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CityNetMobil

City network for fair mobility

1 September 2008
through
31 August 2011





A new approach

Cybernetic Transport Systems (CTS)

In cities around the world, historical centres are losing residents, visitors, and business while private cars are causing pollution, congestion, noise, accidents, and dependency on oil. Yet despite improvements in public transport, people are still reluctant to give up their cars to take the bus, cycle, or walk, making the development of urban transport unsustainable. The solution may lie in a new approach: small fully or partly automated vehicles as part of the public transport system providing passenger service for any location at any time.

Can anybody use “on demand”? Even my grandmother?

Even your grandfather can summon a vehicle from home by telephone through a call centre or by Internet with a computer or smartphone. At stops the procedure is even simpler. You just select your stop and push the right buttons. But if you forget to tell the system where you are, there's no driver on board to see you jumping and gesticulating.

How will they change my life?

Cyber systems shine in low- to medium-demand short-distance transport services both as feeders for the main public transport network and as shuttles linking car-parks to one or many destinations. Unless you live along a metro line or near a major public transport node, you probably use a feeder bus to reach the main line. These buses are infrequent except at peak time, when they are crowded and get stuck in traffic. Most people would prefer to travel by car.

With no drivers, cyber systems can use many smaller vehicles instead of one big bus to provide faster, more reliable service. On the down side, if you've been using your daily commute to read War and Peace, you may never finish it.

When can I expect to see a Cybernetic Transport System in my city? Are they actually in operation anywhere?

There are several systems running or under construction. They are not as widely used as they could be both because they are not known and because they require a change in behaviour on the part of citizens and city administrators.

But CityNetMobil is here to help you get a Cybernetic Transport System for your city as soon as possible.



CityNetMobil, a European project

Raising awareness of CTS

Will our cities become more and more congested, polluted, and unsafe? Or can Cybernetic Transport Systems (CTS) help reverse this trend? Can such novel systems solve mobility problems in any city? Can they be integrated into the urban structure and conventional transport networks? How would users react?

To help answer these questions, since 2000 the European Commission has funded a series of projects to study both the technology needed for CTS and their feasibility in urban environments. They are, in chronological order, CyberCars, CyberMove, EDICT, NetMobil, CyberCars2, CityMobil, and CityNetMobil, launched in late 2008.

CityNetMobil aims to raise awareness of CTS in order to increase their acceptance. The project hopes to convince politicians, local mobility planners, and the general public that CTS can provide better access to public transport for all and that they are environmentally friendly, can reduce urban transport's share of energy consumption and CO2 emissions, and are safer than conventional transport modes.

CityNetMobil Project Objectives

- to explore and promote the potential of developments in CTS for future sustainable urban transportation systems,
- to disseminate knowledge of CTS, and
- to provide advice and guidance on the options for decision makers.



[5] Five special events

The best way to convince people of the value of CTS is to show them what it can do. Accordingly, CityNetMobil will organise five demonstrations, each in a different European city, between summer 2009 and spring 2011. Each event, which will last between two days and two weeks, will feature a small showcase of moving automated vehicles, a conference, and an exhibition with audiovisuals and poster display. People will be able to ride the vehicles and ask questions and can take home some printed material and souvenir gadgets. To maximise visibility, the events will be held, where possible, at the same time as other scientific or cultural events in the same city.

The first step is to select the five cities. The selection process begins with invitations to the reference group of cities formed under the previous project, CityMobil, and a call to other cities that are interested in being candidates. Selection criteria include:

- technical suitability of the site to host a showcase,
- willingness of the city to help organise the event,
- potential for implementation of CTS after the event,
- size and geographical coverage of the expected audience,
- other events at the same time,
- compliance with CityNetMobil schedule.



How your city can participate

The project invites all interested cities to join a group of cities sharing an interest in CTS. This group is called the Reference Group. Elected city officials or members of technical services interested in driverless transport for their cities are invited to join this Reference Group to participate in activities proposed by the project (such as international meetings), or to propose their city as a venue of one of the five CityNetMobil events.

The support of local authorities and transport planners will be an important criterion in site selection. It is very easy to become a member of the CityNetMobil Reference Group. The first step is to fill in an online questionnaire at www.citynetmobil.org. Members may suggest one or more sites in their cities where CTS would be most effective.

The website provides guidance and the CityNetMobil project partners are all available to help the candidates.

Not science fiction

Questions and answers about CTS

Cybercars” are small vehicles with autonomous driving capabilities for collective, semi-collective, and personal public transport. They are ideally suited to providing feeder and shuttle services to connect, say, a parking lot with a terminal building, hospital, or even a city centre. They can easily provide taxi-like, door-to-door service for individuals or a group, between homes and main public transport lines (feeder service) to replace large, slow, and infrequent suburban buses. When demand is low or pick-up points are far apart, cybercars are much more effective than conventional transport systems.

There's really no driver? Are they safe?

Yes, they can really drive themselves. Cybercars are operated automatically with state-of-the-art obstacle-avoidance technology. Although it's too soon for them to have a real safety record (but so far so good), they are expected to offer the same safety as a rail system, in other words, excellent. Most accidents are caused by drivers, not by cars. With no driver, there's nobody to fall asleep at the wheel, answer a phone call, or decide it's safe to speed down a street where children play. Automated vehicles go strictly by the book. And each vehicle is equipped with at least three different safety systems; even if one malfunctions, another will guarantee safety.

Can they go in traffic? They look like toys.

They won't race in Formula 1 any time soon, but, when permitted, they can travel at 40 km/h. The main barrier to their mixing in traffic is the law. At present, the technology is set to keep them at low speed (up to 10 km/h) around pedestrians and cyclists since the road-vehicle certification procedure does not yet contemplate driverless vehicles sharing the road with cars, trucks, and buses. Cybercars can, however, be certified as a complete transport system, like a metro, and are thus allowed to operate with protected and segregated infrastructures (that is, dedicated paths and lanes). A more permissive type of certification is in the pipeline. The vehicles CityNetMobil uses remind many people of golf carts, but the same technology can move any vehicle, even buses.

Are they environment friendly? How are they fuelled?

Most emissions are caused not by the car but by the driver. Just removing the driver is a big step towards cleaner vehicles. These vehicles were created to be clean; they are either electric or hybrid or have very low environmental impact. They consume about a tenth of the energy per passenger needed by a bus and a hundredth of that needed by a car.

How does the system work?

The passenger summons the vehicle either from a stop or from home and gives his destination. The vehicle is provided with an optimised route to take the caller and other passengers to their destinations as directly as possible. Waiting time at stops is usually less than three minutes.