



## **Multi-services agency for the integrated management of mobility and of accessibility to transport services**

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### **Abstract**

AGATA (Multi-services agency based on telecommunication centres for the integrated management of mobility and of accessibility to transport services) is an INTERREG III B MEDOCC area project, which began in July 2004 and will last until June 2006.

The AGATA consortium of 8 partners from 3 European countries (Italy, Spain and Portugal) and one South Mediterranean country (Morocco), works towards the development of a multi-service agency which coordinates flexible transport and mobility services in urban and rural areas. This agency will be based on modern information and communication technologies, and composed of a network of services facilitating interactions between actors and agency. The project represents an example of transfer from the world of research to public administrations and transport companies, based on IST IV FP projects. AGATA's goals are: successful undertaking of feasibility studies and pilot projects, the results of which will be widely diffused, exchange of experiences and best practices, identification of a business model for an ICT based telecommunication centre.

AGATA was born in a context of growing mobility problems which this paper considers before going on to describe various different actions (studies, pilot actions, experiences exchange, results diffusion and promotion), which are currently being carried out both at a general project level and at a local level by the different partners. The results of these actions should in theory have an impact on the local environment and on the issues of transport and mobility on a wider scale. This paper shows the expected results and evaluation techniques and the possible future of such initiatives in political and financial terms.

*Keywords:* Agency; Car Sharing; Collective Taxi; Cooperation; Demand Responsive Transport; Flexible Mobility; Goods Distribution; Information and Communication Technology; Low Impact vehicles; Telecommunication.

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### **Introduction**

The AGATA Project - Multi-services agency based on telecommunication centres for the integrated management of mobility and of accessibility to transport services – was approved and financed on the European INTERREG IIIB Programme in the MEDOCC area. The project began on the 1st of July 2004 and will run until the end of June 2006.

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The AGATA project foresees the development of a multi-service agency which coordinates flexible transport and mobility services in urban and rural areas. Management and coordination within the agency will be based on information and communication technologies and on services which will allow integration and interaction between service, actors and the agency itself.

To understand AGATA, its aims and objectives, it is important to have an idea of the context in which the project was developed. Only once this has been established can we consider the various different actions which are currently being undertaken both at a general project level and at a local level by the different partners and which have developed directly from an understanding of the general and local context. This paper will analyse these issues before going on to identify the expected results of the project and the future of such initiatives.

## **Background and General Context**

The AGATA project addresses current global impacts caused by changes in lifestyle and travel in rural, urban and metropolitan areas. In 1970 the average European citizen travelled 17 kilometres a day. Today that has risen to 35 km. This phenomenon cannot help but have negative impacts in terms of congestion, the environment and social inclusion. Every day, 7500 kilometres of road in the European Union are affected by traffic jams and it is universally recognised that transport is a fundamental element of the problem of climate change. In 1998 transport was responsible for 28 of greenhouse gas emissions, a share likely to rise dramatically before 2010.<sup>1</sup> The importance of environmental concerns was shown clearly by the European Union's decision to dedicate 2004 to the strengthening of international environmental treaties such as the Kyoto protocol and the United Nations Framework Convention on Climate Change. The EU 25 are all signed up to the Kyoto treaty and thus committed to domestic and European cuts in greenhouse-gas emissions of 8% in the commitment period 2008-2012.<sup>2</sup> In addition to negative environmental impacts, the rising dependence on motorised transport has led to a worrying level of isolation for those suffering from mobility handicaps. In rural areas those without a private means of transport are severely disadvantaged as public transport often does not offer a sufficient provision, a disadvantage that becomes all the more serious if the person is elderly or disabled.

It has gradually become clear that the problems highlighted above cannot be fully addressed with current provisions of conventional transport. Instead one positive, innovative solution is the use of new telecommunication and informative technology to create flexible mobility services, which respond to real transport needs using various methods and vehicles to suit the specific territorial and social context. In recent years, flexible services in the form of Demand Responsive Transport (DRT) applications, which do not intend to replace conventional transport provision but to compliment it in areas of dispersed mobility needs where an effective service cannot be provided, have been experimented and adopted in a number of European countries, including Belgium,

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<sup>1</sup> European Commission, Energy and Transport Report 2000-2004, [http://www.europa.eu.int/comm/transport/index\\_en.html](http://www.europa.eu.int/comm/transport/index_en.html)

<sup>2</sup> United Nations Framework Convention on Climate Change, <http://unfccc.int/2860.php>

Finland, Italy, Sweden and the UK. Overall the results have proved advantageous within the relative projects, though in general DRT has yet to make a wide scale impact<sup>3</sup>.

DRT services and their inherent flexible characteristics require dynamic planning, programming, and management. One effective way to ensure this is to create a Multi-services Agency which can integrate and coordinate different mobility services, and which is based on some form of Information and Communication Technology (ICT). This technology may include advanced ICT applications and mobile communication platforms relative to communication, booking and reservation functions, and customer support.

### **AGATA consortium, objectives and activities**

Within this context, and based on a process of transfer from the world of research to public administrations and transport companies, the AGATA project was developed. The analysis carried out before the presentation of AGATA concerned an in-depth consideration on the current state of DRT services in Europe. It became clear that a number of projects had been undertaken both by transport companies at a individual level and in other integrated projects. In particular, AGATA took the FAMS project into consideration. FAMS, a 20 months Trial Project initiated under the EU Research & Technological Development Programme Information Society Technologies (IST), aimed to address fundamental organisational and technical issues at the heart of DRT transport models.<sup>4</sup> This project produced a wealth of information on the issues that AGATA hoped to address and ultimately the AGATA project was proposed as a means to take this detailed research carried out during FAMS and other related projects, to build on it and to produce concrete results. AGATA concentrates on the creation of an initial pilot of a multi service agency based on a telecommunication centre which manages the main aspects of flexible mobility and increases service accessibility and integration. The agency should be composed of a network of services able to facilitate interactions between all actors, the agency and the fundamental phases of the workflow involved in its operational functioning. See figure 1 for an illustration of the AGATA agency concept.

The overall objectives of the AGATA project can thus be summarised as:

- Identification and analysis of local AGATA sites' needs and of the requirements of flexible services;
- Definition of the agency concept based on a telecommunication centre and the planning of a functional reference and service framework;
- Development and completion of local projects (studies and pilot projects);
- Definition of best practices;
- Creation and promotion of guidelines for the definition and development of the concept of mobility agency.

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<sup>3</sup> For an interesting study on the feasibility of DRT services see: Dr Marcus Enoch, Dr Stephen Potter, Dr Graham Parkhurst, Dr Mark Smith, *Final Report INTERMODE: Innovations in Demand Responsive Transport*, Department for Transport and Greater Manchester Passenger Transport Executive, June 2004

<sup>4</sup> For more information see: <http://www.famsweb.com/> and G.Ambrosino, J.D.Nelson, M.Romanazzo (ed), *Demand Responsive Services: Towards the Flexible Mobility Agency*. ENEA, Italy 2004

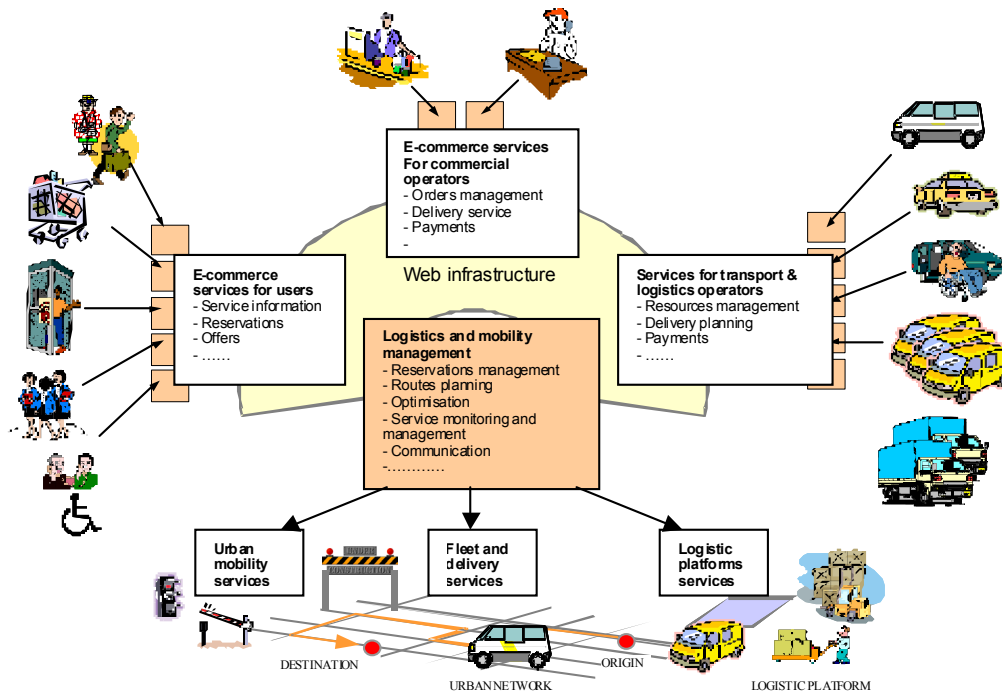


Figure 1: The AGATA concept.

In order to achieve these objectives the AGATA consortium was carefully chosen according to various criteria. It includes a number of public administrations and transport operators who offer the possibility of financial success and sustainability, partners from different countries in order to promote interregional exchange of knowledge and experience, and sites with different levels of DRT provision in order not only to develop existing services but also to learn from them and use the experiences to aid other less developed sites. In detail the AGATA consortium is composed of:

- Regione Toscana (Project Leader). Local sites: Firenze, Livorno, Piombino (Italy)
- CTP Spa / Memex/ STI (Project technical coordination): Potenza (Italy)
- Technomobility: Cagliari (Italy)
- ATAF Spa: Firenze (Italy)
- Terrassa Municipality: Terrassa (Spain)
- AREAL: Monchique and Loulé (Portugal)
- Granada Municipality: Granada (Spain)
- City of Marrakech (Morocco)

Each of the partners concentrates on a certain aspect of the flexible mobility scenario to then pool their work with the other partners. It can be said that each partner represents a brick in the construction of the AGATA agency.

The construction of this agency is divided into various different actions, including studies, pilot actions, experiences exchange, results diffusion and promotion, which will

be carried out both at a general project level and at a local level by the individual partners. Taking into consideration that each AGATA site, while having points in common, represents a different reality in terms of, for example, geography, local stakeholders, experience and existing provision, each site's local project will be developed individually following the adopted reference model. With this understanding a methodological approach to affront the complexity of the problem has been developed, together with guidelines for context analysis and for the creation of telematic systems.

The methodology is divided into two parts, the first of which particularly concerns an analysis of the territorial characteristics in order to understand fully what form of DRT service would be most socially, environmentally and economically effective for each area. This represents phase one of the project and was concluded in February 2005. The results of this initial study were compared and contrasted in order to highlight the points in common between local projects and indeed the unique aspects which differentiate each site. The second methodological aspect concerns an evaluation of the work carried out particularly in the form of interviews and questionnaires directed at local stakeholders. This serves not only to understand if the AGATA interventions are successful or not, but also to further involve those local actors who may be interested in the continuation of the AGATA services. This activity will take place from the beginning of 2006.

In order to provide a clearer picture of how these actions and methodological aspects can make the AGATA agency a reality, this paper will now give a brief overview of the work carried out in each local site. Within the project 7 demonstration projects and 4 feasibility projects will be completed. The demonstration sites are: Firenze (Florence City Council and ATAF), Livorno, Cagliari, Potenza, Terrassa, and Granada. In Monchique, Loulé, and Piombino feasibility studies are being carried out. Marrakech, not being part of the MEDOCC area, participates as third country and will carry out a feasibility study.

At sites where flexible services are more mature, demonstration projects have already been initiated. In these cases AGATA serves to consolidate and expand existing provision, in terms of geography and of services offered and operations adopted. On the other hand, a number of sites do not yet have any flexible service provision and in these cases AGATA serves to lay the essential foundations and experiment new possibilities.

The most advanced sites present in the AGATA consortium are those managed by ATAF in Florence and by ATL in the Province of Livorno. In Florence PERSONALBUS™ is ATAF's Demand Responsive Transport System for the planning and management of flexible services in low-demand areas and non-peak hours and for special users groups (disabled, elderly, etc). The service was introduced in 1997 and in a survey carried out in 2000 showed that 78% of those using the service were satisfied with the provision, highlighting the added value that such initiatives can bring.<sup>5</sup> Within this service ATAF has created a TDC (Travel Dispatch Centre) which functions as the interface for users and service drivers and the service planning and management site.

In Livorno the ProntoBus service, run by the local public transport company ATL, operates a night service and an early morning service in various provincial areas. As in the case of ATAF this service is run through a centre for journey management (TDC) based on an innovative computerised platform which supports the management of

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<sup>5</sup> ATAF, publicity material for PERSONALBUS™ service:  
[http://www.ataf.net/DN@Files/personalbus/depliant\\_servizi\\_flessibili.pdf](http://www.ataf.net/DN@Files/personalbus/depliant_servizi_flessibili.pdf)

journey requests from users and relative reservations, journey planning and resource optimisation.

Within AGATA these two sites are committed to improving the service currently available. ATAF aims to improve accessibility to the service by the development of an integrated web portal through which users can access information on routes, timetables and current state of the service in addition to making reservations for the service itself. Livorno, on the other hand, works towards improving the agency structure with further integration and coordination of the current services. It is important to note that a high level of coordination should take place between these two partners as the software used to managed their respective DRT services is the same. AGATA is an opportunity for the two to learn from one another and exchange experience.

The other local sites which form part of the AGATA consortium are currently supplied by either little or no flexible service. Those who can lay claim to some provision, for example Technomobility's local site in Cagliari in which CTM S.p.A provides an on call service for disabled people, do not yet have any form of integrated agency to manage the services. These sites have therefore undertaken to complete a period of study in order to fully understand both their own territorial reality and the feasibility of DRT in that area. In some cases this analysis will then lead to a pilot demonstration, while in others the project concentrates on an in-depth feasibility study.

Florence Local Council has based its project on a feasibility study carried out on the location and development of a transit point for goods distribution in the city of Florence. Taking this work as a basis, within AGATA an agency that uses ICT to manage an integrated, flexible service of goods distribution will be planned and developed. Technomobility, on the other hand, recognises the lack of available information regarding transport scenarios and data in the city of Cagliari and therefore works first towards the creation of a mobility database which will allow private and public actors to access important mobility details. This database will form the basis for the creation of a mobility agency. The third Italian partner, CTP S.p.A, has chosen the city of Potenza as its local demonstration site. The planned intervention consists in the study and experimentation of DRT public transport service in the rural areas around Potenza. In line with the overall project objective, this service will ultimately be managed, along with other transport services, through a multi-service agency based on a technological platform.

The two Spanish partners involved in the project will also carry out demonstration projects. Terrassa City Council aims to create an agency by means of a mobility web portal, in order to manage the development of a car-pooling service. The project works towards a maximisation of private car occupation for workers, initially in one industrial park but with the possibility of a future extension to other industrial areas, making use of GIS and an automatic SMS communication system. Granada City Council on the other hand, will implement a collective taxi service for the Granada metropolitan area, coordinated and managed by a Mobility Agency. This service will complement existing public transport by offering scheduled and non-scheduled trips in un-served areas, addressing the specific target of a nocturnal service for young people.

The partners involved in the development of feasibility study on the implementation of some form of flexible transport are AREAL and the Provincia di Livorno. AREAL's study concerns two local sites named Loulé and Monquiche, both mountainous areas characterised by a large population dispersion and large accessibility problems. Both areas suffer from inadequate infrastructure and an almost complete lack of public

transport provision. Within this local project, AGATA concentrates on an on-call service which enables population from isolated places to receive essential services, without implying either large initial investments or high operating costs. The study concerns issues of user acceptance, operational costs, organisational features, low impact vehicles and potential political involvement. The feasibility study in Piombino deals with a different territorial reality and indeed a slightly different subject matter. In the Piombino area a demand responsive service for disabled users already exists. ATM (public transport company) will carry out a feasibility study on the extension of existing DRT and the development of new provision in the Piombino area. The study will include analysis of territorial characteristics and users requirements, the definition of a service scheme, of supporting technology and of a management model.

While it is clear that the AGATA consortium represents a number of different sites that will each produce an individual and unique pilot project or study project, it should also be clear that each fits into to the overall AGATA context. Ultimately, the idea of AGATA is that each partner brings one aspect of flexible mobility to the agency framework, as aspect which can then be inserted into the guidelines and best practices in order to provide a transferable documentation both for the cities involved in AGATA and for those outside the project who may have similar interests. The experience can be used to maximise the promotion of DRT by increasing experience and learning both from positive experience and from mistakes made.

Partners also participate in the horizontal tasks included in the project. These involve methodology for data collection, projects and operational experience exchange, and results evaluation and promotion. Throughout the project general experience exchange has occurred and will continue to occur through the three-monthly meetings in which all partners participate. These meetings offer a chance for partners to present local project progress and for input and discussion to be undertaken regarding the next steps to be taken. Furthermore, a number of events have been organised to promote experience exchange and collaboration. For example, a workshop on DRT tools was held in Florence on the 9th of March 2005, organised by ATAF in collaboration with another connected project.

### **Innovative Aspects**

Innovation in AGATA is represented on four levels. The first level is that of Transport Systems which concerns the definition of transport and flexible mobility frameworks which are both innovative and serve to integrate marginal areas. The second level is the Business Model and Work Flow Level. This concentrates on the development of the concept of a flexible service agency and the definition of its functional qualities, along with the development of innovative organisational models and work flows for cooperation and collaboration of different actors involved in the distribution of mobility services (business models and service networks, normative organisational and legal aspects). At a Technological Level, on the other hand, in each AGATA site ICT services support the agency in managing and coordinating flexible mobility services (technological platform, tele-centre for reservations, management and reservation of tourist buses, definition of e-business and e-commerce services for reservations and user information, integration with conventional transport etc) with an

evaluation of different ICT scenarios in order to identify the relationship between quality and organisation of mobility. Finally the promotion and diffusion level concerns the promotion of the AGATA approach particularly through the production of directive lines for administrations, operators and technological suppliers on the potentials of flexible services, coordination agencies, and the role of ICT.

AGATA's innovative approach thus lies in the promotion of reciprocal knowledge, continuous information, integration of activities, optimisation of the use and management of resources and coherence with international policies and legislations.

### **AGATA expected results and evaluation**

As mentioned previously, in order to ensure that the work carried out during the AGATA project responds to real territorial needs each partner has carried out an in depth analysis of the local site in terms of geographical, economic, social, political and mobility characteristics. This information helps each individual partner to understand fully the territorial needs of the local site and thus how to go about responding to them. For example, in Terrassa the proposal of car sharing to improve industrial park mobility comes directly from a City Council directive which states one of its main goals as the improvement of industrial park commuter mobility. These areas are generally characterised by a low cover of public transport. Analysis of the data available shows that 30% of the population works in the industrial sector, most of which in the 13 industrial parks in the south of Terrassa and that the lack of public transport in these industrial parks, plus the growth in commuter traffic, has created growing mobility problems. A survey carried out showed that 85% of workers used a car to reach their place of work. Thus, having considered this data the AGATA partner was able to propose the car sharing pilot project as a serious alternative to the current unsustainable situation. The same can be said for AREAL in the Algarve. Their data analysis in the two study regions showed that the majority of the elderly population is particularly concerned with not being able to reach essential services in the nearby towns and that they would be extremely interested in an on-call transport service offered at a reasonable price.

The initial period of data collection not only serves the project at an individual level but also at a horizontal, overall project level. One of AGATA's objectives is the promotion of interregional and international cooperation, within the capacity of the project, and the aim is to achieve this in areas where it is most beneficial. The data analysis and the three monthly project meetings have proved essential for identifying points in common and points where one partner can learn from another's experience.

In terms of the expected results AGATA hopes to successfully complete a number of demonstration projects and studies which each bring something useful to the achievement of an agency for flexible mobility services. The success or otherwise of these activities will be shown in practical terms by concrete achievements, for example in political support for the service, in the passage from demonstration to operational or in the agreement of some form of private financial intervention. In addition, a number of evaluation indicators were established at the beginning of the project. These were divided into the categories of realisation indicators, result indicators and impact indicators. The realisation indicators include the number of seminars, meetings and



discussion groups held, the number of information campaigns organised particularly with regards to institutional actors and the number of actions related to promotion and dissemination. The result indicators, on the other hand, concern issues of methodology production, the number of actors involved in the project and the number of new telematic and flexible services identified and developed. Finally the impact indicators, include the evaluation of improvements to territorial accessibility, reduction of the use of private vehicle with a connected increase in the use of public transport and increased user information.

At project conclusion a series of best practices, which takes into account not only the work carried out by each local site and at a coordinated level but also the above mentioned indicators, will be defined. The best practices will be diffused through the organisation of seminars and conferences with the aim of sharing the experience and helping to promote the sustainability of the work particularly in terms of financial and political support. Sustainability is vital for such projects which often collapse after the end of ERDF funding. Thus AGATA includes analysis of possible measures for economic sustainability as a intrinsic part of the project development. For example, Terrassa has already begun a series of meetings with members of the local council and a number of transport operators who may be interested in part financing an integrated service based on the AGATA model. Another example is that of Technomobility who has worked in close collaboration with the needs identified by the regional administration in order to encourage their support. With such activities the AGATA project should have impact and results to some extent beyond the scope of its two year funding.

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