

Measure title: **Agency for flexible services and new mobility services in Genoa**

City: **Genoa**

Project: **Civitas Caravel**

Measure number: **8.4A**

A Introduction

A1 Objectives

The measure objectives are:

- To demonstrate innovative flexible (demand responsive) services “bridging the gap” between conventional large volume PT and new mobility demands
- To integrate flexible services in the framework of an Agency, intended as a co-ordination, organisational, technological and management centre of intermediate services, based on mature ITS platform (M08.04)
- To implement new mobility services in Genoa accompanied by targeted marketing campaigns, possibly including this services in the agency for flexible services

A2 Description

When we have to choose the mode of transport for any kind of trip, we generally have few alternatives: either relatively low cost with rigid timetables and routes (traditional local public transport) or high cost, high quality and high comfort alternatives (taxi and private car). Essentially there is no service between the two.

This is one of the main restrictions of the current local mobility system. Although we are not in a free market, it is possible that a regulated local mobility market could support and favour the birth and development of a flexible transport system.

This could offer a level of quality and price between the traditional local public transport and the taxi which would be competitive for a broad range of mobility demands. It is therefore possible to design a local mobility scheme, not only suitable for a polycentric city like Genoa, but also exportable to many other contexts, to combine the traditional strong points of local public transport (fixed timetable and routes) together with “on demand” services, such as:

- Bus/minibus “on demand” services, implemented in the local public transport network with similar fares to other public transport services (therefore generally subsidised). Particularly suitable where there is a limited mobility demand and a significant “network effect”.
- Collective “door to door” taxi services, with much lower fares than the traditional taxi, possibly with a fixed fare, known in advance by the user. The mobility demand generated by the reduced fares should make the system economically sustainable: this is suitable for fast and medium-length trips (between districts).
- Minibus fast services at fixed fare with seat booking, economically sustainable and useful to rapidly connect distant city areas, without providing a “door to door” service.
- Specific services fixed for particular transport needs or specific targets: people with reduced mobility, house-work trips, transport services for large mobility

attractors such as hospitals, commercial centres, etc., where economic sustainability can be achieved through the stakeholders' involvement.

- Car and bike sharing and car pooling services.

Obviously, the appropriate mix of the above mentioned systems should be re-assessed from time to time; but the different systems have a common structure which foresees:

- Design, development and management centre for services which has a similar technological and organizational model.
- Booking and trip management call centres.
- Several transport operators.

This is the overall context how Genoa has developed the Agency for flexible services and realised through it new mobility services, covering 100% of the operating costs.

B Measure implementation

B1 Innovative aspects

- **New conceptual approach** - The Agency is able to provide “turn-key services”: feasibility, design, planning, implementation, management, maintenance, dispatch centre for all flexible services and relative technology and systems
- **Use of new technology/ITS** – The Agency use an overall innovative ITS platform that shares some basic modules that are adapted to different services such as DRT bus services, DRT disable service, collective taxi and car pooling.
- **Targeting specific user groups** – DRT on demand bus services are normally targeted to the citizens living in the defined areas, collective taxi are targeted to all citizens, whilst disable services are targeted to people with reduced mobility. Car pooling are both targeted to the employees in case of a commuting service or to all citizens in case of an open scheme.
- **New organisational arrangements or relationships (1)** – The Agency is providing call and dispatch centre services for PT companies / on demand services not located in Genoa (i.e. the Aurelio service in the Province of Savona).
- **New organisational arrangements or relationships (2)** – The Agency, together with the IT provider Softeco, can provide a full take up of DRT services (technology transfer + service know how transfer) both in Italy and outside Italy as demonstrated with the Telebus service implemented in Krakow.

B2 Situation before CIVITAS

Concerning innovative non-conventional passenger services AMT has launched in 2002 the first two Demand Responsive Services (one of these in the CIVITAS area) and a third service in 2004 (substituting two fixed routes) with the support of a EU Life programme project called SIDDHARTA.

The concept of the Agency did not exist and is developed inside the CARAVEL project.

B3 Actual implementation of the measure

The development of the Agency has progressed quite fast also in comparison with plan and started its operation already in 2005.

All the following activities have been realised accordingly to plan (some of them in advance):

- agency framework design,
- definition, design revision and follow up of the overall ITS platform system,
- flexible services implementation plan.

The objective of the creation of the Agency has been already achieved. After the first two years of the project the Agency has been already recognised as a knowledge and management centre for all the intermediate flexible services in the Liguria region.

The success of the concept is also demonstrated by the fact that the flexible services and the Agency itself have been recognised as leader in Europe in the framework of the new initiative of the CIVITAS THEMATIC LEADERSHIP PROGRAMME and by potential exploitation of the Agency that makes feasible the realisation of other flexible services outside the boundary of the city of Genoa (i.e. PT company in Savona, La Spezia and in the province of Genoa).

During the last year of the project:

- management of the three existing Public Transport on demand buses called DRINBUS - dispatch centre and transport operations are provided by AMT (Genoa PT operator);
- management and dispatch centre (only till April 2007) for the Genoa Disabled persons flexible transport services; transport operations is provided by three social cooperatives;
- system development and service implementation of the collective taxi (DRINTAXI); dispatch centre and transport operations will be provided by Genoa taxi drivers association;
- car sharing development; management provided by a specific company partially owned by AMI (Genova Car Sharing);
- design, development, communication/marketing campaigns and dispatch centre for a new flexible services in Savona connecting the two peripheral sea coasts with the main hospital of the town called AURELIO;
- design, development, communication/marketing campaigns and dispatch centre for a second AURELIO flexible services in an urban area (Bosco delle Ninfe) in Savona operated with the same buses of the first "Aurelio" service;
- design, development, and dispatch centre (may to october 2007) for a new flexible leisure service (ESCURSIONIBUS) operated by the Province of Savona, connecting the coast to the mountains in order to give a leisure service to the interested trekkers;
- design of PRONTOBUS, the new flexible service in Sarzana, operated by the local PT company (ATC La Spezia);
- design, development, and dispatch centre of the new flexible service in Province of Genoa (Alta Val Trebbia), operated by the local PT company (ATP Genova);
- design and development of a car pooling service for mobility management purpose for the S. Martino Hospital of Genoa;
- design of a new specific car pooling service dedicated to all the citizens and not to companies or closed groups, to be integrated in the infomobility portal within the "community" section;
- design, implementation, training and launch of the flexible PT service in the city of Krakow, inaugurated in July (TELEBUS).

B4 Deviations from the original plan

In relation to the “Agency for flexible services” (M08.04) and to the “New Mobility Services” (M08.09), as the services which are currently planned and under development in M08.09 are all flexible services, CARAVEL has proposed to merge these two measures into M08.04A “Agency for flexible transport services in Genoa”. The European Commission, within the Mid-Term review exercise, has accepted the proposal.

B5 Inter-relationships with other measures

The measure is related to other measures as follows:

- **9.4 Car sharing** – The Agency is also supporting the car sharing development, not directly as the other services, but through the AMI daughter company Genova Car Sharing that is the company in charge of the service in the city.
 - **12.1 Infomobility platform** – Car pooling services are accessible through www.mobilitypoint.it, such as other information and booking services related to DRT buses or collective taxi.
 - **8.6 Krakow demand responsive service** – The Agency has supported implementation, training and launch of the flexible PT service in the city of Krakow, inaugurated in July (Telebus).
 - **11.8 S.Martino mobility plan** – The Agency, together with the IT provider Softeco, has implemented the car pooling service used in the plan.
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C Evaluation – methodology and results

C1 Measurement methodology

C1.1 Impacts and Indicators

Table of Indicators.

No.	Indicator	Units	Methodology for indicator construction	Baseline date	Services involved
1	Operating cost recovery	Operating cost/revenues (fares + public funds)	Measurement	Drinbus 2005	Drinbus
2	Trend of passengers per month	Passengers per month	Measurement	2004 (only Drinbus)	4 demand responsive bus services in Italy, car pooling, new DRT bus service in Krakow
3	Awareness level	%	Telephone / direct survey	Drinbus 2003	1 demand responsive bus service
4	Quality of flexible services including modal shift / acceptance / security	Perceived quality	Direct survey	2004 (only Drinbus)	1 demand responsive bus service
5	Number of operators involved	Operators involved	Measurement	2004	All
6	Number of new flexible services developed and integrated in the Agency	Services running	Measurement	2004	All
7	Expert statement (Guard)	Statement	Interview	---	All

Detailed description of the indicator methodologies:

- **Indicator 1** (Operating cost recovery) – Operating revenues are originated by fares and public funds. Fares are estimated on the base of annual passengers: Drinbus service need a standard PT ticket plus a specific daily supplement, so it's possible to calculate sold supplements and evaluate a percentage of standard PT ticket revenue due to Drinbus. Public funds are based both on total service hours and passengers, so it's possible to calculate exactly their amount.
- **Indicator 2** (Trend of passengers per month) – All DRT bus service are managed through specific optimisation software. In the data base all service data, including passengers transported day by day, are registered.
- **Indicator 3** (Awareness level) – Thanks to a specific phone survey conducted on a random sample of people living in the target area, it's possible to understand how many people know the DRT service.
- **Indicator 4** (Quality of flexible services including modal shift / acceptance / security) – In order to know the perceived quality of the services, the best way is to interview passengers during their trip.

- **Indicator 5** (Number of operators involved) – It is the total number of transport operators involved in services coordinated by the Agency in the Caravel time period.
- **Indicator 6** (Number of new flexible services developed and integrated in the Agency) – It is the total number of flexible services developed by the Agency in the Caravel time period.
- **Indicator 7** (Expert statement (Guard)) – Interviews, including operational, technical, financial aspects and operators acceptance to:
 - Car sharing company director and president
 - Agency staff including call centre
 - Taxi Drivers and Unions representatives
 - Disabled association representatives
 - PT operators management staff.

C1.2 Establishing a baseline

The only available baseline is the Drinbus situation in 2004. The remaining services began during the Caravel project.

C1.3 Building the business-as-usual scenario

The trips satisfied by the DRT services should be satisfied by other modes but it is mostly impossible to evaluate this scenario.

C2 Measure results

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

C2.1 Economy

In 2004 the overall Drinbus operating cost was about 850.000 €. The only service revenues were fares, as the service contract between Municipality of Genoa and AMT, establishing public funds for Drinbus operations, was signed only in 2006; the total revenue in 2004 is estimated in 28.000 €. So in 2004 operating cost / revenues ratio was about 30.

In 2007 Drinbus operating cost increased up to 950.000 €, mainly because of personnel cost and fuel cost raise. Thanks to the bigger number of passengers and the increase in fares established by AMT in November 2006 (standard urban ticket from 1,00 € to 1,20 €, specific Drinbus supplement from 0,50 € to 1,00 €), incomes for fares were about 49.000 €. Obviously the biggest revenue were public funds: in fact in 2006 Drinbus was defined no more as an experimental service but as an essential service, so Drinbus was inserted in the service contract between Municipality of Genoa and AMT; in 2007 the public fund was about 620.000 €. So in 2007 operating cost / revenues ratio was about 1,4.

C2.2 Energy

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C2.3 Environment

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C2.4 Transport

In 2004 Drinbus was the only existing flexible service in Genoa; it served 3 urban areas situated in the west coast (Pegli), the east coast (Quinto) and the north part of the city (Bolzaneto).

The only transport operator involved in the management of flexible service was AMT, the Genoa public transport company.

During the Caravel time period the Agency has involved **7 transport operators** in the implementation of flexible services; thanks to this cooperation **9 flexible services** have been developed by the Agency:

- Drinbus, operated by AMT Genova,
- Service for mobility impaired people, operated by 3 social cooperatives,
- Drintaxi, operated by taxi drivers [the service is in the implementation stage],
- Aurelio, operated by ACTS Savona,
- Escursionibus, operated by ACTS Savona,
- Prontobus, operated by ATC Spezia,
- Alta Val Trebbia, operated by ATP Genova,
- Telebus, operated by MPK Krakow,
- Car pooling (no transport operator) [the service is in the implementation stage].

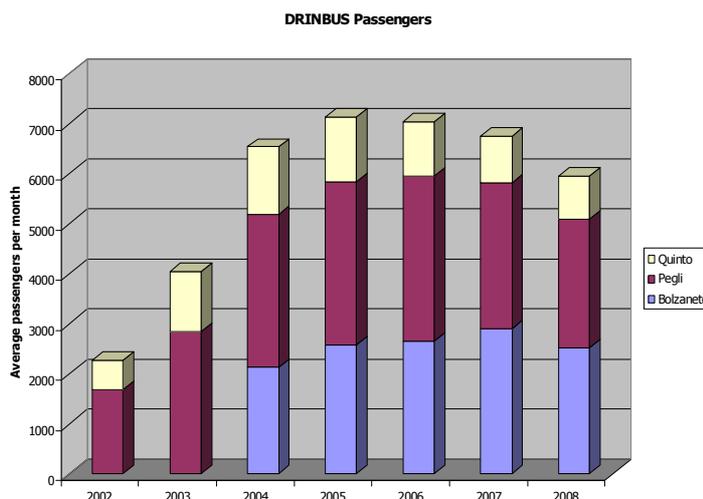


Figure 1

In October 2008 the Agency made the following analysis about the **trend of passengers per month** for some of the flexible services implemented in Caravel.

In 2004 **Drinbus** served an average number of 6534 monthly passengers (3057 in Pegli, 1343 in Quinto and 2134 in Bolzaneto).

During the first 44 months of Caravel Drinbus counted 1260 new registered users.

In 2005, the first year of project, there was a good growth of Drinbus users: 7129 passengers per month were transported (3262 in Pegli, 1285 in Quinto and 2582 in Bolzaneto).

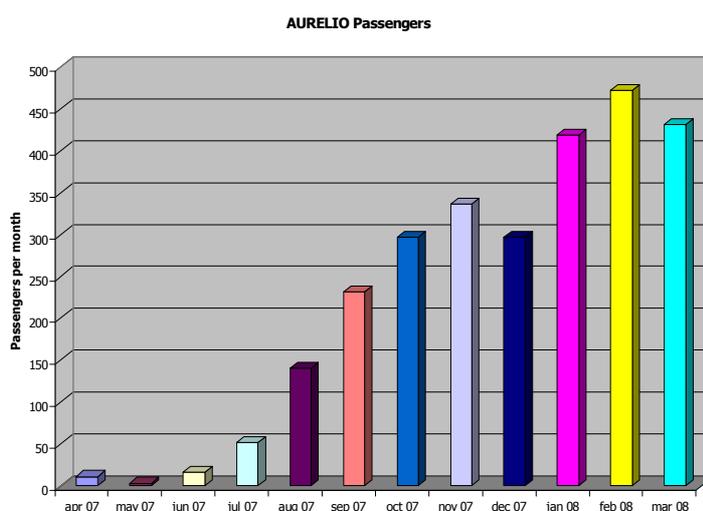


Figure 2

In 2006 there was a little decrease of users (7048 passengers per month), mainly due to the fact that in November AMT decided a strong increase in fares (+20% for standard urban ticket, +100% for specific Drinbus supplement). The effects of this fares raise were more evident in 2007, when the number of monthly passengers was 6747.

The datum about 2008 is not very meaningful as it's based on the first 9 months of the year, but the highest number of users is always served during the last 3 months of every year.

Aurelio is the flexible services developed by the Agency in Savona and operated by ACTS Savona from March 2007 to April 2008 (60 registered users).

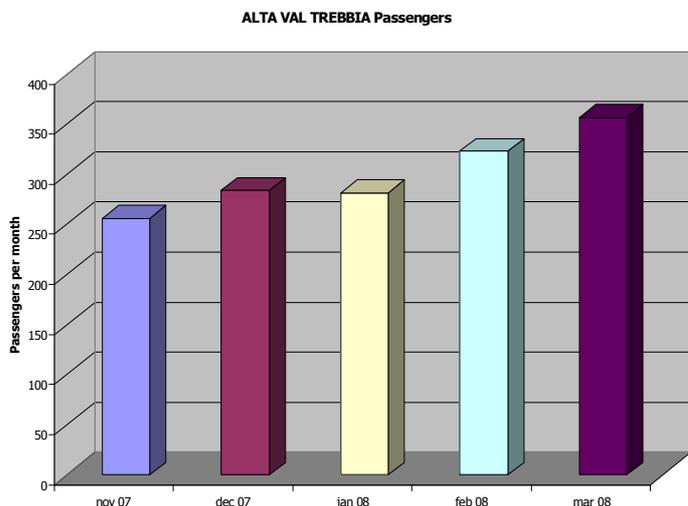


Figure 4

encouraging result for a service running only out of peak hours.

The **Alta Val Trebbia** service has been implemented in a mountain valley in Province of Genoa and operated by ATP Genova from November 2007 to April 2008.

170 registered users and 300 average passengers per month are a quite good result taking into consideration the extremely low housing density in the valley and the very high average age of the population. The growing trend of served users testifies the success of the trial.

Telebus is the flexible services developed jointly by the Agency and MPK in the city of Krakow, and

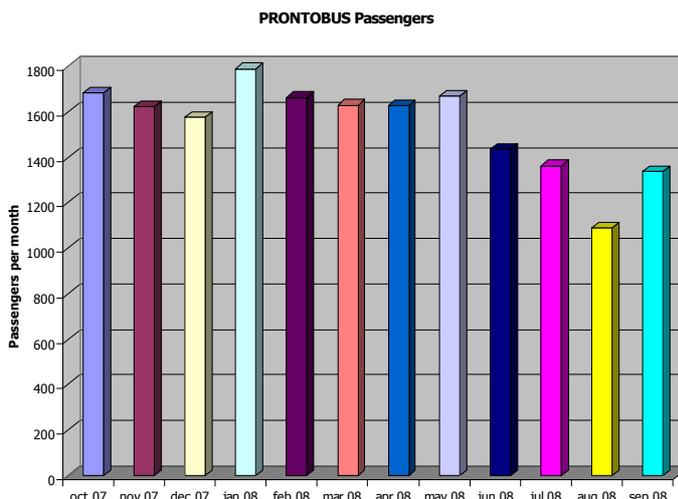


Figure 3

ACTS Savona from March 2007 to April 2008 (60 registered users).

The average number of 200 passengers per month is not a success, but the trend of served users shows a strong increase of passengers in the last months of service, mainly due to the extension of the service to the "Bosco delle Ninfe" area.

Prontobus is the flexible service implemented by the Agency in Sarzana and operated from September 2007 by ATC La Spezia.

During the first 13 months of service 710 citizens have registered. The average number of 1541 passengers per month is an

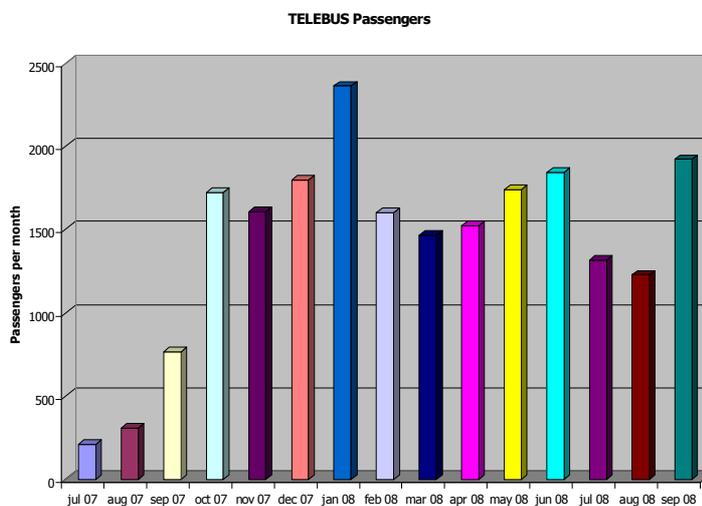


Figure 5

operated by MPK from July 2007.

During the first 15 months of service 380 citizens registered with the service. The average number of 1424 passengers per month is a very good result for a service integrating traditional bus routes without any substitution.

C2.5 Society

In October 2008 the Agency investigated the **awareness level** of Drinbus and Prontobus.

For both the services a random sample of telephone number associated to the service area was extracted and a phone survey was made.

The **Drinbus** survey is based on 263 questionnaires. 70% of the interviewed people state they know the service; it's interesting to notice that in a similar survey made in 2003 only 43% of people knew Drinbus.

The most part of citizens have known the service because they have seen minibuses circulating on the

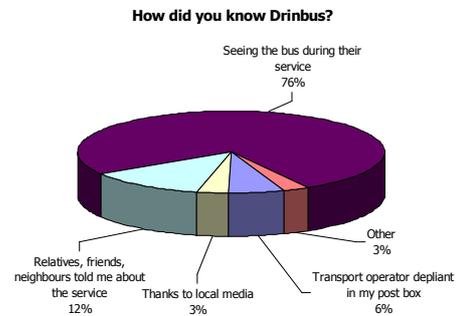


Figure 6

road; this evidences the appeal of the minibus decoration.

Between people that know the service, 84% don't use it (generally because it's not useful for them), 12% use it sporadically, 4% use it habitually.

The **Prontobus** survey is based on 178 questionnaires.

75% of the interviewed people state they know the service; local media, people passing the word and buses in service were the main instruments to convey the service.

Between people that know Prontobus, 88% don't use it (generally because they prefer to use the car / motorbike or because the service is not useful for them), 7% use it sporadically, 4% use it habitually.

The Agency also evaluated the perceived **quality** of flexible services.

A survey made in 2004 about Drinbus had shown that it was an excellent service for 66% of interviewed people.

Users perceived Drinbus as a reliable, punctual, comfortable and safe service; between users who owned a car, 79% stated they had reduced their car use.

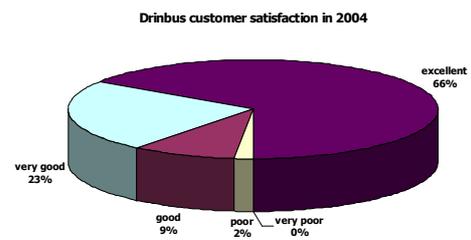


Figure 8

In October 2008 the Agency managed a direct

survey in order to investigate the quality of **Prontobus**.

The service is evaluated good, very good or excellent by 93% of interviewed people.

Users perceive the service reliable (97%), punctual (81%), comfortable (90%) and safe (94%).

74% of users state they have increased their movements thanks to Prontobus; 42% have reduced their car use.

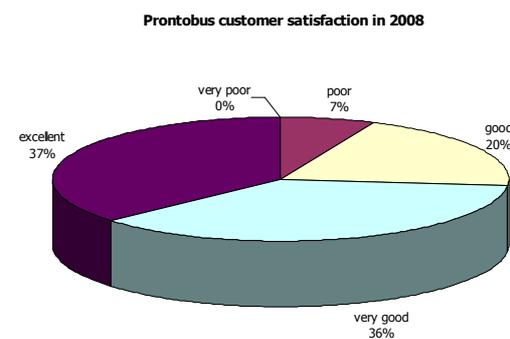


Figure 9

C3 Achievement of quantifiable targets

No.	Target	Rating
1	Improved institutional cooperation between operators / number of stakeholders involved	**
2	Demonstration of different DRT services ·	***
3	100.000 passenger per year carried by flexible services in 2008 ·	**
4	Realisation of one/two new mobility services (100% cost recovery)	
NA = Not Assessed * = Not achieved **= Achieved in full ***= Exceeded		

C4 Up-scaling of results

Specific DRT on demand buses are too much localized in the defined areas to be up scaled. Some other services such as car pooling for all citizens and collective taxi are already up scaled to all city.

C5 Appraisal of evaluation approach

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C6 Summary of evaluation results

The key results are as follows:

- **Key result 1** – Public transport operators show a very high interest in flexible service, as they can provide an efficient solution where traditional bus services are not able to respond to citizens needs.
- **Key result 2** – Public funds are essential in flexible bus services budget: in fact every low demand service is not able to cover operating costs with fares.
- **Key result 3** – The number of transported passengers is strongly influenced by the context where a flexible service is developed. The trail success is connected not only on the number of passengers per month, but also on registered users and registered users / target area residents ratio.
- **Key result 4** – Local media and specific leaflet delivered on the whole target area are the best instrument in order to increase the awareness level of a flexible service in the launch stage. During the years the awareness level continues to grow thanks to decorated vehicles circulating on the road and users passing the word.
- **Key result 5** – A flexible service is always perceived by users as a very high quality level service, and it has an appeal on citizens higher than traditional public transport services.

D Lessons learned

D1 Barriers and drivers

D1.1 Barriers

- **Drinbus: high costs of the service** – If a flexible bus service is implemented where a public transport service didn't exist before, the new service represents an added cost for the public transport system. If a flexible bus service is implemented in substitution of existing fixed routes, it generally allows a little decreasing of the operating costs, but implies a new type of cost for the transport operator, related to the availability of a call center for booking collection. This extra-cost is often bigger than the operating cost decrease if the call center manages few little flexible service, is smaller if the call center is an Agency for flexible transport services, able to coordinate several on-demand services. So this barriers can be overcome by enlarging the flexible PT network with new substitutions of fixed routes with on demand services and by integrating in an only Agency different flexible services.
- **Drintaxi: different positions of the different taxi associations involved** – Due to the high number of taxi associations, it's very difficult to reach an agreement between all the stakeholders involved in the implementation of the project, especially when it's necessary to make a decision about model of service and fares. The risks that the measure fails due to this barrier is not unimportant, in fact if only a part of transport operators really believes in the project is possible that at the service launch the taxi availability is not sufficient to satisfy users demand with a good service level.
- **Drintaxi: high fares** – As fares are proposed by taxi associations and approved by Municipality of Genoa, they are highly influenced by taxi driver profit perspectives and weakly influenced by users point of view. So the new service will probably have too high fares and will be not attractive for users. It's necessary to convince the taxi associations that high fares are not good for taxi drivers as high fares keep users away from the new service.
- **New car pooling service: low interest of the employees** – The implementation of a car pooling service for the San Martino Hospital is strongly opposed by the low interest shown by the hospital managers and employees. In order to avoid the risk of failure of the project, it would be necessary a deeper involvement of Municipality of Genoa and hospital management, a better cooperation between them and a specific communication campaign focused on employees.
- **Disabled service: interest of the no profit companies to manage directly the call and dispatch center without being "controlled" by an external agency** – The strong point of the disabled service reorganisation was the functional separation of the scheduling phase, the operating phase and the control phase: the first and the last assigned to the Agency, the second assigned to ATI, an association of no profit companies that managed the whole service in the recent past. This service structure was efficient but not liked to ATI, because of low freedom in service scheduling and high control in service operations. In order to avoid institutional problems, Municipality of Genoa decided to move the call and dispatch center from the Agency to ATI.

D1.2 Drivers

- **Softeco partnership** – One of the main reason for the good results achieved is the very good partnership with the software provider (SOFTECO) that makes easy to customise the different services following the different needs and requirements from the users and from the transport operators, making feasible the realisation of a stable and flexible technology including very innovative features (i.e. Interactive Voice Recognition system for the reservation of the flexible services).
- **Drinbus: high quality of the service with a fare close to the PT fare** – Drinbus is a service able to satisfy users' requests in a very efficient way. From the spatial point of view it is a many-to-many service, so it allows people to choose whatever bus stop in the Drinbus road network as pick-up and drop-off point. From the temporal point of view it is a really on-line service, able to assign a trip few minutes before departure. Moreover Drinbus minibuses are very comfortable. Nonetheless Drinbus fare is very cheap: user has to pay the normal PT fare plus a 1.00 € daily supplement. So users appreciate this service very much, as its service level is similar to the taxi one, but its fare is close to the PT fare. This makes Drinbus a very successful experience.
- **Service for mobility impaired people: necessity of the Municipality to serve more users with the same operating costs** – The number of transport requests from disable people is increasing year by year, but the budget for the service is always the same. So Municipality of Genoa needs a system able to manage all the requests and to produce a service schedule optimising the existing resources. The Agency for flexible service is the best answer to this need, thanks to its call and dispatch center, collecting disable booking, and its Personalbus software (by Softeco), planning the service in order to optimise routes in time and space. This organisational model allows to reduce the operating costs, so it makes possible to serve more users without increasing the overall service cost.
- **Drintaxi: new collective service for all the citizens to develop the market of intermediate services** – The strong use of private car, a problem common to most European cities, is strictly connected to the absence of public transport services intermediate between bus and taxi. Market rules tell us that there is an (unexpressed) transport demand for services with quality and fare higher than the bus one but lower than the taxi one. The collective taxi offers this kind of service and aims to capture users from car users, so it represents a big opportunity for politicians and local administrations.
- **New mobility management services: needs of the employees of the area to be served by the new service** – In Genoa there are some big workers concentrations without adequate public transport services. In these situations the implementation of car pooling services dedicated to the employees of the area can give a real alternative to the private car use.

D2 Participation of stakeholders

- **AMI** – Genoa Public Company having in charge the development of the Agency for flexible service.
- **Softeco Sismat** – Technological partner in the development of the Agency.
- **AMT** – Genoa Public Transport Company managing the Drinbus service.
- **Drinbus users.**
- **Municipality of Genoa** – Local Council involved in the disable service and in the Drintaxi service.

- **Social Cooperatives** – Transport Operators managing the disable service.
- **Disable service users.**
- **University of Genoa** – Technical support for the Drintaxi service.
- **Unions of taxi drivers, taxi cooperatives** – Decision-making support in the Drintaxi development.
- **San Martino Hospital** – The main Genoa hospital, involved in the car pooling service.
- **ACTS** – Savona Public Transport Company managing the Aurelio service.
- **Aurelio users.**
- **ATC** – La Spezia Public Transport Company managing the Prontobus service.
- **Prontobus users.**
- **ATP** – Genoa Public Transport Company managing the Val Trebbia service.
- **Val Trebbia service users.**
- **MPK** – Krakow Public Transport Company managing the Telebus service.
- **Telebus users.**

D3 Recommendations

- **Recommendation 1** – Concerning the development of a new flexible service, it is strongly recommended that every planning and implementation stage complies with a “flexible services development guideline”, in order that planners and transport operators correctly lead their joint work.

D4 Future activities relating to the measure

No further activities are foreseen.