

RTD Fact Sheet

Car sharing	
Reference Measure	BOL 6.1 Car sharing
Date of Submission	03/2013
Date of Review (ISIS)	04/2013
Date of Approval	04/2013
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Context and Purpose

Bologna was one of the first cities that offered a Car Sharing service in Italy. Since August of 2002, after some pilot trials and a brief running-in period, Car Sharing became fully operational.

The service has always been performed by ATC spa. It is part of the ICS group “Car Sharing Initiative”, involving several Italian cities where a Car Sharing service has been carried out.

In 2008, before Mimosa project started, the car rental fleet was composed of 30 vehicles available in the urban area and 10 in the Province, which can use 17 reserved parking places in the urban area and 8 in the Province.

Bologna Municipality confirmed in the Urban Traffic Plan, the willingness to further develop car sharing as an alternative to private cars in strict integration with the public transport network. The plan aimed to increase parking locations and the number of cars available thanks also to a financing programme of the Italian Ministry of the Environment for the purchase of new cars.

The RTD activity of the Mimosa measure concerned first of all the realization of a global plan for the creation of new car sharing locations in order to widen the service in the urban area taking into account the indications given in the Urban Traffic Plan.

Another fundamental aspects of the RTD activity was the testing of different system for the protection of the car sharing locations against unauthorized parking. This activity is necessary to improve the service offered: one of the main problems for car sharing users arises when at the end of their journey they have to park the car in the reserved parking space and they find it occupied by unauthorized vehicles. This causes inconveniences both for the client that has to leave the car and has to inform the call center and find an alternative place to park and also for the next client that could not find the booked car in the expected place.

Description of RTD Activity

The planning of the new locations took into consideration the Urban Traffic Plan that gives indications and criteria to realize car sharing parking areas:

- close to the bus stops of the main public transport lines
- some locations will be equipped also with bike racks of the bike sharing service that allows free use of public bicycles.
- close to the local train stations.

The characteristics of locations are:

- area with good lighting in order to guarantee security conditions for users;
- open area with few trees in order to avoid leaves or dirt on the cars;
- clear indications on the ground and with vertical panels of the car sharing area in order to avoid confusion with other reserved zones.

The final car sharing location network should guarantee a well distributed service in order to have the possibility to reach an alternative pick-up point with a short trip by bus or by foot.

The final position and realization of the new locations has been identified following these steps:

- a set of locations was defined based on the provisions of the Urban Traffic Plan and taking into consideration the number of cars available;
- the parking areas were realized along defined public transport main lines;
- after a first period of test an evaluation concerning each location has been done: it has been based on data concerning the use, suggestions from users, particular conditions verified at the location.

Fig. 1 shows map of car sharing locations in Bologna after Mimosa measure development: since the project start 17 new locations were realized (at November 2012 car sharing offers 34 locations in the urban area).

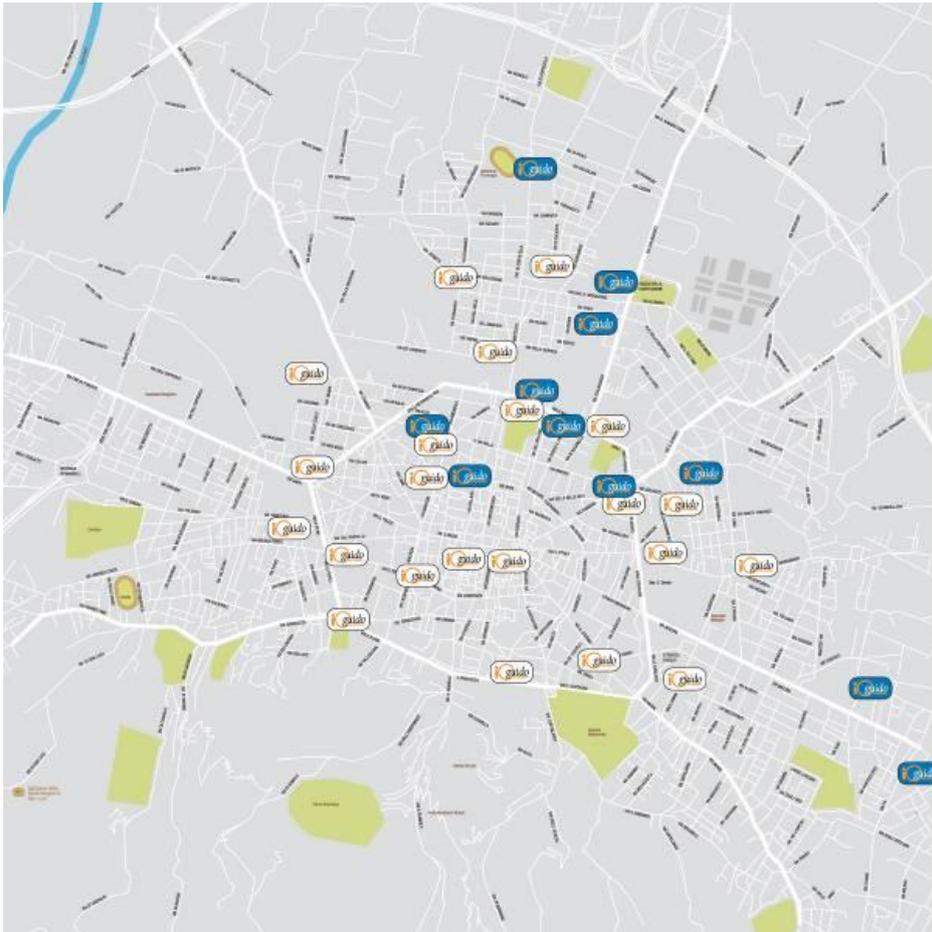


Fig. 1 - Car sharing locations in Bologna

The other aspect of the RTD activity concerned the test of systems able to prevent the parking of other cars in car sharing locations.

One of the main problems for car sharing users is that when they end their journey and have to park the car in the reserved parking space they find it occupied by unauthorized vehicles.

In cooperation with the Municipality, at the car sharing location of Via Zanolini ATC tested an automatic “parking post” to prevent unauthorized parking.

The parking space is equipped with a device automatically managed by software that through a radio frequency sensor recognizes vehicles and raises or lowers the physical barrier. After the first tests it appears that in some cases due to the topology of the parking space the barrier opens if the car drives past. A solution was implemented to solve the problem in which the car sharing user arrives at the parking place and enters the code of his current car booking on the ground device, after the code check it lowers the barrier.

A second test was performed in two locations in Via Paolo Fabbri and Via Saliceto and concerns an innovative protection system that uses sensors in the ground of the parking area. The system communicates with protocols like ZigBee to a concentrator (the parking meter) that sends via GPRS the status of the parking space to the control centre:

- free
- occupied by an authorized vehicles (equipped with a tag)
- occupied by a unauthorized vehicle

Via web, the control centre has the map of the current situation of the parking spaces and is able to activate the procedure for unauthorized car removal.

Outputs and Results

17 new locations were realized in Bologna urban area within the Mimosa project. This activity was developed in parallel with the purchase of new green cars (mainly natural gas, LPG and Hybrid in order to decrease the environmental impact of the car sharing fleet). The increase of car sharing locations was appreciated from clients: locations in the central area of Bologna had more booking requests in comparison with the peripheral ones.

As concerned parking slot protection both solutions tested had positive results from the technical point of view.

Criticalities of the solution of Via Zanolini that foresees the physical barrier concerns the authorization aspect: we obtained a temporary authorization for system testing it but we are facing problems to obtain the definitive authorization for implementing it in a larger scale.

The solution that uses sensors for the monitoring of the status of the parking place implies to have the possibility in a short time to remove the car from the slots but at the moment the fine and the removal needs the presence of the local police that has insufficient resources to guarantee a prompt intervention.

Resulting Decision-making

The results of the car sharing plan was the basis for the development of the new 17 locations.

The R&D activity concerning parking protection allowed us to test different solutions and to examine different strategies to solve this issue.

Lessons Learnt

The results show that the key factor of the success is first of all the closeness of the parking location to the client residence or place of interest.

The location in the central area of the city have automatically success; the peripheral ones have to be located in high inhabitants density areas and near commercial activities.

The car sharing system has to be supported with constant information and promotional campaigns in order to increase the use. We found a fruitful information channel with info desks at COOP supermarkets clients: we had positive results with a 4% increase in service subscriptions in a month of campaign.

Cost-effectiveness

The RTD activities was the basis for the extension of the car sharing service in Bologna.

As concerns parking protection we didn't find the final solution to be implemented on a large scale but the activity was really useful to analyze technical and authorization aspects of different systems.

Dissemination and Exploitation

The Bologna study and experience is at disposal of the Italian partners of ICS (Italian car sharing association) and the activity results are published in the car sharing white book published on the MIMOSA web site .