



Control system

EcoSat¹⁰

Latest generation of microprocessor based control systems, which enables maximum flexibility in configuration and visualisation of the different spreading parameters: width, asymmetry and dosage depending on the vehicle speed. EcoSat¹⁰ is an integrated control box which can be extended with various options to enable multi-equipment support and to fulfil all customer needs.

	Technical specifications
Display	7" 800x480 Format 16:9
Case	Width: 253 mm · Height: 177 mm · Depth: 48 mm Weight of 1.25 kg
Communication	GSM/GPRS
Ports	RS232, USB 2.0 (mini), CAN-bus
Localization	GPS, GLONASS
Memory	RAM 128MB · Flash 64MB · mini-SD (2GB)
Processor	ARM 9 FREESCALE 32 bit
Power-supply	12-48V



POSITIONING

EcoSat¹⁰ integrates (option) a multi-constellation GNSS receiver which supports GPS or GLONASS improving the localization performance in terms of accuracy, continuity, availability, and reliability.

WORKING AREA

All information are available at a glance. The working area design reflects best practices in creating intuitive and user friendly interfaces. By default it has multi-lingual support.

MATERIALS

Different materials and related parameters such as the minimum and maximum value, the step value with which dosage is increased/decreased during operation can be defined.

PROGRAMS

It is possible to set different working programs which support the driver during operation improving safety and efficiency. Per each program all main settings can be pre-defined.

ALARMS AND ALERTS MANAGEMENT

Failures or risks related to the operational tasks are promptly notified through visual displays and pop-ups. The alerts are fully configurable by the user.

OPERATORS MANAGEMENT

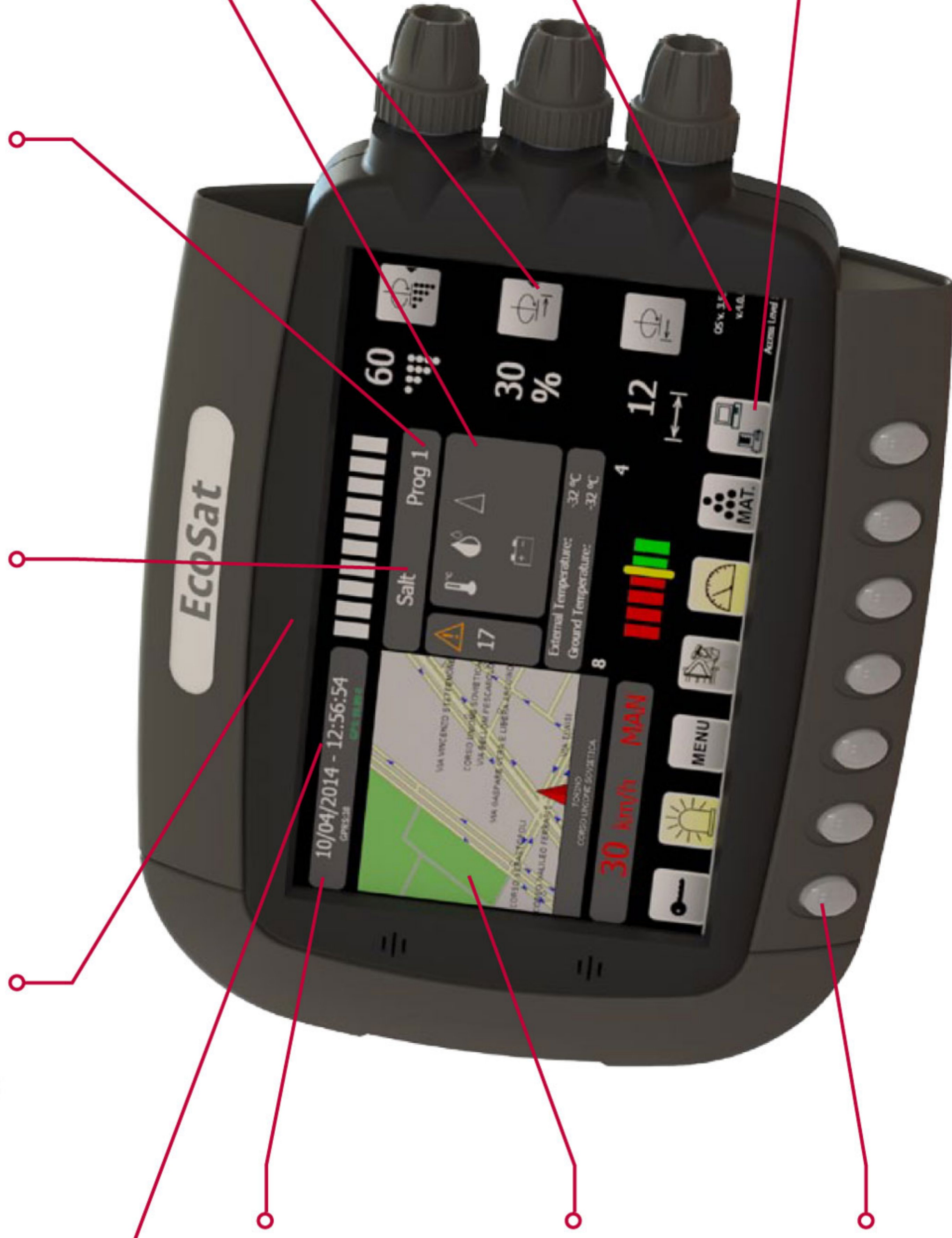
Managing a list of different operators (drivers). For each, a name can be defined and key operational data will be logged e.g. time, distance, material spread etc.

COMMUNICATION

EcoSat¹⁰ has an integrated GSM/GPRS module (option) which enables operational data transmission. In case of bad coverage (e.g. tunnels) the data are logged and will be transmitted as soon as the connection is back.

BACKLIT FUNCTION BUTTONS

All main functions are accessible through the seven buttons in the lower part of the EcoSat¹⁰. The backlight will allow use even in poor lighting conditions.



SPREADING PARAMETERS

The three encoders allow quick and safe access to the main spreading parameters: dosage, width, asymmetry and % of humidity.

ACCESS LEVELS

To prevent the misuse 5 different password protected access levels can be defined.

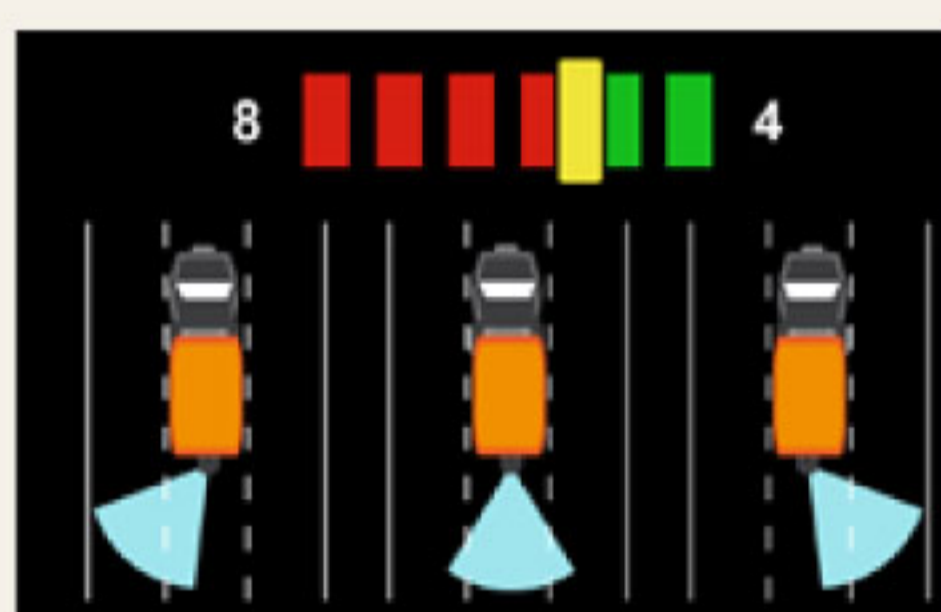
REPORT AND STATISTICS

The EcoSat¹⁰ stores daily operational reports and global counters which can be downloaded or printed via serial connection.



Route-Replay

The Route-Replay is based on pre-defined geo-referenced spreading parameters settings uploaded on the EcoSat¹⁰ before the operation and used automatically during the mission relying on an enhanced positioning. The driver is guided by means of vocal and visual messages which show the road section already treated as well as the section that still has to be done. It is possible to exit from any pre-set route and re-entry at any point along the section.



Asimmetry

On spreaders with electrical control of asymmetry, this function provides full control of the direction of spreading. The screen display varies according to the type of asymmetry: with or without feedback. 5 pre-set positions can be selected.



Analogical levels

In this section of the working area, it is possible to monitor the level material in the hopper and also the fuel level (only for equipment with auxiliary engine).



Simulated speed

The vehicle speed can be simulated from 5 to 90Km/h in steps of 5. This feature is useful when there is no tachometer connection, when the connection is damaged or when the spreader has to work while the vehicle is not moving.



EasyCom

Perfectly integrated with the EcoSat¹⁰, allows precise operation of front and side snow ploughs, inter-axial brushes and special applications.



Navicon

The Navicon is able to send the vehicle position and spreading parameters via a GSM/GPRS connection and can be used also with third party equipment.



Climtronic

A serial connection between the infrared sensor and the EcoSat¹⁰ allows automatic changing of the spreading dosage based on the road temperature.



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■ **Gmeiner GmbH**
Wernberg-Köblitz

■ **Bucher Municipal**
Niederweningen

■ **Arvel Industries Sarl**
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