Technological and Operational Support for Car sharing

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Rupprecht Consult	GERMANY
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EUROCITIES ASBL	BELGIUM
TMB-Barcelona	SPAIN
RATB-Bucuresti	ROMANIA
Communauté Urbaine-Strasbourg	FRANCE

PROJECT MAIN DATA

Start: 1st September 2000 **End: 1st March 2002**

DURATION

18 Months

TOTAL COST:	412.856 euro
COMMISSION FUNDING:	367.000 euro

TABLE OF CONTENTS

ANNEX

PROJECT MAIN GOALS

TOSCA project was born from the necessity of setting up an alternative system to the traditional idea of mobility.

TOSCA is a strategic initiative promoted and financially supported by the European Commission which will enable a number of European cities in the implementation of commercially sustainable IST-based car sharing concepts, as an element of flexible and intermodal door-to-door mobility, and will facilitate further take-up developments, such as: integrated smart card for public transport, car sharing and taxis or car sharing booking and information system via internet, call centre and in the future Wireless Application Protocol (WAP).

Building up an experience as the one provided by the TOSCA project is something the Italian reality is not familiar with.

The idea, of car sharing is rooted in the previous experiences gained in the Northern European countries such as, the Netherlands, Switzerland and Germany. As far as the Tosca project is concerned, the City of Bremen will provide ATC with practical assistance and all necessary tools for setting up a car sharing system in the city of Bologna.

The support offered from the City of Bremen, will consist in transferring its direct experience's results and acquired technologies, disseminating the transport and environment policy related benefits and options of IST-based car sharing to other European cities willing to integrate the already existing mobility modes.

To make it all more feasible and to facilitate this transfer within TOSCA project, the City of Bologna (ATC), public transport operator, will implement a pilot application of IST-based car sharing, taking up all successfully implemented technologies and methodologies as well as established car sharing concepts derived from the City of Bremen.

The main objectives that Tosca is looking at can be summed up in 4 main points:

1. **Transfer innovative technological tools of the car sharing scheme in the City of Bremen (supplier) to the public transport operator ATC-Bologna (user)**

TOSCA will support the transfer of car sharing technological elements for setting up a car sharing organisation and communication system in Bologna from the City of Bremen who is one of the leading cities in the management of an advanced IST-based car sharing system.
The hardware and software components of the Car sharing organisation and communication system (COCOS) provided by INVERS (GERMANY) will be used for the operation of a car sharing system starting with 9 vehicles fleet placed at three locations in the central area of Bologna and involving a users group of about 100 customers.
COCOS will help to provide a reliable, user-friendly and efficient car sharing management by setting up an electronic booking and accounting system for transferring trip data from car sharing vehicles to the booking centre (mainly for

accounting and fleet management purposes). By means of contactless smart cards it will possible to control user's access to vehicles.

2. Develop and implement a pilot application of car sharing in the city of Bologna, based on the implementation and business concept of the car sharing system in Bremen

Within the TOSCA project ATC Bologna will implement a car sharing pilot application to guarantee a high quality of customer services and environmental friendliness, the car sharing scheme shall satisfy the following emerging standards for car sharing operation:

a) Provide users with 24-hrs service accessibility, in order to offer a real alternative to the private car

b) fee structure based on mileage, in order to prevent from driving more than really necessary ("pay as you drive" structure)

c) use of low emission vehicles (compliant with at least EURO III norm)

3. Develop a car sharing business and technical implementation plan for 3 European cities in France, Spain and CEEC (Central Eastern European Country)

The TOSCA project will enable three European cities from France, Spain and CEEC (Central Eastern European Countries), with a high car sharing market potential and strongly committed to bring forward the idea of car sharing and develop a car sharing technical and business implementation plan in their cities.

4. Disseminate the project results and best practice examples of car sharing

Dissemination activities will help to increase awareness on the system benefits and potentials amongst transport policy decision-makers and users in Europe.
TOSCA will organise three car sharing workshops where results of the car sharing demonstrations in Bremen and Bologna will be presented and the transferability of these examples to other European cities will be discussed. Dissemination activities will also include the production of a car sharing best practice study, the edition of a project brochure and the setting up of a car sharing best practice web page. All relevant project information will be published, project results will be updated regularly, and links to other car sharing trials, operators and technology suppliers will be maintained.

Car sharing is a modern mobility concept, which gives the possibility of using a car at any time needed, without owning an individual vehicle.

A well-organised car sharing service gives almost the same flexibility as a private car plus higher economic and ecological efficiency. Organised car sharing services complete the network of environmentally friendly transport solutions (public

transport, walking and cycling). It works like a mobility insurance for all requirements, when public transportation, walking and cycling are not adequate.

Although some car sharing successful experiences already exist, (mainly in co-operation with public transport or taxi operators), the overall awareness of the benefits of car sharing as well as the organisational expertise and the currently available technologies for building up a well operating, reliable and user friendly car sharing system, are not yet sufficiently deployed in Europe.

KEY ISSUES

In accordance with European Commission objectives TOSCA meets the main aims pursued from the IST programme particularly interested and careful in implementing the realisation of "systems and services addressed to citizen" in terms of development of reliable user and friendly applications, improvement in the accessibility and the quality of services provided by satisfying users demands and their mobility needs.

TOSCA in fact represents an attempt to step towards other innovative transport modality by promoting an environmentally oriented urban transport policy based on reduction of energy consumption, noise and air pollution.

Within TOSCA ATC Bologna will realise an electronic booking and payment system also via internet, and will adopt an electronic access control system via a smart card which will control users access to the vehicles.

TOSCA will largely contribute to support the deployment of "Intelligent Transport and Mobility Management" particularly the development and enhancement of reliable, user friendly car sharing management and payment systems.

Moreover, the project will give a significant contribution to develop intelligent infrastructures for the exchange and distribution of multi-modal traffic information, easing the integration of booking facilities and car sharing relevant information with public transport information in an interactive platform such as the Internet.

TECHNICAL APPROACH

TOSCA will support emerging technologies to widespread into those markets still insufficiently implemented and disseminate car-sharing technological tools to other realities.

From a technical point of view, the following components will be part of the Bologna car sharing system:

- **Car-related hardware (GSM onboard computer and smart card readers will be installed in nine car sharing vehicles)**
- **Software: (call centre & administration centre, booking, accounting and reservation software for reservation via Internet will be installed).**

The related technological activity will be undertaken within different steps starting from the central reservation server installation to network clients, administration and web server installation.
The whole system and vehicles will be opportunely tested.
System parameters will be adapted to the local realities and operation optimised accordingly.
During the piloting phase extensive training of operators, managers and network administrators on all system elements will be conducted. Afterwards ATC, assisted from INVERS will be able to run and maintain the system by its own and to provide training at the call centre staff for necessary experience acquisition during real life operation.
System operation checks will be conducted in internal use through telephone and e-mail hotline assistance.

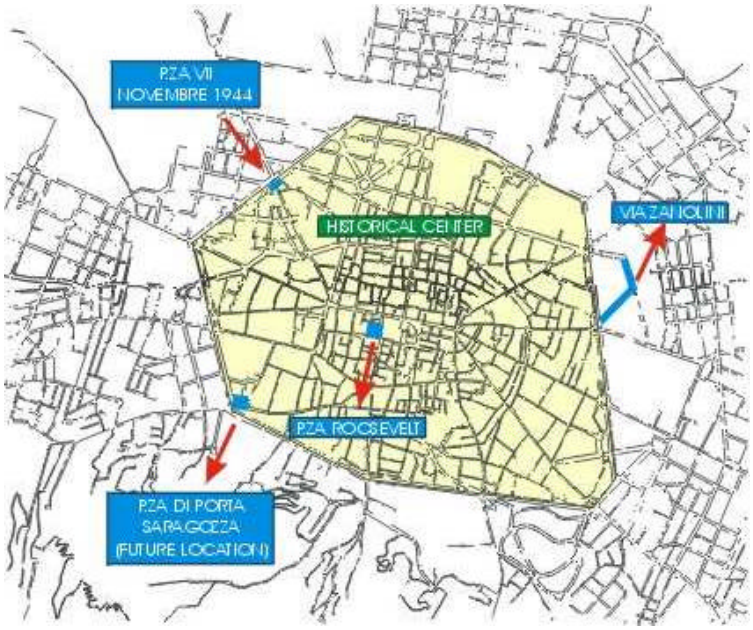
EXPECTED ACHIEVEMENTS / IMPACTS

If car-sharing operations will turn out to be successfully achieved, the Tosca project experience will have a strong impact in the improvement of citizen's urban life quality from an environmental (reduction of air, noise pollution & CO_2 emission, energy consumption saving) social, economical (no costs for purchasing or maintaining a car but only trips taken costs), scientific and technological point of view and will be a lunching pad for future replication.

MAP

The map below shows the positions of the car sharing locations within the area of Bologna.

Presently only three car parking areas have been identified (namely Piazza VII Novembre, Via Zanolini, Piazza Roosevelt, but in the next future a further location will be added in order to ensure customers with a more efficient accessibility to the service.



PICTURES

Below see a schematic representation of an equipped car sharing locations.

For harmonisation purposes the SMART cars will be opportunely painted in the typical ATC fleet colour (red) and will carry the European Commission and Bologna Municipalities logos.