

Bin Tracking via GPS and RFID tags

Upon registration of a skip or wheelex bin account all collection locations are plotted on a centralised map using the locations geo coordinates and saved into the system e.g. (52.95525697844546, -2.77014180156253). These coordinates are present throughout the WIS system on all devices when a customer's account is brought up for editing / review.

Within the waste industry Low frequency RFID are the norm, but other types like high frequency or hitc could be used – depending on the hardware and business case. Within the waste industry there are two main reasons for using RFID tagging in Wheelex bins:

1. For the bin collection crew to know if a customer has paid their bill / have enough money on their account or not
2. To monitor waste and recycling presentation rates.

With our RFID tags, deployment into an already existing customer base is quite easy as the tags come in the shape of a durable outdoor plastic bonding sticker. So they could quite easily be sent in the post to the customer with details of how and where to stick onto the bins. Our policy is to make wheelex bin tracking simple and as cost efficient to deploy as possible



Truck Computer System

The truck computer system is a robust high spec PC which together with the 12.4" LCD touch screen integrates graphics of the trucks 24 volt power console. The fariest PC boasts of an intel Atom 1.50Hz with 2GB of RAM and SATA 16GB Hard disk. Features like auto start and safe mode power down are pre-programmed. The PC's 3G/GPRS is reconfigured to the admin as well as the GPS tracker and Bluetooth dongle for wireless handheld communication.

Upon starting the truck, the PC will start up with the WIS PC Client loading on driver login screen. Once logged in the driver's preconfigured routes from admin are automatically downloaded. The driver then presses the touch screen to load the required route. Once the route has loaded, the route directions, total trip time and all the customers' bins will all load on the map. Once the route is started, regular updates are synchronised with the admin so admin staff can see where the truck is and how much of the route has been completed and also the collection staff are updated with new customer balances for blacklisting purposes. At regular intervals the admin staff if needed can send messages to the driver e.g. go back to hill street and pick up Mr Murphy's bins as she's left too late to put them out. If the wheelex bins have been RFID chipped and customer blacklisting is enabled in the admin - then once the bin is scanned it will show up on the screen and an alert is played to the collection staff whether to empty or not. Within the admin statistical analysis can be viewed as to the current and past presentation rates of the wheelex bins.

If required additional add on components can be fitted to the truck. PC – like for example video camera for video surveillance purposes can be fitted to the back of the lorry and be recorded directly to the PC's SATA 16GB Hard disk.



Waste Information Server

- The WIS Server in a physical Linux Machine which can be installed inside your DMZ (local network) or remotely hosted.
- The Linux Machine is configured with Tomcat application server, Apache web server, MySQL database.
- The machine is secured using IP lockdown, Password Updater, PHP and SSL Encryption as well as a Linux based Firewall.
- The WIS Server is controlled by the backend administration module which can be configured to suit your business needs. So if your business only requires a service for managing Skip Hire / Dumpsters then only that module will be installed so the server is fully extendable and scalable.

Bluetooth Marketing from Trucks

We know your trucks drive miles and miles each day in towns, villages and cities. They pass by 1000s upon 1000s of potential customers of your wheelexbin and skip hire services. With our Bluetooth hardware device which can be fitted to your truck dashboard – you can automatically send out FREE mobile messages to everyone within a radius of 20 metres, telling them all about your services. The default setting of the device are set to only send messages to people one time per every 24 hours and if people have stated no upon receiving the message they are placed onto the device's blacklist. This service really turns your truck into a sales and marketing force.



Mobile Handheld Solution

We know that handhelds can be costly and are all too aware that repairing them is even costlier. That's why we developed handheld software to run on the Nokia Symbian OS – these phones are cheap, robust and have all the needed features like barcode scanning, signature capture, etc. From the Nokia phone our WIS mobile client handles commercial and skip hire tasks for the drivers. These devices work over GPRS, 3G, WLAN or in offline mode feeding back information to the admin about GPS positioning, Signature Capture, Task Status Update, Barcode Scanning, Pictures of Problems, and New GPS position of bins (skip). The software also helps the drivers with click to call functionality, address mapping and office notes to assist in their daily duties. The WIS mobile also has extendable setting module which can be set to provide the ability to run service in the background like GPS tracking, Office Chat and RFID reading.



Backend Administration System

The backend administration system provides complete management of all customers accounts, transactions and accounting as well as full control and integration with hardware components like truck PCs and handheld devices. The administration system has a number of key modules which include:

- System Access and Security
- Domestic, Commercial and Skip Customer Management
- Route Manager for Trucks
- Mobile Handheld Task Manager
- Web Content Management
- Internal Document Management
- System Support / Ticket Manager
- Full Accountancy & Billing System

The accountancy and billing system is by default connected with Realex Payments for all Credit/Debit Cards Transactions, Payzone for all Paypoint Card Transactions and Bank of Ireland and Allied Irish Banks for all Direct Debit Payments. These connections can be fully customised to suit any company and country payment requirement.

Telephone Payments System

The IP based Interactive Voice Response (IVR) system is fully customisable, and with its default format enables customers to pay bills and make balance enquiries over the telephone. At present the default payment gateway used in the IVS is Realex. Payments but others can be easily connected. The call flow can be customised to fit with your existing PABX telephone system or could be installed as your office PABX itself.



Frontend Website Modules

The frontend modules can be fitted into existing websites or designed into a new website template. Depending on the configuration setup of the WIS server, whether hosted or internally managed – content from the backend administration system will fully control the frontend website module. This enables administrators to manage content presentation, customer ordering and account management over a secure network.



Mobile Messaging Service

The ability to send text messages / SMS to individual customers, all customers on routes and to all customers is programmed in the WIS system by default. This service is perfect if the truck had an issue and had to return to base leaving bins still not empty, so the admin could send a note to all routed customers for that route / day – e.g. Please leave bins out, we will be around tomorrow morning to collect them.

We also have an alert service which can be configured to send alerts based on waste type and customer balance to customers the night before collection is due.

So messages like: Tomorrow your waste bin will be collected, your balance is €12.90 to top up go online. Or Tomorrow your recycling bin will be collected, your balance is €12.90 to top call 1890 1234 56.



WIS accepts the following payment types

