4 JMS Janus Management System

JMS is a Web based Parking Management System capable to manage all parking systems developed and released from HUB Parking Technology business unit. It's a software that relies on top and manages the following Parking Systems: ZEAG, PARQUBE, DATAPARK (so it drives all proper functionalities on an higher level where these are available on a superior platform) and JMS itself: this means that it is possible to have a centralized multisite or multiparking configuration, on top of which the unique JMS CENTRAL (Control Room application) manages all functions of the multiple JMS LOCAL.
It is a modular system, designed in order to be open to third party systems (ERP, BI, CRM..), advanced data analysis and mobile connectivity

MAIN FEATURES

JMS is a web based application so it can be used from any devices with an Internet browser available (servers, desktop PCs, laptops) and from mobile devices like tablets and smartphones using the JMS application

JMS can run on several O.S. like: Linux, Windows, Mac OS, iOS, Android. You just need a web browser

JMS components can run both on a single server (standalone) or on different servers (physical, or virtual) in order to achieve better components containerization and high availability

JMS has been designed to be used in an easy way from an Internet browser or mobile app

JMS implements multitenancy: a single instance of the software (**Janus Central**) runs on a server (or on multiple servers), serving multiple client organizations (tenants)

JMS architecture can be scaled both horizontally (adding more servers) and vertically (adding more CPU, RAM, disk space). The architecture was also designed with high availability in mind

CLOUD OPTION: Through our cloud-based remote management system, access your business anytime, anywhere using any device and a web browser. With our Cloud Option, you only need your local hardware and internet access and we handle everything else.

JMS Advantages:

Near zero learning curve. JMS offers a very intuitive and user-friendly interface: Windows 8 style

Reduces business process inefficiencies and helps boost business performance without investing in more staff

Ensures 24/7 system and data availability

Simplifies your system management and business processes

Allows you to decide who can access the information

Is a highly configurable and scalable system

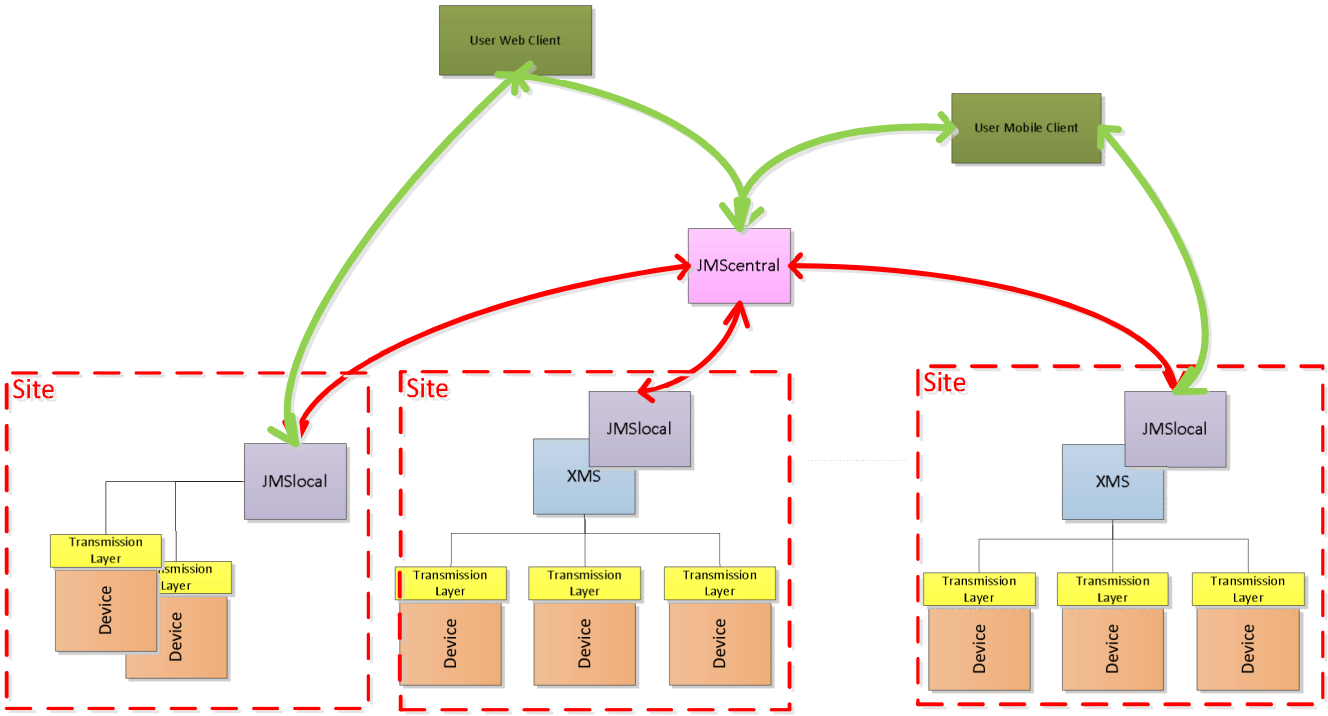
Has multi-user, multi-car-park and multi-equipment capability

Provides flexible reports, wide process control and realtime business performance visibility

Improves your service and reduces potential downtime as the information is available to you so quickly

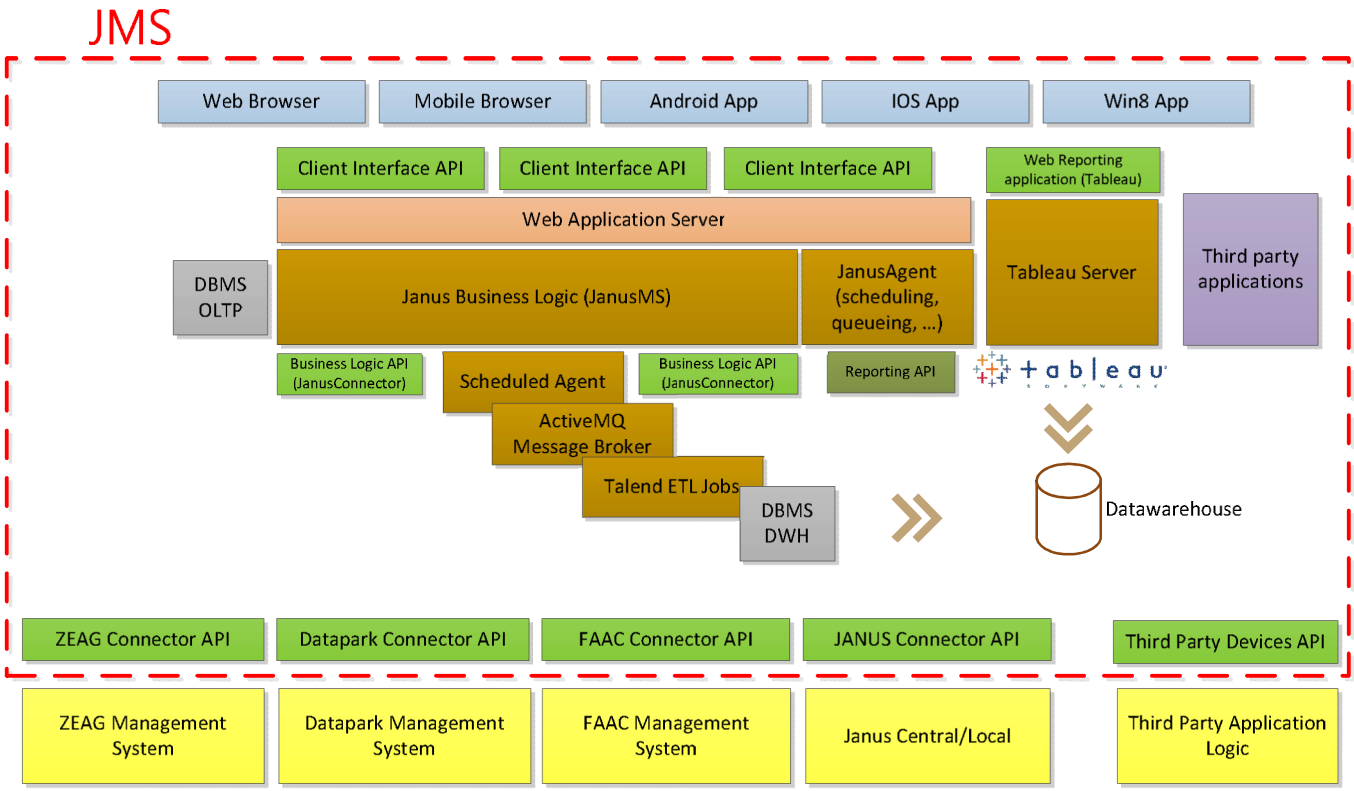
Drives down IT costs and lowers your risk when you implement our Cloud Option. We manage server backup, maintenance, and regular updates to offer you a stress free reliable service.

GLOBAL ARCHITECTURE



Each single site is managed by the LOCAL JMS. Any of this can be composed by one of all the HUB brand (Datapark, FAAC, ZEAG). In the central Control Room we can have another separate remote CENTRAL JMS installation which manages all sites, and grant all operations inside a multiparking scenario. On a parallel level access to central or single DATABASEs can be achieved by dedicated mobile devices or by simple PC connected to LAN/WAN/internet.

INTERNAL ARCHITECTURE OVERVIEW



The scheme above shows the modular architecture and describes the reciprocal independency of the internal modules.

This explains the reactivity of the System, its velocity in data management, robustness against crashes and automaticity of disaster recovery. Data are synchronously replicated in all internal processes.

The Database Server can be the standard one or the already existing Customer one as well as a new Business Enterprise type. Also it can be installed on a physical or virtual machine in the IT Center of the customer. Fully configurable and scalable can be configured in a redundant and cluster installation, with a synchronous active-active module (on demand).

It is drowned to be open towards third party applications (ERP, BI..), and it is easily pluggable: we can provide additional plug in on demand to expand system functionalities.

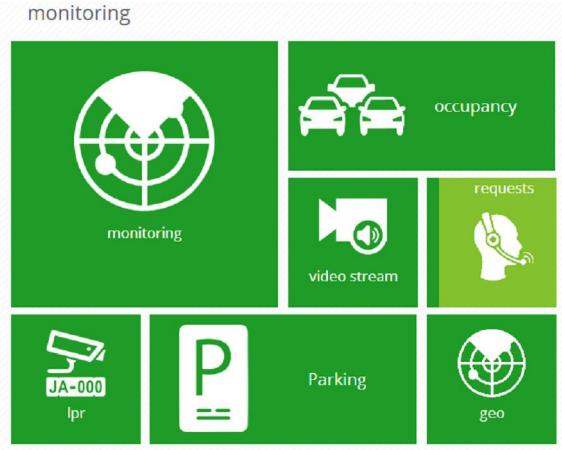
MAIN DASHBOARD

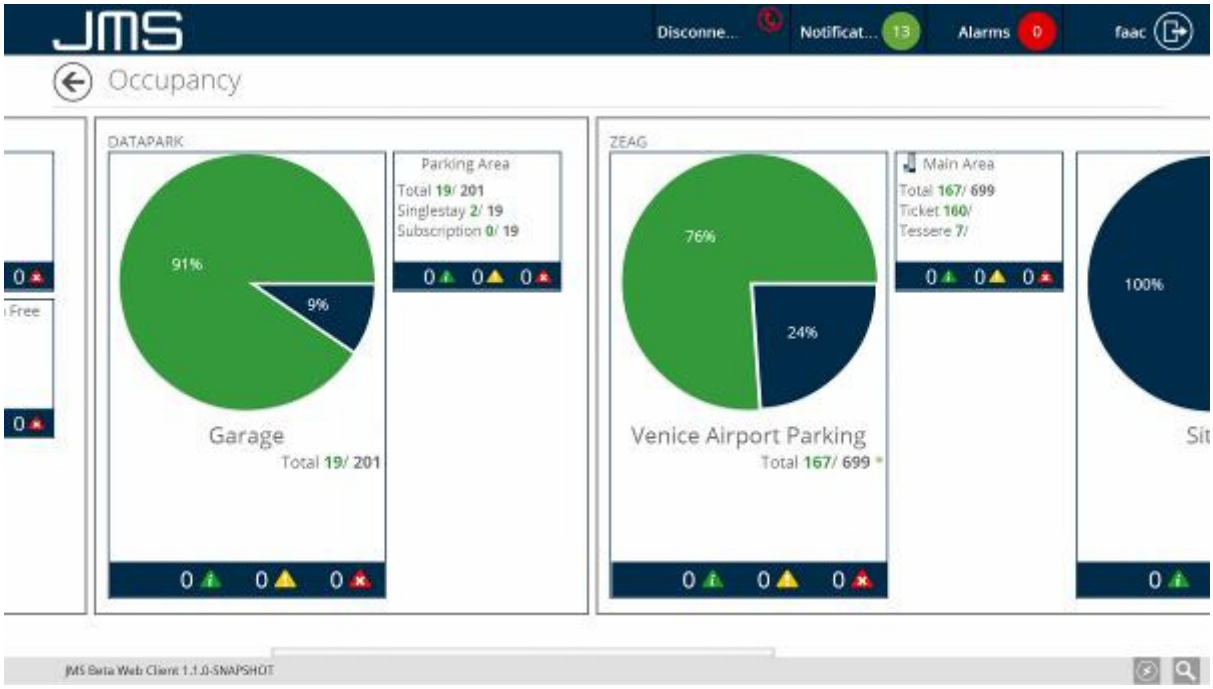
GUI has been designed so that the user could access all the front-end functionality of the management system directly from the main dashboard in Win8 style.

The concept is to browse all the functions by simply clicking/tapping on the visual icon calling them. The more you click/tap the more you access to a deeper level of complexity of information, and easily came back at the previous level in the same way: You always know where you are.

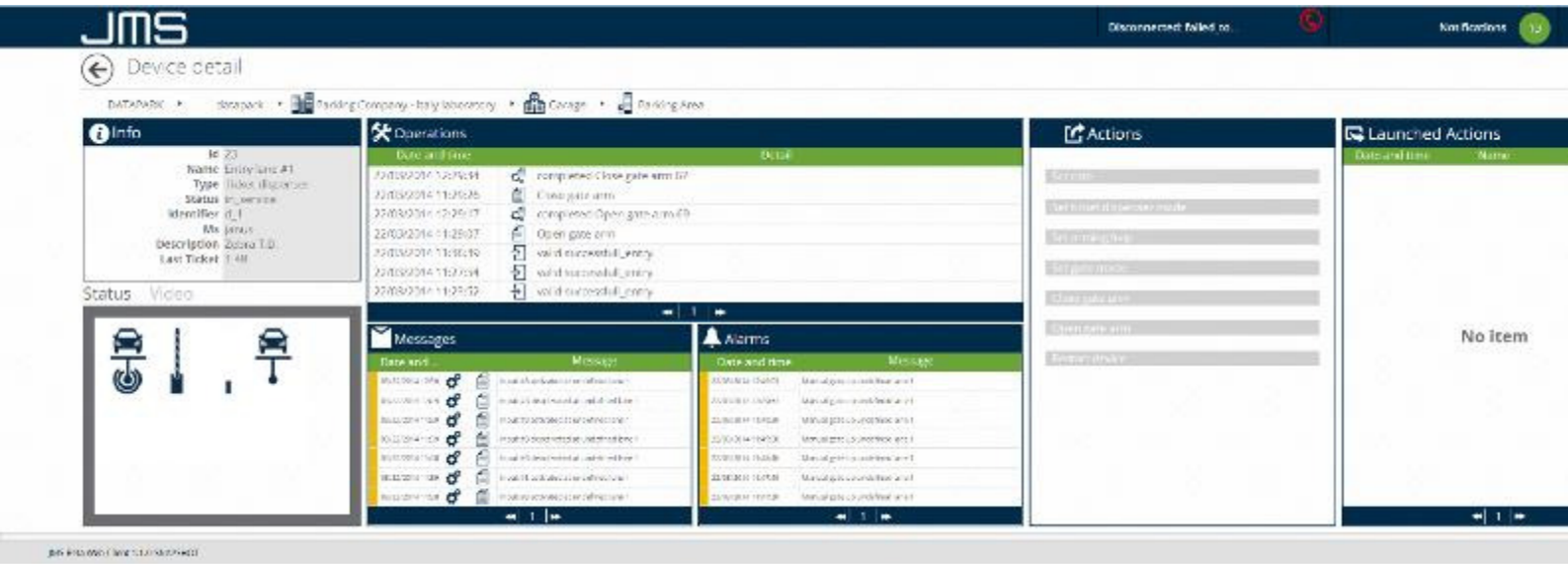
Always on top you have a function bar from where you have direct access to info/Alarms of the systems

1) **Monitoring**: this tiles group provides direct access to the pictures showing the ongoing situation on the parking. It collects also access to the ancillary system as: integrated CCTV IP Camera, integrated server PBX for VOIP Intercom (You just need a mic + hearphone from wherever you are and can have direct communication with users in front of the peripherals, no more physical intercom central servers are needed), LPR System or Geospatial map, where you find on google map locations of your parkings, with detail of the buildings in which they are installed whit detail of the location of the single peripherals.

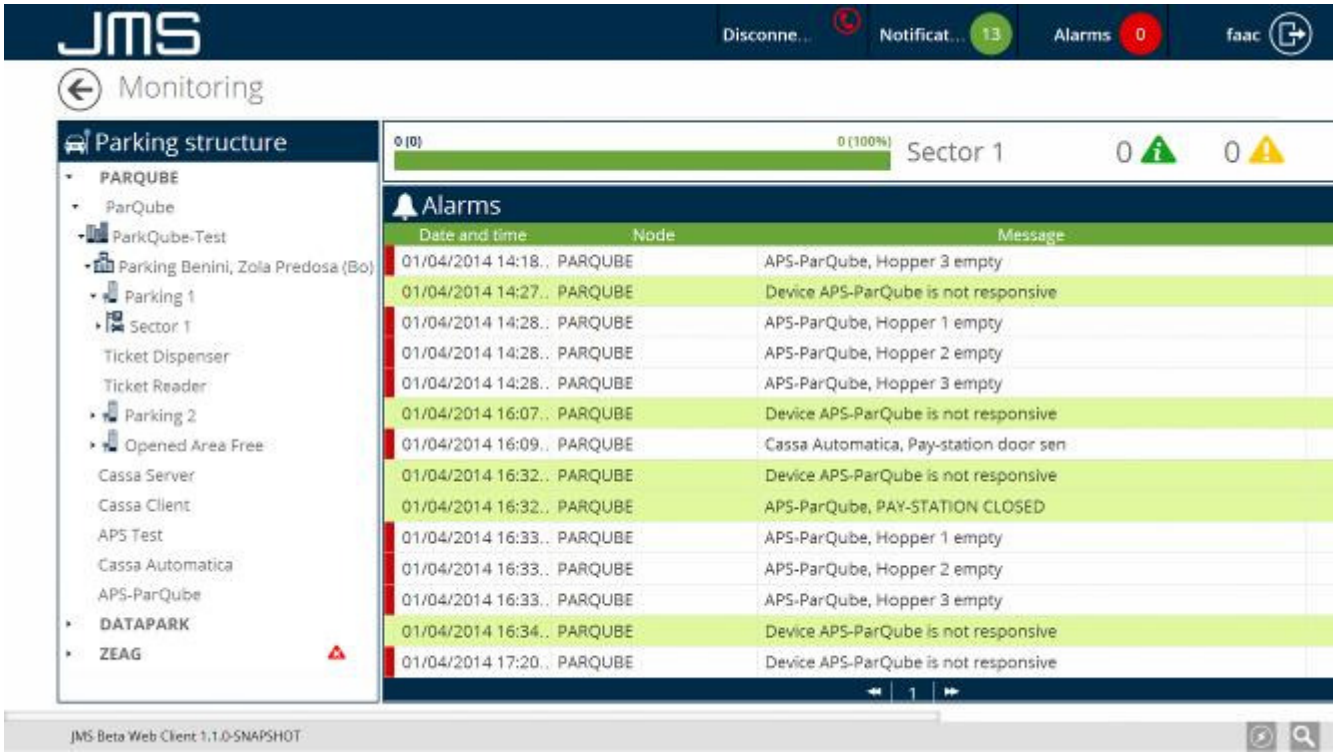




Example 1: Parking Occupancy Multi Tile View allows to have direct vision and information about different occupancies, with the specific summary of the messages and alarms from the related park:



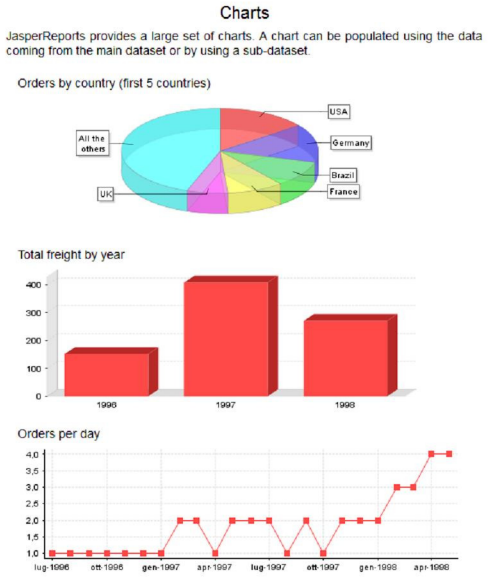
Example 2: Device Detail: allow the complete view of all the standard activity that a control room should take care for a specific device.
By the Tile from you have direct access to the parking and the single lane or peripheral on site, with both graphic and linear status information: you can also have a direct video streaming on the peripheral if any IP camera is linked to.



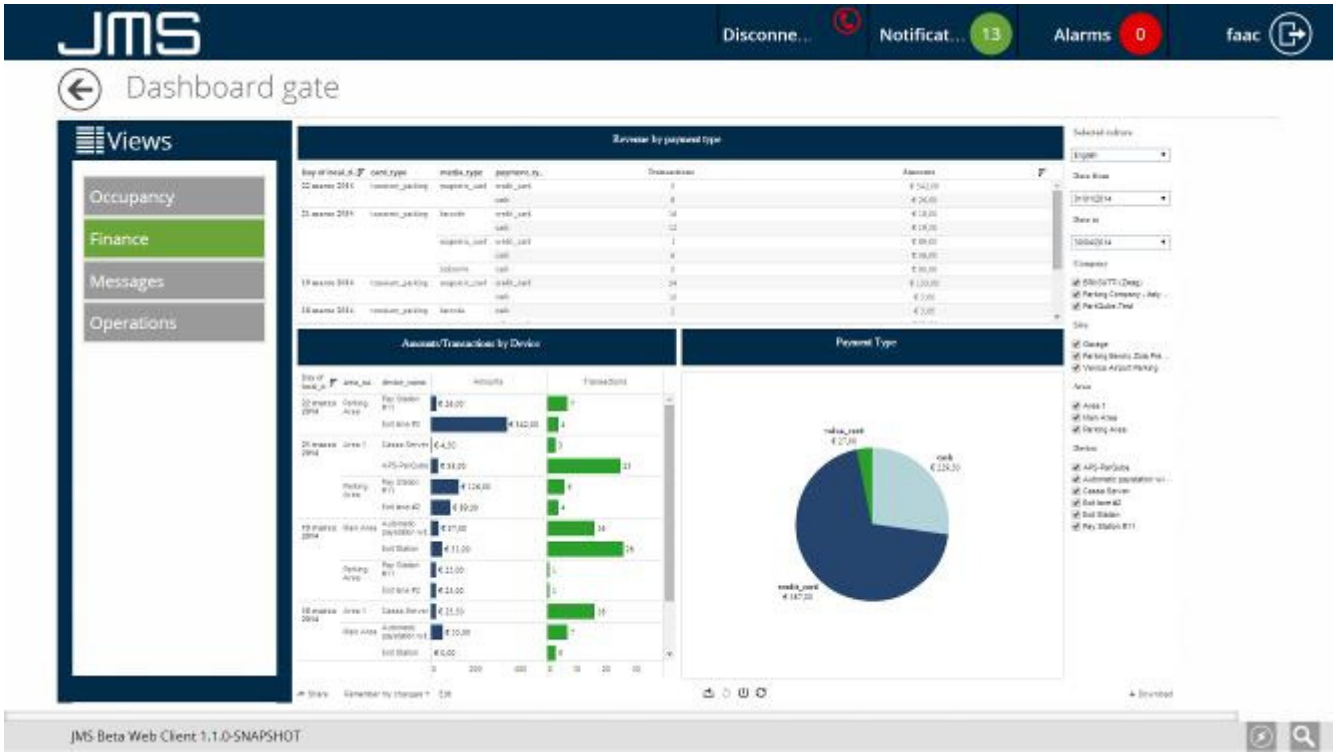
Example 3: tree model of areas, devices and peripherals organization with log file list of details.

Example 4: Geospatial Dashboards

2) **Data analysis**: tile group dedicated to all kind of function related to analysis and reporting.

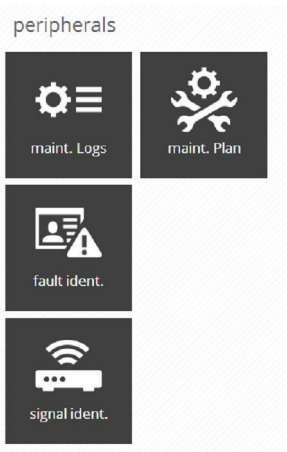


Example 1: Standard reporting capabilities (paper like…) and charts. These Static reports can be synchronous (data exported at that moment you ask the report) or asynchronous (data exported at a fixed date and time).



Example 2: Reporting and Dashboards. Enhanced Business Intelligence capabilities based on a complete integration with **Tableau Server**. Provide dynamic reporting, configurable by the customer without limitation.

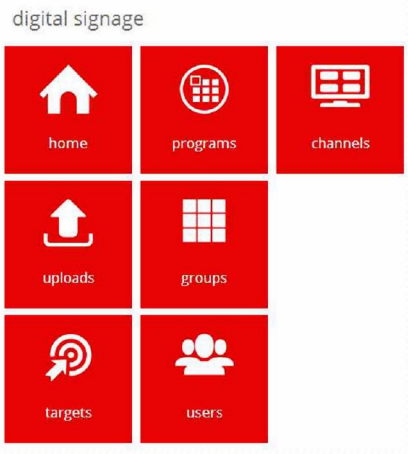
3) **Periferals**: tile group for managing the periferals hardware and maintenance operations



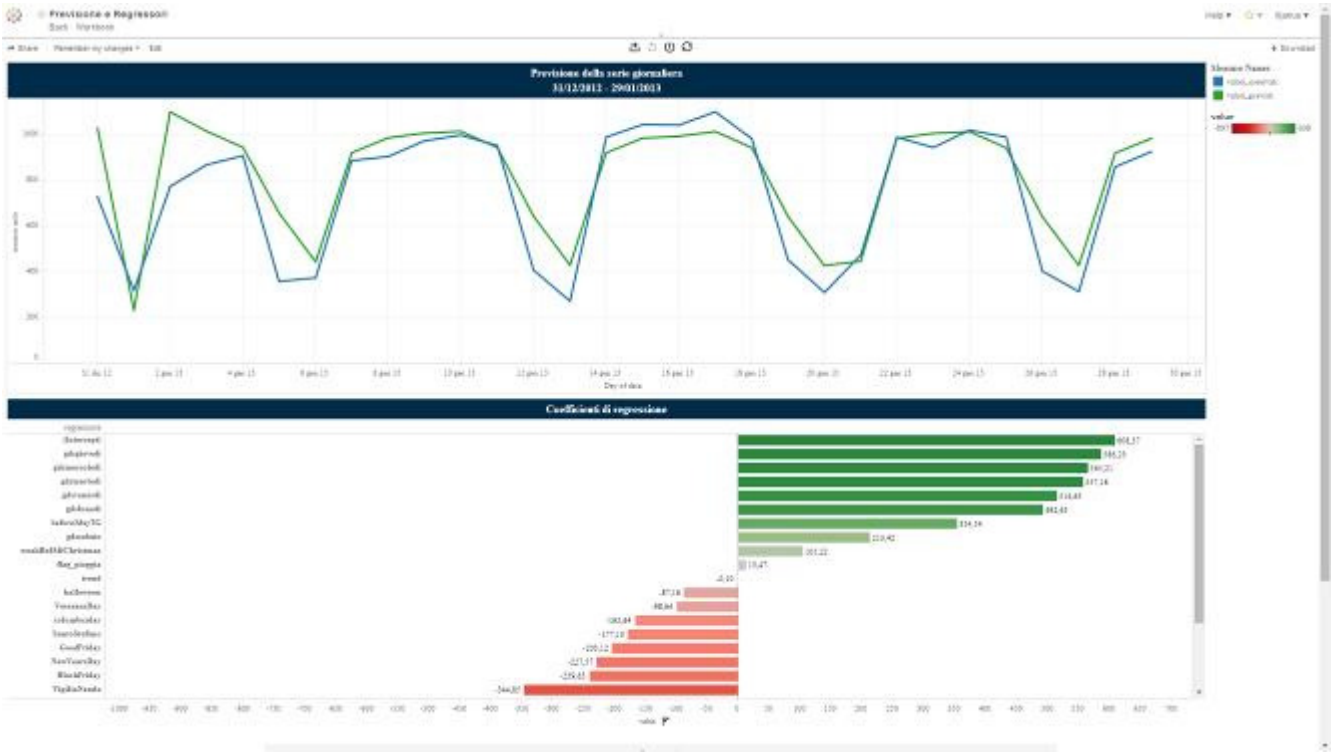
4) **Configuration** of all objects managed by the system: users, subscribers, business contracts, discount, vouchers and so on

5) **System Configuration**: system and local GUI settings, plugin, tenants, and so on

6) **Janus Digital Signage**: management of the video communication for internal messages and advertisings for the parking users. A professional and flexible vehicle to spread all over the media screens present in the parking area and on the peripherals fully customized information: static images, videos, internet feeds, and all kind of information to the users.



7) **Forecasting and Prediction**: advanced Business Intelligence analysis in order to improve and boost the business.



8) **Deployments of JMS: Mobile Platforms & Devices**

EXAMPLE OF **SMARTPHONE PORTRAIT**

EXAMPLE OF **TABLET LANDSCAPE**

5 PARKING SYSTEM

ParQube System performances

- Client-Server system configuration
- Up to 255 peripherals managed on RS485 or TCP/IP network; system should manage configurations in which there is a mixt of both networks;
- PMS allows real time events / alarms monitoring and recording, management of access level, time frames, antipassback, actuations, preset time cards expiry date, preset value card updating on credit.

Major features:

- Backup data storage (automatic or manual) on local hard disk or remote hard disk post (client) or any PC on line on same network;
- Multiple access level protected by passwords such as operator, supervisor, system administrator;
- Single screen use for monitor real time events, peripheral map, user friendly graphic interface with tool bar suitable for system settings and management;
- Events display and three structure of peripherals with general counter for real time area occupancy (easily re-settable);
- Emergency code to unlock the system in case software smart key is lost, stolen or broken;
- System software synchronised by external watch;

Data carriers:

Paper ticket Barcode for occasional users (transients, visitors, etc.), pre set time card or unlimited validity, pre set value card, points card (based on number of entries), card released to user recognised by their plate car number, card released to users recognised by AVI systems (active or passive TAG's). All cards are released by central fee computer post with anti-pass-back or entries/exits number or credit control:

Tickets

Valid entry ticket
Bar-code ticket issued on entry lane to single stay users
Black listed ticket
Bar-code ticket issued on entry lane to single stay users that drove backwards
Lost ticket
Bar code ticket released in manned (or automatic) cashier to single stay users that have not their entry ticket

Cards

Season card (pre-set time)
Pre-set time card sold in manned cashier under anti-pass-back control
Pre-paid card (per set value)
Pre-set value card sold in manned cashier under anti-pass-back control
Points card
Card with a pre-set number of entries, sold in manned cashier

Vehicular and pedestrian access:

Vehicular gate: management and gate control is possible by entry (or exit) unit with automatic barrier operating by loops to check lane detection for queue, backwards and valid transit. Furthermore, it is possible the use of AVI readers having double identification for car and its driver;

Pedestrian door: access to parking night doors, is possible to all users having a valid media support (valid ticket, valid card). Those users have to check on the readers located to parking access doors;

General purpose features

Activations messages: by setting these messages, it is possible to operate an input on a certain peripheral when a certain card is read. The reading of such card is generating a visual alarm for the operator (switch ON a light, etc.), it is recorded on relevant alarm report and, simultaneously, generates one or more output on same peripheral or on other peripherals on same network. This action allows actuations such as parking FULL sign, valid or invalid card (eg. out of time frame) or because of input by clean contact (ec. external reader);

Manual or automatic activations, even at a pre-settable time for cards or programmable from external input;

Area management, Antipassback, time frame, groups of access, holiday calendar;

Access enabling management; authorization time frame (up to 5 time frames per access),

Validation device for discount management: on-line by scanning entry ticket and off-line by issuing a discount ticket;

Voucher issuing and management: agreements with shops;

Screen buttons: function buttons configurable for output activations always on the screen (cannot be modified by operator);

Card archives, companies, departments, operators with all related access rights: route and extra time for route not respected within set time, vehicle counting on the gates, counting from external dry contacts;

Data concentrator, for data collecting and peripherals polling;

Cards white & black or identification media;

Vehicular transit events management: recognizing of withdrawals, violations(transit out of system control) forward and backwards, vehicles queuing;

Reports: reports are very effective and easy to use. Based on various account enquiry forms, for management and diagnosis, it allows custom reporting, extrapolation and statistics in graphic format stored data analysis on reports visible on the screen or printed and exportable on file format such as .txt , .csv, .pdf , with filter function buttons and multiple choice for rapid audit of time period, single day/hour, subscriber groups or single user to get needed reports for proper site management;

Major reports:

Reports: for all data requested to properly manage the car park site;

Cashier: to get all relevant park site income for both, manual and automatic cashier management;

data concentrator for peripheral management and data collecting;

white & black list ticket management: ticket is valid once entry transit has been confirmed. From there system starts to compute parking fees to be applied;

Alarm management for:

Low paper on entry lane and APS -Automatic Pay Station (receipts & lost ticket);

No change in APS;

Not authorized opening of APS front door;

Off line or power failure on peripherals;

Current transits discrepancies for erroneous user maneuvers (driving backwards, etc.) on the lanes;

Tariffs

The configuration is properly called tariff profile: each profile is a tariff combination having an access condition (by time or depending on access gate), a group profile and a proper time based tariff calculation;

calculation can be linear increasing or decreasing, combination of sequential tariffs tied to different time blocks, manages the different logics to cross the time blocks and with maximum per day/week tariff.

each gate has its own tariff

tariff is pre-settable on weekly basis. It manages “free of charge time” after entry, grace time and tolerance time; Fragmentation is up to a minute;

test tariff tool