

Imagine life without **traffic jams**

The CityMobil project is tackling the twin problems of congestion and pollution in Europe's cities by developing innovative automated public transport systems which can take passengers exactly where they want to go, when they want to go.

In many European cities, traffic jams and congested roads are a daily problem. Many cities have introduced emergency procedures which are implemented when pollution levels get too high. Other cities have introduced a congestion charge to actively discourage drivers from going into the centre of the city.

The 26 project partners come from 10 countries, including 7 EU Member States. They include public authorities, manufacturers and suppliers of transport systems, universities, research institutes and public transport organisations.

Removing the roadblocks to automated transport

Automated transport systems based on environmentally friendly vehicles offer a number of advantages, including reduced conges-

tion and improved traffic flow. By eliminating driver errors, the systems also improve road safety. As they do not require a driver's license, anyone can use them, including those with a physical disability and older people. Autonomous cars can also be moved easily to remote parking areas when not needed, freeing up urban spaces which would otherwise be turned into car parks.

However, before the vision of automated transport can become a reality, a number of hurdles need to be overcome. For example, current law states that the driver is always responsible for a vehicle. This means that if there is no driver, the issue of liability remains unclear. Furthermore, while manufacturers of ordinary vehicles have a clear set of safety standards with which they must comply, there is currently a lack of official safety standards for automated systems. Such standards are needed if the public is to have confidence in these new systems.



Title | Towards advanced road transport for the urban environment

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Partners

- Advanced Transport Systems Ltd (UK)
- Centro Ricerche FIAT (Italy)
- Centro Studi sui Sistemi di Trasporto S.p.A. (Italy)
- Comune di Roma Dipartimento VII Politiche della Mobilità (Italy)
- Dipartimento di Idraulica Trasporti e Strade – Univ. degli Studi di Roma 'La Sapienza' (Italy)
- DLR – Deutsches Zentrum für Luft- und Raumfahrt Institute of Transportation Systems (Germany)
- ENQ (Spain)
- ETRA Investigación y Desarrollo SA (Spain)
- Fundación Comunitat Valenciana Región Europea (Spain)

- GEA (Switzerland)
- Generalitat Valenciana (Spain)
- Ingegneria dei Trasporti srl (Italy)
- Institut National de Recherche en Informatique et Automatique (France)
- Istituto di Studi per l'Integrazione dei Sistemi (Italy)
- ITS – Institute for Transport Studies – University of Leeds (UK)
- POLIS – Promotion of Operational Links with Integrated Services (Belgium)
- Rheinisch – Westfälische Technische Hochschule Aachen Institut für Kraftfahrwesen Aachen (Germany)
- ROBOSOFT (France)

- RUPS Consultancy & Projectmanagement B.V. (The Netherlands)
- SINTEF The Foundation for Scientific and Industrial Research at the Norwegian Institute of Technology – Department of Safety and Informatics (Norway)
- Technion – Israel Institute of Technology (Israel)
- TNO Netherlands Organisation for Applied Scientific Research (The Netherlands)
- Transport & Mobility Leuven (Belgium)
- TRW Ltd, TRW Conekt (UK)
- University of Southampton Transportation Research Group (UK)
- Uniresearch BV (The Netherlands)



One of the aims of CityMobil is to identify these kinds of barriers and remove them, to make the implementation of automated transport systems possible.

At the heart of the project are three pilot demonstrations in major cities in Spain, Italy and the UK. These demonstrations are helping the cities involved to assess the economic viability of an automated system. Authorities also gain a complete overview of the operational issues linked to integrating an automated system into existing public transport systems. The reactions of users to automated transport can also be gauged, to make these new modes of transport more user-friendly and ensure that they meet the environmental and safety requirements of the city and its inhabitants.

Coming soon to a road near you

In Castellón, Spain, high-tech buses are being used along two stretches of road measuring more than 40 kilometres. They can be operated either in guided or manual mode depending on the road environment. In guided mode, a number of driving tasks are carried out by the automated system, although the driver is always in control of the vehicle. The vehicles run mainly on a reserved platform, but share road infrastructure for certain sections of the route.

In Rome, Italy, a fleet of fully automated, unmanned cybercars will operate in the car park of the new Rome exhibition centre, shuttling visitors between the parking area and exhibition centre. The system is designed to provide an on-demand service, and vehicle reservation is integrated into car park management. Each time a car enters the car park, the driver receives a parking space number indicating where he or she must leave the car. An automated vehicle then waits for the car's occupants at the closest stop to the allotted space. As the vehicles run on electricity, local air pollution is reduced.

The world's first personal rapid transit system is being tested at the new terminal five of Heathrow airport in London, UK. In the first phase of the project some 18 cabs are in place to carry people from the car park to the terminal, travelling along dedicated guide ways. Each cab

can carry up to four people with their luggage. The system is easy to use, reliable and rapid and offers a point-to-point service with no waiting around. The low-energy, battery-powered vehicles are also 50% more energy efficient than the ordinary buses used to provide these services. Tests reveal the vehicles to be safe in a collision situation and able to deal with any debris on the track. If the pilot project is successful, the system will be rolled out to cover the whole of Heathrow and other airports and will be linked to public services in the local area.

Cities queue up to take part

While Castellón, Rome and Heathrow are the main pilot demonstration sites, a number of other towns, including Uppsala (Sweden) and Lausanne (Switzerland), are hosting smaller demonstration projects. These towns are already extremely interested in deploying automated systems, but feel it wise to run a pilot project prior to full-scale implementation.

CityMobil is also running showcase events, lasting just a couple of weeks, in a number of other cities which are looking into the possibility of using automated transport. Daventry (UK), Hyvinkää (Finland), Genoa (Italy) and La Rochelle (France) are among the towns taking part.

The showcases assist local authorities in their decision making on automated transport and allow the general public to experience driverless vehicles on a test track.

In yet more towns across Europe, CityMobil is carrying out theoretical studies with the goal of investigating how automated transport systems could help to improve local transport networks.

Through its activities, CityMobil is proving the technical feasibility of automated transport systems and effectively dismantling administrative and operational barriers to their wider implementation. It is also helping to boost public acceptance of automated transport. Meanwhile, its results are already helping numerous towns pick the best automated solution to their transport problems.

