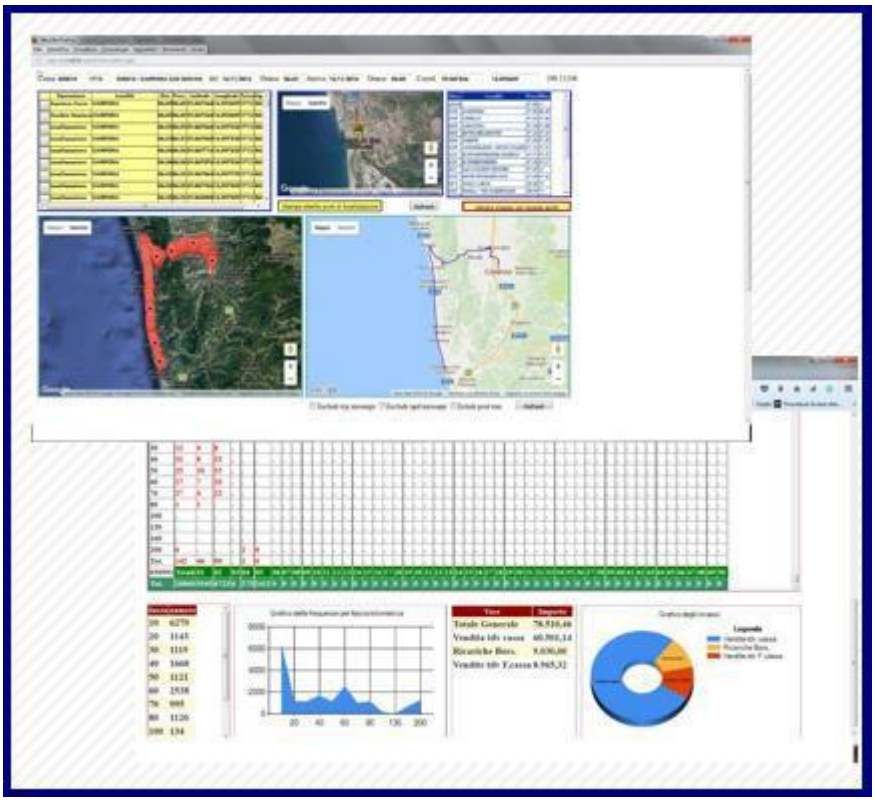
WBus

Smart Ticketing on web

Introduction

Wbus is one of the X-System solution addressed to all transport companies. The desire is to renovate their systems and services. It is the answer to the particular need to obtain a superior efficiency regarding the sale transaction management and data processing. Thanks to its ease of use the relations with the public will be assisted.



The Project

Our project is looking at different directions, that are partly independent, with the aim to satisfy the requirements in order to manage a company working in the local public transport domain:

1) On-board ticketing (an appropriate ticket issue device will be guaranteed on-board, in combination with all devices concerning the ticket validation, the company's sale points, online ticketing, automatic devices (RTVM) or external ticket sale point. It would be possible with paper tickets or the electronic ones (smart card), or based on a dematerialized selling.

2) Localisation of the vehicles while they are carrying out the activities (routes) and their relocation on the territory (included the data collection process which is necessary for the third party institutions certification). Thereby it is possible to create, at the same time, the requirements of an info-mobility system. It would be based on the activities of the single company or, maybe on the united groups of companies with no dimension limits.

3) Analysis of the operator's activity on-board (driving time, duration of work shifts, duration of the routes, prior work shifts planning and their balance sheet at the end of the sale data collection process. It may be possible thanks to the operative on-board devices or devices which are present in the territory.

4) Total sale data analysis and traveller frequency. In this way marketing actions and vehicles fine-tuning will be allowed, together with the analysis of consumption based on the travel time analysis.

5) Implementation of IT tools able to plan, to change easily and to transmit all basic sale and operating data to the peripheral devices. It is considered as "ease of change and peripheral devices transmission" the opportunity to modify prices and operating data by using a simple and friendly interface on the provided software. As well as the opportunity to transmit simultaneously and extemporaneously to the peripheral device all changes in real time.

We have created a WEB portal able to satisfy all requirements set out above for this purpose. The portal is composed by four sections:

a) Private Section

b) Public Section

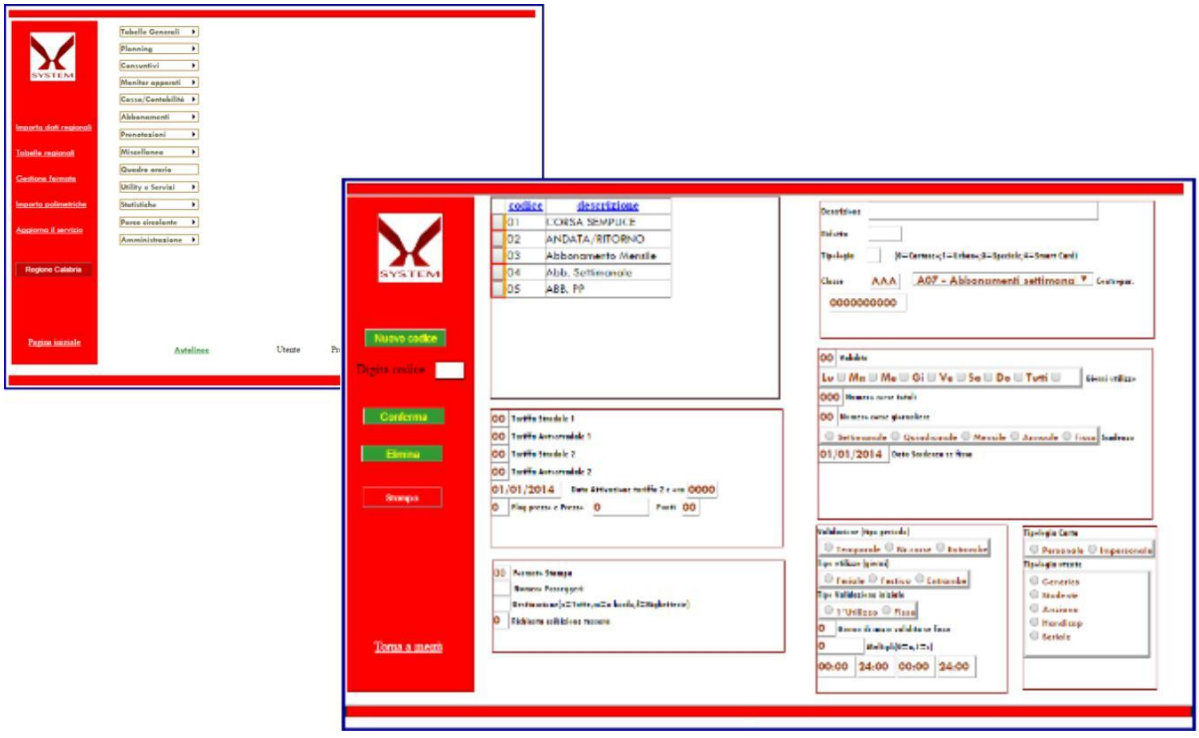
c) Retailer

d) Maintenance

Private Section

Service Planning

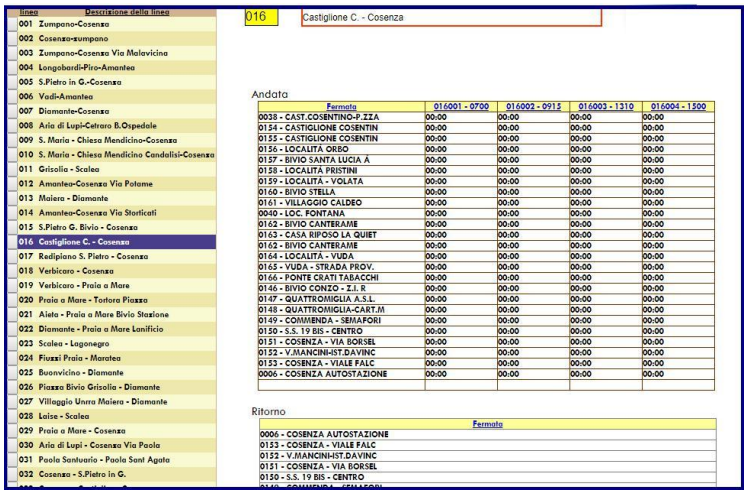
In this application section is possible to upload your own service (admission routes, routes coming from licensed concessions, managing of the bus transfers, list of the operators in charge, work shift concerning transport daily activities (operating data, regularity), loading and operating data concerning the polymeric, creation and modification of sales catalogue, list of the expected tickets and their parameterisation, planning of export data towards sale programs, management of the terminal operator's access and realization of their access profile etc..



Every planning or editing activity developed in this section, can be instantly available for the external devices. They can be updated in real time through the ADSL/GPRS connection available at the time.

Reporting System

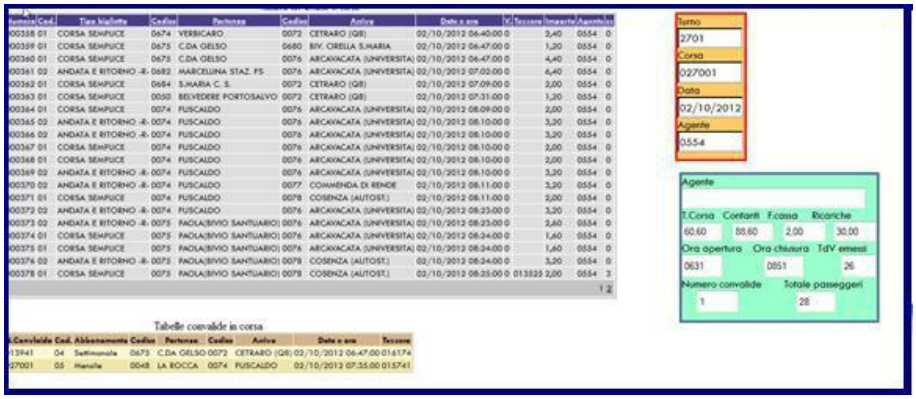
All sale data are gathered together for their main features (operator, route, work shift, proceeds type, vehicle, tickets type etc..). So they can be submitted to a synthetic and analytical consultation.



Timetables, work shift hours, proceeds, total number of hours worked per operator, kilometres travelled and fuel consumption are available. The geographical representation of the route pages are really interesting.

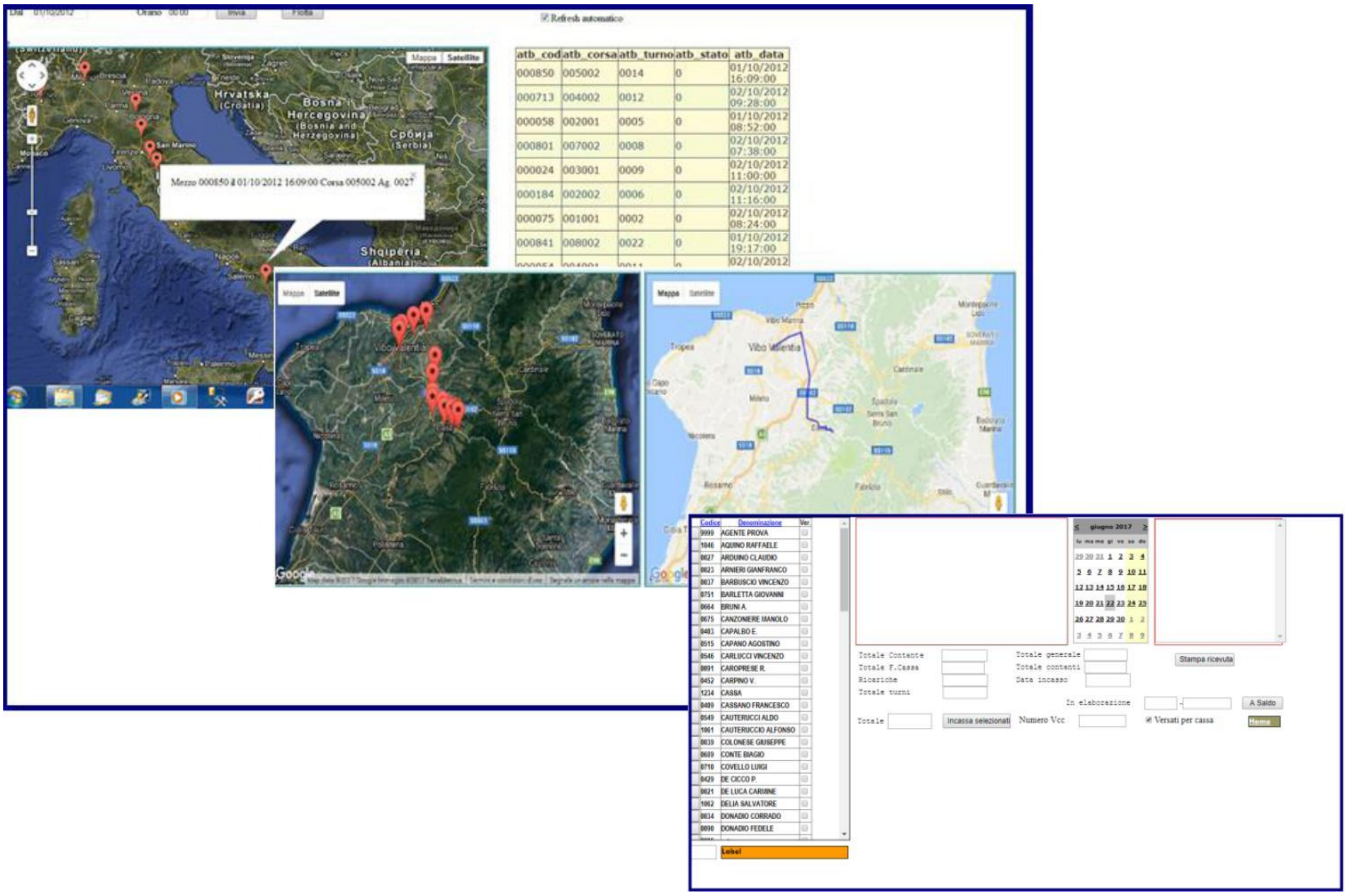
Data collection management

In this section the operators will be responsible for the proceeds. A real daily petty cash book will be created together with proceeds, cash in and out flows, the progressive amount as well as the receipt issuing to the operators, the report of the monthly compensations and the collection for every bus line.



Miscellany

Moreover, a wide range of tools are available. They are aimed to control the ticket emission, the smart cards use, the e-purse use, and to control the device connections linked to the central system. Furthermore there is the opportunity to supervise the on-board devices in real time, to control their conditions (on/off/in charge etc) and to remote stop them, if necessary.



Smart card

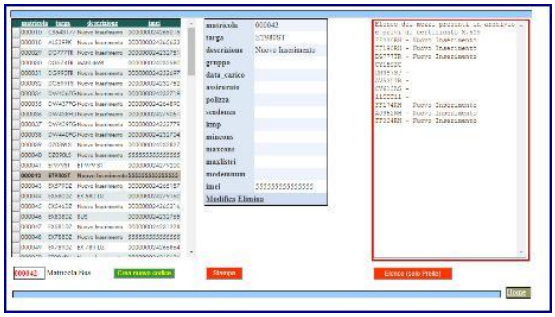
The sale and the validation of the "pay as you go" subscription on smart card is expected (electronic tickets). Every user can ask and get for it through the portal request or via smart phone App.

It can be used to buy a subscription (such as variable and controlled subscription;

a pay as you go subscription, a time limited one or both of them). It could be validated on-board through the stamping machine.

The e-purse can be used to pay the single tickets (in this case, it will be clearly a pay as you go e-purse).

Subscriptions and e-purse can be both topped up or renewed by using the stamping machine on-board. The ticket machine can be programmed as an enabled POS terminal useful for credit-card payments via WEB, or through the renewal/purchase page, or from third party sites, or by the available smart phone APP.



Every e-purse procedure is accessible for every user, as well as the certification printing of the subscription use is applicable. (it is really useful during the income tax declaration)

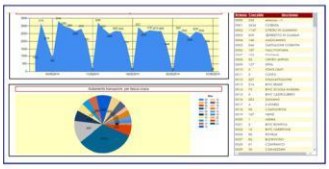
Booking Process.

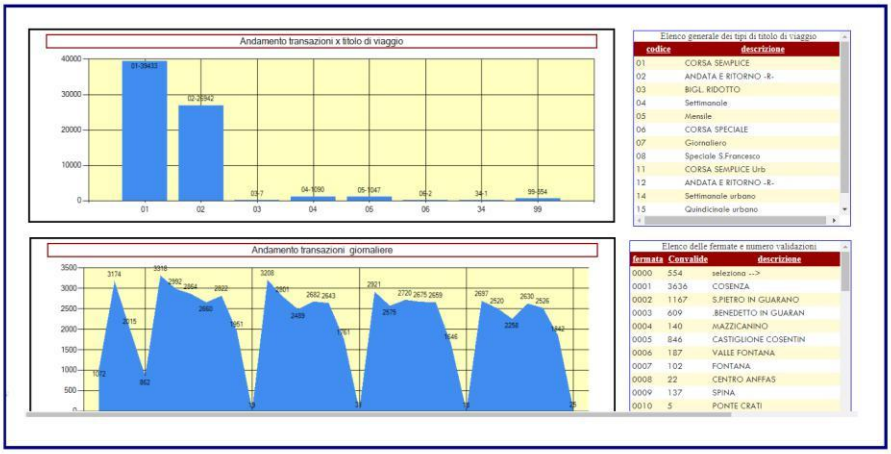
Due to the specificity of the topic, we can just say that is possible to expect an imprecise number of routes, such as booking bus routes. As a matter of fact we can create an online booking system via WEB or through the smart phone App.

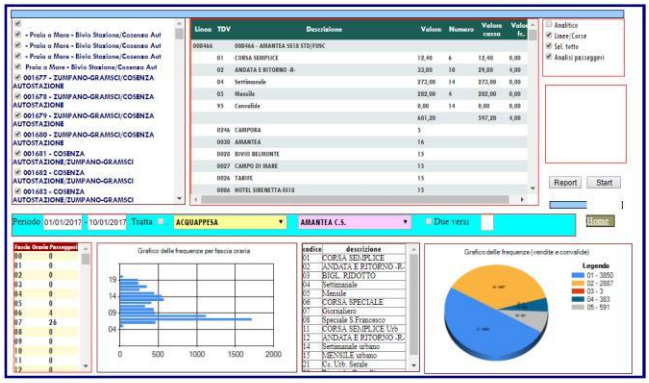
Sale Statistics

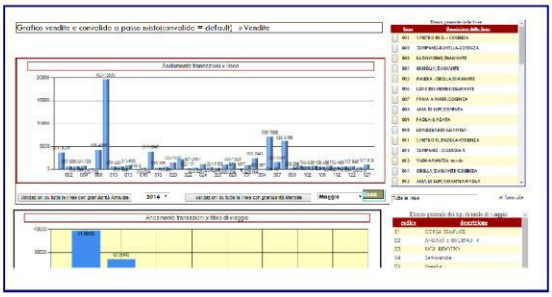
All data collected can be divided in a monthly or yearly representation and the routes/bus lines can be represented through a graphic or a chart illustration (a pie chart etc.). The analysis could be done regarding the number of the passengers per time band, distance, tickets type, route type, and the analysis of the frequency about each bus stops etc.

Moreover the data warehouse export is expected in case of a large amount of data flow.









Public Section

The goal of the public section is aimed to the end-user and it considers the localization of the vehicles, with the aim to predict the bus time arrival in which the end-user could be interested. General time tables, re-printing of unused online-purchased tickets whose physical copy you no longer possess, printing of the purchasing certification, consultation of the e.c smart card, nominal bookings, the online ticket purchasing, and the request for a smart card issuance too.

Retailers

This section is addressed to the third point of sale. They can be a part of the company or affiliated point of sale. The retailers, or the ground's ticket box office, can be equipped by ticket machines which are really similar to on-board ones, or they can be connected to the main portal. The login of the operators is managed by the system. It is available through the peripheral device recorded by our Server. (the local hardware identification). Every sale procedure is recorded in real time. Both the retailer and the company (through the monitor page) can consult them. Every external sale system can be monitored and then managed by the supervisor or the referenced company (arrest, procedures log download etc..)

The end-user's registration data (by using the smart card) are recorded on the central server. So they are available through every kind of online system in real time.

Security

Every device is equipped by SIM card in order to create the GPRS connection. Every SIM card is registered in the central database. No device is able to work without a registered SIM card. So, a continuous control of the on-board and on ground devices is verified. The login of the ticket machines is controlled by the operator with a centralized password. In this way the perfect identification of all people involved is guaranteed, as well as the connection through the validation of the SIM card.