



# MANAGEMENT REPORT

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## 1. INFRASTRUCTURE AND SERVICE PLANNING AREA

### 1.1 INFRASTRUCTURE MASTER PLAN 2001-2010 (PDI)

The PDI 2001-2010 is the consensus-driven response by the Administrations in charge of public transport infrastructure needs in the short- and medium term in the metropolitan region of Barcelona. Structured in four action Programmes (Extension of the network, Modernisation and improvement of the existing network, Interchanger Points and Actions on the state railway network), the PDI provides for a total investment of 7,295.7 million €, according to the attached financing chart.

Once the 89 proposals for amendments submitted during the public information period had been studied, from June 28 to September 28, 2001, and the technical report on the 72 specific requests pertaining to the proposals had been drawn up, the definitive version of the PDI was approved at the session of the Governing Board held on April 25. A set of changes have been made to the document that was initially approved, including the new Castelldefels-Sant Boi-Sarrià line. The Council of Government of the Autonomous Government of Catalonia definitively approved the Infrastructure Master Plan 2001-2010 on June 25, which means that the actions contained in it must be included in public transport infrastructure planning in the multiannual Funding Agreements to be entered into between the Administration of the Autonomous Government of Catalonia and the General State Administration, and in the Programme?-Contracts and Funding Agreements between the ATM and the public Administrations.

### 1.2 ACTIONS OF THE PDI

The actions contained in the document definitively approved on June 25, have been grouped into the following chapters:

- Network extension programme: it includes the extension actions being carried out on the current Underground and FGC rail network, as well as the new Underground line 9, the new L12 Sarrià-Castelldefels railway line and the introduction of the tram as a new mode of transport. These actions have been addressed to provide coverage with a high-capacity mode to areas of high density mobility (generation and attraction of journeys) which do not at the moment have a fast and efficient service for making metropolitan journeys or trips.
- Interchanger programme. This programme will boost interconnections between the different lines of public transport, to increase the network effect and reduce the deterrent effect of changeovers. Mention must be made of the action to be carried out on the Central Interchanger at Plaça de Catalunya, which will become a powerful nexus of public transport, as well as the Interchangers at Sants and Sagrera, Sarrià, Arc de Triomf, from Torrance to l'Hospitalet, Cornellà, Martorell or Barberà del Vallès.
- Modernisation and improvement programme. The actions included in this programme can be divided into three groups: infrastructure actions related to the territory, improved comfort and quality of the service offered to the public transport client and finally action on the

existing network to facilitate operation. In this section, mention should be made of the purchase of rolling stock, station improvements and specially the adaptation of the latter for people with reduced mobility.

- Actions on the state rail network. Here, some actions target extending the network, the remodelling of existing lines, partial track splitting and improved service. The main actions included in this programme are linked to the deployment of the TGV in the metropolitan area of Barcelona.

The aforementioned ensemble of actions will be financed differently, depending on how they are characterised. Thus, the sources of funding have been defined as follows:

- Funding agreements for infrastructure (a 2/3 contribution from the Autonomous Government of Catalonia and one third from the General State Administration) for network extensions and infrastructure improvement.
- Contract-Programmes with the participation of all Administrations for investments in modernisation and the improvement of the existing network in terms of improving the way the service is operated.
- Specific funding for the tram, with a deferred capital input from the Autonomous Government of Catalonia and compensation to the private franchisee - by a technical rate - for the operating deficit, plus an investment royalty.
- Own funding for the Underground line 9, to be defined by the Autonomous Government of Catalonia. A similar system may be used to fund the Sarrià-Castelldefels line 12. (see page 26, 28 and 30)

### 1.3 DEVELOPMENT OF ACTIONS OF THE PDI

In order to develop the approved PDI, the ATM has conducted three studies in the course of the year, via public tenders for technical assistance:

- Alternative layout study of the new Castelldefels-Sant Boi-Sarrià line. Call for tenders announced on June 23, 2002 and awarded on July 29, 2002. Two meetings of the follow-up Commissions have been held.
- Basic project of the la Torrance (l'Hospitalet de Llobregat) changeover point. Further to an agreement entered into with the City Council, the call for tenders was announced on June 13, 2002 and awarded on July 29, 2002. Three meetings of the follow-up Commissions have already been held in Barcelona, and one in Madrid with the Ministry of Development.
- Study of alternative layouts and a mode change point for the extension of L2 with the Barcelona Centre-Can Ruti light underground.

Moreover, the ATM participates actively in the Monitoring Commissions promoted by the General Board of Ports and



Transports, of the building projects and informative studies of the following actions:

- Extension Terrassa Rambla-Can Roca (FGC)
- Extension Sabadell Rambla-Pl. Espanya (FGC)
- TPC Service in the Caldes-Mollet/Santa Perpètua de Mogoda corridor
- Underground Line L9. Airport-Parc Logístic, Parc Logístic-Zona Universitària and Zona Universitària-Sagrera Meridiana sections
- Interchanger Point d'Arc del Triomf-Estació del Nord
- Interchanger Point Sagrera Meridiana
- Interchanger Point at Quatre Camins (FGC)
- New L5 station in Sant Ramon
- New hall and connection to the L1 station in Feixa Llarga
- New station in Vullpalleres (FGC)

The ATM has also participated on the Technical Commission of the Infrastructure and Mobility Master Plan of el Vallès Occidental, promoted by the corresponding County Council.

#### 1.4 VIABILITY STUDIES DERIVED FROM THE PDI

As a result of the proposals for modifications submitted to the initially approved PDI, it was agreed to submit some of the actions derived from the requests to viability studies, in order to take the decision whether or not to add them, as the case may be, to this PDI 2001-2010 (in the second five-year period) or forthcoming Plans. The viability studies launched this year are:

- Joint study of the new Mataró-Granollers, Granollers-Sabadell, Terrassa-Martorell and Vilafranca-Vilanova orbital railway line
- Extension of the Diagonal-Baix Llobregat tram, in the Sant Feliu - Molins de Rei-Quatre Camins section
- Alternative routes for the Cerdanyola-Centre Direccional-UAB / Sant Cugat tram
- New station at the Institut Químic de Sarrià (FGC)

#### 1.5 OTHER STUDIES AND ROUTING PROJECTS

The ATM has also commissioned the preliminary project for the embedding of the Renfe C-3 line to Mas Rampinyo (Montcada I Reixac), which, once completed, was delivered to the City Council. Moreover, the studies of mobility associated with health, educational and commercial facilities, started in 2001, have also been disseminated.

#### 1.6 PUBLIC TRANSPORT SERVICE PLAN 2005

The Service Plan is an instrument for the development of the service planning function and for setting up operating programmes coordinated by all the companies that render them, a function which article four point two of its Statutes grants to the ATM.

The first version of the Plan was drafted during the first half 2002 and was submitted to the Governing Board on July 4.

As of this date, a process of information and dissemination of the plan to the Administrations, operators and municipalities was under-

taken, and meetings held with the different County Councils between July and September. As a result of this process, thirty municipalities submitted comments or proposals. One third of them, approximately, have helped to enrich or add nuances to the initial text, and have been added to the new version.

Moreover, the BusMet operators' association also presented its suggestions, totalling 114, all contained in a single report. Following an individual analysis, about 50% of them were added

Moreover, the analysis of these inputs helped to fine tune the criteria issued initially.

The second version of the 2005 Service Plan was presented to the Governing Board on December 12, and is in the initial approval phase.

#### 1.6.1 BASIC CRITERIA AND METHODOLOGY

The writing of the Service Plan is based on certain aspects:

- Territorial scope: the metropolitan region of Barcelona (RMB), comprising 7 counties and a population of 4.39 million inhabitants (2001).
- Horizons year: 2005, coinciding with the end of the time limit of the ATM's financing agreements.
- Service criteria to be applied:
  - For reasons of unserved demand
  - For reasons of territorial coverage
  - For reasons of universal accessibility
  - For reasons of service quality

The following basic methodology was applied:

- Identification of current supply and demand.
- Estimation of demand in 2005.
- Compare current offer to envisaged demand: diagnosis.
- Setting of goals and service criteria to be applied.
- Action programmes drafted according to the service criteria defined.
- Economic evaluation of the proposed actions.

There are different services that are part of public transport in the RMB: rail (Underground, FGC, Renfe Local Trains and Tram) and road. The Service Plan must define the characteristics the transport services (routes, number of services, timetable coverage) and establish the coordination of the different modes of public transport to satisfy the potential demand for metropolitan mobility through territorial and timetable coverage, with a suitable level of quality and at a reasonable cost.

The detailed analysis of intermunicipal flows envisaged for 2005, related to the current services, leads to the detection of deficits which the Plan aims to solve by extending services or reshuffling existing ones. Moreover, in order to boost the use of public transport

coordination actions stimulating intermodality, the improvement of quality and the rendering of services are proposed.  
(see page 32)

### 1.6.2 SERVICE CRITERIA: FREQUENCY, TIMETABLE RANGE

#### Frequency

The lines are classified into the following groups in order to define the service:

- Main: direct or semi-direct services to Barcelona
- Radial: connection with Barcelona with frequent stops
- Corridor/County: connection of the municipalities with the head of the corridor
- Feeder: connection of the municipalities to a train or bus station

As a general rule, the interval at the off peak period is twice that of the rush hour.

The figures are proposed as a minimum frequency. In many cases the current service level is already above this value.

#### Timetable range of the service

At the moment there is no uniformity in the frequency of the different lines or in the range of timetables of the services. It is clear that absolute uniformity of all the lines is neither possible nor desirable, since they have to face up to totally different demand volumes and characteristics. However, it is advisable to standardise, as far as possible, these magnitudes, so that when the action programme has to be drawn up each service proposed can fit into one category or the other.  
(see page 33 and 34)

### 1.6.3 ACTION PROGRAMMES

The actions scheduled in the Service Plan are defined in four programmes:

- Reorganisation and extension of services, both rail and road, day and night, where the largest volume of proposals is.
- Improvement of the integration with special attention to the coordination of timetables in park and ride facilities (52 actions included in the PDI 2001-2010) and the identifiers of lines of all modes.
- Improvement of service quality via information and comfort at stops and en route.
- Improve the features of the services, speed and regularity via the SAE, bus lanes accessing the big cities and prioritisation of TPC at traffic light crossroads.

### 1.6.4. REORGANISATION AND EXTENSION OF DAYTIME ROAD SERVICES

#### EMT

The proposals for line reorganisation and extension are those that

satisfy accomplish the following objectives most adequately:

- lines that cover the demand which in the future will be met by an action of the PDI.
- lines that cover a local demand, for example of a neighbourhood or population nucleus, to bring it closer to a interchanger point: underground or train, tram or long-distance bus station.
- lines that connect different municipalities of Barcelona but which are adjacent or close to the city.

In the DGPT, on the basis of:

- shortcomings in accessibility at municipal level according to the aforementioned criteria
- the identification of flows not properly served by bus, i.e. with a high vehicle occupation rate
- the identification of the flows of relevant volume not served by any form of public transport at the moment

Moreover, it is evident that in terms of passenger transport, the UAB (Autonomous University of Barcelona) has two characteristics that make it unique:

- it is a major pole of attraction of journeys/travel
- it occupies a central position in the metropolitan region of Barcelona

These qualities mean a large concentration of buses in the UAB at certain times, which makes it possible to switch between different lines and others and therefore use this point as a hub for users either coming from or going to destinations other than the UAB. This is why the UAB has been made a main bus interchanger point of the metropolitan region.

### 1.6.5. IMPLEMENTATION OF BUS LANES IN THE ACCESSES TO BARCELONA

Bus lanes are defined as road platforms, totally or partly segregated, for use by public transport vehicles only.

The objective of these platforms is to increase the number of persons that can use the corridor in which the platform is implemented instead of increasing the number of vehicles that use it. Therefore, it is to facilitate the use of modes of public transport, which make a more rational use of road space that is in short supply.

The following four corridors were analysed:

- Avinguda Diagonal and the A-2 motorway
- Gran Via South and the C-31 motorway
- Av. Meridiana and C-58 motorway
- Gran Via North and C-31 motorway

The benefits are as follows:

- Reduction in journey time for public transport users: Current travellers on the bus lines and new travellers alike, whether they are captured from private vehicle use or induced demand, will obtain, in congestion periods, savings in travel time, at a money value of 7.47



€/hour. As periods get longer, the number of travellers that benefit will be greater. The number of travellers that will gain time in year 0 (in congestion periods) would be 13,100 travellers/day, travelling on 480 buses. In the scenario of a 3% annual growth in demand, the number of travellers that benefit would rise to 34,000 daily on 710 buses at the end of 30-year evaluation period.

- Reduction in bus operating costs.
- Reduction in externality costs: This means the reduction in the emission of gases into the atmosphere and the time for which the population is exposed to the noise associated with vehicle traffic.
- Reduction of accident rates, which are lower using public transport than private vehicle.

The determination of the profitability of the investments was made by determining flows of costs and benefits converted into monetary terms for each one of the years of the evaluation period, which are updated using different rates of discount and the calculation of the Net Updated Value (NAV) corresponding to each one of them. The rate of discount which makes NAV = 0 is the internal rate of return (IRR), the main indicator of the profitability of the investment.

The proposals finally chosen would be, besides bus lanes that do not require physical separation, the implementation of two segregated bus lanes:

- A-2, between Diagonal and the link-up with Molins de Rei, at a construction cost of 39.3 M€ and an IRR of 18%.
- C-58, between Meridiana and the link-up with Cerdanyola/Ripollet, at a construction cost of 22.3 M€ and an IRR of 8%.

## 1.7 NIGHT SERVICE PLAN

The night bus service, known as TPC Nit, comprising 17 lines that cover more than 80% of the population of the RMB, was officially opened last November 5, 2001. These buses are regular and run between midnight and 5 am, when there is no rail service; they link Barcelona (Pl. Catalunya) to the main town centres of the second Metropolitan crown, with a maximum journey time of 1 hour. This provides permanent availability (24 hours a day all year round) of public transport services for the area in question.

The service was introduced and consolidated in the course of 2002. Its implementation has made it possible to detect dysfunctions and improvements to be made. In the course of the year requests have been received from 33 municipalities pertaining to the modification of certain characteristics of the service: changing stop locations, extension of routes, information on the service, timetable modifications,... Eighteen (18) of these requests were resolved favourably. (see page 37 and 38)

## 1.8 LINE IDENTIFIERS AND UNSTAFFED STATION AND STATION NOMENCLATURE

A standard has been drawn up to name the lines and services to be

able to unequivocally identify all the railways and roads of the Barcelona Metropolitan Region.

The rail services (Renfe, FGC, TMB and Tram) are identified by a two- or three-character code, the first of which is a letter. An exclusively numeric code of up to 3 numbers is envisaged for the bus lines. The night line identifier begins with the letter N.

This standard was approved by the Governing Board on July 4, and has already been applied to the TMB lines.

Moreover, a proposal has been drafted following this standard which provides for a code for the different bus lines of the DGPT which hitherto did not have them or did not meet the standards. This has been addressed with the operators' representatives, and is another part of the Service Plan.

A list of the names of the unstaffed stops of El Baix Llobregat Tram has also been drawn up, which includes the modifications and suggestions made by the Town/City Councils of the municipalities the tram crosses. It was approved by the Governing Board on October 23.

Similarly, the change of name of the station known as "Joan XXIII" of the old L4 line to "Artigues | Sant Adrià" when this section became part of the L2, was approved. Also approved was the change of name of the "Feixa Llarga" station of L1 to "Hospital de Bellvitge", and the name of "El Maresme | Fòrum" has been approved for the L4 station between Selva de Mar and Besòs Mar, currently under construction.

Proposals have been made for all the other stations with a building project completed or under construction of the L2 (Badalona Centre), L3 (Canyelles- Trinitat Nova section), L5 (Horta - Vall d'Hebron section), L9 (Gorg and Can Zam - Sagrera section) and L11 (Trinitat Nova- Can Cuiàs) lines. These proposals have been validated by most of the municipalities involved, with answers from the remaining municipalities pending to draw up the definitive proposal.

## 2. PROJECT MANAGEMENT AREA

### 2.1 DIAGONAL - BAIX LLOBREGAT TRAM

The Governing Board of January 31 approved the modification of the route of the Diagonal-Baix Llobregat tram in the avinguda Diagonal, carrer Martí Franqués-Carretera de Collblanc section, and submitted this modification to the formalities of public information (published in the DOGC issue 3575, of February 14, 2002).

Once the proposals submitted had been dealt with, alternative B (along carrer Adolf Florensa) of the aforementioned route plan was approved and the Director General was empowered to negotiate with the Neighbours' Associations of the area for the city planning work on avinguda de Xile. These negotiations were carried out after the route project, approved, was submitted to Public Information formalities pertaining to environmental impact (published in the DOGC issue 3634, of May 13, 2002) and a favourable environmental impact declaration was issued on July 11, 2002 by the Department of the Environment.

The definitive approval of the building project was given by the Director General on November 13, and was ratified by the Executive Committee on November 25.

On May 8, the cooperation Agreement was signed between the Metropolitan Transport Authority, the Ministry of Development and the Town/City Councils affected by the transfer of the former national road N-340 and the building of an underpass under the A-2 motorway. As a result of the Agreement, work is already under way on this route in the city limits of Esplugues de Llobregat and the detour of the A-2 motorway has also been addressed to make the aforementioned underpass, following approval of the project on October 7.

At the beginning of the last quarter, certain changes were addressed in the building project pertaining to the final section of work in Sant Feliu de Llobregat, in several unstaffed stops and city development work in the areas of Sant Joan Despí and Esplugues de Llobregat. The following proposals were made:

- To connect the T2 line from unstaffed stop 26 via avinguda Barcelona, to the T3 line at the junction with the avinguda del Baix Llobregat, merging unstaffed stops 27 and 28 into a single unstaffed stop in the avinguda del Baix Llobregat and then conducting development work on the sea side of the extension of the T2 line.
- Implement the T3 line to unstaffed stop 31 followed by development work on rest of the N-340 to the city limits of Sant Feliu de Llobregat, Sant Just Desvern and Sant Joan Despí in compliance with the "Cooperation Agreement between the Metropolitan Transport Authority, the Ministry of Development and the Town/City Councils of Barcelona, l'Hospitalet de Llobregat, Esplugues de Llobregat, Sant Just Desvern and Sant Joan Despí on the transfer of the former N-340 national road to the municipalities, the implementation of the new Diagonal-Baix Llobregat tram line and the building of an underpass under the A-2 motorway".

These changes were approved by the Governing Board of October 25, thus confirming the operating model of the three lines (T1, T2 and T3) defined in the operating project proposed by the franchise company and accepted by the ATM in the award of the tender, with no modification to the service level or the scheduled frequencies.

The study for the routing of the extension of the line to Sant Feliu de Llobregat-Molins de Rei, whose first phase will make the connection between unstaffed stop 31 and the changeover point envisaged at the connection point of the L-12 line (action AX17 of the Infrastructure Master Plan 2001-2010) and the RENFE C-4 line in Torreblanca, and demand studies have been started according to the aforementioned changes.

Regarding the work carried out by the Tramvia Metropolità, S.A., company, the following points should be made:

Barcelona - the main actions were developed in Av. Diagonal from plaça Francesc Macià to Palau Reial. In September, 2002, a model stop was made and the first tram could be visited.

L'Hospitalet de Llobregat- Work began on the detour of the services affected and development work on the pavements.

Esplugues de Llobregat- Work focused mainly on the Carretera de Cornellà, with the placing of the road infrastructure. The sidewalk paving was changed and landscaped areas improved.

Cornellà de Llobregat- The "Cornellà changeover" is under way, which will provide intermodality between the Underground line 5, RENFE and the tram. The RENFE underpass was made by means of a box placed so as not to interrupt rail traffic.

Sant Joan Despí- Work has begun on the tram platform on BV-2001 and the making of workshops and depots.

Sant Just Desvern- Work started on the A-2 underpass, requiring a temporary detour of traffic on this motorway.

In 2003, the critical points in work on the Baix Llobregat Tram will presumably be:

- Detours in traffic on the N-340.
- The structures of the Collblanc road.
- Junctions between the Collblanc road and the Av. Països Catalans and the Cornellà Road and Av. Baix Llobregat, where an power substation will be built.
- The Cornellà changeover with the flyover over the underground.
- The A2 underpass.
- Development work on the N-340 at Sant Just Desvern.

Work on the part of Workshops and Depots not affected by the detour of the high voltage pylon is progressing at a brisk pace, the objective being that the first trams will be able to arrive in the first four-month period of 2003. The side areas of the tracks that will be formed by the depot have been completed, and the catenary poles and corbels have been erected. Work is underway on a drinking water and sewage mains, outside lighting, as well as assembly work on the traction substation. The workshops and offices premises are also proceeding at a good pace. The structure of the Service Station for the trams is ready and work is underway on inside partitions and finishing.

As far as Rolling Stock is concerned, in the course of 2002, at the Alstom factory in Santa Perpètua de Mogoda, work has progressed on the building of a fleet of 19 trams for the Diagonal - Baix Llobregat network, so that they will be ready to start at the end of 2003. The first three trams were finished at the end of the year. The first one passed all the tests it was put through, including the safety test in the presence of the management of the General Board of Ports and Transport of the Autonomous Government of Catalonia. The second and third units are ready and are in the testing phase. Trams 4 and 5 are being built.  
(see page 40 and 42)

## 2.2 SANT MARTÍ - BESÒS TRAM

In the year 2001 the project documents for the routes and the sheets of specifications were drafted for tenders for the writing of the pro-



ject, building and operation of the stretch of the tramline between Plaça of the Glòries and Sant Adrià del Besòs, with the two following lines:

- Estació del Nord - Glòries - Diagonal - Fòrum 2004 - Sant Adrià del Besòs.
- Vila Olímpica - Meridiana - Glòries - Gran Via - Cristòfol de Moura - Sant Adrià del Besòs - Badalona.

And the connection between them through la Rambla de la Mina.

The route project was submitted to a public information process (published in the DOGC issue 3439 of July 26, 2001) and the Governing Board approved it at its session of January 31, 2002 with the corresponding sheet of technical specifications and specific administrative clauses for the award.

This award was assigned to the "Group TramMet" on July 4, 2002 according to its optimised bid number 2, modifying the budget, which was finally set at 205 million euros.

In terms of timing, the network start-up was agreed to according to the following phases:

**1st Phase:** the Sant Adrià RENFE - Diagonal - Estació del Nord line will come into service in March 2004.

**2nd Phase:** in January 2005, and in coordination with the remodelling work and the civil work on the tunnel of the Gran Via section, the Badalona - Gran Via - Barceloneta line (via carrer Wellington) will come into service.  
(see page 43)

### 3. CALL FOR TENDERS FOR THE SUPPLY OF TRAINS FOR THE BARCELONA UNDERGROUND

On January 31, 2002, the Governing Board of ATM reached a series of agreements pertaining to the rolling stock of Lines 5 and 9 of the Barcelona Metropolitan Underground. These agreements were made to take on the management hitherto carried out by the TMB in the supply of rolling stock for Line 5, developing the agreements reached by the Governing Board of ATM on July 9, 2001, and moreover to adapt the sheet of technical specifications drawn up by the TMB, according to the specifications contained in the Basic Functional Study of Line 9 drawn up by the DGPT.

Thus, the Governing Board of the ATM agreed to initiate the process of tendering for the supply of rolling stock for lines 5 and 9 of the Barcelona Underground. The agreement established that the TMB was to take charge of the process of tendering and that two Commissions, technical and economic, respectively, would be set up, to monitor the tendering process and the appraisal of the bids submitted, so that the Governing Board of the of the FMB could submit an award proposal to the Executive Committee of the ATM, for the Governing Board of the ATM to subsequently make the definitive award.

The two Commissions were constituted on February 13, 2002 at an initial joint meeting, where the working methodology was addressed, and a series of modifications to the proposal for the announcement of the extension of the train tendering prepared by TMB were approved. These Commissions met regularly in the course of 2002, with the final meeting held on November 20, 2002, where the definitive analysis of the bids was made.

On February 15, the call for tenders was sent to the DOCE and was published in the BOE and the DOGC, on February 20 and 22, respectively.

An agreement taken by the Governing Board of the ATM on April 25, 2002, approved the content of the Sheet of specifications for the train bidding.

On July 1, 2002, the bids were opened. The following bids were received:

- CAF
- Alstom / AnsaldoBreda
- Siemens

The Governing Board of the ATM, on December 12, 2002, made the award for the supply of the trains of lines 5 and 9 of the Barcelona metropolitan railway, on the basis of the information received from the Technical and Economic Commissions. The supply 50 trains of the future Line 9 was awarded to the Consortium comprising ALSTOM / ANSALDOBREDA, and the 33 trains of lines 5, 3 and 2 were awarded to the CAF company. This award agreement was conditioned by compliance with certain technical, economic and financial requirements, and the definitive supply agreements are expected to be entered into in the first four months of 2003.

### 4. FARE SETTING AREA

#### 4.1 INTEGRATED FARE SYSTEM

The Fare Integration project in the RMB as a whole was approved by the Governing Board of The ATM on November 15, 2000 and its objectives are:

- To create an easy-to-understand fare system based on principles accepted by the users.
- For the Metropolitan public transport system to be perceived as an integrated network.
- To contribute to positioning public transport as a more attractive system for users.

The implementation calendar of this project for the different operators was:

**January 1, 2001:** The T-Mes and T-Dia tickets came into operation in the first crown for the following operators: buses (Authosa, Mohn, Oliveras, Rosanbus, Soler and Sauret, TMB, Transports Lydia and Tusgsal), Underground, Ferrocarrils de la Autonomous Government

of Catalonia and Rodalies Renfe (except the stations of St. Feliu de Llobregat, Gavà, Viladecans, Castelldefels and the Airport).

**January 15, 2001:** The T-10 and T-50/30 tickets came into operation in the first crown for the following operators: Buses (TMB and Transports Lydia), Underground and Ferrocarrils de la Autonomou Government of Catalonia. All the services of the Ferrocarrils de la Autonomou Government of Catalonia from outside the first crown were integrated in the fare system, as was Sarbús, La Vallesana, A. Font and E. Plana, franchisees of the Autonomou Government of Catalonia, with the T-10 and T-50/30 tickets.

**April 1, 2001:** The T-10 and T-50/30 tickets came into operation in the first crown for the following operators: Buses (Authosa, Mohn, Oliveras, Rosanbus, Soler and Sauret and Tusgsal) and Rodalies Renfe (except the stations of St. Feliu de Llobregat, Gavà, Viladecans, Castelldefels and the Airport). The T-10, T-50/30, 1-zone T-Mes and T-Dia tickets came into operation, the services offered in the integration system by the franchisees of the Autonomou Government of Catalonia: Autocorb, Empresa Casas, Autos Castellbisbal, Mohn, Transports Públics, Soler and Sauret and Transports Generals d'Olesa. As of this date the 1-zone T-Mes and T-Dia cards on suburban and local services of the Ferrocarrils de la Autonomou Government of Catalonia, Sarbús, La Vallesana, Autocars Font and Empresa Plana also came into operation.

**June 1, 2001:** The T-Mes, T-Dia, T-10 and T-50/30 tickets came into operation in the stations of Rodalies Renfe: St. Feliu de Llobregat, Gavà, Viladecans and Castelldefels; and T-Mes to the Airport.

**June 30, 2001:** The services offered in the integration system by the franchisees of the Autonomou Government of Catalonia: Asser, Cingles Bus, Fytsa, E. Sagalés, Hispano Igualadina came into operation, as did the urban services of Sabadell with the Transports Urbans de Sabadell company and the urban service of Sant Cugat with the Marti and Renom company.

- On this date the urban transport services of Sabadell and Sant Cugat del Vallès were also added to the system.

**August 1, 2001:** The Valldoreix (Saiz Tour) urban service joins the fare integration system.

**August 15, 2001:** The services offered in the integration system by the franchisee of the Autonomou Government of Catalonia, Cinto Bus, came into operation.

**September 1, 2001:** All the tickets of the Martí Colomer company, the franchisee of the Autonomou Government of Catalonia, are integrated.

**January 1, 2002:** On this date all the services of Rodalies Renfe and the urban services of Mataró (Mataró Bus) and Castellbisbal were integrated.

**February 1, 2002:** Integration of the interurban services of Bus Castellví.

**March 1, 2002:** Integration of the interurban services of Marès-Trans.

**April 1, 2002:** Integration of the interurban services of Empresa Pous.

**October 1, 2002:** The urban service of Rubí and the Port bus service (TCC) integrated.

**October 14, 2002:** The Capellades shuttle bus is integrated (Montferri Hnos)

**January 1, 2003:** Scheduled date for the integration of Hispano Llacunense and of the urban services of Terrassa, Granollers and El Papiol.

#### Data on proceeds and sale and use of tickets for this year are:

- In 2002, 244.49 million € (VAT not included) were made from the sale of ATM integrated tickets. This represents a growth of almost 20% on sales of integrated tickets at the end of 2001, which were 203.92 million € (VAT not included).

- Validations made with ATM integrated tickets in 2002 totalled 551,995 million, whereas in 2001 there were 461,614 million integrated travellers. This increase, compared to the increase for the same period in 2001, is 19.58%. (see page 46,47 and 48)

#### Distribution and compensations

Of total sales of 244,498,066.56 € in 2002, 242,188,587.32 € were distributed, the Renfe safety rate was 308,274,56 €, with 2,001,204.68 € left in reserves for unconsumed sales for the period, which will be distributed in the first quarter of the year 2003.

In the course of the year, periodic transfers were made at the beginning of each month, apart from the payments on account, to cover deficits in the operators' treasury due to the lag in closures.

Payments were made within a maximum of five days as of the submittal of invoices by operators, and emphasis has been placed on the transparency of the system, implementing a transfer from the Integrated Fare System to the financial and economic system.

The adhesion agreement of the operators to the STI establishes that the ATM will compensate the operating company monitored by the DGPT, as a consequence of any reduction in income caused by the impact of integration. To this end the number of travellers carried every month in 2000 or the mean of the corresponding months of 1998, 1999 and 2000, if the amount is higher, will be multiplied by the difference between the mean pondered fare for 2000 of the ensemble of the operator's interurban services, increased by 10% for 2001 and 7% for 2002, minus the operator's mean pondered fare for the corresponding month in 2002, the result of the new travel tickets created by the ATM, and journeys made with the operator's own tickets.

The annual sum for this concept in the second year of fare integra-



tion was 10,967,975.98 € without VAT. Subsidies for low occupation total 382,653.23 €, and 3,407,712.05 € for night services. (see page 49)

#### Index of Intermodality

One of the outstanding results is the increase in intermodality in journeys by public transport: this index stands at 20.94 % for the metropolitan public transport system overall, whereas before the implementation of the Fare Integration (as can be seen in the attached table), the value was 8.3%. If we analyse this data considering only the integrated tickets, the values obtained are around 30%, i.e., three of every ten journeys with integrated tickets are made with more than one mode of transport. (see page 49)

#### 4.2. TICKETS AND FARES FOR 2003

The Governing Board of the Metropolitan Transport Authority approved, at its session of October 23, the public transport fares that will be applicable in the Integrated Fare System as of January 1, 2003.

The prices of the different transport tickets are generally speaking updated with a nominal increase similar to the inflation of the last 12 months, which is 3.6%, rounded up to 5 cents of a euro. At the same time, all prices carry the railway safety tax set by the General State Administration, which is 0.02 € per journey for next year.

With this price update, the mean pondered rate of the public transport system has an average increase of 0.74%, which is below the CPI, derived from the generalisation of the use of ATM tickets, a trend to more profitable tickets (monthly and quarterly passes) and the increased intermodality of the system (cheaper interchangers).

With this new price structure, an increased use of public transport in the order of 3% is forecast, which means a total of 825 million trips for the coming year (2003). (see page 50 and 51)

#### 4.3. ANTI-FRAUD ACTION

The ATM programme for year 2002 provided for a fight-the-fraud drive, to which end a task force was set up and started working in April 2002. The group comprises representatives of the administrations with powers in matters of fraud, plus representatives of the integrated operators and the ATM.

The objective of the group is to define and propose homogeneous lines of action against fraud throughout the Integrated Fare System network.

A preliminary diagnosis of fraud on the public transport system in the RMB was performed of the as the basis for defining and proposing anti-fraud actions.

Hitherto, the progress made by the group focuses on the harmonisa-

tion of criteria to define fraud and types of fraud in the Metropolitan public transport system (SMTPC), with three different lines of action defined: standards, operating and communication. Moreover, the group has drawn up a proposal for overall action in the detection of fraud.

- Standards: this line aims to formulate proposals to adapt and improve the framework of standards or regulations that regulate all types of fraud.
- Operating line: the aim here is to create a homogeneous inspection system and, on the basis of the first section, to implement systematic network-wide measures.
- Line of communication: inform the citizens /users what fraud means, that action is being taken and what the results are.

#### 4.4. ISO 9001 QUALITY MANAGEMENT SYSTEM

Now that the Integrated Fare System has been consolidated in the RMB, and the number of lines and integrated operators is growing, a quality management system will be implemented to guarantee internal and external quality in all activities related to the STI, in time and in form, by means of established standards and on going improvement.

This task of implementing the quality management system into the processes involved in the STI is seen as a first phase within the project for the ISO 9001 certification of all ATM processes. The technical assistance for this implementation was awarded by negotiated procedure to the Institut Català de Tecnologia. Certification is expected to be achieved in September 2003.

### 5. INDICATORS OF THE METROPOLITAN PUBLIC TRANSPORT SYSTEM

#### 5.1 EVOLUTION OF THE MAIN MAGNITUDES OF THE SMTPC

In 2002, the total validations of the Metropolitan public transport system are estimated at 800.05 million, as is shown in the table attached. This figure constitutes an increase of 5.8% versus 2001. As far as fare integration is concerned, the accumulated increase is 12.7%.

The transformation of tickets sold into journeys to be able to compare evolution over the last few years, gives a figure of 846.9 million tickets sold in 2002. (see page 53 and 54)

#### TransMet figures

The Transmet xifres for 2001 and the first six months of 2002 were published in the course of 2002. These figures comprise the main data of the public transport network of the Barcelona Metropolitan Region: supply (number of lines, stations/stops, vehicles-km, etc.), demand and income.

The Transmet Figures for 2002 are detailed in chapter 4.

## Transport Indicators

The transport indicators for 2001 and the first six months of 2002 have been drawn up, and include the main parameters by characterisation of supply, demand, quality of service, prices and the economic situation of the transport operators of the Metropolitan region.

The transport Indicators for 2002 are given in chapter 4 "Transport statistics".

## 5.2 EVERYDAY MOBILITY SURVEY (EMQ 2001)

The collection of data from the field for the Everyday Mobility Survey 2001 (EMQ '01) was completed in 2002. The fieldwork was carried out in October and November 2001, and most of the surveys were collected in the first fortnight of December 2001, and a second round was carried out from January 15 to February 15 to obtain the quotas corresponding to each one of the surveyed areas.

Subsequently, in the course of the year, the data were processed to obtain the modelling of the mobility characteristics in the Barcelona Metropolitan Region, extended to the limits of the Local Train services.

The final study sample is 16,123 selected individuals (12,427 of whom answered the opinion poll) and who facilitated socio-demographic information on a total of 44,941 individuals, 30,740 of whom answered the mobility survey, and information on a total of 342,975 journeys was collected.

This work was conducted by the Institut DYM with assessment from IDESCAT and IERMB.

The main results are shown in chapter 4 of this report.

## 6. COMMUNICATION AND ATTENTION TO THE CITIZEN

### 6.1 CITIZEN'S ATTENTION SERVICE

#### Personalised attention

This activity, which was undertaken on the implementation of the Integrated Fare System in January 2001, has continued to operate with a progressive increase during the year 2002.

Attention to the citizen has been carried out via two channels:

- Telephone attention
- Answers to e-mail and letters

The topics of the queries and letters pertain mainly to different aspects on how the Integrated Fare System works (70%), and to requests for information on the different actions of the Infrastructure Master Plan 2001-2010 (30%)

The volume of queries attended to in this service amounted to 1850

by telephone and 830 by e-mail and ordinary mail.

The activity carried out in the library/documentation centre in 2002 led to an increase in the volume of documents and reference material specialising in transport, now totalling 440 publications, besides a collection of 124 journals/magazines.

A total number of 72 external users were attended to.

#### Web ([www.atm-transmet.org](http://www.atm-transmet.org))

Work in maintaining and updating the contents and services of the web site generated an increase in the number of connections compared to the previous year. The web site received a total of 100,197 visits in 2002.

### 6.2 TRANSMET INFORMATION CENTRE

On July 29, 1998 the first collaboration protocols with the public transport operators and with the main radio stations were signed to offer the information service on the status of the Metropolitan public transport network and the news generated by the system. These collaboration agreements have been updated and extended.

In the course of 2002, the radio channels with connections are: Catalunya Ràdio - Catalunya Information, Com Ràdio, Cadena Cope, Onda Cero Ramblas, Ràdio Barcelona - Cadena Ser, Ona Catalana Barcelona - Ona Música Barcelona, RAC 1 - RAC 105, Ràdio Gràcia, Ràdio Club 25, Ràdio Ciutat Badalona, Ràdio Rubí, Ràdio Ripollet, Ràdio Hospitalet, Ràdio Sta. Perpètua, Ràdio Premià, Ràdio Florida, Ràdio Castelldefels and Ràdio Sant Felu.

A total of 7,850 connections were made, with more than 3,700 information items of interest broadcast. In 20% of these connections, information was given on incidents in the system.

The other medium which makes it possible to have live connections is the television. In the course of the year, Televisió de Catalunya, using teletext, provides more immediate and permanent round-the-clock access to all users for Metropolitan transport information. This information can also be accessed via the websites of the ATM and Televisió de Catalunya.

These connections have broadcast almost 2,988 items, 490 of which were related to incidents in Metropolitan transport.

### 6.3 SUSTAINABLE AND SAFE MOBILITY WEEK

The Sustainable and Safe Mobility Week was held for the second time in Catalonia between September 16 and 22, following the European call. The week culminated in the car-less day on the 22.

In Barcelona, the week featured the Sustainable and Safe Mobility Exhibition, bringing together different public institutions and companies engaged in transport and social organisations to disseminate the actions they are carrying out in different areas. The results of the exhibition were: 126,000 visitors to the fair venue, twice the pre-



vious year's attendance, 24 exhibitors and more than 50,000 documents distributed.

The level of participation by the municipalities was high: 94 Town/City Councils seconded the car-less day, 14 more than the previous year, and 43 of them organised their own mobility week.

The ATM participated in the organisation of the exhibition, coordinating the only stand set for public transport.

A leaflet was also published and distributed on board public transport on September 16, Public Transport Day, which featured recent improvements to public transport.

#### 6.4 EUROPEAN SUMMIT

The meeting of the European Council in Barcelona on Friday 15 and Saturday 16 March and the social summit of Thursday 14 brought heads of state and government from 28 states, the 15 EU countries and the 13 EU candidate countries, as well as the Ministers of Foreign Affairs, Economy and Employment, the authorities of the European Commission and the European Parliament, 1,000 delegates and 3,000 journalists representing 450 media from 51 countries.

During the actual holding of the Summit, a series of restrictive measures were deployed from 10 am on the 14th until 4 pm on the 16th affecting private and public transport and pedestrian access.

The ATM designed and coordinated the public transport measures. The aim was to deter drivers and private vehicle users from using their cars to go to Barcelona, and if they did, to leave them in a car park before reaching the city and continue their journey on public transport.

There were three groups of measures:

- Creation or setting up of park and ride facilities a certain distance away from Barcelona.
- Reinforcement of public transport. Two objectives were pursued:
  - Reinforce the regular offer as far as possible so that drivers who chose not to leave their vehicle at home had the means necessary to get to Barcelona.
  - Serve the different park and ride facilities with public transport so that those using it can continue their journey.
- Informative Campaign: The Press Office of the Catalan Traffic Service, the City Council of Barcelona and the TransMet Information Centre gave advice and tips over the days prior to the summit. During the summit their service was to be reinforced and they were to give specific and continuous information on the traffic and public transport. Similarly, a leaflet was published and distributed to the public transport media and to drivers on entering the city, repeating the tips and advice issued by the media.

During the Summit, the operation and use of public transport was monitored to correct any problems detected.

There was a notable reduction in mobility over the three days the Summit lasted, both for obliged reasons (work and studies) and non-obliged mobility (shopping, leisure, etc...). A great many citizens chose to forego their cars and use public transport without causing any noteworthy surplus occupation problems in any mode of transport. (see page 58)

#### 6.5 INSTITUTIONAL RELATIONS

##### Papers and conferences

The ATM participated, in the course of 2002, in a great deal of conferences and meetings to disseminate its work and share the latest trends in the sphere of the functions of the Transport Authorities in the planning and implementation of transport infrastructure and services, as well as applicable technologies, including:

- Citizen's Network Benchmarking Initiative Annual Conference. In Brussels, on the comparison of Transport Systems.
- First meeting of the Miracle European project in Rome with representatives from the different cities participating: Rome, Barcelona, Winchester and Cork.
- Meeting in Rome of a group of representatives of the transport authorities of Paris, Berlin, Frankfurt and Barcelona, on the accessibility of people with reduced mobility to public transport.
- Seminar organised by the Consorcio de Transportes of Madrid on "Transport and Land use".
- Second meeting, at the headquarters of the transport authorities of Stockholm, of the EMTA group, on the accessibility of people with reduced mobility to public transport to receive information on the accessibility of people with reduced mobility in Sweden, and to hold the first meeting with the IBGM company, commissioned with carrying out the accessibility study.
- Meetings of EMTA Association of European Metropolitan Transport Authorities held in Bologna and Dublin.
- Participation at a working day at the University of Florence, where Fare Integration in the Barcelona Metropolitan Region was presented.
- Participation at a working day at the in the headquarters of the Region of Lombardy, where Fare Integration in the Barcelona Metropolitan Region was presented.
- Participation at the Universitat Pompeu Fabra on Agenda 21.
- Conference on Infrastructures organised by "The Economist" in Barcelona.
- Participation in the Postgraduate in Municipal Engineering of the UPC at the "Escola de Enginyers Camins de Barcelona".
- Working days of the Transport Consortium in the Balearics on "the

consortium-based organisation as a way of tackling mobility problems" in Palma de Majorca.

- Attendance at the opening of the Bilbao Underground Line 2.
- Colloquium at the headquarters of the Transport Consortium of Madrid on the contact-free card as support to integrated transport tickets.
- International Congress on Cards, means of payment and security (cit2002 - Expocard) at the Institute for International Research España in Madrid.
- Technical Metropolitan public transport seminar dealing with the Operating Management and Help System in the Barcelona Metropolitan Region, World Trade Center in Barcelona.
- Alstom working days on Urban Transport.
- Presentation of the ATM and the Contact-free Chip card Project as support to integrated transport tickets at the Universitat Politècnica de Catalunya.
- Unitronics, Seminar on security in computing networks in Barcelona.
- Transport Award Integrated 2002 Congress, Project: The implementation of the Integrated Fare System in Barcelona. United Kingdom.
- Conference of the Institute for International Research España in Madrid on "Technologies applied to management, control and operation of Public Service fleets" .
- International Transport System Spain, III National Congress on Smart Transport Systems: Security, Information and Technology in Palma de Majorca.
- Themed sessions on Geospatial Information technologies and applications (Fòrum SIG) in the Institut Cartogràfic de Catalunya.
- Conference Esri 2002 in Madrid, Presentation of the ATM's Geographical Information System.
- Universitat Politècnica de Catalunya (UPC), paper in the "Master in Geographical Information Systems" .
- Paper at the "Teleatlas users Spanish Working Day" held in Madrid and Barcelona.
- Institut Cartogràfic de Catalunya, presentation of the ATM's Geographical Information and Documentary Management System.
- Geovirtual working days in Barcelona, presentation of the ATM's Geographical Information and Documentary Management System.
- Geographical Nexus in Barcelona, presentation of the ATM's Geographical Information and Documentary Management System.
- Esri España Barcelona, presentation of the ATM's Geographical

Information and Documentary Management System.

- Presentation of the ATM's Geographical Information and Documentary Management System at the headquarters of the Consorcio de Transportes de Madrid.
- Presentation of the ATM's Geographical Information and Documentary Management System at the Universitat Autònoma de Bellaterra.
- V Congress on Transport Engineering held in Santander.
- I Working Day on "public transport in Spanish Metropolitan Areas: Current Situation and future plans" held in Valencia.
- Congress of the International Federation for Housing and Planning (IFHP) on "Urban conditions 21" Tianjin, China.

#### Visits to the ATM's headquarters

In the course of 2002 the ATM received numerous visits by organisations interested in its activity, including:

- Visit by a delegation of METROREX from the city of Bucharest to see how the institution works.
- Visit by a representative of operators from Keolis (France) to see the implementation of the night bus service.
- Working day in Barcelona with representatives from the province of Turin (Italy) on how the ATM operates.
- Visit by transport modelling experts from Santiago de Chile.
- Working day with representatives from the different transport authorities of Sweden. Description of the work of the ATM of Barcelona.
- Visit by a delegation from Tel-Aviv Metropolitan Mass Transit System. Presentation of the ATM and explanation of the Integrated Fare project.
- Visit by a delegation from Seville to see how the ATM and the Integrated Fare System work.
- Colloquium on the ATM's activity with different transport representatives from Algeria, in a working week in Barcelona at the Universitat Pompeu Fabra.

Meetings related to the coordination and improvement of urban and interurban services

Visits to the headquarters of the ATM to deal with coordination, remodelling of services or fare integration, with representatives from the County Council of el Maresme and the Town and City Councils of Cerdanyola, Martorell, Lliçà de Vall, Sant Cebrià de Vallalta, Sabadell, Sant Feliu de Llobregat...

For the same reason, in the course of the year ATM representatives



have visited a great number of municipalities and county institutions: County Council of l'Alt Penedès, County Council of el Maresme, County Council of el Vallès Occidental, County Council of el Baix Llobregat, Town Council of Vilassar de Mar, Town Council of Sant Cugat del Vallès, Town Council of La Roca del Vallès, Town Council of Mataró, Town Council of Sabadell, Santa Eulàlia de Ronçana, Town Council of Granollers, etc.

## 7. INFORMATION SYSTEMS AREA

### 7.1 FARE INTEGRATION MANAGEMENT (SGIT)

Subsidy for the purchase of Magnetic Sale and Validation Systems

With regard to making the payment of the subsidy granted, the certification of the systems implemented in the operators has been conducted through the Laboratori General d'Assaigs and Investigacions, which issued the corresponding technical reports.

#### Integrated ticket Manual

The manual has been updated with the characteristics of the 2003 tickets.

Here, particular attention should be drawn to the parameterisation of the double strip for the tickets T-10, T-Mes (Month), T-50/30 (all 1 zone) tickets, as well as the T-Esdeveniment (T-Event) and Employee pass tickets.

Moreover, certain particularities of some operators and municipalities of the RMB have reduced the need to modify the logical fare-change areas this year.

#### Fare Integration Technical Group

In the course of the year meets were held monthly to define and resolve the different technical aspects of the SVV (Validation and Sale System).

The issues addressed by the Technical Group include the coordination of the calendars and systems of the integrated operators for the implementation of the follow-up bit in the system via the implementation of the double strip, the update of the technical specifications of the ticket support, the follow-up of the quality of recording and maintenance of the systems installed in the operators, the specifications of the contact-free chip card project, how cross incidents between operators were solved, etc.

### 7.2 OPERATING AID SYSTEM (SAE)

#### Coordinating Work Management of the SAE implementation project

Supervision of coordination work has been a priority in the relationship between operators and the company commissioned with installing the systems on the buses and the operators' management centres, the coordination of aid to work management by the SAE radio network and the supervision of the different operators' bus installer teams.

Finally, operator training in Fleet management Centres, driver training, maintenance, etc. was followed up.

#### Obtaining lines, stops, routes and timetables from operators

Once the coordinates of the stops of the lines of the operators involved in the SAE have been obtained, a work team was created in the ATM during the year to generate the information required by the SAE on lines, stops, routes and timetables to make it possible to perform the initial data loading needed to start up the SAE.

This task required the exhaustive collection, in real time, of all nominal timetables for each one of the basic routes of the buses of the different operators, with details such as rush hour, off-peak, etc and any calendar-specific variations (special holidays, holiday periods, university period, night-time, etc).

The bus services in the ATM sphere of integration are in the order of 400 in each direction for the interurban services of the DPTOP, and 80 in each direction for those of the EMT. The services had to be defined with the utmost cartographic, geographic and topological precision at three levels (infrastructure, route and services).

#### Management of intermodal information

A proposal for the location of the User Information panels scheduled in the implementation of the SAE was generated. A collaboration effort was also set up with the DGPT and the EMT for the installation of panels at the bus stops of both administrations.

Particularly innovative was the project for the connection of the public information systems of the DGPT bus stations to the ATM's SAE. This will make it possible to know, in real time, the arrival time of the buses at the aforementioned stations in real time. The first installation featuring these advanced client information features will be the bus interchanger point of Quatre Camins.

#### Management of the SAE maintenance, 24-7-365

The operation of the SAE, and the fact that the different operators depend on it to communicate with drivers, for safety and the monitoring of buses, means that the systems common to all the operators must operate 24 hours a day, all year round.

This requirement was the determining factor in hiring the real-time maintenance of the management of communications and locations of the Trunking Radio network of the SAE, as well as 24x365 supervision from Collserola.

### 7.3 CONTACT-FREE CHIP CARD PROJECT

In the course of the year, work began on the specifications of the Contact-Free Sale and Validation System (SVVSC) project, which targets the introduction of contact-free tickets in Fare Integration. This technology is scheduled to be rolled out in current Sale and Validation systems in the period spanning 2003 to 2005.

The project has been structured in three different phases:

**Phase 1:** Reduced implementation of the system at the end of 2003.

**Phase 2:** Mainstreaming of the system in FI (fare integration) at the end of 2004.

**Phase 3:** Extension to all FI validation and sale points at the end of 2005.

#### 7.4 GEOGRAPHIC AND DOCUMENTARY INFORMATION SYSTEM (SIG-SGD)

Documentary Management System (SGD)

All the ATM staff have been working with the system in corporate, structured and ordered fashion since the beginning of 2002.

The Management of the ATM's Library and Journal Library was implemented at the beginning of 2002.

Finally, in the sphere of documentary management, an incoming/outgoing Register application has been developed, which scans and registers documents for subsequent on-line reference from any authorised post in the organisation.

##### Proceedings Management

The internal operation of The ATM is geared towards the handling of administrative dossiers or proceedings of two types:

1. Handling documents in the organisation, where there are two types of generators:

- Agreements from the different commissions, particularly the Governing Board and the Executive Committee, agreements that must be followed up and subsequent formalities pursued until they are implemented, and whose status may have to be queried at any time.

- Documents arriving at the ATM through the in-register, which generate a subsequent series of tasks, and whose status may have to be queried at any time.

2. The handling of administrative documents regulated by the Hiring law of Public Administrations, and which may be of different kinds, particularly Agreements, Subsidies, Hiring (Work, Supplies, Services, Consulting and Assessment)

In many cases the formalities involved in these questions lead to administrative proceedings.

The analysis of Proceedings Management was undertaken in November 2002, and programming is expected to be completed by the first quarter of 2003. The Proceedings Management application will permit the electronic monitoring of internal bureaucracy and will be a definitive complement to the process of documentary management.

##### Geographic Information System

Different protocols were defined in the course of the year:

- Harmonisation of symbols, colours, formats, paper output.
- Creation of the ATM cartographic style manual
- Automatic generation of raster images for different uses: presentations, web, ex. Sustainable Mobility, Car-less day, etc.
- Definition of a common data model
- Definition of a common repository format

Different user profiles were identified with regard to the tasks they perform. On the one hand specialised user profiles, with editing and data creation functions, and on the other specialised and non-specialised user profiles, who consult or run analyses but do not create new data.

The access modules to the information created for different purposes are fed by the base cartography, the network infrastructure and related alphanumeric data.

Since a major volume has been accumulated, the documentary information and the sources have been introduced into the system, as well as other parameters that help to describe it, -area, date, attributes, etc-, both alphanumeric and graphic -quick view - in the GIS application for this -catalogue-. The aim was to be able to know what information is in the GIS and how updated it is.

As far as the processing of information by users that generate maps is concerned, symbol archives have been created which, amongst other advantages, entail a standardisation of the final symbols.

For rail infrastructure (Underground, FGC), this was done according to the style manual of each operator.

This process of consolidation has led, on the one hand, to the generation of a document with the technical specifications of digital graphic files (CAD or GIS) integrated in the jobs commissioned by The ATM to third parties, and on the other to interest from the IDEC project (Spatial Infrastructure Data of Catalonia) which is in the final implementation phase by the Autonomous Government of Catalonia, so that the ATM will be integrated within it.

##### Intranet

All ATM users can access the GIS by a web browser with querying, analysis and presentation functions provided by a map server developed specifically for the ATM.

The query of the metadata of the GIS data base is included.

Finally, the GIS-DMS link up makes it possible to associate documentation and graphical information represented on the maps for them to be accessible by all users and from both environments.

##### GIS-DMS Link-up

The link-up function between the GIS and the DMS has been implemented.

The main characteristic is the association between documentation and graphic information represented on and by the maps, -viewing file,



image, plotting file-, with the possibility of knowing with which information and with which version of the Data Base the map was generated.

Taking into account the fact that it is accessible by all users and from both environments, one interesting aspect is the possibility that any ATM user can plot a map made with the GIS, and can check the paper size and the relevant printing device.

Reference to documentary information associated with viewable graphic objects via the Intranet is also a reality.

#### **ATMAX-GIS Link-up**

Wizards have been implemented for the execution of network analysis algorithms with the ATMax with the ATM base GIS programming technology with a view to facilitating access to complex calculation by people who are not necessarily conversant with how ATMax operates, and for viewing them on the GIS, and publish quality maps with the results obtained of the ATMax .

#### **Integration of SAE with the GIS**

This consist of a two-way exchange of elements from the SAE data base and the ATM corporate data base to guarantee transparent work with data from the SAE for service planning and different types of analysis: traffic allocation, use of data pertaining to demand on the basis of the information collected from remotely managed buses, etc.

The appearance of the new Teletlas browsable vialer has led to a rethinking of the routines in place for the two-way exchange of elements from the data base of the SAE and the GIS of the ATM, as it has structural differences with regard to the previous ones which could not be predicted. This casuistry has also led to the need to adapt the development of the ATMax for this end.

In the future no further tasks of this nature are envisaged, since the area managed by the SAE is now 100% covered.

#### **GIS-SGIT Link-up**

In a scenario of consolidation of both environments, a first version of the use of information on the GIS coming from the Fare Integration Management System has been made, consisting of the possibility of generating data on monthly validations and sales at RMB railway stations.

### **7.5 CARTOGRAPHY**

In a scenario of updating and constant improvement, the geographic information base has gradually increased, and there is now 1:5000 scale coverage available in orthophoto colour of the whole ATM area. Further to the base information on public transport, mention must be made of the replacement of the FGC and Renfe rail infrastructure by the infrastructure supplied by the actual operators, generating the corresponding version of the Data Base to enable access to the ATM's historic documentation.

Another major impact has been brought about by the loading of a new version of the vialer which already covers 100% of the ATM area, and was used as the basis for the generation of the information required by the SAE.

## **8. ADMINISTRATION SERVICE AREA**

### **8.1 LEGAL ASSESSMENT**

First of all, the secretariat of the Governing Board, of the Executive Committee, the Economic Commission and the Technical Commission of the ATM have all been active. All activity is recorded by means of the relevant meetings, and agreements are all duly certified and reported.

Moreover, support was given to the Director General in the follow-up of the agreements of the Governing Board. In this regard, those in charge of fulfilling agreements are required to produce evidence thereof; formalities have been carried out with other general secretariats, etc.

The Legal Commission of the ATM, with representation of the heads of legal advice of the administrations in the consortium, was coordinated. In this activity agendas were drafted, minutes written up, and proposals for findings were generated.

We participated in a task force proposing anti-fraud measures on public transport, with particular focus on the proposal of legal measures.

In legal assessment, initial work was carried out in the hiring processes. In 2002 the most important proceedings, in terms of workload, were: the follow-up of legal issues in the contract for the Diagonal-Baix Llobregat Tramline; the hiring procedure for the Sant Martí-Besòs Tramline and the hiring procedure for the rolling stock of lines 5 and 9 of the Barcelona underground.

A second scenario are the expropriation processes of which the TM was beneficiary. Particularly noteworthy are the expropriation proceedings carried out in 2002 in the city limits where the Baix Llobregat Tram runs through.

Legal assessment was also provided in the mandatory drafting of the agreements of the Governing Board, as well as any related administrative formalities.

Finally, support was given to the Director and to the other ATM services in the writing of the Agreements signed with other administrations or with public transport operators, making sure that they meet all legal requirements.

### **8.2 ACCOUNTING AND TREASURY:**

Execution of the budget for 2002: control and follow-up of the different budget items for each one of the organic classifications linked to the different services of the ATM.

Preparation of the budget for 2003: depending on the needs of each service, Administration draws up the preliminary expenditure project. The forecasts of the Administrations in the Consortium and the forecasts of the Fare Integration System. are used to calculate the preliminary income project. These documents are submitted to the Economic Commission and to the Executive Committee for appraisal. The Governing Board then approves the Budget.

As far as the treasury is concerned, surpluses from the lags between the collection of payment from the administrations and payments to operators have been leveraged over the first three quarters of the year. As of the month of October, the surplus fell considerably due to the settlement of the 1998-2001 Contract-Programme.

Regarding bank balance control, all income and payments that take place periodically are systematically followed up, thus providing updated information on current balances and future short-term balances.

Maintenance of Treasury operations for a total sum of 39 million euros with four financial organisations.

Activity data:

One indicator of increased budget activity is the number of items posted, calculated as 7,100 for the year 2002, a 70% increase versus 2001.

### 8.3 HIRING AND ADMINISTRATIVE FORMALITIES:

- Support to the Consortium's hiring formalities: 25 procedures negotiated and 10 calls for tenders issued and the contract for the tendering of the Sant Martí-Besòs (Estació del Nord - Glòries - Gran Via - Fòrum 2004 - Sant Adrià del Besòs - Badalona) tram system.
- Writing of the administrative specifications of all calls for tenders.
- Acting as secretariat in hiring.
- Control and revision of subsidy dossiers.
- Support to external auditing for drawing up the annual accounts and to the Sindicatura de Comptes for the review thereof.

### 8.4 PERSONNEL

**In the course of 2002 the workforce increased by 3 workers.**

On February 11 the labour calendar, working day and holidays for 2002 were approved, and a total of 37.5 hours a week, was set.

On July 26 the wage agreement was signed, which establishes the wage increase conditions and reviews for 2002 and 2003, future increases, the implementation of the restaurant voucher, and finally the granting of advances and other measures helping to reconcile work and family life.

### 8.5 FUNDING THE SYSTEM

- AGE-ATM Contract-Programme and Funding Agreement 1999-2001

Reports were drafted on the budgets for the year 2002 made by both public operators. This report is used as a tool to check the budgets of the two companies and to validate that they follow the forecasts established by the Contract-Programme, as well as to estimate the calculation of the contributions of the different administrations.

Moreover, the proposals for settlement of the year 2001 were made, and the accumulated settlement of the 1998-2001 period for both Contract-Programmes.

- Funding Agreement 2002-2005

The draft of the new Funding Agreement 2002-2005 was updated, as a rewording of the previous AGE - ATM Contract-Programme and ATM - Consortium Administrations Funding Agreement.

The quarterly follow-up of the main economic magnitudes of the 2002-2005 Business Plans and the evolution of the subsidies received by the ATM from the different Administrations were performed.

### 8.6 ACTIVITY DATA

In the course of the year 6 governing Boards and 11 Executive Committees were held. The Technical Commission and the Economic Commission met 10 times. The Legal Commission held 4 meetings and finally the Integration Monitoring Board met 11 times.

## 9. Incorporation of the AMTU into the ATM

On November 18, 2002, the Agreement for the Association of Municipalities that own the Urban Transport services of the Barcelona Metropolitan Region (AMTU) to join the ATM was signed as provided for by the agreement of the ATM's Governing Board of December 13, 2001, modifying the Statutes of the ATM, to make it possible for the Town/City Councils that own urban transport services of outside the first crown to be represented through this Organisation.

The objective of the Agreement is to empower the ATM to consult, inform, coordinate and participate in its actions targeting Metropolitan public transport with the Town/City Councils that own urban transport and which are members of the AMTU, and for the latter to have information, be able to participate, have a voice and take part in decision making in the ATM.

To this end, the AMTU has appointed representatives on all the governing and consultative organs of the Metropolitan Transport Authority.