CREACOM

SmartBike

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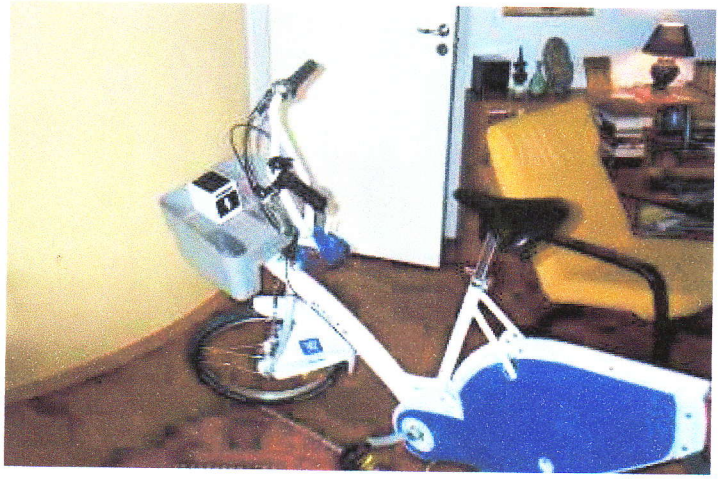
The first generation bicycle was a French product. It was conceived and fabricated in the production plant of Cycleurop, at Romilly sur Seine in the Champagne - area. Typical features were an integrated dynamo, rear torpedo brake, a five-speed gearbox and covered wheels.

Thanks to the typical appearance of the vehicle, there is no question about the identity and its whereabouts.
You can see a picture here of the first proposed prototype - still in a red cloth and without the five-speed 'box. It is photographed in front of the Cycleurop plant in an early stage of the project.

When it came finally to a production stage, it looked almost the same : the bikes shown below are the ones that were actually taken in the field on june 6th 1998.

The project evolved, so other manufacturers habe come in to the picture : this bike is made by Decathlon, France.



The bike below is a Taiwan product and is used in Singapore and in Drammen, Norway.

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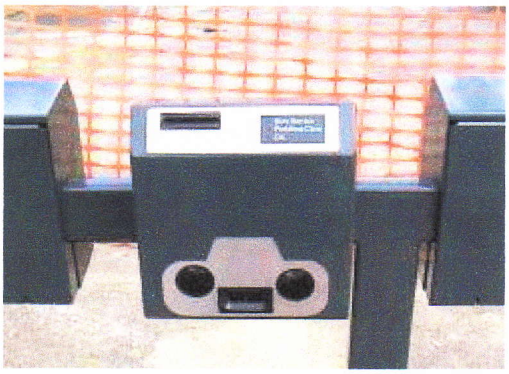
Practical set-up

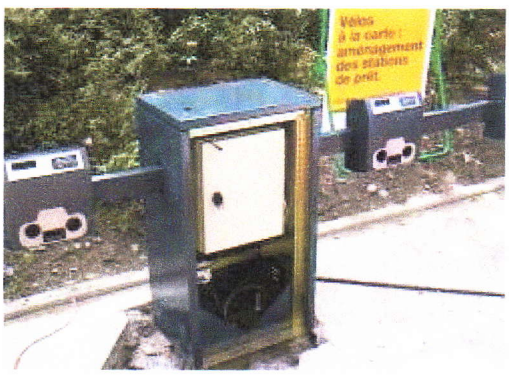
A number of bicycles is installed in public places. Each bicycles is locked on a mechanical bay, called 'docking station'. The user can, by means of an electronic card system which identifies him, release the bicycle and use it for a certain time in the city. Next he can return the bicycle to the same - or another docking station, with the use of his card - returning thus his card to 'not used' status.

Hardware Description

Docking Unit : the fysical box to which a bicycle is slotted. It contains a card-reader, a twin antenna tag read unit for bicycle tag and lock tag, a display with 3 LEDs and the necessary firmware to lock a bicycle.



Station Controller : the box that contains all electronics for local network management and communications hardware. It is equipped with an intelligent controller. Communication is based on GSM protocol, the GSM being used is the Siemens Module M1.



Host Controller : this is a remote computer. It is equipped with NT server version 4.0 or higher, Back Office for NT and a digiboard with multiple serial channels for modem management.

User operation

To unlock a bicycle, the card is introduced into the reader. There is a visual and an audio signal for operation purposes. Three LEDS will display the status of the docking unit. If there is no activity, no visual sign is given.
When a card is introduced in the cardreader, the bicycle will be released mechanically. After this the OK-LED (yellow) is blinking and the buzzer sends a repetitive beep. If there is a problem with the card, the Problème Carte LED (red) is blinking and the buzzer sends a repetitive beep. If for any reason the docking unit is out of service, the red Hors Service LED (red) is always on.

If the time of loan is exceeded, the card is locked. If any of the key registers that are written on the card does not match when the bicycle is returned and the card re-introduced, the card will be locked by the system. Unlocking of the card is done by the remote host operator.

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The bicycle project was conceived for **Adshel**, a daughter company of the Clear Channel Group (former More o' Ferall), . This company is specialized in advertising in city - environments. (http://www.moregroup.fr).
Adshel came up with the original idea of loaning bicycles people by means of high technology infrastructure. The combination with city furniture and advertising possibilities was an extra asset to the idea.

Adshel solicited the Belgian company of Orlians Engineering and Prototyping to develop the project. Over a period of more than one year, the technical constraints for the system were discussed and determined Antwerp based Creacom.bvba wrote the specifications for the product to be, while another important partner - XLN-t, brought in expertise on Smart Proximity Cards and made the complete hardware design of the equipment.
The company can be visited on http://www.xln-t.com.
The first city that acommodated the project was Rennes, France. The project has gone international with installations in London, and Singapore, and Norway.