

BURGOS • GENOA • KRAKOW • STUTTGART



CiViTAS

Cleaner and better transport in cities

CARAVEL



Travelling towards a New Mobility

CiViTAS CARAVEL

CiViTAS CARAVEL is part of the CiViTAS-initiative and links the cities of Burgos, Genoa (leading city), Krakow and Stuttgart to common efforts in the field of sustainable mobility. **CiViTAS CARAVEL** started in February 2005 and will end, after a period of four years, in January 2009.

Within the project a total of 54 measures will be implemented. They are all related to the eight policy fields of sustainable mobility, defined by the CiViTAS-initiative.

The main expected result of **CiViTAS CARAVEL** is the broader use of cleaner, resource-efficient urban transport systems based on innovative instruments and large-scale demonstrations.

The use of alternative and innovative vehicles, the increasing transport efficiency, less demand for motorised transport, access control and improved collective transport modes, together implemented by a specific mix of measures will result in a reduction of transport-related noise and air pollution.

As a consequence, **CiViTAS CARAVEL** will contribute significantly to a healthier and more enjoyable life in urban areas. The absence of cars or a strong reduction in their number in certain areas will lead also to a re-definition of public spaces as meeting points for people.

In this brochure some examples of successful measures in **CiViTAS CARAVEL** are shown. Nevertheless, the real success of **CiViTAS CARAVEL** in the four participant cities is based on the comprehensive approach of numerous measures in various fields. Last, but not least, the intensive information and participation of citizens and stakeholders is one of the big success factors in **CiViTAS CARAVEL**.



Greeting

Now it is already more than two years that we, the municipalities of Burgos, Genoa, Krakow and Stuttgart and their associated partners, are working close together in **CiViTAS CARAVEL** - promoting sustainable mobility in our cities. "Travelling towards a new mobility" - with this theme the four cities committed themselves to promote a new culture for clean mobility in European cities, balancing environmental and economic development, fostering their citizens' wellbeing, and allowing for safe access to all modes of transport.

In total the cities want to implement 54 measures covering a wide span of urban transport:

- from improvements in the traffic flow on the main road network by controlling the traffic flow in an Integrated Traffic Management Centre to access restrictions for motorised vehicles in the historical city centres,
 - from the usage of bio fuels in our public transport fleets to a safe design of public transport stops,
- from traditional transport modes to new forms of urban mobility like car pooling, car sharing or demand responsive flexible public transport services,
 - from passengers to goods transport,
- from hard measures to soft measures, like infomobility services and sustainable mobility marketing.

CiViTAS CARAVEL is on a good way! A lot of measures are already successfully implemented. In Burgos the historical city centre gained new quality due to area-wide access restrictions, in Genoa mobility credits apply road pricing to goods distribution, in Krakow buses offer special services for cyclists and in Stuttgart the Integrated Traffic Management Centre passed the challenge of the World Soccer Championship 2006. With this brochure we want to show you, quasi as a half time resume, some of the measures which proved to be very successful within **CiViTAS CARAVEL**.

*I wish **CiViTAS CARAVEL** to continue on the promising way we walked in the first half of our project. Let's continue to run **CiViTAS CARAVEL** to anchor finally in the harbour of sustainable urban mobility!*



Ing. Vito Maria Contursi

A handwritten signature in blue ink, which appears to read 'Vito Maria Contursi'. The signature is fluid and cursive, written over the printed name.

Burgos

Measures in CiViTAS CARAVEL

Support for clean fuels and introduction of clean public and private fleets

Integrated access restriction strategy

Parking strategy and management

Clean high mobility services

Collective mobility services for target users

New mobility services for visitors

Car pooling

City bike scheme

New goods distribution scheme

Sustainable mobility marketing

Mobility Forum

Access for mobility impaired people

Safe access for pedestrians to peripheral neighbourhoods

Increasing bicycle use

Safety and accident prevention plan

Info-mobility tools

Traffic visualisation system

City bike scheme

Measure Description – Objectives

The main objectives were to implement a new city bike scheme to increase the bicycle use, to promote the use of the bicycle as an alternative means of transport and to extend and connect up the existing network of bicycle lanes.

The description of the measure is simple: the establishment of infrastructure for loaning out bicycles in the City, the implementation of safe bike parking and improving the connections between existing bicycle lanes, all of which will allow the bicycle to be used in the city as an alternative, cheap and clean means of transport.

Implementation

BICIBUR is the free bicycle loan system developed by Burgos City Council that has made 200 bicycles available for public use in the city of Burgos (180,000 inhabitants). In August 2006, four installations, each holding 15 bicycles, operating with software and equipment developed exclusively by city technicians, in charge of designing the bicycles and the smart card software recognition programmes in operation at the bike-loan points, were installed at four locations around the city. Within less than one year's operation the system has registered over 2,000 members and has loaned out over 5,000 bikes. In 2007, four more bike-loan points were installed. BiCiBUR started up in March 2006, following an ambitious plan put forward by the City Council to offer the public the possibility of loaning a bicycle without charge for a couple of hours to travel around the city. By doing so, they could leave their private vehicle at home and travel in a sustainable way on errands or from one place to another, without polluting, and without causing noise or congestion in the city. The bicycle design, the software for the bike-loan points, and the bicycles were all manufactured in local factories, as were the installations for the bike loans. Smart cards were also developed with a chip in order to identify users and to create a database record of everybody that loans a bicycle.

In August 2006, the inauguration of the Bike-loan System was attended by many authorities. The event was widely reported in the regional and the national press, and echoed in various magazines and television programmes that reported on this unique project in Burgos to "loan" bicycles to the public. Furthermore, a large scale marketing campaign was launched with gifts for the first members and leaflets explaining the project and, at the same time, a map of the city bike lanes was prepared to provide information on the safest routes for cyclists.

The organisation that is in charge of maintaining the bicycles (re-painting them if necessary, repairing wheels, brakes, etc..) as well as putting them out, putting them away or redistributing them during

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the day is a social organisation that is made up of socially excluded groups and people with disabilities.

In July 2007, due to their evident benefits, it was proposed to double the number of bike-loan points to a total of eight, including a conflictive point which was at the University. We say conflictive because it was thought that demand would be high among university students to travel from home to their place of study. Even though many other cities had not dared to install the service there, students were also taken into account in Burgos. The result is that the public now have eight bike-loan pick-up points.

The system has had such a positive reception that many cities have replicated the idea. Barcelona set up the same system but with different technology and other cities such as Jerez de la Frontera, Ponferrada, Logroño, San Vicente de Raspeig and various towns in Valencia and Andalucía have installed the same system that was developed in Burgos, with the same idea of a free service offering a healthy transport alternative to the public.

The system is also part of a global strategy of support for non-polluting, alternative transport, which is complemented by the construction and development of new bike lanes (32 km in the city, the fourth city in Spain in terms of actual km and the first for km per inhabitant), the installation of new bike parks (about 15), the provision of bike-lane maps and marketing of the service and of bike use in general.



Integrated access restriction strategy

Measure Description – Objectives

The main objective was to establish a clean traffic-free zone in the historic city centre and to reorganize traffic management. In order to achieve this objective, CiViTAS proposed a restricted-access zone equipped with electronic bollards to control traffic after the demarcation of the pedestrian areas, and a modernised traffic control centre to monitor the system. Other objectives that form part of the measure are the reorganization and management of traffic in sensitive areas, and public meetings to encourage the involvement of all stakeholders.

Implementation

Over the past year, under the umbrella of the CiViTAS Project and on the Council's initiative, 16 electronic bollards have been installed and about 5 square kilometres of the city have been pedestrianized, which has completely changed the whole layout of the city centre. At the same time, a more modern traffic control centre has been installed for round-the-clock traffic monitoring in the city. It is now possible to control access to pedestrianized areas with these tools, and at the same time ensure that the public can enjoy a city centre that is free from noise and pollution.

The idea of the restricted-access systems in the city centre was given life in January 2006 in the form of an ambitious plan put forward by the City Council to change the layout of the city centre and to provide the general public with areas in which they could walk and enjoy themselves in surroundings that are free from traffic, pollution and noise.

The plan, which covered a total of about 5 square kilometres, was to install 24 electronic bollards (finally, only 16 were installed due to the specific requirements of certain streets) in the city centre to control access to such a sensitive area. At the same time, the traffic control centre was refurbished, fitted with modern display panels and provided with direct links to cameras around the city in order, amongst its many other activities, to control the restricted-access zones 24 hours a day, 7 days a week.

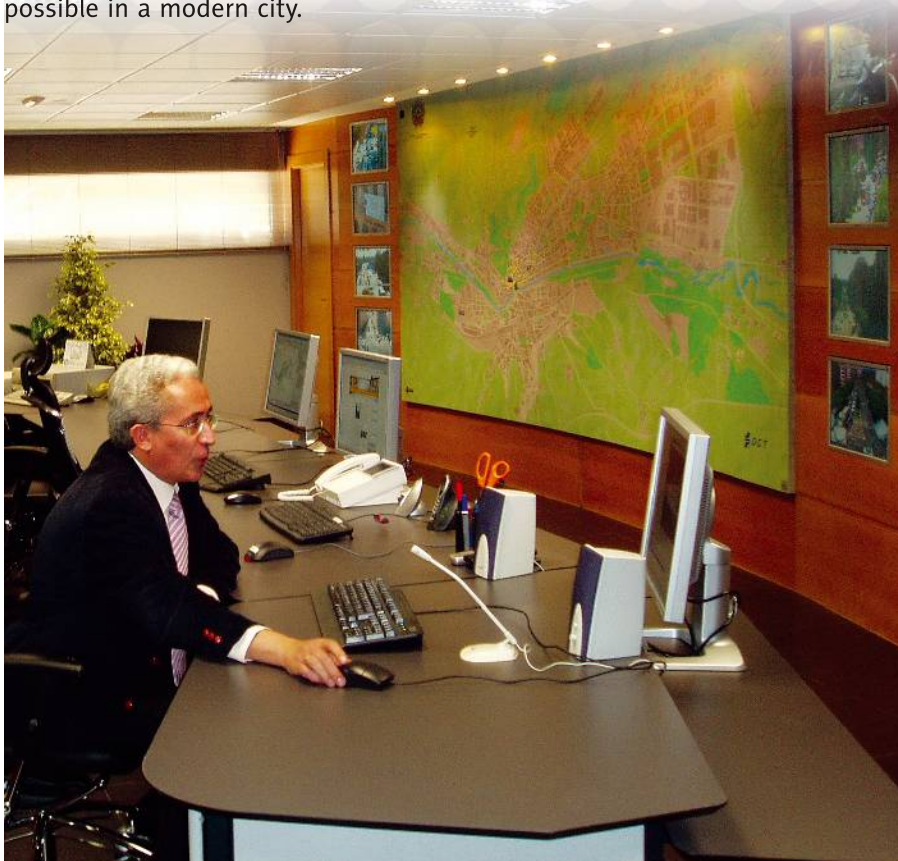
The initiative began with several stakeholder meetings, more than 50 in total: neighbours and neighbourhoods associations, shopkeepers and proprietors, hotel owners and goods distribution companies to explain how the system would work. Then, a list was drawn up to decide on how many access cards would be delivered. An agreement was signed with the goods distribution companies in order to fix different timetables for the distribution of merchandise and goods. One of the main factors behind its success, in addition to the political agreement and the efficient work of council employees and the company responsible for developing the system, has been the total consensus of the stakeholders involved.

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All residents had received their cards in or around July 2006 some months before the system began to operate. Furthermore, extensive documentation on the system was made available, providing detailed explanations on the operation of the system.

The civil engineering project was completed in August 2006, and in September 2006 the new traffic control centre with all of its access facilities and automatic bollards was inaugurated. Over recent months, each new pedestrian street has been inaugurated as street party with children's plays, music, and dance to which the public has been invited to celebrate the opening of another pedestrianized street.

All inaugurations were attended by a number of city dignitaries such as the Mayor of the City, the President of the Burgos Federation of Companies and Commerce, City Councillors and the Delegate of the Junta of Castile and Leon for the City of Burgos. The events (new pedestrian streets, inauguration of the access-restriction system and the new traffic control system) were widely reported in the regional and even the national press as an example of public participation and, of course, to demonstrate that a car-free city centre with uncontaminated air, free from pollution and noise is perfectly possible in a modern city.



Measures in CiViTAS CARAVEL

Integrated mobility strategy for trade fairs

Mobility Forum

Agency for flexible services and new mobility services

Integrated mobility actions for the San Martino Hospital

Enlarged goods distribution scheme

Integrated access control strategy
and road charging scheme

Clean high mobility corridors

Bus lane control system

Transition towards clean vehicle fleets

Sustainable mobility marketing and Ecopoints

Intermodal infomobility platform

Decision support tool for environmental impact
assessment of traffic planning measures

Carsharing service

Monitoring Centre for Road Safety and Accident
Prevention

GENOVA

The Intermodal Infomobility Platform and Infomobility Bus in Genoa

Description of the measure

The city of Genoa has a long story in terms of traffic and travel information. Today there are several available services concerning traffic and travel information, mainly on traditional media, but they are not integrated and mainly cover traffic congestion problems. The overall idea of the measure is to create a unique infomobility platform to aggregate different multimodal information and to deliver multimedia services.

Objective

To provide intermodal traffic and travel information services (TTI) based on Intelligent Transport Systems including real-time and mode specific information, delivered on different media (i.e. web and mobile phone)

Implementation

The new web mobility portal called "Guido ti guida" (Guido drives you – www.guidotiguide.it) was born, managed by AMI S.p.A.: this

The screenshot displays the GuidoTiGuida.it website interface. At the top, there is a navigation bar with links for HOME, Chi è Guido, Mobile, Cerca..., Sitemap, and Contatti. The main header features the logo "GUIDOTIGUIDA.it IL PORTALE PER LA TUA MOBILITÀ GENOVA" and a mobile phone icon. Below the header, there is a section titled "INFORMAZIONI IN TEMPO REALE" (Real-time Information) with a red background. This section lists several traffic alerts with icons and timestamps: a yellow warning for "Via Hermada -> Staz. FS Sestri: POSSIBILI CODE" at 14:56, a red warning for "VIA AURELIA RALLENTAMENTI SESTRI PONENTE" at 14:53, a green warning for "Autostrada: A10 Traffico Rallentato - Traffico Rallentato tra Genova Aeroporto e Bivio A..." at 14:51, and a green warning for "Autostrada: A26 Coda - Coda tra Alessandria sud e Bivio A26/Diramaz. A7" at 14:33. Below the alerts is a map of Genoa and its surroundings, showing major roads and traffic conditions. The map includes a search bar and navigation controls. To the right of the map, there is a "WEBCAM" section with several live video feeds from various locations in Genoa, such as "P.le Azzo Azzurri", "Corso Europe", and "Soprael/Dinegro". At the bottom right, there is a "METEO" section showing the current weather as "Oggi 24°C". The website also features a sidebar with various services and advertisements, including "I mezzi pubblici", "Muoversi in auto", "Sosta e Parcheggi", "Sicurezza", "Arrivare e partire", "SERVIZI PREMIUM", "Car Sharing", "Car Pooling", "Bus a Chiamata", and "Webcam traffico".

measure aims at providing the users through different medias, of several traffic information in order to obtain more efficient choices in their transport modes.

The objective of the web portal, based on the experience in the mobility sector of AMI S.p.A., is to cover the entire regional area with punctual, precise and clear information and, where possible in accordance with the monitoring systems of each local institution, in real time.

The web portal has been published on line in July 2007 and will be officially launched in November 2007.

It is being continuously updated with lots of information on: Public Transport, private car web services, parking places, road safety, means of transport which can be used to arrive at and to leave from Genoa, car sharing, car pooling, flexible on demand public transport buses (Drinbus), traffic webcams. Moreover, “premium services” are available, such as: the “personal mobility page” (web personalized page with specific traffic information chosen by the users), the SMS and email alerts, the dedicated contact centre and advanced marketing services (such as advertising and panels).

Furthermore, within Mobility Forum Measure, in collaboration with AMT, who gave at disposal an IVECO 12 meters hybrid bus for CiViTAS CARAVEL project free use, in collaboration with AMI technicians and drivers, who took care of all the electronic, audio, external and internal setting up of the bus, IIC fully projected and put into practice an itinerant office.

The Infomobility Bus is able to give information on CiViTAS CARAVEL Project, on the various different measures, thanks to the printed



GENOVA

measure fact sheets, leaflets, brochures, external and internal panels describing the measures and promoting sustainable mobility in the city, among citizens and transport users, constituting an operative, concrete and immediate output of the project which can be easily used and understood by all citizens.

The bus has been inaugurated in November 2006, with the presence of the Italian Transports Minister Alessandro Bianchi and was used for the CiViTAS CARAVEL Training Workshop on “Urban Pricing” held in Genoa at Ducale Palace on November 26, 2006 and for the CiViTAS CARAVEL Training Workshop on “Hospital area Mobility management” held in Genoa at San Martino Hospital on May 18, 2007.



The CAR SHARING service in Genoa

Description of the measure

The objective of the measure is to extend the car sharing service in Genova within the target areas in order to achieve during the project duration a fleet of 90 - 100 vehicles. The vehicles provided within the project framework will be low emission ones. Another relevant aim of the measure is to introduce the use of car sharing in Public Institutions.

The measure's work is coordinated by the Municipality of Genoa, in cooperation with ICS (Car Sharing Initiative) and Genova Car Sharing S.p.A., (the local car sharing operator), appointed by the Municipality of Genoa in order to develop the operational service and the promotional plan, in accordance with the Local Dissemination Manager.

Objective

- To extend the car sharing service in Genoa all over the target areas
- To include the car sharing scheme into the flexible services management agency for special purpose applications
- To set up a mixed car sharing service in cooperation between the Municipality of Genoa and the local car sharing operator
- To introduce the use of the car sharing service for good distribution
- To set up a special experimental car sharing service for disabled persons.

Implementation

The foreseen expansion of the car sharing service within CiViTAS CARAVEL project is ongoing: 18 new car sharing parking places have been opened in the central western and eastern part of the town.

Currently, the number of car sharing parking places in Genoa is 34. Within the end of the project, 50 parking places will be allocated in the CiViTAS CARAVEL area.

26 new vehicles, to be partly devoted to the expansion of the service and partly to the mixed car sharing scheme (to be used both by the Municipality of Genoa and by citizens) have been delivered, equipped with the standard on board computers. At the moment the number of Car Sharing vehicles is 64 and they will be about 90 - 100 within the end of the project.

The procedures for the procurement of a new vehicle, to be devoted to the experimental service for impaired persons, have been completed.



Krakow

Measures in CiViTAS CARAVEL

Transition towards clean vehicle fleets

Intergrated access control strategy

Enforcement of access restrictions

Clean high mobility corridor

Demand-responsive transport services

New leisure related mobility services

Integrated ticketing and tariffs

Security action plan for public transport

Car pooling system

Policy options for car sharing

Bicycle renting

New goods distribution scheme

Sustainable mobility marketing

Mobility forum in Krakow

Integrated mobility plan for Technical University

Monitoring Centre for Road Safety and Accident
Prevention

Infomobility platform

Public transport priority system

Demand responsive transport service TELE-BUS already launched in Krakow

In July 2007, after several months of preparations and cooperation between CARAVEL project partners from Genoa (Italy) and Krakow (Poland), inhabitants of the latter city were given a possibility of using innovative demand responsive transport service: TELE-BUS.

A joint initiative of Polish and Italian partners is a pioneer DRT solution in Poland and an example of technology and know-how transfer in public transportation on international scale.

The main goal of DRT launching was better customization of PT offer to citizen's needs, getting new PT users as well as more effective bus fleet management. The introduction of TELE-BUS was to enlarge existing transport system with respect to current tariff and service provision regulations.

The implementation of flexible transport services in Krakow required gradual and smooth realization of the following goals: choosing DRT services availability area, creating corporate identification system for the services, defining the service model with respect to business, operational and social dimensions, DRT software adaptation, training and implementation, establishment of transport dispatch center (TDC) as well as conducting communication and marketing campaign targeted to all stakeholders.

First and one of the most important phases was the process of choosing a proper target area of TELE-BUS availability. The chosen area in the South-East of Krakow, spanning three districts: Rybitwy, Podwierzbie and part of Bieżanów, is a region of low people density where regular PT offer is limited and frequency of bus runs is low.

Further activities were aimed at defining the service model along with network determination as well as software adaptation and training. All this work was done successfully thanks to good cooperation of three project partners: Miejskie Przedsiębiorstwo Komunikacyjne SA (Public transport operator in Krakow responsible for the measure implementation), Azienda Mobilita e Infrastruttura de Genova S.p.A (Agency for Flexible Services in Genoa supporting MPK SA in the design and planning of new services in Krakow) and Softeco Sismat (Company responsible for providing DRT software and its customization to MPK's needs).

And final step preceding the service launch was the communication and marketing campaign focused on two main groups of stakeholders: Districts Councils (local decision makers) and inhabitants of the target area. The campaign included following: direct meetings with mentioned stakeholders, press releases, production and distribution of leaflets, posters and gadgets, information in internet, articles in local newspapers and magazines, short programs and interviews in local TV channels. All promotional materials were prepared with accordance to TELE-BUS corporate

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identification system including green and blue colours for buses and bus stops, and also new soft shape for the latter ones.

And finally on 3rd of July Transport Dispatch Center of TELE-BUS was opened. The grand opening of TDC was followed by a press conference. The main guests of the event were Mayors of Genoa and Krakow – Mr. Paolo Pissarello and Mr. Tadeusz Trzemiel.

The daily DRT service operating is managed by Transport Dispatch Center – a part of MPK organizational structure. DRT clients contact dispatchers by phone using a special free line dedicated only for DRT services. Dispatchers collect the information from passengers, input data to the system, the system plans routes and output information is given to TELE-BUS drivers. The only limitation from the passengers' point of view is fact that an order must be placed at least 30 minutes before the planned start of the trip. The communication between TDC and drivers is based on mobiles phones and private radio network.

The flexible transport services will be tested during the period of 1 year. CARAVEL project partners are hoping for favourable results of the tests. Moreover, expected success in Krakow would be an incentive for further development of DRT services in other Polish cities.



Integrated mobility plan for Technical University

Krakow University of Technology (PK) is realizing a measure 11.9 “Integrated mobility plan for the PK”. An integrated mobility plan contains activities concerning promotion of: PT; cycling; walking trips and carpooling system as well as solutions which realize an idea of sustainable mobility.

The main aims of an integrated mobility plan

- Changing employees’ and students’ mobility behaviours towards sustainable transport modes
- Creation of a position of mobility consultant at PK
- Reducing parking needs for cars in the University campuses
- Reducing traffic congestion near the Warszawska St.

Within this measure PK Caravel team realized following activities:

Inquiries about employees’ and students’ travel behaviours and preferences. Research was carried out among 2000 respondents in order to get information concerning employees’ and students’ present ways of travelling, causes of choice of individual transport forms, ownership of driving license, car and identifier which entitle to entry and parking in the area of PK. Collected material was a great base to define assumptions of employees’ and students’ mobility management system at PK. A document “Integrated mobility plan for PK” was created as a list of aims to achieved, list of most important activities and projects within realization of sustainable mobility. This document includes all forms which contribute to reduction of car trips to and from the PK campuses and promotion of environment-friendly transportation among PK employees and students.

“Integrated mobility plan for PK” was based on exhaustive researches and analysis of present situation in: parking places, bike path&parking inventories and inquiries among employees and students.

“A concept of bike paths system between all PK campuses” was created.

Concept was presented during meetings of the Municipality Bicycle Task Team and it obtains positive opinion from independent experts and Deputy Major. There was made an agreement that in case of enough budget, after series of consultations with City Streets Authority and Police Department, concept will be implemented within one year.

Krakow University of Technology organized a Bike Happening in order to encourage employees and students to travel by bike. PK CARAVEL team together with happening participants established “A Book of PK cyclists” as a database of people who travel by bicycle to PK and in

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their free time. There were a lot of attractions – bike maintenance point, competition with prizes “Pimp my bike®” and action of bike marking carried out by police. Participants got maps with street networks and location of PK campuses and they down their route in bike trips between the University campuses. Maps with students’ routes were used to create a concept of bike paths between PK campuses. During this event CARAVEL team organized “Bike Ride” inside the campus, with a special participation of the University Rector!

In Krakow there is a tradition of Students Festival, when students get keys to city gates and they are in power for one week. All students in Krakow dress up into funny suits and present their University in original way on the market place. Within the mobility plan activities, there was an idea to transport PK students to the market place by old IKARUS bus (the oldest operating bus in the city) with CiViTAS CARAVEL logo. Bus was running across streets of Krakow and it was a great promotion of PT among students. It was also a kind of goodbye with IKARUS buses which always operated on line between PK campus and Students Town, and now are being replaced by modern buses.

University CARAVEL team organized special training session during the transportation students conference in Krakow – “Days of Transport”, with three presentations concerning the CARAVEL project and sustainable mobility. There were also organized case workshops, where students had to invent a promotional campaign for PT. Almost 200 students from different Polish technical universities actively participate in the conference and seventeen of them were trying to invent a marketing campaign for PT.

According to the CARAVEL project objectives, Krakow Municipality and Streets Authority has convert the layout of streets near the Warszawska St. University campus, what caused reduction of the traffic congestion The main street was shifted farther from the campus buildings, new bicycle path and tram tracks has been constructed, and the sidewalk to main gate of the campus was reconstructed in the way to avoid further parking and widen the pedestrian area. New tram line connecting two University campuses starts to operate.



Stuttgart

Measures in CIVITAS CARAVEL

Security Action Plan for Suburban Railway
in Greater Stuttgart

Policy options for access restrictions

Sustainable mobility marketing

Car-pooling system

Event-oriented Traffic Management



Policy options for access restrictions

Initial situation

The limit values for PM10 and NO2 in the ambient air are exceeded in many European cities after the introduction of new EU air quality guidelines (96/62/EG and 99/30/EG). The guideline values for PM10 became valid in January 2006 and those for NO2 in 2010. In many areas traffic is the main source for air pollution and so access restrictions, which will be tested and implemented within CARAVEL, are the most effective measures to reduce the traffic permanently.

Objectives

- Design and implementation of a policy to reduce pollution in different areas of human activities through the strategies of restrictions and management of transport.
- Analysis of the data of air pollution due to transport in different places.
- To fulfil the requirements on pollution in line with the European Clean Air Directive and fall permanently below the limit values.
- Proposal of strategies of access restrictions and for other traffic restrictions in areas where the concentration of emissions exceed the allowed levels (NO2 and particulate matter as well as CO2, Nox, SO2 etc.).

The Measures

Different measures in transport, finalised in the Clean Air Program for Stuttgart, will be designed, implemented, tested and assessed during CIVITAS II. Examples of measures, out of a list of 36 measures in total, are:

- Year-round traffic ban for heavy transit traffic within the entire city area of Stuttgart. Date of introduction: 01.01.2006
- Year-round traffic ban for diesel vehicles which do not fulfil any EURO standard and EURO standard 1. Exception: Backfitting with soot particle filter. Planned date of introduction: July 2007. Date of introduction postponed to January 2008 or even July 2008.
- Year-round traffic ban for diesel vehicles which do not fulfil at least EURO Standard 2. Exception: Backfitting with soot particle filter. Date of introduction: 2012
- Installation of pedestrian crossings over a city highway to reduce speed of cars on that street and to equalize the traffic in order to avoid traffic congestions. Date of introduction: 2006

Implementation of one measure: Pedestrian Crossings

The centre of Stuttgart is situated in a basin, surrounded by hills of approx. 200 m height. This specific situation and the fact that Stuttgart is not surrounded by ring roads like many other cities leads to the fact of a high percentage of transit traffic passing the city centre. One of these transit roads was subject of a measure. More than 100 000 vehicles per day are using this road (national road B14), which has the character of a city highway with its 8 to 10 parallel lanes. The average speed of the vehicles was relatively high with up to 70 km/h. For a test the city council decided to install two pedestrian crossings over this road with a progressive signal system in order to reduce the speed of the vehicles. Among other reasons environmental aspect like the reduction of air pollutants and noise were expected. The crossings were installed in July and August 2006 and the test phase lasted for one year and ended recently. Complex investigations of the influence of the crossings on the average speed, on the continuity of the traffic flow and the number of vehicles were done. These data were used for noise modelling as well as for emission and ambient air modelling in order to calculate the changes caused by this measure. The results of the investigations proved a desired reduction of the speed of the vehicle of 10 to 15 km/h. The noise was reduced slightly for 2 to 3 dB(A). Emissions of air pollutants were also reduced for up to 7 % depending on the component. NO_x and PM₁₀ were reduced more than benzene, hydrocarbons, CO and CO₂. Reductions of the ambient air concentrations could also be determined, but less than the reduction of the emissions. These results are preliminary, the evaluation is still ongoing. The exact reasons for the reductions will be determined.



STUTT GART

Event-oriented Traffic Management

Measure Description

In and along the highly loaded arterial road network of Stuttgart occur annually about 22.600 accidents, 1.800 events in public areas, 200 events in congress centres, concerts, stadiums etc., and about 12.000 work sites (on main roads). However not the size of the event, but the tangible impacts are relevant for incidents. These impacts concern both the public transport as well as individual traffic. The coincidence of several events mainly contributes to the fact that on about 90 days of the year the traffic conditions are impaired in a way that is no longer controllable without interventions. For a better traffic control the Integrated Traffic Management Centre is being gradually built up for Stuttgart.

Objectives

This measure aims at improving the traffic situation in case of events and traffic disturbances (incidents), promoting intermodality in the context of big events such as soccer games, open-air concerts, etc. and reducing congestion in road traffic as well as of emissions and travel times through optimal information and guidance of the road users.



Implementation

- The Integrated Traffic Management Centre Building has been set into operation on the 26.04.2006 with an opening ceremony.
- The parking and traffic guidance system Cannstatter Wasen (PVLS) started just before the World Soccer Championship in 2006.
- The dynamic lane signalization on the Gaisburger Brücke started to work in May 2006.
- Technical adaptations of the traffic information centre (VIZ) to the new conditions to enable switching of light signal systems, putting scenarios into action and to activate the variable routing (PVLS) have been made accordingly.
- The Network control system in the area Stuttgart North got started.
- The Integrated Traffic Management Centre enables an event-oriented control of traffic flow across all transport modes. The system also controls the traffic flow on the operative level with foreseeable events, e.g. commuter traffic, work sites or big events as well as with unforeseeable events such as accidents.
- Also due to the new Integrated Traffic Management Centre the traffic management during the World Soccer Championship went really smooth, without major traffic jams.
- Just now, preparations are being made to offer individual online-services.



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If you are interested in more detailed information about **CiViTAS CARAVEL** or the **CiViTAS-Initiative** please visit our website <http://www.civitas-caravel.org>

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