

Urban Transport Benchmarking Initiative Year Two



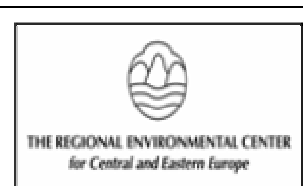
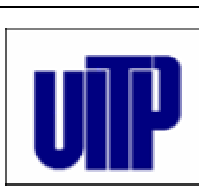
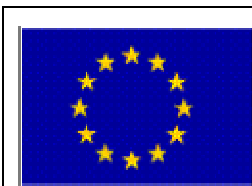
Annex A5.1

Public Transport Organisation & Policy Working Group

Annex to final report

July 2005

S		U		BUS	
Destination	Time	Destination	Time	Destination	Time
Bietigheim	3 Min	U6 Vaihingen	1 Min	44 Killesberg Messe	1 Min
Schwabstrasse	3 Min	U4 Restach	1 Min	44 Westbahnhof	2 Min
Weil der Stadt	8 Min	U9 Killesberg Messe	2 Min	40 Degeringstraße	4 Min
Schwabstrasse	9 Min	U9 Botnang	2 Min	40 Krähenwald - Vogelsang	4 Min
Schorndorf	10 Min	U5 Stammheim	3 Min	42 Schreiberstraße	6 Min
Herrnberg	11 Min	U9 Leinfelden	5 Min	42 Ostendpl. - Schloßplat	7 Min
Marbach	13 Min	U6 Gerlingen	7 Min		
Esslingen 00	15 Min	U14 Remseck	8 Min		
Schwabstrasse	18 Min	U9 Hedelfingen	8 Min		
Backnang	20 Min	U7 Ostfildern	9 Min		
Flughafen/Airport	22 Min	U5 Ruitbank	9 Min		
Weil der Stadt	23 Min	U5 Freiberg	10 Min		
Büblingen	25 Min				
Schorndorf	26 Min				
Marbach	28 Min				
Schwabstrasse	28 Min				
Hillerstadt	30 Min				
Plochingen	31 Min				
Bietigheim	32 Min				
Schwabstrasse	32 Min				



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Annex to final report

Prepared for

European Commission
Directorate General for
Energy and Transport

by



Author(s)	Jerome Pourbaix
Quality Control	Sarah Clifford
Project Manager	Kieran Holmes
Project Number	L/04/182
Version	1.1
Date	July 2005
File location	\\Ttr01\company\TTR PROJECTS\CURRENT PROJECTS\EC Benchmarking Year 2\Technical\Project Reports - Year Two for QC\A5 PTOP
Last edited	14/07/05
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1. INTRODUCTION

This document represents Annex A5.1 of the Urban Transport Benchmarking Initiative's year two final reports and contains information in support of the final report of the Public Transport Organisation & Policy working group. The remainder of this annex contains summaries of the interesting practices observed at the working group's two site visits which took place in Madrid, Stuttgart and Athens during year two of the Urban Transport Benchmarking Initiative.

2. GOOD PRACTICE CASE STUDIES FROM SITE VISITS

2.1 Madrid, December 13th & 14th 2004

Overview

The first meeting of the Public Transport Organisation & Policy working group was hosted by the *Consortio Regional de Transportes de Madrid*. The host of the meeting, Carlos Cristobal Pinto, provided some insights into the Madrid region, its public transport system, and the activities of the *Consortio Regional de Transportes de Madrid*. The site visit showed some recent developments of the metro network and the interchange of *Avenida de America*. With respect to the focus of the meeting, namely the organisation of public transport, special attention was given, during the visit, to the role of the *Consortio* in the extension of the metro network and the development of the *Avenida de America* interchange.





a. The Madrid region and its public transport system

The Madrid region (*Comunidad de Madrid*) is one of the 17 autonomous regions of Spain. It is made of 179 municipalities and has a total population of 5.4 million inhabitants (reference is year 2001). The organisation of the region and the location of population and activities show a clear functional structure:

- the city of Madrid, which is the main municipality of the region and concentrates economic activities (2.9 million inhabitants);
- the 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 (2.2 million inhabitants);
- the rest of the region, with small and medium size municipalities (0.3 million inhabitants).

The public transport system consists of two urban modes (metro and urban buses) and two suburban modes (suburban buses and suburban railways). Table 2.1 summarizes supply and demand for each of these modes (reference is year 2002).

Table 2.1: Supply and Demand for public transport modes in Madrid in 2002

	Modes	Supply					Demand
		Number of routes	Route length (km)	Stations / stops	Fleet - Vehicles	Vehicles-km (millions)	Passengers (millions)
	Metro (MetroMadrid)	11+1	178,9	158	1.357	125,7	563,8
	Urban buses (EMT)	188	3.094	8.999	1.900	96,2	478,4
	Suburban buses	368	18.048	14.968	1.618	140,7	278
	Suburban railways (RENFE Cercanias)	9	335,7	92	888	101,8	193,7

b. The activities of the *Consortio Regional de Transportes de Madrid*

The *Consortio Regional de Transportes de Madrid* (CRTM) is an autonomous agency of the regional government. In its quality of public transport authority, the main activities of the CRTM include:

- the planning of public transport infrastructures;
- the establishment of an integrated fare system for the whole public transport network and the finance framework of the system;
- the planning of transport services and the definition of co-ordinated operating programmes for all transport modes;
- the creation of an overall image of the public transport system where the CRTM holds the external relation with the users.

Considering the structure of the region and its public transport networks, achieving integration is critical to the efficiency of the system. The contribution of the CRTM to integration is three-fold:

- administrative integration - the CRTM gathers the responsibilities of the Madrid region and the local governments, and acts as the unique public transport authority for local and regional transport;
- fare integration, with the implementation of the travel pass, which is currently used in more than 65% of public transport journeys;
- modal integration, by expanding networks and services so that intermodality between bus (regional and local), metro and regional railways is facilitated.

c. The development of the metro network

The metro network of Madrid expanded significantly over the last decade. During the period from 1995 to 1999, the network grew of 56.3 km and 38 new stations were opened, including 9 interchanges. These new developments concerned mainly the extension of existing lines and the development of new lines towards the Northern, North-Eastern and South-Eastern suburbs of city. The latter had an interesting financing scheme.

Focus on the development of metro line 9 (South-Eastern suburbs of Madrid):

- initiative of CRTM;
- invitation to tenders for concession (30 years);
- successful bidder contributed 20% of capital investment;
- sources of revenue for concession: passenger fares and subsidy per passenger.

During the period 1999 to 2003, another 54.6 km of line was built and 36 new stations were opened, including 11 interchanges. These new developments concerned notably a new circular line to the South of the city, called *MetroSur*, which represents a very effective response to the progressive extension of Madrid metropolitan area.

Focus on *MetroSur* features:

- length of the network: 40.5 km;
- 28 stations, including six interchanges with commuter railways and one interchange with the metro network;
- overall investment of 1.640 millions euros, including rolling stock;
- the network connects with each other five large towns situated to the South of Madrid (*Alcorcón, Leganés, Getafe, Fuenlabrada and Móstoles*).

Figure 2.1: One of Madrid' most recent metro stations



d. The interchange of *Avenida de América*

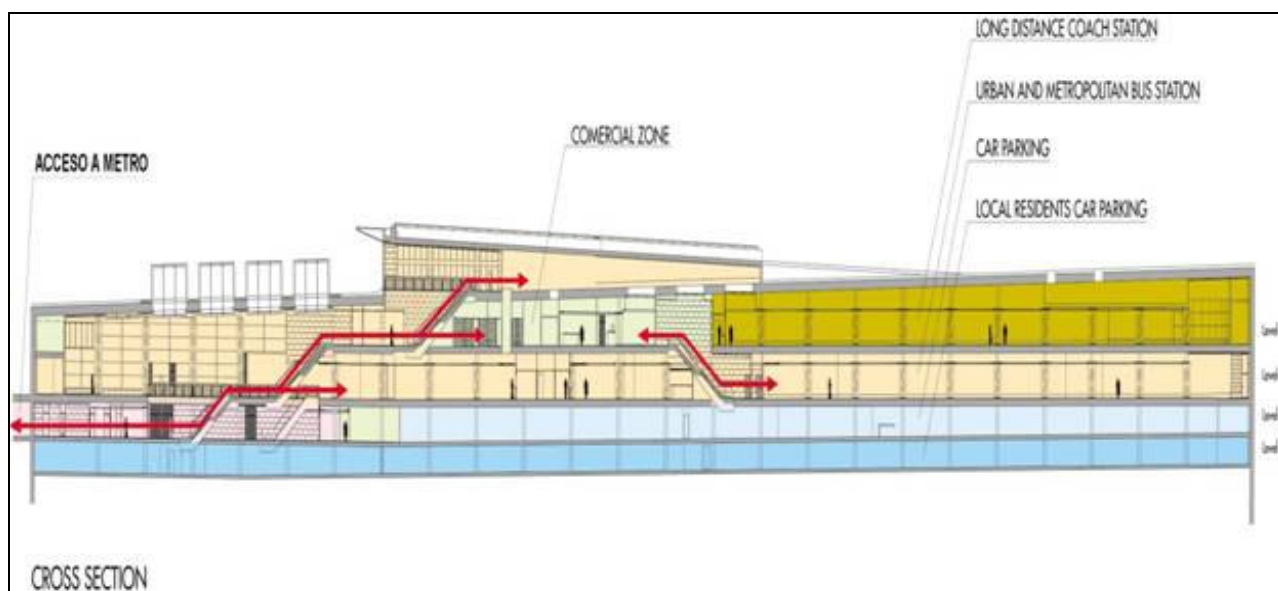
The creation of this multimodal interchange (urban buses, interurban coaches, metro, and car park) was a joint initiative of the CRTM and the City of Madrid.

The development of the interchange (25.4 million euro) was privately financed, following an invitation to tenders for the construction and the operation (interchange 25 years, parking 50 years) of the premises. The sources of revenue for the concession include:

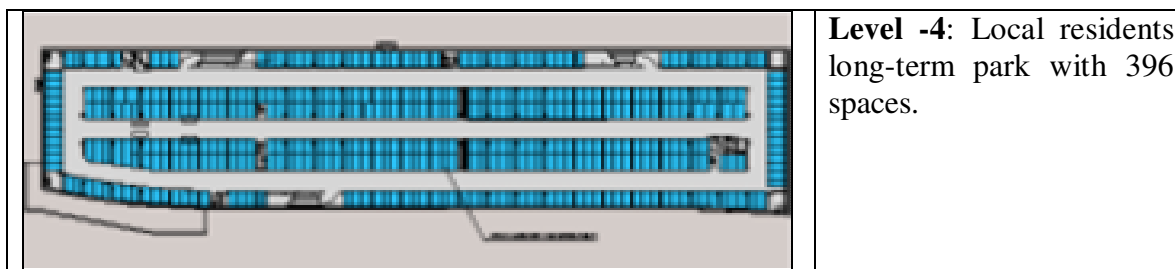
- the operation of the interchange (buses pay a fee to use the interchange);
- the parking facilities;
- the commercial areas and publicity.

The interchange was built underground, in order to create an extensive pedestrian area at street level. The only elements above ground are a domed access pavilion to the interchange and some windows designed to provide the interchange with natural daylight. This is illustrated in figure 2.2:

Figure 2.2: The interchange of *Avenida de América*



A 480 m long access tunnel serves the interchange providing buses with direct entry and exit which can save them as much as 15 minutes in rush hours. This is illustrated in figure 2.3.



Level -4: Local residents long-term park with 396 spaces.

2.2 Stuttgart, March 7th & 8th 2005

Overview

The second meeting of the Public Transport Organisation & Policy working group was hosted by the *Verband Region Stuttgart*. The host of the meeting, Frank Zerban, provided some insights into the Greater Stuttgart region and its public transport system. The site visit showed the S-Bahn network, which is supervised by the *Verband Region Stuttgart* in its quality of public transport authority. With respect to the focus of the meeting, namely quality provisions in public transport contracts, special attention was given, during the visit, to the practical implementation of quality provisions (accessibility, information, cleanliness, support to passengers, etc.)

a. The Greater Stuttgart region and its public transport system

The Greater Stuttgart region is situated within the *Land* of Baden-Württemberg in the South-West of Germany. This polycentric region is made of five administrative districts (including the city of Stuttgart) which comprise over 140 cities and villages. It has a population of 2.4 million inhabitants.

The public transport system consists of three urban modes (bus, tramway and light rail), operated by SSB, and two regional modes (regional bus and suburban/regional railway). Regional buses are operated by 38 private companies, whereas suburban/regional railways are operated by S-Bahn Stuttgart, DB Regio, and WEG (Connex). Table 2.2 below provides some information on public transport supply.

Table 2.2: Public transport supply in Stuttgart

Modes	Operators	Line length (km)	Stations/stops	Fleet (vehicles)
Urban buses	SSB	655	209	255
Light rail	SSB	190	176	136
Tramway	SSB	17	20	36
Regional buses	38 operators	3081	2656	1020
Suburban rail	s-Bahn (DB)	248	71	255
Regional rail	DB	506	108	-
Regional rail	WEG	46	37	31

Regarding demand, the patterns of use of public transport vary across the region. While public transport represents 47% of the journeys made within the city of Stuttgart, the number is between 8 and 10% in the rest of the region, depending on the frequency of service in each area.

Commuting is significant in the Greater Stuttgart region. In fact, the average distance of a trip using public transport is 20km, and almost 30% of all passengers are commuters. Most of these passengers use the S-Bahn network. The supervision of public transport within the region is shared between various authorities:

- the *Land* of Baden-Württemberg, in charge of heavy rail;
- the Greater Stuttgart Region, responsible for suburban rail (S-Bahn) and selected regional trains;
- the City of Stuttgart, responsible for light rail, trams and city buses;
- the four other administrative districts, in charge of their regional buses;
- an integration company (VVS), managing the revenue sharing and informing passengers about timetables and fares.

The tarification is fully integrated within the region. Key features of the integrated fare system include a zone system for the determination of the ticket fare, a single ticket and a single fare for all modes. In addition, it is possible to make several transfers with one ticket and the fare does not depend on the number of transfers.

b. The S-Bahn network

The *Verband Region Stuttgart* is the authority supervising the suburban railway network of Stuttgart, operated by S-Bahn Stuttgart, which is a subsidiary of DB (German Rail).

The S-Bahn network consists of 6 lines, for a total route length of 248 km. The total annual cost of the S-Bahn network is about 140 million Euro and subsidies amount to about 50 million Euro.

The relationship between the *Verband Region Stuttgart* and S-Bahn Stuttgart is formalised by a contract. The current contract started on July 2003 and is planned to end by December 2013. This contract has contributed to reach and to maintain high levels of performance regarding service quality. The site visit along the S-Bahn network focused on the practical implementation of the quality provisions included in the contract.

Objective quality indicators including punctuality, cleanliness of trains, management of complaints, and functioning of the ticket machines, are set out in the contract, which specifies the thresholds for the grant of a bonus or a malus. Punctuality, for instance, is measured in real-time for every train at several stations, and compared against the criteria in the contract. No malus has to be paid if more than 90% (97.5%) of all trains within one month were running with less than 3 min (6 min) delay in peak time.

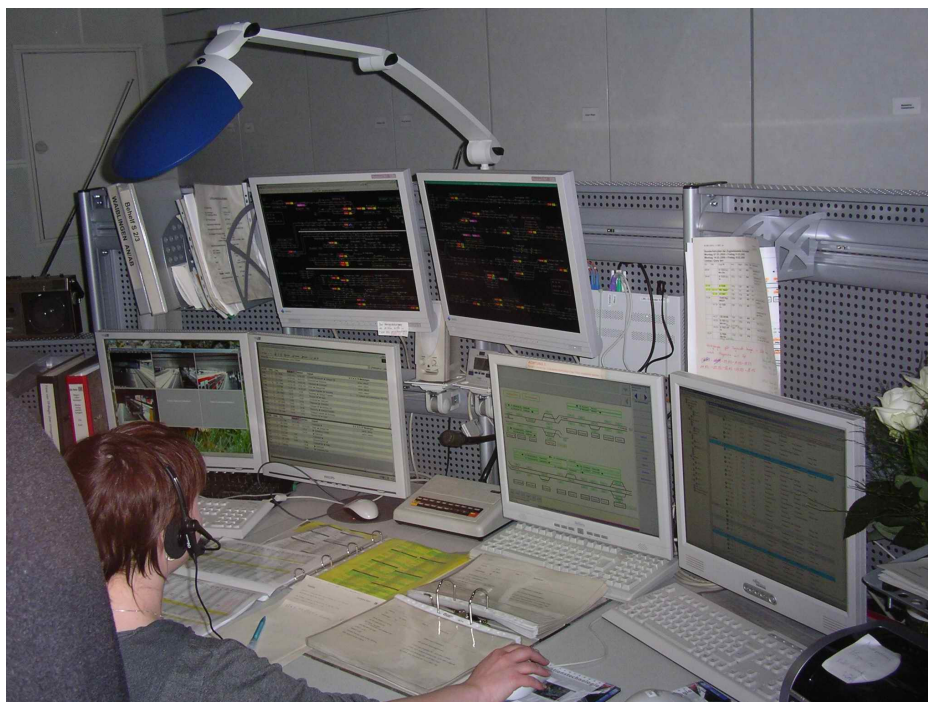
The contract also includes six subjective quality indicators, including the provision of information (cf. picture below), both in regular situation and in the case of delay, which are measured on a scale for 1 to 6. One example for improvement is the cleanliness, where the marks given by passengers improved from 3.0 to 2.88 from 2002 to 2004. Subjective quality measurement shows that it takes at least one year before improvements in quality are realized by the passengers.

Figure 2.5: Provision of accurate passenger information is a component of the contract between the S-Bahn and Verband Region Stuttgart



The revenue of the penalties is used in the improvement of the service. For example, the network’s management centre, where originates all real-time passenger information, is partly funded by the revenues of the bonus/malus scheme. The group visited the network management centre, situated within Stuttgart’s main station (see figure 2.6).

Figure 2.6: The network management centre at Stuttgart’s main station



2.3 Athens, May 5th and 6th 2005

Overview

The third meeting of the Public Transport Organisation & Policy working group was hosted by Athens Public Transport Organisation. Public transport has considerably evolved in Athens in recent years, both in terms of organization and infrastructure. The host of the meeting, Nellie Tzivelou, provided some insights into these recent changes and guided the group for an extensive visit of the network.

a. Organisation of public transport in Athens

Established in 1993, Athens Public Transport Organisation (OASA) is the public transport authority for the greater Athens area (metropolitan area of Athens). It is a private law organisation, totally owned by the Greek State, under the supervision and control of the Ministry of Transport & Communications.

OASA is responsible for the planning, co-ordination and control of all public transport modes in the greater Athens area: thermal buses, trolley buses, and metro. OASA assigns the operation and exploitation of transport service to its affiliated organizations. In that respect, the organization of public transport in Athens is an interesting example of progressive integration of public transport. OASA currently has three affiliated companies which are responsible for the delivery of transport services:

- the thermal bus operator (ETHEL), which was established in 1994 as an affiliated company of OASA;
- the trolley-bus operator (ILPAP), established in 1970, is a public corporation belonging to the Greek State which has been affiliated to OASA in 1998;
- the operator of metro line 1 (ISAP), established in 1976, which has been an affiliated company of OASA since 1998.

The operator of the new metro lines (AMEL) is currently affiliated to its owner Attiko Metro SA. It is planned that AMEL will merge with ISAP within a few years and will thus be supervised by OASA to the same extent as the other operators above.

OASA planning responsibilities are in the process of extending to the tram, the suburban buses, and the suburban railways.

Considering the organization of public transport in more detail, public transport in Athens operates under an authority initiative regime, meaning that the right of initiative to create public transport services is reserved to the organising authority. OASA, which has business contract agreements with its affiliated operators, does not only set the rules for the operators, but also defines the scheduling, monitors the results and covers the financial deficits. OASA is also responsible for the definition of service, quality management, fares & ticketing, information & promotion, etc.

b. Current planning priorities

A set of short & medium term transport measures were announced by the Minister of Transport after the Olympic Games, in October 2004. These measures aim to incorporate the Olympics legacy and to capitalize on lessons learned during the Games.

The strategic objectives of these new measures include:

- the integration of the different transport modes in the Attika region (cf. above);
- the increase of the modal share of public transport;
- the reduction of the use of the private car;
- the development of emergency procedures;
- public transport service improvements, including in particular:
 - the introduction of a single fare ticket (90 min);
 - the extension of the bus lane network;
 - new express lines;
 - and the restructuring of the bus network.

In this framework, a number of priority measures are in process of being implemented:

- the extension of the existing and the development of new bus lanes;
- police enforcement of priority measures, notably through the purchase of towing vehicles and installation of monitoring cameras;
- roadside parking control measures in the central business district;
- the introduction of peak hour restrictions for truck deliveries.

c. A picture of the urban public transport network

The visit along of the network showed the recent developments of the system, implemented notably in prevision of the Olympic Games.

The bus network is made of 311 bus lines, for a total network length of about 7,000 km. The 2,000 buses in operation make a total of about 16,000 trips per day. On the demand side, the daily traffic is of 1,300,000 passengers.

In comparison, the trolley bus network has 22 lines, for a total network length of about 360 km. A total of 2,500 daily trips are made by a fleet of about 366 trolley buses. The passenger traffic is of about 300,000 passengers per day.

As far as the metro is concerned, there are three lines in total: the initial line 1 and the new lines 2 and 3. There currently are 45 stations for a total network length of about 50 kilometres. The peak hour interval is 2.5 minutes on line 1, and 3 minutes on lines 2 and 3. On the demand side, there are about one million passengers per day.