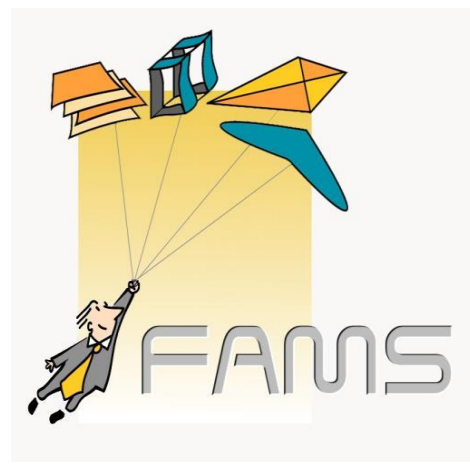


# FAMS PROJECT

IST-2001-34347



## **Deliverable D3 Trial Site Context and Design**

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## 0 EXECUTIVE SUMMARY

**FAMS** (IST-2001-34347) is a 20 months Trial Project initiated under the EU Research & Technological Development program Information Society Technologies (IST). The project aims at scaling up the technologies, services and business models currently adopted in Demand Responsive Transport (DRT) and supporting the evolution from single DRT applications towards the concept of a **Flexible Agency for Collective Demand Responsive Mobility Services**.

The planned work includes the following elements:

- **adaptation and scale-up** of previously demonstrated DRT technologies and methods
- **deployment of the Flexible Agency concept** in two EU sites
- implementation of **trials** in the sites
- **comparative assessment** of technologies and organisational models
- **assistance** to the **Users** and **Suppliers** in decision-making
- collection of **knowledge** and **best practice** into a “Handbook and Best Practice Guide”
- **market stimulation** for IT and e-Business/e-Work products

Two **Collective Transport Operators/Authorities** – Angus Transport Forum (UK) and SITA (IT) – will implement and trial the Flexible Agency. Two **IT suppliers**, Mobisoft Oy (FI) and Softeco Sismat (IT) will provide the required technology transfer by adapting solutions obtained in previous RTD projects. One Public Transport service operator, ATAF (IT), will provide transfer of expertise on DRT operation and will support in implementing best practice in community transport and DRT at end-user organisations. Two IT and Transport Consultancies, MemEx (IT) and ETTS (IE), will ensure coordination of the technical trials and the Common Evaluation framework.

The FAMS Take-up Action has three main **strategic objectives**:

- to **innovate** the way DRT business and service models are implemented
- to **build confidence** for authorities and investors (operator, communities and suppliers)
- to **lead to deployment** of DRT and Intermediate Transport concepts based on innovative Flexible Agencies.

FAMS will base itself upon and adapt available results – technologies, processes and business models – from previous RTD projects in **two main areas**:

- a) technologies, models and IT tools for **DRT planning, operation and management**, supporting key phases of the service provision scheme;
- b) web based architectures, tools and models for **eBusiness/eWork** applications, facilitating cooperation among DRT transport operators within the Flexible Agency concept (**B2B services**) and improving access for the end-users of the transport service chain (**B2C services**).

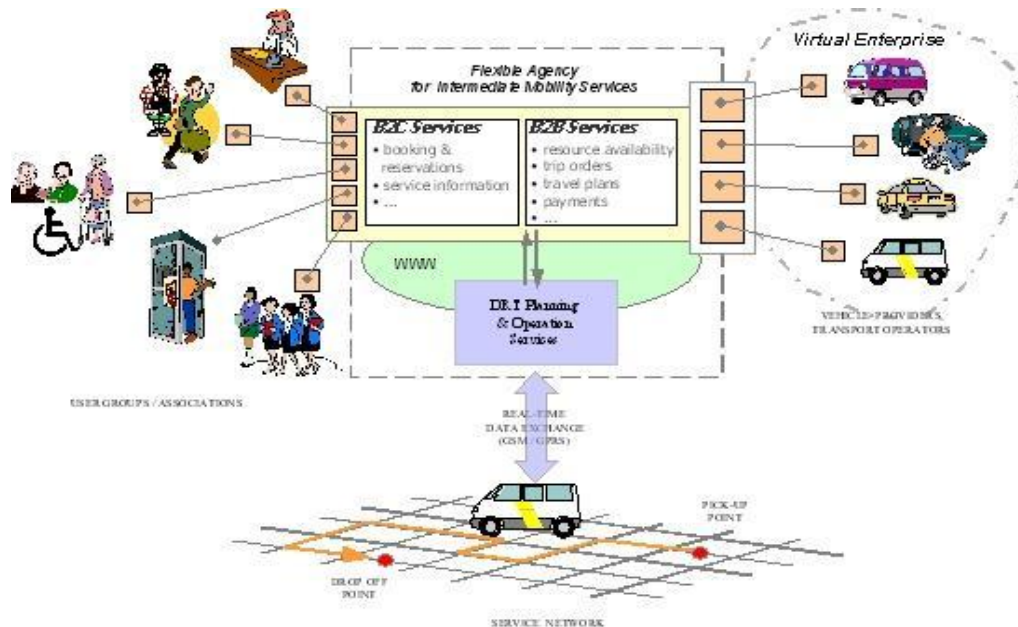
Chapter 1 introduces the FAMS project, the workplan and deliverables, and places this current Deliverable within Workpackage 2, Trial Sites Context and design. This Deliverable assembles the contextual knowledge of the project and defines the stakeholder interests and requirements. This provides the platform for both the Evaluation Plan (WP5/D2) and the technical design (WP3/D4).

In Chapter 2 we introduce the concepts behind DRT. Demand Responsive Transport can be defined as transport which is adapted to meet the known needs of users, typically on a trip-by-trip basis. Thus, there are at least the following core functions :

- a knowledge-acquiring function to understand the actual demand, or at least the relevant variations on expected demand
- an analysis function to determine what action to take in response to this known demand
- a dispatching function to communicate the changes to assignment and operating personnel

In some cases there may be a default route with variations applied as required. In other cases the service may be determined entirely from the specific demand for that trip. DRT services can be defined as having at least one degree of freedom for the specific trip being offered. The three main dimensions are the route taken, the timing of the service, and the vehicle used. This allows the decision taker (dispatch centre or operator) to alter the service offer and cost parameters in response to the actual demand. We review options for each of these degrees of freedom . We then review the state-of-the-art of ITS applied to the DRT domain.

A key added-value area of FAMS lies in the concept of the Flexible Agency, which we introduce in Chapter 2.4. This provides the concept for a higher-order entity than the traditional operator of the individual DRT line or group of lines. The FAMS Agency will enable operation of a Virtual/Extended Enterprise of transport operators. Despite the physical location of the operators, different types of fleet, booking systems, services provided, etc., the Agency will manage the entire service chain - from customer booking to service planning, monitoring and control - operating as a single entity, as "one operator with one fleet and one booking system", providing an effective response to the mobility needs of the different user groups. Figure 0.1 shows an abstract operational reference model for the Flexible Agency.



*Figure 0.1 - overall structure of the Flexible Mobility Agency*

The services offered by the Agency can be clustered as customer-facing services (**B2C services**) and operator-facing (**B2B services**) and are supported by a communications platform. The ITS elements and applications are specified within this framework.



In Chapter 2.5 we introduce the concept that the foreseeable evolution of DRT will involve five layers as shown below, with FAMS being at the third layer :

Layer	Category	Description	Example	Status
1	Basic	Dial/write-in flexible transport service, all bookings and assignment manual - no ITS support.	1970's dial-a-ride; most US paratransit	Proven, many
2	Stand-alone	Real-world commercial system with ITS-supported services. Ranges from one to many services through a single TDC.	Hasselt, Limburg, Florence, Gothenburg, Tuusula, Kuipio, Oulu	Proven, some
3	Expanded agency	Collaboration of multiple service providers to provide integrated service from user viewpoint. Reduces tasks and overheads for operators. Exploits synergies and optimises resource utilisation. Business and organisational models still being tested and developed	FAMS project : Florence region, Italy; Angus region, Scotland	To be tested
4	Mature agency	Stable, viable integrated agency based on mature ITS platform. Well understood processes by customers, suppliers and agency. Not a problem to add new supplier, service or customer interface.		None yet
5	Interacting agencies	Layer 4 agencies retain own identities, but can optimise across territory, modes and/or service layers by either carrying each other's customers or organising transfers. Could be TDC to TDC exchange, supported by well understood processes and value proposition.		None yet

*Table 0.1 : The progressive 5-layer FAMS model of DRT organisation*

The primary purpose of the 5-layer model is to consider both the “road-map” for DRT services and organisation, and to foresee the technical and support requirements. The primary value-added of the FAMS project is to allow the state-of-the-art to move from layer 2 to layer 3, thus opening up business opportunities both for operators/authorities and for suppliers.

Chapters 3 through 7 position the sites, their stakeholders, the reference and planned DRT services, and the user needs assessment.

Chapter 3 provides a context for the sites. An overview description is given of the Angus site in Scotland and of the Florence area site in Italy.

Chapter 4 considers the stakeholders both in generic terms and at site-level. At the simple level, we could consider six main categories of stakeholder :

- The EU – both as a main sponsor, and which in turn has subcategories such as the ITS program, transport policy, social policy, industrial policy
- Authorities – which can include regulators, financial sponsors, elected representatives
- Agencies – which can include the FAMS agency, TDC centres
- Operators
- Suppliers – especially suppliers of ITS systems
- End-users – the broad market of potential customers of DRT services (in some cases authorities are also either direct or indirect end-users)

Taking this general classification, an in-depth presentation of the stakeholders and their specific objectives is offered for both Angus and Florence, with further supporting material in Annexes A and B. Chapters 4.6 and 4.7 synthesise the individual objectives to site-level for Angus and Florence respectively. What is reported in this Deliverable is the culmination of very extensive consultation and consensus forming activities that have preceded FAMS, and which provide the political and community validity for the take-up actions.

Chapters 5 and 6 provide the in-depth description of the Angus and Florence sites respectively. Physical, social and demographic data are provided in the chapters and in the Annexes. It becomes very clear that the two FAMS sites have very different starting points, the Angus site being a start-up DRT situation with a first-time adoption of ITS support (albeit from an experienced supplier). The Florence site is a mature site which is extending the scope and functionality of DRT services and ITS support. This is also very clearly reflected in the underlying objectives. In the case of Angus there is a very pressing and human-level need for basic mobility to combat social exclusion, improve quality of life and to contribute to rural regeneration. In Florence the challenge is to improve the quality of the service offer and the delivery mechanisms. However, when it comes to the objectives in relation to the operational and technical tasks, and to the business perspectives, there is a high-level of commonality. The current and reference services are defined in detail, with an assessment provided of the opportunities offered by the DRT/FAMS approach, and of the critical aspects.

Chapter 7 takes an in-depth look at the user needs in the two sites, and also recalls the user needs findings of previous projects SAMPO and SAMPLUS.

In Chapter 8 we attempt to synthesise the requirements and context of the FAMS project in the form of “Problem Definition”. These are concise statements of the ‘problems’ at both site and project level which FAMS will endeavour to solve. This provides guidance for both the trials and for the Evaluation concepts. These are defined for the Angus and Florence sites, for generic transport issues (poor integration of DRT in the overall transport chain, service models and ways of working), generic ITS issues (interoperability of services and infrastructures, user access to information and services) and for take-up issues (business processes, technology implementation, training and know-how transfer).

Chapter 9 introduces the analysis of functional requirements underlying the planned FAMS developments and trials at the two sites. After identification of the stakeholders, user need and service requirements, the objective of the functional requirements analysis is to translate the identified needs in a set of (macro-)functions which are necessary to support the implementation of the FAMS concept in the sites. Thus, the functionalities identified and briefly outlined in this chapter describe what is expected from the FAMS Flexible Agency in terms of services made available to the different user categories; i.e. to final end-users of DRT and other flexible transport services, DRT service operators, the Flexible Agency operators themselves, and the local Authorities interested in the FAMS.

The functional requirements analysis is done firstly at site level. The aim is to proceed in a bottom-up way, identifying the main functionalities required in each site. Then, a cross-

comparison of site related functional analyses is done in chapter 10, where a general FAMS concept and design is presented and a functional list as well as a top-level functional architecture are derived identifying the main needs which are common across the two sites. This provides the basis for the overall functional design of the Flexible Agency that is addressed in this deliverable and then expanded and consolidated in the work to be carried out in WP03 Trial Design and Technology Adaptation.

Concluding remarks are presented in Chapter 11. As the current document is the opening Document of the FAMS project, and is designed to present the context rather than make findings, we do not propose any conclusions here. That is the task of the further Deliverables which will present the FAMS work. The key point that we note is that despite their diversity, both sites have been able to describe the functions required at their sites in a common framework and to yield a FAMS functional set. This is very encouraging since wide deployment of ITS-supported DRT will require agencies and operators in contiguous areas to interact at all levels. When we find that a sparse rural site and a mature suburban agglomeration can work to common functions and architecture, then we can reasonably hope that sites which have more characteristics in common can also work to a common function set and system architecture. This is absolutely essential if the FAMS-style Flexible Agencies (layers 4 and 5) described in Chapter 2.4 are to emerge as integrators of B2B and B2C services.

Finally, it is noted that both sites are taking on significant challenges in the DRT service and organisation concepts as described in Chapters 5 and 6. It is not conceivable to achieve the service offer without the planned ITS support. This provides a sufficient challenge to yield European added-value. Therefore, the take-up dimensions of the FAMS actions will be highly significant and will form part of the Evaluation Plan.

This document is supported by a Glossary (which will be enhanced in the further deliverables) and References. Three Annexes running to over 90 pages give a substantial level of detail on both sites. These are not aimed at the expert reader, but at practitioners in other sites considering take-up of DRT and the ITS tools to support it. We hope that the materials in the Annexes will provide useful templates and reference values to operators and communities who are often attempting to develop and implement services without a support program.

## 1 INTRODUCTION

### 1.1 Presentation of the FAMS Project

**FAMS** (IST-2001-34347) is a 20 months Trial Project initiated under the EU Research & Technological Development program Information Society Technologies (IST). The project aims at scaling up the technologies, services and business models currently adopted in Demand Responsive Transport (DRT) and supporting the evolution from single DRT applications towards the concept of a **Flexible Agency for Collective Demand Responsive Mobility Services**.

By capitalising on the results, experience and practices gained in previous RTD projects on Demand Responsive Transport - both by DRT service providers and IT providers participating to the FAMS consortium - FAMS will implement and trial the Flexible Agency concept, evaluate the viability and impacts in real business cases and gather knowledge and best practice to ensure dissemination and subsequent adoption at the European level.

The planned work includes the following elements:

- **adaptation and scale-up** of (1) previously demonstrated DRT technologies and methods and (2) e-Business/e-Work collaboration and team-working tools and methods, to support operation and coordination of a set of DRT services by a Flexible Mobility Agency;
- **deployment of the Flexible Agency concept** in two EU sites (Angus, UK and Florence, Italy) and transfer to these of the technological, operational and organisational experience gained about application of ITS in DRT;
- implementation of **trials** in the sites, including trial and test of the impacts of **GPRS** technology in supporting DRT operations within the Flexible Agency;
- **comparative assessment** of technologies, organisational models and implementation contexts, based on a common Measurements and Evaluation Plan;
- **assistance** to the **Users** and **Suppliers** in decision-making, as regards further deployment and use of trialled IT solutions and product consolidation and market penetration strategies, respectively
- collection of **knowledge** and **best practice** on Flexible Agency implementation and operation and **dissemination** of these through a “Handbook and Best Practice Guide”;
- **market stimulation** for IT and e-Business/e-Work products supporting in effective implementation of DRT and the Flexible Agency.

Two **Collective Transport Operators/Authorities** – SITA (IT) and Angus Transport Forum (UK) – will implement and trial the Flexible Agency. Two **IT suppliers**, Mobisoft Oy (FI) and Softeco Sismat (IT) will provide the required technology transfer by adapting solutions obtained in previous RTD projects. One Public Transport service operator, ATAF (IT), will provide transfer of expertise on DRT operation and will support in implementing best practice in community transport and DRT at end-user organisations. Two IT and Transport Consultancies, MemEx (IT) and ETTS (IE), will ensure coordination of the technical trials and the Common Evaluation framework.

*The core objective of the FAMS Trial Project is to scale up technology, service and business models currently adopted in Demand Responsive Transport and support the evolution **from single DRT applications** towards the concept of a **Flexible Agency for Collective Demand Responsive Mobility Services**.*

*By capitalising on the results, experience and practices gained in previous RTD projects, FAMS will **implement** and **trial** the Flexible Agency concept, **evaluate** the **viability** and **impacts** in real business cases and gather knowledge and **best practice** to ensure dissemination and subsequent adoption at the European level.*

Based on this, the FAMS Take-up Action has three main **strategic objectives**:

- to **innovate** the way DRT business and service models are implemented, through the adaptation, extension and **trials** of new IT infrastructures and e-Commerce/e-Business services – such as web-based access to information, booking and reservation for social service associations, shared resources planning etc. - to support their operation within the Flexible Agency concept
- to **build confidence** for authorities and investors (operator, communities and suppliers) by the ability to plan, organise and deliver:
  - a quality product that meets the needs of users who have, until now, been marginalized by the transport offer;
  - substitute mobility products that are cheaper and more attractive than non-viable conventional services;
- to **lead to deployment** of DRT and Intermediate Transport concepts based on innovative Flexible Agencies. The implementing agency will need tools to support the business and organisational service models – hardware, software, communications, skills, training, etc.- leading to take-up of the outputs of the advanced telematics and support products.

In order to achieve this, FAMS will base upon and adapt available results – technologies, processes and business models – from previous RTD projects in **two main areas**:

- c) technologies, models and IT tools for **DRT planning, operation and management**, supporting key phases of the service provision scheme;
- d) web based architectures, tools and models for **eBusiness/eWork** applications, facilitating cooperation among DRT transport operators within the Flexible Agency concept (**B2B services**) and improving access for the end-users of the transport service chain (**B2C services**).

By adapting results obtained in these domains by the participating partners, the FAMS project will implement and test technical infrastructures and models facilitating operation of **Virtual Communities** linking service operators and users, improving (1) communication, service provision and coordination for the different service providers and (2) access to services for the end-users.

An additional objective will be testing novel **GPRS** based communication services available in the trial sites, and evaluating their impacts in terms of technical performance and the service / business models supported.

## 1.2 Structure of FAMS project

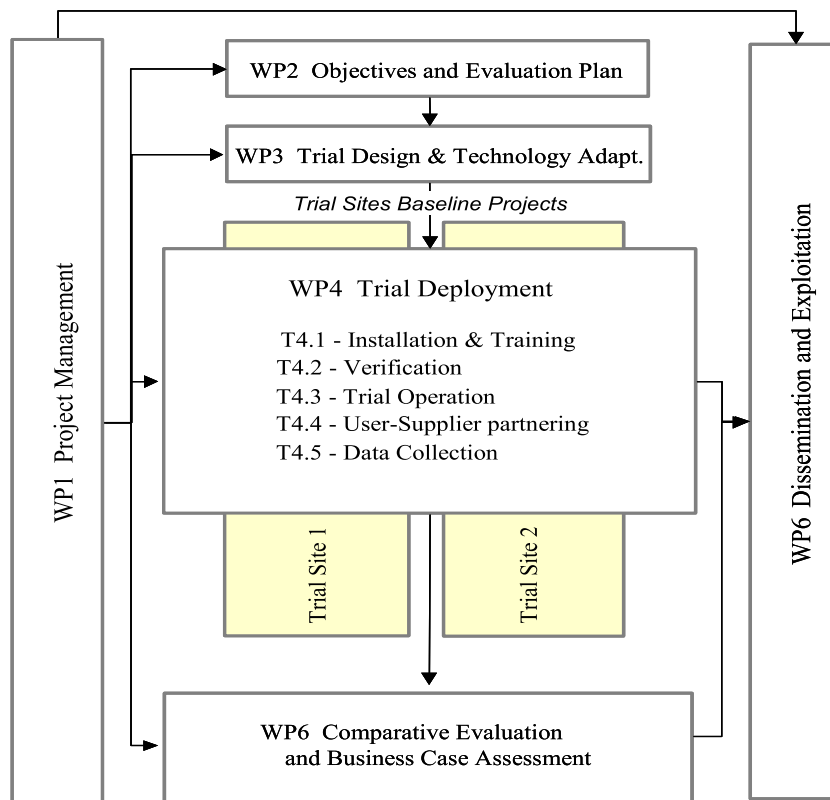
The FAMS project is structured in a set of six workpackages (WPs) which allows for distributed management and execution of the project across the partners and sites. The six workpackages are :

WP	Title	Lead Partner
1	Project Management	ATAF
2	Trials Context and Design	Memex
3	Trial Technology Adaptation	Softeco
4	Trial Deployment	Mobisoft
5	Comparative Evaluation and Business Case Assessment	ETTS
6	Dissemination and Exploitation	ATAF

*Table 1 : Workpackages of the FAMS project*

This Deliverable takes place within the scope of Workpackage 2.

The structure of the project, and the dependencies are shown in figure 1.1 below



*Figure 1.1 : Structure of the FAMS project*

### **1.3 Scope and role of WP2**

The core purpose of the FAMS Take-up/Trial action is to help the Users to understand the impacts that the new technologies will have on their businesses and on their customers. Following the SAMPO and SAMPLUS projects, there is already a deep understanding of the general needs of users in relation to DRT services, covering the mobility, institutional and operational aspects. The SAMPO, SAMPLUS and INVETE projects provide already a strong understanding of system architectures, technical specifications, interfaces and functionality. Hence, it is not proposed within FAMS to carry out generic work on the needs of users, and for these dimensions to focus on the specific requirements of the sites.

On the basis of the general DRT/FAMS context, WP2 will set out and precisely define the site context approach of the planned trials with respect to the main parameters (reference service model, institutional framework and constraints, operational context, impacts and performances, etc.).

For each site, the Supplier and the User will collaborate in the Trial Design phase. The outputs will be the functional and technical specifications for the systems, along with the operational design. This document will allow the Supplier to prepare the technologies for the Deployment phase, and the User will be able to make any needed preparations at the host systems.

This Workpackage is made up of the following tasks:

Task 2.1 - Definition of Trial Context: The Trial approach of each of the sites will be defined and expressed in terms of measurable parameters and operational context. These will be clustered according to technical, business, operational, socio-economic and user acceptance objectives. Cross-site potential will be identified. This will provide input to both the Evaluation Plan and to local Trial Design.

Task 2.2 – Definition of Functional Design: At each Trial site, the User and Supplier will work together to develop and document the functional and technical specifications. These will be based on the site objectives, the most appropriate technical options, and the Evaluation Plan. This task forms an important part of the User-Supplier partnering, and of the technical expertise transfer. The FAMS Technical Manager will work closely with all sites throughout this process to assure common approaches where possible. A FAMS technical meeting will be held to maximise synergy across sites.

The principal outputs of WP2 :

- a) Deliverable D3 “Trials Context and Design” which documents all relevant materials and findings generated in Tasks 2.1 and 2.2
- b) An understanding of the core stakeholder objectives, both at individual and collective level, to provide a platform for the development of D2 “FAMS Evaluation Plan” within WP5.
- c) An understanding of the functional design requirements within the technical team to assist in the adaptation of the trial technology, within WP3.

### 1.4 Scope and role of Deliverable D3

The FAMS project will generate a total of 11 Deliverables during the project life.

<b>Del. no.</b>	<b>Deliverable name</b>	<b>WP</b>	<b>Lead participant</b>	<b>Del. type</b>
D1	The FAMS Website	6	ATAF	Website
D2	The FAMS Evaluation Plan	5	ETTS	Report
<b>D3</b>	<b>Trial Site Context &amp; Design</b>	<b>2</b>	<b>ETTS</b>	<b>Report</b>
D4	FAMS Architecture & Trial set-up	3	SOFTECO	Report
D5	FAMS System Deployment	4	SOFTECO	Report
D6	FAMS Trials Report: Testing and Evaluation	5	MOBISOFT	Report
D7	Comparative Assessment of IT Solutions, Service and Business Models for the FAMS	5	ETTS	Report
D8	The FAMS Workshop	6	ATAF	Workshop
D9	The FAMS Hand Book: Best Practice & Recommendations	6	MOBISOFT	Report
D10	Dissemination and Use Plan	6	MOBISOFT	Report
D11	Technology Implementation Plan	6	SOFTECO	Report

*Table 1.2 : Deliverables of the FAMS Project*

The current Deliverable D3 “Trials Context and Design” plays a key role in the project launch, with the following main aims :

- To classify and define the stakeholders, their requirements and their priorities
- To analyse relevant user needs, and identify synergies
- To allow problem definition at site and at project level
- To transfer this knowledge to the Evaluation WP5, so that the Evaluation Plan can be soundly based on the actual information needs
- To fully define the current reference context in terms of the physical sites, operators, transport services, and transportation metrics
- To fully define the reference DRT services in terms of current and planned services, support facilities, opportunities, and trial priorities
- To identify and define the functional requirements in a structured way, and to generate a functional list based on the two FAMS trial sites
- To generate the FAMS overall functional design
- To transfer this knowledge to the Trial Technology Adaptation WP 3.



## 2 FAMS CONCEPTS

### 2.1 *Basic Concepts of Demand Responsive Transport*

During the last few years, **Demand Responsive Transport** (DRT) applications have shown important advantages and benefits in several European cities and regions. DRT services are complementary to the conventional, scheduled passenger transport. They usually serve dispersed mobility needs, either during hours of low demand, in areas of low population, or where the target users are dispersed among the general population (e.g. disabled & elderly, students, tourists, ...).

Such a type of "Intermediate Transport" solutions include a range of different transport services:

- Local buses of routes with some flexibility
- True Demand Responsive Transport
- Special needs transport
- Community Transport
- Shared taxis and car pooling
- Some forms of Park'n'Ride, including those with advanced place booking
- Car sharing and organised lift giving

So far, DRT services have been applied mostly as a single element of a potentially larger intermodal transport chain. Most often the DRT schemes have been - or are - operated as single mode, by a single operator, with little or no integration with the other transport schemes. However, there are large opportunities for improvement of service provision modalities and of the service model itself by strengthening the coordination of different Intermediate Services and their integration within the overall transport service chain.

Demand Responsive Transport (DRT) can be defined as transport which is adapted to meet the known needs of users, typically on a trip-by-trip basis. Thus, there are at least the following core functions :

- a knowledge-acquiring function to understand the actual demand, or at least the relevant variations on expected demand
- an analysis function to determine what action to take in response to this known demand
- a dispatching function to communicate the changes to assignment and operating personnel

In some cases there may be a default route with variations applied as required. In other cases the service may be determined entirely from the specific demand for that trip. It is important to remember that the characteristics of both the demand and the background conventional service offer varies dramatically depending on whether the location is urban, peri-urban or rural in nature.

DRT services can be defined as having at least one degree of freedom for the specific trip being offered. The three main dimensions are the route taken, the timing of the service, and the vehicle used. This allows the decision taker (dispatch centre or operator) to alter the service offer and cost parameters in response to the actual demand – SAMPLUS (1999a, b).

### *Routing*

The most fundamental options relate to the route taken by the vehicle. The main options are presented in order of increasing level of flexibility :

- Offer a fixed route as default, serve points off the route on request, and return to the original route at the same point – all points on the fixed route are always served
- Offer a fixed origin and destination pair and perhaps pre-determined intermediate points and section(s) of route. Serve points off the route on request, and return to the fixed route at the optimal position. Some points on the normal route might not be served, and booking is needed
- Offer a fixed route service on the trunk section of the route, but have flexible routing at one or both ends of the route, thus providing a local collection/distribution role.
- Have a number of defined stops/collection points, and generate an optimal routing based on the specific trip demand
- Generate the service from the requested origins and destinations on a free routing basis

### *Timing*

A further level of flexibility can be achieved by adapting the timing of the offered service. The main options include :

- Advancing or delaying the departure time for the service
- Pick-up or set-down at a time specified by the user
- Adjusting the timing to meet/wait for another transport service for transfers
- Choosing whether or not to operate a specific trip
- Time period for switching between conventional and DRT operating mode

### *Vehicle assignment*

The vehicle assigned to carry out the trip can be altered for cost, operational or facilities reasons. The main options include :

- Assigning vehicles with wheelchair lifts (and trained drivers) or other special facilities on demand so that not all vehicles in the pool need to be so equipped
- Upsizing/downsizing vehicles to match the expected number of passenger on the outbound or return trip
- Assigning a smaller or more robust vehicle when requested to operate on smaller roads (e.g. in rural areas) or in traffic-calmed areas
- Assigning a more appropriate vehicle/driver if packages/documents handling is offered as part of the service
- Where there are very few passengers for the planned trip, pass the work to a taxi firm and don't operate the (mini)bus trip

## **2.2 State-of-the-art of DRT**

Modern Demand Responsive Transport first appeared in the 1970's in the form of "dial-a-ride" and was generally intended for rural dwellers in areas where the travel demand was too low for conventional services. Interested users would telephone-in their request some days before they intended to travel. The operator or agency would plan the service the day before the trip, assign the driver and vehicle and give the driver a running board with the list of trips, pick-up points, timings, etc. While this provided some mobility for people who had no other

options, it was very limiting and meant that users had to plan their travel days beforehand – in some schemes users even had to write in. Some schemes developed moderate customer bases, but with increasing access to private cars, the concept was considered quaint and irrelevant.

During the 1980's, some interesting developments were achieved on the marketing side, vehicle types, branding, choice of locations and linkage with conventional services. However, the key stumbling block remained for users of having to plan trips at least a day ahead, and for both users and operators that there was not the “critical mass” to be able to offer a wide range of destinations – Finn (1996).

By the mid-1990's, a number of different initiatives in Europe and in North America confronted the key technical problems facing DRT, and developed both the applications and the communication platforms to radically change the customer proposition. This required multiple challenges to be overcome, and new functions to be offered :

- Effective, reliable means for the potential user to communicate travel demand
- Booking and reservation systems capable of handling multiple and diverse requests, with quick turnaround time
- Databases to manage and support the booking process
- Computerised scheduling and assignment tools to generate, adapt and update service trips - routing and timing; to assign and where necessary reassign passengers; to assure that customer time windows were respected; to respect upper limits for distance and time deviations
- Optimisers to minimise the resource requirements
- Dispatching tools to create instructions for drivers, and to update these as required
- Communications platforms to support the exchange of information

The most significant advances have been in compressing the timescale for the processes so that it can function as close as possible to real-time. This allows not only same-day booking, but same-hour booking to take place. In some cases, new customers can be accepted even after the vehicle has departed, just as long as the vehicle has not yet passed a critical deviation point.

This radical change in the customer proposition has completely re-positioned the DRT product set, so that services can attract a much higher revenue base, while distributing costs over a broader customer base. In the period 1997-2002, there has been an upsurge in the number of DRT systems with same-day bookings in Europe, and similar progress is now occurring in the USA which has an extensive presence of paratransit systems.

### **2.3 Supporting ITS technology elements**

The advances in DRT services have been made possible by Intelligent Transportation System (ITS). ITS is a powerful combination of appropriate software applications on intelligent devices which can exchange information across communication platforms.

The enabling technologies include :

- Booking and reservation systems to manage the customer requests
- Internet, IVRS and palm-top top etc. devices to assist customer booking
- Travel Dispatch Centre (TDC) software for allocating trips and optimising resources
- Communications systems and equipment to link the TDC with both drivers and customers
- In-vehicle display units to support the driver
- GPS-based or GMS-based vehicle location systems

- Smart-card based fare collection systems
- MIS and other data analysis systems

These technologies and applications have been developed and validated within EU projects such as SAMPO, SAMPLUS, INVETE, as well as in independent initiatives. In addition, a substantial body of work has now been developed to provide system architectures, functional and technical specifications, and interface definitions – SAMPLUS (1997, 2000).

Within the last 5 years there has been a massive deployment of both devices and connectivity across the three key players in the DRT service :

- The customer
- The dispatcher/operator
- The vehicle/driver

With the hardware and information exchange platforms in place, the applications needed to support DRT can be put in place and can interact to provide the range of customer, back-office and operational functions.

The core Service Concept in DRT is a combination of mobility and convenience, which therefore extends beyond the simple transportation function. A very wide range of combined service concepts has been developed and implemented, and can be considered to have four main dimensions :

### **2.3.1 Mobility Service (The transportation offer)**

The basic mobility service (i.e. the transportation offer) can be widely varied to meet the specific needs of the individual, subject to operational constraints and customer willingness to pay. The ‘toolbox’ for the degrees of flexibility consists of the elements in section 2.1 above, and case studies can be found in SAMPO (1996, 1997) and SAMPLUS (1999).

### **2.3.2 Communication to the Travel Dispatch Centre**

The user must communicate his/her travel need to the Travel Dispatch Centre (TDC), which in turn must be able to accept this information efficiently, error-free, and in a format which supports the booking process. Communication options need to take into account the devices available to the user, the skill/competence level of the user, the desire for 24 hour access, that the user might not be at their regular location, and the immediacy of the desire to travel.

Options include :

- conventional telephone calls to an operator
- interactive voice response system (“press 1 for ..., please insert your user number, ..etc.”)
- on-line request formulation
- SMS request placement
- Internet connection
- 3<sup>rd</sup> party reservations (e.g. for clinic outpatients, the clinic organises the booking as part of the process of setting up the next appointment)

To date, direct on-line booking is not available, since systems prefer to receive requests which they process and then offer the response to the user.

### 2.3.3 The Booking and Reservation Function

The booking function accepts the detailed request of the user, and turns this into a specific mobility offer to the user. This needs to be an efficient process which minimises the input and effort by user, with fast turnaround time, and which allows the user to feel that his/her needs are really being satisfied. Developments in this aspect include :

- input templates for the TDC operator
- supporting databases of customer data : home address, frequent destinations, preferences, special needs
- locators, gazettes and other means of quickly understanding locations
- time-window offers to customers based on pick-up or set-down
- negotiation of mobility offer to customer
- block-booking of regular trips
- auto booking of return-to-home trip (e.g. by smart card, by SMS)
- advice on options for conventional services, which may be cheaper or more convenient

### 2.3.4 Customer Support

For conventional services, customers are very much left to find the service themselves. For DRT customer, the operator/agency or the TDC frequently offers additional customer support including :

- Telephone call in advance of vehicle arrival to allow the user sufficient time to prepare, lock up and get to the stop – e.g. for elders in apartment blocks, people in rural areas – but also in harsh climates to minimise the waiting times outdoors
- Telephone or SMS notification of delays or disruption to service
- Assignment of suitable vehicle or trained driver where the user has special needs
- Alignment of organised activities/events and mobility services

As DRT services become more widely deployed, we find the customer support dimension as a clear differentiator from conventional services. This may reflect the greater involvement of the community in DRT service initiation.

## 2.4 *The Added-Value approach of the FAMS project*

FAMS aims at improving demand responsive, intermediate transport by addressing fundamental organisational and technical issues at the heart of such kind of transport model: **improving communication, integration and cooperation** among all actors involved in the DRT domain, on the side of transport service planners, **transport providers** and **end-users**.

The main vision supported in FAMS is that all actors of the DRT service chain, both the different transport operators and the different users groups, constitute a **Virtual Community**. Through an appropriate e-Business infrastructure, the member of the community will obtain several benefits including: knowledge sharing, improved access to information and services, improved travel service offer, enhanced management of the workflow between the customer and the transport service providers.

Existing DRT management tools will be adapted and made interoperable within an **e-Business collaborative environment**. This will allow improved cooperation among transport service suppliers and operation of a new **service value chain (Figure 2.1)**.

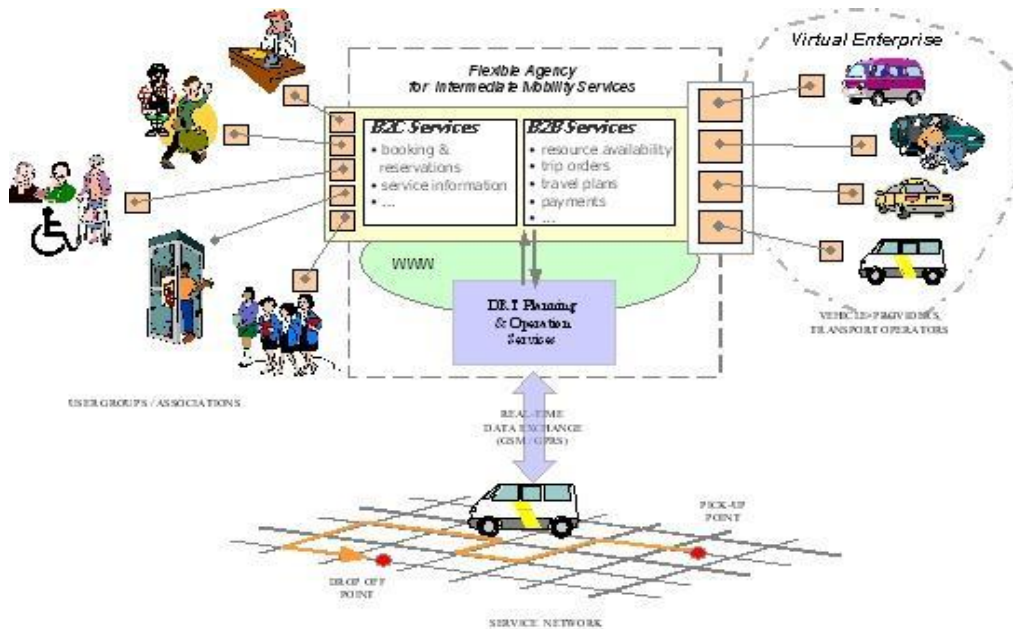
Models and solutions to enable collaboration among transport operators are based on currently available e-Commerce/e-Business technologies such as n-tier web-based architectures, portal technology, distributed web services, internet communication and notification services, information and resources sharing techniques over the internet.



*Figure 2.1 - The FAMS service value chain for Intermediate Transport (DRT) provision*

The FAMS Agency will enable operation of a Virtual/Extended Enterprise of transport operators. Despite the physical location of the operators, the different types of fleet, booking systems, services provided, etc., the Agency will manage the entire service chain - from customer booking to service planning, monitoring and control - operating as unique entity, as "one operator with one fleet and one booking system", providing an effective response to the mobility needs of the different user groups.

Figure 2.2 shows an abstract view of the operational reference model for the Flexible Agency.



*Figure 2.2 - overall structure of the Flexible Mobility Agency*

Overall, the FAMS architecture is based on the following main components:

- a common **FAMS Service Centre** (TDC) sharing a number of services for planning, managing and monitoring the different type of flexible services. These will include: shared route and service planning facilities, shared resource (vehicles) management, customer management repository, service information and data repository;
- the **e-Business services** between the Agency's DRT management service components and the different actors involved in the DRT process chain, both operators and users. Specifically, these services are grouped in two different service and one support category:
  - **Business-to-Business (B2B) services**, allowing interaction and teamwork among the different transport service providers co-operating through the Agency. Provided services will include: support to management of resources (vehicles) availability and sharing, request and delivery of trip orders and travel plans, notification of events (e.g. service modifications, expected events, etc.)
  - **Business-to-Consumer (B2C) services**, supporting access to information and services different associations, user groups, communities, etc. Provided services will include: remote service information, booking facilities for associations and user communities, inquiry and notifications, etc.
  - a **communication network** among the TDC and the vehicles operating the services, based on cellular technology - GSM and GPRS.

The flexibility of the Agency addresses not only the different needs of transport demand but also the different operational models and service provision schemes supported by the technical infrastructure. Based on this, FAMS will trial, evaluate and gather best practice evidence about a number of operational schemes, looking in particular at:

- the **coordinated management** of the fleet belonging to the different transport operators and/or citizens associations "federated" through the Agency;
- the **balancing** of services among the different operators involved in the services;
- real-time monitoring of **service operation** through GPRS;
- diversification of **service access** modalities for different end-users groups and user categories;
- the **workflow** and **information flow** along the entire service chain, from transport operators, to the DRT planning / operation service provider, to the end-users and customers of the transport services.

## **2.5 A progressive 5-layer model for DRT**

For anything other than the most basic DRT (e.g. one bus, phone-in), there is a need for an appropriate organisational structure. As the number of services, number of users, and degrees of freedom increase, the organisational structure needs to be robust, flexible, adaptive, and expandable. It needs to be based on clear allocation of functions and responsibilities within a proper regulatory, contractual and business framework. These issues have been examined in depth with clear recommendations issued from the SAMPLUS project (1999) and this Deliverable does not propose to deal further with these issues.

What is of interest here is the evolution of the organisation of DRT services, especially as the service offer becomes more complex and different agencies/operators are in adjacent or overlapping areas. This could be between DRT services and networks, or between DRT services and conventional services (urban bus, rail, long-distance bus).

FAMS has taken on the task to examine the organisational, technical and business requirements of the expanded agency for integration of DRT services. Such an agency may be virtual or actual, is based on a range of B2B and B2C services, and supported by ITS applications and communication platform. It will be developed within FAMS.

The FAMS project suggest that the foreseeable evolution of DRT will involve five layers as shown below, with FAMS being at the third layer :

Layer	Category	Description	Example	Status
1	Basic	Dial/write-in flexible transport service, all bookings and assignment manual - no ITS support.	1970's dial-a-ride; most US paratransit	Proven, many
2	Stand-alone	Real-world commercial system with ITS-supported services. Ranges from one to many services through a single TDC.	Hasselt, Limburg, Florence, Gothenburg, Tuusula, Kuipio, Oulu	Proven, some
3	Expanded agency	Collaboration of multiple service providers to provide integrated service from user viewpoint. Reduces tasks and overheads for operators. Exploits synergies and optimises resource utilisation. Business and organisational models still being tested and developed	FAMS project : Florence region, Italy; Angus region, Scotland	To be tested
4	Mature agency	Stable, viable integrated agency based on mature ITS platform. Well understood processes by customers, suppliers and agency. Not a problem to add new supplier, service or customer interface.		None yet
5	Interacting agencies	Layer 4 agencies retain own identities, but can optimise across territory, modes and/or service layers by either carrying each other's customers or organising transfers. Could be TDC to TDC exchange, supported by well understood processes and value proposition.		None yet

*Table 2.1 : The progressive 5-layer FAMS model of DRT organisation*

The primary purpose of the 5-layer model is to consider both the “road-map” for DRT services and organisation, and to foresee the technical and support requirements.

The primary value-added of the FAMS project is to allow the state-of-the-art to move from layer 2 to layer 3, thus opening up business opportunities both for operators/authorities and for suppliers.



### 3 THE FAMS SITES

#### 3.1 Overview of the FAMS sites

FAMS trials will be implemented in two sites, in **Italy** and **UK** (Scotland). Two **transport operators / authorities** - ATAF in Italy, Angus Transport Forum in the UK - will implement the Flexible Agency concept in **Florence** and the **Angus Region**, respectively. Different transport service providers will collaborate with the Agency in the two local implementations of the FAMS concept.

The trial site in **Florence** has the base DRT technologies already in place and already gained valuable knowledge about DRT through previous demonstration projects. This site is in the ideal situation to scale-up the local systems, develop and trial the technological infrastructure and the collaborative service models underlying the Flexible Agency concept. Four different transport providers - ATAF, SITA, LiNEA and CAP - will operate in Florence through the FAMS action, with different DRT services in six different areas. A private (Charity) transport provider will cooperate as well through the FAMS action for the provision of special services for disabled and elderly users.

The trial site in **Angus** is new to DRT applications, although local plans exist to introduce DRT and the Flexible Agency in the site. This site covers the rural Angus area surrounding Alyth, Kirriemuir and Brechin and will allow evaluation of transferability issues, both on the technical and organisational level.

#### 3.2 Location of the sites

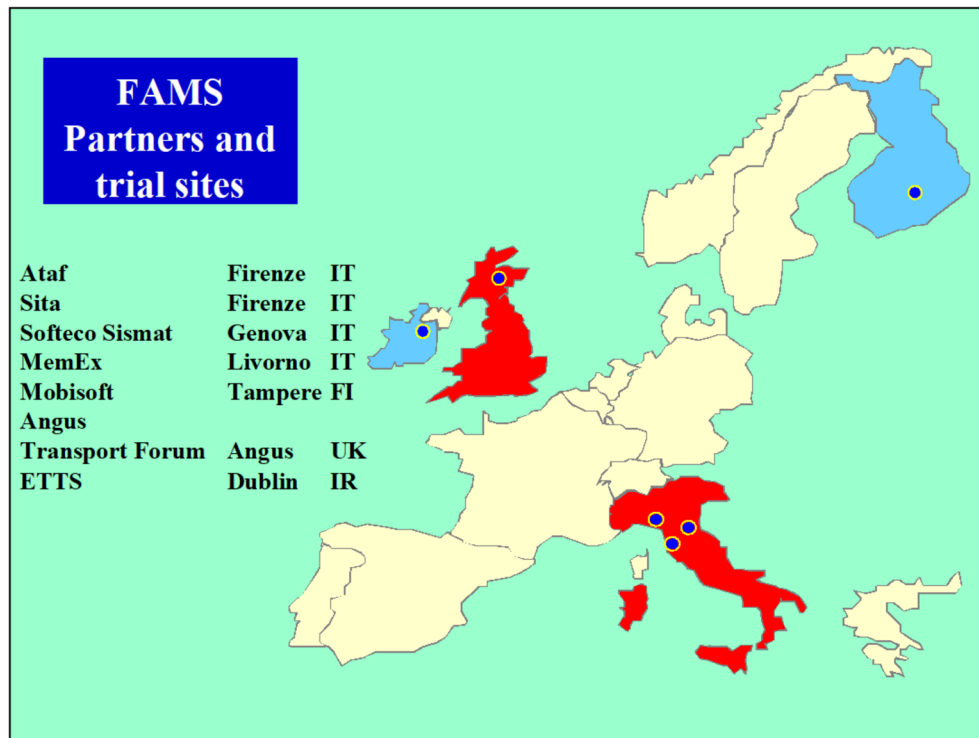


Figure 3.1 : Location of the FAMS Partners and Trial Sites

### **3.3 Characteristics of the Angus site**

#### **Geographical Location and Context**

The county of Angus lies to the north-east of Edinburgh on the Firth of Tay. The coastal belt is well served by public transport services to and from Dundee, Arbroath, Forfar (the county town) and Montrose and onward north to Aberdeen and south-west to Edinburgh. The northern boundary of this coastal strip is marked by the settlements of Alyth (which is in the county of Perth and Kinross to the west of Angus), Kirriemuir and Brechin. These settlements have good transport links on the coastal side but landward towards the Glens public transport provision ranges from adequate to poor and even non-existent, particularly at the heads of the Glens.

The area selected for the DRT services serves the rural areas surrounding Alyth, Kirriemuir, Brechin and the Glens of Angus, covering 490 square miles, (58% of the Angus area, see attached map) and a population of 9742 (8.9% of the Angus population). Due to the low population density this area is not currently well served by public transport services. Where services are provided these are based around School transport provision and only operate on schooldays or Shopper buses provided on a weekly basis to provide a basic lifeline for rural residents. Post Buses operate limited services in Glen Isla, Glen Prosen and Glen Clova.

People residing in the proposed area are car dependant. Increasing motoring costs (fuel and insurance) are having a severe effect on rural residents. Access to employment, training, education, health services, child care, shopping, recreational facilities and visiting are all dependant on access to a car and sufficient funds to undertake the wide range of activities taken for granted by those living in urban areas. Average income in Angus is 10% less than Scotland as a whole.

Health care policy in the area is in a period of change with more services being centralised in Ninewells Hospital, Dundee. Visits to Ninewells Hospital can mean a whole day spent travelling by public transport and several changes of vehicle. This is causing great concern for residents in the area. General Practitioners are sympathetic to elderly residents and are aware that a car provides the only lifeline for their needs at present. If a suitable alternative could be found a large number of elderly car owners would gladly give up their car.

The allocation of hospital appointment times does not recognise the difficulties people residing in rural areas experience. This causes widespread concern especially for elderly patients. Patients are regularly faced with delays and arriving late. There is a shortage of car parking spaces at Ninewells. This can result in visitors and out-patients facing long walks to get to the hospital.

Disabled people are restricted to travelling by “client” based services due to the lack of accessible services. This does not meet their needs or meet the concept of social inclusion within the community.

Angus Council, Scottish Enterprise Tayside and Dundee and Angus Tourist Board are encouraging tourism in the area. It is difficult for cottage industries, particularly catering to attract part-time staff due to the lack of transport in the area. Visitor numbers are restricted to car owners.

School children are restricted in their ability to undertake after school activities due to the lack and/or cost of finding alternative transport. This does not offer rural children an equal

opportunity. At school holiday times parents are faced with the dilemma of having a family holiday together or splitting vacation time between partners to act as childminders. The lack of accessibility to child minders and or clubs organised by community education department can also act as a disincentive to bring up a family in rural areas. Older children remain heavily dependant on parents therefore restricting personal development.

Angus Council has introduced Internet facilities at a number of village halls in the area. Accessing this facility is welcomed but access is limited to those who can reach the halls.

The above problems will be addressed by the DRT services. It is not intended to develop a solution around any singular group or problem. Our solution is to involve all parties to introduce a cost effective local solution to meet the needs of all parties, utilising existing resources in a coordinated manner. Flexibility in service delivery is the key. “Best fit” will be used to deliver services using a wide range of vehicles from taxis/volunteer drivers to coaches.

The creation of a coordination centre to administer all transport requests for people trying to access or exit the area will establish the true demand and unmet demands for the area. Transport providers will be contracted to meet the highest service levels (including MIDAS and local authority standards). New technology systems are now available to make this concept possible. Where these systems have been introduced in Europe results have shown that significant savings can be made and resources freed up to meet unmet demand.

Services will be designed around three main policies: sustainability, rural regeneration and social inclusion. The project meets the objectives outlined in a number of Angus Council’s strategies including Local Transport, Community Planning, Education, Childcare, Rural partnership and Healthcare. Rural services would be designed to compliment and coordinate with the existing public transport networks surrounding Alyth, Kirriemuir and Brechin. These settlements would act as hubs for the project. It is the intention to provide services that will result in rural residents having equal opportunities to access facilities in a similar fashion as those people currently residing in Alyth, Kirriemuir and Brechin.

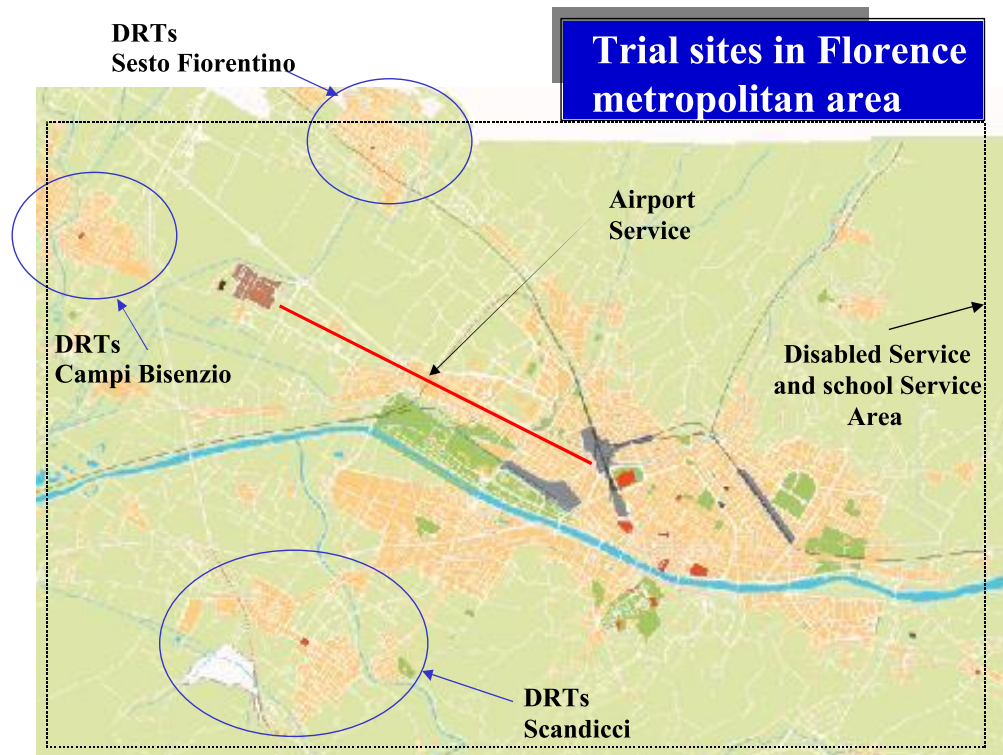
### **3.4 Characteristics of the Florence site**

The FAMS trial site in Italy includes Florence and the surrounding Metropolitan Area, for a total area of about 500 Km<sup>2</sup>. The whole metropolitan area and Florence in particular are characterised by a very old cultural and economical history, with about 590.000 inhabitants and huge commuter/tourist flows during the whole year.

The mobility and collective transport services of the metropolitan area are operated and co-ordinated by three main Private and Public Transport Companies: ATAF SpA, LI-NEA SpA and SITA SpA. ATAF, the main transport operator, is operating advanced technological infrastructures (AVL/AVM system) to ensure monitoring of the bus fleet on the network, communication with drivers, vehicle location and service “regulation” on the network. ATAF has already pioneered a flexible and intermediate DRT service in the urban and metropolitan area. This is managed by a Travel Dispatch Centre (TDC), based on advanced system concepts and technologies (the PersonalBus system, developed by Softeco Sismat) to support trip request and reservation handling, trip planning, vehicle dispatching.

Regarding the provision of Public Transport in Florence metropolitan area, the service provided by ATAF is complemented in the suburbs (Scandicci) by Li-NEA, a Transport Company owned by ATAF. This gives an opportunity to the FAMS Agency for co-ordinating

also the DRT services, operated by Li-NEA with respect to both the citizens/users and to vehicle-resources. Furthermore LI-NEA will take part to the planned Discussion Forum.



*Figure 3.2 : Location of the DRT services in Florence*

The technological scenario built up to support DRT operations in Florence and the operational experience gathered provide the starting point to upgrade the existing TDC into a Flexible Agency, interconnecting the different public (ATAF)/private transport operators (SITA and Li-NEA) and co-ordinating, differentiating, optimising the overall intermediate services offer in the metropolitan area. The core DRT planning/operation facilities for the Agency will be provided by the PersonalBus system. These will be extended by the required B2B/B2C components and made interoperable through the different transport service providers (an “information, booking and reservation portal” providing a set of facilities as a common interfacing module with users/citizens/associations, common resources availability and service management interfacing module with Li-NEA, ATAF and SITA fleet providers).

Through the FAMS organisational and business model, the Agency will be the unique reference (both as regards service booking/reservation and management and optimisation of the resources – vehicle availability) interface in Florence site for the users of intermediate transport, with the responsibility/task of co-ordinating the different operators and managing in real-time a set of flexible services. These will include:

- many-to-many DRT services in Campi Bisenzio town, operated by ATAF SpA;
- many-to-many DRT services in Scandicci town, operated by LI-NEA SpA;
- demand responsive, special bus service connecting Florence’s “A. Vespucci” Airport with the inner centre, operated by SITA SpA;
- door-to-door DRT social services for special user categories (elderly, disabled) in the whole metropolitan area, operated by different Associations/Public Health Care transport service providers;
- dedicated school transport services, operated by ATAF.

By FAMS, the different transport operators expect to achieve a number of business advantages:

- Personalised services for particular user categories such as disabled, elderly people and school-children, tailored on each category specific needs. Provision of information on the service quality and planning.
- Special services connecting the main city generation/attraction centres, the airport, the main railway terminals, the main hotels;
- Integration of e-Business solutions to allow the interaction of all the transport operators and easy access to services (information, booking and reservation, etc.) to different user categories. To ensure adequate interaction and co-operation between service providers (SITA, LI-NEA, Citizens Associations) and the service planning and dispatching TDC (ATAF)
- transfer of operational and management expertise from the current DRT operated by ATAF in Florence to the new Agency

Besides facilitating the development of wider service options to customers, an integrated Agency will offer a true opportunity to create a co-ordination at Metropolitan level of all the actors involved in the provision of different kinds of service (PT operators, Municipalities, Disabled Associations, etc.), thus improving the service offer to users and optimising the overall financial resources utilisation for transport services.

Some of the institutional and organisational issues related to co-ordination between the different service providers have already been investigated in the Florence Metropolitan Area and agreements have been stipulated, so that the scenario is ready to enter the new operational challenges that are proposed within FAMS.

The local partnering in Florence include all type of actors required by the Take-up/Trial action:

- Best Practice Supplier: ATAF;
- User Partners: SITA SpA, private PT operator, LI-NEA SpA, PT operator;
- IT Supplier Softeco Sismat SpA, supported by MemEx for all trial related, technical and operational issues.

In addition, other Local Authorities are linked to FAMS at local level: Florence Municipality and all the other service providers (public, private for-profit and private non-profit) mainly specialised in dedicated services (elderly & disabled) which operate at the metropolitan area level.

## 4 STAKEHOLDERS AND OBJECTIVES

### 4.1 Purpose of stakeholder analysis

FAMS project deals with Demand Responsive Transport services. There are a number of different dimensions to the project, among them :

- Design, develop, implement and operate integrated DRT services
- Create a value-added layer (the virtual agency) which can integrate DRT services, and offer a seamless service to the user
- Design, develop, produce and implement ITS tools to support both DRT and the virtual agency
- Transfer the service, ITS and skills tools into transportation entities, both in enhancement and new site scenarios

These linked dimensions contain aspects of conceptual, organisational, operational, technical, and financial feasibility and sustainability.

Within FAMS project we need to define three main themes :

- Who are the relevant stakeholders ?
- What are their primary objectives ?
- What are their specific needs relevant to FAMS, how does FAMS answer their needs ?

From one perspective, we need to know these things to design the Trial. We need to understand who we are trying to support, what they want us to achieve, and where priorities and trade-offs lie. This is the scope of Work Package 2 and of this Deliverable.

From a second perspective, we need to prepare the evaluation framework. There is little point in measuring things that are not important to any FAMS stakeholder, especially if at the same time we fail to help stakeholders in their most important decision taking. This is the scope of Work Package 5, and of Deliverables D2 and D7.

The Stakeholders are entities that are entitled to have an interest in the FAMS activities or outputs. This can be because they are sponsors or facilitators, or because they are likely to be impacted by the FAMS activities.

### 4.2 Classification of stakeholders

Typically we can identify generic groups of Stakeholders, but there may be various sub-categories within them. On one side, this could include different key interests (e.g. within the different DGs of the EU). On the other, they could be different market segments of the end-user. It is important to identify sub-groups since their objectives, needs, measures of success, and basis for acceptance may be quite different.

At the simple level, we could consider six main categories of stakeholder :

- The EU – both as a main sponsor, and which in turn has subcategories such as the ITS program, transport policy, social policy, industrial policy
- Authorities – which can include regulators, financial sponsors, elected representatives
- Agencies – which can include the FAMS agency, TDC centres
- Operators
- Suppliers – especially suppliers of ITS systems
- End-users – the broad market of potential customers of DRT services (in some cases authorities are also either direct or indirect end-users)

We need to develop this list and prioritise (sub)categories of stakeholders whose objectives and user needs we will explore in more detail and carry through to trial and evaluation design.

### **4.3 Identification of Goals and Objectives**

Objectives represent the desired achievements or outputs for the various stakeholders, and will typically be quite different from one stakeholder (sub)category to the next. Some stakeholders may have common objectives, whereas some sets of stakeholders may have conflicting objectives.

We need to understand the objectives of each of the stakeholders for four main reasons :

- To ensure that FAMS is relevant to the stakeholders, and to support both the trial design and evaluation processes
- To understand where synergies and potential conflicts arise, so that win-win situations can be found, rather than win-lose
- To increase the potential for expansion and take-up of DRT, flexible agency and ITS solutions
- To develop the business case

Objectives may be at the level of **goals** which are high level, are often aspirational and reflect fundamental policy. They will be independent of specific projects. E.g. :

- “to retain population in the XYZ rural area” (authority)
- “to achieve X% return on capital employed” (operator)
- “to be one of Europe’s three leading suppliers of TDC systems” (supplier)

Goals are achieved through the development of practical strategies, typically in the 2-5 planning period. These strategies will have specific actions associated with them, and will typically have practical, achievable **strategic** objectives :

- “to provide an acceptable base-line mobility for youth, women with young children, and job-seekers”
- “to develop and implement profitable (after subvention) flexible transport services”
- “to bring transferable TDC software to the market by end-2003 which requires not more than XX% of customisation per new customer”

Typically, a stakeholder will have a few core goals, and multiple objectives. A stakeholder with a clear vision will already have defined these, and they will underpin all actions and the business processes of the entity.

Within FAMS project, we identify the relevant goals and strategic objectives for each stakeholder. Care has been taken to have a sufficient scope. We realised that if we only looked at objectives that specifically refer to DRT, we could have overlooked high-impact fiscal, governance or equity objectives which can heavily determine the outcomes.

#### 4.4 The Stakeholders at the Angus Site

Angus represents a complex site of multiple stakeholders. This reflects factors such as :

- The wide geographical coverage across local boundaries
- The deep interest in mobility services from all sectors of the community
- The complexity of the organisation and sourcing of the mobility services
- The fragmentation of responsibility across many agencies
- The need to source funding from many different sources

Annex A provides a detailed listing of all of the Stakeholders at the Angus site and their Goals and Objectives. A summary table is provided here which categorises the stakeholders and identifies linkages among them.

	STAKEHOLDER NAME	TYPE	LINKAGE TO OTHER STAKEHOLDERS
1	Angus Council	Authority/Sponsor/Social Service Provider Employer/End User	Links to all Groups through all departments
2	NHS Tayside	Authority/Sponsor/Social Service Provider/ Employer/End User	Links to Angus Council and Patient Transport Service
3	Scottish Enterprise Tayside	Sponsor	1+2+3+4+5+7+8 +13+14+17+18+19+22
4	European Commission	Sponsor	1+2+3+17
5	European Rural Development Fund	Sponsor	1+2+3+5+17
6	Forward Scotland	Sponsor	1+17
7	Angus Childcare Partnership	Sponsor	1+3+17
8	Angus College	Sponsor	1+3+5+15+17+25
9	Cairngorm Partnership	Sponsor	1+5+13+15+16+17+22+23
10	The Community Fund	Sponsor	1+16+17+18
11	Ordnance Survey	Sponsor	1+9+12+15+16+17+19+25
12	Scottish Ambulance Service	Sponsor + Social Service Provider	2+11+15+16+17+18+25
13	Angus and Dundee Tourist Board	Authority/End User	1+3+4+5+9+11+15+16+17+19+22+25



	STAKEHOLDER NAME	TYPE	LINKAGE TO OTHER STAKEHOLDERS
14	Federation of Small Businesses	Employer/Business/End User	1+3+9+13+15+16+17+18+22+25
15	Bus Operators	Transport Service Provider	All
16	Community Transport	Transport Service Provider	All
17	Angus Transport Forum	Transport Service Provider Financial Sponsor Community Group Employer	All
18	Angus Association of Voluntary Organisations	End User	All
19	Chamber of Commerce	Employer/business/end user	All
20	Rotary	Community Group	17,18
21	Round Table	Community Group	17,18
22	Local Traders Groups	End User/Employer and Business	All
23	Post Office (Consignia)	Transport Provider/Employer	All
24	Mobisoft	Supplier	All
25	Taxi/Private Hire Trade	Transport Service Provider	All
26	Community Councils	Community Group	All
27	Angus Youth Congress	Community Group/end user	
28	Community Transport Association	National Body representing Community Transport Groups	All
29	Traffic Commissioners	Authority	1,15,16,17,30
30	Scottish Executive	Authority	All
31	People	End user	All

Table 4.1 : Stakeholders at the Angus Site

All the above organisations have been involved in discussions regarding the pilot project. The user groups have been in existence since 1997 and highlighted the need for everyone to work together. Angus Transport Forum has been the driving force in highlighting the need for greater partnership working. The result has been the recognition by the above groups to the cause.

#### 4.5 The Stakeholders at the Florence Site

Table 4.2 shows the stakeholders at the Florence site

STAKEHOLDER NAME	TYPE	LINKAGE TO OTHER STAKEHOLDER(S)	ADDITIONAL COMMENTS
Regione Toscana	Local Authority		
Provincia di Firenze	Local Authority		
Comune di Firenze	Local Authority		
Comuni della Piana	Local Authority		The Town Councils of Sesto Fiorentino, Campi Bisenzio, Scandicci and Calenzano form one unique managerial administrative entity not only for a territorial and economic point of view but also for the management of the transport services
ASL Health Local Authority	Social Service Provider		ASL is involved in disable transport service
APT	Community Group		
Schools	Community Group		
Hotels	Community Group		
SITA	Transport Service Provider		
ATAF	Transport Service Provider		
Li-nea	Transport Service Provider	It is a participate of ATAF	
CAP	Transport Service Provider		
Fams Agency	Activity centre	It is a subsidiary department of ATAF	
Drivers	Intermediate User		
Dispatcher	Intermediate User		
Softeco	Supplier		
Telecom	Supplier		
Omnitel	Supplier		
Tourists	End-User		
Workers	End-User		
Disables	End-User		
Elderly	End-User		
Students	End-User		
Generic End-users	End-User		

Table 4.2 : Stakeholders at the Florence Site

## 4.6 Key Goals and Objectives at the Angus site

There are four core goals at the Angus site :

- Improve Public Transport in remote rural areas in Angus
- Embrace Social Inclusion
- Introduce community planning
- Sustainability of services

These four goals can be associated with more specific objectives relevant to the DRT services and FAMS action, as shown in Table 4.3 below. Annex A provides an individual table for each of the Angus stakeholders as listed in Table 4.1 above, in which the relative priority of each objective for that stakeholder is shown, as well as achieved or planned actions relevant to that objective.

Goal	Objective
Improve Public Transport in Remote Rural Areas in Angus	Encourage innovation
	Establish existing demands
	Establish existing resources
	Explore alternatives and commercial acceptance for the need for change.
	Trial alternatives
Embrace Social Inclusion	Consider greater co-ordination and integration
	Explore opportunities for joint working between agencies
	Evaluate software systems for invoicing multi agency client based services
	Evaluate customer feedback
	Evaluate vehicle design requirements to meet the needs of everyone in the community
Introduce Community Planning	Encourage Communities to get involved in policy and delivery of services
	Establish Local Groups that represent a cross section of the community.
	Involve the groups in service design to establish “ownership”
Sustainability of services	Explore environmental impact of existing transport provision
	Encourage non car user tourists
	Explore alternative fuels in design of vehicles

*Table 4.3 : Site-level objectives of the Angus site*

The Angus Pilot Demand Responsive Transport (DRT) co-ordinated transport pilot project seeks to maximise the use of existing public transport resources in the area to produce a flexible, user-friendly integrated service and provide a sustainable means of delivering transport provision utilising new technologies.

The demographic data presented in Tables 5.3 and 5.4 below illustrate that the Angus site is a location of dispersed population and diverse activity. As previously noted, people who do not

have the use of a car face very serious challenges, and this greatly reduces the quality of life and their ability to participate in society. There are very specific community and people-oriented objectives of the new mobility services, and these are presented in Table 4.4.

<b>Objectives of the Mobility services Scheme</b>	<ol style="list-style-type: none"> <li>1. Provide all rural residents with equal public transport access.</li> <li>2. Maximise the use of existing resources.</li> <li>3. Improve access to employment and training.</li> <li>4. Improve access to area for tourists without access to cars.</li> <li>5. Increase passenger numbers.</li> <li>6. Establish Travel Club for residents in pilot area.</li> <li>7. Improve access to childcare and after school activities.</li> <li>8. Reduce car dependence.</li> <li>9. Increase car sharing.</li> <li>10. Encourage shopping in local areas through introduction of hub principle.</li> <li>11. Encourage families to stay in rural areas.</li> <li>12. Introduce multi modal joint ticketing.</li> <li>13. Create more full time employment in transport sector.</li> <li>14. Improve access to health and education.</li> <li>15. Reduce duplication and wasteful use of resources.</li> <li>16. Evaluate new technologies and effect on patronage.</li> <li>17. Reduce subsidies.</li> <li>18. Encourage bike carriage on buses.</li> <li>19. Demonstrate that taxi services can provide a solution to rural transport problems.</li> </ol>
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*Table 4.4 : Community-level objectives of the Angus site*

#### **4.7 Key Goals and Objectives at the Florence Site**

In this phase it has been necessary to identify the main goals and objectives of the stakeholders for the Florence site. Rather than identifying goals and objectives for the individual stakeholders we have preferred to group them for typology to avoid an excessive level of detail. This stakeholders grouping has also helped to show the commonality of the goals for each typology.

The process of identification of the goals has shown that finally all the stakeholders have a common main goal: improve the quality of the service. However this “common thought” assumes different meanings for the individual categories of stakeholders.

For the local authorities in fact this general macro-objective can be translated into the will to offer a proper service and into the need of saving used resources. Starting from these goals (at a lower level) the authorities have defined some objectives as elements to pursue in order to contribute to main goals. Among them DRT and flexible services integration, fare integration, different operators integration and traffic impact reduction turned out to be key to the development of an intelligent transports policy aimed at achieving the proposed goals.

For the Social Service Provider and Community groups the goal of the quality improvement of the services is naturally transferred into the request of guaranteed mobility for the different categories of groups that they represent.

For the Transport Service Provider increasing of the quality implies a better services offer and the use of instruments to manage DRT. These ideas have also strong reflections on the increase of the number of customers that, naturally, represents a primary objective for every transport company. On the other hand such objectives have to be joined to the need to save resources that, for the transport companies, means a better optimisation of the use of buses and workers.

The main goal for the FAMS agency is obviously to manage the service. In order to assure this proper management an easy use of technological support is seen as the first objective to reach.

For the dispatchers it is fundamental to count on effective means of communication in order to assure the dispatch of the information.

For the suppliers FAMS represents not only the chance to provide know-how and technology, but also the opportunity to develop new equipment, software, IT Technologies and so on.

For the drivers we have identified two main goals: the provision of a better service and the improvement of the working condition. Both of them have strong returns on the use of technical support and on the safety of the working condition.

Finally the end-users ask not only to move with reasonable fees, but they mainly want a satisfactory service. This idea includes different elements that contribute in the increase of the quality of the service. Among them the most significant are the need to reach destination in time, the possibility to book the journey in advance (in order to have a reserved seat), the opportunity to travel comfortably, the need to have a satisfactory level of information, etc.

Beyond all the goals and objectives identified by the stakeholders (with different considerations or arguments) stands the common idea that the quality improvement of the service is the main target.

The following table shows the goal and the corresponding objectives for the different stakeholders categories. In *italics* are shown the categorisation of section 4.2 above.

Type of Stakeholder	Goals	Objectives
<b>Local Authority</b> <i>(Authorities)</i>	Proper PT service provision	Transport efficiency improvement
		DRT and flexible services integration
		Fare integration
		Related objectives
	Resources saving	Different operators integration
		Traffic impact reduction
Mobility management		
<b>Social Service Provider / Community groups</b> <i>(Authorities)</i>	Guarantee of the mobility for their groups	Provision of services for disabled
		Provision of services for elderly
		Provision of services for students
		Provision of services for students
		Easier access to the services

<b>Transport Service Provider</b> <i>(Operators)</i>	Increase the quality of service	Offer better services
		Tools to plan/manage DRT
	Increase the number of clients	
	Resources saving	Buses and workers optimisation
<b>Fams Agency</b> <i>(Agency)</i>	Manage the service	Easy use of technological support
<b>Dispatcher</b> <i>(Operators)</i>	Assure information dispatch	Count on effective means of communication
<b>Drivers</b> <i>(Operators)</i>	Provide a better service	Work safety
		Use technical support
	Improve working condition	Use technical support
<b>Suppliers</b> <i>(Suppliers)</i>	Know-how and technology provision	
	Sw, equipment, new IT Technologies... development	
<b>End-users</b> <i>(End-users)</i>	Satisfactory service	Reach destination in time
		Book the journey in advance to be sure to have a reserved seat
		Travel comfortably
		Personnel care
		Satisfactory level of information
		Work safety
	Move with reasonable fees	

*Table 4.3 : Summarised Key Goals and Objectives at the Florence Site*

## **5 REFERENCE CONTEXT AND PLANNED MOBILITY SERVICES IN ANGUS**

### **5.1 Objectives and Structure of Reference Context**

This section is designed to set out clearly :

- the current context and framework at the Angus site within which the FAMS mobility services will be offered
- metrics concerning the current relevant mobility services
- the service and operational characteristics of the current mobility services
- information concerning the current means of managing the mobility services
- the development opportunities for mobility services in the Angus site
- critical aspects to be analysed and defined

In this context, it is worth noting that currently the public transport service in the region is very weak, and is non-existent in some of the glens at the core of the Angus mobility services. Hence, the Angus site is very much a green field site by contrast to the Florence site with mature services in the urban area and peri-urban areas.

### **5.2 Detailed context of the Angus Site**

#### **5.2.1 Description of regulatory framework and authorities**

Deregulated Regulatory Framework

- The existing public transport network has existed since the 1950s. The main transport provision in the 3 trial areas is centred on school transport services that operate 190 days per year. Weekly or twice weekly shopper's services are provided and are subsidised by Angus Council. (See 2002 Angus Council Network map).
- Fares are set by operators in accordance with Angus Council's Concessionary Travel Scheme
- Angus Council has introduced joint ticketing multi operator scheme between operators serving Stracathro Hospital).

#### **5.2.2 Description of transport operators**

Six main operators provide services within the pilot area

- Strathtay Scottish (Subsidiary of Yorkshire Traction)
- Meffans Coaches (Kirriemuir) subsidiary of Strathtay Scottish
- Melvilles Kirriemuir,
- Wisharts of Friockheim
- Nicholls of Laurencekirk
- Glen Travel

Strathtay Scottish and Meffans operate over 90% of the scheduled services in Angus.

Post Buses operate in Glen Isla and Clova.

Numerous Taxi and Private Hire Companies and Owner Drivers operate in the area. Fares are set by Angus Council in conjunction with the Taxi/Private Hire Federation

### **5.2.3 Description of current transport services**

The county of Angus lies to the north-east of Edinburgh on the Firth of Tay. The coastal belt is well served by public transport services to and from Dundee, Arbroath, Forfar (the county town) and Montrose and onward north to Aberdeen and south-west to Edinburgh. The northern boundary of this coastal strip is marked by the settlements of Alyth (which is in the county of Perth and Kinross to the west of Angus), Kirriemuir and Brechin. These settlements have good transport links on the coastal side.

However, landward towards the Glens public transport provision ranges from adequate to poor and even non-existent, particularly at the heads of the Glens. Public transport is not well developed due to the low population density of the area: the area selected for the pilot scheme covers 490 square miles (58% of the Angus area) with a population of approximately 10,000 (8.9% of the Angus population). Where services are provided, they are based around school transport provision (which only operate on schooldays) and shoppers buses (provided on a weekly basis thereby providing a very basic lifeline for residents). There are also limited Post Buses in the Glens (Isla, Prosen and Clova).



Non DRT Services in operational area	Companies	Planned TDC/Fleet Interactions	Development Opportunities	Critical Aspects
<b>Fixed routes</b>				
21, 21A, 21B Forfar – Brechin – Stracathro Hospital or Edzell	Strathtay Scottish (subsidiary of Yorkshire Traction)	Link DRT services to connect at Stracathro Hospital	Provide links between Forfar and Glens. Joint Ticketing potential. Attractive for tourists.	Traditional Service. Emphasis should be to encourage DRT to link to sustain and improve network
28,29 Montrose – Craigo – Laurencekirk-Edzell - Brechin	Strathtay Scottish (subsidiary of Yorkshire Traction)	Link DRT services to connect at Brechin	Provide links between Montrose (including railway station) and Edzell and Brechin	Traditional Service. Emphasis should be to encourage DRT to link to sustain and improve network
30 Montrose – Brechin – Stracathro Hospital –(Edzell)	Strathtay Scottish (subsidiary of Yorkshire Traction)	Link DRT services to connect at Stracathro Hospital	Provide links between Montrose (including railway station) Edzell, Brechin and Glens	Traditional Service. Emphasis should be to encourage DRT to link to sustain and improve network
31 Northwater Bridge – Laurencekirk-Fettercaim-Edzell- Brechin and Angus College Arbroath	Strathtay Scottish (subsidiary of Yorkshire Traction)	Link DRT services to connect at Brechin	Improve access to employment and training by providing link services	Tendered Service subsidised by Angus College and Angus Council. Seating is for students only “surplus” seating if available can be allocated to TDC
118 Forfar – Fern – Tannadice – Forfar	Meffans Coaches (Kirriemuir) (subsidiary of Strathtay Scottish)	Take Bookings for Goods and passengers	Expansion of service to carry more “goods” to help reduce subsidy levels	Only operates Wednesday and Friday
122 Blairgowrie – Auchavan	Strathtay Scottish (subsidiary of Yorkshire Traction)	Take Bookings for Goods and passengers	Expansion of service to carry more “goods” to help reduce subsidy levels	Only operates on Wednesdays
262 Laurencekirk-Stracathro Hospital-Brechin-Forfar- Ninewells Hospital (Dundee)	MW Nicoll	Link DRT services to connect at Stracathro Hospital	Provide Links between Ninewells Hospital, Stracathro Hospital and the Glens	New Service started April 2002 using Optare solo accessible midibus Emphasis should be to encourage DRT to link to sustain and improve network

801 Kirriemuir – Glen Clova – Braedownie	Meffians Coaches (Kirriemuir) (subsidiary of Strathay Scottish)	Utilisation of Dead Mileage to from schools to provide link service to/from Kirriemuir	Schooldays only service. Potential to use “Dead Mileage” for DRT services	Only operates schooldays only
815 Kirriemuir – Glen Prosen village – Dalairn	Meffians Coaches	Utilisation of Dead Mileage to from schools to provide link service to/from Kirriemuir	Schooldays only service. Potential to use “Dead Mileage” for DRT services	Only operates schooldays only
800 Kirriemuir – Glen Isla – Auchavan	Meffians Coaches	Utilisation of Dead Mileage to from schools to provide link service to/from Kirriemuir	Schooldays only service. Potential to use “Dead Mileage” for DRT services	Only operates schooldays only
119 Forfar – Tannadice – Careston -Brechin	Meffians Coaches	Take Bookings for Goods and passengers	Expansion of service to carry more “goods” to help reduce subsidy levels	Operates only on Tuesdays and Thursdays
120 Kirriemuir – Lintrathen (circular)	Meffians Coaches	Take Bookings for Goods and passengers	Expansion of service to carry more “goods” to help reduce subsidy levels	Only operates on Tuesdays
802 Kirriemuir – Memus - Noranside	Meffians Coaches	Utilisation of Dead Mileage to from schools to provide link service to/from Kirriemuir	Schooldays only service. Potential to use “Dead Mileage” for DRT services	Only operates schooldays only
810 Kirriemuir – Kilry School – Incheoch – Lintrathen – Kirriemuir	Melvilles (Kirriemuir)	Utilisation of Dead Mileage to from schools to provide link service to/from Kirriemuir	Schooldays only service. Potential to use “Dead Mileage” for DRT services	Only operates schooldays only
811 Kirriemuir-Justinhaugh-Wellford-Kirriemuir	Melvilles (Kirriemuir)	Utilisation of Dead Mileage to from schools to provide link service to/from Kirriemuir	Schooldays only service. Potential to use “Dead Mileage” for DRT services	Only operates schooldays only
812 Kirriemuir – Fern – Tannadice -Kirriemuir	Meffians Coaches	Utilisation of Dead Mileage to from schools	Schooldays only service. Potential to use “Dead Mileage” for DRT services	Only operates schooldays only

			to provide link service to/from Kirriemuir	Mileage” for DRT services	
140 Stracathro Hospital - Brechin –Arbroath – Auchmithie	Wisharts of Frioekheim	Link DRT services to connect at Stracathro Hospital	Provide links between Arbroath and Glens. Joint Ticketing potential. Attractive for tourists.	Service utilises 2 Optare Solo accessible midi buses. Links to coastal areas and Arbroath Railway Station	
262 Laurencekirk – Stracathro – Brechin – Forfar – Ninewells Hospital (Dundee)	Nicholls of Laurencekirk	Link DRT services to connect at Stracathro Hospital?	Provide link service with joint ticketing between the 2 major hospitals in the area.	Service only started May 2002 uses new Optare Solo accessible Midi bus	
150 Glen Esk – Edzell – Brechin	Glen Esk Travel	Take Bookings for Goods and Passengers	Expansion of service to carry more “goods” to help reduce subsidy levels	Only operates on a Friday	
Describe.....	Glen Travel	?	?	?	
220 Kirriemuir - Glen Clova	Post Office	Take Bookings for Goods and Passengers	Expansion of service to carry more “goods” to help reduce subsidy levels	Small vehicles used limited potential for expansion. Uncertainty about future of service due to cuts in Post Office Services	
221 Kirriemuir - Glen Prosen	Post Office	Take Bookings for Goods and Passengers	Expansion of service to carry more “goods” to help reduce subsidy levels	Small vehicles used limited potential for expansion. Uncertainty about future of service due to cuts in Post Office Services	
215 Blairgowrie – Glen Isla	Post Office	Take Bookings for Goods and Passengers	Expansion of service to carry more “goods” to help reduce subsidy levels	Small vehicles used limited potential for expansion. Uncertainty about future of service due to cuts in Post Office Services	
<b>Taxi / private hire operators</b> Operating within Angus Council Taxi/Private Hire bye laws. Fares set by Taxi Federation and Angus Council Taxi Licensing Board	Most operators are owner operators operating through an “office” to use central radio booking system	Take Bookings for Goods and Passengers	Greater coordination to provide more efficient service provision for NHS Tayside, Angus Council and potential for carrying	?	

				more goods and internal mailing for statutory bodies	
<b>Patient Transport Services</b>	Scottish Ambulance Service (SAS)				
Door to Door Client based service free of charge to referred patients only		Take Bookings for Goods and Passengers		Reduced mileage for SAS. Reduced journey time for end-users. Greater control of volunteer transport costs and potential for significant savings	Improved coordination will reduce journey times and increase perception of quality of care
<b>Local Authority</b>					
Angus Council Door to Door Client based service free of charge for entitled groups only	Education	Take Bookings for Goods and Passengers		Reduced costs for Education Department through more efficient use of resources	Potential for outsourcing to surplus commercial resources. Significant capital and revenue savings.
Angus Council Door-to-door Client based service free of charge.	Social Services	Take Bookings for Goods and Passengers		Reduced costs and improved services	Potential for outsourcing to surplus commercial resources. Significant capital and revenue savings.

*Table 5.1.1 : Summary of non-DRT transport services at Angus site and opportunities in relation to DRT*

### 5.2.4 Demographic and socio-economic data for Angus site

Table 5.3 presents the demographic data for the Angus site. More detailed information is provided in Annex C.

Area Name	Glen Esk / Brechin	Glen Clova / Kirriemuir	Glen Isla / Alyth
<b>Core Information (1991 census)</b>			
Area (km <sup>2</sup> )	392	600	203
Population (Total)	11,029	7,105	719 excluding Alyth figures
Population (under 15)	507 excluding Brechin figures	1,515	144 excluding Alyth figures
Population (over 60)	1,822	1,143	66 excluding Alyth figures
Density (Total Population)	28	12	3
Car ownership	1488	858	17

*Table 5.3 : Demographic data for the Angus site*

The Socio-economic characteristics of the Angus site are presented in Table 5.4.

Socio-Economic Characteristics	
Economy (all of Angus site)	<ul style="list-style-type: none"> <li>The Economy of the three areas within the Angus Pilot is underpinned by agriculture and tourism. Foot and mouth did not directly affect the area but there was no access to the Glens during the spring and summer of 2001. The youth hostel at Glen Doll/Glen Clova has been sold to become a private residence.</li> <li>Average wages are 10% lower than the Scottish average.</li> <li>The 3 hub towns are dormitory towns for people who work in Dundee, Forfar, Aberdeen, Perth, Montrose and Arbroath.</li> <li>Main employers: Angus Council, NHS Tayside, Glaxo Pharmaceuticals (Montrose), Don and Low (Textiles) Forfar, Oil Industry Support Industries (Montrose, Aberdeen).</li> <li>Threatened closure of village post offices and shops will increase travel demands for essentials.</li> <li>Brechin/Glen Esk area has suffered from a number of substantial job reductions over the past 10 years.</li> <li>The closure of the United States Command Centre for the Atlantic Fleet and the closure of Esk Foods have resulted in higher than average unemployment in the area.</li> <li>Kirriemuir/Glen Clova has a high elderly population and substantial poverty related problems. The area has become a commuter belt for Forfar and Dundee.</li> </ul>
Population	<ul style="list-style-type: none"> <li>Rural areas within the pilot area are showing a decline in families.</li> <li>School closures are threatened as a result.</li> </ul>

Tourism	<ul style="list-style-type: none"> <li>• Within the pilot areas hill walking is a major tourist attraction.</li> <li>• Fishing.</li> <li>• Cycling.</li> <li>• Canoeing.</li> <li>• Climbing.</li> <li>• Number of cottage industries selling knitwear, pottery, arts and photography, organic foods.</li> <li>• Number of small pubs/hotels and good quality 3 and 4 star self-catering standard.</li> </ul>
Local IT	<ul style="list-style-type: none"> <li>• All village halls have internet access and IT</li> </ul>
Health	<ul style="list-style-type: none"> <li>• NHS Tayside is introducing new methods of service delivery, based on Dundee, Stracathro and Arbroath.</li> <li>• Transport provision is recognised as an issue to be addressed.</li> </ul>
Education	<ul style="list-style-type: none"> <li>• Secondary Education is provided in Brechin, Kirriemuir</li> <li>• Number of small rural primary schools throughout the pilot area</li> <li>• Angus has one college in Arbroath with distance learning provided at Kirriemuir. Universities and colleges also in Dundee</li> </ul>

*Table 5.4 : Socio-economic data for the Angus site*

The data presented in Tables 5.3 and 5.4 illustrate that the Angus site is a location of dispersed population and diverse activity. As previously noted, people who do not have the use of a car face very serious challenges, and this greatly reduces the quality of life and their ability to participate in society. There are very specific community and people-oriented objectives of the new mobility services, and these have been presented in Table 4.2 above.

### 5.3 Description of Reference Services at Angus Site

#### 5.3.1 Current Situation

There are no existing reference DRT services – these will be provided as part of the FAMS project, as outlined in the table below.

DRT Area	Companies	TDC Operation	Planned TDC/Fleet Interactions	Development Opportunities	Critical Aspects
Glen Esk/Brechin	To be finalised	Booking Management (MobiRouter sw system) by phone. Service planning (MobiRouter sw) Service Driver communication (GPRS)?	Operators of bus/taxi/private hire community/other services notify available resources by fax, email. TDC communicates the planned service via fax/email and hopefully to GPRS phone.	Incentive schemes with retail and service outlets. Joint ticketing between operators and coordinated services. Providing link services to the established transport network.	Community Involvement Public Transport Providers cooperation. Training - all levels of staff.
Glen Clova/Kirriemuir	To be finalised	As above	As above	As above	As Above
Glen Isla/ Alyth	To be finalised	As above	As above	As above	As Above

*Table 5.6 : Reference DRT services at the Angus site*

### 5.3.2 Development Opportunities

#### Characteristics of Planned Services

Area Name	Glen Esk / Brechin	Glen Clova / Kirriemuir	Glen Isla / Alyth
<b>Service characteristics</b>			
Type of Service Area	Low Demand Rural	Low Demand Rural	Low Demand Rural
Type of Service User	No restriction	No restriction	No restriction
Type of Service	Partial feeder services to Hub (Brechin) trunk routes and local errand traffic	Partial feeder services to Hub (Kirriemuir) trunk routes and local errand traffic	Partial feeder services to Hub (Alyth) trunk routes and local errand traffic
No. of Services	To be decided	To be decided	To be decided
Journey Pattern	To be decided	To be decided	To be decided
Number of Operators	To be decided	To be decided	To be decided
<b>Number of vehicles used</b>			
Public transport operators	To be decided	To be decided	To be decided
Taxi/Private Hire	To be decided	To be decided	To be decided
Statutory Bodies	To be decided	To be decided	To be decided
Post Buses	To be decided	To be decided	To be decided
Voluntary/community groups	To be decided	To be decided	To be decided
No. of Travel Dispatch Centres	1 for all 3 sites based at Stracathro Hospital, Brechin		
Distance to/between stop points	To be decided	To be decided	To be decided
Service operating hours	To be decided	To be decided	To be decided
Frequency of service	Not applicable. Will concentrate on maximising the capacity of existing services, e.g. dead mileage for school services, etc.		
Minimum pre-travel booking time by user	2 hours initially working up to 1 hour in advance		
Notification of collection time by TDC	15 to 30 minutes in advance		



Expected stop point wait time	Maximum 10 minutes
Method of payment	Cash, Voucher by Social Service, Concessionary Travel Schemes, Joint Ticketing agreement
Is the operator legally bound to carry user?	No. Legislation states that a driver or operator can refuse to carry a passenger as long as they can demonstrate the reason why.
Trip planning: is pick up time or drop off time more important? Why?	Drop off time is the more important especially for services linking with main trunk routes. Within short period of time it is hoped to establish semi-fixed routes and timetables based on user trends. This will assist both pick up and drop off times and perception of reliability.
<b>Operational Features</b>	
Hardware	Single user PC, ISDN modems
Software	Map User Interface Booking Routing Scheduling
User-TDC dialogue	Land line or mobile phone
Driver-TDC dialogue	GSM or GPRS mobile phones Moirouter system
	Communications to vehicles GSM – data GSM – SMS GSM voice GPRS
	NMT voice Connections to pti.org.uk Connection to Patient Transport and Taxi operator systems

Table 5.7 : Market and operational characteristics of the DRT services at the Angus site

### Method of Booking DRT Service

All bookings will be taken through the Travel Dispatch Centre. Where semi-fixed routes operate, the driver will be able to calculate seating capacity requirements to take passengers who have not pre booked.

## **6 REFERENCE CONTEXT AND PLANNED MOBILITY SERVICES IN FLORENCE**

### **6.1 Objectives and Structure of Reference Services definition**

This section is designed to set out clearly :

- the current context and framework at the Florence site within which the FAMS mobility services will be offered
- metrics concerning the current relevant mobility services
- the service and operational characteristics of the current mobility services
- information concerning the current means of managing the mobility services
- the development opportunities for mobility services in the Florence site
- critical aspects to be analysed and defined

### **6.2 Detailed context of the Florence site**

#### **6.2.1 Description of regulatory framework and authorities**

At local level the main Authorities involved in the design, assignment and control phases of the public transport services are, in the area where SITA and ATAF operate:

- Florence Town Council, that fixes the rules of the services within the city;
- the Province of Florence, that signs the service contract through which rights and duties of the operators are defined and the economical amounts for the development of the service are set;
- the Tuscany Region that has the availability of the economical resources and defines the guidelines for one harmonised and comprehensive transport policy upon homogenous areas both from a geographic and mobility point of view.

Inside the service contract the engagements and obligations relate to :

- the transport and the activities connected to its supply,
- the fare system,
- the investments (buses, service infrastructures, technology, ...),
- the monitoring of the performances,
- the qualitative standards of the service,
- the level of satisfaction of the customers.

Related to these aspects instruments of promotion and measurement of penalty are activated.

The European Directive has pushed the Regions to legislate with the aim to introduce from one side competitive elements in the market (at the present time still joined to substantially monopolistic concessions) and from the other to push for the development of the managerial efficiency and for the improvement of the quality of the services and the communication to the customers.

Due to this growing autonomy of the Local Authorities, the Region carries out tasks of address and general coordination, the Province, the Local Communities and Town Councils (Agencies) program and organize the services of public transport giving the management to third parties (the operators).

The Local Authorities, as well as supplying the amount due to the operators, aim to promote the contract application, to verify the performances of the operators and to monitor the results achieved.

In Italy the atypical or flexible services have different regulation according to the individual regional context: Tuscany, due to its productive environment based on services sectors and small industries more than medium-large industries, has never regulated this matter.

For this reason the development of flexible services is consequently tied to existing public service and it has to justify its existence by:

- a) planning different lines from the conventional local public transit service
- b) a clear identification of the customers to be served: therefore in presence of an existing line served by the conventional TPL service, the flexible one has to be focused on specific target users.

The situation is slightly different for the airport services: the Directive 96/67/CE concerning the access to the market of the ground services inside the EU airports foresees a free entrance into some market niches:

- a) Passengers assistance includes every kind of services offered to the passengers in departure, in arrival, in transit or in coincidence, in particular the baggage carrying until the shunting systems (handling)
- b) Operational assistance includes crew, passengers and baggage transport between the plane and the airport

It is clear that, between the transport political objectives defined by the Authorities and the achievement of balanced performances of services, a wide space can be fulfilled by flexible services, particularly if optimised in order to reach the higher standards of quality.

## **6.2.2 Description of transport operators**

ATAF is the Mobility Authority managing the transport in the Florence Metropolitan Area. This area covers the urban network and several small towns for a total of 500 km<sup>2</sup>. ATAF has some 1352 employees (of which 961 are drivers), 66 routes operated over 630 km, 505 busses, four depots (one for CNG vehicles and three for conventional and electric minibuses), a yearly mileage of 20 million km, 400.000 daily trips, 120 million yearly.

Different types of service are provided by ATAF from the conventional mass transport to on user demand service (DRT Services, Collective taxi, Special user groups, etc.). ATAF is, moreover, responsible for the realisation of a new Tramway system for the Florence metropolitan area. ATAF has the following ITS applications and technological systems:

- AVL & PT User Information systems, including: 400 GPS and on-board computer equipped vehicles;
- Integrated Payment System (IPS) based on a contact smart card.
- Travel Dispatcher Centre (TDC) to provide and manage on-demand transport services (DRTS)

- A large CNG fleet (over 50 vehicles) and Electric minibuses fleet (over 25 vehicles).
- Shared Telematics Network for Energy and Environment Impacts Monitoring.

**SITA** (Società Italiana Trasporti Automobilistici) is a Private Transport Operator Company (Capital Stock = Lit. 7.000.000.000) founded in 1912 by FIAT.

Today SITA is present in Basilicata, Campania, Lazio, Puglia, Toscana and Veneto, operating in various segments of the market, thanks to a fleet of 1600 buses and 2500 employees. During year 2000 the number of Km driven has reached 83.500.000. In the course of 1999 and 2000, SITA acquired several services operating in Rome, Modena, Milano Malpensa airport and 49% of F.N.M.A. shares. Not by chance SITA is leader in Italy, assuming the role in this sector as the leading privately run company.

SITA has been working for years to ensure the mobility of its clients, offering the following services to better satisfy their needs of transport:

- Local Public Transport - Local Public Transportation represents the core business of the company, across a tight - knit network present in numerous Italian regions.
- National and International Routes, Grand Tourism - Long distance routes are in another significant activity of the company.
- Substitute Services Of Railroad Transport - SITA manages the substitute services of road rail transport, with the aim of integrating the service of road rail.
- Merchandise Transport - SITA also provides freight service to industry, specifically in southern part of Italy.
- Rental Services - In this sector SITA has agreements with travel agencies or deals directly with the clients.
- Travel agencies - SITA has 3 travel agencies working in the national market as well as in the international.

**LI-NEA S.p.A.** is a private transit company, owned by ATAF, operating the urban/suburban lines with low demand. It also manages special services, as school services or rental services. During year 2001 the number of Km driven was more than 2.400.000. LI-NEA operates on 65 routes with a fleet of 57 buses and 111 employees.

**CAP S.p.A.** is the private transport company of PRATO and operates the urban transport of Prato and the suburban lines in the metropolitan area of Florence. This area a total of 1.778 km<sup>2</sup>. During year 2001 the number of Km driven was more than 8.000.000 thanks to a fleet of 179 buses and 373 employees.

### 6.2.3 Description of current transport services

Table 6.1 : DRTS DISABLED SERVICE	
Service area:	<p>ATAF network                      Disabled people in Florence = about 3000                      ATAF disabled users = about 100                      ATAF transported passengers in 1999=about 25.000                      Data related to other associations for disabled people operating in the area of Florence:                      HUMANITAS (Scandicci):                      Transported passengers in 1999= about 15.600                      Misericordia Maria SS Addolorata (Firenze):                      Transported passengers in 1999= about 3200</p>
Type of services	<p>ATAF: door to door service with off-line request                      HUMANITAS (Scandicci): door to door service                      Misericordia Maria SS Addolorata (Firenze): door to door, many to many, on line services</p>
Number and type of vehicles	<p>ATAF = 5 minibuses equipped with special seats for disabled users and weel chair locking device. The types of the buses are the following:                      ✓ Pollicino (8 seats and 2 weel chairs seats)                      ✓ 242 TH (6 seats and 3 weel chairs seats).                      HUMANITAS (Scandicci): 3 buses, 3 ambulances                      Misericordia Maria SS Addolorata (Firenze): 3 minibuses, 1 vehicle with 9 seats, 1 vehicle with 6 seats.</p>
Control centre Functions, activities	<p>TDC in ATAF central control room                      - communication with the users by phone,                      - communication with the drivers (by GSM),                      - maintenance of the network data,                      - monthly planning of the service                      - off-line dynamic updating of the service.</p>

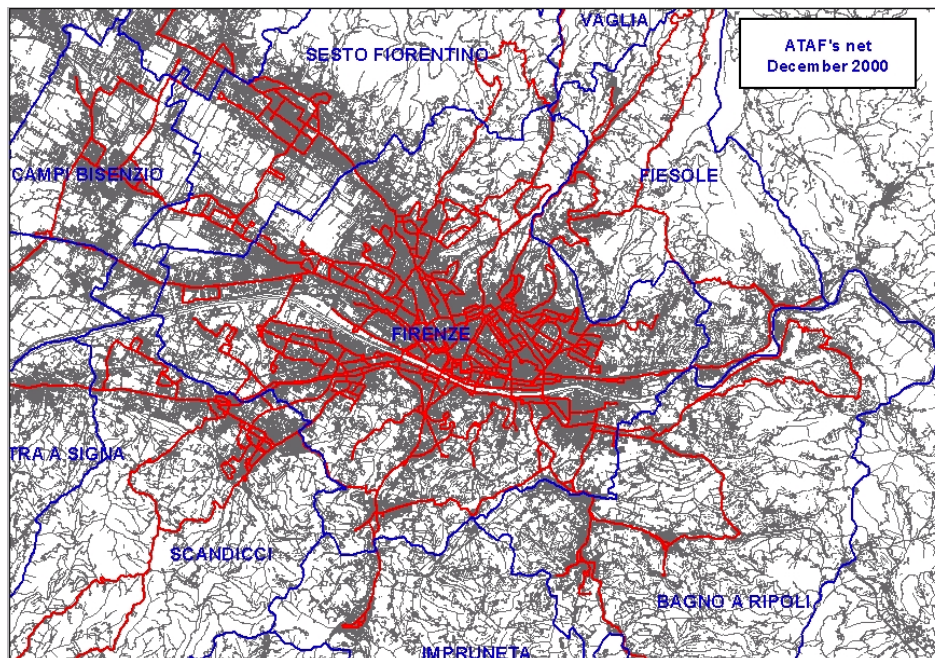


Table 6.2 : DRTS IN CAMPI	
Service area	Campi Bisenzio town / suburbs
Surface	28,62 km <sup>2</sup>
Inhabitants Campi	35.757 (63% of passengers live in Campi)
Inhabitants Florence	380.070 (31% of passengers live in Florence)
Density	1262 inh./ km <sup>2</sup>
Operator	ATAF S.p.A.
Type of services	On request (off-line and on-line requests) from 6.30 to 20.00.
Transported passengers in 2001	117.000
Number and type of vehicles	5 minibuses (7-8 mt type Cacciamali, Bredamenarini, Pollicino minibuses)
Control centre	TDC (Travel Dispatcher Centre) operated by ATAF
Functions, activities	<ul style="list-style-type: none"> <li>✓ communication with the users by phone,</li> <li>✓ communication with the drivers (by GSM),</li> <li>✓ maintenance of the network data,</li> <li>✓ weekly planning of the service,</li> <li>✓ on-line/off-line dynamic updating of the service</li> <li>✓ internet booking (under development).</li> </ul>
Main PT Operators in the area	ATAF - CAP - LI-NEA - COPIT - LAZZI (in pool with CAP) - FlorentiaBus

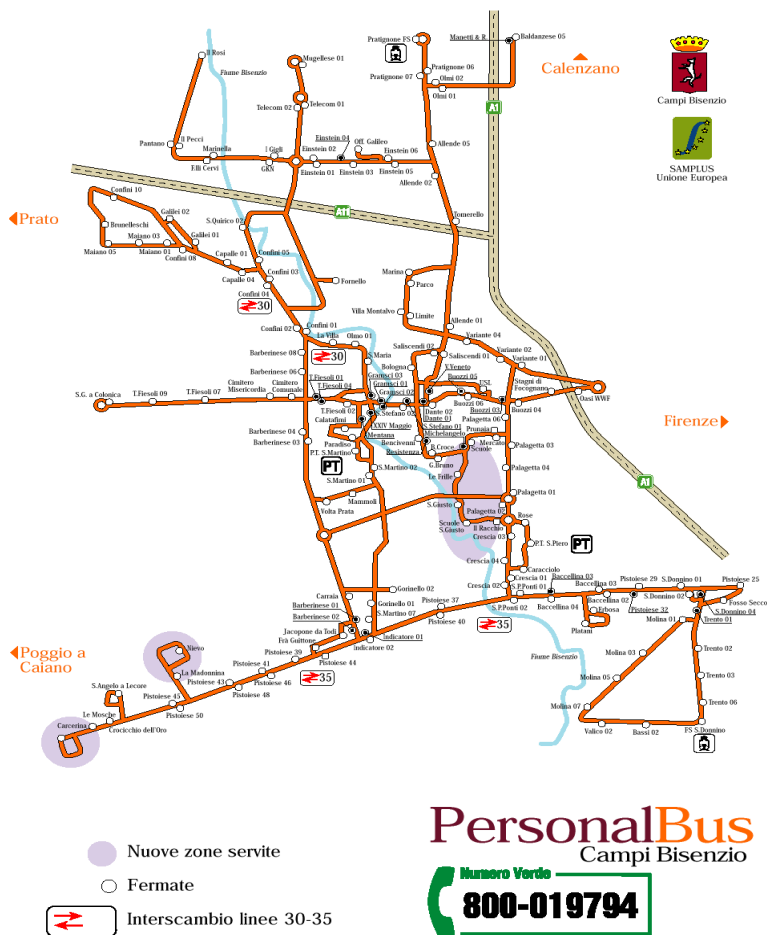


Table 6.3 : DRTS IN SCANDICCI	
Service area Inhabitants Density Area of the service	Scandicci town / suburbs About 51.500 863 inh./ km <sup>2</sup> 59.59 km <sup>2</sup>
Type of services	On request in the non peak hours (off-line and on-line requests) from 8.30 to 12.00 and from 14.30 to 21.00; regular line in the peak hours.
Operator	LI-NEA S.p.A.
Number and type of vehicles	Non-peak hours: 2 minibuses in the first phase and 5 minibuses in the second phase (type of the vehicles Cacciamali). Peak hours: 2 buses in the first phase (length of the vehicles 10 mt) and 5 minibuses in the second phase.
Control centre Functions, activities	TDC (Travel Dispatcher Centre) operated by ATAF <ul style="list-style-type: none"> <li>✓ communication with the users by phone,</li> <li>✓ communication with the drivers (by GSM),</li> <li>✓ maintenance of the network data,</li> <li>✓ weekly planning of the service</li> <li>✓ on-line/off-line dynamic updating of the service</li> <li>✓ internet booking (under development).</li> </ul>
Main PT Operators in the area	ATAF - LI-NEA – CAP

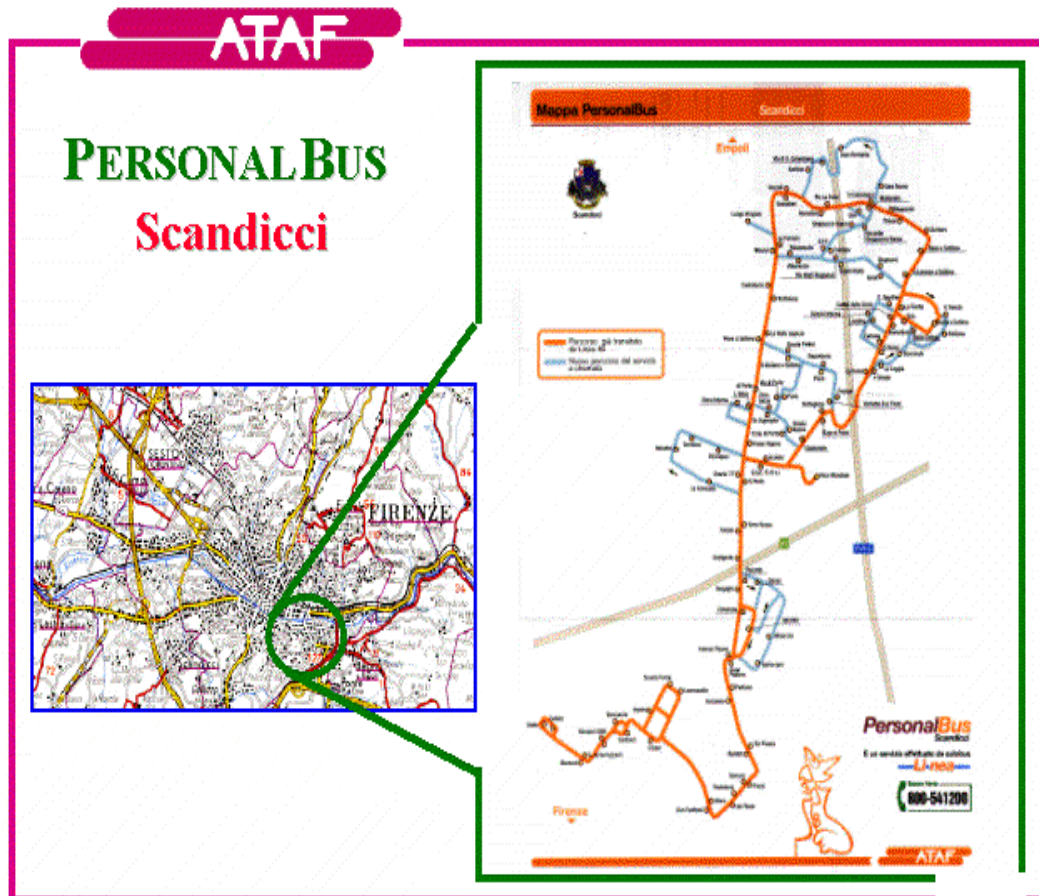


Table 6.4 : DRTS IN CALENZANO	
Service area Inhabitants Density Area of the service	Calenzano town / suburbs About 15.000 195 inh / km <sup>2</sup> 76.87 km <sup>2</sup>
Type of services	On request in the non peak hours (off-line requests) from 9.00 to 10.30, from 11.30 to 13.00, from 14.00 to 15.30 and from 17.30 to 19.00; regular line in the peak hours
Operator	CAP Autolinee Pratesi
Number and type of vehicles	Non peak hours: 1 bus for every service stream (12 mt suburban vehicles). Peak hours: 1 bus (12 mt suburban).
Control centre Functions, activities	TDC (Travel Dispatcher Centre) operated by ATAF <ul style="list-style-type: none"> <li>✓ communication with the users by phone,</li> <li>✓ communication with the drivers (by GSM),</li> <li>✓ maintenance of the network data,</li> <li>✓ weekly planning of the service</li> <li>✓ on-line/off-line dynamic updating of the service</li> <li>✓ internet booking (under development).</li> </ul>
Main PT Operators in the area	ATAF - LI-NEA – CAP - SITA

**ATAF**

**cap** autolinee

**Voi siete qui**

**servizio a chiamata**

**dal Lunedì al Sabato**  
dalle 9:00 alle 10:30  
dalle 11:30 alle 13:00  
dalle 14:00 alle 15:30  
dalle 17:30 alle 19:00

**Telefonando entro le ore 17:00 del giorno precedente**

**Numero Verde**  
**800 - 541200**

Servizio svolto con bus CAP



Table 6.5 : DRTS IN SESTO FIORENTINO	
Service area	Sesto Fiorentino town / suburbs
Inhabitants	About 47.000
Density	958 inh / km <sup>2</sup>
Area of the service	49.04 km <sup>2</sup>
Type of services	Regular line (n. 64) with on demand route deviations (off line requests) from 7.00 to 19.30.
Operator	LI-NEA S.p.A.
Number and type of vehicles	1 urban bus (10 mt)
Control centre	TDC (Travel Dispatcher Centre) operated by ATAF
Functions, activities	<ul style="list-style-type: none"> <li>✓ communication with the users by phone,</li> <li>✓ communication with the drivers (by GSM),</li> <li>✓ maintenance of the network data,</li> <li>✓ weekly planning of the service</li> <li>✓ on-line/off-line dynamic updating of the service</li> <li>✓ internet booking (under development).</li> </ul>
Main PT Operators in the area	ATAF - LI-NEA – CAP - SITA

**Personalbus**  
Sesto Fiorentino

Voi siete qui

Numero Verde  
**800 - 541200**

**Linea 64**  
dal **Lunedì** al **Sabato**  
dalle ore **7:00** alle ore **19:30**

Telefonando entro le ore 17:00 del giorno precedente al

Numero Verde  
**800 - 541200**

**Corse fisse da Sesto FS (P. za Galvani)**

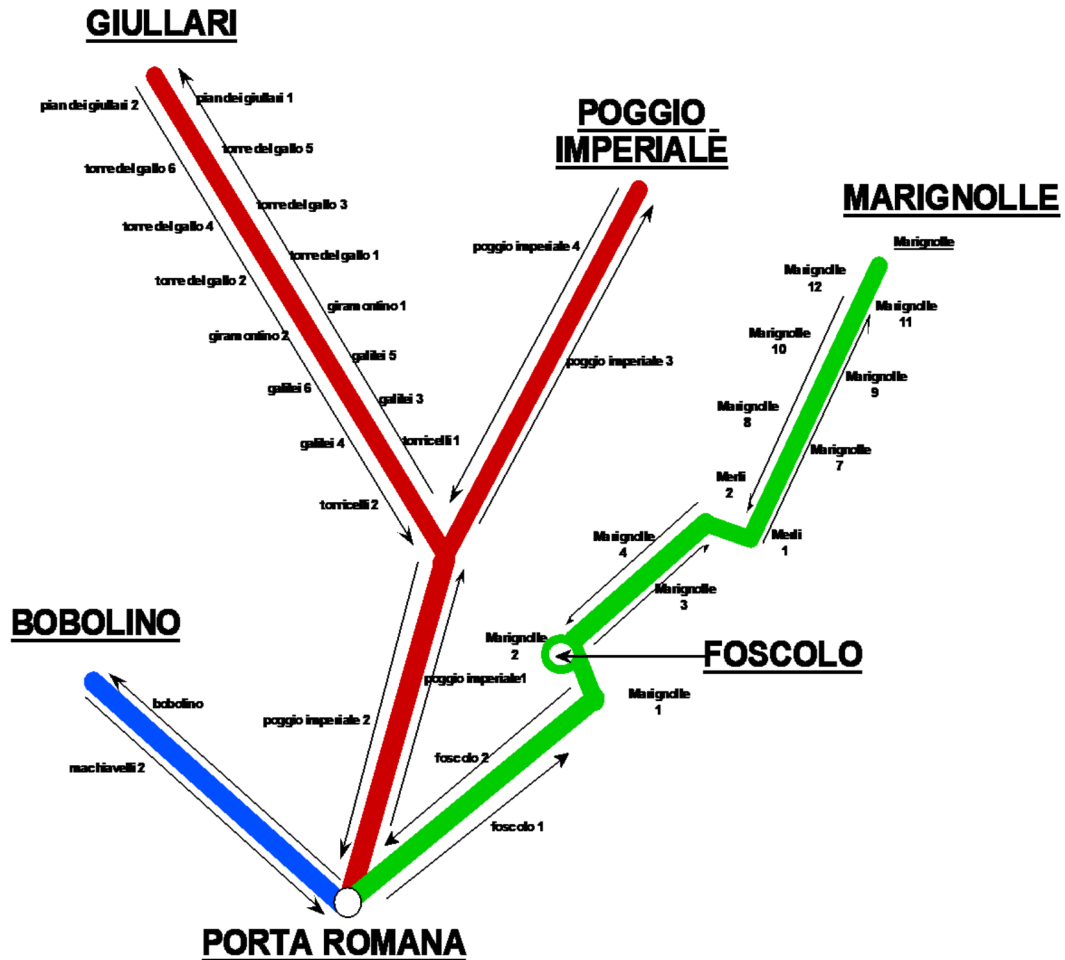
Servizio Feriale	
07:13	08:53 09:23 10:23
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Servizio del Sabato	
07:13	08:53 09:23 09:53
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15:53	16:23 16:53 17:23
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**ATTENZIONE**

Le corse fisse si effettuano per le fermate lungo il percorso **ROSSO**  
Le fermate lungo il percorso **VERDE** sono raggiunte **SOLO SU PRENOTAZIONE**

Table 6.6 : DRTS IN PORTA ROMANA	
Service area Inhabitants Surface	Porta Romana urban / rural district About 5000 22,5 km <sup>2</sup>
Type of services	On request (off-line and on-line requests) from 6.30 to 21.00.
Transported passengers in 1999	104.400
Number and type of vehicles	2 minibuses (6 mt type Pollicino, 7-8 mt type Cacciamali and Alè)
Control centre: Functions, activities	TDC (Travel Dispatcher Centre) - communication with the users by phone, - communication with the drivers (by GSM), - maintenance of the network data, - weekly planning of the service - on-line/off-line dynamic updating of the service - internet booking (under development).
Main PT Operators in the area	ATAF - CAP – LI-NEA – SITA



### **6.3 Description of Reference Services at Florence Site**

This section presents for the Florence site (ATAF and Sita) the transport services of interest that could be handled by the FAMS agency implementing a centre of booking, co-ordination and management of mobility flexible services.

The potential services, described in the following sections, are currently :

- (the relevant parts) in operation in the metropolitan area of Florence;
- (some) potentially will be operated in the next period on the same area.

For each identified service, the following aspects are outlined and discussed:

- current situation
- development opportunities
- critical aspects.

#### **6.3.1 DRT Services**

The DRT services are designed to provide an alternative service to the users of an area of low public transport. Their main characteristics are:

- Booking service for long-medium term requests (off-line service) and call service for short term requests (on-line service)
- Routes carried out among the stops of the service area
- The users request are managed by ATAF by means of a TDC
- Planning/management of the service by means of a dedicated software or, in the simplest cases, manually by the TDC operators.

##### *6.3.1.1 DRT service for the area of the “Piana”*

###### 6.3.1.1.1 Current situation

In the north-west area of Florence, the area called the “Piana” (for the morphological aspect of its land) several DRT service are operating at the moment. In particular, the following services are active and the related transport operator is pointed out in parenthesis:

- PersonalBus in Campi Bisenzio (ATAF)
- PersonalBus in Sesto Fiorentino (Li-nea)
- PersonalBus in Calenzano (CAP)

All these services are planned by ATAF, and the first of them (Campi Bisenzio) is managed through PersonalBus application software developed by Softeco Sismat.

The management of the main phases of the DRT service production – booking, planning, communication of the planned service to the responsible operator – are carried out with different modalities.

The following table shows the current situation.

DRT service	Operator	TDC functionality	Interaction between Service Operator and TDC
Campi Bisenzio	ATAF	On-line/off-line booking management (by PersonalBus SW) Service planning (by PersonalBus SW) Communication to the drivers of changes to the planned service (via GSM, IVT terminal)	
Sesto Fiorentino	Linea	Off-line booking management (hands-on activity) Service planning (hands-on activity).	The service operator transmits the vehicles availability via fax or phone call. The TDC transmits the planned service to the operator by fax.
Calenzano	CAP	Off-line booking management (hands-on activity). Service planning (hands-on activity).	The service operator transmits the vehicles availability via fax or phone call. The TDC transmits the planned service to the operator by fax.

*Table 6.7 :Summary of current TDC organisation at Florence site*

#### 6.3.1.1.2 Development opportunities

The current DRT services can be considered a starting point for the development of the FAMS infrastructure/architecture.

The Mayors of the Municipalities belonging to the mentioned area made a clear request for the co-ordination of the current services until their possible integration in order to guarantee the shift with origin/destination placed in different Municipalities.

The following development opportunities come out from the analysis of the current situation:

- a) Realisation of several functionalities based on a web site in order to allow the information exchange among the different service operators (Li-nea and CAP) and the FAMS Centre managed by ATAF. In this case, each service operator can transmit variations in the vehicles availability (the number of vehicles, their capacity) during the daily service and the availability in different periods of the year (summer, winter, holiday, etc.).
- b) Realisation of functionalities to improve the interaction with the DRTS users regarding the information circulation and the access to the off-line booking service.
- c) Realisation of functionalities to improve the TDC operator working.
- d) Realisation of functionalities to allow the information exchange related to temporary or final variations of the roads condition or traffic regulations between the Municipalities and FAMS centre.
- e) Rationalisation of the phone service access.

### 6.3.1.1.3 Critical aspects

It is necessary to analyse and define in details (mainly on the ATAF requirement) the operating model and the interaction flow among the different operators (Li-nea, CAP, SITA, etc.) and FAMS centre regarding the determined functionalities in order to identify:

- Common aspects that can be generalised in the interaction model and in the functionalities, addressed to the service operators, to develop in web structure of the FAMS centre.
- Specific aspects and characteristics of each operator in order to customise the functionalities and the user interface
- Feasibility of the Mayor’s request for a real integration of the services. An aspect to consider from a technological point of view, in this case, can be related to the actual behaviour of the DRT planning module, which was developed to manage homogeneous vehicle fleets of a unique service operator. To integrate the different operated services means to link two or more detached service networks and share only some small parts of them among the vehicles. Doing so, it is necessary to introduce a new constraint on the vehicles in order to restrict their movement inside a precise area of competence within the whole service network.
- While the vehicles availability can be easily transmitted from the specific service operators to the TDC to initialise the fleet for the service, the management of variations can be more complex.

### 6.3.1.2 *Urban DRT services*

#### 6.3.1.2.1 Current situation

At the date the only DRT service in the urban area of Florence is Porta Romana, an residential quarter in the southern part of Florence, characterise by a PT interchange point (Porta Romana) and several urban/rural areas with low demand of public transport.

The service is planned with several fixed trip during the peak time and with trip on request (on predefined routes) during the non-peak time.

It is a managed by ATAF but operated by Li-nea S.p.A.

The management of the main phases of the DRT service production – booking, planning, communication of the planned service to the responsible operator – are carried out as indicated in the following table:

<b>DRT Service</b>	<b>Service operator</b>	<b>TDC functionality</b>	<b>Interaction between Service Operator and TDC</b>
Porta Romana	Li-nea	On-line/off-line booking management (by PersonalBus SW) Service planning (by PersonalBus SW) Communication to the drivers of changes to the planned service (via GSM)	The service operator transmits the vehicles availability via fax or phone call.

*Table 6.8 : Current TDC Functionality of the Porta Romana DRT services*

6.3.1.2.2 Development opportunities

The following development opportunities come out from the analysis of the current situation:

- a) Realisation of several functionalities based on a web site in order to allow the information exchange among the different service operator (Li-nea) and the FAMS Centre managed by ATAF. In this case, each service operator can transmit variations in the vehicles availability (the number of vehicles, their capacity) during the daily service and the availability in different periods of the year (summer, winter, holiday, etc.).
- b) Realisation of functionalities to improve the interaction with the DRTS users relating to the information circulation and the access to the off-line booking service.
- c) Realisation of functionalities to improve the TDC operator working.
- d) Realisation of functionalities to allow the information exchange related to temporary or final variations of the roads condition or traffic regulations between the Municipalities and FAMS centre.
- e) Rationalisation of the phone service access.

6.3.1.2.3 Critical aspects

It's necessary to analyse and define with ATAF the operating model and the interaction flow among the different operators (Li-nea, CAP, SITA, etc.) and FAMS centre relating to the determined functionalities in order to identify:

- Common aspects that can be generalised in the interaction model and in the functionalities, addressed to the service operators, to develop in web structure of the FAMS centre.
- Specific aspects and characteristics of each operator in order to customise the functionalities and the user interface
- While the vehicles availability can be easily transmitted from the specific service operators to the TDC to initialise the fleet for the service, the management of variations can be more complex.

6.3.1.3 *Other Operated DRT services*

6.3.1.3.1 Current situation

In the area of Scandicci, at the south-west part of Florence, another DRT service is currently operated by Li-nea but managed by ATAF for what concern the on-line/off-line booking and the planning of the service.

The management of the main phases of the DRT service production – booking, planning, communication of the planned service to the responsible operator – are carried out as indicated in the following table:

DRT Service	Service operator	TDC functionality	Interaction between Service Operator and TDC
Scandicci	Li-nea	On-line/off-line booking management (by PersonalBus SW) Service planning (by PersonalBus SW) Communication to the drivers of changes to the planned service (via GSM)	The service operator transmits the vehicles availability via fax or phone call. The TDC transmits the planned service to the operator by fax.

*Table 6.8 : Current TDC Functionality of the Scandicci DRT services*

#### 6.3.1.3.2 Development opportunities

The following development opportunities come out from the analysis of the current situation:

- a) Realisation of several functionalities based on a web site in order to allow the information exchange among the different service operator (Li-nea) and the FAMS Centre managed by ATAF. In this case, each service operator can transmit variations in the vehicles availability (the number of vehicles, their capacity) during the daily service and the availability in different periods of the year (summer, winter, holiday, etc.).
- b) Realisation of functionalities to improve the interaction with the DRTS users relating to the information circulation and the access to the off-line booking service.
- c) Realisation of functionalities to improve the TDC operator working.
- d) Realisation of functionalities to allow the information exchange related to temporary or final variations of the roads condition or traffic regulations between the Municipalities and FAMS centre.
- e) Rationalisation of the phone service access.

#### 6.3.1.3.3 Critical aspects

It's necessary to analyse and define with ATAF the operating model and the interaction flow among the different operators (Li-nea, CAP, SITA, etc.) and FAMS centre relating to the determined functionalities in order to identify:

- Common aspects that can be generalised in the interaction model and in the functionalities, addressed to the service operators, to develop in web structure of the FAMS centre.
- Specific aspects and characteristics of each operator in order to customise the functionalities and the user interface
- While the vehicles availability can be easily transmitted from the specific service operators to the TDC to initialise the fleet for the service, the management of variations can be more complex.

### **6.3.2 Disabled & elderly service**

#### *6.3.2.1 Current situation*

The disabled & elderly service in the urban area of Florence, is at the moment operated by ATAF and by Public Assistance and Onlus (Misericordia, Croce Rossa, etc.).

The service requests are managed and transmitted to the service operators by the Local Health Authority (ASL).

From the operating point of view, the disabled service is managed in different way by each operator related to legal and normative aspects. ATAF in fact needs the presence of a accompanying person on the vehicle while some disable is on.

Moreover, because of the lack of a co-ordination centre among the different operators, some similar trips are carried out to satisfy the request of a little number of users.

In the following, some operating data related to ATAF service are shown:

- N° of drivers: 11
- N° of vehicles: 5 during the service
- Vehicles type: 242 TH Pollicino
- Capacity of the vehicles: 6 users seats + 2 wheel chairs
- Time of the service: from Monday to Saturday (6.30-18.30)
- Average N° of daily users: 75
- Service planning: 2 times/year (from May to September and from October to April) (hands-on)
- Door to door service in the metropolitan area of Florence
- Off-line booking service by phone call or by fax

At the moment, some interviews and some questionnaires are on going in order to know the characteristics of each operator and the usual requests of the disable people and their type of disability (if they need accompanying person or not).

#### 6.3.2.2 *Development opportunities*

The FAMS centre gives the opportunity of rationalisation and development of the disabled & elderly service in the metropolitan area of Florence, assuring an overall better capability of satisfying the demands and guaranteeing a better service.

The requirements guide lines of a possible development inside the FAMS structure can be summarise as follows:

- The disabled service operators can access to the Centre through proper services
- The Centre manages the service using the resources available from ATAF and the other operators, according to operational and contractual rules that will be further investigated and defined
- The different service request managed by FAMS Centre will derive from the different operational needs of:
  - o ASL
  - o Disabled Associations
 by means of the specific planning module that will be developed with the FAMS activity.

The planning module will be made of two principal components, one developed in the new Web infrastructure and one in the new PersonalBus release.

As part of the general FAMS portal, the web component related to this service will include all web services required for managing booking operations and for providing service users with the necessary information and feedbacks. These include, particularly:

- specific booking services dedicated to the different user categories (single D&E users, user groups, associations, etc.)
- web services for accessing user information (previous bookings, scheduled trips, etc.)
- user feedback services related to confirmation of bookings and requested services through various channels (e-mails, SMS, phone)

The PersonalBus component will need to extend existing booking and planning functionalities of the current DRT management software, taking into account the specific characteristics and constraints of DRT services for D&E. Particularly, it will take into account the following specific hypotheses :



- Disabled users are an almost fixed set of persons. Each year, some new users may subscribe but they are only a small percentage with respect to the overall stable group.
- Their homes define the main origins and they generally need to go in a well defined set of destinations (hospital, school, work place, rehabilitation centre, and so on). This means that the DRT service is of door-to-door type.
- Their trip requests are often the same, repeated in time and therefore suitable for off-line processing.
- Disabled users have some particular necessities like accompanying person, wheel chair, more time for boarding and alighting operations but generally are more flexible in accepting delays or variations in their scheduled trips.
- The service network is wider and more complex with respect to the standard DRT service (a higher number of roads, a great variety of road and traffic conditions) principally because it's extended to the centre of the town (of Florence) and, as previously noted, the DRT service is of door-to-door type.

### 6.3.2.3 *Critical aspects*

From the service point of view, it is necessary :

- To point out an external subject (Public Assistance) available for the experimentation
- To identify exactly the area under ATAF management and of the operator that will take part to the experimentation
- To define how to manage the “overlapping” between the two different subjects, that means the rules to assign the service to one or the other operator when they both have the possibility to carry it out
- To investigate and define an operational model to manage the economic aspects (incomes/outcomes) deriving from assigning certain trips to one operator or to the other.

From a technological point of view, a number of extensions/enhancements to the current DRT booking/planning software are required. Specifically, it is necessary to underline:

- The new PersonalBus release needs to simplify the service network model because of the high complexity level of the real network. Implementing the whole road network, the amount of managed data would excessively grow with a consequent increased response time. Furthermore, it would be very difficult for the operators to trim and keep updated the model of the whole service network.
- The door-to-door service required implies a toponomy support for the TDC operator in order to precisely identify the boarding and alighting operations on the service network model. Also home addresses/building numbers information should be available.
- Therefore, a completely new approach has to be followed in network creation and users booking. The best network model is the one that best covers all the origin and destination points but in the meanwhile has the minimum number of links (that is, has the simplest possible structure).
- The richer variety of service vehicles and user needs requires a new concept of relationship between user request and vehicle type. New attribute and graphic interfaces have to be added in order to keep track and manage these new information. A new set of rules and constraint functions have to be implemented in order to find the suitable vehicle for the specific user request.

As seen before, the registration of a new service user or a new user request may cause a service network model modification. This implies that beside the Web interface collecting data and storing them in proper database tables, a new back-office module/procedure is needed to process data to achieve the required service network modifications.

### 6.3.3 Airport service

#### 6.3.3.1 Current situation

At the present moment Amerigo Vespucci airport and the city center (Santa Maria Novella railway Station) are connected with the so called “Volainbus” service established by Provincia di Firenze and managed by SITA and ATAF.

This connection is assured by a shuttle on a fixed line between the airport (side arrives) and the center of Florence (SITA bus station near the railway station) with a frequency of half an hour nearly all the day. By now it takes approximately 25 minutes to reach the airport since the shuttle is not allowed to make intermediate stops during all the trip.

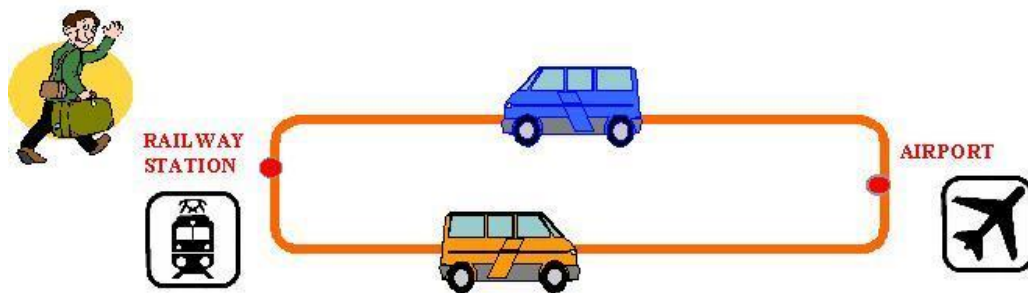


Figure 6.1 : Current Airport service

#### 6.3.3.2 Development opportunities

The development of the Agency as well as SITA participation to FAMS project, offer the chance of a first evolution of this service. In fact a specific booking module will be developed in order to allow the users to make a trip reservation.

The operational management of the service will remain the same (fixed line, only stops at terminals,..), but thanks to the booking module it will be possible to better match the users requirements.

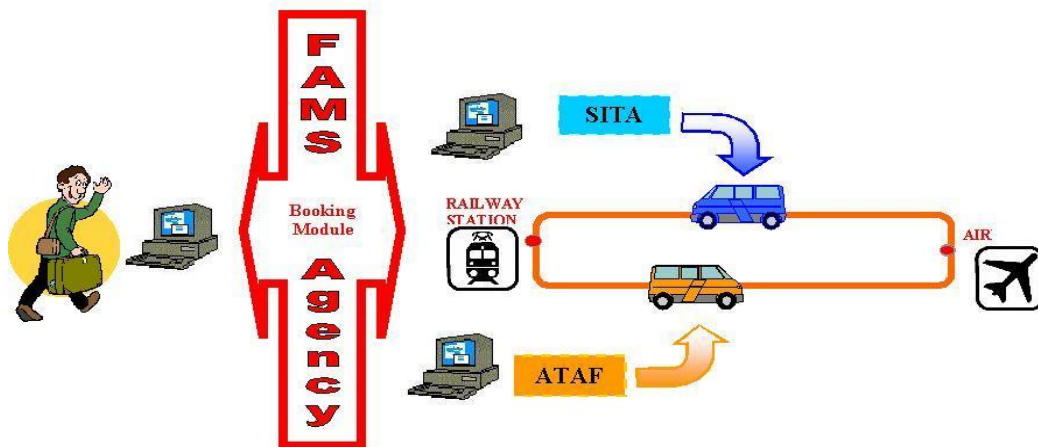


Figure 6.2 : Development of the booking module

At the same time a new service will be developed thanks to the architecture foreseen in FAMS.

The new planned DRT service will be based on the introduction of another service shared by ATAF and SITA in order to connect Peretola airport not only with the railway station, but also with a number of selected hotels so far not served directly by public transport.

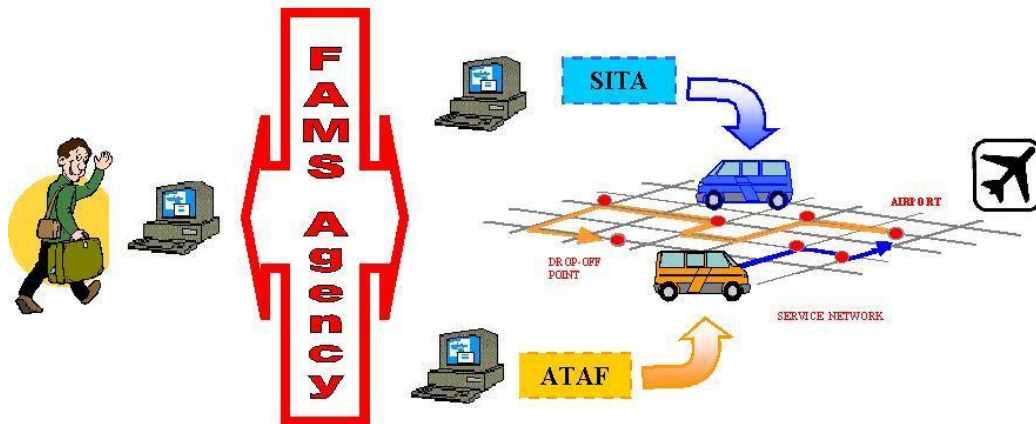


Figure 6.3 : Scheme of the new Airport service

### 6.3.3.3 Critical aspects

There are several critical aspects to accurately investigate in order to plan a really feasible service from the economic and organisational point of view and in respect to the time foreseen in FAMS.

It is necessary to pay attention both to the operational point of view than to the technological infrastructure that must be guaranteed to the interested subjects,

User aspects:

- easiness and quickness of use of the reservation module offered by FAMS web infrastructure to the hotels (in comparison with the already consolidated taxi service and with some directly managed shuttle of the hotels);
- quickness of the reservations confirmations;
- flexibility of the reservation procedure offered to the customer (the hotels): in terms of potentiality to carry out modifications and variations to the reservation also in short times (once again compared with the taxi system);
- level of interactions between the different operators;
- need to supply a really flexible and competitive service (reserved modifications to the trip also even at the last moment) can require the use of specific on vehicles terminals, to allow the communication of the variations timely to the drivers. However if an operating outline with fixed departures (e.g. every 30 min.) is maintained, this type of management and the use of the terminal could be made easier.

Service operational aspects:

- design/planning of a real flexible and competitive service;
- relationship between operators (SITA-ATAF)-users and operator-operator;
- competition with others services (Taxi and especially the hotel shuttles);
- accurate promotion of the main advantages of this service offered to the customers (hotels) in terms of chance to reserve and to manage the transport from/for the airport for groups of customers (e.g. tourists), to save money compared to the use of taxi, to supply to the hotels a promotional and advertising service through the FAMS web structure.

In particular, in the development of the web access , the specific technical and technological requirements for the D&E user groups should be taken into account.

### **6.3.4 School service**

#### *6.3.4.1 Current situation*

The current school services are based on 6 lines operated by ATAF as conventional transport (fixed time table and standard bus). However the service is dimensioned on the basis of the students requests, coming from the related schools. The overall management of the requests is provided by an apposite Department of Florence Municipality, that collects all the data related to the location of the students.

#### *6.3.4.2 Development opportunities*

The following opportunities have been identified for the overall school service operated by ATAF:

- to offer transport services among schools and the playing fields/infrastructures with the aim of a better integration between school timing and sport timing;
- to offer school/tourism services with the aim to provide transport services for the school outings in the Florence area
- to allow the school management staff to operate directly on the FAMS web structure in order to manage the service student booking avoiding manual interactions and saving time also for possible service variations
- to interface the school management staff with the PersonalBus School Service Manager (SSM) throughout the FAMS web structure in order to feed the PersonalBus Planning Module with proper data for automated School Service Trip generation.

In particular:

- The PersonalBus SSM provides a database model for collecting all necessary data in order to describe the subsequent information:
  - School/Institute Typology (First level, Second level, Liceo, Technical, etcetera).
  - Specific Institute information (*Typology*, Name, Headquarter/Branch, address, stop point for boarding/alighting student operations).
  - Class information (*Institute*, Name).
  - Lessons Timetable (*Class*, Timeframe, week frequency, start time in morning, end time in morning, start time in afternoon, end time in afternoon).
  - Student information (*Class*, Name, Surname, address, Phone).
  - Travel information (*Student*, origin in the morning, destination in the morning, origin in the afternoon, destination in the afternoon).

So, each *institute* of a given *typology* has a set of *classes*. Each *class* has a set of *lessons timetable* and a set of *students*. Each *student* belonging to a *class* of a given *institute* may have two origin/destination pairs in order to indicate:

- an origin point in the morning, to begin a trip to reach the school before the lessons start;
- a destination point in the morning, to end a trip starting from the school after the lessons termination;
- an origin point in the afternoon, to begin a trip to reach the school before the lessons start;
- a destination point in the afternoon, to end a trip starting from the school after the lessons termination.

The PersonalBus SSM besides collecting and managing these information, generates the proper requests and data needed to PersonalBus Planning Module to perform the trip planning for the students.

#### 6.3.4.3 *Critical aspects*

From the service point of view it is necessary:

- To point out an external subject (Public School/Institute) available for the experimentation.
- Other (?)

From a technological point of view, a number of extensions/enhancements to the current DRT booking/planning software are required. Specifically, it is necessary to underline:

- need to define a common data model and data format for exchanging a large amount of data.
- Alternatively, understand existing standard data collectors and interface them.
- Association of a student to a vehicle; that is, force the PersonalBus planning module to serve a student request with a specific vehicle.
- Need for a new import module to parse, validate and store the data collected by school management staff throughout the predefined data format. At the date the PersonalBus SSM doesn't implement such an external data access but simply offers a graphic user interface (GUI) for operator on-hand data input.
- Definition of a notification procedure to automatically advise the school management staff about successful or failed validation for uploaded data.
- While the service planning management seems to be affordable, the service variations management seems to be more critical because probably requests a higher level of interaction and dynamic behaviour between the internet client and the planning module to close the loop back to the internet client.

### 6.3.5 **Mobility manager**

#### 6.3.5.1 *Current situation*

In the Metropolitan Area of Florence, and in particular in the area of the “Piana” of Firenze (including the towns and the suburbs of Campi Bisenzio, Sesto Fiorentino and Calenzano, all

located in the North-West of Firenze), and in a second time in the Town of Scandicci, a new project of introducing the Mobility Management schemes at a level of area has been undertaken. The main aim of the project, consisting with the FAMS target and closely related from the provided service point of view to the DRT operated in the “Piana” area, is to improve the current mobility situation in the area, guaranteeing a better PT service and promoting new mobility schemes, in order to reduce the use of the private car and the consequent impact on environment.

The first target of the action is the creation of a Mobility Management Office for the “Piana”, that will have the task of assisting the local Mobility Manager in their activity, and to act directly co-ordinating the overall activity at the wide area level, supporting also the local administrations both in the management of the different services, and in the information on the available services and in the promotion of the new ones.

According to this, some training courses for Mobility Manager both at local and national level will be organised, with the possibility also of offering some classes directly via-web.

In this context, a survey on the mobility needs of the workers in the area has already started, that will permit to tune the different services according to these actual needs.

#### 6.3.5.2 *Development opportunities*

The first step to be undertaken for the Piana Mobility Manager activity is the provision of updated and exhaustive information on the available services in the area. At the moment, in fact, the poor use of Public Transport is due not only to its impossibility of satisfying certain needs of mobility, but also to the lack of information on some services.

At a technological level, the Agency will provide this kind of service, collecting the information on all the available services in the area (paths, timetables, fares, ...), keeping this data base constantly updated and visible via different means (via web, wap, SMS on demand, ...). Consistent with this, the added value provided by the Agency is also the promotion of the new services according to some specific users categories.

This should be guaranteed at different levels:

- individual user
- users categories, authorities, Company Mobility Managers, ...

The Mobility manager activity will be strongly enhanced by means of the exploitation of the Agency architecture, on which some other important activities should be based:

- acquiring/fulfilling/providing mobility survey questionnaires on the single users/whole Company mobility needs directly via web
- dynamic updating of the data base on the mobility of the Piana
- possibility of consulting the data base/some specific subset differentiating the service for some specific users categories
- collection of FAQs (*Frequently Asked Questions*) on the existing transport services and on new services/mobility schemes introduced for the different target users categories (direct users/workers of the area, Company Mobility Managers / Managers, Local Authorities, etc.)
- collection and distribution of user and service claims
- automatic answer to some classified *FAQ/claims* categories, filtering some more specific issues
- creation of a FAQ section to satisfy general and standard requests

- management of via-web off-line classes for Mobility Managers instruction/technical updating
- co-ordination of the mobility services active in the area/of some specific mobility services targeted to workers of the area
- co-ordination/integration between the existing on-demand services at a level of metropolitan area, and better integration between them and the regular fixed line services
- promotion of the services and of the activities undertaken and of the obtained results.

#### *6.3.5.3 Critical aspects*

Consistent with the FAMS scope, the main critical aspects involve mainly the level of acceptance of the new proposed services by the different users, due mainly to their sensation of limitation of freedom (the use of collective transport services compared to private cars is always seen in this sense). In order to face this, the Agency could also represent the meeting place between the social parts (workers, owners of the companies, Authorities, ...) in order to promote the agreement for the exploitation of the new proposed mobility services/schemes (for an example evaluating the possibility of discounts in the fares, etc.).

### **6.3.6 Car pooling**

#### *6.3.6.1 Current situation*

In the context of the introduction of innovative mobility schemes, and consisting mainly with the target of the Mobility Manager activity, on the basis of the survey that is being carried out on the workers of the Piana, a car pooling strategy has been pointed out as one of the mobility schemes that can help in reducing the traffic congestion/pollution.

#### *6.3.6.2 Development opportunities*

The creation of the Agency, like for the Mobility Manager services, can strongly enhance the possibilities of car pooling, allowing users to co-ordinate/be co-ordinated in an efficient and dynamic way, providing the possibility of subscribing as a “car-pooling available person”. The Agency data-base will contain all the important data related to the subscribers, which should be elaborated by the system in order to create the groups of users that can be “pooled” in a car, according to their actual mobility needs as emerged from the survey.

The service will be possible via web / SMS / toll free number, and its functionality will be guaranteed by the Agency, that will also assure the level of privacy for the different users.

In this way it will be possible to co-ordinate also workers belonging to different Companies, that have compatible mobility characteristics (near origins and destinations, modalities of work, same start/finish hour of work, etc.).

#### *6.3.6.3 Critical aspects*

Just like the other mobility management schemes, the main critical aspects inside car pooling service involve mainly the level of acceptance of the new proposed services by the different users, due mainly to their sensation of limitation of freedom (the use of collective transport services compared to private cars is always seen in this sense). In

order to face this, the Agency could also represent the meeting place between the social parts (workers, owners of the companies, Authorities, ...) in order to promote the agreement for the exploitation of the new proposed mobility services/schemes (for an example paying part of the gas expense for the work-home trips, etc.). Another critical issue is the absolute need of privacy for users who are intended to subscribe for car-pooling, a crucial aspect that must be greatly taken into account in the definition of the structure and the architecture of the Agency.

### **6.3.7 User Information Panels**

#### *6.3.7.1 Current situation*

At present only a few static information services are provided to PT users, both by informative leaflets and via internet. In this context, it is evident how information doesn't reach many categories of target users, or at least the information is always "too far" from them. New technologies are being introduced in order to improve the level of service of PT, including localisation by means of differential GPS that permits the regularisation of the service and the provision of real-time information on the network situation and on buses arrival times.

#### *6.3.7.2 Development opportunities*

An important role in the change of citizens' attitudes towards alternative mobility schemes is played by information; in this context, the Agency and its technologies, will offer a new opportunity, constituting the kernel for the development of new advanced information systems, both via web and "on the road", permitting the management of real time information on the service (dynamic arrival times, paths of the next trip for DRTs, sudden service variations, etc.) targeted to the specific needs of the service and of the user category. In particular relating to the DRT service operated in the "Piana" a user information panel will be installed in the "Gigli" mall ("Gigli" being one of the main "active" destination of the PersonalBus service in Campi. This panel should display the trips that cross "Gigli" and should indicate the related destination in order to allow to the mall visitors to have the possibility to use the DRT service.

#### *6.3.7.3 Critical aspects*

Critical aspects are represented by the intrinsic dynamic nature of DRT service which is characterised by trips with a free route and unpredictable stops depending only on user requests. Also an existing trip with a precise route can be suddenly changed or aborted before its start time. The only certainty is given by those trips already started and whose rides are determined by onboard users. This means that from a general point of view, it is also possible that a vehicle performing a specific trip will change the pre-planned route before its presumed end. This phenomenon is particularly induced using IVT terminals that give the possibility to detour the vehicle and cancel future operations within a few minutes.

In this situation, it seems necessary:

- to investigate and find out suitable ways of communicating this type of information to the users, clarifying the limits of validity of provided service information
- as an alternative – or, eventually, at the same time – giving the possibility to perform a smart reservation on a suitable trip obtaining a sort of locking of the vehicle and getting guaranteed to have the needed ride performed.



### **6.3.8 Authority services**

#### *6.3.8.1 Current situation*

At present, the control of the area at the level of PT services is only done in a conventional way, by means of direct control, while no possibility is given to Local Authorities to have a look at updated data on the level of service provided to citizens, and to their main needs in terms of mobility, to be taken into account for the adequate countermeasures, especially at the definition of the minimum services and of the related Contracts for the Provision of Service for the Operators.

#### *6.3.8.2 Development opportunities*

The Agency and its web structure can constitute the base on which building also the process of service certification, by means of making available certain service data also for the different Authorities responsible for the control of the service on their reference area.

In this context it will be possible also to keep under control the characteristics of the users of the different areas, whose profile will be made available by means of predefined graphical representations on maps, etc.

#### *6.3.8.3 Critical aspects*

The main contrast in this kind of service is the determination of the typology and amount of information that PT Operators can/want to provide to Local Authorities, and the level of specification for the different users data/profiling.

## **7 ANALYSIS OF USER NEEDS**

### **7.1 Purpose of User Needs Analysis**

With a new generation of tools available, and a growing interest in DRT from both the transportation and business perspective, the obvious question is “how do we unlock the potential of DRT?”. This requires six interlocking dimensions (not necessarily in this sequence) :

- a) Identify the relevant users and understand their needs
- b) Develop new service concepts to meet these needs
- c) Identify clearly the markets these will serve, and the transportation function for each
- d) Identify, develop and deploy the appropriate technical solutions to deliver the services
- e) Develop the business case for the foreground and background services
- f) Establish the appropriate organisational structure and relationships to provide the framework for delivering the transport services and managing the customer interface

How these are achieved will vary from location to location, but failure on any of these dimensions will undermine the potential and stability of a DRT project.

User Needs Analysis is a fundamental building block in any DRT project. This phase allows the project team to understand their users, and to use this knowledge to design a system to meet these needs. The outputs of this phase should identify the key markets, the services and features that they need, and requirements for communication and information after services are implemented. The purpose, processes, user classification and user needs for DRT are already well documented in the SAMPO, SAMPLUS and INVETE projects - SAMPO (1996), SAMPLUS (1999, 2000).

User Needs Analysis first establishes who are all of the users that will be involved, and secondly what are the needs of each of the different types of user.

### **7.2 User Needs findings from prior projects**

The SAMPO project User Needs analysis identified that for DRT there are four main user types :

*a) End Users* : The End-User is a direct customer, or potential customer of the provided transport service. (S)he can also be described as the "passenger" or "consumer".

*b) Operators* : The Operator is directly involved in the provision of the transport service to the End-User by providing some or all of the elements of the vehicle, driver and support services.

*c) Authorities* : The Authority has statutory or delegated responsibility for the provision or regulation of transport services in the target area.

*d) Active Destinations* : Certain destinations may play an active role in the organisation of transport. For example, they may supply information to the operator about trips to the destination, they may act as a travel broker, they may assist the operator in planning the

services, or they may co-operate with the operator to provide an inclusive price for the travel and the destination activity.

For the purpose of this paper, we will focus on the needs of End-users and Operators identified in the SAMPO and SAMPLUS projects – Finn (1996, 1999).

The main needs consistently expressed for the **end-users** are that the services should offer :

- wide range of destinations / coverage
- easy access to services (walk, wait)
- responsive to personal needs
- accessibility of complete, reliable information
- ease and speed of booking
- last-minute booking
- reliability of service and arrival time
- minimum deviations/delays on route
- assurance of the return journey
- ease of boarding and space for luggage, shopping
- access to other modes, but minimise transfers
- maximum operating hours
- reasonable pricing structure

The main needs and concerns consistently expressed by **operators** across DRT sites were :

- viable, sustainable services
- maximise patronage
- develop new markets
- cost efficiencies in service provision
- maximise occupancy and minimise dead running
- quick start-up period for new services
- suitable/improved technical support systems
- integration with other modes/routes
- effective/efficient Travel Dispatch Centre
- effective/efficient fleet management
- fair allocation of work, costs, revenues
- freedom to continue to develop own business
- ability to expand coverage area
- ability to accept non-booked passengers

### **7.3 General Objectives and User Needs at the Angus Site**

#### **7.3.1 Main Purpose of User Needs Analysis**

The area selected for the proposal serves the rural areas surrounding Alyth, Kirriemuir, Brechin and the Glens of Angus, covering 490 square miles, (58% of the Angus area) and a population of 9,742 (8.9% of the Angus population). Due to the low population density this area is not currently well served by public transport services. Where services are provided these are based around school transport provision and only operate on schooldays or shopper buses provided on a weekly basis to provide a basic lifeline for rural residents. Post Buses operate limited services in Glen Isla, Glen

Prosen and Glen Clova.

The key challenges facing the area are;

The existing public transport provision in the area, where it exists does not meet the needs of the community or encourage families to live in rural areas.

Client based services are provided by numerous agencies including Scottish Ambulance Service Patient Transport Service, Angus Council Social Work and Community Education Departments and Voluntary Organisations. These services are provided on an EXCLUSIVE basis, where only those who fit the qualification criteria can be carried.

There is no coordination or integration of existing resources providing school, health and client based services, meals on wheels or departmental mail delivery services. This results in several vehicles operating in the same area but only for a limited number of people. The result is that service provision in rural areas is regarded as expensive. Many functions could be undertaken by the same vehicle. This would release resources to meet unmet demand.

People residing in the proposed area are car dependant. Increasing motoring costs (fuel and insurance) are having a severe effect on rural residents. Access to employment, training, education, health services, child care, shopping, recreational facilities and visiting are all dependant on access to a car and sufficient funds to undertake the wide range of activities taken for granted by those living in urban areas. Average income in Angus is 10% less than Scotland as a whole.

Health care policy in the area is in a period of change with more services being centralised in Ninewells Hospital, Dundee. Visits to Ninewells Hospital can mean a whole day spent travelling by public transport and several changes of vehicle. This is causing great concern for residents in the area. General Practitioners are sympathetic to elderly residents and are aware that a car provides the only lifeline for their needs at present. If a suitable alternative could be found a large number of elderly car owners would gladly give up their car.

The allocation of hospital appointment times does not recognise the difficulties people residing in rural areas experience. This causes widespread concern especially for elderly patients. Patients are regularly faced with delays and arriving late. There is a shortage of car parking spaces at Ninewells. This can result in visitors facing long walks to get to the hospital.

Disabled people are restricted to travelling by “client” based services due to the lack of accessible services. This does not meet their needs or meet the concept of social inclusion within the community.

Angus Council, Scottish Enterprise Tayside and Dundee and Angus Tourist Board are encouraging tourism in the area. It is difficult for cottage industries, particularly catering to attract part-time staff due to the lack of transport in the area. Visitor numbers are restricted to car owners.

School children are restricted in their ability to undertake after school activities due to the lack and or cost of finding alternative transport. This does not offer rural children an equal opportunity. At school holiday times parents are faced with the dilemma of having a family holiday together or splitting vacation time between partners to act as childminders. The lack of accessibility to child minders and or clubs organised by community education department can also act as a disincentive to bring up a family in rural areas. Older children remain heavily dependant on parents therefore restricting personal development.

Angus Council has introduced Internet facilities at a number of village halls in the area. Accessing this facility is welcomed but access is limited to those who can reach the halls.

The above problems will be addressed by the new DRT services. It is not intended to develop a solution around any singular group or problem. The solution is to involve all parties to introduce a cost effective local solution to meet the needs of all parties, utilising existing resources in a coordinated manner. Flexibility in service delivery is the key. “Best fit” will be used to deliver services using a wide range of vehicles from taxis/volunteer drivers to coaches.

The creation of a coordination centre to administer all transport requests for people trying to access or exit the area will establish the true demand and unmet demands for the area. Transport providers will be contracted to meet the highest service levels (including MIDAS and local authority standards). New technology systems are now available to make this concept possible. Where these systems have been introduced in Europe results have shown that significant savings can be made and resources freed up to meet unmet demand.

Services will be designed around three main policies: sustainability, rural regeneration and social inclusion. The project meets the objectives outlined in a number of Angus Councils strategies including, Local Transport, Community Planning, Education, Childcare, Rural partnership and Healthcare. Rural services will be designed to compliment and coordinate with the existing public transport networks surrounding Alyth, Kirriemuir and Brechin. These settlements will act as hubs for the project. It is the intention to provide services that will result in rural residents having equal opportunities to access facilities in a similar fashion as those people currently residing in Alyth, Kirriemuir and Brechin.

The project is centred on the development of a coordination centre for all transport provision within the chosen area. The purchasing of a software system to control demand and allocation will maximise use of existing resources and identify the true transport needs for the area. Mobile phones will be used to inform drivers of customer requests. Everyone residing within the area and those wishing to access the area from out with will be able to call the coordination to place a transport request. Transport providers will be contracted into the scheme to provide services that meet the highest possible quality criteria.

The project is being designed in partnership with NHS Tayside, Angus Council and Transport operators. The main aspect of the bid is to encourage integration of services and sharing information to help plan improved services for all. Existing services provided by operators will be built into the system. Each enquiry will be checked against existing services and all possibilities explored before considering additional requests. It is hoped that joint ticketing will be encouraged between modes and that concessionary fares will be available on all services. This will help to reduce cost elements particularly for elderly, disabled and children.

Angus Transport Forum’s, Transport Development Officer will manage the project. Brian Masson has experience of managing a public transport operation with over 100 vehicles, 400 men and £8 million pound budget. A full time transport coordinator has been appointed to take and process bookings Monday to Friday between 0830 and 1700 hours. The post involves 40 hours per week. A part time position of 16 hours per week will work 4 afternoons per week Tuesday to Friday and also cover holidays and sickness.

**There are three main parts to the Angus project:**

The first part is to **maximise the efficiency of existing client based services**. This will identify excess resources that could be used to meet the existing unmet demands. The dead runs to and from school will be used to supply Demand Responsive Transport trips. Other organisations already operating in the area will benefit from the coordination and integration of services. For example the Patient Transport Service will be able to provide direct services from Alyth, Kirriemuir or Brechin to Ninewells and Stracathro Hospitals instead of the

existing system of trailing throughout the area picking each client up at their own home. This will reduce journey times and increase the number of journeys that can be undertaken by ambulance service resources in any given day. The introduction of feeder services to Alyth, Kirriemuir and Brechin will enhance the prospect of improvements to the public transport services in the area, as services will be designed to integrate and offer joint ticketing.

The second is to **identify the needs of rural residents and individual requirements**. Each household will be sent an application form asking for details relating to family members and willingness to participate in the scheme. This information will be returned to the coordination centre for input into the system. (All data will be held in compliance with data protection procedures). This will allow the system to identify individual requirements such as mobility problems (wheelchair user, deaf, blind etc). Health Board and Social work clients will be identified and the system will be designed to identify clients who can and cannot be carried in mixed groups. The introduction of a coordination centre will simplify the system of finding out which services can be used by which client group as all client groups will be covered by the project.

The third aspect of the project is to **introduce Demand Responsive Transport Services** in the designated area, to integrate with the existing public transport network in Alyth, Kirriemuir and Brechin. The concept is to design inclusive passenger services to offer equal opportunities to meet the needs of rural residents and people wishing to access the area. This would be achieved through integration and coordination of existing resources. Services will be delivered in a number of methods. Car sharing, Social Car Schemes, Community Buses, taxis, statutory bodies services, Bus operators, private hires will all be considered.

The introduction of one coordination centre will allow consistent rules to be applied across the whole area. Demands and resources will be controlled. Within a short period of time demand trends will be established. It should be possible to design services to allow residents in rural areas with access to Alyth, Kirriemuir and Brechin each morning, afternoon Monday to Friday. Supply of evening and weekend services will be restricted to group hire in the first instance.

Voluntary organisations could apply for minibus permits and volunteer drivers would be trained to allow greater use of community education vehicles. Service delivery will depend on local input from residents and interested parties.

A survey to establish the availability of resources was carried out by the Forum in Autumn 2000. Every operator has shown a willingness to participate in the proposal. The results showed that between the hours of 0900 and 1500 hours on schooldays over 50 vehicles were available to undertake work in the area. Voluntary car drivers from WRVS, Red Cross and Scottish Ambulance Service have all expressed a willingness to work with the project.

The project will provide a flexible method of meeting ever changing needs of the rural community. Links to Alyth, Kirriemuir and Brechin would give rural residents the same public transport opportunities as the people staying in these towns. Individuals will be able to make a contribution to service design. The computerised system will be able to identify demand trends. This information will allow for future transport services to be designed knowing actual demand patterns for the area.

The creation of integrated services for everyone's use will encourage social inclusion and help community spirit. Car reliance is essential at present to retain any level of independence in rural areas this will be reduced.

It is our intention to give rural people in the designated area access to the same level of facilities and services as those people residing in Alyth, Kirriemuir and Brechin.

Economic problems are being experienced at present in Alyth, Kirriemuir and Brechin. The project has been designed to recognise the importance of sustainability within the local economy.

Discussions with all local transport providers have expressed a willingness to improve services from the towns mentioned and to participate in joint ticketing arrangements to minimise cost for users. The proposed new Concession Scheme for the over 60s from October 2002 will mean that “Free” transport will be available to those in this category. Angus Council also has a Free and 10p disabled person transport schemes. The current lack of accessible or indeed any services in the proposed areas means these people have got to rely on access to cars or more costly methods of travel (taxis, voluntary car schemes etc).

### **Summary**

The proposal will offer the following benefits:

- Simplify the booking and use of transport services through the introduction of a one-stop shop/call centre utilising new technology.
- Involve local residents in planning services.
- Encourage people to shop and utilise local businesses in the area.
- Improve access to the Glens for residents and visitors.
- Improve access to Health Care facilities.
- Improve access to Education.
- Improve access to Employment.
- Improve access to Training.
- Improve access to Childcare after school activities.
- Improve access to leisure facilities.
- Encourage and organise car sharing.
- Deliver local goods via vehicles to encourage local business to compete with internet/home delivery companies.
- Embraces the concept of Rural Regeneration, Social Inclusion and Sustainability.

### 7.3.2 Users being Studied at the Site by User Categories

At the Angus site, the users can be grouped in the following clusters :

User Cluster	Users
Final End-users	All individuals wishing to travel within the area
	Voluntary Groups
	Community Groups
All Transport Providers	Bus
	Taxi/private hire
	Statutory
	Voluntary Groups
	Community Groups
Angus Transport Forum Co-ordination Centre (TDC)	Dispatchers
	Management practices
General user management services	
Authorities	Angus Council
	i    Education
	ii   Social Services
	iii  Transport Planning
	iv   Economic development
	v    Welfare rights
	vi   Law and Administration
	vii  Community Education
	NHS Tayside
	i    GPs
	ii   Hospitals
	Scottish Ambulance Service Patient Transport Service
	Scottish Enterprise Tayside
Angus and Dundee Tourist Board	
Scottish Executive	
Traffic Commissioner	
EU	
Businesses and their Representatives	Businesses
	i    Consignia
	ii   White Arrow
	iii  Retail outlets
	iv   Ordnance Survey
	Representatives
	i    Round Table
	ii   Rotary Club
	iii  Federation of Small Businesses
	iv   Chamber of Commerce
v    Forward Scotland	
Technology	MobiRouter      Software/Hardware      (background technology)
	Interface systems
	Mobile communications providers (GPRS)

*Table 7.1 : User groups studied at the Angus site*



### 7.3.3 Source of User Needs Information

Angus Council has issued a Local Transport Plan, which forms the starting point for identifying many of the user needs. This has been analysed in conjunction with background data for the area derived from the 1991 Census.

The end-user needs information is based upon the minutes from pre-existing local user groups held throughout the pilot area. The Angus Transport Forum first established these in 1997. Continuing to hold these groups will derive further information specifically for FAMS.

Information is also derived from informal discussions with all user needs categories, i.e. public transport providers, taxi and private hire operators, Community Groups, Voluntary Groups, groups representing businesses (Round Table, Rotary Club, Federation of Small Businesses, Chamber of Commerce), Statutory Authorities (Angus Council, NHS Tayside, Scottish Enterprise Tayside, Angus and Dundee Tourist Board) and other organisations (e.g. Forward Scotland, Ordnance Survey, White Arrow, Consignia (Post Office)).

### 7.3.4 User Needs for each User Need Category

For each of the user categories established in b) above, there are many common user needs, which have mostly been identified in 9.2 Goals and Objectives.

1. Final End-users
  - a. All individuals wishing to travel within the area see Stakeholders 16, 18 and 31
  - b. Voluntary Groups Stakeholder 18
  - c. Community Groups Stakeholder 16
  
2. All Transport Providers
  - a. Bus Stakeholder 15
  - b. Taxi/private hire Stakeholder 25
  - c. Statutory Stakeholder 1
  - d. Voluntary Groups Stakeholder 18
  - e. Community Groups Stakeholder 16
  
3. Angus Transport Forum Co-ordination Centre (TDC)
  - a. Dispatchers Stakeholder 17
  - b. Management practices Stakeholder 17
  
4. General user management services None for Angus
  
5. Authorities
  - a. Angus Council Stakeholder 1
  - b. NHS Tayside Stakeholder 2
  - c. Scottish Ambulance Service Stakeholder 12
  - d. Scottish Enterprise Tayside Stakeholder 3
  - e. Angus and Dundee Tourist Board Stakeholder 13
  - f. Scottish Executive Stakeholder 30
  - g. Community Transport Association Stakeholder 28
  - h. Traffic Commissioner Stakeholder 29
  - i. EU Stakeholder 4

6. Businesses and their Representatives

- a. Businesses
  - i Consignia Stakeholder 23
  - ii White Arrow
  - iii Retail outlets Stakeholders 14 and 22
  - iv Ordnance Survey Stakeholder 11
- b. Representatives
  - i Round Table Stakeholder 21
  - ii Rotary Club Stakeholder 20
  - iii Federation of Small Businesses Stakeholder 14
  - iv Chamber of Commerce Stakeholder 19

7. Technology

- a. MobiRouter Software/Hardware Stakeholder 24
- b. Interface systems Stakeholders 1,2,4,12-17,22,24,25,29,31
- c. Mobile communications providers (GPRS) All Stakeholders

## 7.4 User Needs at the Florence Site

The main goal of the User Needs Analysis is to clearly point out the specific requirements of user groups and to establish how the different transport services can answer to this identified mobility demand. Moreover the actions and activities to be pursued to improve the service offered to these target-users are identified, in order to reduce the existing gap between the supply of regular public transport and this specific mobility demand.

Another significant aspect is clearly related with the analysis of the willingness of potential users to choose a FAMS product compared to alternatives

The Florence site involves a large number of different services managed by the Agency. For this reason we have identified many different users associated with the Agency. Some of them will have a direct impact/interaction with the Agency itself, some others will have less reflections.

For simplicity, we have grouped them in 4 different categories:

Authority	Regione Toscana
	Provincia di Firenze
	Comune di Firenze
	Comuni della Piana
	ASL Health Local Authority
Corporate	APT
	Schools
	SITA
	ATAF
	Li-nea
	CAP
	Fams Agency
	Supplier
Intermediate	Drivers of the different services
	TDC operators and technicians
End-User [passengers of the different flexible] services active in the investigated areas (DRT service passengers, students, disabled & elderly, workers of the areas managed by the mobility manager / car pooling service is active, ...)	Hotels
	Tourists
	Workers
	Disabled
	Elderly
	Students
Generic End-users	

*Table 7.2 : User Groups studied at the Florence site*

In Annex B, we have described in detail the approach to the User Needs Analysis, the methodology, sample sizes, the detailed characteristics and needs of the users, and the detailed findings

In the following sections we have summarised in bullet point format the user needs divided in the four categories identified.

#### **7.4.1 Needs of the Authority Users in Florence**

- Improve the efficiency of Public Transport in order to provide better services;
- increase the number of DRT system functions already operating;
- integrate existing DRT and flexible services and develop new ones;
- integrate transport services offered by public and private transport providers;
- guaranteeing a wide and effective accessibility to urban transport for different user groups (elderly, workers, students, disabled, etc.);
- providing an efficient service in low mobility demand zones and periods (marginal suburbs and quarter, night-time, etc.);
- provision of flexible services with respect to mobility needs and area characteristics;
- co-ordination and optimisation of service production modalities and resources (vehicles, operation process, user call, etc.);
- integrate fare;
- reduce traffic impact;
- enact mobility management policies;
- modify the existing system elements or operations;
- transfer technologies between sites to address the issue of wider application;
- reveal the institutional and organisational barriers to the use of DRT.

#### **7.4.2 Needs of the Corporate Users in Florence**

- Easily manage the services;
- increase the quality of service;
- increase the number of clients;
- tools to plan/manage DRT;
- provide services for their groups;
- cost-benefit of the service;
- work safety;
- company policies respect;
- system expandability;
- system interface towards the other technical company sectors;
- better used resources in terms of buses and workers optimisation;
- use technological support easily;
- provide Know-how and technology;
- develop new software, equipment, IT Technologies...

#### **7.4.3 Needs of the Intermediate-users in Florence**

- Provide a better service;
- improve working conditions;
- work safely;
- use technological support;
- assure information dispatch;
- count on effective means of communication;
- realise the service according to the scheduled one;
- information on the next trip and on the service variation (new ride insertion, planned rides cancellation);
- information on the traffic situation of the road network.

#### **7.4.4 Needs of End-users in Florence**

- Service satisfactory;
- Extension of the service in terms of hours of service and available busses;
- Reach destination in time;
- Timetable respect;
- Easier access to the services;
- Book the journey in advance to be sure to have a reserved seat;
- Have quick responses to their requests;
- Travel comfortably;
- Personnel care;
- Satisfactory level of information;
- Reasonable fees;
- Be informed on the delays;
- Be informed on the service and on the variation of the service network;
- Comfort at the bus stop;
- On-board information;
- Regularity;
- More flexibility of the service.

## 8 PROBLEM DEFINITION

### 8.1 Purpose of Problem Definition and linkage to Trial Design

In sections 4 and 5 above we have considered the Stakeholders and their goals, and then looked at the different categories of Users and their needs. It becomes clear that there is great diversity among the Stakeholders and Users, with a deep complexity of perspectives. So how can a set of goals and needs be defined at site level which encapsulates this diversity and complexity ?

A **problem definition** or **statement of the problem** allows us to identify the core challenge that faces the collective of Stakeholders at the site. It establishes in simple terms the problem that has been identified and which needs to be solved.

This allows the Trial designers to seek solutions to the problem, and gives them the freedom to consider innovative approaches. It also directs them when considering the various dimensions – concepts, technical, organisational, financial, service offer, etc. Of course, the detailed objectives and user needs are still taken into account throughout the process and assist in the detailed design.

The proposed solution can then be assessed in terms of whether it provides a significant contribution to solving the problem. Note that it does not have to fully solve the defined problem, since the problem may be complex in scope or scale. The important thing is that the proposed solution – in the case of FAMS project, the Trial – should allow the Stakeholders to move closer to achieving their objectives in a way that is consistent with the needs of users.

### 8.2 Problem Definition at Angus site

The Angus Pilot Demand Responsive Transport (DRT) co-ordinated transport pilot project seeks to maximise the use of existing public transport resources in the area to produce a flexible, user-friendly integrated service and provide a sustainable means of delivering transport provision utilising new technologies.

This challenge requires a visionary approach and the dismantling of artificial barriers erected by the “it’s always been done like this” mindset. Legislation needs to be flexible to encourage co-operation between modes. Technology can assist in designing a solution to the transport problems caused through lack of co-ordination and integration of existing services. Service delivery will be designed to meet the needs of customers not just operators.

The project embraces all current EU, UK and Scottish Executive policies across community planning, sustainable development, social inclusion and environmental policies. The challenge is to see if it is possible to demonstrate real progress in these areas with regard to planning a public transport solution in rural areas that is designed from the bottom up.

### 8.3 Problem Definition at Florence site

In order to increase the use of the public transport resources in the area the Florence Site has identified several objectives to be developed under the FAMS project.

Among them the most ambitious challenge is surely the will to put together different public transport operators sharing the same technological architecture in order to maximize the quality of the service offered to their clients and to minimize the resources used.

In a context like the Florence area this approach is completely new and represents the first attempt to break a stand-still scenario, where the operators often act like competitors more than co-operators.

Based on these premises FAMS will allow the development of co-managed new services, the transfer of the organisational and operational expertise, the adaptation of the existing DRT technologies for managing different flexible transport services.

It is clear that this change requires an “open mind” approach not only by the operators involved, but also by the local authorities that have to encourage it by promoting new services and assisting them with proper and flexible acts.

### 8.4 Generic transport service Problem Definition

Although the interest in demand responsive, intermediate transport services is growing rapidly, there are still barriers to large-scale adoption and employment of such systems by the transport industry. Two key organisational and technical issues :

*Poor integration in the overall transport services chain.* Different Collective Transport Operators and Local Authorities provide demand responsive mobility services (school, hospital transfer, elderly and disabled, urban and rural low demand zones, etc.). In most existing applications, DRT systems are mainly operated as **single systems**, with little or no integration with other transport services. Normally, different transport modes are planned and dealt with separately. This generally results in a less efficient answer to the mobility needs of the citizens, to lower levels of service and less efficient use of technological infrastructures than it would be possible with a more integrated approach. As a result, the quality of this transport offer is low due to both to the production modalities and to the lack of the coordination among the different actors. In addition, the low level of integration of these services in the overall transport chain (e.g. feeder services within the conventional transport network, etc.) result in a further dispersion of resources and push the Authorities to look for new transport concepts and infrastructures to better coordinate their offer. This “state of the art” is confirmed by the recent recommendation of CEMT.

*Service models and ways of working.* Demonstrations of DRT and Intermediate Transport have, until now, basically made some adaptation to existing ways of working. In fact, there is a need for **appropriate business and service models, which** have been specifically developed for DRT/IT. These need to take into account the nature of entities, organisation, demand, financing and operations, which are associated with such services. These services usually are provided at the margin, where conventional mobility services are either not viable, or are inappropriate. Hence it is unlikely that the underlying conventional business and service models are viable or appropriate either.

## **8.5 Generic ITS Problem Definition**

*Interoperability of IT infrastructures and services.* Improved IT infrastructures and services are needed which support the new organisational models and new ways of working, allowing better cooperation among transport operators during service planning and provision. Base DRT technologies (Travel Dispatch Centre, booking and planning software, communication infrastructures...) may require relevant investments, especially when operators are small. Solutions are needed to facilitate different operators sharing infrastructures, transport resources (vehicles, drivers, ...) in a way to optimising costs and economic efficiency.

*Improved access to services and information.* Parallel to this, improved access to services is to be ensured to the citizens, facilitating access to information, services and transport resources anywhere and anytime, from both fixed locations (home, office, points of information ...) and on the move. Together, these new IT infrastructures/services and service models should allow implementing new models of interaction between DRT service operators and users' communities, facilitating access to and take-up of DRT and Intermediate Services.

The Business Case for DRT is highly dependent on being able to meet the varying demands of the potential users, whilst keeping the cost of provision within strict parameters. Once the offered service goes beyond one or two routes, and a small number of daily users, it is difficult, if not impossible to effectively manage without IT support. Even with basic IT support, the number of dispatchers and call handlers escalates rapidly, and becomes a bottleneck for the system. Sub-optimal allocations get made, and unnecessary costs are incurred. Coping with increasing volumes of users, rationalising the management of different DRT applications, making the best use of available transport capacity for a given level of demand, reducing the costs of technology by sharing services and resources, are the basic motivations driving the trials for the Flexible Agency.

## **8.6 Generic Take-up action Problem Definition**

Transport authorities, community groups and operators are the main entities faced with the option of implementing a Take-up of ITS-supported DRT. They are faced with the standard challenges of estimating the business and financial implications of the new venture, the cost of the support systems, selecting and procuring new systems, and operating the new services.

The work within FAMS to date suggests that there are three additional challenges that must be faced in a take-up action – i.e. where new technologies are being imported into the organisation :

a) *Business Processes* : The organisation is offering a new customer proposition, and must adapt its knowledge, planning, resource allocation, production and service delivery processes to properly support the new product. It is insufficient to just “plug in” a new piece of software into the existing processes and expect that a new service type can be successfully offered to the customer. The challenge includes understanding how the organisation needs to change, developing the plan to do so, and acquiring the needed skills.

b) *Implementation* : The technology which is being taken up needs to be prepared, installed, tested, integrated, commissioned, and deployed. As a take-up, the skills for this are typically not resident within the organisation. Further, there may not be a tradition of such take-up actions. There may also be a customisation or adaptation phase needed to align the technology with the site-specific needs.



c) *Training* : The organisation needs to acquire knowledge in how to exploit the technology. For the specific case of DRT, skills must be rapidly acquired in handling the booking processes, managing the allocation and dispatch, and supporting the technical systems. Once the DRT goes live, it is not acceptable that the learning-curve for dispatchers is visible to customers. In parallel, the ITS-supported DRT is a key business opportunity. Managers and planners need to be learn how to exploit it.

## 9 FUNCTIONAL REQUIREMENTS

### 9.1 *Purpose and Structure of Functional Requirements description*

This chapter introduces the analysis of functional requirements underlying the planned FAMS developments and trials at the two sites. After identification of the stakeholders, user need and service requirements, the objective of the functional requirements analysis is to translate the identified needs in a set of (macro-)functions which are necessary to support the implementation of the FAMS concept in the sites. Thus, the functionalities identified and briefly outlined in this chapter describe what is expected from the FAMS Flexible Agency in terms of services made available to the different user categories; i.e. to final end-users of DRT and other flexible transport services, DRT service operators, the Flexible Agency operators themselves, and the local Authorities interested in the FAMS.

The functional requirements analysis is done firstly at site level. The aim is to proceed in a bottom-up way, identifying the main functionalities required in each site. Then, a cross-comparison of site related functional analyses is done in chapter 10, where a general FAMS concept and design is presented and a functional list as well as a top-level functional architecture are derived identifying the main needs which are common across the two sites. This provides the basis for the overall functional design of the Flexible Agency that is addressed in this deliverable and then expanded and consolidated in the work to be carried out in WP03 Trial Design and Technology Adaptation.

It should be taken into account that the Florence site has some ITS-supported DRT in place (as described in Chapter 6 above) and also has quite some experience of participation in European R&TD collaborative projects and in the formal approach towards functions and system architecture. By contrast, the Angus site is very much in start-up mode without such prior experience.

For this reason, the Florence site has taken the lead in the functional definition, both at the high-level and in the detailed description (section 9.2). The Angus site has followed the Florence approach and has identified the functional requirements at Angus (section 9.3). The usual style of presenting Angus first, then Florence, has been reversed for Chapter 9 to reflect this approach.

To avoid possible misunderstanding, it is noted here that the requirements of Angus are given equal importance to those of Florence in the analysis in Chapter 10.

## 9.2 Functional Requirements Analysis at Florence Site

In this section a first indication is given of the main functions to be developed in the Florence site to set-up the FAMS Agency. Table 9.1 below provides the list of the main functions related to the identified services described in the above sections.

User categories	Service / Functionality
F1 Final users of DRT services (B2C services)	Information on planned services
	Web-based booking
	Booking confirmation
	Reservation cancellation / modification
	Customer satisfaction module
	Claims and missed appointments
	Information and contents on the web
	Communication with the Agency and other services
F2 Transport Companies and Operators (B2B services)	Management of planned service information
	Management of vehicles availability
	Access to service data
F3 Agency Operators (back office services)	Web-based booking management
	Management of reservations cancellation / modification
	Service confirmation management
	Missed trips management
	Claims management
	Contents management and publication
	Accesses analysis and statistics
F4 General user management services	Users registration and management
	Profiling
F5 Authorities	Access to service data
	Access to information on service (lines paths, timetables, ...)
	Users data and profiling management
F6 Mobility Manager	Information on existing/new services
	Information and contents on the web
F7 Car Pooling	Information on existing/new initiatives
	Information and contents on the web
	Users registration and management
	Users Profiling management
	Communication with the Agency and other services
	F8 User Information

*Table 9.1 : List of main functions associated with the DRT services at the Florence site*

The remaining parts of this section 9.2 provide an outline of each identified function in terms of the following items:

- Name
- Scope
- Type of information involved
- Modalities of presentation
- Type of User involved

### 9.2.1 Final Users of DRT Services (B2C)

Title	<b>F1.1 Information on planned services</b>
Scope	To provide DRTs users an easy access to the planned services information
Information	Information on the main DRT services operated in the Piana site by the Agency
Modalities	Information access based on different criteria (service area, day, time period, stop interested by the planned trip, etc.) provided by the users. The output is the graphical representation of the planned service selected by the specified criteria
Users	DRT users (subscribers or not). For the subscribers a link with the booking service/function is possible

Title	<b>F1.2 Web-based booking</b>
Scope	To allow the Agency subscribers to book the different DRT services operated by the Agency. This function aims at reducing the workload on Agency operators (less “voice” contacts with the users)
Information	Trip booking (by web) for the medium and long term period (for the next day, week, etc.) in terms of origin and destination stops, trip typology, date and timing, seat numbers, confirmation modalities, etc. Linked with F1.3
Modalities	Self trip booking directly by the users, elaboration by the system and trip confirmation to the user together with the requested detailed information
Users	Subscribers, groups/ensembles of users, great users (Hotels, Companies, Associations, etc.)

Title	<b>F1.3 Booking confirmation</b>
Scope	Confirmation of the web-based booking and variation of the booked service
Information	Confirmation and variations of the booked service in terms of origin and destination stops, trip typology, date and timing, seat numbers, waiting time, further information on the service, etc.
Modalities	Provision of booking confirmation will be managed by the Agency operators under the predefined operational schemes based on the media channel indicated by the users (by e-mail, SMS , phone, ...)
Users	Subscribers, groups/ensembles of users, great users (Hotels, Companies, Associations, etc.)

Title	<b>F1.4 Reservation cancellation / modification</b>
Scope	To allow the Agency Subscribers to obtain information on their reservations and to make variations
Information	Data related to the reservation (date, timing, other details, etc.) and on its current state
Modalities	Two options of modifications: confirmed / not yet confirmed reservations
Users	Subscribers, groups/ensembles of users, great users (Hotels, Companies, Associations, etc.)

Title	<b>F1.5 Customer satisfaction module</b>
Scope	To allow the Agency Subscribers to fulfil the customer satisfaction report
Information	The available data structure presents predefined items and free text with the possibility of assigning a range of assessment values
Modalities	Users interact with the web to fulfil the predefined module
Users	General users , Authorities, Agency Operators, etc.

Title	<b>F1.6 Claims and missed appointments</b>
Scope	On – line collection of users claims on the different services operated by the Agency
Information	The data structure presents predefined items and free text
Modalities	Users interact with the web to fulfil the predefined module
Users	General users, Authorities, Agency Operators, etc.

Title	<b>F1.7 Information and contents on the web</b>
Scope	Provision of complementary information on the DRT services operated by the Agency
Information	Information Contents (time table, line and network composition, traffic situation, etc.) and web links
Modalities	Users via web
Users	General users, Authorities, Agency Operators, etc.

Title	<b>F1.8 Communication with the Agency and other services</b>
Scope	Provision of added value services
Information	Mailing, browsing/navigation, FAQ, event calendar, Forum
Modalities	Users via web
Users	General users, Authorities, Agency Operators, etc.

## 9.2.2 Transport Companies and Operator Services (B2B)

Title	<b>F2.1 Management of planned service information</b>
Scope	To allow the centralisation of the service planning and the access to the planned services for the Operators
Information	Information and constraints on the main service requests for the services operated by the different Operators. Planning of the services
Modalities	Reserved access to the Operators, web component for requiring the service planning by the Operators, web component to show the planning results (vehicles time tables, etc.), transfer to local data base
Users	Operators, Agency

Title	<b>F2.2 Management of vehicles availability</b>
Scope	Provide the Fleet Operators with data on vehicles availability for the different DRT services
Information	Number of vehicles, available timing, shift constraints, etc.
Modalities	Web access to provide the vehicles availability, changing and consultation with a predefined module
Users	Operators, Agency

Title	<b>F2.3 Access to service data</b>
Scope	Allow the access to the service data provided by the different Fleet Operators
Information	Trips performed, bookings, cancellations and modifications, planned services (paths, passengers at each stops, travelled Km, passengers per trips, etc.)
Modalities	Each Operators can access, visualise and print the requested data/information
Users	Operators, Agency, Authorities

### 9.2.3 Agency operators (back office services)

<b>Title</b>	<b>F3.1 Web-based booking management</b>
Scope	Management of the bookings and reservations by the Agency Operators
Information	Booking and reservations data
Modalities	The operators can access the booking requests not satisfied, selecting the request to be processed, sending or not the confirmation to the users
Users	Agency Operators

<b>Title</b>	<b>F3.2 Management of reservations cancellation / modification</b>
Scope	Management of the modification/cancellation requests and control of the overall requests situation
Information	Service data
Modalities	The operators can access the planned service data base and act on it
Users	Agency Operators

<b>Title</b>	<b>F3.3 Service confirmation management</b>
Scope	Management of the booking flow sending the confirmation to the users (by SMS, e-mail)
Information	Reservation data
Modalities	The operators can access the planned service data base and act on it
Users	Agency Operators

<b>Title</b>	<b>F3.4 Missed trips management</b>
Scope	Management of missed trips
Information	Missed trip event related data (motivations, no picking-up of the passengers, etc.)
Modalities	The operators can access the planned service data base and act on it
Users	Agency Operators

<b>Title</b>	<b>F3.5 Claims management</b>
Scope	Management of the users claims
Information	Claim motivation data (line, service, users profile, etc.)
Modalities	The operators can access the claim data base, browsing according to specific criteria, reporting, claim transfer to the identified Operators, internal workflow (link to administrative procedures, user contacts, ...)
Users	Agency Operators

<b>Title</b>	<b>F3.6 Contents management and publication</b>
Scope	Management of the Web-structure and Portal contents
Information	Overall Contents data
Modalities	Publication modalities depending on the different Operators work flow requirements and constraints
Users	Agency Operators, Operators, ...

<b>Title</b>	<b>F3.7 Accesses analysis and statistics</b>
Scope	Management of web access
Information	Number of accesses to the web structure/other related statistics
Modalities	Collecting data on the number of accesses to the web structure
Users	Agency Operators, Operators

### 9.2.4 General User Management Services

<b>Title</b>	<b>F4.1 Users registration and management</b>
Scope	Management of FAMS Clients registration
Information	User data, typology, services requests, note
Modalities	Direct by web or by phone
Users	Agency Operators, Operators, Users

<b>Title</b>	<b>F4.2 Profiling management</b>
Scope	Management of FAMS Clients profiling
Information	Main data on the users, specific elaboration of thematic maps on users origins/destinations, etc.
Modalities	Predefined graphic/numeric outputs, possibility of creation of specific elaboration
Users	Agency Operators, Authorities

### 9.2.5 Authority Services

<b>Title</b>	<b>F5.1 Access to service data</b>
Scope	Allow the access to the service data provided by the different Fleet Operators
Information	Different services performance parameters, bookings, cancellations and modifications, planned services (paths, passengers at each stops, travelled Km, passengers per trips, etc.)
Modalities	Each reference Authority can access, visualise and print the requested data/information
Users	Operators, Agency, Authorities

<b>Title</b>	<b>F5.2 Information on planned services</b>
Scope	To provide Authorities an easy access to the planned services information
Information	Information on the main services operated by the Agency
Modalities	Information access based on different criteria (service area, day, time period, stop interested by the planned trip, etc.) predefined by agreement between the Operator and the reference Authority. The output is the graphical representation of the planned service selected by the specified criteria
Users	Authorities responsible for the overall planning of services in the area

<b>Title</b>	<b>F5.3 Profiling management</b>
Scope	Management of FAMS Clients profiling
Information	Main data on the users, specific elaboration of thematic maps on users origins/destinations, etc.
Modalities	Predefined graphic/numeric outputs, possibility of creation of specific elaboration
Users	Agency Operators, Authorities

## 9.2.6 Mobility Manager Services

Title	<b>F6.1 Information on existing/new services</b>
Scope	To provide users an easy access to the information on existing / under development services operated in the reference area (the “Piana”)
Information	Information on the main PT services operated in the Piana site and on the new mobility schemes introduced by the Agency according to the Wide Area Mobility Management, integrated time table, etc.
Modalities	Information access based on different criteria (service area, day, time period, stop interested by the planned trip, reference users, etc.) provided by the users. The output is the graphical presentation of the planned service selected by the specified criteria with explanatory text
Users	Piana workers, Companies/Industries active in the area, Company Mobility Managers (subscribers or not). For the subscribers a link with the booking service/function of different services is possible

Title	<b>F6.2 Information and contents on the web</b>
Scope	Provision of complementary information on the different services operated by the Agency
Information	Information Contents (time table, line and network composition, traffic situation, etc.) and web links
Modalities	Users via web
Users	General users, Authorities, Agency Operators, Industries/Companies of the area, Company Mobility Managers, etc.

Title	<b>F6.3 Management of via-web training courses</b>
Scope	To provide on-line courses to the Mobility Managers of the different Companies/Industries of the Piana
Information	Material related to the courses, direct courses via web-cam, ...
Modalities	The web structure should be the site where collect and distribute the material related to the service; for the on-line courses the students can access the web site directly and follow the class directly on the web
Users	Students of the mobility manager courses (Area/Company Mobility Managers, Local Authorities Mobility Managers, ...)

Title	<b>F6.4 Communication with the Agency and other services</b>
Scope	Provision of added value services
Information	Mailing, browsing/navigation, FAQ, event calendar, Forum
Modalities	Users via web
Users	General users, Authorities, Agency Operators, etc.

Title	<b>F6.5 Profiling management</b>
Scope	Management of reference area users profiling
Information	Main data on the users, specific elaboration of thematic maps on users origins/destinations, etc.
Modalities	Predefined graphic/numeric outputs, possibility of creation of specific elaboration
Users	Agency Operators, Authorities, interested Companies/Industries and the related Mobility Managers/Responsibles



## 9.2.7 Car Pooling Services

Title	<b>F7.1 Information on existing/new initiatives</b>
Scope	To provide users an easy access to the information on existing / under development car pooling services operated in the reference area (the “Piana”)
Information	Information on the main car pooling schemes introduced by the Agency according to the Wide Area Mobility Management/Car Pooling schemes
Modalities	Information access based on different criteria (reference area, day, time period, Company/Industry, reference users, users profile, etc.) provided by the users. The output is the graphical presentation of the planned trip selected by the specified criteria with explanatory text
Users	Piana workers, Companies/Industries active in the area, Company Mobility Managers (subscribers or not). For the subscribers a link with the booking service/function of different services is possible

Title	<b>F7.2 Information and contents on the web</b>
Scope	Provision of complementary information on the car pooling initiatives operated by the Agency
Information	Information Contents (planned trips, promotional activities , traffic situation, etc.) and web links
Modalities	Users via web
Users	General users, Authorities, Agency Operators, Industries/Companies of the area, Company Mobility Managers, etc.

Title	<b>F7.3 Users registration and management</b>
Scope	Management of FAMS Car Pooling Clients registration
Information	User data, typology, services requests, note
Modalities	Direct by web or by phone
Users	Agency Operators, Operators, Users, Mobility Managers, Companies

Title	<b>F7.4 Users Profiling management</b>
Scope	Management of FAMS Car Pooling Clients profiling
Information	Main data on the users, specific elaboration of thematic maps on users origins/destinations, etc.
Modalities	Predefined graphic/numeric outputs, possibility of creation of specific elaboration
Users	Agency Operators, Authorities, interested Companies/Industries and the related Mobility Managers/Responsibles

Title	<b>F7.5 Communication with the Agency and other services</b>
Scope	Provision of added value services
Information	Mailing, browsing/navigation, FAQ, event calendar, Forum
Modalities	Users via web
Users	General users, Authorities, Agency Operators, etc.

### 9.2.8 User Information Services

Title	<b>F8.1 User Information Panels</b>
Scope	To provide users an easy access to real time information on the service (dynamic arrival times, other service related information, etc.)
Information	Information on buses arrival times updated dynamically, information on the next trip and on its path, ...
Modalities	The Agency web structure directly manages the information on the service to be sent both to the web and to the informative panels.
Users	PT users, Authorities,

### 9.3 Functional Requirements Analysis at Angus Site

This section provides an overview of the main functions that have been identified in the Angus site as a basis to set-up the FAMS Agency. The approach of Florence has been taken as the ‘template’, but these functions described in Table 9.2 below are based on the in-depth assessment of needs at the Angus site.

User Categories	Service / Functionality
F1. Final End-users (individuals wishing to travel within the area)	Information on planned services
	Information of existing resources for hire to community groups
	Telephone/email booking
	Booking confirmation and service variations
	Customer complaints/user groups register
	Missed appointments
	Information and contents on the web
F2. Final End-users (Voluntary and Community groups within pilot area - e.g. Angus Association of Voluntary Organisations)	Communication with the TDC, Travel Club members and other services
	Management information
F3. All Transport Providers (bus/taxi/private hire, Statutory, Community and Voluntary Groups)	Planning and management of information on the planned service
	Management of vehicles availability
	Access to booking data within scope of Data Protection Act to assist future service design
	Management information and dissemination of data into public domain
	Driver criminal record security
F4. Angus Transport Forum Co-ordination Centre (TDC)	Operating permits
	On-line booking management
	Management of reservations, cancellation, modification and own vehicle hire bookings
	Service confirmation management
	Missed trip management
F5. General user management services	Trip analysis and statistics
	Users registration and management (Travel Club)
	Economic viability profiling (education, health, employment, leisure, client group recharging Travel Club)
F6. Authorities within pilot area [Angus Council (all departments), NHS Tayside, Scottish Enterprise Tayside, Angus and Dundee Tourist Board]	Service provision profiling (education, health, employment, leisure, client group recharging Travel Club)
	Management information
F7. Final users of businesses within pilot area (Consignia, White Arrow, retail outlets Ordnance Survey, Bus and Taxi operators, Statutory bodies)	Management information

User Categories	Service / Functionality
F8. Groups representing businesses within pilot area (Round Table, Rotary Club, Federation of Small Businesses, Chamber of Commerce)	Management information
F9. Technology: Integration of MobiRouter Software/Hardware with other systems	Wayfarer ticket machines
	Mobile phone network
	Angus Councils Concessionary Taxicard Scheme for disabled people
	NHS Tayside/Scottish Ambulance Patient Transport Service appointment system interface
	Cross-charging to agencies for services provided including carriage of goods
	Link GPRS to pilot area
Link with UK journey planner Web site	

*Table 9.2 : List of main functions associated with the DRT services at the Angus site*

## 10 FAMS COMMONALITIES AND DESIGN

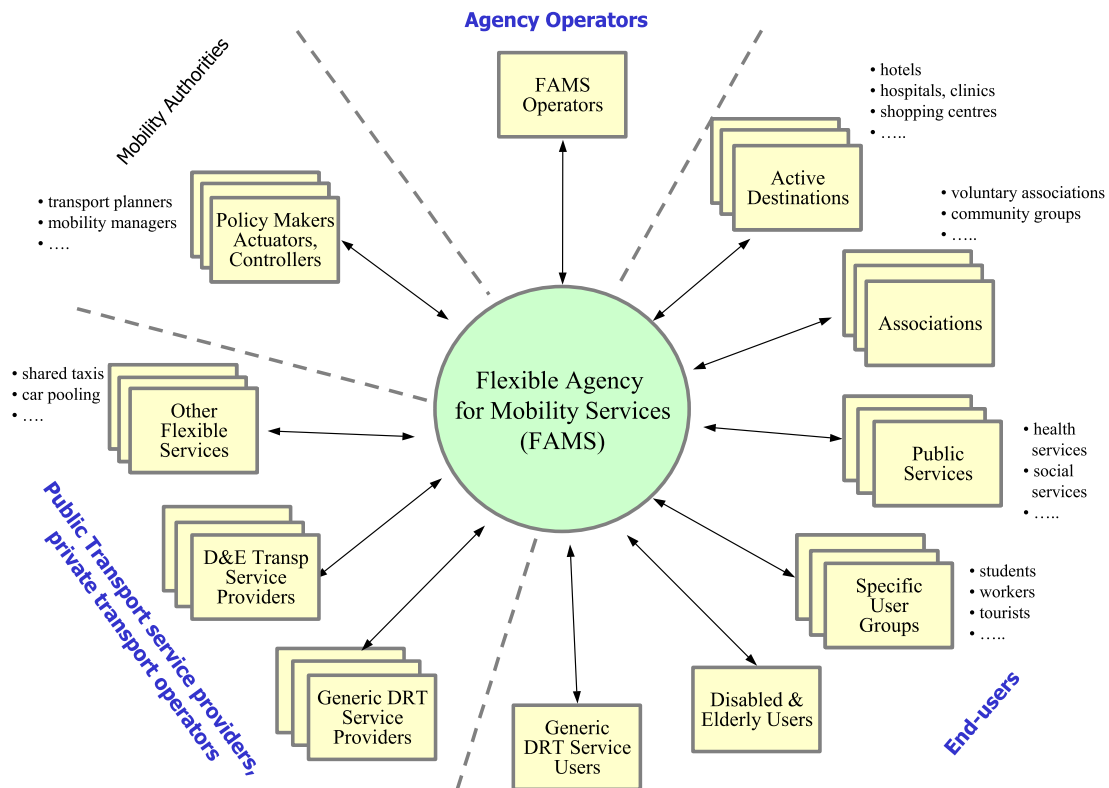
### 10.1 Common reference model

According to previous site functions list and to the 5-layer model introduced in previous section 2.5, FAMS addresses Layer 3 of the model, i.e. the concept of an Expanded Agency.

By supporting collaboration of multiple transport service providers, the Flexible Agency adds a number of capabilities to the usual Travel Dispatch Centre architecture and organisation (Layer 2), with the main goals of:

- providing an integrated service offer to flexible transport end-users;
- providing a unique reference point for information and service access for the users;
- optimising the utilisation of transport resources by coordination of services and exploitation of synergies;
- reducing overheads and improving the coordination work of service planners and managers.

The figure below introduces the overall context of operation of the FAMS Flexible Agency.



*Fig. 10.1 – Context Diagram for the FAMS Flexible Agency*

As one can see, the FAMS provides an organisational and technical infrastructure which will have an impact mainly on four user categories:

- 1) **End-users of flexible transport services.** This user category covers the whole range of possible end-users of flexible transport services, including: citizens and generic transport users; Disabled & Elderly user groups; other user groups with specific transport requirements (e.g. students, workers, tourists, etc.); public agencies (e.g. public health organisations, social service organisations, etc.) and associations (e.g. voluntary associations, community groups, etc.) organising transport for particular user groups; *active destinations* for demand-responsive transport (e.g. hotels, shopping centres, hospitals and clinics, airports, railway stations, harbours, etc.);
- 2) **Transport service providers.** This category includes both public and private organisations which provide various forms of flexible, collective transport services, from DRT services for generic users (e.g. in low demand zones, peri-urban areas, rural areas, etc.) to D&E services, shared taxi services, car pooling, car sharing and travel club services, etc. These users of the FAMS actually provide transport resources, infrastructures and services meeting the demand of the previous user categories.
- 3) **Mobility Authorities.** This category represents the interface between flexible transport organisation/provision and the overall planning and management of mobility services. Mobility authorities include, for instance, transport policy makers, transport planners, mobility managers, etc. They need to have access to the FAMS knowledge base of users' demand, transport service planning, management and operation data for the purpose of monitoring the implementation and updating the mobility policies in the application area.
- 4) **Flexible Agency operators.** These represent the operational users of the organisational and technical infrastructures implementing the Flexible Agency. FAMS operators are to ensure the effective implementation of all the processes and workflows related to customer communications, service booking and reservation, service management and operation.

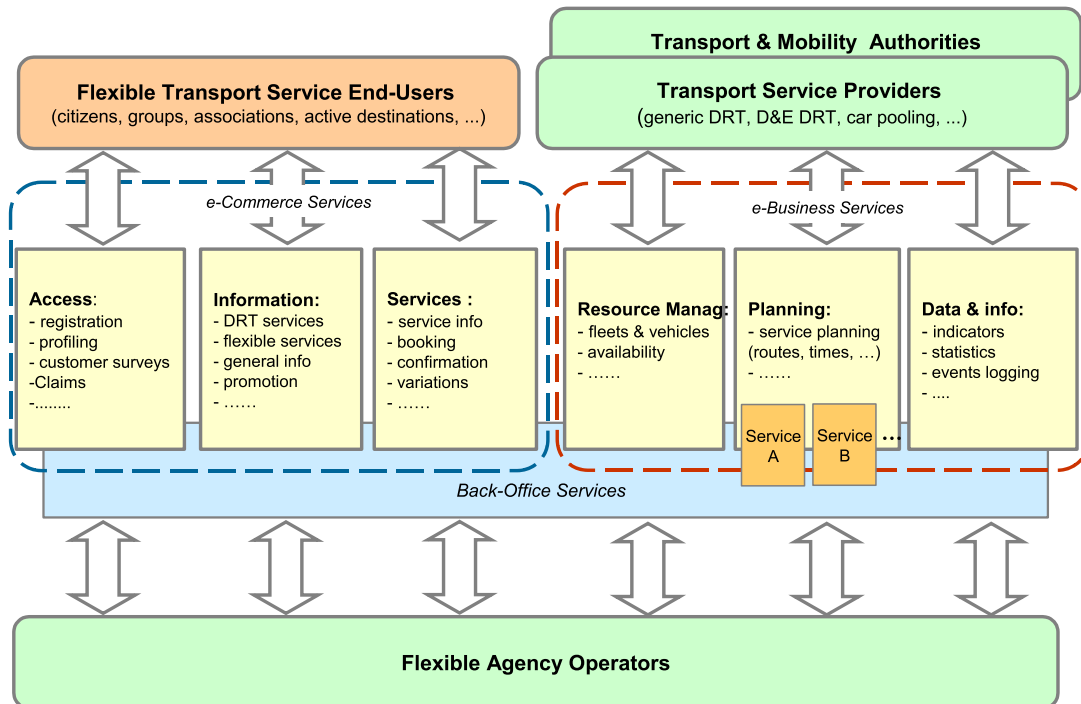
The detailed functional analysis underlying the services that the FAMS Flexible Agency has to provide to these four user categories is summarised in Table 10.2. Overall, the User Needs Analysis and functional requirements analysis conducted in the FAMS sites revealed the Flexible Agency has to implement and support a number of key tasks, including:

- Registration and access – through a number of internet and communication based media – to the Flexible Agency for all user categories;
- User communication and information, both in general about available flexible services as well as related to personal information about reserved services;
- Management of end-user requests for service reservation, for the different user categories and groups;
- Management of booking and reservation for the different transport service providers;
- Service planning and resource (vehicles) management for the different transport providers;
- Service management and operation;
- Service data warehouse and management;
- Customer management through a number of services including surveys, user feedback collection and discussion groups;

From a logical point of view, these services can be grouped into three main categories:

- **B2C Services**, related to the interaction with and service provision to all end-user categories of the Flexible Agency;
- **B2B Services**, provided by the agency to all transport providers and business users (e.g. Transport Authorities) interacting with the Agency;
- **FAMS Operators Services** (back-office services) related to the management and operation of the Agency itself.

The following figure provides an abstract logical view of the general services supported by the FAMS Flexible Agency.



*Fig. 10.2 – high level functional overview of the FAMS Flexible Agency*

## 10.2 Main functions & services

The cross-comparison of site functional requirements analyses has led to the identification of a core set of services that define a general functional architecture implementing the key concepts of the Flexible Agency.

Overall, the following main functional areas can be identified:

FAMS Main Functionalities		
F1	Service information	End-user services
F2	Customer communication and feedback	
F3	Service booking	
F4	Reservation data provision	Transport providers services
F5	Planning data provision	
F6	Resource data provision	
F7	Service data management	General management services
F8	Access management	
F9	Flexible Transport operations management	Extended TDC operations
F10	Flexible Transport operations control	
F11	Fare collection/management	
F12	Management of vehicle communications	

*Table 10.1 : FAMS main functionalities*

The functional groups F1-F3 relate to the interactions between the Agency and the different end-user categories. These services support all the information exchange, service booking and customer management functionalities required by FAMS.

The functional areas F4-F5 cover the interaction between the transport providers and the Agency. The underlying services provide support to transport operators as regards service reservation, service scheduling, route planning and the management of available resources (i.e. vehicles).

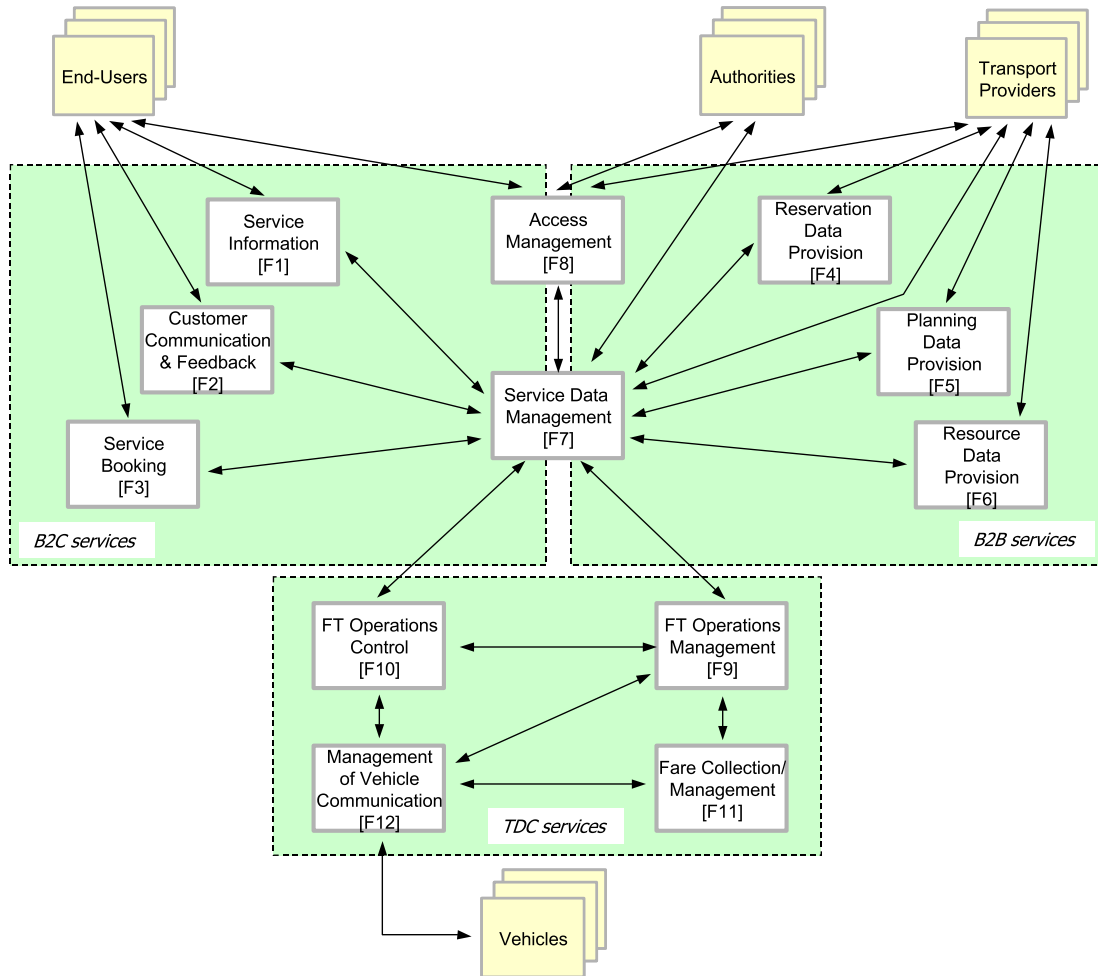
The F7-F8 groups, implement the general data management services of the FAMS. These include the archiving, structuring, updating and maintenance over time of all the information handled by the Agency. Support to data analysis and statistics is also provided.

Finally, the functional groups F9-F12 cover all core tasks related to the management and operation of flexible transport provision. These correspond, mainly, to the typical operations supported by a Travel Dispatch Centre, extended to cover the multi-service, multi-operator dimension of the Flexible Agency.

It is to be noted that the functional groups from F9 to F12 can be linked to the TDC functionalities defined for DRT applications in the SAMPO and SAMPLUS projects [1], [2], whereas the groups F1-F7 concern more directly the information and service interaction requirements among the Agency and the different users introduced by the general concept of the FAMS.



The overall functional architecture for FAMS is represented in the following scheme (Fig. 10.3). The notation used (Data Flow Diagrams, DFD) follows the methodology adopted within FP4 and FP5 transport projects for system architectures specification (see e.g. CONVERGE, KAREN, FRAME projects).



*Fig. 10.3 – Top-level functional architecture of the FAMS Flexible Agency*

The functional architecture is meant to illustrate the structure and interrelations between all main functional components of the Flexible Agency and is assumed to be abstract with respect to the different solutions adopted in the FAMS sites as regards technological choices and set-ups (physical architecture, communication architecture). These further levels of architecture specification and design will be subject of activities within WP3, Trial Design and Technology Adaptation.

Finally, the following table provides a more detailed overview of the reference functional list defined for FAMS. For each functional area identified above, the main sub-functions are listed. Also, for each service / functionality, the main users are indicated.

	<i>B2C</i>	<i>B2B</i>		
	<b>End-users</b>	<b>Transport Providers</b>	<b>Authorities</b>	<b>Agency Operators</b>
<b>Service / Functionality</b>				
F1. Service information				
Public domain information and contents	X	X	X	X
Customer information on booked/planned services	X			X
Customer information on service variations	X			X
F2. Customer communication & feedback				
Customer satisfaction	X			X
Generic customer claims	X			X
Missed appointment claims	X			X
Other user communication services	X			X
F3. Service booking				
Booking request	X			X
Booking confirmation	X			X
Modification/cancellation of previous bookings	X			X
F4. Reservation data provision				
Reservation data request/notification		X		X
Reservation data provision		X		X
F5. Planning data provision				
Planning data request/notification		X		X
Planning data provision		X		X
F6. Resource data provision				
Management of static fleet data		X		X
Management of dynamic vehicle availability data		X		X

Service / Functionality	B2C	B2B		
	End-users	Transport Providers	Authorities	Agency Operators
F7. Service data management				
Access to/search/retrieval of service data		X	X	X
Service statistics and reporting		X	X	X
Data maintenance and update				X
F8. Access management				
User registration & profiling	X	X	X	X
Customisation of information presentation	X	X	X	
User information update	X	X	X	X
Analysis/processing of user profiling data				X
F9. Flexible Transport operations management				
Process booking				X
Update schedules				X
Process service journey				X
F10. Flexible Transport operations control				
Process control data				X
Process DRT status data				X
Verify DRT performance				X
Determine action / actor				X
F11. Fare collection/management				
Process required fare				X
Charge / cash / distribute fare				X
Process passenger statistics				X
F12. Management of vehicle communications				
Process information data				X
Prepare communication data / means				X
Transmit data				X

*Table 10.3 :Detailed function list cross-referenced to main users*

### 10.3 Reference to the FAMS sites

As anticipated, the reference FAMS services/functionalities provide an abstraction of the functional requirements identified at each FAMS site. The two sites will develop their own functional set-ups, based on available technologies, identified adaptation needs and on local requirements and constraints. In order to show the validity of the reference functional specification identified for FAMS, correspondences are identified between the local functional requirements and the general FAMS functional breakdown. The following table provide such a correspondence, showing, for each FAMS function/service the coverage of the identified functionalities at the two FAMS site. As it can be seen, each local sub-function can be linked to one or more sub-functions within the reference list. Generally, these correspondences reflect two possible situations: (a) the local sub-function is completely covered by a general FAMS service/function, the former corresponding completely to or being a more specific concept of the latter; (b) different aspects of the local sub-function are covered by different general FAMS services/functions.

Relationships between site-related and general FAMS functionalities		
Service / Functionality	Florence Site	Angus Site
F1. Service information		
Public domain information and contents	1.7, 3.6, 6.1, 6.2, 7.1, 8.1	1.2, 1.7
Customer information on booked/planned services	1.1	1.1
Customer information on service variations	1.1	1.4
F2. Customer communication & feedback		
Customer satisfaction	1.5	
Generic customer claims	1.6, 3.5	1.5
Missed appointment claims	1.6, 3.4	1.6, 3.4
Other user communication services	1.8, 6.4, 7.5, 6.3	1.8
F3. Service booking		
Booking request	1.2, 3.1	1.3
Booking confirmation	1.3, 3.2	1.4, 3.3
Modification/cancellation of previous bookings	1.4, 3.2	
F4. Reservation data provision		
Reservation data request/notification	2.1	3.1
Reservation data provision	2.1	3.1
F5. Planning data provision		
Planning data request/notification	2.1	3.1
Planning data provision	2.1	3.1
F6. Resource data provision		
Management of static fleet data	2.2	3.2
Management of dynamic vehicle availability data	2.2	3.2
F7. Service data management		
Access to/search/retrieval of service data	2.3, 5.1, 5.2	2.1, 3.3, 6.1, 7.1
Service statistics and reporting	5.1, 5.2, 5.3	3.5, 7.1
Data maintenance and update		

<b>Relationships between site-related and general FAMS functionalities</b>		
<b>Service / Functionality</b>	<b>Florence Site</b>	<b>Angus Site</b>
F8. Access management		
User registration & profiling	4.1, 4.2, 4.3	1.5, 5.1
Customisation of information presentation	4.2	
User information update	4.1, 7.3	
Analysis/processing of user profiling data	3.7, 6.5	
F9. Flexible Transport operations management	TDC services	TDC services
Process booking		
Update schedules		
Process service journey		
F10. Flexible Transport operations control	TDC services	TDC services
Process control data		
Process DRT status data		
Verify DRT performance		
Determine action / actor		
F11. Fare collection/management	TDC services	TDC services
Process required fare		
Charge / cash / distribute fare		
Process passenger statistics		
F12. Management of vehicle communications	TDC services	TDC services
Process information data		
Prepare communication data / means		
Transmit data		

*Table 10.3 : FAMS function list cross-referenced to site function list*

## 11 CLOSING REMARKS

This document is the opening Deliverable of the FAMS project. It positions the FAMS project, sets out the core concepts, presents the sites and their objectives, and moves from stakeholder requirements to functions that meet these needs on a tactical and operational level. Other than the functional work in chapters 9 and 10, most of this work has been done in advance of the FAMS project, and only the presentation has been co-ordinated across the sites. Consequently, we do not propose at this stage to offer ‘conclusions’ or ‘findings’ – it is too early in the project.

The content of Chapter 2 is effectively an extended hypothesis which sets out the emerging DRT concepts, and which needs to be proved within the FAMS Evaluation. The Problem Definition in Chapter 8 synthesises the challenges faced by FAMS along structured lines. These will be developed into detailed Evaluation objectives in the FAMS Measurements and Evaluation Plan (Deliverable D2).

The two FAMS sites have very different starting points, the Angus site being a start-up DRT situation with a first-time adoption of ITS support (albeit from an experienced supplier). The Florence site is a mature site which is extending the scope and functionality of DRT services and ITS support. Nonetheless, both sites have been able to describe the functions required at their sites in a common framework and to yield a FAMS functional set.

This is very encouraging since wide deployment of ITS-supported DRT will require agencies and operators in contiguous areas to interact at all levels. When we find that a sparse rural site and a mature suburban agglomeration can work to common functions and architecture, then we can reasonably hope that sites which have more characteristics in common can also work to a common function set and system architecture. This is absolutely essential if the FAMS-style Flexible Agencies (layers 4 and 5) described in Chapter 2.4 are to emerge as integrators of B2B and B2C services.

Both sites have carried out a deep assessment of stakeholders, their objectives and requirements, linkages and interactions. This has led to a clear understanding of the objectives for the sites, which represent a balanced prioritisation of the individual stakeholder interests. The take-up actions thus represent a valuable contribution to the site objectives, to the local societal, and to the commercial objectives of the operators and agencies.

Finally, it is noted that both sites are taking on significant challenges in the DRT service and organisation concepts as described in Chapters 5 and 6. It is not conceivable to achieve the service offer without the planned ITS support. This provides an adequate challenge to yield European added-value. Therefore, the take-up dimensions of the FAMS actions will be highly significant and will form part of the Evaluation Plan.

## 12 GLOSSARY

### *Active revenue time*

Time during which a vehicle is active during revenue service, i.e. it does not include the time during which the vehicle is standing by and waiting for bookings.

### *Actual trip time/distance*

The time/distance actually taken per ride.

### *Automated booking*

The use of telematics tools by the customer to bypass the switchboard and the manual operator in the Travel Dispatch Centre by having a direct dialogue with the reservation module, e.g. interactive voice response systems, card readers.

### *Automated trip notification*

The ITS function which will automatically notify the customer about his pick-up time (usually about 15 minutes in advance).

### *AVL (Automatic Vehicle Location)*

A system for automatically determining vehicle positions, usually by beacon-based or **GPS** technology. Information is conveyed from the DRT vehicle to the TDC which monitors various aspects of the operation. Typically, locations will be displayed on a digital map on an operator workstation at the TDC.

### *Booking*

A confirmed reservation where the order has been entered in the DRT system and a given service (ride) has been negotiated between the customer and the DRT service provider.

### *Call-back*

See *Automated trip notification*.

### *Cancellation*

An order submitted by the customer requesting deletion of a previous reservation or booking.

### *Capital costs*

Cost of supply and commissioning of system, including special tools, and initial set of spare parts.

### *Captive passengers in DRT*

Passengers who are only able to use DRT as a means of transport. This may be due to financial reasons (cannot afford a taxi or permanent access to a car) or mobility reasons (cannot get into a taxi or ordinary bus easily).

### *Connection link*

The physical movement of a passenger changing from one public transport to another in order to continue the trip.

### *Customer*

A person or organisation involved in a sales transaction concerning the DRT service, issuing a DRT service order. The customer will be trying to make a booking for him/herself and/or other passengers.

*Dead time*

Time taken to travel from the depot to the service area, or vice versa. This includes the time taken for the preparation of the vehicle for DRT (before revenue time) and the unloading of equipment, data and cash as end of day duties (after revenue time).

*Deviation time/distance*

The extra time/distance taken due to deviation to pick up other passengers.

***Deviation time/distance = actual trip time/distance - direct trip time/distance***

*Direct trip time/distance*

Time it would take to travel directly from the origin to the destination, i.e. assuming that no deviation takes place in order to pick up other passengers.

*DRT (Demand Responsive Transport)*

Transport services that are offered to the customers based upon their individual needs, using a central dispatching system and providing services with flexible routes.

*Economic viability*

Financial costs and benefits of a system taking into account the level of private/public financing required by the market environment.

*Fare revenue*

Revenue received from fares, including approximate pro-rata revenue received from passes.

*Feeder service*

A service which collects and/or distributes passengers making the major part of the journey on another transport mode (e.g. express bus, service bus, tram, train).

*Flexible route*

A scheduled service between two end-terminal which has fixed departure times, but with a more or less flexible route, which responds to the actual needs for pick-up and drop-off on the route. Route deviation is a variation in which there are also one or more scheduled points along the route.

*GIS (Geographic Information systems)*

*GSM (General System Mobile (French) / Global System for Mobile communications (English))*

*GPS (Global Positioning System)*

A satellite-based positioning system that can be used for calculating the position of vehicles in automatic vehicle location (AVL) systems.

*Idle revenue time*

Revenue service time spent either standing by waiting for each dispatch/pick-up, or time spent travelling from last passenger alighting point to next passenger pick-up point, i.e. with no passengers on board.

*Intermodality*

Occurs when the route of an individual passenger consists of a combined chain from origin to destination involving at least two different modes. A transport network or route serving passengers is intermodal if it is established by means of more than one mode.

*Invataxi*

Vehicles which are specially equipped for mobility impaired persons. They can have varying seating capacities.



*ITS (Intelligent Transport Systems)*

A group of techniques, using information technology and telecommunications in vehicles and infrastructure, supporting or performing serviced intended to improve transportation from the point of view of safety, efficiency, comfort and the environment.

*IVRS (Interactive Voice Response System)*

The use of automated services in which a telephone is used but there is no operator interface, e.g. in the case of SAMPLUS for booking a trip.

*Journey pattern*

An ordered list of stop points and timing points on a single route, describing the pattern of working for public transport vehicles. A journey pattern may pass through the same point more than once. The first point of a journey pattern is the origin. The last point is the destination.

*Mapping point*

A point for which the mapping information (e.g. geographical location) may be recorded.

*Market projection*

Estimates of the applicability of a system to new markets, measured in terms of economic viability, service provision and ITS capability.

*Non-captive passengers*

Passengers who have access and resources to use transport other than DRT, e.g. car, rail, bus, taxi.

*Operating costs (vehicle)*

Includes costs for: driver, fuel, maintenance, depreciation, insurance, taxes, overheads.

*Order*

A request issued by a customer to the DRT service provider, concerning the reservation of a ride or cancellation of a previous reservation or booking.

*Passenger*

Person travelling with the DRT service vehicle.

*Refused customer*

Person who made contact with the operator but could not for some reason be provided with a booking, e.g. because their destination is outside the limit of the service.

*Reservation*

The order issued by a customer made in advance of the trip to get a DRT vehicle to pass a requested stop point for boarding and alighting.

*Revenue time*

Time during which vehicle is in service. For vehicles hired on a trip basis (e.g. taxis, invataxis) this includes the time after the order has been accepted and actually leaving for the journey, but does not include dead time. For vehicles hired on a time basis (e.g. buses, DRT buses) it includes the “standing by” time in the project area waiting for bookings (idle revenue time) but does not include dead time.

***Revenue time = Active revenue time + Idle revenue time***

*Ride*

A ride refers to a trip made by a passenger on one particular mode of transport. A number of rides may make up a trip. Within SAMPLUS, the ride will generally refer to the leg of the journey undertaken on the demand responsive transport service. It will not include walking time to the pick-up point (this is a separate trip).

*Ridership*

The total number of passengers who board the DRT vehicles in the service area during a given period. Passengers include both the revenue passengers and assistants to disabled and elderly persons who travel for free.

*Route*

An ordered list of mapping points defining one single path through the road network: a route may pass through the same mapping point more than once.

*SAMPO (System for the Advanced Management of Public Transport Operations)*  
European Union Project within the Transport Sector of the TAP.

*Service journey*

A passenger carrying journey by a vehicle between an origin and destination, which may be on a direct schedule route or on a flexible route which depends on a schedule of calls from the TDC. The pattern of working is defined by the associated service journey pattern.

*Service journey pattern*

The journey pattern for a (passenger carrying) service journey.

*Service provision*

The actual services provided and perceptions of their reliability and convenience by passengers and operators.

*SMS (Short Message Service)*

160 character messages that can be sent to most modern digital mobile telephones connected to a compatible GSM network.

*Stop point*

A point where passengers can board or alight from vehicles (= meeting place or boarding point)

*STS (Special Transport Service)*

Service designed for targeted user categories such as disabled and elderly persons. Typically, it is carried out with special vehicles which can handle wheelchairs etc. or with taxis in a shared ride mode. Such services can be operated by the municipalities (common in the Nordic countries), or by volunteer organisations (common in the UK).

*System architecture*

This defines the interrelationships amongst all key elements, in terms of functions performed, data flows and organisation of a system.

*System integration*

The design, construction and operation of transport services within a prescribed boundary (usually geographical) through the co-operation of all relevant service providers (e.g. operators, PTAs). The end product is the provision of transport services that: satisfy user needs (e.g. cost effective and efficient completion of a unimodal or intermodal journey); perform consistently, efficiently and cost effectively; and is subject to operational testing and evaluation.

*TAP (Telematics Applications Programme)*

A European Union programme of research and technological development and demonstration in the area of telematics applications of common interest, 1994-1998.

*Target population*

People for whom the service is provided, living in the service area within easy walking distance (100 metres) of a stop point.

*TDC (Travel Dispatch Centre)*

The location for organising the Travel Dispatch System.

*TDS (Travel Dispatch System)*

A booking and reservation system which has the capacity to dynamically assign passengers to vehicles and to optimise the routes taken by vehicles.

*Technical performance*

In SAMPLUS: the ability of the ITS to operate within specified standards, e.g. reliability, safety, convenience to operator.

*Time vehicle was booked*

The time at which the customer came into contact with the operator.

*Timing point*

A point for which the timing information necessary to build schedules may be recorded.

*Transferability*

The ability to transfer the results of the SAMPLUS evaluation between SAMPLUS partners and to other cities of comparable size and demography within the EU. The SAMPLUS results will thus have a universal applicability throughout the EU, and not just within the individual partner cities.

*Trip*

Trip refers to the complete journey from the passenger's origin to the passenger's final destination. A journey may be made up of a number of trips, e.g. 1st trip: walk to stop point; 2nd trip: by bus to railway station; 3rd trip: by train to end destination.

*Trip booking time*

The minimum advance time required from the passenger in order to make a reservation for a trip. Also known as reservation constraint time.

*Trip cancellation time*

The advance warning time required from the passenger in order to cancel a trip.

*Trip handling time*

Time taken to inform passenger of their actual pick-up time once their call has been received and their demand for the service registered.

*Vehicle journey*

Refers to the depot-to-depot journey.

*Vehicle time*

Time during which vehicle is not at the depot or used in other duties or service. **Vehicle time = Revenue time + Dead time = Active revenue time + Idle revenue time + Dead time**



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**Abbreviations**

<b>Abbreviation</b>	<b>Explanation</b>
<i>ATT</i>	Advanced Transport Telematics
<i>AVL</i>	Automatic Vehicle Location
<i>AVM</i>	Automatic Vehicle Monitoring
<i>CEN</i>	Comité Européen de Normalisation (European Standards Committee)
<i>DRT</i>	Demand Responsive Transport
<i>DSRC</i>	Dedicated Short Range Communications
<i>GIS</i>	Geographic information systems
<i>GPRS</i>	Generalised Packet Radio Service
<i>GPS</i>	Global Positioning System
<i>GSM</i>	General System Mobile (French) / Global System for Mobile communications (English)
<i>GUI</i>	Graphics User Interface
<i>HMI</i>	Human Machine Interface
<i>IDRTS</i>	Integrated Demand Responsive Transport Services
<i>IP</i>	Internet Protocol
<i>ISO</i>	International Standards Organisation
<i>ITS</i>	Intelligent Transport System
<i>IVRS</i>	Interactive Voice Response System
<i>IVT</i>	In-Vehicle Terminal
<i>LAN</i>	Local Area Network
<i>NMT</i>	Nordic Mobile Telephone
<i>OBU</i>	On-Board Unit
<i>PRN</i>	Private Radio Network
<i>SAMPLUS</i>	SAMPO Plus – successor project to SAMPO
<i>SAMPO</i>	System for the Advanced Management of Public Transport Operations
<i>SMS</i>	Short Message Service
<i>STS</i>	Special Transport Services
<i>TAP</i>	Telematics Applications Programme
<i>TCP-IP</i>	Transmission Control Protocol / Internet Protocol
<i>TDC</i>	Travel Dispatch Centre
<i>TDS</i>	Travel Dispatch System
<i>UNA</i>	User Needs Analysis

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Note :

1) SAMPO and SAMPLUS were projects part-funded by the European Commission under the 4<sup>th</sup> Framework Program for R&TD. All Deliverables from not only these two projects, but all other projects in the Transport for Telematics action can be accessed and downloaded from the CORDIS website at [http://www.cordis.lu/telematics/tap\\_transport/research/11e.html](http://www.cordis.lu/telematics/tap_transport/research/11e.html)

2) Information on the FAMS project can be obtained at website <http://www.famsweb.com>

## **14 ANNEX A : STAKEHOLDER ANALYSIS FOR THE ANGUS SITE**

STAKEHOLDER NAME	TYPE	LINKAGE TO OTHER STAKEHOLDERS
1 Angus Council	Authority/Sponsor/Social Service Provider Employer/End User	Links to all Groups through all departments
2 NHS Tayside	Authority/Sponsor/Social Service Provider/ Employer/End User	Links to Angus Council and Patient Transport Service
3 Scottish Enterprise Tayside	Sponsor	1+2+3+4+5+7+8 +13+14+17+18+19+22
4 European Commission	Sponsor	1+2+3+17
5 European Rural Development Fund	Sponsor	1+2+3+5+17
6 Forward Scotland	Sponsor	1+17
7 Angus Childcare Partnership	Sponsor	1+3+17
8 Angus College	Sponsor	1+3+5+15+17+25
9 Cairngorm Partnership	Sponsor	1+5+13+15+16+17+22+23
10 The Community Fund	Sponsor	1+16+17+18
11 Ordnance Survey	Sponsor	1+9+12+15+16+17+19+25
12 Scottish Ambulance Service	Sponsor + Social Service Provider	2+11+15+16+17+18+25
13 Angus and Dundee Tourist Board	Authority/End User	1+3+4+5+9+11+15+16+17+19+22+25
14 Federation of Small Businesses	Employer/Business/End User	1+3+9+13+15+16+17+18+22+25
15 Bus Operators	Transport Service Provider	All
16 Community Transport	Transport Service Provider	All
17 Angus Transport Forum	Transport Service Provider Financial Sponsor Community Group Employer	All
18 Angus Association of Voluntary Organisations	End User	All
19 Chamber of Commerce	Employer/business/end user	All
20 Rotary	Community Group	17,18
21 Round Table	Community Group	17,18
22 Local Traders Groups	End User/Employer and Business	All



STAKEHOLDER NAME	TYPE	LINKAGE TO OTHER STAKEHOLDERS
23 Post Office (Consignia)	Transport Provider/Employer	All
24 Mobisoft	Supplier	All
25 Taxi/Private Hire Trade	Transport Service Provider	All
26 Community Councils	Community Group	All
27 Angus Youth Congress	Community Group/end user	
28 Community Transport Association	National Body representing Community Transport Groups	All
29 Traffic Commissioners	Authority	1,15,16,17,30
30 Scottish Executive	Authority	All
31 People	End User	All

*Additional Comments*

All the above organisations have been involved in discussions regarding the pilot project. The user groups have been in existence since 1997 and highlighted the need for everyone to work together. Angus Transport Forum has been the driving force in highlighting the need for greater partnership working. The result has been the recognition by the above groups to the cause.

**Goals and Objectives**

**Stakeholder Name: 1. Angus Council and 30 Scottish Executive  
Reference Documents: Local Transport Strategy, Equal Opportunities, Economic Development, Community Planning,  
Joint Futures with the NHS, Rural Development**

<b>Goal</b>	<b>Objective</b>	<b>Priority</b>	<b>Additional Comments</b>
Improve Public Transport in Remote Rural Areas in Angus	Encourage innovation	High	Angus Council has supplied £15K cash and digital mapping for project. Budgetary pressures are also being experienced.
	Establish existing demands	Done	The feedback from user groups since 1997 helped to persuade Angus Council for the need for change.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives and commercial acceptance for the need for change.	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration	High	Current legislation and Council policy is to work to this aim.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments
	Evaluate vehicle design requirements to meet the needs of everyone in the	High	Trying to encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer

Goal	Objective	Priority	Additional Comments
Introduce Community Planning	community Encourage Communities to get involved in policy and delivery of services	High	feedback and involvement of user groups. Scottish Executive has placed community planning as their no. 1 priority. User groups will test the potential of community involvement in transport delivery design.
	Establish Local Groups that represent a cross section of the community.	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision Encourage non car user tourists	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources and seasonal tourist trends.
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name:** 2. NHS Tayside  
**Reference Documents:** Acute Services Review, Elderly Patients Strategy, Community Planning, Joint Futures with Angus Council

<b>Goal</b>	<b>Objective</b>	<b>Priority</b>	<b>Additional Comments</b>
Improve Public Transport Access to Health Care	Encourage innovation	High	NHS Tayside has provided 2 offices FOC and £20,000 cash support for our project.
	Establish existing demands	Done	The feedback from user groups since 1997 helped to persuade NHS Tayside for the need for change..
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas..
	Explore alternatives	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Funding secured as a result of above. Await results when services start. Pilot work undertaken with the Patient Transport Service has shown saving of over £150,000 per annum can be achieved through greater management and co-ordination.
Embrace Social Inclusion	Consider greater co-ordination and integration	High	NHS Tayside is suffering from budgetary pressure. Increasing elderly population and acute services review has highlighted the need for greater co-ordination and integration.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements	High	Trying to encourage local bus and taxi operators to purchase

Goal	Objective	Priority	Additional Comments
	to meet the needs of everyone in the community		vehicles to meet the needs of the area will require customer feedback and involvement of user groups.
Introduce Community Planning	Encourage Communities to get involved in policy and delivery of services	High	Scottish Executive has placed community planning as their no. 1 priority. User groups will test the potential of community involvement in transport delivery design.
	Establish Local Groups that represent a cross section of the community	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources.
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name: 3. Scottish Enterprise Tayside**  
**Reference Documents: Local Transport Strategy, Equal Opportunities, Economic Development, Community Planning, Joint Futures with the NHS, Rural Development**

Goal	Objective	Priority	Additional Comments
Improve Public Transport in Remote Rural Areas in Angus	Encourage innovation	High	SET has provided £7,000 cash support for our project for training purposes. 3 members have been trained to MIDAS DAT standard. MobiRouter training also partially covered.
	Establish if improved public transport can assist business /tourism and skillbase of residents in the area	Done	The feedback from user groups since 1997 helped to persuade SET for the need for change.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives and commercial acceptance for the need for change.	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration to encourage everyone to access employment and training	High	SET has a role to create job opportunities for everyone in the area. Access to employment and training is essential to their success.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must be able to identify the impact on employment and training in the area through booking process.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments
	Evaluate vehicle design requirements	High	Trying to encourage local bus and taxi operators to purchase

Goal	Objective	Priority	Additional Comments
	to meet the needs of everyone in the community to access employment, training and encourage tourism		vehicles to meet the needs of the area will require customer feedback and involvement of user groups.
Introduce Community Planning	Encourage Communities to get involved in policy and delivery of services	High	Scottish Executive has placed community planning as their no. 1 priority. User groups will test the potential of community involvement in transport delivery design
	Establish Local Groups that represent a cross section of the community. This will highlight local issues relating to employment, training and tourism	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision Encourage non car user tourists	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources and seasonal tourist trends.
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name:** 4. European Commission and 5 Rural Development Fund  
**Reference Documents:** EU Transport Strategy, Equal Opportunities, Economic Development, Community Planning, Health, Tourism, Education policies

Goal	Objective	Priority	Additional Comments
Improve Public Transport in Remote Rural Areas in Europe	Encourage innovation	High	Council has provided digital mapping FOC and £15,000 cash support for the project.
	Establish existing demands	Done	The feedback from user groups since 1997 helped to persuade the Council for the need for change.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration	High	Council is suffering from budgetary pressure. Increasing elderly population and new Free Travel Concession Scheme from October 2002 has confirmed the need for greater co-ordination and integration.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements to meet the needs of everyone in the community	High	Trying to encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer feedback and involvement of user groups.



Goal	Objective	Priority	Additional Comments
Introduce Community Planning	Encourage Communities to get involved in policy and delivery of services	High	Scottish Executive has placed community planning as their no. 1 priority. User groups will test the potential of community involvement in transport delivery design
	Establish Local Groups that represent a cross section of the community	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name:** 6 Forward Scotland  
**Reference Documents:** None

Goal	Objective	Priority	Additional Comments
Improve Public Transport in Remote Rural Areas in Angus and Scotland	Encourage innovation	High	Forward Scotland has awarded £10,000 cash support for our project.
	Establish existing demands and demonstrate community involvement	Done	The feedback from our user groups since 1997 helped to persuade the Council for the need for change.
	Establish existing resources and willingness to participate in new ideas	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives and evaluate potential for local and national trials	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives and disseminate information to assist other groups in Scotland	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration and evaluate potential for other areas of Scotland	High	Every Council in Scotland is suffering from budgetary pressure. Increasing elderly population and new Free Travel Concession Scheme from October 2002 has confirmed the need for greater co-ordination and integration.
	Explore opportunities for joint working between agencies and potential for other areas of Scotland	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services and design for adaptation throughout Scotland	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback. Establish	High	The needs of the customer are paramount. Complaints register is

Goal	Objective	Priority	Additional Comments
	which mechanism is best suited to get results for local area and potentially for other areas of Scotland		designed to record every complaint. Market research and user groups will also feedback customer comments.
Introduce Community Planning	Encourage Communities to get involved in policy and delivery of services	High	Scottish Executive has placed community planning as their no. 1 priority. User groups will test the potential of community involvement in transport delivery design
	Establish Local Groups that represent a cross section of the community and report on success to assist other areas in Scotland	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”. Report on results to assist other groups throughout Scotland	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision and demonstrate potential for other areas of Scotland	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources.
	Explore alternative fuels in design of vehicles and potential for other areas in Scotland	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name: 7. Angus Childcare Partnership and 27. Angus Youth Congress**  
**Reference Documents: Local Transport Strategy, Equal Opportunities, Economic Development, Community Planning, Joint Futures with the NHS, Welfare Rights in Angus**

Goal	Objective	Priority	Additional Comments
Improve Public Transport in Remote Rural Areas in Angus	Encourage innovation	High	Angus Childcare Partnership has committed £15,000 cash support for our project
	Establish existing demands of Rural Residents particularly families with children	Done	The feedback from our user groups since 1997 helped to persuade the Council for the need for change..
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas..
	Explore alternatives to assist families to reside in rural areas yet still have access to employment, training, child care, after school activities and leisure	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives and highlight benefits for children and families	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration to meet the needs of everyone in rural areas, particularly families and children.	High	Council is suffering from budgetary pressure. Decreasing child population is resulting on pressure to close schools in rural areas. Access to childcare is expensive therefore rural areas are unattractive for families on low or average incomes
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements to meet the needs of everyone in the	High	Encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer feedback / involvement of

Goal	Objective	Priority	Additional Comments
	community		user groups.
Introduce Community Planning	Encourage communities to get involved in policy and delivery of services	High	Scottish Executive has placed community planning as their no. 1 priority. User groups will test the potential of community involvement in transport delivery design.
	Establish local groups that represent a cross section of the community including Angus Youth Congress and Parents	High	Local groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources.
	Explore alternative fuels in design of vehicles. Especially to reduce asthma levels in children in the area	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name: 8. Angus College**  
**Reference Documents: Local Transport Strategy, Equal Opportunities, Economic Development, Community Planning, Education policy, Welfare Rights in Angus**

<b>Goal</b>	<b>Objective</b>	<b>Priority</b>	<b>Additional Comments</b>
Improve Public Transport in Remote Rural Areas in Angus	Encourage innovation	High	Angus College has committed £1,000 cash support for our project
	Establish existing demands	Done	The feedback from our user groups since 1997 helped to persuade the Council for the need for change.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives to assist further Education in Angus	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration to encourage everyone in Angus to have access to further education	High	Angus College has to compete with Dundee, Aberdeen and Perth to attract students. Good local transport is essential.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements to meet the needs of everyone in the	High	Trying to encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer feedback and

Goal	Objective	Priority	Additional Comments
	community		involvement of user groups
Introduce Community Planning	Encourage Communities to get involved in policy and delivery of services. Also highlighting local education needs	High	Scottish Executive has placed community planning as their no. 1 priority. User groups will test the potential of community involvement in transport delivery design.
	Establish Local Groups that represent a cross section of the community including students and those wishing to access further education	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources.
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name: 9. Cairngorms Partnership**  
**Reference Documents: Local Transport Strategy, Equal Opportunities, Economic Development, Community Planning**

<b>Goal</b>	<b>Objective</b>	<b>Priority</b>	<b>Additional Comments</b>
Improve Public Transport in Remote Rural Areas in Angus To assist access to proposed Cairngorms National Park	Encourage innovation	High	Cairngorms Partnership has provided £1,000 cash support for our project.
	Establish existing demands	Done	The feedback from our user groups since 1997 helped to persuade the Council for the need for change..
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas..
	Explore alternatives and potential for concept for other areas within the proposed National Park	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives and report on success or otherwise of concept	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration to attract everyone into rural areas	High	Cairngorms National Park will include parts of Glen Isla, Clova and Esk. Making the park attractive to everyone is essential to its success.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements to meet the needs of everyone in the community	High	Trying to encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer feedback and involvement of user groups.



Goal	Objective	Priority	Additional Comments
Introduce Community Planning	Encourage Communities to get involved in policy and delivery of services	High	Scottish Executive has placed community planning as their no. 1 priority. User groups will test the potential of community involvement in transport delivery design
	Establish Local Groups that represent a cross section of the community	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources.
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name: 10. Community Fund**  
**Reference Documents: Local Transport Strategy, Equal Opportunities, Economic Development, Community Planning, Joint Futures with the NHS, Welfare Rights in Angus**

Goal	Objective	Priority	Additional Comments
Improve Public Transport in Remote Rural Areas in Angus	Encourage innovation	High	Community Fund finances Angus Transport Forum core business until June 2003.
	Establish existing demands	Done	The feedback from our user groups since 1997 helped to persuade the Council for the need for change.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration	High	Council is suffering from budgetary pressure. Increasing elderly population and new Free Travel Concession Scheme from October 2002 has confirmed the need for greater co-ordination and integration.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements to meet the needs of everyone in the	High	Trying to encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer

Goal	Objective	Priority	Additional Comments
Introduce Community Planning	community Encourage Communities to get involved in policy and delivery of services	High	feedback and involvement of user groups. Scottish Executive has placed community planning as their no. 1 priority. User groups will test the potential of community involvement in transport delivery design.
	Establish Local Groups that represent a cross section of the community	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources.
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name:** 11. Ordnance Survey  
**Reference Documents:** Digital Mapping Licence

Goal	Objective	Priority	Additional Comments
Improve Public Transport in Remote Rural Areas in Angus	Encourage innovation	High	Ordnance Survey has allowed Angus Council's Digital Mapping to be licensed.
	Establish existing demands	Done	The feedback from our user groups since 1997 helped to persuade the Council for the need for change.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives and potential use for digital mapping	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives and evaluate use of digital mapping	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration. Can digital mapping assist in service delivery	High	Council is suffering from budgetary pressure. Increasing elderly population and new Free Travel Concession Scheme from October 2002 has confirmed the need for greater co-ordination and integration.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements to meet the needs of everyone in the community	High	Trying to encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer feedback and involvement of user groups.

<b>Goal</b>	<b>Objective</b>	<b>Priority</b>	<b>Additional Comments</b>
Introduce Community Planning	Encourage Communities to get involved in policy and delivery of services can digital mapping be used to assist?	High	Scottish Executive has placed community planning as their no. 1 priority. User groups will test the potential of community involvement in transport delivery design.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments
	Evaluate vehicle design requirements to meet the needs of everyone in the community	High	Trying to encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer feedback and involvement of user groups.
Introduce Community Planning	Encourage Communities to get involved in policy and delivery of services	High	Scottish Executive has placed community planning as their no. 1 priority. User groups will test the potential of community involvement in transport delivery design.
	Establish Local Groups that represent a cross section of the community	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources.
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name:** 12. Scottish Ambulance Services  
**Reference Documents:** Joint Futures with the NHS, Welfare Rights in Angus

Goal	Objective	Priority	Additional Comments
Improve Public Transport in Remote Rural Areas in Angus	Encourage innovation	High	Patient Transport Service will provide 6 second hand minibuses to assist the project.
	Establish existing demands	Done	The feedback from our user groups since 1997 helped to persuade the Council for the need for change.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Trial of concept within SAS have already saved >£150K
Embrace Social Inclusion	Consider greater co-ordination and integration	High	Patient Transport is suffering from budgetary pressure. Increasing elderly population and centralisation of health care confirmed the need for greater co-ordination + integration.
	Explore opportunities for joint working between agencies	Moderate	Shares same problems as Angus Council. Try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Mobisoft to work on links between NHS appointment system/SAS client transport booking system and our co-ordination centre. Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements to meet the needs of everyone in the community	High	SAS must ensure that clients are transported in suitable vehicles. Encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer feedback and involvement of user groups

Goal	Objective	Priority	Additional Comments
Introduce Community Planning	Encourage Communities to get involved in policy and delivery of services	High	Scottish Executive has placed community planning as their no. 1 priority. User groups will test the potential of community involvement in transport delivery design.
	Establish Local Groups that represent a cross section of the community	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources.
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name: 13. Angus and Dundee Tourist Board**  
**Reference Documents: Local Transport Strategy, Equal Opportunities, Economic Development, Community Planning, Visit Scotland Strategy, Welfare Rights in Angus**

<b>Goal</b>	<b>Objective</b>	<b>Priority</b>	<b>Additional Comments</b>
Improve Public Transport in Remote Rural Areas in Angus	Encourage innovation	High	Tourist Board recognises importance of good public transport within pilot area.
	Establish existing demands	Done	The feedback from user groups and tourist boards own members comments have highlighted problem areas.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration	High	The lack of joint ticketing between services/modes detracts from attractiveness of visiting area.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	Moderate	Link between tourist board systems and co-ordination centre required. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements to meet the needs of everyone in the	High	Trying to encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer



Goal	Objective	Priority	Additional Comments
Introduce Community Planning	community Encourage Communities to get involved in policy and delivery of services	High	feedback and involvement of user groups. The closure of Glen Doll Youth Hostel has resulted in the need for Bed and Breakfast/self catering sites.
	Establish Local Groups that represent a cross section of the community	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources.
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name: 14. Federation of Small Businesses and Local Trade Associations**  
**Reference Documents: Local Transport Strategy, Equal Opportunities, Economic Development, Community Planning, Joint Futures with the NHS, Welfare Rights in Angus**

Goal	Objective	Priority	Additional Comments
Improve Public Transport in Remote Rural Areas in Angus	Encourage innovation	High	Retail in Angus towns is under pressure from Dundee. Income in the area is 10% less than national average. Good public transport is essential to attract staff and customers.
	Establish existing demands	Done	The feedback from the user groups since 1997 helped to persuade Federation that the project can demonstrate potential for other areas.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration	High	Everyone can benefit: the employer, consumer, employee, visitor.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	The prospect of goods delivery is encouraging businesses. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements	High	Trying to encourage local bus and taxi operators to purchase

Goal	Objective	Priority	Additional Comments
	to meet the needs of everyone in the community		vehicles to meet the needs of the area will require customer feedback and involvement of user groups.
Introduce Community Planning	Encourage Communities to get involved in policy and delivery of services	High	Encourage existing or new small business to expand and create more jobs in rural areas.
	Establish Local Groups that represent a cross section of the community	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources.
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name: 15. Bus Operators 25 Taxi/Private Hire Operators and 29 Traffic Commissioners**  
**Reference Documents: Local Transport Strategy, Equal Opportunities, 1985 Transport Act, Economic Development, Community Planning, Joint Futures with the NHS, Welfare Rights in Angus**

Goal	Objective	Priority	Additional Comments
Improve Public Transport in Remote Rural Areas in Angus	Encourage innovation	High	All operators willing to participate. Current legislation forbids joint planning. Co-ordination centre can act as “Honest Broker”
	Establish existing demands	Done	Companies have received feedback from user groups since 1997.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Funding secured as a result of above. Await results when services start
Embrace Social Inclusion	Consider greater co-ordination and integration	High	Increasing elderly population and new Free Travel Concession Scheme from October 2002 has confirmed the need for greater co-ordination and integration.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments
	Evaluate vehicle design requirements to meet the needs of everyone in the community	High	Trying to encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer feedback and involvement of user groups.
Introduce Community Planning	Encourage Communities to get	High	Scottish Executive has placed community planning as their no. 1

Goal	Objective	Priority	Additional Comments
	involved in policy and delivery of services		priority. User groups will test the potential of community involvement in transport delivery design.
	Establish Local Groups that represent a cross section of the community	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources.
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name: 16. Community Transport and 26. Community Councils and 28 Community Transport Association**  
**Reference Documents: Acute Services Review, Elderly Patients Strategy, Community Planning, Joint Futures with Angus Council**

<b>Goal</b>	<b>Objective</b>	<b>Priority</b>	<b>Additional Comments</b>
Improve Public Transport	Encourage innovation	High	Voluntary organisations are suffering from funding problems. Other solutions must be explored.
	Establish existing demands	Done	The feedback from user groups since 1997 helped to persuade community transport groups to work together and the need for change.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration	High	Increasing elderly population and financial uncertainty for groups has highlighted the need for greater co-ordination and integration.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements to meet the needs of everyone in the community	High	Trying to encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer feedback and involvement of user groups.

<b>Goal</b>	<b>Objective</b>	<b>Priority</b>	<b>Additional Comments</b>
Introduce Community Planning	Encourage Communities to get involved in policy and delivery of services	High	Scottish Executive has placed community planning as their no. 1 priority. User groups will test the potential of community involvement in transport delivery design.
	Establish Local Groups that represent a cross section of the community	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources.
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name: 17. Angus Transport Forum**  
**Reference Documents: Local Transport Strategy, Equal Opportunities, Economic Development, Community Planning, Joint Futures with the NHS, Rural Development**

<b>Goal</b>	<b>Objective</b>	<b>Priority</b>	<b>Additional Comments</b>
Improve Public Transport in Remote Rural Areas in Angus	Encourage innovation	High	Angus Transport Forum has existed since 1997. Raised £253K for 3 year trial project.
	Establish existing demands	Done	The feedback from user groups since 1997 helped to persuade all parties for the need for change.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives and commercial acceptance for the need for change.	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration	High	Forums main aim is to break down barriers to introduce service design based on cradle to grave approach. Partnership working is essential everyone wins.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements to meet the needs of everyone in the community	High	Trying to encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer feedback and involvement of user groups.



Goal	Objective	Priority	Additional Comments
Introduce Community Planning	Encourage Communities to get involved in policy and delivery of services	High	Scottish Executive has placed community planning as their no. 1 priority. User groups will test the potential of community involvement in transport delivery design.
	Establish Local Groups that represent a cross section of the community.	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision Encourage non car user tourists	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources and seasonal tourist trends.
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name: 18. Angus Association of Voluntary Organisations (AAVO)**  
**Reference Documents: Local Transport Strategy, Equal Opportunities, Economic Development, Community Planning, Joint Futures with the NHS, Rural Development**

<b>Goal</b>	<b>Objective</b>	<b>Priority</b>	<b>Additional Comments</b>
Improve Public Transport in Remote Rural Areas in Angus	Encourage innovation	High	AAVO represents over 150 voluntary organisations. Good public transport is essential. Angus Rural Transport Officer (B Masson) is a member of management committee.
	Establish existing demands	Done	Feedback from our user groups.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives and commercial acceptance for the need for change	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration	High	Current legislation and Council policy is to work to this aim.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements to meet the needs of everyone in the community	High	Trying to encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer feedback and involvement of user groups.

Goal	Objective	Priority	Additional Comments
Introduce Community Planning	Encourage Communities to get involved in policy and delivery of services	High	Scottish Executive has placed community planning as their no. 1 priority. User groups will test the potential of community involvement in transport delivery design.
	Establish Local Groups that represent a cross section of the community.	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision Encourage non car user tourists	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources and seasonal tourist trends.
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name: 19. Chamber of Commerce and 22 Local Traders**  
**Reference Documents: Local Transport Strategy, Equal Opportunities, Economic Development, Community Planning, Joint Futures with the NHS, Rural Development**

<b>Goal</b>	<b>Objective</b>	<b>Priority</b>	<b>Additional Comments</b>
Improve Public Transport in Remote Rural Areas in Angus	Encourage innovation	High	Good Public Transport Links are essential for sustaining growth in area.
	Establish existing demands	Done	The feedback from our user groups since 1997 helped to persuade Chamber of Commerce for the need for change.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives and commercial acceptance for the need for change.	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Funding secured as a result of above. Await results when services start
Embrace Social Inclusion	Consider greater co-ordination and integration	High	Efficient use of resources will increase profits and customer service.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements to meet the needs of everyone in the community	High	Trying to encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer feedback and involvement of user groups.
Introduce Community Planning	Encourage Communities to get	High	Scottish Executive has placed community planning as their no. 1

Goal	Objective	Priority	Additional Comments
	involved in policy and delivery of services		priority. User groups will test the potential of community involvement in transport delivery design.
	Establish Local Groups that represent a cross section of the community.	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision Encourage non car user tourists	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources and seasonal tourist trends.
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name: 20. and 21. Rotary and Round Table**

<b>Goal</b>	<b>Objective</b>	<b>Priority</b>	<b>Additional Comments</b>
Improve Public Transport in Remote Rural Areas in Angus	Encourage innovation	High	Both groups donate substantial amounts of money to charities. Both recognise that better use of money could be made from transport donations.
	Establish existing demands	Done	The feedback from user groups since 1997 helped to persuade both groups that individual group donations do not always prove value for money.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives and commercial acceptance for the need for change.	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration	High	Money provided to joint ventures would benefit more people.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements to meet the needs of everyone in the community	High	Trying to encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer feedback and involvement of user groups.

<b>Goal</b>	<b>Objective</b>	<b>Priority</b>	<b>Additional Comments</b>
Introduce Community Planning	Encourage Communities to get involved in policy and delivery of services	High	Scottish Executive has placed community planning as their no. 1 priority. User groups will test the potential of community involvement in transport delivery design.
	Establish Local Groups that represent a cross section of the community.	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision Encourage non car user tourists	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources and seasonal tourist trends.
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder name:** 22. Local Traders Groups  
**Reference Documents:** None  
**Table:** See 19

**Stakeholder Name:** 23. Post Office / Royal Mail  
**Reference Documents:** Local Transport Strategy, Equal Opportunities, Economic Development, Community Planning, Joint Futures with the NHS, Rural Development

Goal	Objective	Priority	Additional Comments
Improve Public Transport in Remote Rural Areas in Angus	Encourage innovation	High	Budgetary pressures are also being experienced. Rural Post Buses costly to operate.
	Establish existing demands	Done	Feedback from our user groups since 1997.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives and commercial acceptance for the need for change.	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration	High	Project may provide a working model for rest of UK rural areas for mail deliveries.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements	High	Trying to encourage local bus and taxi operators to purchase



Goal	Objective	Priority	Additional Comments
	to meet the needs of everyone in the community		vehicles to meet the needs of the area will require customer feedback and involvement of user groups.
Introduce Community Planning	Encourage Communities to get involved in policy and delivery of services	High	Scottish Executive has placed community planning as their no. 1 priority. User groups will test the potential of community involvement in transport delivery design.
	Establish Local Groups that represent a cross section of the community.	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision. Encourage non car user tourists	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources and seasonal tourist trends
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder Name: 24. Mobisoft**  
**Reference Documents: Local Transport Strategy, Equal Opportunities, Economic Development, Community Planning, Joint Futures with the NHS, Rural Development, FAMS**

<b>Goal</b>	<b>Objective</b>	<b>Priority</b>	<b>Additional Comments</b>
Improve Public Transport in Remote Rural Areas in Angus	Encourage innovation	High	Mobisoft to provide system to meet the needs of agencies involved in Angus Pilot.
	Establish existing demands	Done	Feedback from user groups since 1997.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives and commercial acceptance for the need for change.	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration	High	Current legislation and policy is to work to this aim throughout UK and Europe.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements to meet the needs of everyone in the community	High	Trying to encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer feedback and involvement of user groups.
Introduce Community Planning	Encourage Communities to get	High	Scottish Executive has placed community planning as their no. 1

Goal	Objective	Priority	Additional Comments
	involved in policy and delivery of services		priority. User groups will test the potential of community involvement in transport delivery design.
	Establish Local Groups that represent a cross section of the community.	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision Encourage non car user tourists	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources and seasonal tourist trends
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

**Stakeholder name:** 25. Taxi/Private Hire Trade  
**Reference Documents:** None  
**Table** See 15

**Stakeholder name: 31. People**  
**Reference Documents: Local Transport Strategy, Equal Opportunities, Economic Development, Community Planning, Joint Futures with the NHS, Rural Development**

<b>Goal</b>	<b>Objective</b>	<b>Priority</b>	<b>Additional Comments</b>
Improve Public Transport in Remote Rural Areas in Angus	Design Services to meet needs of residents	High	Raise awareness of current services and improve use of existing resources
	Establish existing demands	Done	Feedback from our user groups since 1997.
	Establish existing resources	Done	Survey done in 2000 of all transport providers highlighting surplus capacity and willingness to try new ideas.
	Explore alternatives and commercial acceptance for the need for change.	Done	DRT plan devised for pilot area. Over 100 meetings undertaken with stakeholders to explore acceptance of concept. Conference held in Carnoustie in April 2001. Over 130 people attended and support for pilot was confirmed.
	Trial alternatives	High	Funding secured as a result of above. Await results when services start.
Embrace Social Inclusion	Consider greater co-ordination and integration	High	Project may provide a working model for rest of UK rural areas for mail deliveries.
	Explore opportunities for joint working between agencies	Moderate	The first part of the pilot is to establish existing services and potential, then try to maximise use of existing resources then encourage agencies to work together.
	Evaluate software systems for invoicing multi agency client based services	High	Main concern between agencies is budgetary control. MobiRouter system must address these needs before joint working will succeed.
	Evaluate customer feedback	High	The needs of the customer are paramount. Complaints register is designed to record every complaint. Market research and user groups will also feedback customer comments.
	Evaluate vehicle design requirements to meet the needs of everyone in the community	High	Trying to encourage local bus and taxi operators to purchase vehicles to meet the needs of the area will require customer feedback and involvement of user groups.
Introduce Community Planning	Encourage Communities to get	High	Scottish Executive has placed community planning as their no. 1

Goal	Objective	Priority	Additional Comments
	involved in policy and delivery of services		priority. User groups will test the potential of community involvement in transport delivery design.
	Establish Local Groups that represent a cross section of the community.	High	Local Groups have existed since 1997. Emphasis must change from complaints about existing services, to finding local solutions, designed by local people to meet local needs.
	Involve the groups in service design to establish “ownership”	High	Community involvement should result in services being more responsive to the actual needs of the community. Travel Club will establish local interests.
Sustainability of services	Explore environmental impact of existing transport provision. Encourage non car user tourists	Moderate	The MobiRouter system will assist in highlighting of duplication and wasteful use of resources and seasonal tourist trends
	Explore alternative fuels in design of vehicles	Moderate	Once needs of area are known and vehicle types identified, consideration could be given to using alternative fuels.

## 15 ANNEX B : USER NEEDS ANALYSIS FROM THE FLORENCE SITE

### a) Describe the main purpose of the User Needs Analysis

The main goal of the User Needs Analysis is to clearly point out the specific requirements of user groups and to establish how the different transport services can answer to this identified mobility demand. Moreover the actions and activities to be pursued to improve the service offered to these target-users are identified, in order to reduce the existing gap between the supply of regular public transport and this specific mobility demand.

Another significant aspect is surely related with the analysis of the willingness of potential users to choose a FAMS product compared to alternatives

### b) Identify the Users who are being studied at your site

The Florence site involves a large number of different services managed by the Agency.

For this reason we have identified many different users associated with the Agency. Some of them will have a direct impact/interaction with the Agency itself, some others will have less reflections.

For simplicity, we have grouped them in 4 different categories:

<b>Authority</b>	Regione Toscana
	Provincia di Firenze
	Comune di Firenze
	Comuni della Piana
	ASL Health Local Authority
<b>Corporate</b>	APT
	Schools
	SITA
	ATAF
	Li-nea
	CAP
	Fams Agency
Supplier	

<b>Intermediate</b>	Drivers of the different services
	TDC operators and technicians
<b>End-User</b> [passengers of the different flexible] services active in the investigated areas (DRT service passengers, students, disabled & elderly, workers of the areas managed by the mobility manager / car pooling service is active, ...)	Hotels
	Tourists
	Workers
	Disabled
	Elderly
	Students
	Generic End-users

c) Identify the source of the User Needs information

In order to develop the user needs analysis we have taken into account some relevant characteristics of the users, such as:

- motivation (What do they want to do and why?)
- activities and habits (e.g., for work, education, leisure)
- values (e.g., importance of standing, comfort, privacy, property)
- attitudes (e.g., towards public transport, car-pooling, cyclists)
- satisfaction (e.g., towards different systems or services in transport)
- complaints (e.g., concerning waiting lines, disorientation, noise, poor air quality, etc.)
- security concerns
- situation awareness (e.g., do they know about alternatives solutions in transport?)
- economical behaviour (willingness to pay for a service)
- number of users
- age (e.g., young, elderly users)
- gender
- abilities or disabilities
- education (e.g., ability to read instructions on an automatic ticketing service interface)
- experience (e.g., with systems or services similar to the one a service provider intends to offer)

According to other studies carried out, the information about users needs derives from wide investigations built upon the customers satisfaction survey. In this context, the identified investigation tools are based on questionnaires (direct interviews,

interviews by phone, etc.), focus groups (open discussions on a specific subject, ...), filtered by the direct knowledge and experience of the researchers of the PT Operator. Consisting with the particular target of FAMS, some other specific surveys have been designed, in order to deeper investigate the needs of some specific users categories (disabled, workers provided with car-pooling management service, ...) or some other specific service areas.

Starting from these considerations it is clear that even the collection of information was strongly influenced by the variety of the services involved in FAMS. Therefore the sources of information used were extremely variable according to the services related:

- meeting
- discussion
- observation
- specialist consultation
- data collection
- articles, texts
- review of European and national projects literature
- measurements

Concerning the existing DRT services and their extension for Sesto-Campi-Calenzano-Scandicci, the collection of information was based mainly on survey among the drivers and focus groups with operators, passengers and associations.

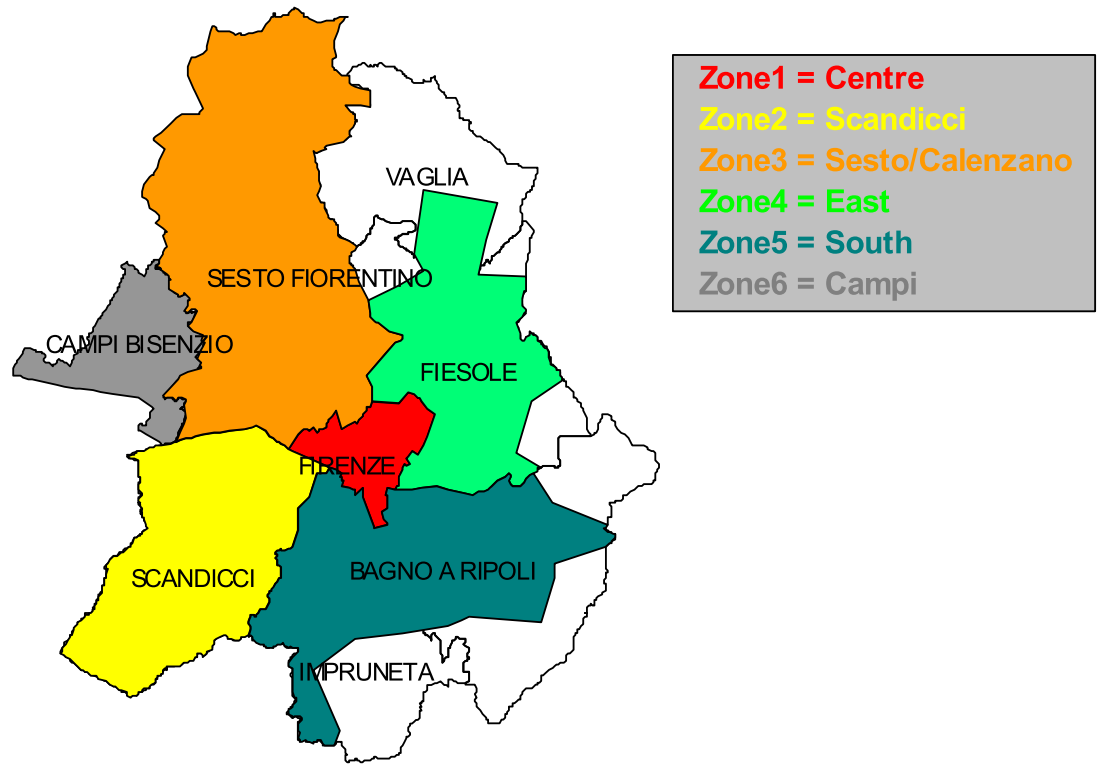
In particular ATAF could bring the experience in realising the service and the PersonalBus system since 1996 and the knowledge of the real problems and requests both of the drivers (more than 20 ATAF drivers in charge of the DRT service and 10 drivers of the Li-nea transit company in charge to operate the Scandicci DRT service) and the operators and TDC personnel (for the service requirements and characteristics, for the needs of the control room operators in connection the DRT bus driver journey transmission, voice connection, etc).

Further analysis on other services and driver requirements have been carried out with the specific Authority in charge of those projects and the community associations involved in the service operational aspects.

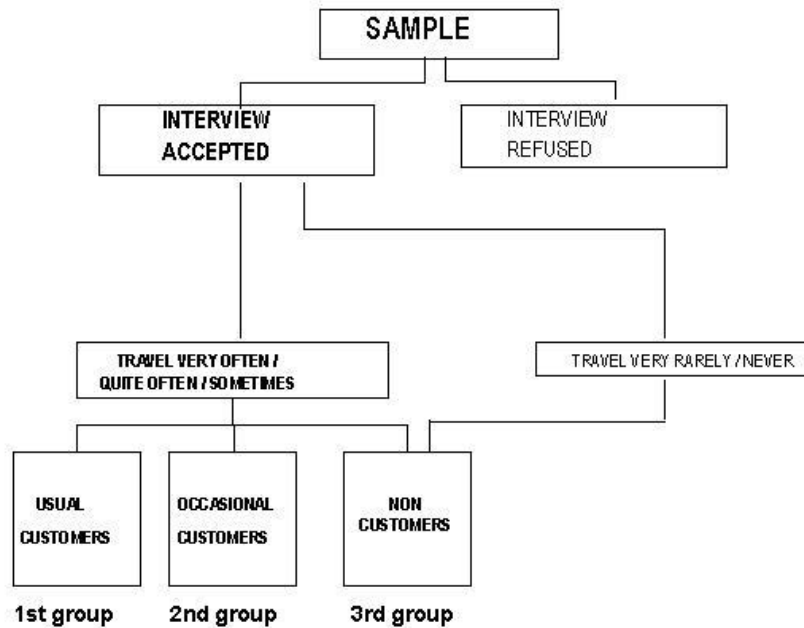
Moreover several surveys have been done among the users of the DRT services.



In the following pictures are shown the investigated area zoning and a scheme used to allow a classification between the users.



*Investigated area zoning*



For the airport service the information gathering was mostly based on discussion and specialist consultation between ATAF and SITA. Thanks to the survey on the existing service and to several meetings has been possible to define the user needs.

At the same time a specific data collection campaign has been prepared.

A questionnaire was provided to the identified hotels in the area surrounding Vespucci airport

Thanks to this questionnaire it has been possible to understand the needs of the most involved user groups. In particular the main purpose of this analysis was to understand the willingness of potential users to choose a FAMS product compared to alternatives.

Starting from the consideration that elderly and disabled people are an important subset of Public Transportation customers, and one of the main target categories inside FAMS, ATAF's investigation was meant to analyse the elderly and disabled transportation needs and requirements.

The approach followed to analyse the user needs has been carried out by ATAF on two levels :

- Qualitative
- Quantitative

The Qualitative phase focused the situation and the transport process taking into account different characteristics of the disabled and elderly user groups, level of service fruition, typology of needs, etc.

At the end of this phase we obtained general information on current situation and its trends but no statistical criteria have been taken into account.

This approach involved:

- Setting up a qualitative analysis/survey (focus group, discussion groups, no structured interviews);
- Preparation of a draft questionnaire;
- Testing of the realised questionnaire;
- Design of a definitive questionnaire;
- Performing of a qualitative on-board survey;
- Collecting of the results.



## New airport service - Data collection questionnaire

Hotel Name..... Category.....  
 Address.....  
 Telephone..... E-mail.....  
 Number of single rooms ..... Number of double rooms.....

1. The clients are mainly composed by:

- |   |         |  |         |
|---|---------|--|---------|
| <input type="checkbox"/> Private Tourists | ① ② ③ ④ | <input type="checkbox"/> Organised group of tourists | ① ② ③ ④ |
| <input type="checkbox"/> Workers          | ① ② ③ ④ | <input type="checkbox"/> Others .....                | ① ② ③ ④ |

2. Usually which is the mean of transport used by your clients to arrive to/leave the hotel?

- |  |           |                                       |           |
|--|-----------|---------------------------------------|-----------|
| <input type="checkbox"/> Cars              | ① ② ③ ④ ⑤ | <input type="checkbox"/> Taxis        | ① ② ③ ④ ⑤ |
| <input type="checkbox"/> Public Transports | ① ② ③ ④ ⑤ | <input type="checkbox"/> Others ..... |           |
| <input type="checkbox"/> Coaches           | ① ② ③ ④ ⑤ |                                       | ① ② ③ ④ ⑤ |

3. How many of your clients come/go form/to Peretola airport (in percentage)? .....

4. Are you provided with a private shuttle service for/from the airport?  YES  NO

*SITA and ATAF are going to arrange a new transport service for/from Peretola in order to allow the hotels to offer their clients an added service specially designed to join the city centre with the airport.*

5. Would you like to offer this service to your clients?  YES  NO

6. If "No", please explain why .....

7. If "YES", please describe the main characteristics you think the service should have?  
 \_\_\_\_\_  
 \_\_\_\_\_

8. Which kind of service would you prefer:  fixed time  on demand

9. Which are the main aspects of interest for the clients?

- |                                      |   |
|--------------------------------------|---|
| <input type="checkbox"/> Comfort     | <input type="checkbox"/> Economic aspects |
| <input type="checkbox"/> Travel time | <input type="checkbox"/> Other .....      |

10. Which are the main aspects of interest for the hotel operators?

- |   |   |
|---|---|
| <input type="checkbox"/> Easy access to the booking service | <input type="checkbox"/> Economic aspects |
| <input type="checkbox"/> Hotel promotion/advertising        | <input type="checkbox"/> Others .....     |

11. In which way would you like to make the trip reservation for your clients?

- |                                    |                                      |
|------------------------------------|--------------------------------------|
| <input type="checkbox"/> Telephone | <input type="checkbox"/> Internet    |
| <input type="checkbox"/> Fax       | <input type="checkbox"/> Other ..... |

12. How in advance would you like make the trip reservation?

The preparation of the Quantitative phase is also important, since it allows to associate a number, a value, to the phenomena. For this kind of analysis it is necessary to employ professionals in statistic.

Step by step we have acquired information and suggestion that have been followed by these actions (feedback).

Each step of the analysis entails different techniques:

- **Focus Group** to allow a behavioural evaluation tool to measure the users' attitude towards public transport (including regular service, Demand Responsive Transport Service, related information provision service, etc.).
- **Non-structured interviews** a kind of motivational analysis based on an open discussion. There is a presence of a moderator, but all the participants are free to speak. There is no leader and the topic of the discussion is not limited only to the mobility needs of disabled user groups.
- **On-board surveys** to give a comparable expression to the behavioural evaluation. It has been possible to draw up the questionnaire targeted for the users of the Special Transport Service for disabled and for the users of Porta Romana on-demand Service.
- **Survey by phone** to analyse (thanks to a specific questionnaire) the transport service provided by the different service operators. The aim of this activity was to compare the service provided by other operators with the service operated by ATAF (mainly the service on-request).

The table below shows analysis process and characteristics.

METHOD	TARGET	TARGET CHARACTERISTICS	SAMPLE SIZE
Focus Group	End users	Disabled Assistants to the disabled Elderly users and no users	8 disabled (mainly wheel-chair) 8 assistants/companions of disabled 8 elderly (retired)
Non-structured interviews	Disabled Associations	Highly involved in the problems Involved in the "task force"	4-6
On vehicle surveys	End users	Disabled (mainly with wheel chair) 2 surveys done: the first to end users of public transport and the latter to end users of DRTS	50 + 50 = 100

On vehicle surveys	End users	General users (mainly elderly) End users of Porta Romana Demand Responsive Transport Service	50
Survey by phone	Transport Operators	Non-profit associations	4

d) Document the User Needs for each studied User Category

In this section we show the main evidences emerged by the analysis carried out on the results. The analysis can be considered as a deeply overview of user requirements. The aim, in fact, was to find out which actions to be undertake in order to reduce the differences between the supply and user requirements.

Flexible Transport Services

The judgement/level of satisfaction towards this service is rather good. All the quality factors have registered a higher level of customer satisfaction, compared with the survey on the general service.


The only problem is the great gap between demand and supply: users ask for an extension of the service in terms of hours of service (extension to night time) and available busses, since it's not possible to satisfy all the requests of service. This is a problem of resources (vehicles, drivers with expertise, costs...), but also a of service organisation.

This is the reason why ATAF is implementing the DRT system, that helps the optimisation of the routes thus guaranteeing more service than before.

Concerning the services related with the transport service the critical points emerged were related with the comfort of bus stops, the on-board information, the information at the meeting points and at the main bus stops (terminals).

## Sample Profile

Sex	%	Age	%	Zone of service	%	Working condition	%
Male	45,5	15-19	2,3	Centre	23,66	Employee	26,70
Female	54,5	20-26	7,3	Scan	19,43	Other	18,78
		27-60	64,7	Sesto	23,29	Retired	17,78
		61-65	7,6	East	12,90	Worker	6,88
		> 65	12,1	South	15,28	Student	6,58
		no answer	6,0	Cam	5,44	Unemployed	6,38
						Freelance	4,32
						No answer	4,27
						Housewife	3,66
						Professional	3,46
						Manager	1,19
Main reason of the trip	%			Main transport mode utilised	%		
Work	59,41			Car	44,87		
Leisure/shopping	27,32			ATAF Bus	22,67		
School	6,52			Motorcycle	19,58		
Other	3,36			Bicycle	9,82		
Visiting friends/relatives	2,18			Train	1,67		
Health	1,17			Taxi	1,2		
Sport	0,05			Other	0,2		

	%		ATAF passengers	%
ATAF users	45,9		++ customers	85,89
non-ATAF users	54,1		+ customers	6,26
			customers	7,85

### 1. USUAL PASSENGERS

- a. ++ *customers* = passengers that use ATAF buses for their main trip/trips
- b. + *customers* = passengers that have used ATAF buses at least 3 times in the week before the interview, but not for their main trip

### 2. OCCASIONAL PASSENGERS

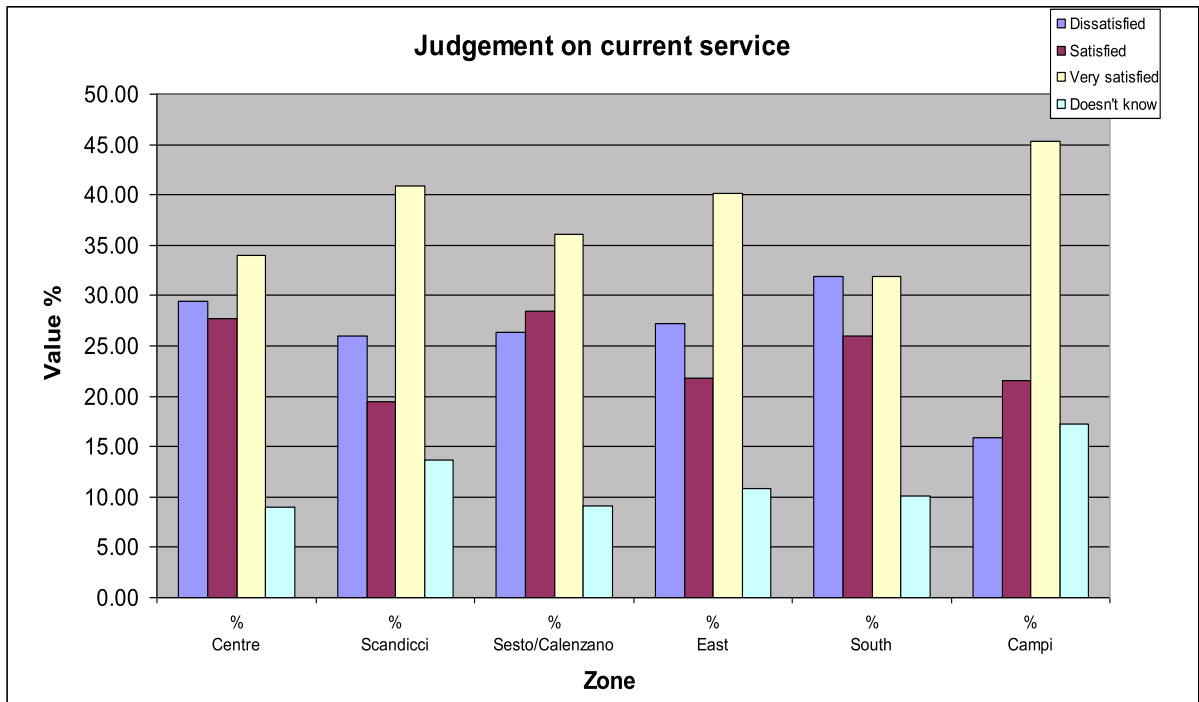
*customers* = passengers that have used ATAF buses 1/2 in the week before the interview

### NON PASSENGERS

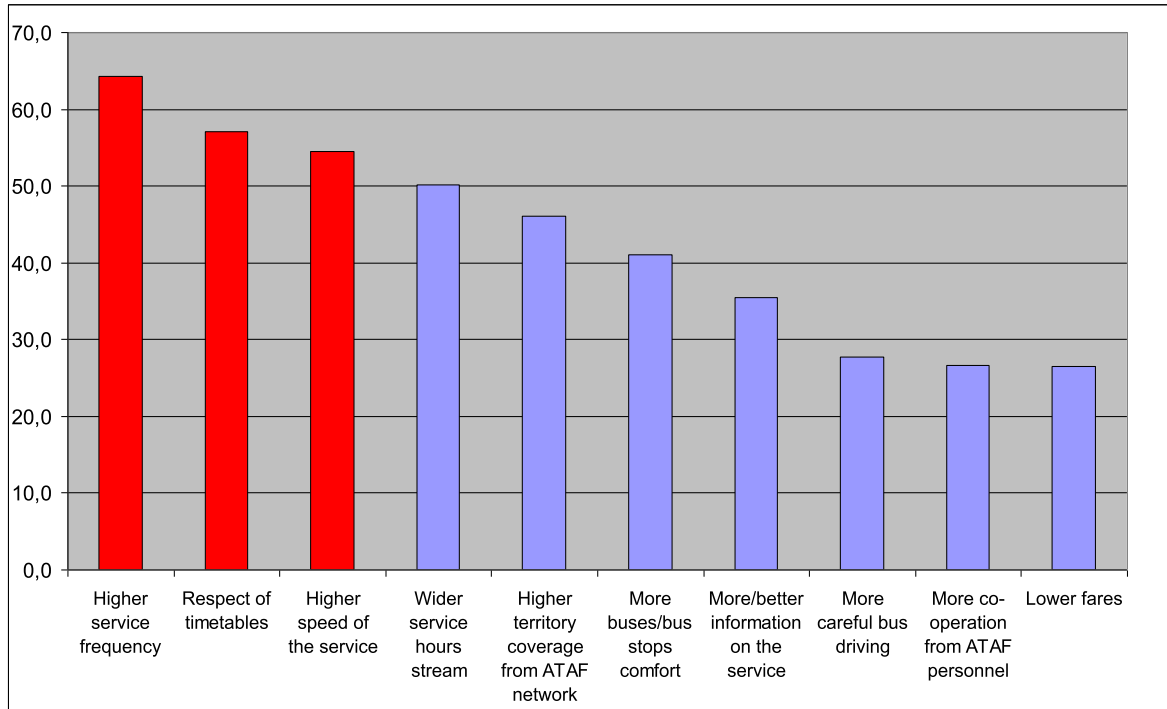
(*non-customers*)

	<b>average judgement</b>	<i>not sufficient</i> (1-5)	<i>sufficient</i> (6)	<i>good</i> (7-10)
<b>quality</b>	<b>6,81</b>	22%	25%	53%
<b>quality vs. price</b>	<b>6,38</b>	27%	53%	20%

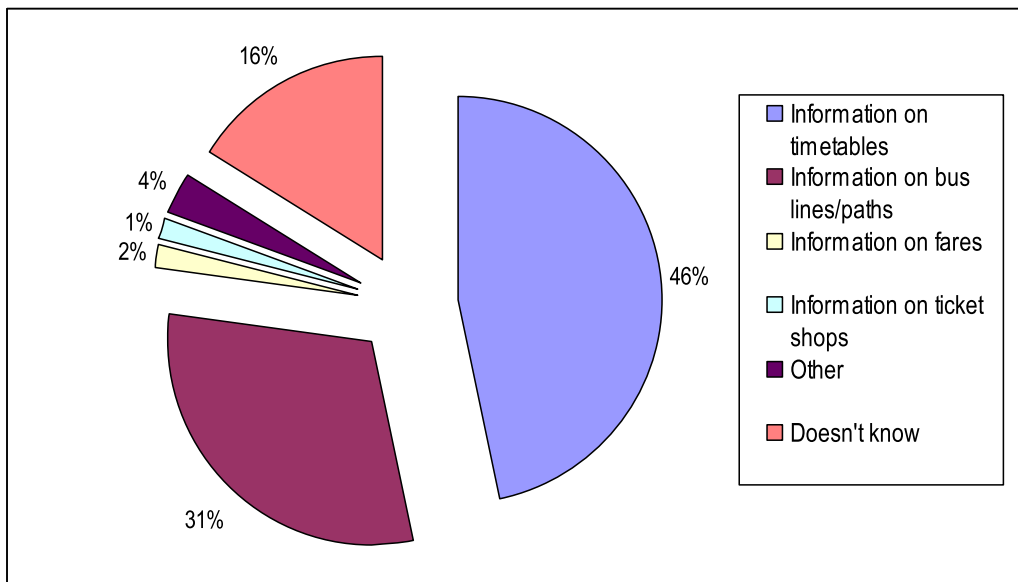
<b>Quality factor</b>	<b>average judgement</b>	<i>not sufficient</i> (1-5)	<i>sufficient</i> (6)	<i>good</i> (7-10)
service price	<b>6,35</b>	30%	21%	49%
service hours/timetables	<b>6,20</b>	30%	24%	46%
direct information on the service from ATAF ( ...)	<b>5,88</b>	35%	27%	38%
service frequency	<b>5,95</b>	38%	19%	43%
respect of timetables	<b>6,05</b>	34%	20%	46%
speed of the service/lines	<b>6,42</b>	22%	27%	51%
area covered by ATAF network	<b>6,60</b>	20%	21%	59%
number of stops along the lines	<b>7,06</b>	10%	20%	70%
bus stops comfort/user-friendly design	<b>6,05</b>	33%	25%	42%
bus stops information	<b>5,84</b>	35%	26%	39%
buses comfort	<b>5,92</b>	36%	24%	40%
on-board information	<b>5,89</b>	32%	32%	36%
drivers driving style	<b>6,51</b>	6%	27%	67%
ATAF personnel co-operation	<b>6,66</b>	15%	28%	57%



**General users needs**



**Information needs**





### Usual passengers

Channel	Student	Worker/Employee	Freelance/Manager	Housewife	Retired/other
Media	1,3	9,8	20,0	9,1	10,7
Bus stops	35	34,8	36,7	26,2	35,1
Internet	1,3	1,8		0,8	
On-board vocal information	1,3		3,3		2,3
On-board visual information	1,3	0,6			0,8
On-board personnel	3,8	6,1	3,3	4,1	9,2
Informative books/leaflets	3,8	6,1	3,3	9,8	9,2
FS Terminal info panels	36,3	26,2	13,3	23,8	16,8
Telephone	6,3	5,5	13,3	11,5	6,1
No opinion	10,0	9,1	6,7	14,8	9,9

### Occasional passengers

Channel	Student	Worker/Employee	Freelance/Manager	Housewife	Retired/other
Media		11,8	16,6		6,3
Bus stops	50,0	29,4	41,7		37,5
Internet	16,7	5,9	8,3		
On-board personnel		5,9			18,8
Informative books/leaflets	16,7	17,7	16,7		
Informative books/leaflets					
FS Terminal info panels		17,6	8,3	50,0	12,5
Telephone	16,7	5,9	8,3	50,0	12,5
No opinion		5,9			12,5

### Usual passengers

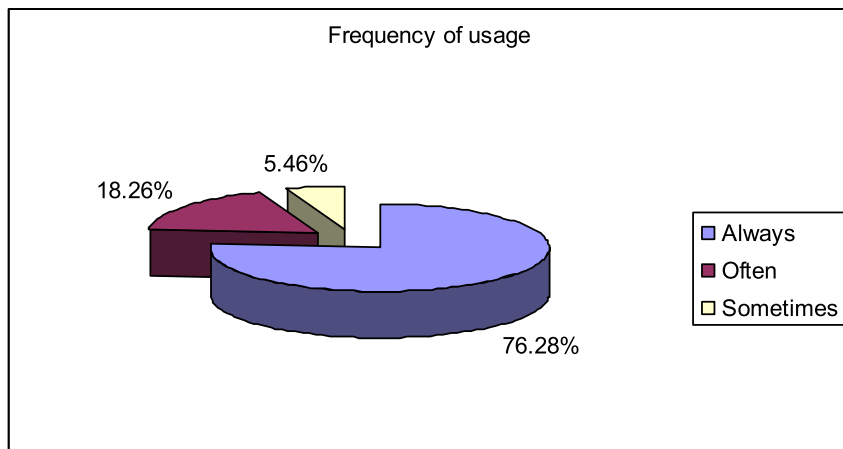
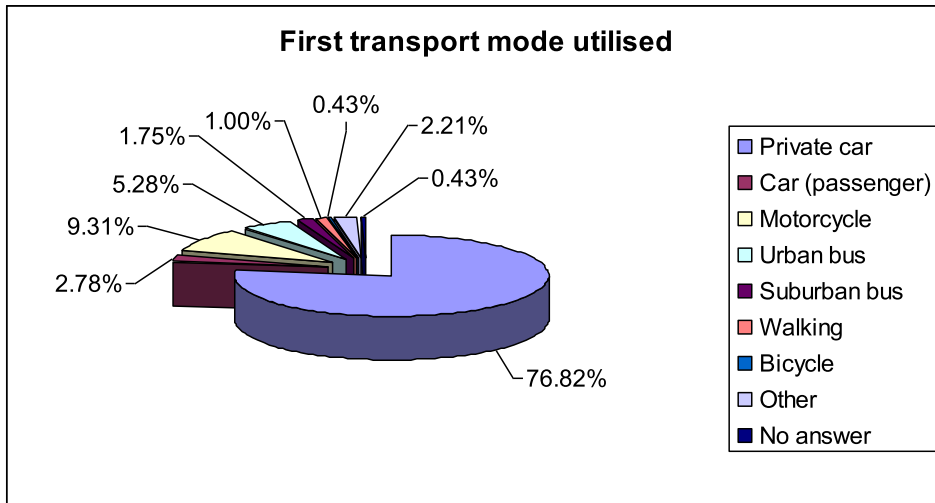
Channel	Centre	Sesto	Scandi	East	South	Campi
Media	5,1	10,9	16,7	8,4	5,2	6,9
Bus stops	42,4	30,8	23,5	35,9	35,4	27,1
Internet	0,8	0,5	1,0	1,5		0,8
On-board vocal information	2,5	1,4		0,8	1,0	
On-board visual information				1,5	2,1	5,4
On-board personnel	9,3	6,2	2,9	7,6	6,3	8,1
Informative books/leaflets	5,1	7,1	9,8	8,5	8,3	12,3
FS Terminal info panels	17,8	28,0	20,6	20,6	21,9	
Telephone	7,6	4,7	8,8	6,9	11,5	36,1
No opinion	9,3	10,4	16,7	8,4	8,3	3,3

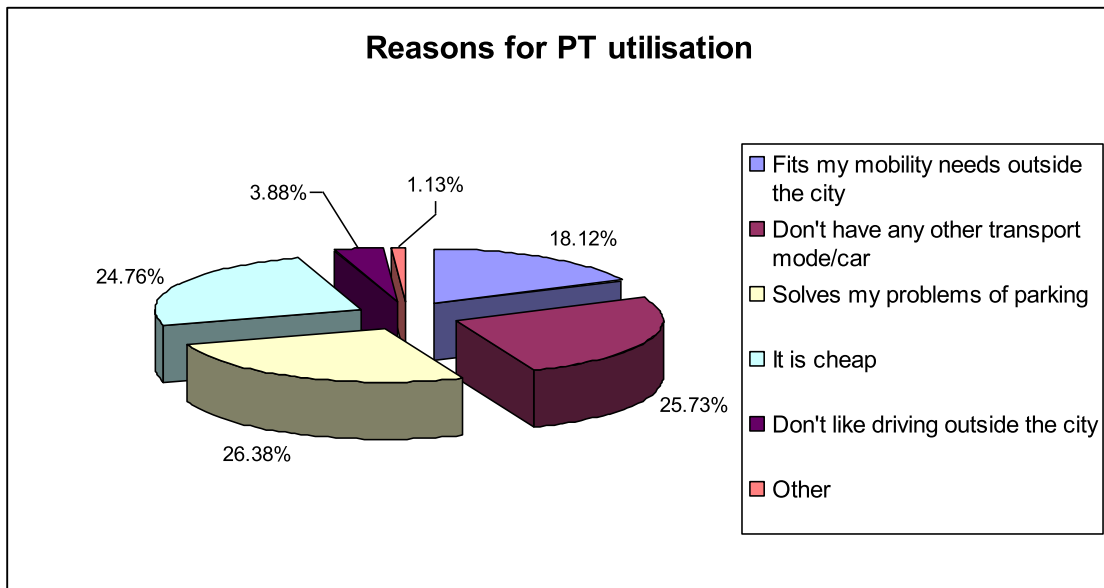
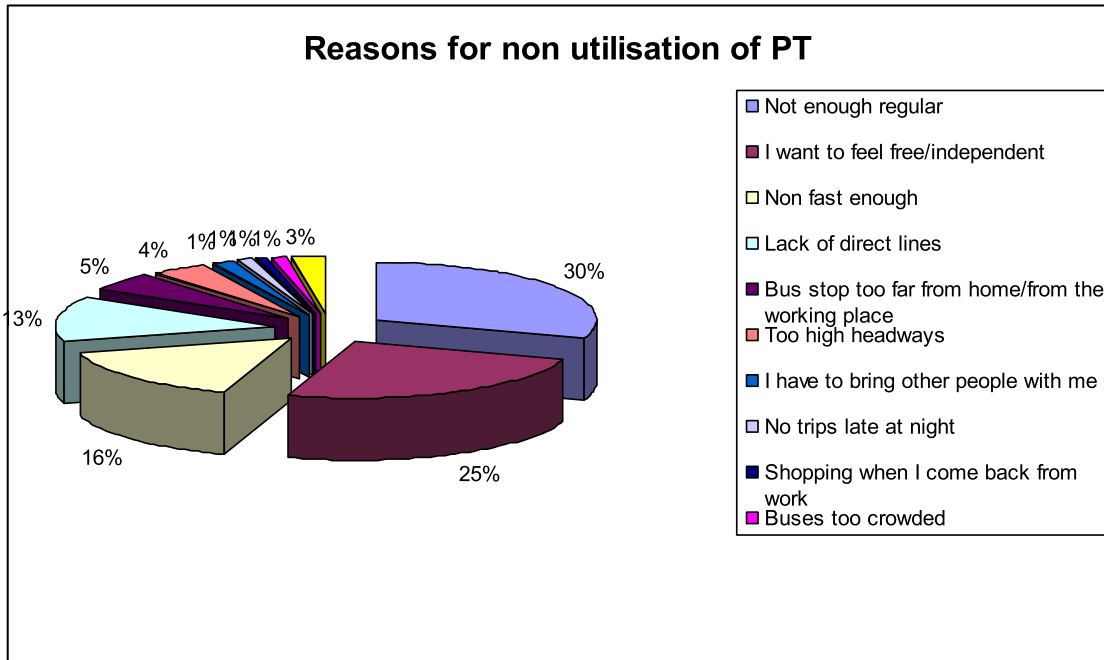
### Occasional passengers

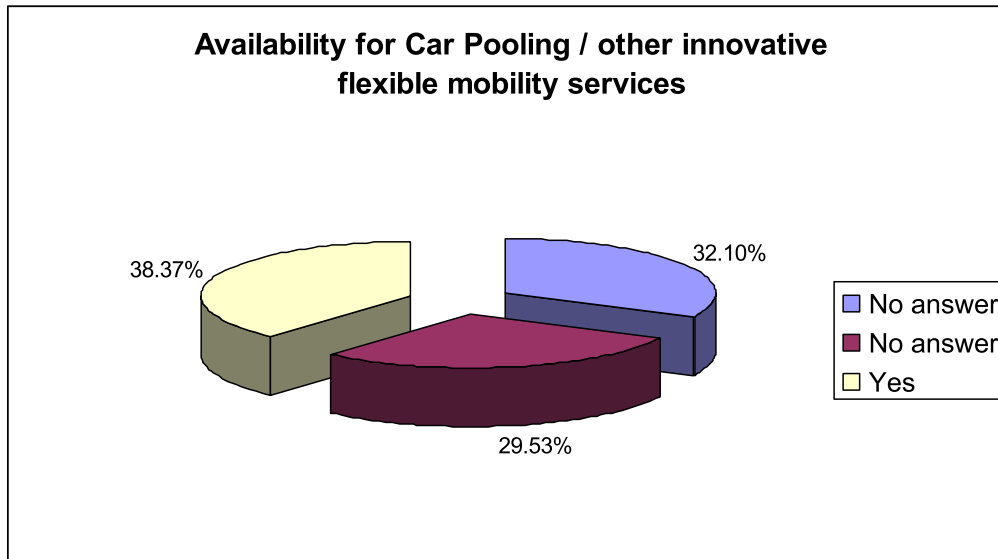
Channel	Centre	Sesto	Scand	East	South	Campi
Media	18,2			18,2	10	11,0
Bus stops	63,6	35,7	14,3	27,3	30	25,5
Internet	9,1				20	0,8
On-board personnel		14,3	14,3	9,1		10,2
Informative books/leaflets		21,4	14,3	9,1	10	10,4
FS Terminal info panels		21,4	14,3	18,2	10	
Telephone	9,1	7,1	14,3	9,1	20	38,1
No opinion			28,6	9,1		4,0

**Survey on workers from Campi/Sesto/Calenzano**

The investigation on the mobility needs of workers has been carried out on the main Industries active in the area.







## **DISABLED & ELDERLY**

### **Disabled**

After a first survey involving 50 end-users, another one was performed, for a global target of 100 disabled end-users.

Combining the information of the different questions it has been possible to make a typical users' profile:

- they are people with physical problems (wheel chair);
- they need to have a companion (72%);
- they don't take other bus-lines because of their problems of affability;
- they live mainly in 3 town councils where the service is in use : Bagno a Ripoli, Sesto Fiorentino and Florence;
- they use the bus regularly (88% of them use the service every day);
- the main destinations are:
  - ◆ 48% work and school (24+24%);
  - ◆ 36% rehabilitation's centres.

52 % of the users were informed about this ATAF's service by the ASL (Local Health Agency). Due to the large number of requests, ASL works as a broker between the demand and the supply. The associations play an important role in information too: 20% of the users were informed by them. It is important to underline that ATAF has

not yet started an informative campaign (we are waiting for new busses that should help us to satisfy the demand).

For users and their family ATAF is almost the only way to move, since private operators are said not to provide enough services, while public operators provide mainly emergency services.

TARGET: 50 disabled users - QUESTIONNAIRE : on board

GENDER     Male :            52%  
 Female :            48%

<b>D1. MODALITY</b>	<b>%</b>
Wheel chair	37.5%
With companion	54.2%
Other	8.3%

<b>D2. AGE</b>	<b>%</b>
< 15 years old	20%
16 - 30 years old	32%
31 - 45 years old	44%
46 -60 years old	4%
Average : 29 years old	Mode : 40 years

<b>QUALITY FACTOR</b>	<b>AVERAGE RESULT</b>
Perceived trip time	1,84
Comfort	1,79
Safety and security	1,76
Control and independence	1,95
Willingness to pay	1,96
Ease of making reservation	2,51

The main evidence is that, even if there is a general high level of satisfaction with ATAF’s services, disabled ask for an improved service, both in its quality and extension (in terms of service hours and covered area), because they wish for reaching a sort of independence, by means of an efficient transport service, that allows them not have to ask for the help of the family or of the friends. Disabled users, in fact,

don't have any other alternative to ATAF on demand transport service, apart from family and friend's help. Private operators are only a few, and are considered quite expensive (cheap services are available only for emergencies). This factor could therefore be a social discrimination among wealthy and non-wealthy disabled users.

Furthermore, we found out that disabled users' main complains about the regular service are the following:

- not all the lines can be utilised because only a part of the fleet has the special devices for disabled with wheel-chair;
- there is not a list of lines and timetables of the lines that operate low-floor buses;
- low-floor busses and those with special wheel chair devices can carry only a maximum of 3 wheel-chairs;
- there are still too many obstacles in the path for the access to busses (side-walks without special slip-walks, massive presence of cars illegally parked at the bus stops).

Comparing with the results of other surveys involving general users (not only disabled and elderly) the disabled are willing to pay more in order to have of an extension in the service in terms of hours of service and are covered by the service.

The results obtained are described in the section below.

### **Elderly**

Elderly users of Demand Responsive Transport Service were involved in an on-board survey.

The target was composed by 50 users.

Users interviewed gave their opinion about the different aspects of the service, classified by "likert scale".

<b>QUALITY FACTOR</b>	<b>AVERAGE RESULT</b>
Perceived trip time	1,82
Comfort	1,79
Time taken to reach the bus stops	2,24
Safety and security	1,85
Control and independence	1,99
Willingness to pay	2,54

Elderly people consider the bus not totally comfortable, especially when schools are opened, because vehicles get too crowded;

Elderly have problems to get on old busses because they don't have low-floor; special vehicles and accessibility supports are required

Elderly ask for a more comfortable ATAF booking office near to the railway terminal because this place is the only one where it is possible to buy special bus-ticket (with a special discount for elderly and low-income users);

Elderly ask more continuous controls by ATAF in order to find out users without ticket.

Disabled and elderly ask for more suitable busses, provided with low-floor. They find the new generation busses quite comfortable, but the old ones are not comfortable for them. This is an important factor because only 43% of ATAF' busses are provided with an easier access (new generation), so this is a sure strategy to improve the service offered to disabled and elderly.

Some problems emerged also with the low-floor busses provided with a special device for wheel chairs. Even if they have an easier access and they are equipped with a special platform to carry in the wheel-chairs at bus-stops, the slope of the platform is too high. This doesn't allow the disabled with wheel-chair to catch the busses on their own, but makes them need a help.

The reliability depends strongly on the bus stop structure.

The problem of accessibility is also related with the edge. It is irregular and, in general, it is too low to allow a lower slope of the platform.

Further on, busses need space at the bus-stop to put out the platform. Cars, quite often parked illegally next to the bus stop, don't allow the driver to come out with the platform.

Another problem is that, even if 43% of busses are provided with an easier access, ATAF can't guarantee a regular frequency of transit of these busses. For this reason, disabled do not have a warranty that, going to the bus-stop, there is an easier access

provided bus. This situation discourages them in using the regular public transport service.

Disabled ask for knowing paths and timetables of the services adequate for them: since not the whole of the network is served by low floor busses, disabled need to know which line is served, together with when and where a low-floor bus transits.

Moreover, we must also say travellers and drivers met some problems with easier-access devices, due to their rare and exceptional use (despite all the drivers have received training focused on the way of using the device for wheel chair, it has been noticed that there were problems in its use).

In the following section we have summarise in bullet point format the user needs divided in the four categories identified.

### **Authority**

- Improve the efficiency of Public Transport in order to provide better services;
- increase the number of DRT system functions already operating;
- integrate existing DRT and flexible services and develop new ones;
- integrate transport services offered by public and private transport providers;
- guaranteeing a wide and effective accessibility to urban transport for different user groups (elderly, workers, students, disabled, etc.);
- providing an efficient service in low mobility demand zones and periods (marginal suburbs and quarter, night-time, etc.);
- provision of flexible services with respect to mobility needs and area characteristics;
- co-ordination and optimisation of service production modalities and resources (vehicles, operation process, user call, etc.);
- integrate fare;
- reduce traffic impact;
- act mobility management policies;
- modify the existing system elements or operations;
- transfer technologies between sites to address the issue of wider application;
- reveal the institutional and organisational barriers to the use of DRT.

### **Corporate**

- Easily manage the services;
- increase the quality of service;
- increase the number of clients;
- tools to plan/manage DRT;



- provide services for their groups;
- cost-benefit of the service;
- work safety;
- company policies respect;
- system expandability;
- system interface towards the other technical company sectors;
- better used resources in terms of buses and workers optimisation;
- use technological support easily;
- provide Know-out and technology;
- develop new Sw, equipment, IT Technologies...

### **Intermediate-users**

- Provide a better service;
- improve working condition;
- work safely;
- use technological support;
- assure information dispatch;
- count on effective means of communication;
- realise the service according to the scheduled one;
- information on the next trip and on the service variation (new ride insertion, planned rides cancellation);
- information on the traffic situation of the road network.

### **End-users**

- Service satisfactory;
- Extension of the service in terms of hours of service and available busses;
- Reach destination in time;
- Timetable respect;
- Easier access to the services;
- Book the journey in advance to be sure to have a reserved seat;
- Have quick responses to their requests;
- Travel comfortably;
- Personnel care;
- Satisfactory level of information;
- Reasonable fees;
- Be informed on the delays;
- Be informed on the service and on the variation of the service network;
- Comfort at the bus stop;
- On-board information;
- Regularity;
- More flexibility of the service.

## **16 ANNEX C : CONTEXT DATA FOR THE ANGUS SITE**

#### 9.4 Site Description: Angus

##### Geographical Location and Context

The county of Angus lies to the north-east of Edinburgh on the Firth of Tay. The coastal belt is well served by public transport services to and from Dundee, Arbroath, Forfar (the county town) and Montrose and onward north to Aberdeen and south-west to Edinburgh. The northern boundary of this coastal strip is marked by the settlements of Alyth (which is in the county of Perth and Kinross to the west of Angus), Kirriemuir and Brechin. These settlements have good transport links on the coastal side but landward towards the Glens public transport provision ranges from adequate to poor and even non-existent, particularly at the heads of the Glens. Public transport is not well developed due to the low population density of the area: the area selected for the pilot scheme covers 490 square miles (58% of the Angus area) with a population of approximately 10,000 (8.9% of the Angus population). Where services are provided, they are based around school transport provision (which only operate on schooldays) and shoppers buses (provided on a weekly basis thereby providing a very basic lifeline for residents). There are also limited Post Buses in the Glens (Isla, Prosen and Clova).

The area selected for the proposal serves the rural areas surrounding Alyth, Kirriemuir, Brechin and the Glens of Angus, covering 490 square miles, (58% of the Angus area, see attached map) and a population of 9,742 (8.9% of the Angus population). Due to the low population density this area is not currently well served by public transport services. Where services are provided these are based around School transport provision and only operate on schooldays or Shopper buses provided on a weekly basis to provide a basic lifeline for rural residents. Post Buses operate limited services in Glen Isla, Glen Prosen and Glen Clova.

The key challenges facing the area are;

- The existing public transport provision in the area, where it exists does not meet the needs of the community or encourage families to live in rural areas.
- Client based services are provided by numerous agencies including Scottish Ambulance Service Patient Transport Service, Angus Council Social Work and Community Education Departments and Voluntary Organisations. These services are provided on an EXCLUSIVE basis, where only those who fit the qualification criteria can be carried.
- There is no coordination or integration of existing resources providing school, health and client based services, meals on wheels or departmental mail delivery services. This results in several vehicles operating in the same area but only for a limited number of people. The result is that service provision in rural areas is regarded as expensive. Many functions could be undertaken by the same vehicle. This would release resources to meet unmet demand.

- People residing in the proposed area are car dependant. Increasing motoring costs (fuel and insurance) are having a severe effect on rural residents. Access to employment, training, education, health services, child care, shopping, recreational facilities and visiting are all dependant on access to a car and sufficient funds to undertake the wide range of activities taken for granted by those living in urban areas. Average income in Angus is 10% less than Scotland as a whole.
- Health care policy in the area is in a period of change with more services being centralised in Ninewells Hospital, Dundee. Visits to Ninewells Hospital can mean a whole day spent travelling by public transport and several changes of vehicle. This is causing great concern for residents in the area. General Practitioners are sympathetic to elderly residents and are aware that a car provides the only lifeline for their needs at present. If a suitable alternative could be found a large number of elderly car owners would gladly give up their car.
- The allocation of hospital appointment times does not recognise the difficulties people residing in Rural Areas experience. This causes widespread concern especially for elderly patients. Patients are regularly faced with delays and arriving late. There is a shortage of car parking spaces at Ninewells. This can result in visitors facing long walks to get to the hospital.
- Disabled people are restricted to travelling by “client” based services due to the lack of accessible services. This does not meet their needs or meet the concept of Social inclusion within the community.
- Angus Council, Scottish Enterprise Tayside and Dundee and Angus Tourist Board are encouraging tourism in the area. It is difficult for cottage industries, particularly catering to attract part-time staff due to the lack of transport in the area. Visitor numbers are restricted to car owners.
- School children are restricted in their ability to undertake after school activities due to the lack and or cost of finding alternative transport. This does not offer rural children an equal opportunity. At school holiday times parents are faced with the dilemma of having a family holiday together or splitting vacation time between partners to act as childminders. The lack of accessibility to child minders and or clubs organised by community education department can also act as a disincentive to bring up a family in rural areas. Older children remain heavily dependant on parents therefore restricting personal development.
- Angus Council has introduced Internet facilities at a number of village halls in the area. Accessing this facility is welcomed but access is limited to those who can reach the halls.

The above problems will be addressed by our proposal. We do not intend to develop a solution around any singular group or problem. Our solution is to involve all parties to introduce a cost effective local solution to meet the needs of all parties, utilising existing resources in a coordinated manner. Flexibility in service delivery is the key. “Best fit” will be used to deliver services using a wide range of vehicles from taxis/volunteer drivers to coaches.

The creation of a coordination centre to administer all transport requests for people trying to access or exit the area will establish the true demand and unmet demands for the area. Transport providers will be contracted to meet the highest service levels (including Midas and local authority standards). New technology systems are now available to make this concept possible. Where these systems have been introduced in Europe results have shown that significant savings can be made and resources freed up to meet unmet demand.

Services will be designed around three main policies- sustainability, rural regeneration and social inclusion. Our project meets the objectives outlined in a number of Angus Councils strategies including, Local Transport, Community Planning, Education, Childcare, Rural partnership and Healthcare. Rural services would be designed to complement and coordinate with the existing public transport networks surrounding Alyth, Kirriemuir and Brechin. These settlements would act as hubs for the project. It is our intention to provide services that will result in rural residents having equal opportunities to access facilities in a similar fashion as those people currently residing in Alyth, Kirriemuir and Brechin.

Area Name	Glen Esk / Brechin	Glen Clova / Kirriemuir	Glen Isla / Alyth
<b>Core Information (1991 census)</b>			
<b>Area (km2)</b>	392	600	203
Population (Total)	11,029	7,105	719 excluding Alyth figures
Population (under 15)	507 ex Brechin figures	1,515	144 excluding Alyth figures
Population (over 60)	1,822	1,143	66 excluding Alyth figures
Density (Total Population)	28	12	3
Car ownership	1488	858	17
<b>Market environment</b>			
Characteristics (all of Angus site)	Deregulated <ul style="list-style-type: none"> <li>Existing public transport network has existed since 1950s. Main transport provision in the 3 trial areas is centred on school transport services that operate 190 days per year. Weekly or twice weekly shopper's services are provided and are subsidised by Angus Council. (See 2002 Angus Council Network map).</li> <li>Fares are set by operators in accordance with Angus Council's Concessionary Travel Scheme</li> <li>Angus Council has introduced joint ticketing multi operator scheme between operators serving Stracathro Hospital).</li> <li>Six main operators provide services within the pilot area. Strathtay Scottish (Subsidiary of Yorkshire Traction), Meffans Coaches (Kirriemuir) subsidiary of Strathtay Scottish, Melvilles Kirriemuir, Wisharts of Frioekheim, Nicholls of Laurencekirk and Glen Travel. Strathtay Scottish and Meffans operate over 90% of the scheduled services in Angus. Post Buses operate in Glen Isla and Clova</li> <li>Numerous Taxi and Private Hire Companies and Owner Drivers operate in the area. Fares set by Angus Council in conjunction with the Taxi/Private Hire Federation</li> <li>Will the UK deregulated legislation assist or hinder the establishment of fully flexible DRT services?</li> </ul>		
Issues			
<b>Socio-Economic</b>			

<b>Characteristics</b>	
Economy (all of Angus site)	<ul style="list-style-type: none"> <li>● The Economy of the three areas within the Angus Pilot is underpinned by agriculture and tourism. Foot and mouth did not directly affect the area but there was no access to the Glens during last spring and summer. The youth hostel at Glen Doll/Glen Clova has been sold to become a private residence.</li> <li>● Average wages are 10% lower than the Scottish average.</li> <li>● The 3 hub towns are dormitory towns for people who work in Dundee, Forfar, Aberdeen, Perth, Montrose and Arbroath.</li> <li>● Main employers: Angus Council, NHS Tayside, Glaxo Pharmaceuticals (Montrose), Don and Low (Textiles) Forfar, Oil Industry Support Industries (Montrose, Aberdeen).</li> <li>● Threatened closure of village post offices and shops will increase travel demands for essentials.</li> <li>● Brechin/Glen Esk area has suffered from a number of substantial job reductions over the past 10 years.</li> <li>● The closure of the United States Command Centre for the Atlantic Fleet and the closure of Esk Foods have resulted in higher than average unemployment in the area.</li> <li>● Kirriemuir/Glen Clova has a high elderly population and substantial poverty related problems. The area has become a commuter belt for Forfar and Dundee.</li> </ul>
Population	<ul style="list-style-type: none"> <li>● Rural areas within the pilot area are showing a decline in families.</li> <li>● School closures are threatened as a result.</li> </ul>
Tourism	<ul style="list-style-type: none"> <li>● Within the pilot areas hill walking is a major tourist attraction.</li> <li>● Fishing.</li> <li>● Cycling.</li> <li>● Canoeing.</li> <li>● Climbing.</li> <li>● Number of cottage industries selling knitwear, pottery, arts and photography, organic foods.</li> <li>● Number of small pubs/hotels and good quality 3 and 4 star self-catering standard.</li> </ul>
Local IT	<ul style="list-style-type: none"> <li>● All village halls have internet access and IT</li> </ul>
Health	<ul style="list-style-type: none"> <li>● NHS Tayside is introducing new methods of service delivery, based on Dundee, Stracathro and Arbroath.</li> <li>● Transport provision is recognised as an issue to be addressed.</li> </ul>
Education	<ul style="list-style-type: none"> <li>● Secondary Education is provided in Brechin, Kirriemuir</li> <li>● Number of small rural primary schools throughout the pilot area</li> <li>● Angus has one college in Arbroath with distance learning provided at Kirriemuir. Universities and colleges also in Dundee</li> </ul>

**Objectives of the Pilot Scheme**

20. Provide all rural residents with equal public transport access.
21. Maximise the use of existing resources.
22. Improve access to employment and training.
23. Improve access to area for tourists without access to cars.
24. Increase passenger numbers.
25. Establish Travel Club for residents in pilot area.
26. Improve access to childcare and after school activities.
27. Reduce car dependence.
28. Increase car sharing.
29. Encourage shopping in local areas through introduction of hub principle.
30. Encourage families to stay in rural areas.
31. Introduce multi modal joint ticketing.
32. Create more full time employment in transport sector.
33. Improve access to health and education.
34. Reduce duplication and wasteful use of resources.
35. Evaluate new technologies and effect on patronage.
36. Reduce subsidies.
37. Encourage bike carriage on buses.
38. Demonstrate that taxi services can provide a solution to rural transport problems.

**Characteristics of Planned Services**

<b>Area Name</b>	<b>Glen Esk / Brechin</b>	<b>Glen Clova / Kirriemuir</b>	<b>Glen Isla / Alyth</b>
<b>Service characteristics</b>			
Type of Service Area	Low Demand Rural	Low Demand Rural	Low Demand Rural
Type of Service User	No restriction	No restriction	No restriction
Type of Service	Partial feeder services to Hub (Brechin) trunk routes and local errand traffic	Partial feeder services to Hub (Kirriemuir) trunk routes and local errand traffic	Partial feeder services to Hub (Alyth) trunk routes and local errand traffic
No. of Services	To be decided	To be decided	To be decided
Journey Pattern	To be decided	To be decided	To be decided
Number of Operators	To be decided	To be decided	To be decided
<b>Number of vehicles used</b>			
Public transport operators	To be decided	To be decided	To be decided
Taxi/Private Hire	To be decided	To be decided	To be decided
Statutory Bodies	To be decided	To be decided	To be decided
Post Buses	To be decided	To be decided	To be decided
Voluntary/community groups	To be decided	To be decided	To be decided
No. of Travel Dispatch Centres	1 for all 3 sites based at Stracathro Hospital, Brechin		
Distance to/between stop points	To be decided	To be decided	To be decided
Service operating hours	To be decided	To be decided	To be decided
Frequency of service	Not applicable. Will concentrate on maximising the capacity of existing services, e.g. dead mileage for school services, etc.		
Minimum pre-travel booking time by user	2 hours initially working up to 1 hour in advance		
Notification of collection time by TDC	15 to 30 minutes in advance		
Expected stop point wait time	Maximum 10 minutes		
Method of payment	Cash, Voucher by Social Service, Concessionary Travel Schemes, Joint Ticketing agreement		
Is the operator legally bound to carry user?	No. Legislation states that a driver or operator can refuse to carry a passenger as long as they can demonstrate the reason why?		



<p>Trip planning: is pick up time or drop off time more important? Why?</p>	<p>Drop off time is the more important especially for services linking with main trunk routes. Within short period of time it is hoped to establish semi-fixed routes and timetables based on user trends. This will assist both pick up and drop off times and perception of reliability.</p>
<p><b>Operational Features</b></p>	
<p>Hardware</p>	<p>Single user PC, ISDN modems</p>
<p>Software</p>	<p>Map User Interface                      Booking                      Routing                      Scheduling</p> <p>Communications to vehicles                      GSM – data                      GSM – SMS                      GSM voice                      GPRS</p> <p>NMT voice                      Connections to pti.org.uk                      Connection to Patient Transport and                      Taxi operator systems</p>
<p>User-TDC dialogue</p>	<p>Land line or mobile phone</p>
<p>Driver-TDC dialogue</p>	<p>GSM or GPRS mobile phones                      Mobirouter system</p>

**Method of Booking DRT Service**

All bookings will be taken through the Travel Dispatch Centre. Where, semi-fixed routes operate the driver will be able to calculate seating capacity requirements to take passengers who have not pre booked.

**Existing Transport Provision Within ANGUS TRIAL AREA only  
Cannot breakdown into pilot area due to reporting procedures.**

Provider		Service / Route	Number of Vehicles	Patronage	Other Information
<b>STATUTORY</b>					
<b>Angus Council</b>	Planning and Transportation Department		50 vehicles from all Bus Operators		Tendered Services, Education Transport Tenders and Concessionary Fares. Figures cannot easily be broken down into existing trial area usage.
	Welfare Rights Department	Fully flexible			Taxicard Scheme
	Law and Administration	N/A	30 Taxis/private Hire vehicles in Trial Area	unknown	Taxi/Private Hire Licensing
	Education Department				School minibuses and Community Education Vehicles for Section 19, Community Transport use
	Social Work Department				Client Based transport using own vehicles and over 80 volunteer drivers
	Tayside Contracts		8		School Meals, internal mail between departments and schools do not carry passengers. Do not currently carry passengers
<b>NHS Tayside</b>	Library		2		Mobile library services does not carry passengers
	SAS Patient Transport Services (PTS)	Flexible according to demand			Local GPs refer patients who can use PTS. Hospitals own vehicles for transporting patients and goods. Routes have evolved to cover areas efficiently as possible with the existing system.
	Hospitals	Flexible according to demand			Samples and records taken by internal mail vans between hospitals and GPs daily.
<b>North of Scotland Water Authority</b>					Water samples taken from local reservoirs daily. Do not carry passengers

Provider	Service / Route	Number of Vehicles	Patronage	Other Information
Post Office	220 Kirriemuir – Glen Clova	1	Average passenger	2 daytime return journeys Monday – Friday 1 daytime return journey Saturday
	221 Kirriemuir - Glen Prosen	1	Average passenger	1 daytime return journey Monday – Saturday
	215 Blairgowrie – Glen Isla	1		1 daytime return journey Monday – Saturday
<b>VOLUNTARY SECTOR</b>				
<b>WRVS</b>	Flexible according to demand			Meals on Wheels. Routes will not change frequently due to known customer base.
	Brechin Day Centre	2	20 clients per day	Services for elderly members only
	Kirriemuir Day Care Centre	1	20 clients per day	Services for elderly members only
<b>Community groups.....</b>				
<b>COMMERCIAL OPERATORS</b>				
<b>Strathtay Scottish</b>	122 Blairgowrie – Auchavan	1	8 per journey	1 return journey daytime Wednesday
	21 Forfar – Brechin - Edzell	1		3 journeys Monday to Friday 2 journeys Saturday No evening or Sunday service
	21A Forfar – Brechin-Stracathro	1		7 journeys Monday to Friday

Provider	Service / Route	Number of Vehicles	Patronage	Other Information
	21B Dundee – Forfar – Brechin – Stracathro Hospital	1		1 journey Monday to Friday
	28,29 Montrose-Craig-Laurencekirk –Edzell - Brechin	1	3 per journey	10 journeys Monday to Friday 9 journeys Saturday No evening or Sunday service This service is being discontinued from July 2002
	30 Montrose – Brechin – Stracathro - Edzell	2	12 per journey	Hourly service Monday to Saturday 4 journeys evenings 2 hourly service Sundays
	31 Northwater Bridge – Laurencekirk – Fettercairn – Edzell – Brechin – Arbroath Angus Collage	1	60 per journey	1 return journey schooldays College service Double Deck vehicle
<b>Meffans Coaches (Kirriemuir)</b>	801 Kirriemuir – Glen Clova – Braedownie	1		1 return journey schooldays Monday – Friday Seats are allocated by Angus Council for schoolchildren
	815 Kirriemuir – Glen Prosen village – Dalairn	1		1 return journey schooldays Monday – Friday Seats are allocated by Angus Council for schoolchildren
	800 Kirriemuir – Glen Isla - Auchavan	1		1 return journey schooldays Monday – Friday Seats are allocated by Angus Council for schoolchildren
	802 Kirriemuir – Memus - Noranside	1		1 return journey schooldays Monday – Friday Seats are allocated by Angus Council for schoolchildren

Provider	Service / Route	Number of Vehicles	Patronage	Other Information
	812 Kirriemuir – Fern – Tannadice – Kirriemuir	1		1 return journey schooldays Monday – Friday Seats are allocated by Angus Council for schoolchildren
	814 Kirriemuir – Bogindollo – Finavon - Kirriemuir	1		1 return journey schooldays Monday – Friday Seats are allocated by Angus Council for schoolchildren
	118 Forfar – Fern Tannadice - Forfar	1	6 Per journey	1 return journey Wednesday and Friday only
	119 Forfar – Tannadice – Careston – Brechin	1	6 Per journey	1 return journey Tuesday and Thursday only
	120 Kirriemuir – Lintrathen (circular)	1	8 Per journey	1 circular journey Tuesday
	121 Kirriemuir – Cortachy (circular)	1	6 Per journey	1 circular journey Tuesday
	130 Dykehead – Kirriemuir – Glamis – Dundee – Ninewells Hospital	1	2 Per journey	1 return journey Tuesday and Thursday only
<b>Melvilles (Kirriemuir)</b>	810 Kirriemuir – Kilry School – Incheoch – Lintrathen – Kirriemuir	1		1 return journey schooldays Monday – Friday Seats are allocated by Angus Council for schoolchildren
<b>Wisharts of Fricockheim</b>	140 Stracathro Hospital – Brechin – Arbroath - Auchmithie	2	159 passengers per day monthly average	7 journeys Monday to Friday 3 journeys Saturday and Sunday 1 evening journey Monday to Friday

Provider	Service / Route	Number of Vehicles	Patronage	Other Information
<b>Nicholls of Laurencekirk</b>	262 Laurencekirk – Stracathro Hospital – Brechin – Forfar – Ninewells Hospital (Dundee)	1	4 per trip	3 journeys Monday to Friday 2 journeys Saturday 1 Journey evenings and Sundays
<b>Glen Esk Travel</b>	150 Glen Esk – Edzell – Brechin	1		2 return journey schooldays Monday – Friday and all other Fridays

**Population Statistics: Area Population Statistics BASE 1991 Census**

**Area 1 Glen Esk / Brechin Hub**

Settlement	Total Population.	Average Household Size	No. of Households	No. of Households without Car	No. over 60 years old	No. under 16 years old
Brechin Landward	659	2.74	270	23	55	133
Careston	331	2.52	150	11	34	51
Edzell	753	2.20	365	82	173	112
Edzell Landward	173	2.73	94	5	22	38
Lethnot	95	2.79	51	5	4	26
Menmuir	293	2.86	127	7	12	75
Stracathro	214	2.27	80	7	42	25
Tarfside	118	2.48	99	4	11	29
Tannadice	713	2.72	317	11	52	151
Total Trial Area 1	3,349	2.37	1553	155	405 (13.39%)	640
Brechin City	7,680	2.32	3446	1,333	1,417	1527
Total	11,029	2.37	4999	1,488	1,822	2167

**Area 2 Glen Clova/Prosen / Kirriemuir Hub**

Settlement	Total Population.	Average Household Size	No. of Households	No. of Households without Car	No. over 60 years old	No. under 16 years old
Kirriemuir Landward	701	2.80	273	36	72	148
Kingoldrum	112	2.73	54	4	8	17
Linrathen	187	2.69	107	5	15	37
Cortachy	322	2.60	160	7	27	66
Glen Prosen & Glen Clova	106	2.71	70	0	6	31
Total Trial Area 2	1,428	2.7	664	52	128 (8.96%)	299
Kirriemuir town	5,677	2.35	2482	806	1,015	1,216
Total	7,105	2.53	3146	858	1,143	1,515

**Area 3 Glen Isla / Alyth Hub**

Settlement	Total Population.	Average Household Size	No. of Households	No. of Households without Car	No. over 60 years old	No. under 16 years old
Airlie	256	2.63	119	6	25	55
Glen Isla	203	2.56	132	5	16	43
Kilry	129	2.77	69	0	15	22
Ruthven	131	2.40	69	6	10	24
Total	719	2.59	389	17(4.37%)	66 (9.18%)	144
Alyth Town						



**Operator Profiles**

**Area 1 Glen Esk – Brechin Hub**

Taxi & Private Hire Operators	Operate in Angus Council Taxicard Scheme	Wheelchair Vehicles	Accessible
<b>Brechin:</b>			
A2B Taxis	Y	N	
Davie's Mini Cabs	N	N	
Morrison's Taxis	N	N	
Murrays Mini Cabs	N	Y	
<b>Edzell:</b>			
Edzell Taxis	Y	Y	
<b>Local Bus Operators</b>		<b>Wheelchair Vehicles</b>	<b>Accessible</b>
	Fleet Size		
Glen Esk Travel (Edzell)	3 minibuses 1 small bus >17<35 seats	N	
M W Nicoll Ltd (Laurencekirk)	25 minibuses 13 small buses 10 coaches	4 minibuses	
Strathtay Scottish	Over 160 vehicles throughout Angus	12	
<b>Section 19 Community Transport</b>		<b>Wheelchair Vehicles</b>	<b>Accessible</b>
	Fleet Size		
Brechin Angus Council Education	1 minibus	Y	

**Area 2 Glen Clova – Kirriemuir Hub and Area 3 Glen Isla – Alyth Hub**

<b>Taxi &amp; Private Hire Operators</b>	<b>Operate in Angus Council Taxicard Scheme</b>	<b>Wheelchair Vehicles</b>	<b>Accessible</b>
<b><i>Kirriemuir:</i></b>			
County Cabs	N	N	
A Jordan	N	N	
K Kabs	Y	N	
Glen Cabs	Y	N	
<b>Local Bus Operators</b>	<b>Fleet Size</b>	<b>Wheelchair Vehicles</b>	<b>Accessible</b>
Meffan's Coaches Kirriemuir	7 small buses >17<35 seats 3 coaches	N	
A Melville Ltd County Travel	7 coaches 2 minibuses	N ?	
<b>Section 19 Community Transport</b>	<b>Fleet Size</b>	<b>Wheelchair Vehicles</b>	<b>Accessible</b>
Kirriemuir Angus Council Community Education	1 minibus	Y	

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