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## Measure Evaluation Results

### FUN 2.3 Public Urban Transport Planning Centre

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## Executive Summary

The measure 'Public Urban Transport Planning Centre' aimed at building a common platform for integrated monitoring and passenger information services in Funchal. An Urban Transport Planning Centre was established for gathering, processing, and analysing relevant information about the performance of the urban public transport (PT) operator making use of new available technologies. The objectives of the measure were to support decision-making processes based on relevant and reliable data and encourage use of PT by providing users with better information. Decision-makers, PT users in general and especially tourists are therefore the target groups for this measure.

The measure was implemented in the following stages:

**Stage 1: Purchase of Geographic Information System (GIS) software and training** (June 2009) In order to increase the efficiency of the existing Control Centre in managing traffic data, the PT Operator purchased a GIS system called ArcGIS and training sessions were held for traffic experts working at the Centre.

**Stage 2: Optimization of the PT network in the West part of the City** (January 2010) The first activity realized by the new Planning Centre was the reshaping of the PT network in the West part of Funchal including the implementation of the new Green Line (see FUN 2.1 'Green PT Line') to optimize PT lines and time schedules.

**Stage 3: Purchase of integrated and transport related managing system GIST** (July 2010) To strengthen the coordination between the diverse planning departments of the PT operator, the GIST managing system was purchased to support a continuous transfer of information and exchange of knowledge between the several planning entities. The GIST system aimed at improving the overall management of the Planning Centre and worked in perfect integration with the geo-based tool Arc Gis 9.3. (purchased in June 2009).

**Stage 4: Optimization of the entire PT network** (January 2011) The second activity realized by the Planning Centre was the optimization of the entire PT network by redefining PT lines including withdrawal of ineffective sections of PT lines and opening new ones. These major changes were communicated to PT users through a public campaign.

**Stage 5: Further development of technological devices** (2011) To optimize the activities of the Planning Centre, a traffic simulator software was purchased and traffic experts were trained to use it effectively. At the same time, a new public online tool called "Travel Planner Tool" was developed by a subcontractor with the aim at optimizing itinerary searches by PT in the entire network of the Island addressed to citizens. One of the innovative features of the Travel Planner Tool is the application for tourists to guide them in their daily trips around the Island by using PT network. However, the PT operator made the existing PT information website compatible for mobile phone and accessible in English.

**Stage 6: Application development for information transfer and data collection** (2012) An online interface was designed to provide PT users a portal for complaints or observations related to PT issues. Users' comments were analysed, improvement measure were undertaken as far as possible and feedback was given to users.

Impact and process evaluations were conducted. Since the system was fully operative only in the late phase of the project period, it was not possible to evaluate the impact of the measure based on the changes in the number of PT users. A qualitative approach was applied based on semantic appraisals of the technical opinions given. Specific guiding-questions for the interviews were prepared to gather and evaluate the experts' opinions regarding the effectiveness of the Planning Centre. Three interviews were conducted with

decision makers and transport practitioners who directly benefited from the PT Planning Centre.

The **key-results** of the evaluation highlighted the positive effects of the measure on the working organization and effectiveness of traffic experts and on the transfer of information between PT users and PT planners. Indeed, the three PT managers interviewed were satisfied with the new system providing reliable data for a better planning and decision-making process, even if they noticed that the data analysis would be more time consuming than before. Regarding the online interface dealing with complaints and observations from users to planners, the new system enabled the reduction of the response/feedback time to about one month thanks to the new and appropriate working process introduced in the frame of the measure. Concerning the Travel Planner Tool, several potential extensions could be developed based on the results from the interviews to enlarge the offer and reach larger target groups: the Travel Planner Tool will target new market niches and provide several thematic tourist routes as an innovative outcome which can help non-regular users and tourists find their way through the city and the interurban area using the bus. Furthermore the Travel Planner will be also used as a planning tool and help to create a working platform for the PT operator.

**One of the main barriers** encountered during the process was the delay in the purchase of the traffic simulator software which was a key-tool for the efficient operation of the Planning Centre. The late setting-up of the software did not enable the extraction of results for the MIMOSA project evaluation.

**The main driver** was the common understanding of the Planning Centre concept as an efficient way to overcome PT challenges in the context of the current financial crisis. The Planning Centre was perceived as the most appropriate structural framework to manage PT supply and demand and solve service deficiencies (provide better planning options, enhance communication channels, etc).

From this experience, the PT Operator **learnt** that the effective operation of the Public Urban Transport Planning Centre required sharing planning software and databases with the responsible departments of the Municipality and of the Regional Government. For a successful replication of the measure, **it is therefore recommended** to invest efforts of cooperation between the diverse PT responsible entities involved.

This measure was a successful step towards the implementation of an integrated PT traffic management in Funchal and contributed to optimise work organization of traffic planners. Even if the impacts on the PT users are not yet visible, the current results proved that future positive outcomes can be expected in the next few months. The activities of the Planning Centre will enable the carrying on of monitoring and evaluation process of PT system in Funchal and to support a context-oriented and efficient decision-making regarding PT issues. The qualitative evaluation showed the potential added-value of the concept and supported the currently ongoing process of fine-tuning the implemented tools such as the Travel Planner Tool, which is being tested and optimised to increase its user-friendliness.

## A Introduction

### A1 Objectives

The measure objectives are:

(A) High level / longer term:

- Modal shift towards sustainable modes, due to more efficient PT network;

(B) Strategic level:

- The integration of the currently dispersed data will have strategic importance in defining more clearly strategies to manage mobility under a variety of conditions;
- Improvement of PT user satisfaction and improvement of citizens' accessibility is also a strategic goal of this measure.
- Improved PT network efficiency, due to the specific bus lines supply revisions.

(C) Measure level:

- Improve the quality and reliability of the decision-making process with the support of new technologies and integration of databases;
- Provide better information for PT users through the use of new technologies.

### A2 Description

Implementation of the Urban Transport Planning Centre mainly consisted of an integrated definition of what better urban public transport system is about and the evaluation of hypothetical mobility scenarios using simulation modelling tools to support the decision-making process.

The Planning Centre measure was unrolled as tools and studies were carried out, influencing (with its outputs) to some extent all the network streamlines and the reorganisation of public transport implemented in the city of Funchal during MIMOSA's lifetime. Most of the studies/tools were accomplished. However, one or two are still pending and their completion will require added time after the MIMOSA period has ended.

Nonetheless, the work carried out meant that information was immediately available when planning or operational decisions needed to be made thus allowing practitioners and managers to be more effective. This removes the delay and cost associated with deficient data and the uninformed studies which would otherwise be implemented.

The evaluation approach has sought to identify the objectives that this measure has been able to reach with respect to the measure goals. Application of the evaluation methodology comprised guided interviews to see, if decision makers and transport experts regard the planning centre as an effective tool.

## B Measure Implementation

### B1 Innovative Aspects

The innovative aspects of the measure are:

- **Use of new technology/ITS, regionally** – The PT operator stores and records a large amount of information about the transport system daily, namely speed, passengers transported, frequency, etc. The whole information system was already managed with fleet operational data, and passenger information was integrated in a monitoring control centre which supported the transport planning process in the urban area and the PT decision making process. This control central feeds, more broadly, the city's mobility policy (and the Urban Mobility Centre developed with MIMOSA).
- **New organisational arrangements or relationships, regionally** – new institutional agreements were settled between stakeholders in order to feed the software with relevant data. These stakeholders included a number of Municipalities in the Region and the office of Geographic Information affairs of the Regional Government.
- **New application provided: tourist routes by bus, nationally** – the PT Operator has included an application in the Travel Planner tool that really encourages tourists and locals interested in discovering the Island: a tourist itinerary that goes through the main attractions of the Island so that visitors/PT users can get the most out of their day(s) and discover the best of what Madeira has to offer.

### B2 Research and Technology Development

The city PT Operator used CIVITAS-MIMOSA to enhance a control centre for urban public transport, to monitor fleet data and launch the foundations for further well-informed studies aiming to match public transport demand with optimal supply. The aim of the R&D activities is thus to give CIVITAS cities food for thought whenever they want to boost knowledge on public transport in their own local contexts or have PT Operator improvements and modernisation in their top priorities.

The RTD activity consisted of preparatory deep analysis and information collection aimed at obtaining a comprehensive description of the baseline scenario (described in section B3) and a needs-assessment of the tools required to create a modern planning centre. To sum it up, a summary of the Planning Centre applications is provided below (separating those already existing before CIVITAS from those actually purchased during the project lifetime).

#### The existing applications before measure implementation

- The PT Operator already had **GIST** software to manage the transport network and the schedule assigned to each driver and bus, though it did not display geo-referenced information.
- The Operator also had an **Exploration department Support System (SAEIP)**, which aimed to track buses and provide the public with real-time information (via the Internet) about bus destinations and precisely when their bus was due to arrive at their bus stop.
- A **contactless ticketing system** that ensures data concerning all trips made on PT.
- A **Middleware platform** to integrate all the data and all the inputs into a single database.

- **Network Analyst** software developed with the objective of running dynamic models for optimal routes among complex networks.

#### Tools purchased within the framework of the PT Control Centre measure

- **ArcGIS 9.3. desktop**, software to analyse the network through geo-referenced spatial data and generate transport system models. Linking ArcGis with Network Analyst allows one to calculate accessibility standards for different modes of transport, through complex buffer analysis and sophisticated spatial and non-spatial database queries made according to specific criteria.
- **One computer** to run complex software and for information gathered and analysed by the planning centre.
- To aid the network analysis and to sort out specific territorial analysis, the PT Operator purchased **Funchal streets layer**, since the previous layers weren't transport-oriented (they did not include turns restrictions, for example).
- **Traffic and network simulator**, which is strategic for the decision-making process and to draft scenarios, making use of powerful modelling tools. It is aimed at the planning and the management of networks, allowing evaluation of the transport system through direct comparison between supply and demand, in the current situation, and in scenarios of future intervention. With this tool it is possible, to characterize the current reality in order to correct discrepancies in the system. It also acts as an important support to decision-making for future interventions, through the evaluation of their impacts before they effectively get implemented. The tender procurement to purchase this tool was bundled along with the Municipality. It purchased the microscopic simulation models, which simulate the journey of each vehicle through driving behaviour models and focuses on intersections design and traffic light regulation. A macroscopic model to describe general and aggregated traffic flows was also purchased. These different priorities should be seen as complementary to the views of the urban mobility management. In addition to this, an environmental model was purchased, ensuring the automatic calculations of environmental indicators (such as pollutant emissions and noise levels).
- **GIST extensions:**
  - GESBUS, allows more flexible management of the drivers' work, a major cornerstone for the PT Operator, where internal policy addresses all drivers and buses on all lines. This application will also enable maintenance plans, allowing the PT Operator to prevent inefficiencies in this area. In this way, it will be possible to assign the bus that better suits each line and each time period, creating added value for the Operator's financial sustainability.
  - Calculation of drivers working time, will optimize the daily working period of each driver, minimizing deviations against what was planned.
  - BusScheds and Bus Map, rather than the traditional and manual creation of schedules for the general public, this program will create schedules and thematic maps that highlight and focus on the most exciting and important places in the network.

#### Training

The planning centre personnel received training back in June 2009 on *ArcGIS 9.3. desktop* which addressed the potential of Geographical Information Systems to bring public transport

policies forward. Following the purchase of the traffic simulator – which was fully integrated with GIS software, building a common database – PT Operator and Municipality experts joined together to develop in depth training on macro and micro simulations analysis.

In 2012, the PT Operator experts received further training in the traffic simulator tool, to prepare scenarios for future network reorganizations and to test the implementation of bus reserved lanes at the main city entrances.

### Communication

Network revisions have to be addressed by appropriate information tools. The planning centre has not only provided a better basis for the monitoring and planning stages, but also allows the dissemination of updated information to all citizens, regardless of their link with public transport.

The focus of this project is, therefore, to inform travellers either by releasing a user's letter, a sort of users' corner where citizens can assess PT performance themselves, with regard to the indicators provided in this letter; or by developing travel planner software to allow citizens to plan their daily trips on the local bus network quickly and easily.

In this way, the measure entailed extensive information and marketing campaign about the new public transport system, so that the citizen's attention would be drawn to the changes and they would be able to understand the reasons why these changes make sense.

### Contributions of the centre – main outputs

#### **Picture B2.1: Example of a network streamline**

Apart from other specific but rather small in depth analyses, the PT Operator planning centre has already contributed with inputs to the network streamline drawn in the West area of the city of Funchal, where the Green Line was implemented. This reorganization was therefore a partial output of the Centre.

Bus deployment in the tourist catchment area contributed to a simpler and easier network for the travellers to follow. The ambition was that residents and tourists would have access to a coherent system with more frequent services. With a bus arriving as often as every 5 minutes (in peak periods) one can forget the time-table.

The centre was useful to collect data which was quite important for evaluation purposes, enabling a clearer and more confident evaluation. In addition, it allowed the delivery of prompt and statistics-based replies to users' complaints, most of which were concerned with the reasons behind the changes.



## **B3 Situation before CIVITAS**

From February 2007 onwards, the PT local operator had a well advanced contactless ticketing system and GPS monitoring system which controlled and managed the whole fleet. The information and monitoring system was linked to an electronic panel network which informed passengers via internet about the frequency of buses and other information linked to the transport network. The whole system was also supported by an SMS service indicating

(on specific request) the expected time of passage and real time platform information, which can also be found on the PT operator internet site.

This system was actually installed in the urban and interurban fleet of Horários do Funchal and is considered a strategic priority for the Regional Government which aims to extend this system to all other PT operators on the island.

The new electronic ticketing and GPS monitoring system installed collects a continuous data flow about services offered and passengers transported (passenger entrances) and creates a very useful data base. But without any integration and proper tools to prepare useful outputs, data collected was used mainly by private consultancy companies that fostered the Mobility Study of Funchal (2006). Most of these tools were not functioning correctly and needed to be up-scaled or replaced by new state-of-the-art software. Furthermore, the consultancy companies were a financial burden, increasing the company expenses. This was not considered to be a sustainable and suitable solution. More solutions were required to raise the profile of Public Transport, making it more appealing (the next charts show the modal share of passenger transport in Funchal<sup>1</sup>) and curbing the steady decrease in public transport demand during the past six years.

Chart B.3.1: Modal share in Funchal

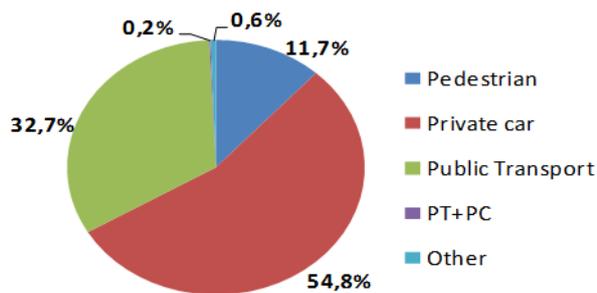
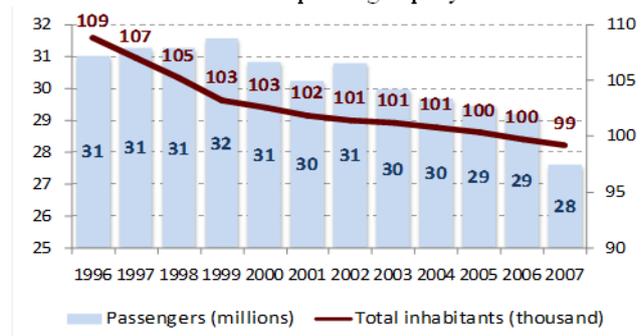


Chart B.3.2: Number of passengers per year



The baseline view of this measure showed that the PT Operator has not been equipped with systems capable of building accurate scenarios for public transport, despite their strong willingness to do so.

This ambition is shared by the PT Operator and the Municipality, but has yet to be achieved, because traditionally the planning was distributed among the Operator's internal structure, as well as between other authorities with responsibilities within the scope of mobility.

This is due to the fact that the actual monitoring of activities lacked an integrated centre with concrete responsibilities and tools. Likewise, the PT Operator was not able to inform users about the improvements in the performance indicators due to the fact that it is unable to collect real-time data.

All in all, one can report that before the measure was started, data was collected by some very important applications, despite the lack of integration and assumption of responsibilities between different actors and departments. Bridging this gap is important to ensure that all the actors involved in the planning process share the same tools and the same e-language. The PT Operator had an exploration department with a lot of knowledge on the territory but this department had failed to sufficiently communicate with the Municipality. On the other hand, the PT Operator had a research department with expertise allowing them to support

<sup>1</sup> According to the 2007 Funchal mobility study, the share of the use of public transport in Funchal was 32,7%, while the use of private car was 54,8%, and the pedestrians represented 11,7%.

the exploration department with concrete data on the territory and fleet performance, due to its privileged and strategic internal position (as a platform hub). Therefore, this department had the skills to become the brain behind the PT planning.

By gathering relevant information from the daily life of a PT Operator, the centre must be able to improve the quality and reliability of the decision-making process of the operation department, which will lead to better acceptance and usage of PT services.

## B4 Actual Implementation of the Measure

The measure was implemented in the following stages:

### **Stage 1: Purchase of ArcGis 9.3. desktop and follow-up training (Summer of 2009)** –

On June 2010, the PT Operator purchased this software system to equip two computers in the Control Centre. Following this acquisition, training was held, with technicians from the informatics department of the PT Operator also present. It was useful to involve these staff members in the process, as they represent a hub in Funchal public transport data. In addition, to aid the network analysis and to sort out specific territorial analysis, the PT Operator purchased streets layer, since the previous layers were not transport-oriented.

### **Stage 2: Launch of the Green Line in its final version and major streamline in the West part of the City (January 2010)** –

The public transport network was streamlined in the West part of the city, reshaping the PT landscape in that area. This included new schedules for all PT lines (even those which were not directly related to the Green Line) and represented the first partial output of the Centre.

### **Stage 3: Purchase of an upgrade of the GIST system (July 2010)** –

Fleet and driver management was previously lacking in coordination, with no integration with GIS features what so ever. The purchase of this new system would (it was hoped) allow the integration of the work undertaken by the operation department of the PT Operator with that carried out by the planning sector which had geo-referencing tools (GIS). This task was essential to set up the planning centre, merging the expertise and know-how of different areas that can henceforth contribute with their specific skills to the success of the Centre.

### **Stage 4: Network streamline (January 2011)** –

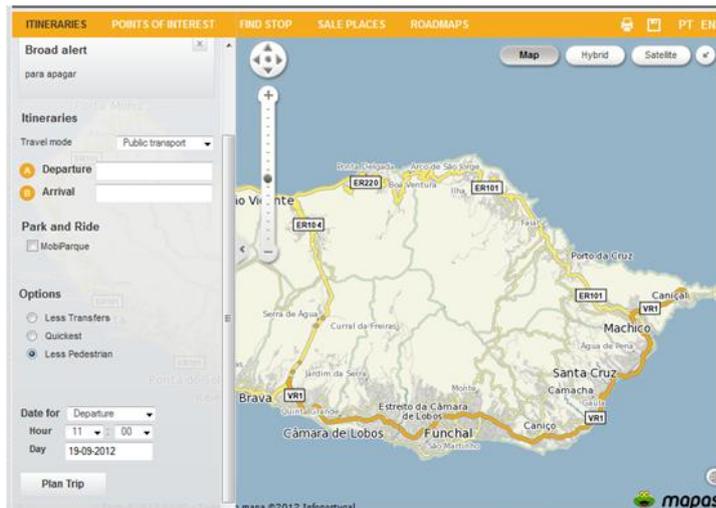
On the 1<sup>st</sup> of January 2011, the PT Company developed another set of major changes, deleting some routes, merging others and cutting down on inefficient kilometres. Again, a communication campaign supported the take up of these changes.

### **Stage 5: Development of important pieces of ITS (Summer of 2011)** –

During the summer of 2011, the PT Operator purchased the traffic simulator tool and launched the tender process to subcontract the Travel Planner Tool. Training on the Traffic Simulator tool was only held in January 2012 (with regard to macro simulation) and in June 2012 (focusing on micro simulation scenarios). Moreover, Horários do Funchal has also developed the mobile version of the corporate website and carried out a complete translation of its contents from Portuguese to English in order to target tourists.

### **Stage 6: Development of the final technological applications developed to support the Planning Centre (Summer of 2012)** –

**Picture B.4.1:** Screen shot of the Travel Planner tool in its beta version



Delays have occurred in developing the Travel Planner tool but a beta version is already available to test its user-friendliness. An information system to manage complaints was completely implemented and has been operational since July 1<sup>st</sup>. This system has introduced a pattern to the process of responding to complaints, assigning different levels of responsibility and introducing a time-limit for answering as a guarantee for a prompt answer.

## B5 Inter-Relationships with Other Measures

The measure is related to other measures as follows:

- Measure FUN 2.1** – The Public Urban Transport Planning Centre is connected with the Green Line measure, especially if taking into account that the planning centre was partially responsible for the reorganisation of some bus lines and services in the target area. Besides its contribution to the planning structure behind the network changes with the Green Line, the Planning Centre also helped to produce information materials to all the clients affected by that route streamline. On the other hand, Green Line is expected to contribute to the Planning Centre's main goal, that is, to increase PT use, an objective shared by all MIMOSA measures.
- Measure FUN 2.4** – The management of human resources in relation to the task of assigning bus drivers to Park&Ride school services was accomplished with GIST, a tool purchased within the framework of FUN 2.3. In addition to this, the tender process to purchase mini buses included, in the technical requirements, a study about the altimetry curve of the new bus routes, because it was planned to use electric or hybrid buses for this service. This analysis was developed with the support of the ArcGis 9.3. Last but not least, the Planning Centre have used a search tool tailored to MOBI PARQUE, the Funchal P&R scheme. This application embedded in the Travel Planner tool will facilitate interest among citizens, helping them to realise that they can build their own itinerary by combining car and public transport using the MOBI PARQUE facilities.
- Measure FUN 8.3** – The Planning Centre will grant inputs to FUN 8.3 Urban Mobility Centre and should thereby be considered a precious instrument to the city mobility policy. Also the Urban Mobility Centre will provide information to the Planning Centre.

## C Impact Evaluation Findings

### C1 Measurement Methodology

This measure methodology was chosen to be qualitative-oriented because: i) the developments made in the scope of this measure address long-term efficiency in terms of PT Planning; ii) some of the features of this measure are delayed and therefore are not yet concluded, so the potential effect they could have on the decision processes must be properly analysed and this can only be accomplished by interviewing people from a technical level who actually use the data made use by the Centre.

The interview questions were determined very carefully in order to capture the experts' perspectives of this measure's contribution to a cost-effective planning centre. Experts are PT workers with decision-making responsibilities that can therefore directly benefit from the implementation of the PT Planning Centre (their role in the PT Operator is described in the following table). Guideline interviews were conducted by Claudio Mantero (HF) CIVITAS MIMOSA site and evaluation leader and this measure leader and compiled by André Freitas (HF project assistant) who transcribed quotes from the interviewees onto this evaluation form. Both technicians work in the studies and planning department of Horários do Funchal (the PT Operator) and handle European projects.

Many indicators defined in the initial working plan for this measure were dropped. This happened because of a misconception around the effect that this measure would have on the operational results of the PT Operator. All these indicators are outlined in the «list of potential effects that were not measured» and an explanation for why they were not assessed is provided in each case.

#### C1.1 Impacts and Indicators

**Table C1.1: Indicators.** *Specific impact indicators related to the Public Urban Transport Planning Centre measure*

Evaluation category	Evaluation sub-category	Impact	Indicator	Description and Source of data	Success quantification	Baseline	After Data collection
Society	Acceptance	Acceptance (Usefulness)	1 – usefulness of information for decision-making City-specific indicator (based on core indicator 14)	Guided interviews with relevant PT Operator staff, who benefit directly from the measure, conducted separately in HF headquarters to: <ul style="list-style-type: none"> <li>Alcindo Freitas</li> </ul>	Provide evidence that this measure has contributed to increase availability and usefulness of information provided to PT users	Not applicable	August, 2012

Evaluation category	Evaluation sub-category	Impact	Indicator	Description and Source of data	Success quantification	Baseline	After Data collection
			2 – usefulness of information for PT users  City-specific indicator (based on core indicator 14)	Member of the board of the PT Operator. Has supervising responsibilities on the Exploitation, Communication and Planning areas  <ul style="list-style-type: none"> <li>• <i>Silvino Jesus</i></li> </ul> Head of the Exploitation Department of the PT Operator. Is responsible for assigning busses and drivers to routes and all the remaining bus operation logistics.  <ul style="list-style-type: none"> <li>• <i>Marco Vasconcelos</i></li> </ul> Head of the Communication and Marketing Department of the PT Operator. Is the spokesperson of the Company and handles the complaints and all the Com.&Marketing strategies.	Provide evidence that this measure has made contributions to improve decision-making efficiency		

*Detailed description of the indicator methodologies:*

The questions selected for the interviews were determined very carefully and are closely linked to the measure indicators. The main goal was to identify exemplary evidence of the contribution this measure has had in terms of usefulness of information for decision-making and for the overall transport system alike and to find out under which conditions the work carried out (within the framework of this measure) was operating successfully.

**1 – Usefulness of information for decision-making**

- 1.1 How do the tools developed under the measure support the efficiency of decision-making?
- 1.2 In what way do you use the data/tools of the Planning Centre?
- 1.3 Can you point out which information has been most useful for you in respect to your responsibilities in the Company?
- 1.4 Are you satisfied with the availability of data?
- 1.5 Does the Planning Centre help you to save time? How much working time do you save?

1.6 How do you regard the quality and reliability of the data that came out of the Planning Centre?

1.7 What suggested improvements do you have for the Planning Centre?

1.8 How do you perceive the impact of the planning centre and its tools on the overall PT network? In what way does it increase the efficiency of the network?

1.9 From 2008 to 2011, the number of passengers decreased by 8%, the number of km decreased by 11%. Yet the fuel costs have risen by 21%. How do these figures correlate with the goals of providing a quality and efficient public transport service? How can the planning centre help to improve these figures in the future?

1.10 What recommendations do you have for other PT Operators who are in the process of organising their own planning centre?

## 2 – Usefulness of information for PT users

2.1. Do you think that this measure contributes to improve the information given to passengers? In what way?

Indicators 1 and 2 were chosen to provide a comprehensive assessment of the contributions this measure has made to smooth decision-making processes and to make the PT Operator more effective in terms of information flow between PT Operator internal areas, other stakeholders and the general population who are the ultimate beneficiaries of this measure. **These indicators correspond to measure specific 1 and 2 respectively.**

### *List of potential effects that were not measured*

Following POINTER specific recommendations, Funchal considers it very important to consider and discuss all possible effects a measure can have. On these grounds all stakeholders involved in the implementation of the measures were assembled to share ideas regarding additional impacts, which resulted in the list presented below:

**Table C1.2:** *List of potential effects that were not accessed*

Impacts	Indicator	How does it impact	Why it was not accessed
Economic	Total fuel costs	Increased efficiency of the PT network can lead to a decrease in the operational costs	These indicators were dropped because the measure primarily serves to enhance decisions through information provision. So the indicators were not closely linked with the measure developed and
	Total maintenance costs		
Energy	Fuel consumption per passenger transported and per Km travelled	Modal shift to public transport can optimise transport efficiency	
Environment	Pollutant emissions	Improve quality of life	

	Air quality		therefore could only be evaluated indirectly and in the long run (i.e. not within MIMOSA lifespan).
Transport	Increase modal split towards more sustainable modes of transport	Increase modal split towards more sustainable modes of transport	
	Perception of PT quality of service	Control Centre may improve PT quality of service	
	Average occupancy in PT vehicles	Providing a more accurate overview about the PT routes performance, this measure might contribute to increase the average occupancy rate by assigning smaller buses to routes with less demand	
Social	Increase in complaints regarding changes in the service	Citizens may complain more due to network streamlines	The questions included in the Expo Madeira survey did not allow us to properly assess to what extent people find this measure useful. They were not technically well-defined and so the connection to this measure cannot easily be made. In addition to this, the delayed implementation of some of the measure features have made it impossible to analyse people's reactions to the outputs achieved.
	Awareness and acceptance of the Control Centre by citizens	Increased awareness and acceptance regarding a Control Centre can raise citizens expectations	

## **C1.2 Establishing a Baseline**

There is no baseline because some of the tools are still in progress. For others that are already in motion, like the complaints management system, some statements in the interviews can enable us to trace a baseline scenario.

## **C1.3 Building the Business-As-Usual Scenario**

No B-a-U scenario was estimated because the evaluation was based on qualitative and comprehensive analysis of the interviews conducted with PT Operator experts.

## **C2 Measure Results**

The results are presented under sub headings corresponding to the areas used for indicators – economy, energy, environment, society and transport.

### **C2.1 Economy**

Not applicable.

### **C2.2 Energy**

Not applicable.

### **C2.3 Environment**

Not applicable.

### **C2.4 Transport**

Not applicable.

## C2.5 Society

During summer 2012, when the measure was moving forwards towards the final implementation stage, the team which steered the evaluation assembled the three main experts who already benefit and will continue benefiting from the PT Planning Centre for decision-making. The main citations from their guideline interviews<sup>2</sup> were selected to be included in table C.2.5.1 as a summary of measure discussion. On the right of the table, the compiler wrote some remarks to outline the most important topics that arose during the conversations and to link these to the measure objectives. The interviews are broken down according to the main tools/studies developed to link this to what was developed within the measure. Blank spaces in the table indicate that no information was given or that the interviewee did not address the issue directly during the interview.

**Picture C2.5.1:** Interview with Marco Vasconcelos



**Picture C2.5.2:** Interview with Alcindo Freitas



**Picture C2.5.3:** Interview with Silvino Jesus



<sup>2</sup> The complete transcription of the interviews can be found in the appendix.

**Table C2.5.1** *Technical opinions of each PT Operator staff, who benefits directly from the measure*

Category	Activity	Communication & Marketing	Member of the Board	Operational	Compiler remarks
1 – usefulness of information for decision-making	Informatics system to manage complaints	<p><b>The informatics system to manage complaints is helping us to shorten the process, and reduce the response time for the customer.</b> It allows us to run databases and to make evaluations. The system allows me to keep track of all the information required for me to prepare a proper answer to any complaint arising. The process includes a pattern which is important to gain efficiency. Some fine-tuning remains as many complaints are still being solved by telephone over the client. But I can say that with the system I was able to reduce the response time to the client to within 1 month for written answers.</p>		<p><b>The complaints management tool allowed us to handle the complaints on a systematic basis and facilitated the communication between experts within our own Company.</b> Experts in their field can now easily give their feedback and expertise. And the system records and logs all the information which eases the process answer and provides the client with quality answers. We, as the operational side of the Company, think that it is very convenient to seek a complaint using filters: like kind of complaint; worker involved; route involved... <b>The availability of statistics is an added-value for us.</b></p>	<p>The complaint system is a tool of great value for both the C&amp;M department and the Operational department which can now easily access statistics. Even if it wasn't mentioned in the interview, one can guess that by having instant access to tailored data, <b>it now takes less time to develop corrective measures to remove the reasons behind the dissatisfaction of clients</b> and this should lead to fewer complaints in the future and therefore increased satisfaction levels with PT service.</p> <p>Moreover, the opinions of each area are consulted in preparing the answer to the complaint and are recorded and discussions are therefore normalised which <b>smooths the process of handling this sensitive issue.</b></p>

Category	Activity	Communication & Marketing	Member of the Board	Operational	Compiler remarks
	Satisfaction study and profit assessment for each PT route	The satisfaction study by route may also be a <b>useful tool to draw marketing plans.</b>	<p>The study focusing on the satisfaction rates per route and the study on the routes in terms of cost-benefit ratios are probably the ones which contributed best to taking action to improve the network efficiency and therefore achieving this measure goal of increase quality and efficiency of the public transport network.</p> <p>My work is all about reading, getting a grasp of the network and deciding. In this sense, the provision of more information equals more working time for me. Before I had to evaluate taking into account only a brief and not well-grounded document, now I have to evaluate a much more detailed document. <b>So I have to say that I benefited a lot because my work and my decisions have now much more quality than before.</b></p>	The <b>studies add information to what we daily see in the network but are not able to quantify or fully understand.</b> They provide complementary information that we can consult whenever there is a specific problem.	<p>All the interviewees were unanimous in saying that <b>the studies developed in the frame of the measure</b> were useful in the sense that they provided in-depth information on some important issues and <b>were supportive for decision-making.</b></p> <p>Many studies like the ones analysed here were introduced as the measure unrolled so the final unfolding of actions was more important than what was initially forecast and is positively evaluated by all the interviewees. It is quite interesting to realise that <b>the Planning Centre rather than allowing decision-makers spend less time making decisions, contributes at first to a more time-consuming process.</b> This is owing to the flow of information provided to decision-makers and is positively perceived by them because it leads to better and more effective decision-making.</p>
	Study on the profile of the Company website user	The study on the profile of the Company website user was relevant for planning purposes.			The study on the profile of the Company website user was only outlined by the C&M department. This study is the backbone behind the translation of the website and all the improvements made in the website and <b>provides an extensive overview of the website user which can be further developed for marketers.</b>

Category	Activity	Communication & Marketing	Member of the Board	Operational	Compiler remarks
	Travel Planner		<p>The Travel Planner tool is a planning tool in itself for PT staff when carrying out their day-to-day activities.</p>		<p>Travel Planner has made contributions to planning. Throughout the work to access to SAE system, the informatics department (which hardly can be considered a direct user of this measure but who definitely have worked hard to prepare the Planning Center) have discovered many critical gaps, including trips whose record the PT Operator never had before because they were made without any passengers on board. This situation was now finally overcome. Thereby, this would not have been possible if CIVITAS was not carried out.</p> <p>Moreover, there is a strict connection between what the Travel Planner and day-to-day activities in terms of knowledge/information about service disruptions, to discover a more efficient path to reach a certain destination.</p> <p><b>Travel Planner can thereby be an operational tool even inside the Company and not only as an information provision tool to PT users.</b></p>

Category	Activity	Communication & Marketing	Member of the Board	Operational	Compiler remarks
	Traffic simulation tool		<p>The tool which contributes most to the decision-making process is probably the in depth traffic simulation tool. This is due because <b>the analytical power of this tool makes HF more competitive in its institutional relations with the Municipality. This can support concrete and well grounded proposals to the Municipality that enable incoming profits in terms of costs reduction and increased commercial speed.</b> We will be able to make sound proposals to favour public transport over less efficient modes of transport, with advantages for the citizen and the city as well. In the future, any proposal that Horários do Funchal make to the Municipality will be much more consolidated, because it is technologically well-grounded and therefore the strength of the proposal will be higher.</p> <p>The relationship with the Municipality is now more efficient because it will no longer be possible for them to harbour doubts about the technical value of the proposals that HF puts forward.</p>		<p>The traffic simulation tool conveys information that can facilitate urban mobility but also highlights the convenience of PT over the private vehicle solution. It is interesting to notice that <b>the Municipality have purchased the same simulation tools and that technicians from both bodies have come together to learn from these tools overcoming ancient institutional barriers and creating a shared and positive working environment</b> from which urban mobility can benefit a lot.</p>

Category	Activity	Communication & Marketing	Member of the Board	Operational	Compiler remarks
	GIST			<p><b>GIST is now my day-to-day working tool. With it, one can take forward a number of simulations in quite an easy way. With many proposals and scenarios on the table, it is much easier to pick one of the solutions, the most suitable one, <i>in-lab</i> before actually implementing measures.</b></p> <p>If it wasn't for these tools we would be even more exposed to the crisis situation like the one we're facing. Because these tools help us to continuously adapt the supply to the demand. Since the demand is now lower, we've redefined the network accordingly therefore reducing unnecessary costs.</p>	<p><b>GIST</b> is the main tool used by the Operational department. It <b>helps to get the most out of fleet management and planning of human resources</b>. For the PT Operator, GIST has therefore made significant contributions which are crucial in times of scarce financial resources</p>
2 – usefulness of information for PT users	GIST			<p>Info Pub will also be useful to inform the public about general information like schedules. <b>The layout is much more user-friendly and this is definitely a plus.</b></p>	<p>GIST has simplified the communication flow with the client because it launched a fresh layout about PT routes to the general public to make information more appealing.</p>
	Clients Letter	<p>The project brought us money/funds that allowed us to focus on communication with the public. Without CIVITAS, it would be much harder to deliver information to the public regarding network changes <b>The Clients Letter is an example of good accountability. It definitely improves institutional communication.</b></p>			<p>One can assume that before CIVITAS there was a lack of information among PT users backed up by efficient communication channels. Here the C&amp;M responsible shows the willingness to improve the communication channels to help deliver information more efficiently to the public.</p>

Category	Activity	Communication & Marketing	Member of the Board	Operational	Compiler remarks
	Travel Plan / Mobile application	<p>Our communication tools might catch the eye of new passengers, namely tourists who can now access our online tools and get to know the PT service we provide. When implemented, <b>the thematic Tourist routes using public transport will certainly be an added value which will distinguish our service even more.</b></p>	<p><b>The translation of the website, the mobile application and the Travel Planner itself facilitate the mobility of tourists and non regular clients of public transport.</b> This is a new field of opportunities for these users. It shows a new commitment towards those kinds of users. If it wasn't for CIVITAS we would never be so technologically advanced as we are nowadays. Without the technological scope all this would not have been achieved. Now that we have these tools, we can initiate actions with in-house resources.</p> <p>The tools have been contributing to improving not only the information provided to the customers but, consequently, the PT Operator image which is now handling information more accurately and tailored to people's needs.</p>	<p>The informatics tools were important to improve internal and external communication with clients and to do it in a more straightforward way employing modern channels.</p>	<p>If implemented as the PT Operator proposes, a quicker, easier and more detailed interactions with PT services will be made available shortly.</p> <p>The PT provider has sought to develop telematic tools. The gist behind this effort was to tackle the need to subcontract services and studies. <b>Indirectly</b> (and this effect is not measurable), <b>with the project the PT Operator have reduced its subcontracting needs.</b></p> <p>Moreover, it is important to notice that <b>the PT Operator was able to revitalize the market of transport-related technologies.</b> The research and knowledge led to bold steps forward due to the new challenges proposed by HF. The service providers had never before faced such complex demands (for example, travel planner in a highly complex network). So this measure has contributed to the regional and national economy in this sense.</p>

This section summarises the findings of the guideline interviews with the relevant experts and considers how successful the implementation of the different modules has been to achieve the three specific objectives this measure pursues.

**Table C2.5.2 Contribution or potential contribution of each feature of the measure to the specific goals**

		<b>Improved the quality and reliability of the decision-making process</b> with the support of new technologies and integration of databases	<b>Improved availability of information for PT users</b>
<b>ITS</b>	Development of a mobile version of the Company website	☺	☺
	Translation of the site into English	NA	☺
	Purchase of Arc Gis 9.3.	☺	☺
	GIST and Info Pub applications	☺ ☺	☺ ☺
	Traffic simulator tool	☺ ☺	NA
	Complaints telematic management	☺ ☺	☺ ☺
	Improvements in the data storage system	☺ ☺	NA
	Travel Planner tool	☺ ☺	☺ ☺
<b>Studies/ docs.</b>	Clients letter	NA	☺
	Study on accidents, access to the website, satisfaction for each single route and financial scoring analysis for each bus line	☺ ☺	NA

☺ ☺	Big contribution
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😊	Small contribution
NA	Not applicable

Even though it was not mentioned by the PT Operator staff, the **mobile version** and the **travel planner** of the Company website can also help to improve PT network efficiency because statistics can show which routes are more popular and for which kind of users. It has only one smiley face in improved availability of information for PT users because only those who have access to the Internet can browse it.

The **translation of the Website** has only one smiley face in its contribution to information for PT users because it is only useful for tourists who are not acquainted with the Portuguese language.

**ArcGis 9.3.** can help create thematic maps of routes to make them more readable. Some studies are embedded with these thematic maps. Moreover, it improves readiness of the maps provided to PT users.

**GIST** is the main working tool of the Operational department. It helps to manage fleet and human resources and the Info Pub feature also plays a role in improving the image of PT to its clients by providing more readable schedules for routes.

**Traffic simulator tool** can evaluate mobility scenarios using macro and environmental simulation modelling to support planning decisions and thereby accomplish measure goals.

The **complaints telematic system** was emphasized by the interviewees for its role in the preparation of prompt and well-prepared answers to users' complaints and for the statistics provided. It has also entailed a special warning for complainants that alert them that the complaint was fully received and will be handled properly in a limited number of days, so a special contribution to improve availability of information for PT users and the PT operator has been accomplished.

The **data storage system** is gathering information and surpassing ancient technical problems in data availability and accuracy with regard to validations per route, which will be very useful to define better urban public transport.

The **Travel Planner** was highly ranked (in regard to its contribution to decision-making) for its role in the planning activities of all PT Operator staff. This feature of the Travel Planner was highly emphasized in the interviews and should be considered a success of the measure. It can be considered to be one of the most effective actions to move beyond traditional communication links with PT users. The PT Operator's goal is to target new market niches like tourists and non-regular PT Users.

Finally, all the studies made sound contributions towards decision-making. They gave food for thought for managers who are now truly overloaded with data and information but seem to be glad to work under these conditions because, as they argue, it leads to sound improvements for the decision-making process. Senior managers now have more inputs to base their decisions upon, while it is important to note that mid-rank technicians like the heads of the Operational and the Communication & Marketing departments have decreased the working time required for their traditional affairs and this time can now be redirected towards completing new challenges and activities.

### C3 Achievement of Quantifiable Targets and Objectives

#### C3 Achievement of quantifiable targets and objectives

No.	Target	Rating
1	Increase 5% in the occupation rate of busses	(★)
2	Increase the total number of passengers by 2% after the first draft of PT net revision	NA
3	Decrease fuel consumption by at least 2%	NA
4	More efficient public transport service (better balance between operating costs and revenues)	NA
5	Increase the number of visits to PT Operator website by at least 10%	NA
NA = Not Assessed    O = Not Achieved    ★ = Substantially achieved (at least 50%) ★★ = Achieved in full    ★★★ = Exceeded		

Unlike what was previously planned, the evaluation has shifted towards a more qualitative approach, thus none of the envisaged targets were directly assessed. The indicators were dropped because the measure has only led to enhance informed decisions so far. Therefore the indicators were not in line with the implemented measure and therefore could be evaluated only indirectly and were regarded as assessable in the long run only (i.e. not within MIMOSA lifespan).

Nonetheless it is important to stress that the evaluation of the implementation of the PT Planning Centre has come up with interesting results which are summarized further below in section C6.

In addition to the above, and even though they were not mentioned during the interviews, one should consider that the evolution of the occupation rate of busses from 18% to 19% in 2008 and 2011 indirectly and partially can be attributed to the PT Planning Centre as it is a result of the studies developed so far and the network reorganization accomplished by using the GIST tool.

### C4 Up-Scaling of Results

With the implementation of the Urban Observatory under the responsibility of the Municipality of Funchal, up-scaling activities linked with this measure are due to be accomplished under the CIVITAS framework.

Some interviewees mentioned that it would be important that the Regional Government could also purchase some strategic planning tools like the traffic simulation software so that all major bodies with responsibilities in the transport field could share the same tools.

### C5 Appraisal of Evaluation Approach

The interviewees are experts in their field and so one can rely on their assessment because the interviewer did not ask for their personal opinion but for their professional knowledge. On the other hand, they only mentioned the benefits of the activities developed, because they would not evaluate negatively what they did and/or bought. Hence an external perspective might be missing. But because some of the elements had yet to be launched, the perspective

of people that were involved in this measure working plan was necessary and they were the only ones with a real global perspective over the activities developed.

On the positive side, one should highlight that the development of systems/studies (like the Travel Planner) has created several task forces within different areas of the company. So it was also a learning opportunity and a comprehensive platform for the company staff to get to know each other better and work side by side towards the same goal.

The technical opinions collected were not only retrospective but also prospective (because most of the tools are not yet fully implemented). Thus, if the evaluation methodology wasn't qualitative, it would be much more difficult to extract important lessons out of it and showcase it to transport practitioners.

This methodological approach to the evaluation of the introduction of a Planning Centre can more easily assess technological and organisational improvements that are not yet fully undertaken and whose impacts will only arise in the future, like the Travel Planner or the Traffic Simulation tool.

Hardly any transport-related measure developed under the CIVITAS umbrella has entailed a qualitative evaluation as the fundamental matrix to address decision-making progresses. The evaluation approach of this measure is bound to become a methodological reference for further projects which aim to implement control centres and urban observatories.

## C6 Summary of Evaluation Results

This measure has experienced some excellent development for long term efficiency. The key results are as follows:

- **The informatic system to manage complaints has reduced the response time to less than 1 month** – complainants now have more reasons to be satisfied. The informatic system that HF has developed not only gives an automatic answer assuring that the complaint was duly received and is being properly addressed, but also the answer time has been reduced to 1 month thanks to the informatic system which redefined and smoothed the internal working flow of the PT operator making it more efficient. This is also a result of a new policy which established a deadline of 15 days to answer complaints.
- **The Travel Planner will target new market niches and provide thematic tourist routes as an innovate outcome** – The experts stressed that the Travel Planner is one of the most spontaneous actions taken forward within this measure and is likely to encourage tourists and not regular PT users to use the PT service more often in the future.
- **GIST and Info Pub applications, complaints telematic management and the Travel Planner tool are the features that best fit the objectives of this measure**, according to an analysis of the contribution or potential contribution of each feature of the measure to the specific goals.
- **Thanks to the Planning Centre, senior managers spend more time analysing a lot of information and can consequently make wiser decisions.** As for mid-ranked technicians like the head of Operations and the Communication & Marketing department, they have decreased the working time for their traditional affairs and can now turn their attention to forthcoming challenges and activities.

## **C7 Future Activities Relating to the Measure**

Further projects and studies related to this measure and its features should be carried out in the future to update the ones developed so far. This makes sense in order to capitalise and up-scale this measure to apply it to new and wider projects and can be done free of charge thanks to CIVITAS, namely because of the knowledge achieved and the software already purchased. The PT Operator can also apply for incoming projects which can reinforce the link between the PT Operator and the Municipality with the Regional Government and other entities with responsibilities in the mobility frame. Should the Regional Government purchase the same Traffic Simulation Tools as the ones owned by Horários do Funchal, an example of a future activity can be that the training is managed by HF staff themselves.

The interviewees stressed that it would be important to focus on new communication technologies tailored to sales and information outlets so that queue waiting-times could be reduced and the satisfaction levels of those who head to these spots to buy PT tickets or to get more information could be raised. It would also be very nice if we had electronic panels working properly on the network. This could also be a way to have more accurate data about the use of the sales and information outlets.

## D Process Evaluation Findings

### D1 Deviations from the Original Plan

The deviations from the original plan comprised:

- **Changes in this measure objective were found useful** – To clarify better the contribution of this measure to better management activities. In the beginning the specific objectives were related to the outcomes of applying the information available from the measure, rather than on improving availability of information for the PT Operator leading to more effective decision-making.
- **Inclusion of the Travel Plan tool in the measure** – The Travel Plan tool is major cornerstone for designing a PT service that provides better and more efficient mobility solutions to the citizens and tourists visiting the Island. Even though it was not envisaged in the initial working plan of the measure, this tool perfectly suits the Centre, as it publicly displays the final outputs and shows to all the community a human-friendly Company. Hence, this can only be considered a driver as it supports and expands the measure effects.
- **Several sub-activities were introduced** – The PT Operator took advantage of the measure working plan revisions to introduce several sub-activities found to be useful. The Travel Planner and the system to manage complaints are examples of tools developed with the aim of achieving an improved decision-making process and providing better information for PT users.

### D2 Barriers and Drivers

#### D2.1 Barriers

##### Overall barriers

- **Organizational and administrative delays (8 – Organizational)** – The main barrier which hampered the measure during its entire lifetime relates to the delays in purchasing the traffic simulation software. The purchase of this tool was due to be accomplished during the first semester of the measure lifetime, but it turned out to be postponed several times due to delays on the observatory measure (FUN 8.3.). These two measures ought to serve each other, so a problem in one of them definitely influences the other. Several problems also occurred with the interested parties' complaining about the jury decision during the tender procurement which had therefore to be dropped and repeated. Delays involved in the purchase of the traffic simulator tool limited the use of this software within the framework of the measure.
- **The risk of not achieving the measure goals was always high (6 – Positional)** – One can predict that continuously cutting kilometres and raising the fares of public transport will unsurprisingly lead to dissatisfaction among PT users. Achieving the general objective of a positive modal shift towards the use of PT from those who currently use a private transport solution (the vicious circle: less supply, leads to less demand, will arguably arise in Funchal) is therefore less achievable.

### Preparation phase

- **Insufficient involvement of key partners** (5 – *Involvement, communication*) – At this stage the PT Operator has faced a lack of liaison and exchange of information regarding geographical data among key players in the island.
- **Technological barriers** (10 – *Technological*) - The measure management team had to deal with the problem of deciding which partners had the responsibility of updating the information in each of the systems (for example, when construction works are carried out and a route is due to change), to create a coherent, and straightforward planning centre.

## D2.2 Drivers

### Overall Drivers

- **Shared view and sense of urgency to prepare the Planning Centre** (1 – *Political / Strategic*) – This measure fits perfectly into the regional sustainable development agenda for urban mobility issues. The board of PT Company and of regional and municipal authorities fully support the need for a new (more efficient and rational) PT network. This necessity became even stronger as Portugal experienced a deep financial crisis that influences all the action plans.

## D2.3 Activities

### Overall activities

- **Evaluation approach has shifted towards a process oriented framework** (7 – *Planning*) – The evaluation methodological approach has shifted from a more quantitative approach which would only assess indirect outcomes of the measure to a process oriented evaluation which can highlight the true contribution this measure has had towards more efficient transport management and where lessons can therefore more easily be found.
- **The PT Operator sought to push the law department of the Municipality in supporting the tender process with their know-how** (8 – *Organizational*) – This activity, made under the scope of the joint procurement to purchase the traffic simulator tool, was important to cope with the overall barrier identified above.

### Preparation phase

- **Studies developed during measure gave inputs to network streamlines** (7 – *Planning*) – Following data and studies developed within the development of the measure, the PT Operator drafted some proposals for cutting extra kilometres and to decrease some inefficient service. In addition to this, the Operation Department of the PT Operator had already integrated their GIST data with the GIS software that the local measure leaders use. This indeed has helped to draft small case studies and make the most of the new geo-tools.
- **Joint work to prepare the tender process to purchase the traffic simulator tool** (8 – *Organizational*) – One of main milestones of this measure were to get PT Operator departments and the Municipality to assemble and work together to build a traffic control centre, including full information about public transport, to adapt PT supply service to the real needs of citizens.

### **Implementation phase**

- **Measure objectives remained achievable through the achievement of outputs during the implementation period (6 – Positional)** – Achievement of some final and partial outputs during this reporting period (purchase of the simulation tool; launch of the tender to develop travel planner software) were relevant to keep the measure objectives achievable. This activity is important to achieve the overall driver described above.

## **D3 Participation**

### **D3.1 Measure Partners**

- **Horários do Funchal**, as local bus operator, is responsible for the measure and triggered and controlled the actions related to the Planning Centre.
- **The Municipality of Funchal**, as a MIMOSA partner, supported the deployment of the Planning Centre and cooperatively worked with the PT Operator to integrate this measure with the Urban Mobility Centre (also in progress within MIMOSA).

### **D3.2 Stakeholders**

- **Regional Government for transport affairs and the Geographic Information Office** supported the implementation of the measure by providing data to Horários do Funchal and is interested in the success of the measure because it owns the PT Company.
- **A number of subcontractors** were called to develop planning tools for the Centre. Among them one should distinguish the Portuguese Telecommunication Company, responsible for the Travel Planner tool, because it probably is the most complex challenge which has arisen within this measure.

## **D4 Recommendations**

### **D4.1 Recommendations: Measure Replication**

- **Equip a Public Urban Transport Planning Centre** - This measure entails the development of a number of new software devices which helped to deliver better and timelier planning or operational decisions (improvements in the Company's website; software to aid the assignment of drivers to buses, integration of geographical information tools, among others). This activity has led to the accomplishment of some important outputs.
- **Integration with Urban Mobility Observatory of the Municipality** – The PT Planning Centre has brought up integrated analysis regarding urban public transport, which will be available to feed the mobility control centre that the Local Municipality is in the process of creating. Adopting cities should bear in mind the importance of including the implementation of a PT Planning Centre integrated with Traffic and Mobility Observatories.
- **Functional use of the PT Planning Centre** – Cities wishing to learn from Funchal's experience in building a PT Planning Centre should take into consideration the main

functional use of this measure, that is: i) Empower transportation planners with useful tools for a wide range of travel demand forecasting and simulation analyses with GIS and GPS technologies; ii) Interoperability between the PT Operator side, the Municipality and other local authorities, all working together and sharing a common tool (GIS) and the same language to smoothen the mobility management processes; iii) development of scalable products, which could be used for non-urban public transport and for other PT operators, like the travel planner tool.

#### **D4.2 Recommendations: Process (Related to Barrier-, Driver- and Action Fields)**

- **CIVITAS has stimulated an innovative PT Planning Centre** - Nowadays, Horários do Funchal is at the front line of European PT Planning Centres. But the final layout of the Centre was not predicted beforehand. The member of the board interviewed for evaluation purposes has outlined that the dynamics of the measure was important in the sense that as the measure unrolled, many fruitful sub-activities were introduced and so the final actions to unfold were more important than those which were initially forecasted.
- **Prepare carefully complex tender processes** – Horários do Funchal launched several tender processes during the PT Planning Centre lifetime. But one which was particularly complex was the Travel Plan. It is recommended that close attention is paid to the technical requirements which support the tender process. Otherwise, a situation can occur (as it did during this measure) whereby more human resources have to be assigned to develop activities for which the subcontractor should be responsible.