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Can People with Cognitive Functional Impairments Use Public Transportation ?: National Report for Greece

**Prepared for
DG Employment and Social Affairs**

by

The MAPLE Consortium

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South Kildare Community Transport (Republic of Ireland)

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Appendix 1: Organisations and Authorities Interviewed

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Can People with Cognitive Functional Impairments Use Public Transportation ?

1. Introduction

MAPLE is a European project designed to study, and to discover methods for improving, accessibility to public transportation systems in Europe for people with cognitive functional impairments. In addition to TSRG from Greece, institutions participate from the United Kingdom, Ireland, Sweden and France, who are conducting sub-studies based on the same questions that are the basis for this present report. The project application describes the project in broad outline as follows:

"The project aims to promote the mobility, and encourage the social inclusion, of two very broad and heterogeneous groups of people: people with learning difficulties and people with mental health problems. This will be done by identifying, investigating and disseminating measures that will improve the accessibility of public transport systems in Europe, so both facilitating the movement of these people within the physical environment, and encouraging their participation in society.

Whilst a considerable amount of work has been done to remove physical barriers in the physical environment, so improving the mobility of people with a physical or sensory impairment, the consortium believes that the problems faced by people with a cognitive impairment or mental health problems (which might include behavioural difficulties or depression etc.) are much less well understood, and that strategies for assisting these people with their mobility are far less well documented. Although these conditions are largely "invisible", they are often no less restricting in their effect of limiting an individual's mobility and participation in mainstream society."

The overall aim of this sub-project is to survey the measures within public transportation that increase the possibilities for people with cognitive impairments to use public transport and to call attention to "good practice". The project application uses the following formulation, among other things, to describe this:

"Special attention will be paid to awareness among public transport authorities and measures that are currently in place to train staff in how to assist people with cognitive, medical and behavioural conditions (although the expectation is that there will be few examples of such good practice in Europe)."

In addition to investigating what has been done by public transport authorities and their operators to facilitate and simplify independent travel for people with cognitive impairments, another goal is to survey how the parties responsible for public transport define the concept "people with cognitive functional impairments."

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There are several important concepts in the sub-projects, beginning with *public transportation*. In the present sub-study, this concept is limited to surface public transport — busses, trolleys, subways and trains.

The next concept is *cognitive functional impairment*. This is a relatively new concept in the context of public transportation, which makes it particularly interesting to obtain a picture of how this concept is regarded by the enterprises that are responsible in various ways for Greece's public transportation. The definitions offered by the people interviewed are presented as part of the following results. After they provided a definition they were informed on MAPLE's view about "cognitive functional impairment" in order to have a better understanding of the questionnaire.

2. Method

2.1. Selection

The population selected for the investigation consists of organizations and enterprises that in different ways have been identified as having connections to public transportation and disability issues. Since the transit authorities have the principal responsibility for public transport in the various prefectures and municipalities, these organizations have been the main target for the study together with operators. But to obtain a complete picture of the issue, it was also attractive to gain the viewpoints of other responsible authorities and interest groups.

When striving to acquire the most comprehensive picture possible, two of the interview questions have been used to facilitate so-called snowball selections. One question's purpose was to obtain additional interesting names within the person's own organization, and the other's was to pinpoint interesting names in other organizations. In most cases, the transit authorities and transport companies did not provide other names within their organization because the interviewed person was the most suitable to answer the questionnaire, but in the case of interest groups the snowball procedure had been very fruitful.

The population selected covers the whole range of surface public transport in Greece and also some end-user organizations. In Greece, public transport is controlled in a high degree by the public sector as an owner or as a regulator with a strict legislative framework. Therefore, there are not many operators and authorities since there are not many public transport modes. Only in Athens there is a variety of public transport modes (buses, trolleys, metro, electric railway, suburban railway, metro, tram) but at the rest of Greece there are only buses and the railways. For each transport mode there is an organization or company that operates it, apart from the buses which are operated in a different way as described below, but with the same organizational scheme for each prefecture or municipality (similar companies). So, the sample from Greece is limited. The questionnaire was addressed to all these organizations, together with a representative sample from end-user organizations, which was kept low in order not to misquote the results. Concerning the end-user organizations apart from the survey it was decided

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to organize a workshop in order to discuss user needs and good practices. The results from this workshop will be presented in a separate report.

Therefore, the Greek sample consists of one (1) national authority (OSE), one (1) transit authority (KTEL of Serres), two (2) local transit authorities (OASA and SASTh), eight (8) operators (ETHEL S.A., ILPAP S.A., ISAP S.A., AMEL S.A., TRAM S.A., PROASTIAKOS S.A., OASTh, RODA) and three (3) user-end organizations (Disability Now, Agios Panteleimon, EEPAA). There are more KTELS and KTEALS in Greece but it was useless to address the questionnaire to more of them because they follow the same organizational scheme and policy. On the other hand, the questionnaire has been addressed to many other user-end organizations. Most of them had good practices to present and thus it was decided to separate them from this survey because it is supposed to be mainly a survey on transport providers.

The intention was to conduct about 30 interviews, as decided by MAPLE consortium. As described above, this was not the case for Greece as the system of surface public transport is organized in a different way that at the rest of Europe. Following the procedure described, though the sample is small, it covers the whole range of surface public transport in Greece. This study is based on a total of 13 interviews (by phone or by e-mail/fax), distributed as follows: nation-wide authorities, 1 (OSE); transit authorities, 1 (KTEL of Serres); local transit authorities, 2 (OASA, SASTh); operators, 6 (ETHEL S.A., ILPAP S.A., ISAP S.A., AMEL S.A., TRAM S.A., PROASTIAKOS S.A.); trainers, 0; end-user organizations 3 (Disability Now, Agios Panteleimon, EEPAA). OASTh and RODA did not answer the questionnaire though they have been informed. A list of the participating organizations is provided in Appendix 1.

2.2. Approach

This study has consisted of telephone interviews with transit authorities, operators in the Greek system of public transportation and relevant interest organizations and authorities. The interviews were conducted with the assistance of a simplified interview guide with open questions (Appendix 2). Some organizations requested to have the questionnaire in a printed format (e-mail or fax) because they could not answer it by phone. Most pleaded lack of time due the organization of Athens 2004 Olympic Games (especially in Athens) and most end-user organizations were on vacations at summer.

The questions were presented in such a way that the interviewees, to begin with, offered a picture of the measures that have been taken to facilitate traveling for people with functional impairments. The subsequent questions turned to what has been done to simplify or facilitate travel for people with *cognitive* functional impairments. Once the interviewees had been able to freely describe the measures that have been applied in public transport, they were asked a number of supplementary questions about improvements that we know come up or have been discussed, and that to a greater or lesser degree are helpful for people with cognitive functional impairments. In the

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framework of these measures, questions were also posed as to whether the interviewees have any opinion about how the measures succeed.

2.3. Analysis

Analysis of the interviews has initially been done at the completion of each interview. This stage was followed by a review of all the compiled interview responses.

The figures in parentheses at the results below show how many have commented on the phenomenon/category preceding the parentheses. It should be noted that since these were open questions, it is possible that more interviewees and their organizations have the same experience or opinion but do not present it and also that more than one organization might refer to the same system or practice (for example an umbrella organization and an operator).

As more and more interviews were carried out it could be observed that fewer new opinions about the central issues appeared. This should be regarded as evidence of good reliability of the results presented.

3. How Greece Organizes Public Transportation

Surface public transport in Greece is organized under a number of different authorities. Apart from Athens, the capital of Greece, there are only two modes of surface public transport all over the country, i.e. buses and the railway, both at urban and at rural areas. In Athens, there are also several other modes of surface transport such as metro, tram, trolleys, electric railway and suburban railway.

3.1. National organizations

In Greece, there is only one (1) national organization responsible for surface public transport.

- **Hellenic Railways Organisation (OSE):** OSE is a public organization, the only railways' organizations in Greece as there is a monopoly of railway services.

3.2. Transit authorities

Apart from the railways, the intercity surface transport services with buses are provided by KTELs which are not public organizations but operate in a corporative basis. KTEALs are the respective companies for Urban Public road transport. There are approximately 52 KTELs in Greece and many more KTEALs.

KTEL of Serres: Public transport by road was organized in Greece after the Second World War when the individual bus owners formed regional Bus Companies. Today in each prefecture there is an intercity Bus Company named "KTEL of the Prefecture" (KTEL means Association of Bus Operators). Each KTEL operates in a corporative basis and has by [the law the monopoly](#)

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of public transportation by buses in scheduled routes inside the prefecture and also from the prefecture to the capital cities of the other prefectures. Generally speaking they are a successful example of co-operation of the public and private sector. Greek geography did not allow for the creation of an extended rail network and so land transport is mainly operated by road. The Greek bus companies (KTEs) have a dense network all over Greece and carry approximately 80% of intercity public transport of the country. There are approximately 52 KTEs in Greece and the KTEL interviewed for MAPLE survey is the KTEL of the Prefecture of Serres. KTEs are the respective companies to KTEs for Urban Public road transport. In most municipalities there is an Urban Bus Company named “KTEAL of the Municipality” (KTEAL means Association of Urban Bus Operators). They operate under the same legislative framework with KTEs and the only difference is their location of operation. There are no KTEs in Athens, Thessaloniki and Rhodes where other organizations are responsible for the Urban Public road transport.

3.3. Local transit authorities (umbrella organizations)

In Greece, there are two (2) local transit authorities, in Athens and Thessaloniki, which are umbrella organizations for the operators of public transport operators.

- **Athens Urban Transport Organization S.A. (OASA S.A.):** OASA S.A. is founded as a Legal Entity of Private Law. The Organization is totally owned by the Greek State, applying the principles of private economy and performing for the public benefit under the supervision and control of the Ministry of Transport and Communications. OASA S.A. is the responsible authority for the planning, co-ordination and control of all public transport modes in the greater Athens area.
- **Thessaloniki’s Urban Transport Council (SASTh):** SASTh is the respective to OASA S.A. responsible authority for the planning, co-ordination and control of all public transport modes in the greater area of Thessaloniki. SASTh has been founded with a long term perspective since there are no other public transport modes in Thessaloniki apart from buses. Currently, its role is to consult OASTh (public transport operator for buses in Thessaloniki) and to participate to the plans for the new modes of public transport that are scheduled to be realized in Thessaloniki such as metro, tram, sea urban transport e.t.c..

3.4. Operators

In Athens there are six (6) surface public transport operators, in Thessaloniki one (1) and at Rhodos another one (1). There are also many KTEs in most other municipalities as described above.

- **Company of Thermal Buses S.A. (ETHEL S.A.):** ETHEL S.A. was founded in 1994 by Athens Urban Transport Organisation (OASA S.A.). The company is a Legal Entity of Private Law and belongs to the public sector. The mission of ETHEL is the implementation of urban transport services with thermal buses in the Metropolitan area of Athens.

- **Athens-Piraeus Trolley Buses S.A. (ILPAP S.A.):** ILPAP S.A. was founded in 1970 and is responsible for trolley bus operation in the centre of Athens and **Piraeus**. The company belongs to the public sector and OASA S.A. is the only shareholder of it.
- **Athens-Piraeus Electric Railways (ISAP S.A.):** ISAP S.A. is a company which was founded in 1976. It is a legal entity of private law and operates as a Societe Anonyme. I.S.A.P. S.A. (like the other Public Urban Transportation Companies in Athens) is a subsidiary company of OASA S.A.. The company is responsible for the operation of metro line 1 "Peiraias-Kifisia" (Electric Railway) which is 133 years old and is the oldest public transport mode in the city and one of the oldest in Europe.
- **Attiko Metro Operation Company S.A. (AMEL S.A.):** AMEL S.A. announced its entry in the S.A. Register on 15 March 2002. The company operates under the rules of private economy, is a public utility enterprise and is supervised by the Ministry of Transport and Communications. The operation of the company began on 15 February 2001 and its term has been set until 15 February 2151. It is a subsidiary of Attiko Metro S.A.. Its main objective is to organise, manage, operate and develop the underground railway network on Lines 2 and 3, as well as any extension thereof within the Prefecture of Attica, as well as their facilities, vehicles, materials and media. It cooperates with other transportation bodies and organisations of the Prefecture of Attica and is responsible for the operation, development or co-development of any fixed-track transportation network. It undertakes the promotion of goods and services (advertising) and can also implement studies, provide advisory and technical services of any kind, to any person in Greece or abroad, in relation to the above matters.
- **TRAM S.A.:** TRAM S.A. was founded in 2001 and at the beginning of 2002 the construction of tram network started. Tram is a new public transport mode for Athens since it started its operation in the summer of 2004.
- **PROASTIAKOS S.A.:** PROASTIAKOS S.A. is a suburban railway company subsidiary to OSE. The term "Suburban Railway" refers to a "guided" means of mass transport for the handling of transport mainly for commuting purposes, within the influence limits of large conurbation. In combination with the metro and the tram, it constitutes the backbone of the metropolitan transport system by supplementing the former and being connected to them (and the other Public Transport Modes) at central transfer stations. The Suburban Railway is due to be fully completed in 2008; however, the part connecting Piraeus and Athens to the airport is operational since the summer of 2004.

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- **Urban Transport Organisation of Thessaloniki (OASTh):** OASTh is a Legal Entity of Private Law and belongs to the private sector but it is controlled by SASTh. It was founded in 1957 and its mission is the implementation of urban transport services with thermal or electric buses in the greater area of Thessaloniki. Although it has the right to route electric buses it never did so. Currently, it is the only public transport company in the city of Thessaloniki.
- **Municipal Transport Company “RODA”:** RODA was established in 1938 and in 1955 it became a municipal corporation of Rhodes Municipality. Its vehicles operate urban lines as well as the greatest part of rural services on the island. Operating according to the principles of the free market, the enterprise also offers a social service by developing civil activities for the benefit of the inhabitants of the island. It is the only Municipal Transport Corporation in operation in Greece that offers full public transport services and does not operate complementarily to other public transport companies.

3.5. Trainers

Driver schools train bus drivers in Greece. The curriculum does not include training on people with cognitive functional impairments. The training of the drivers of the other modes is held by the organizations themselves.

3.6. End-user organizations

There are many end-user organizations in Greece. The first approach was to interview them with the semi-structured MAPLE Questionnaire. From the first interviews it became obvious that the questionnaire was not suitable for these organizations as it had been designed for transport operators at first place. On the other hand, the end-user organizations had several good practices to present, contrary to transport operators, and it was decided that they should be invited to bring material and to begin a wider discussion on their good practices at a scheduled workshop. AUTH was already planning to realize a workshop in order to examine the user needs throughout the whole “transport chain” and it would be a good occasion to have a discussion on user end organizations’ good practices separate from the present survey. There were some questionnaires collected before that decision which are included in the present report as a representative sample from end-user organizations. These are three (3) questionnaires a number that would not affect significantly the general picture from the survey on transport operators.

- **Disability Now:** It is an end-user NGO organisation that runs the <http://www.disabled.gr> web-site which is the site with the most visits worldwide on disability issues according to “Alexa” Internet Traffic Rank Evaluator. It has also manifold presence at the Greek disability movement.
- **“Agios Panteleimon” Foundation:** It is an end-user foundation for people with mental retardation located in Thessaloniki.

- **Greek Society for the Protection of Autistic Persons (EEPAA):**
EEPAA is a Society about autism with connections with the World Autism Organization.

4. Results

4.1. Interviewee definitions of cognitive functional impairment

Cognitive functional impairment is a comparatively new concept in the context of public transportation, which makes it particularly interesting to get a picture of how the concept is viewed among the various operators that are in different ways responsible for Greece's surface public transport. Those interviewed have described cognitive functional impairment with such words as *learning difficulties, mental retardation, personality development disorders, disorders of the central nervous system, autism, perception disorders, orientation disorders, word and speech disorders*. The most serious answers were from end-user organizations. Many operators modestly admitted that they do not know who to define cognitive functional impairment while other (about a couple) even gave definitions such as: *people that can not help themselves, people that have a problem with their brains and cannot even talk*. What follows is a compilation of the interview responses.

- learning difficulties (5)
- mental retardation (5)
- personality development disorders (2)
- disorders of the central nervous system (1)
- autism (2)
- down syndrome (1)
- perception disorders (3)
- orientation disorders (1)
- word and speech disorders (2)
- people that can not help themselves (1)
- people that have a problem with their brain and cannot even talk (1)
- don't know (4)

Generally speaking, most of the operators and authorities were surprised by the questionnaire and it was for the first time that they considered the mobility of people with cognitive functional impairments as a problem though most of them said that such people use their services alone or accompanied.

4.2. Travel possibilities

4.2.1 Measures in place

The latest years much awareness rising on disability issues happens in Greece. The Ministry for the Environment, Physical Planning and Public Works has an office on disability and also a Committee about disability issues, the Ministry of Transport and Communications has its Committee on disability issues too. Unfortunately, these two Committees were inactive the last months but they are going to be reunited again. The organization of the Athens 2004 Olympics and Paralympics Games have been an opportunity to

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emphasize on disability issue (especially in Athens) and to construct new modes of public transport such as metro, tram and suburban railway with certain standards in order to be accessible by the people with disabilities. Unfortunately, the buses and the national railways seem to have been stuck in the past and need to take further actions in most cases.

According to OSE the railway stations are accessible and wheelchair users may use the trains (but in most trains they need help to enter and exit). In every station in big cities there are audio and visual announcements of departure and also inside the trains. There are also phone numbers dedicate to provide information on accessibility for the disabled.

KTEL of Serres has no accessible buses and there are no other measures on accessibility apart from the good will of the drivers. Unfortunately, this bad situation is dominant at the whole intercity system of bus transport.

According to OASA the accessibility of buses and trolleys in the greater area of Athens is satisfactory and concerning the other modes (metro, electric railway, tram etc.) they are accessible.

According to SASTh there are some measures taken for the accessibility of buses in the greater area of Thessaloniki (ramps at many of them, some low-floor kneeling buses etc.) and there it is also a scheduled to install a telematic system of visual and audio announcement at bus stops.

ETHEL S.A. has 520 out of 1850 buses with ramps for wheelchair users, its headquarters have ramps, an accessible telephone, one accessible parking place and other facilities. At its 295 buses with gas there is a telematic system that displays and announces the next bus stop but this system has some problems because there is a legal dispute amongst ETEHL S.A. and Siemens that has developed it, so there is no maintenance. There are also two bus stops with displays of the arrival time of the next coming bus at a pilot stage.

ILPAP S.A., that runs the trolleys in Athens, has accessible headquarters with accessible toilets, parking place, ramps etc. Trolleys are accessible for wheelchair users (kneeling trolleys) and they have audio and visual announcement for the people with sensory disabilities. There are also special seats for the disabled and it is allowed to the blind to have a dog as a guide if it is gagged. There is also special pricing policy for the disabled.

ISAP S.A., that runs the electric railways in Athens (metro line 1), has full accessible stations with elevators for wheelchair users and route guides for the blind people. There are also audio announcements inside the trains for the next station and in a pilot stage in one train there are also visual displays.

AMEL S.A., that runs the metro in Athens, has accessible stations with ramps and elevators, toilets etc. The first and the last gate of each wagon have a ramp for the easiest entry of the wheelchair users thought they can enter thought through any other gate also as they wagons and the floor at the stations are at the same level with a small gap. Inside the wagons there are

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special places for the wheelchairs and at certain lines (the fast ones that go to the airport) there are also places where the wheelchair can be secured. There are route guides for the poor sighted and the blind people with special color and material. There are also audio announcements inside the wagons and at the stations. For the people with sensory disabilities there is an application unique in Europe at a certain station of metro at a pilot stage which warns the passengers for the arrival with flashing light and audio signal. This application is to be installed to every metro station. There are going to be visual announcements to all stations at the future. AMEL S.A. emphasizes also at the help that its personnel provides and at special training. AMEL S.A. offers a training program for children in general, children with disabilities and children with cognitive functional impairments, in collaboration with the Ministry of National Education and Religious Affairs that is called "Metro and Child".

TRAM S.A. that runs the tram in Athens, has full accessible stations with ramps. The wagons are at the same level with the station floors in order to be easy for the wheelchair user to enter, there are special places inside the tram for the disabled and there are audio and visual messages that announce the next station. There are also visual announcements at the stations and there is a possibility for audio announcements when they are overcrowded. The ticket machines are user friendly with touch screens. A very interesting finding about TRAM S.A. is that it employed 3 persons with mental retardation at secondary tasks at the protocol and the financial service.

PROASTIAKOS S.A., that runs the suburban railways at Athens, has accessible stations with ramps and elevators. There are also guide routes for the poor sighted and blind people. Inside the train and at the stations there are visual and audio announcements.

The responses below have been divided into categories. The number of respondents mentioning a category is shown in parenthesis.

- station/stops infrastructure (5)
- headquarters infrastructure (2)
- low-floor vehicles (5)
- vehicles with ramps (6)
- same level station-floor/vehicle (2)
- special places inside vehicle (3)
- in-vehicle announcements (visual) (7)
- in-vehicle announcements (audio) (8)
- station/stop announcements (visual) (5)
- station/stop announcements (audio) (5)
- route guides for the blind (3)
- driver training (9)
- training of people with disabilities and cognitive functional impairments (1)
- training needs analysis (1)
- employment of people with cognitive functional impairments (1)

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Almost all of those interviewed either believed, or knew for sure, that people with *cognitive functional impairments travel by means of the present public transport system*. There were no statistics or surveys about populations but this was the general feeling. KTELEs and KTEALs usually provide buses at special routes for people with cognitive functional impairments (like school buses) and AMEL S.A. is sure that this population uses metro because they train children with cognitive functional impairments how to use metro. The comments of the respondents are presented below.

- Yes, people with cognitive functional impairments use today's public transport services. (7)
- Yes, but only accompanied. (1)
- Yes, rarely alone, usually they are accompanied. (1)
- Don't know (1)

4.2.2. Policy documents and the future

No organization, authority or operator, has produced a specific policy document for assisting people with cognitive functional impairments but all of them are focusing on mobility and sensory impairments. Only AMEL S.A. and TRAM S.A. seem to have a dialogue on measures about people with cognitive functional impairments which is unofficial and with no milestones. There is lack of research and knowledge about the mobility of people with cognitive functional impairments and this is reflected at the lack of policy documents and the awareness of transit authorities and operators.

4.3. Special measures / best practices

No one claims to have undertaken any *special measures to facilitate travel for people with cognitive functional impairments*. However, in Greece there were three (3) measures detected that are of high interest for people with cognitive functional impairments:

- TRAM S.A. has employed 3 persons with cognitive functional impairments. This is not a measure that directly facilitates travel for people with cognitive functional impairments but indirectly may be beneficiary through the awareness and familiarization of its personnel with cognitive functional impairment. Perhaps these persons could be useful at pre-evaluations of new measures taken from the point of view of people with cognitive functional impairments but this is something to be examined.
- AMEL S.A. has an arrival warning system at one of its stations which is supposed to help people with sensory disabilities. But the poor sighted or blind people can actually hear the metro as it arrives and the deaf people can see it. So, this measure, though it is supposed to be a measure for people with sensory disabilities, it is a measure that helps people with cognitive functional disabilities more than any other disabled person because those people need an clear warning on arrival as they tend to function more with automated cognitive queues (i.e. "when the light flashes I stand up and wait for the metro to enter") especially at modes of transport where they do not have much time to enter. Such a

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system might facilitate the training of people with cognitive functional impairments on how to use the different modes of public transport. Unfortunately, this is a new system and this hypothesis probably has to be further examined.

- AMEL S.A. runs a training program in collaboration with the Ministry of National Education and Religious Affairs that is called “Metro and Child”. It is a training program for all children and also for children with disabilities. This training program helps very much children with cognitive functional impairments to learn how to use the metro. All the other children can learn from distance because they can use their imagination and abstract concepts but for the children with cognitive functional impairments training on site is very crucial because it is the only way they can learn how to use a mode of public transport.

Moreover, several respondents think that the other measures that have been taken also make things easier for this population. What they particularly have in mind are the special announcement functions inside and outside their vehicles, which have been mentioned above. The comments of the interviewees are compiled as followed.

- No, no special measures have been introduced. (7)
- No, no special measures have been introduced, but our personnel are experienced and know how to handle such situations. (2)
- Yes, measures generally for people with sensory disabilities are also good (maybe even better) for people with cognitive functional impairments (1).

Based on previous knowledge in this area, we are already aware that some measures/systems can help people with cognitive functional impairments to a certain extent (Grönvall 1996). Questions were posed during the interviews about this phenomenon to find out whether such measures are in place and, if so, whether the interviewees have any opinions about them. The systems/measures are presented below according to the individual descriptions in the interview form.

4.3.1. Education and training

None of the organizations interviewed have introduced any special *educational program for their personnel regarding cognitive functional impairments*. Today’s driver education programs include sub-topics concerning how to greet people, passenger safety and first aid, and to some extent these relate to dealing with the cognitive functional impairments. Many authorities also provide special courses for drivers concerning understanding of impairments in general. The respondents’ comments are presented below.

- Although the transit authorities generally provide dedicated education about functional impairments, the emphasis is on mobility and sensory disabilities. (8)
- No special training is provided. (1)

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- No special training is currently provided since we are a new organization and perform a training needs analysis. (1)

None of the organizations interviewed has any *special training program regarding people with cognitive functional impairments*. Only AMEL S.A. has a training program called “Metro and Child” in collaboration with the Ministry of National Education and Religious Affairs. This training program is for all children with or without disabilities and it includes also children with cognitive functional impairments. At this program the children learn the metro, how it works, the stations, the vehicle etc. Especially for the children with cognitive functional impairments it is necessary to learn on-site because they can not use or use with difficulty their imagination and abstract concepts. The comments of the respondents appear below.

- We do not have a training program. (7)
- In collaboration with the Ministry of National Education and Religious Affairs there is a training program for the children called “Metro and Child” in which we provide training to children with cognitive functional disabilities in collaboration with special schools. (1)
- Special training only to our employees with cognitive functional impairments. (1)

Most of the organizations have not any *special procedural plan for emergency situations e.g. if a (special) passenger takes the wrong bus and needs help, becomes aggressive or is confused*. Only AMEL S.A. and PROASTIKOS S.A. have reported such general plans. In case the metro stops in a tunnel due to power failure or other technical problems although there are pavements and the passengers can walk until the previous or next station, the personnel arrives immediately to help anyone who needs special help or guidance. Most of the other respondents confirm that such situations arise, but are resolved on a case-to-case basis. They emphasized the importance of drivers’ having good knowledge about this, and also having a positive attitude. Several authorities or operators also refer to the dispatching centers with which the drivers have contact and that try to provide help when necessary. The comments of the respondents appear below.

- Drivers know how to handle these situations by their own experience. (2)
- No such plans. (5)
- There is direct communication with the headquarters in order to handle any emergency situation (3).
- Yes, there are such general plans but not special plans for people with cognitive functional impairments. (2)

4.3.2. Information and assistance

The design and distribution of information can greatly influence the possibilities to use public transportation. However, *special information for people with cognitive functional impairments, such as meetings, written material, or Internet sites* is almost nonexistent amongst transit authorities and operators. Special information is provided to people with cognitive functional

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impairments only by AMEL S.A. in the framework of “Metro and Child” training program as describe above. OSE provides special information for the disabled through dedicated telephone lines. On the other hand, the end-user NGO “Disability Now” has a full accessible internet web-site: <http://www.disabled.gr> which is the site with the most visits worldwide on disability issues according to “Alexa” Internet Traffic Rank Evaluator. There is much information there on disability issues including cognitive functional impairments. The comments of the respondents appear below.

- No special information. (7)
- Our home page is accessible. (1)
- We make all information as clear as possible. (2)
- Dedicated telephone lines with information on disability issues especially for mobility and sensory impairments. (1)
- Close co-operation with the National Disability Federation and end-user organizations. (2)
- Meetings with special schools and end-user organizations of people with cognitive functional impairments. (1)

Another important issue may be whether *personal assistance is available on the vehicle*. During the Athens 2004 Olympic Games some organizations had crowd management services with responsible persons on board (AMEL S.A., TRAM S.A., PROASTIAKOS S.A.). AMEL S.A. emphasizes on personal help and whenever the personnel understand that the passengers have special needs they kindly ask if they need any extra help. This is the case for people with cognitive functional impairments especially when this is obvious (for example when there is a special school or group). OSE has hosts/hostesses at its trains that can provide assistance when necessary. On buses, the driver alone is responsible for personal assistance. Certain special routes are an exception; only at special routes of KTEL of Serres for the disabled there is a responsible person but with no special knowledge on cognitive functional impairments. The comments of the respondents appear below.

- No personal assistance on board. (3)
- No personal assistance on board, unless we are asked to provide such. (1)
- Only at special roots for the disabled there is a responsible person but with no special knowledge on cognitive functional impairments. (1)
- Special crowd management services during the Athens 2004 Olympic Games. (3)
- Only the drivers can provide assistance on our buses. (3)
- We have hosts/hostesses on our trains. (1)

4.3.3. Technical aids

Some technical systems both inside and outside buses/wagons have already been mentioned as improvements to facilitate the travel of functionally impaired passengers, including *announcements in the buses/wagons about stops in text and speech*. Several authorities say that they have displays and

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automatic audible announcements in their buses/wagons or plan to introduce such systems. The comments of the respondents appear below.

- Some of our buses have visual announcements. (1)
- Some of our buses have spoken announcements. (3)
- No visual or audio announcements available. (2)
- Spoken announcements are made on all trains (metro, tram, suburban etc.), and the newer ones also have displays. (3)
- Both visual and audio announcements available on all trains (metro, tram, suburban etc.). (2)

The situation is worse concerning the stations and the bus stops. OSE claims to have audio and visual announcements at its train stations but the visual announcements are not real-time as there is no such a need because there is a strict schedule. KTEL of Serres has no announcements at its stations. OASA claims to have announcements at the stations of some of its transport modes and SASTh claims that a telematic system is going to be installed in every bus stop in the greater area of Thessaloniki with visual and audio announcements in the future. ETHEL S.A. has visual and audio announcements at few of its bus stops at a pilot stage. ILPAP S.A. and ISAP S.A. do not have real-time announcements at their stops and stations. AMEL S.A. has audio announcements at every metro station and visual announcements at its new stations and at the future at all of its stations. Also, it has a unique in Europe warning system at a pilot stage in one of its stations with flashing light and audio signal which is going to be installed at every metro station to help people with sensory disabilities and seems to be very good for people with cognitive functional impairments too. TRAM S.A. has visual announcements and if required the capability for audio announcements (i.e. when the station is overcrowded etc.). PROASTIAKOS S.A. has both visual and audio announcements at its stations. None has referred to special pictograms or symbols used at their visual announcements. The comments of the respondents appear below.

- There are audio announcements at our stations. (1)
- Information is provided on the ordinary bus stop stations and in the timetables. No real-time systems or announcements. (4)
- We have real-time systems on some transport modes. (1)
- We are planning to introduce real-time systems. (1)
- Only at few bus stops there are visual and audio real-time announcements at pilot stage. (1)
- At all stations there are audio announcements and visual at some of them. (1)
- At one station there is a real-time warning system when the metro arrives which is going to be installed to all of our stations. (1)
- There are visual announcements at all of our stops and audio if necessary. (1)
- There are audio and visual announcements to all stations. (1)

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Managing tickets is in itself a difficult part of a trip for some people with cognitive functional impairments. One way to simplify this is different kinds of *help functions at ticket machines employing personnel or various technical systems*. At present, different transit authorities have different systems for selling tickets. Some organizations and operators have not introduced any ticket machines at all (OSE, KTEL of Serres, ETHEL S.A., ILPAP S.A.) while other combine ticket machines with personnel that shells tickets at kiosks close to the ticket machines (AMEL S.A., ISAP S.A., TRAM S.A., PROASTIAKOS S.A.). At Thessaloniki there used to be ticket sellers on the buses who announced also the next bus stop but OASTh abandoned this policy replacing them with ticket machines inside the buses together with the kiosks that sell tickets. In most cases bus tickets are available at ordinary shops and are easy to be obtained. AMEL S.A. apart from having special personnel to sell tickets at it stations has user-friendly ticket machines and invalidation machines at places where it is difficult to ignore. TRAM S.A. apart from having special personnel to sell tickets has also user-friendly ticket machines with touch screens etc. Unfortunately, none of these ticket machines has any special facility for people with cognitive functional impairments. The comments of the respondents appear below.

- No ticket machines. (6)
- There are ticket machines on the buses but they are available from kiosks and ordinary shops too. (1)
- There are ticket machines but they are available from special personnel too. (1)
- There are user-friendly ticket machines with special personnel too. (2)
- User-friendly ticket machines with touch screens and special personnel. (1)

None of the interviewees were aware of any *special personal assistance for people with cognitive functional impairments*. This was also the case for the end-user organizations.

- Unaware of any special assistance or aids. (13)

4.3.4. Special Services (STS)

In Greece, only KTELEs provide special services if they are asked to do so. Usually, these services are special route for special schools or end-user organizations like school buses. Usually, they are free of charge and there is a person to accompany the children inside the bus apart from the driver. The comments of the respondents appear below.

- No special services. (9)
- There is a special bus routes for children with cognitive functional impairments. (1)

4.4. Future prospects

The interviewees were asked *to think back over the examples of improvements described above and to consider whether there may be any*

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other service that is particularly relevant to people with cognitive functional impairments. What emerged was the necessity of further research on this domain and lack of knowledge. The comments of the respondents appear below.

- Co-operation of the state and the operators, research and advising / training. (1)
- It's a very sensitive issue and it would be irresponsible to propose measures without previous research. (7)
- Measures for sensory disabilities might help. (1)

A final question was posed to the interviewees: *Do you have opinions about people with cognitive functional impairments and their future prospects for using public transportation?* The most common reply was that the general policy should be to facilitate public transport services for people with cognitive functional impairments and not of discrimination. Once again, many responded that further research and training is required. The comments of the respondents appear below.

- The policy that should be followed is to facilitate public transport services for people with cognitive impairments and not of discrimination. (7)
- They should use public transport services as anyone else unless they create problems to the rest. (1)
- There should be no discrimination but we have to stick to the international standards we use for the operation of our services. If there is no problem with these we are ready to adopt new proposals. (1)
- People with cognitive functional impairments usually travel and should travel accompanied. (1)
- This is a new domain that needs further research and we are ready to adopt any new good practice or proposal. (1)
- Further measures and research are needed. (1)

5. Conclusions

The overall conclusion to be drawn from these interviews is that very little has been done for people with cognitive functional impairments. Those transit authorities that have started to make ordinary public transport more accessible have primarily concentrated on the problems of people with mobility and sensory impairments. Nevertheless, there were three (3) measures detected in Greece that are of high interest for people with cognitive functional impairments:

- TRAM S.A. has employed 3 persons with cognitive functional impairments. This is not a measure that directly facilitates travel for people with cognitive functional impairments but indirectly may be beneficiary through the awareness and familiarization of its personnel with cognitive functional impairment. Perhaps these persons could be useful at pre-evaluations of new measures taken from the point of view of people with cognitive functional impairments but this is something to be examined.
- AMEL S.A. has an arrival warning system at one of its stations which is supposed to help people with sensory disabilities. But the poor sighted or blind people can actually hear the metro as it arrives and the deaf people can see it. So, this measure, though it is supposed to be a measure for people with sensory disabilities, it is a measure that helps people with cognitive functional disabilities more than any other disabled person because those people need a clear warning on arrival as they tend to function more with automated cognitive queues (i.e. "when the light flashes I stand up and wait for the metro to enter") especially at modes of transport where they do not have much time to enter. Such a system might facilitate the training of people with cognitive functional impairments on how to use the different modes of public transport. Unfortunately, this is a new system and this hypothesis has to be further examined.
- AMEL S.A. runs a training program in collaboration with the Ministry of National Education and Religious Affairs that is called "Metro and Child". It is a training program for all children and also for children with disabilities. This training program helps very much children with cognitive functional impairments to learn how to use the metro. All the other children can learn from distance because they can use their imagination and abstract concepts but for the children with cognitive functional impairments training on site is very crucial because it is the only way they can learn how to use a mode of public transport.

Moreover, announcements and displays, which can be of assistance to all travelers, can be assumed to provide especially valuable support for people with cognitive functional impairments.

In addition to the measures mentioned above, there are experiments and functioning activities on a small scale involving aids and assistance that simplify matters for this group. Many of the measures listed below could

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advantageously be introduced on a significantly larger scale and thus provide support for more people, including those with cognitive functional impairments.

- The *destination signs with special pictograms* being used in some metro stations could be very well used in all metro stations. This helps a lot people with cognitive functional impairments to detect their arrival station and could be extended to other transport modes too in cooperation with the end-user organizations.
- *Real-time information* about when the next bus will arrive at a stop can, like time generally, be too abstract for some of those with cognitive functional impairments, but for many it is undoubtedly an aid that simplifies traveling.
- *Loudspeaker information* at bus stops and announcements outside the buses are helpful not only for people with impaired vision but also for people who cannot read.
- Special training programs such as the “Metro and Child” mentioned above can in some cases be extremely helpful for people with cognitive functional impairments. Such training programs are necessary for people with cognitive functional impairments for several reasons. They can learn better on-site as they don't use their imagination or abstract concepts so much as the other people, they familiarize with the transport mode and they feel that this is something that belongs to them also so they don't hesitate to use it, to ask for information etc., they learn from and teach the personnel in order to facilitate their travel.

After all the improvements mentioned in this study the most important thing to facilitate travel of people with cognitive functional impairments seems to be the human element. Special training of the drivers and the personnel as well as special training of people with cognitive functional impairments is very important. A constant co-operation between operators and end-user organizations should be established and also further research is needed.

6. References

<http://www.oasa.gr>

<http://www.ose.gr>

<http://www.ktel.org>

<http://www.ethel.gr>

<http://www.isap.gr>

<http://www.ametro.gr>

<http://www.tramsa.gr>

<http://www.proastiakos.gr>

<http://www.oasth.gr>

<http://www.rodos.gr>

APPENDIX 1:

Organizations and authorities interviewed

Appendix 1 Organizations and authorities interviewed

National organizations

- *Hellenic Railways Organization (OSE)*: National railways organization.

Transit authorities

- *KTEL of Serres*: Association of Bus Operators of the Prefecture of Serres.

Local transit authorities (umbrella organizations)

- *Athens Urban Transport Organization S.A. (OASA S.A.)*: The umbrella organization of public transport in the greater area of Athens.
- *Thessaloniki's Urban Transport Council (SASTh)*: The umbrella organization of public transport in the greater area of Thessaloniki.

Operators

- *Company of Thermal Buses S.A. (ETHEL S.A.)*: Operator of buses in the greater area of Athens.
- *Athens-Piraeus Trolley Buses S.A. (ILPAP S.A.)*: Operator of trolleys in the centre of Athens and Piraeus.
- *Athens-Piraeus Electric Railways S.A. (ISAP S.A.)*: Operator of Metro line 1 (electric railway) in Athens.
- *Attiko Metro Operation Company S.A. (AMEL S.A.)*: Operator of Metro lines in Athens.
- *TRAM S.A.*: Operator of tram in Athens.
- *PROASTIAKOS S.A.*: Operator of suburban railways in Athens

End-user organisations

- *Disability Now*: End-user NGO.
- *"Agios Panteleimon" Foundation*: End-user foundation.
- *Greek Society for the Protection of Autistic Persons (EPPAA)*: End-user society.

APPENDIX 2:

MAPLE semi-structured telephone interview form

Appendix 2 MAPLE semi-structured telephone interview form

MAPLE Semi-Structured Telephone Interview Questions; Transport providers and operators

Interviewer:

Date:

Overview questions:

Have you taken any specific measures to make it possible for persons with disabilities to travel?

How do you define cognitive disability? Which groups of persons do you think of?

(Interviewer: If persons does not have an answer: Prompt by giving example of problems from the MAPLE user group definition list)

Do persons with cognitive disabilities travel with the service you provide?

Have you made any measures specifically targeting persons with cognitive disabilities?

Is there any documentation in policy documents, etc. on such measures?

Are there any ongoing discussions on any such future measures in your organisation?

Questions on specific measures:

Based on previous experiences, I have some examples of specific measure taken, in order to make it easier for persons with cognitive disabilities to travel in public transport. Please answer whether you provide the following services, and comment on them:

Education program for staff

Training programs for persons with cognitive disabilities, e.g. travel training

Information for persons with cognitive disabilities, e.g. meetings, written material, web based information

Special transport service

Action plans for staff to follow, e.g. if a person gets lost, gets aggressive or very confused, in emergency situations.

Bus stop announcement on board buses, trams, and trains

Real time information for departure at bus stops

Personal assistance on board vehicles

Special help functions at ticket machines; personal or technical

Personal technical aids, e.g. palm computers, mobile phones

After having considered these examples, are there any other services you come to think of, specifically relevant for persons with cognitive disabilities?

Concluding questions:

Do you have any concluding remarks regarding persons with cognitive disabilities and their current and future possibilities to travel with public transport?

(Interviewer: These two questions are for snowball sampling, please note contact addresses and telephone numbers:)

Are there any other persons in your organisation I should ask these questions?

Are there any other organisations I should ask these questions?