENFE in the Madrid Region, with some sections of Lines C-2, C-9 and C-3 going beyond the limits of the Region of Madrid (to Guadalajara, Segovia and Toledo, respectively).

MADRID METRO EVOLUTION 1991-2007

1991 - 112.5 km

1995 - 120.8 km

1999 - 171.4 km

2003 - 226 km

2007 - 296 km

* 2.6!!



- Transbordo entre líneas de Metro
- Estación de Cercanías
- Estación de largo recorrido de Renfe
- P Aparcamiento libre
- P Aparcamiento de pago
- Aeropuerto
- * Estación con horario restringido

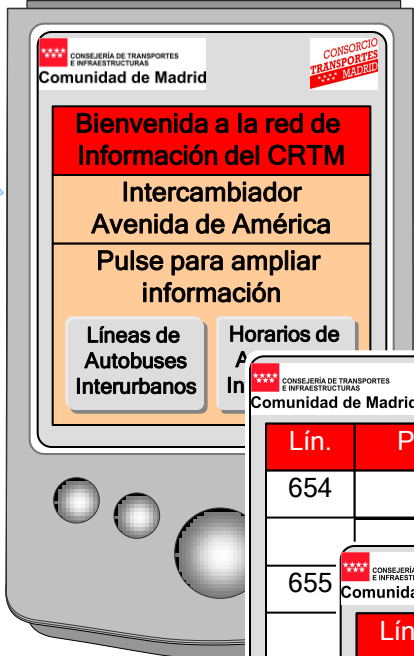
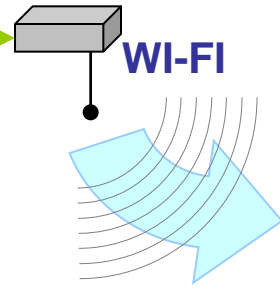
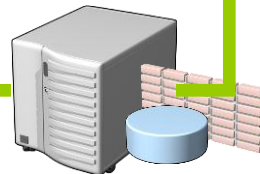
Sistema de información de Transportes sobre PDA

Arquitectura

PANEL DE INFORMACION

Lín.	Próx.Salidas
654	10:45
	10:55
655	10:50
	10:58
656	10:45
	11:05

SERVIDOR DE SEÑALIZACION



PANELES DE DÁRSENAS

654	10:45
	10:55

655	10:50
	10:58

Lín.	Próx.Salidas
654	10:45
	10:55
655	10:50
	10:58

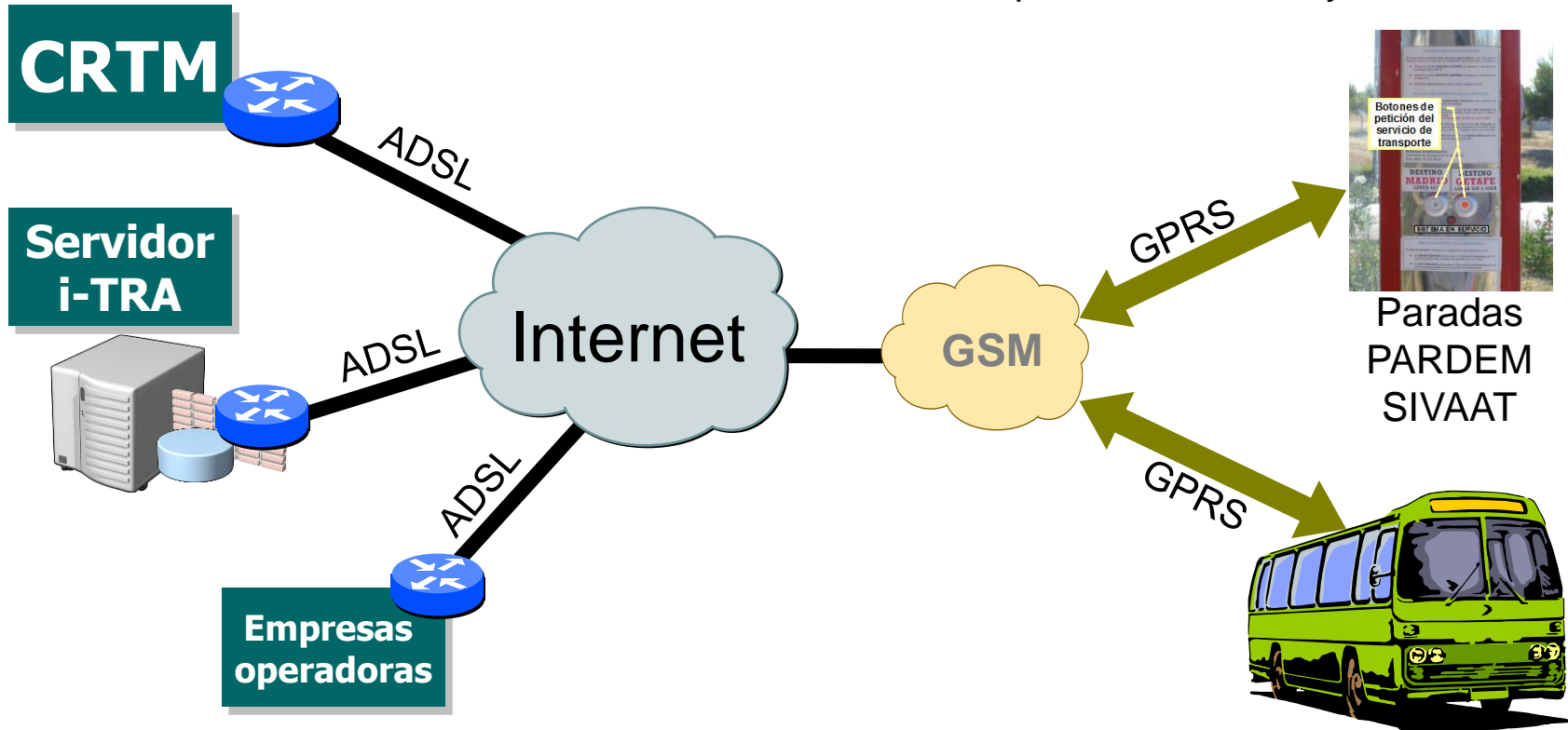
Lín.	Horario Salidas
654	10:45
	10:55
	11:05
	11:15
	11:35
	11:55



Sistema de información de Transportes Accesible para todos SIVAAT

Arquitectura física del Sistema SIVAAT

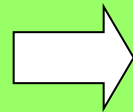
SIVAAT
Información en panel electrónico y hablada



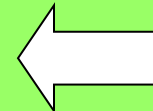
2. PARTICIPANTS IN THE MADRID PILOT PROJECT

TYOLOGY OF THE PARTICIPANTS

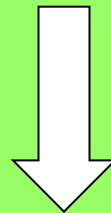
Information
and
Technology
Suppliers



Integrators



ASK - IT



Users

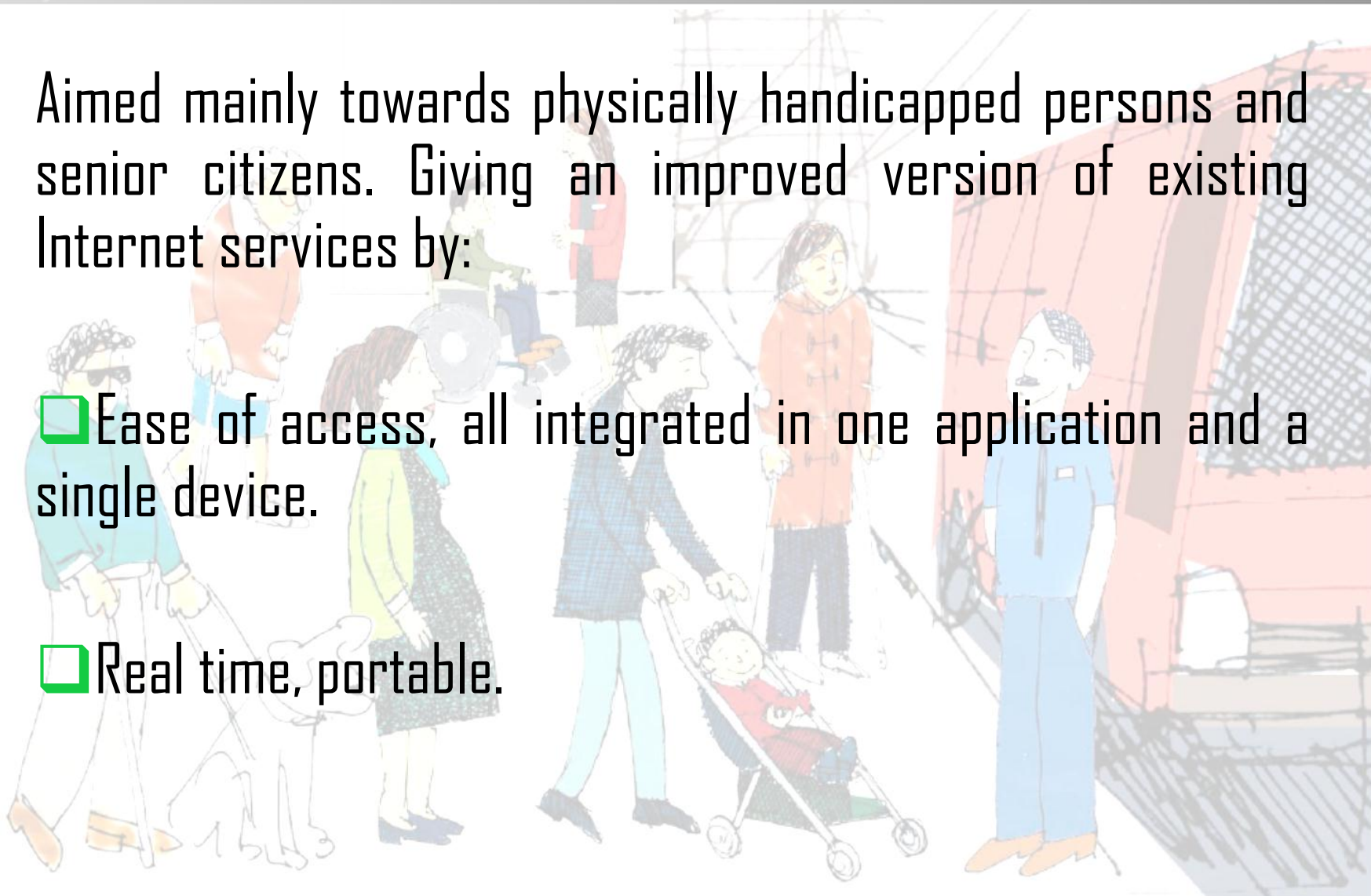
ORGANISATION	GENERAL FUNCTION	PTM SPECIFIC FUNCTIONS
Fundación Movilidad (City council)	PTM Manager	Co-ordinate development actions. Documentation Integrator. Communication with ASK-IT. Co-ordinate dissemination
Siemens	ASK-IT Co-ordinators	Supervise and Give Support to PTM.
UPM	Technology	Give technological assessment. Contribute to ASK IT development.
CRTM	Transport Information Supplier	Provide transport information. Suggest and receive improvement proposals for future services.
Vodafone	Technology Supplier	Contribute support machinery.
Users Association	User	Provide their ideas and vision. Contribute any relevant information that they may have. Recruit and Organise "volunteers".
IAM (Madrid Council)	Relevant Information Supplier	Information about accessibility and localisation of places of interest. Prepare the format of the information.

3. MADRID PILOT CONFIGURATION

Aimed mainly towards physically handicapped persons and senior citizens. Giving an improved version of existing Internet services by:

Ease of access, all integrated in one application and a single device.

Real time, portable.



The services which, in theory, will be provided can be summarised as:

- Choice of destination points of interest (POIs):**
 - Covering the following items with guaranteed accessibility:**
 - ✓ District meetings and other Administration Centres
 - ✓ Municipal Sports Centres
 - ✓ Public Health Centres
 - : Places with legally required accessibility**
 - ✓ Theatres
 - ✓ Cinemas
 - Transport Interchanges.**

- Route Search: Information about public transport, how to get to each point.
- On route Help:
 - Localisation systems.
 - Navigation systems.
- Complementary Services:
 - Personal Assistance in case of emergencies.
 - Internet access for users

This is classified according to what is known in nomenclature as Project User Cases. (UC)

USER CASES

0: SYSTEM ADMINISTRATION.

1: JOURNEY AND GUIDE PLANNING.

2: STORED INFORMATION AND POI'S.

3: TRANSPORT SERVICES.

4: PERSONAL ASSISTANCE SERVICE.

5. ENVIRONMENT CONTROL SERVICES

6: e - Services.

7 JOURNEY AND LEISURE SERVICES.

8 SOCIAL CONTACTS AND COMMUNITY SERVICES.

9 EMERGENCIES.

4. A PRACTICAL EXAMPLE

User case Example

- Juan is a voluntary user of the ASK-IT device.

- One afternoon, Juan wants to go to the Head Offices of AESLEME in Pozuelo to do some affaires, then he wants to go to the Sports Centre to watch his nephew play basketball, and, finally, take his nephew to the cinema.

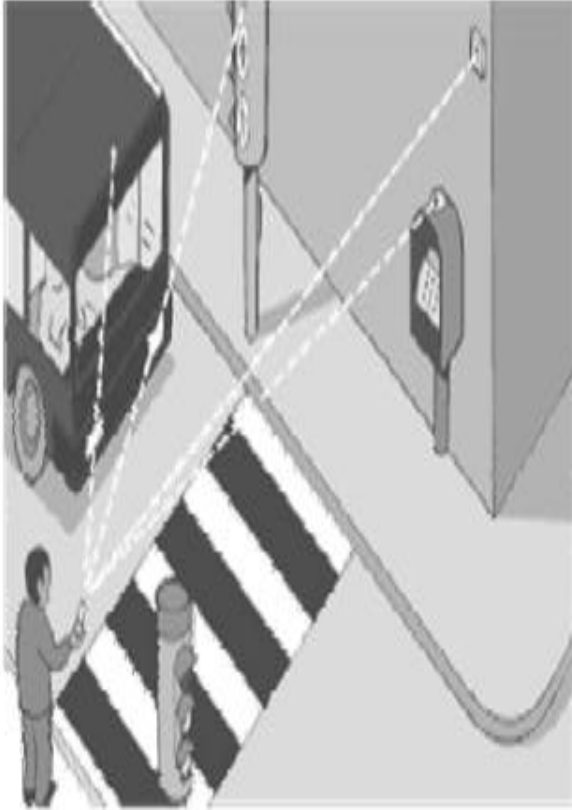


User case Example

From his work, Juan inputs the data into his device that he wishes to go to AESLEME and the device informs him of the best route to take, also indicating the best access route into the AESLEME building.



User case Example



- *On route, Juan's device keeps him informed of his position and tells him at which stop to get off.*
- *After Juan plans a second route with his device in order to go to the Sports Centre. However, when he is already on his way, the bus breaks down and he must re-plan his journey.*
- *The next bus arrives in 12 minutes, according to Juan's device, so he decides to take advantage of the time.*

User case Example

- While he is waiting for the bus, Juan consults what is on at the cinema, he chooses a film and even reserves the tickets from his device.*
- After going to the Sports Centre, watching the basketball game and going to the cinema, Juan returns home, yet he does not know until what time the normal bus routes run. His device indicates that they run until 23:30.*
- When Juan arrives home he has an accident, he falls and cannot get up, he is hurt. He takes his device and, by simply pressing one button he makes an emergency call and will soon be attended by the emergency services.*
- Fortunately, the accident is not serious, Juan returns home, pleased to have signed up for the Pilot Project as a volunteer.*



5. CONTRIBUTION REQUESTED TO DISABLE ASSOCIATIONS

□ APPROACH

- **Contributions and Comments.**
- **Additional Information if available.**
- **Recruitment of “Volunteers”. The following will be required.**
 - ✓ **100 users for short tests (less than one day) and**
 - ✓ **10 users for longer tests (up to two weeks, including a journey to another pilot project).**

METHODOLOGY

- **Signing of an agreement (MoU, according to the terminology of ASK-IT).**
- **Assignment of a person as a permanent representative on the Executive and Operative (minimum monthly retribution).**
- **Participating in the user meetings.**

6. TIMETABLE

□ OCTOBER

- **User conference in Nice 26-27 of October.**

□ SPRING 2007

- **Starting-up of pilot programme.**