ONYMA SISTEMI & TECNOLOGIE SRL • VIA ALBINONI, 61/65 • 41019 SOLIERA (MO) ITALY • TEL. +39 059 850005 • FAX +39 059 850005 • INTERNET: www.onyma.it - E-mail: info@onyma.it

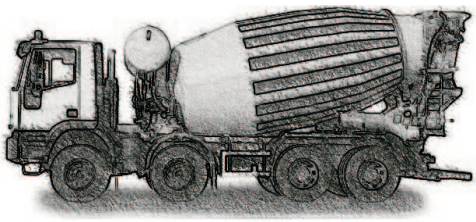
VTS
Veichle Tracking System

concrete production

system for the control of the concrete delivery process

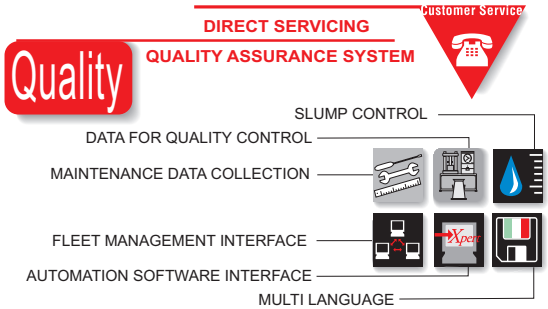
INTRODUCTION TO THE SYSTEM

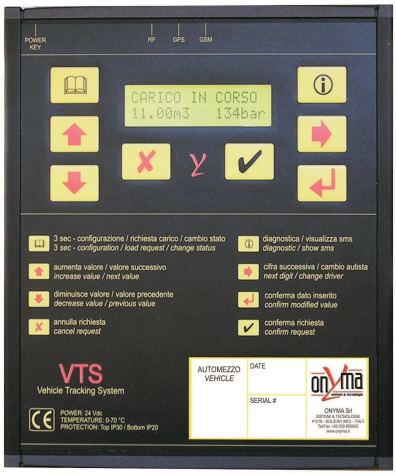
The telematics control of the vehicles fleet for the delivery of ready mix concrete covers a very wide application range, in which the automatic vehicle monitoring is a component.



The VTS terminal has been designed according to the state of the art in today's available technologies, therefore it can perfectly suit the specific needs of the ready mix concrete industry. Thanks to its flexibility and adaptivity to fleets of any size, the VTS represents the prerequisite component for the automatic collection of sensitive information needed for fleet management and control.
The VTS, by using GPS/GSM/Radio technologies coupled to advanced microprocessor systems, offers a spread range of high added value services, such as:
- unique identification of the vehicle and load data (type of transported concrete, customer/site, delivery docket number, etc);
- monitoring of the geographic position and the status of the vehicle (load/delivery/unload/return);
- collection of sensitive data during delivery (time markers for arrival on site/start unloading/finish unloading, consistency-workability, added water, mixing time, temperature);
- interfacement with integrated logistics services (dispatching optimization, communications to the driver, alarms/emergencies);
- integration with servicing amd maintenance management systems (consumptions/parts replacement/vehicle usage/kilometers).

The system also allows to query all collected data in every moment, wherever the vehicle is located.





NEW FEATURES!

- On board firmware update via RF(radio frequency) or GSM (without physical connection to the device, from any geographic location), for easy servicing.
- Modification of all configuration parameters via RF/SMS, for easy setup.
- Up to 10 GSM numbers authorized to incoming coonection, for maximum protection against external intrusion.
- Voice call (with optional earphone and microphone kit) directly enabled from the incoming caller (the VTS cannot make outcoming voice call, but an authorized caller can open the voice channel to speak with the driver).
- Passive environmental listening (with optional microphone kit) from incoming authorized voice call.
- Automatic alarm SMS sending to preset number upon: VTS switch on/switch off, over time usage of the vehicle, over speed.
- Automatic alarm on configurable digital and analogue inputs.
- Internal inbound/outbound control on preset geographic areas, with automatic SMS sending (up to 50 areas).
- Constant fleet monitoring via GPRS, from anywhere at a very low cost.

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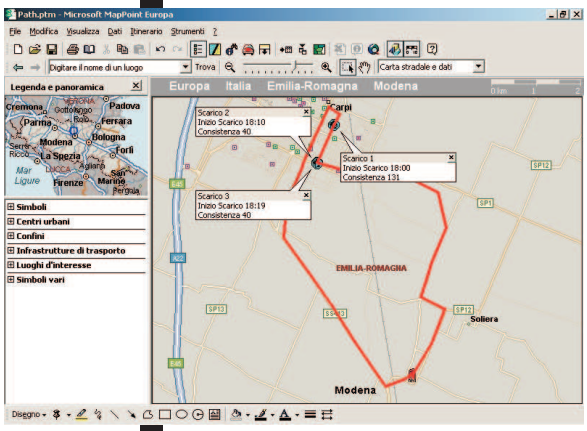
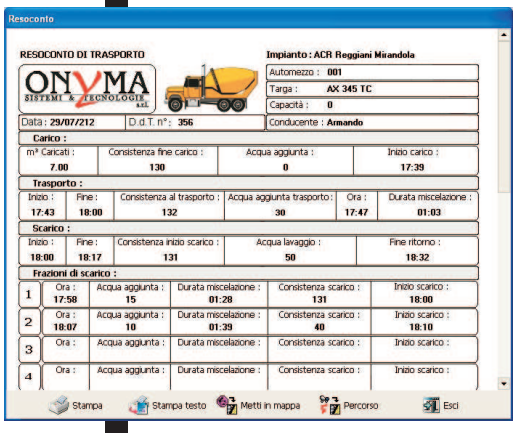
FEATURES OF THE SYSTEM

• Data exchange with loading plant through radio link (no phone connection costs, no permits or licenses required).
• No intervention by the driver is required.
• Transmission of the vehicle's pressure gauge reading to the batching plant control panel through radio link (no wiring/cables required).

• The system includes a custom software for supporting the PC-VTS terminals data exchange.
• Maximum distance from loading point to main control panel: 150 metres (greater distances are achieved with special antennas).

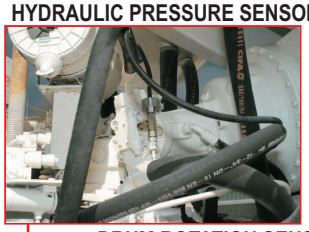


• Continuous detection of position and speed of the vehicle, positioning on low cost mapping software and journey path analysis.
• Automatic detection of the delivery zone, graphically defined directly on the map.
• Automatic detection of water addition to the mix, mixing time, consistency/workability of the concrete, in every phase of the delivery.
• Automatic finalization of time marking data for the delivery note (time of arrival on site/start unloading/finish unloading).
• Automatic real-time reporting of events/alarms through SMS (arrival on site/start unloading/finish unloading/water addition/overspeed/unauthorized vehicle moving/antitheft burglar alarm, etc).

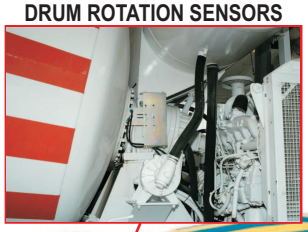


•Transmission of the final delivery report through radio link (to the batching plant that originated the delivery) and/or GSM (to a logistics control center) for the memory storage, the printing and the off-line analysis of the delivery.
• Optional connection to on-board tickets printer, in order to print an automaitc report to be handed off to the customer on site.
• Immediate messaging system (SMS) to the driver (traffic information/delivery/operating instructions).

HYDRAULIC PRESSURE SENSOR



DRUM ROTATION SENSORS



WATER ADDITION SENSOR

MINIMUM HDW CONFIGURATION

- On board VTS terminal for veichle
- 2 sensors for detecting the rotation of the mixing drum
- 1 sensor for detecting the pressure in the hydraulic circuit for the rotation of the mixing drum
- Ground VTS terminal on the electrical control panel of the batching plant

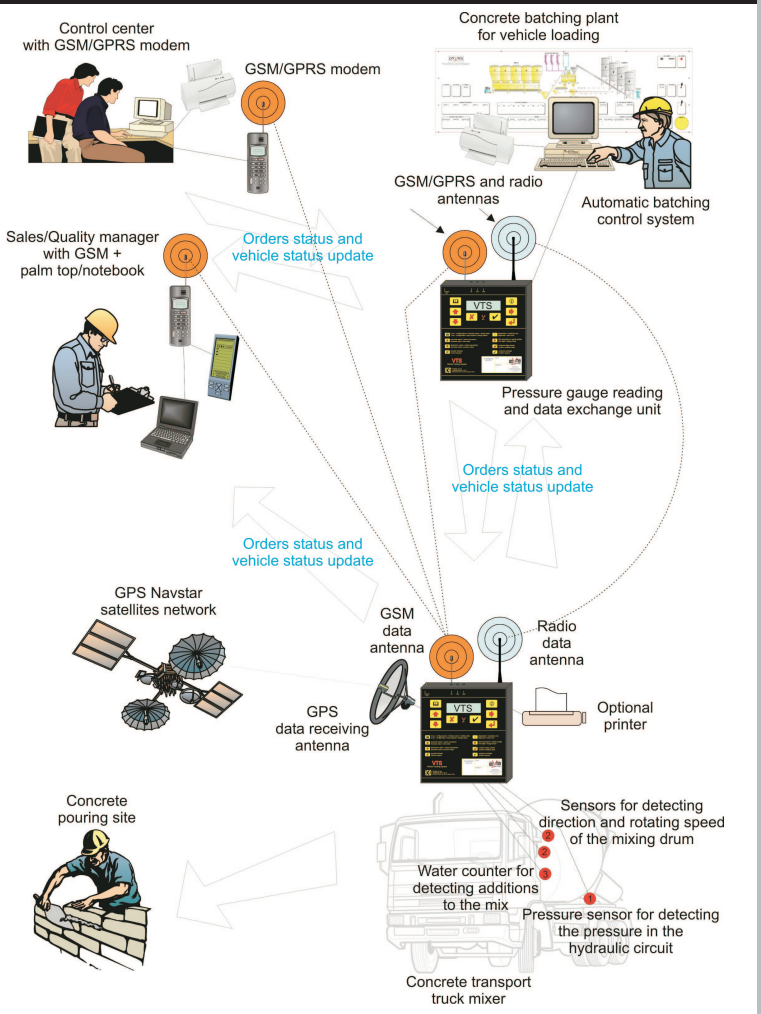
OPTIONS FOR A COMPLETE CONTROL

- Water counter for detecting the addition of water to the mix
- Temperature sensor for concrete and/or environment
- Printer for tickets containing the data collected by VTS, for attachment to the delivery note

ITEMS TO BE PROVIDED BY THE CUSTOMER

- Contract for service by a mobile phone operator, Machine to Machine (GPRS/SMS and data)
- SIM card for on board VTS and SIM card for ground VTS (batching plant)

ARCHITECTURE



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