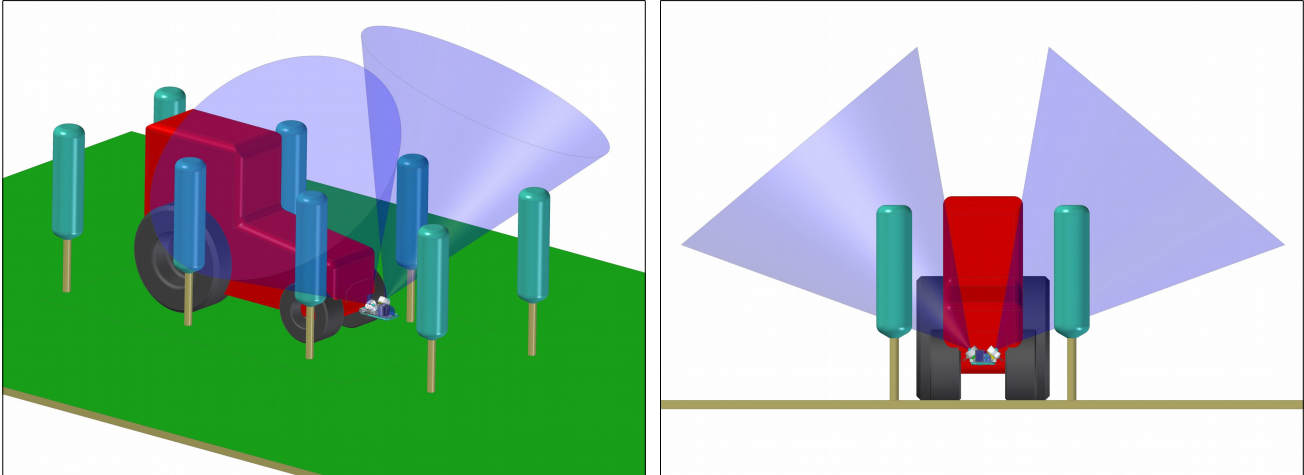


MECS-VINE

MECS-VINE¹ (Micro Environment and Canopy Sensor, VINE version) is a multi-parameter sensor specifically developed for the characterisation of the vegetative canopy and of the micro-environment in vineyards and orchards.

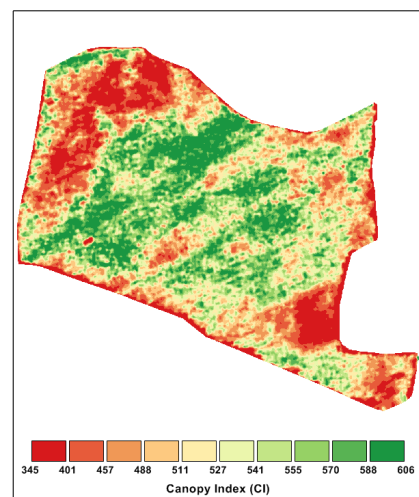
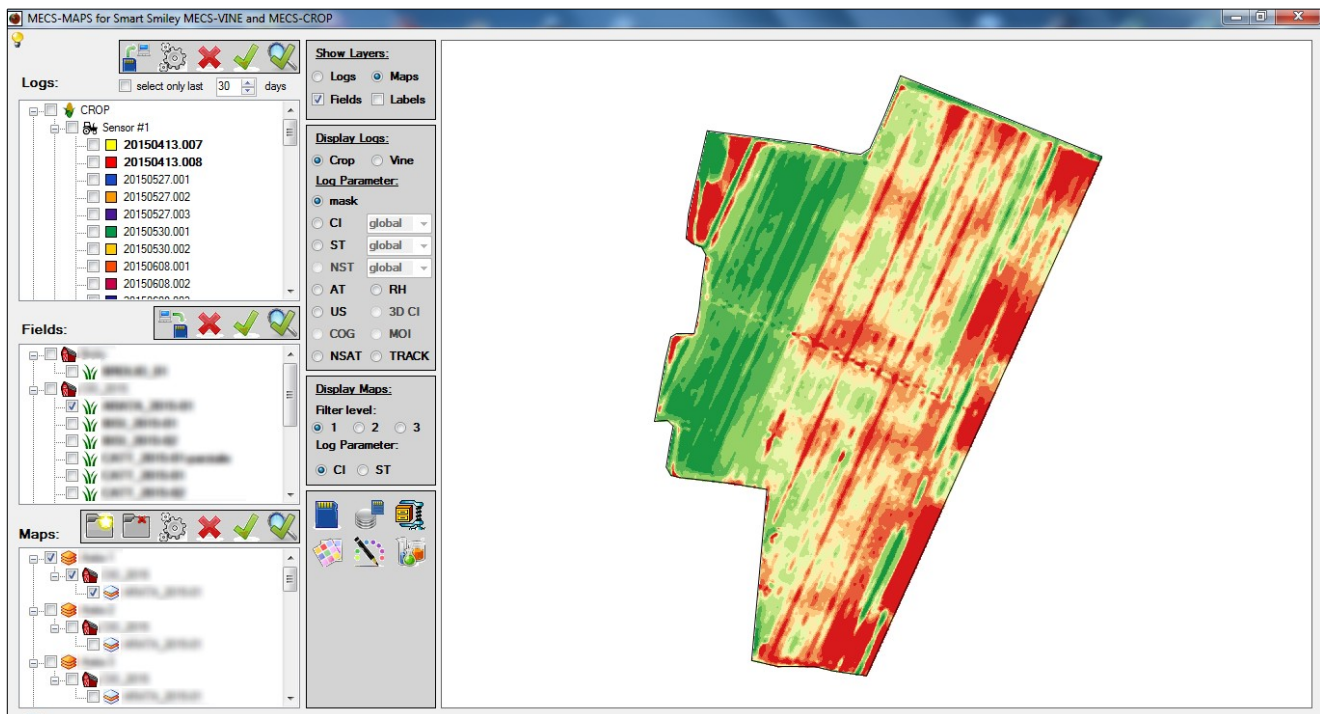


MECS-VINE has been developed and patented by TEAM, a group of companies (Studio di Ingegneria Terradat, Appleby Italiana, Casella Macchina Agricole) established in 2009 with the aim of providing the farming sector with “turnkey” precision agriculture solutions. Its products range from data collection and processing to data management by means of electronic devices and dedicated agricultural machinery able to perform VRT (Variable Rate Technology) activities in the field.



The post-processing software, MECS-MAPS, turns the data collected by the sensor, recorded in *log* files, into a sequence of levels of information that are made available as overlapping maps. Thanks to MECS-MAPS, users can set up customised work programmes using the *log* files recorded by the sensor. These programmes will help them perform VRT activities in the field by means of VRT-enabled agricultural machinery (fertiliser spreaders, manure/compost spreaders, sprayers, irrigators, pruning machines, leaf removal machines, harvesters, etc.).

1 PATENT PENDING.



MECS-VINE has been designed and created in order to draw thematic maps with a level of significance at least similar to the one that was once achieved only thanks to multispectral satellite data. The level of detail these brand-new sensors can achieve is even higher than the one reached in the past. Our sensors allow going beyond the operation limits of the proximity sensors that have been developed to date; it is exactly these limits that have prevented an extensive, simple and reliable use of this technology.

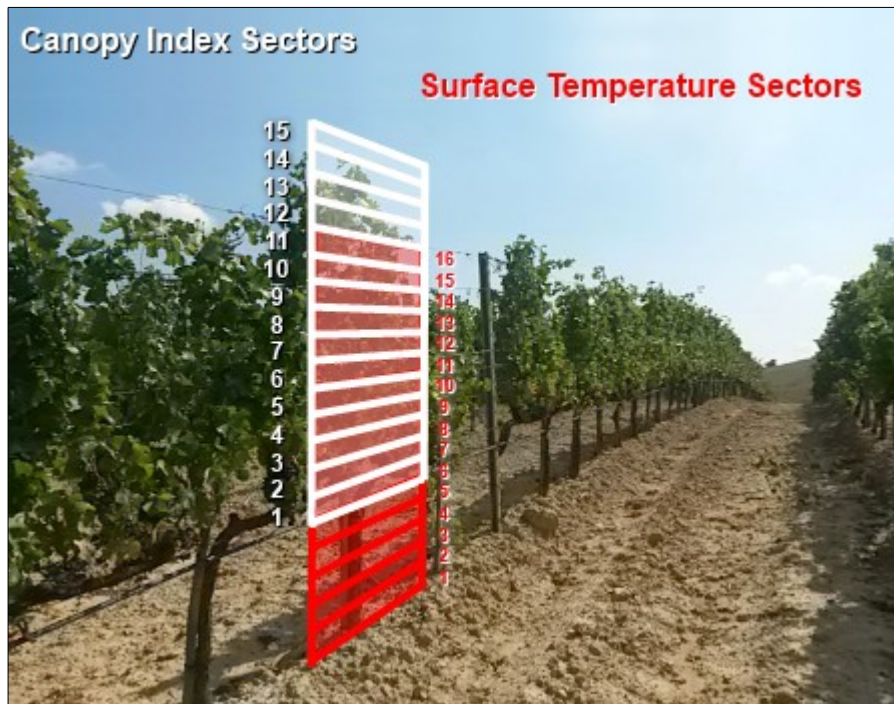
It is no doubt that the characteristics of these sensors will catch the user's interest, since they allow him to map his fields autonomously and to post-process the relevant data in order to draw thematic maps.

MECS-VINE combines a GPS receiver and a series of sensors able to record the following parameters: Canopy Index (CI)², ambient temperature, surface temperature of the grapevine/fruit canopy, distance from the target vine/tree measured by an ultrasonic sensor.

² The Canopy Index (CI) measured by the MECS-VINE sensor is a dimensionless value which may vary between 0 and 1000 that basically represents the vegetation amount per area unit and may be directly related to physically based variables such as LAI (Leaf Area Index), TRV (Tree Row Volume), etc. Experimentations in cooperation with Universities and Research Centres are being carried out to prove these correlations.

The sensor features a special orientation and a wide angle of view which allow to collect data easily, since the sensor is not affected by grass that may be found in the inter-row space or under the rows. Furthermore, the Canopy Index measurements are not affected by variations of light on plants (presence/absence of clouds, elevation and angle of the sun, shading, etc.).

The Canopy Index and surface temperature measurements referring to the full height of the monitored vine row are also divided into horizontal sectors, so that it is easier to monitor both the vine extension at the different heights and the variation of surface temperature along the vine row, especially along the horizontal sector where grape bunches hang.



MECS-VINE can also be used to control VRT-enabled machinery in real time; in that case, the data collected by the sensor attached to the front of the tractor are used to adjust the work done by the machinery (sprayers, pruning machines, leaf removal machines, etc.) attached to the back of the tractor.

The different levels of information can be combined in a variety of ways or used individually to suit the user's requirements; this is possible in case of VRT applications with data collected by the sensor during a previous mapping session as well as in case of VRT applications with real-time control. This feature allows to devise much more successful and effective precision agriculture solutions than those developed to date.

For further information, please visit www.teamsmartfarming.com.