

# Why are we waiting?

*Angela Spence examines some innovative information services currently being developed for Public Transport (PT) users, focusing on the concept of the 'personal PT assistant' and services aimed at helping elderly travellers*

**Exciting potential for 'personalised' travel information services is emerging from the growing use of smart phones associated with the availability of real-time operational data on public transport services and of 'live' traffic data.**

Such services will make travel by bus, tram and train far easier and less stressful. They are of interest to anyone trying to get around by public transport, but especially those travelling in unfamiliar cities, holiday-makers abroad, and a category whose particular needs are often overlooked - the elderly and disabled.

Among the common complaints about public transport are the lack of precise and useful information when services are disrupted (what alternative will get you to your destination on time when your train/bus is delayed or cancelled) and difficulties in making connections, especially when transferring from one mode to another. So the possibility of receiving a timely message with sufficient detail to allow you to decide what to do and, if necessary, re-plan your route 'on the fly', is clearly an attractive one.

### **A FAMILIAR VOICE**

If you are travelling in a city you don't know well, then even simple information sent to your mobile (in your own language) can make all the difference - and encourage you to use public transport instead of taking a taxi. At a more sophisticated level, it is possible to receive detailed real-time information on connecting services supported by route guidance and navigation to facilitate intermodal journeys.

As explained by Carmine Ianzano, MIZAR Automazione's Product Manager for Public Transport, "operators using advanced management platforms already have all the necessary static and real-time data. The challenge is to integrate this, where necessary, with data on traffic and on other transport modes,

and to deliver it to the traveller at the right time and in a suitable form".

The concept of the personal PT navigator is one which MIZAR Automazione, the Italian ITS specialist, is currently developing as part of a new generation of information services for public transport users. According to this new concept, public transport vehicles will become mobile 'gateways' for communication with handheld smart phones. Wi-fi equipment and the GPS on board make it possible to pass on all relevant messages from the Control Centre.

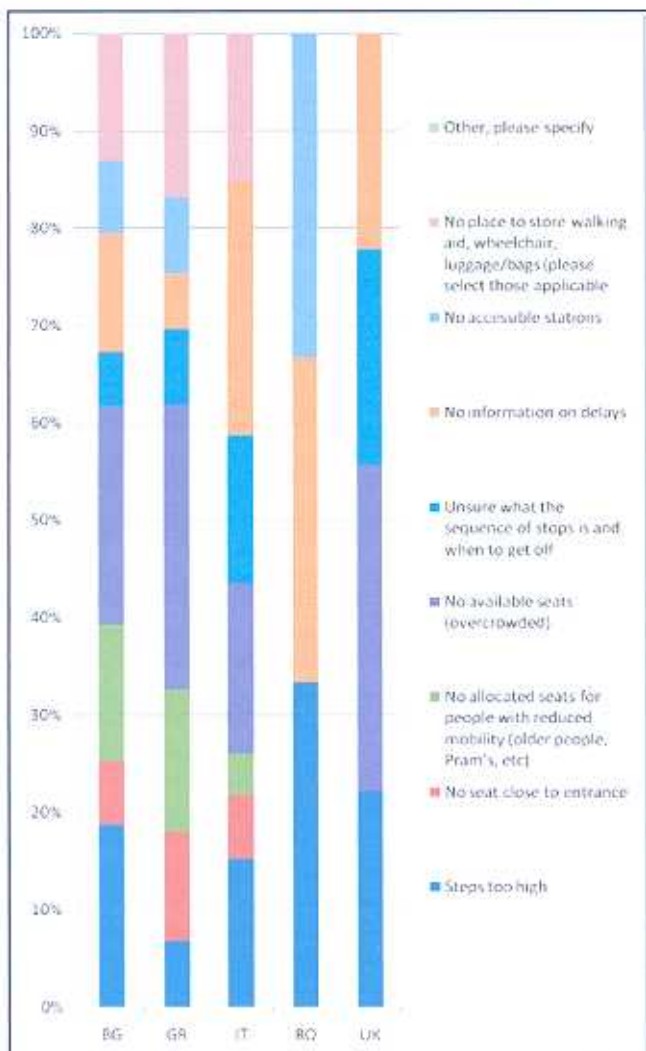
This will enable bus, tram and train passengers to receive directly on their mobiles the kind of information now displayed on panels on the roadside or the platform - with the difference that the content is personalised and will dynamically adjust as their location changes. One very substantial benefit for anyone making a journey involving connections, e.g. between different bus lines or from bus to train, is that it will be possible to obtain in real-time information on the status of other services in time to make adjustments if there are changes in the planned timetable.

MIZAR has considerable experience in this field. Its public transport management system, FLASHNET, is operating successfully in more than 50 cities across Europe. Advanced systems such as this facilitate the provision of high quality information services since the constant and automatic vehicle monitoring, analysis and forecasting make available a large quantity of detailed data on operations. In cities where FLASHNET is fully integrated with the company's traffic control system UTOPIA (which gives priority for selected PT vehicles), reliable forecasts can be made of expected arrival times.

### **KEEPING MOBILE**

It was recently estimated by the United Nations (2007) that by 2030 almost every third European will be over 60 years old. This

***"Passengers will receive personalised real-time information directly to their mobiles"***



**Problems encountered by the elderly in using bus transport (percentage of total interviewees per country). Source: OASIS Interview survey**

has important implications for transport in general and especially public transport. The many mobility-related problems which can be critical for the elderly include:

- reduced walking distance, difficulty in managing stairs and high steps;
- difficulty in reading signs and other visual travel information including bus and platform numbers, timetables, etc;
- difficulty in hearing service announcements;
- a tendency to get confused and stressed, especially when travelling in an unfamiliar environment or faced with unexpected changes or events;

This means that a substantial part of the population runs a risk of isolation resulting from problems of mobility. The European research project OASIS is tackling this challenge by developing an integrated platform which will include travel information services designed to help elderly people experiencing mild cognitive and physical impairments to lead active and independent lives. As one of the project partners, MIZAR is contributing its recent work in the field, focussing on passenger information services specifically designed for the elderly.

The project undertook numerous interviews with elderly people to identify their real needs. Participants had a wide range of mobility levels, but it emerged that an aversion to fast and



heavy traffic as well as aggressive behaviour (by others) mean that they drive less willingly than younger people and generally make shorter journeys. Unless they can rely on lifts from family or friends, their dependence on public transport tends to increase with age, but this too can be fraught with problems. These centre around

- difficulties of access to the vehicles (steps too high, no seats close to the entrance, etc.);
- unpleasant overcrowding during peak hours;
- lack of information, e.g. on delays and stops (elderly people are easily disorientated and often find it difficult to know where to get off);
- difficulty in organising complicated itineraries, especially for multimodal trip planning in unfamiliar places.

Those interviewed also insisted that the interface to the information services should be kept as simple as possible. Although in the future, elderly people will no doubt be more familiar with the Internet and mobile devices, the present generation is not at ease with their use. Among the conclusions were the importance of good pre-journey planning for non-local journeys (possibly done with help of another person) and the usefulness of on-trip support, as long as this did not involve complex systems.

As a result of the surveys, it was decided to focus on the development and demonstration of:

- specially adapted trip planning services able to recommend routes meeting criteria such as: minimum walking distances, easy connections, PT lines with 'low step' vehicles, quiet

the stop, as well as information on delays or other events affecting the journey.

There is also a special support service for elderly passengers who get confused. If, for example, someone gets on a bus travelling in the wrong direction or alights at the wrong stop, a message will be automatically sent to their mobile with a warning 'beep'. The system will then immediately calculate a new route to get them to their destination in the simplest way, if possible without having to retrace their steps. This is equivalent to the rerouting function offered by in-vehicle navigators when someone takes the wrong turning.

AUSER, the local organisation for the elderly will be involved in trials of the prototype system. TT

### ABOUT OASIS

OASIS is a four-year research project supported with funding from the European Commission. Its aim is to create an Open Reference Architecture which will facilitate interoperability and content sharing between a set of 12 different web-based services for the elderly. The 'Autonomous Mobility' area includes elderly-friendly transport information systems and pedestrian route guidance as well as car-based navigation and health sensors. The services will be managed by the OASIS Service Centre and support different types of device (tablet PC, PDA, smart phones, info kiosks, etc).

Special attention is given to the user interfaces which will be designed to allow service personalization. The OASIS applications will be tested in four pilot sites in Europe in trials due to begin in 2010. The 1st International OASIS Conference will take place on 4-5 November 2009 in Florence, Italy. This is preceded on 3 November by a User Forum.

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(non-peak) travel times, minimum number of changes, etc;

- pre-trip services including information on the presence of lifts (at the planned destination or interchange points with a change of level), the location of toilets for the disabled, information points in Braille, etc.
- easy-to-use interfaces, i.e. simplified pre-trip information services through the Internet with adaptations for those with sight impairments.

The use of web-based services is facilitated by setting up a User Profile in advance, as this avoids the need to specify the search criteria each time a journey is planned.

As not all elderly people are familiar with PDAs, the services will be straightforward and based on the assumption that a simple mobile phone with dedicated software and a Wi-Fi connection can be transformed into an information device. This can then convey messages in "push" mode using easy-to-understand icons, 3D maps or with voice messages. It will also be possible to offer 'Text to Speech' functions.

An application being developed by MIZAR with ATAF, the Florence PT authority, for the pilot tests to be held next year in the city, will allow a user to pre-plan a route on the Internet (if necessary with help). This will then be 'transferred' directly to a mobile device. When the person is at the stop, he or she will automatically receive a message to 'get ready to board' when the correct bus is approaching. If a person gets on a bus travelling in the wrong direction, a warning will be automatically sent. Once on board, indications will be provided (in the language of choice) on where to get off and how long it will take to reach

