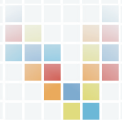# CARRIS - NET BUS

The Institution

Founded in 1872, Carris is a Public transport company which has provided passengers with a network of trams and buses throughout the city of Lisbon, accomodating for the populations need for mobilty and circulation, in a city where there are approximately 400,000 cars circulating on a daily basis.

The Challenge

In the year that celebrates 138 years since its founding, Carris continues to invest in the fleet of buses available to its passengers, to modernize the service and increase comfort to them.

Currently, the entire fleet is equipped with video surveillance systems, radio transmitters / receivers and GPS technology.

With one of the most modern fleets in Europe, Carris wants to go further by allowing its passengers free Internet access in vehicles, via Wi-Fi from a computer or mobile phone.

The Solution

Launched in September 2010, the Carris Net Bus is a free internet service installed in 30 new articulated buses, more comfortable and accessible to people with disabilities and equipped with LED's to identify the bus stops.

The solution is an experimental probe (originally installed on two bus routes) and its a result of a partnership between Carris and TMN in order to provide free broadband access to users of Carris.

These new buses are equipped with a TMN Wi-Fi system, giving Carris users, the ability to connect their laptop, smartphone or other device compatible with Wi-Fi network to access the "Carris-TMN" network whilst present inside the vehicle for the duration of their journey, permitting the viewing of a video on YouTube or checking e-mail, regardless of where the bus is in its entire route.

The user can also, send an email, in case of malfunction to Carris to report the situation, referring to the identification of the vehicle and the issue encountered.

The installed solution is based on a combination of Draytek Wireless Router, the latest generation - with 3G access, wireless access point to 300Mbps (802.11n) - and a USB mobile broadband access to TMN.

The system also includes a web platform, available to TMN and Carris, to allow statistical analysis of the service provided - days, hours, buses, number of users - and availability.

The low cost of the installed equipment and high quality of the service makes the solution implemented, an excellent cost effective option.

Imprint

DRAYTEK VigorFly 200
Wireless Broadband Router/3G

The VigorFly 200 is a compact broadband router with WLAN 802.11n. The WAN Ethernet port lets you connect VDSL / VDSL2 / GPON / G. SHDSL / ADSL2 / cable modem / ADSL. The throughput NAT allows the managing of streaming media an extremely easy task.

If you are outside of the fixed network radius, you can directly connect the modem to the USB port 3.5G VigorFly of 200 or alternatively connect via USB modem 4G WiMAX. Sharing 3.5G / 4G provides the residential needs of download / upload.

Network coverage is extended via WLAN 802.11n, which offers stable and reliable wireless coverage at high-speed data traffic through the WMM (Wi-Fi Multimedia) and is supported by encryption WEP / WPA / WPA2, prevention DoS / DDoS attacks, SPI, port forwarding, MAC address and the opening of ports in order to completely protect your wireless network.

Key features:

- 10/100Mbps Ethernet Interface Modem Cable / DSL / Fiber;
- Integrated Client PPPoE / PPTP / DHCP ;
- USB port for connecting USB modem 3G / WiMAX;
- Wireless Access Point to 300Mbps (802.11n);
- Integrated Firewall: SPI (Stateful Packet Inspection), protection against DoS / DDoS attacks;
- Multi-function VLAN (802.1q);
- 2.4GHz wireless access up to 300Mbps (802.11n) (use with adapter ideal Vigor N61);
- Support for protocol 802.11e WMM (Wi-Fi Multimedia) and APSD;
- WDS (Wireless Distribution System);
- Discovery of Access Points;
- Listing of clients connected via wireless;
- Control Wireless data transfer rate;
- Wireless Network Isolation;
- Wireless access controlled by MAC address;
- Protocol WEP (64-128bit);
- 802.1x, WPA, WPA2 (64/256bit);
- WPS (Wi-Fi Protected Setup);
- Compatible: Windows, Mac, Unix, Linux, etc..

> Read more.

About

The **Visus Telecom** (OptiVisus) is a company operating in the ICT market since 1989 which is dedicated in importing, distribution and servicing of CCTV systems, IP (transmission equipment for video over IP and digital recording), Telecommunications / Networking and equipment for ISDN / ADSL and Cable, the products and brands it represents, being for several years a major company in the National CCTV and Telecommunications / Networking markets.

Convex (SATEC Group) is one of the leading companies in Portugal in developing services and solutions in Information and Communications Technologies (ICT). With 20 years of experience in implementing solutions and IP Networking and Communications, with a comprehensive portfolio of services / solutions in ICT, Convex guide their activities for the implementation of turnkey projects and development of customizable applications.

TMN is the mobile communications operator belonging to Portugal Telecom Group. It's a pioneer in the Portuguese market, first with an analog network followed with a GSM digital network. On April 2004, the third generation mobile phone with UMTS technology was launched. Technological innovation, innovation in providing products and services that characterize this company which has over 7 million customers.

DrayTek is a world leader in innovation, design and marketing of telecommunications products based on ISDN, xDSL, USB, VoIP and Wireless. Their products are constantly evaluated and awarded for their high quality and customer satisfaction, by magazines, technological institutions, and amongst others, consistently assessing the performance of their equipment.

More info

Carris Netbus: http://www.carris.pt/pt/netbus

TMN: http://www.tmn.pt

Convex: http://www.convex.pt

Draytek: http://www.visus.pt/draytek

Visus Telecom

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