



COMUNE DI FIRENZE

Consiglio di Quartiere 4

Assessorato alla Partecipazione Democratica,
ai Rapporti con i Quartieri, Nuovi Stili di Vita e Consumo Critico

In collaborazione con ARSIA
e Laboratorio congiunto Università Impresa GEMMA VERDE

Macchine per la manutenzione del verde

Firenze 7 - 8 maggio 2009

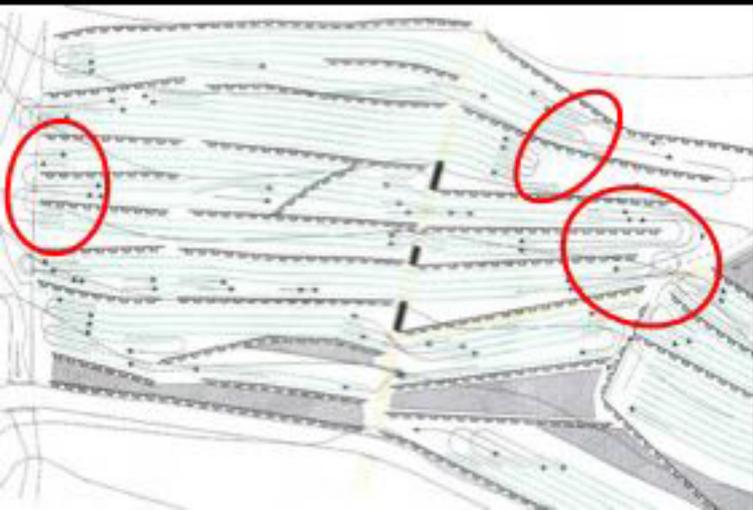
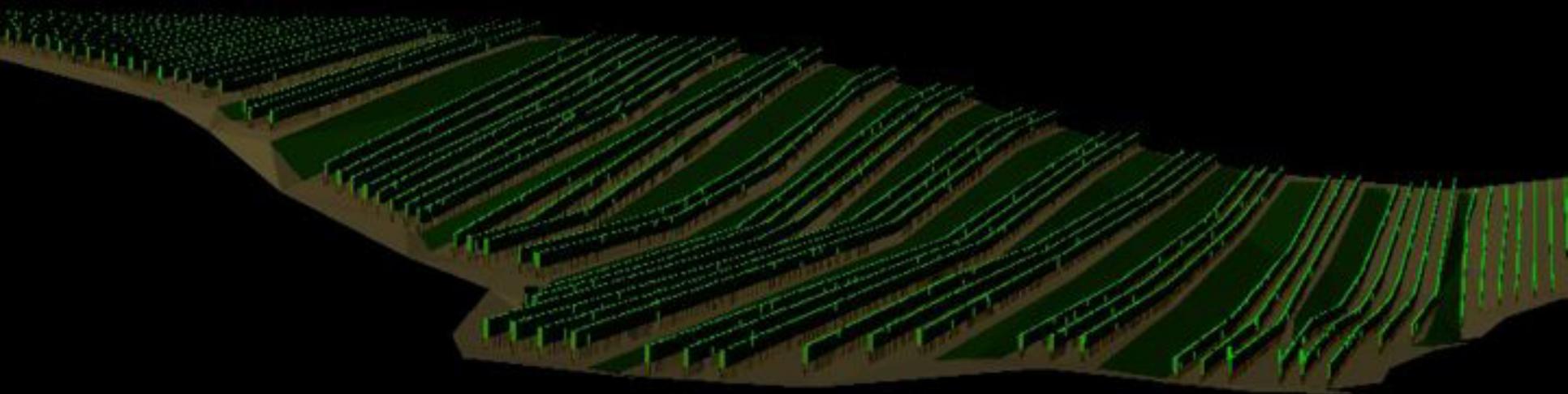
Limonaia di Villa Strozzi - Via Pisana, 77

Con il contributo di:



Atti pubblicati da







Macchine per la manutenzione del verde

Limonaia di Villa Strozzi

Firenze 7-8 Maggio 2009



COMUNE DI FIRENZE



Tecnologie di identificazione, georeferenziazione
e vettorializzazione degli elementi del verde:
dispositivi GPS-RFID, Machine Automation



Adolfo Deltodesco, Emilio Palchetti, Marco Vieri



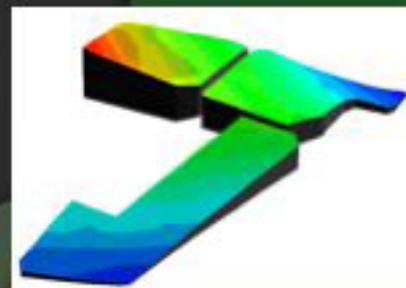
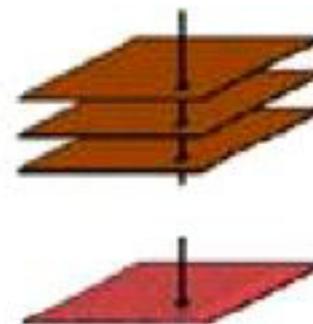
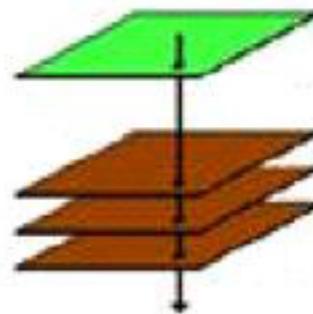
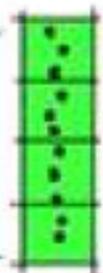
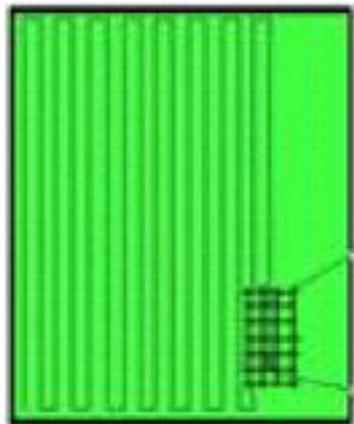
DIAF - Dipartimento di ingegneria agraria e forestale - Università di Firenze
Leicageosystem Divisione Machine Automation - Calenzano (FI)

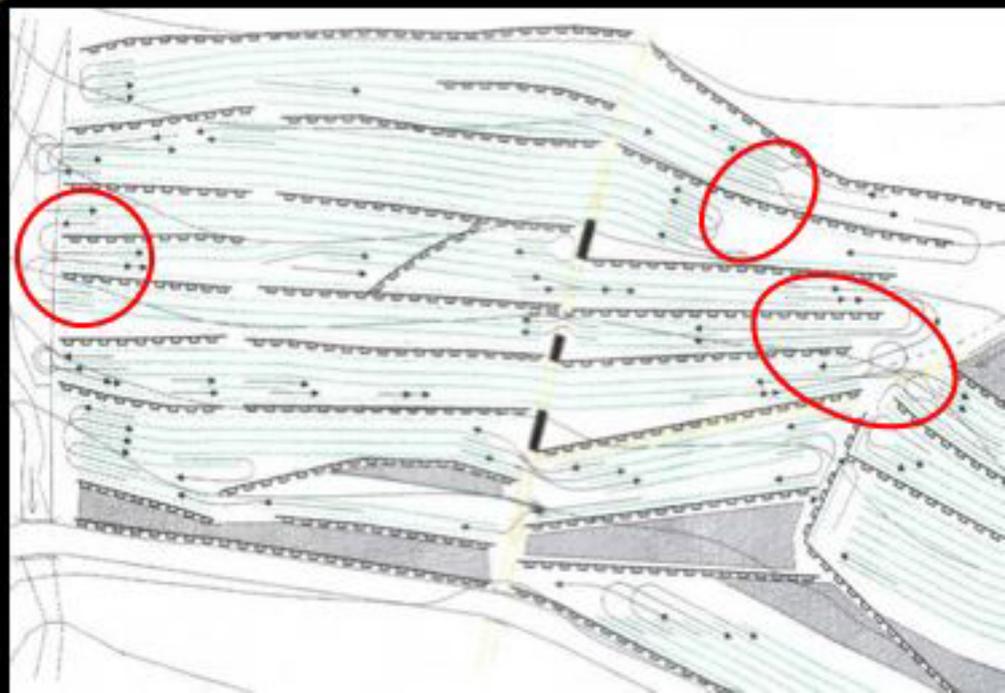
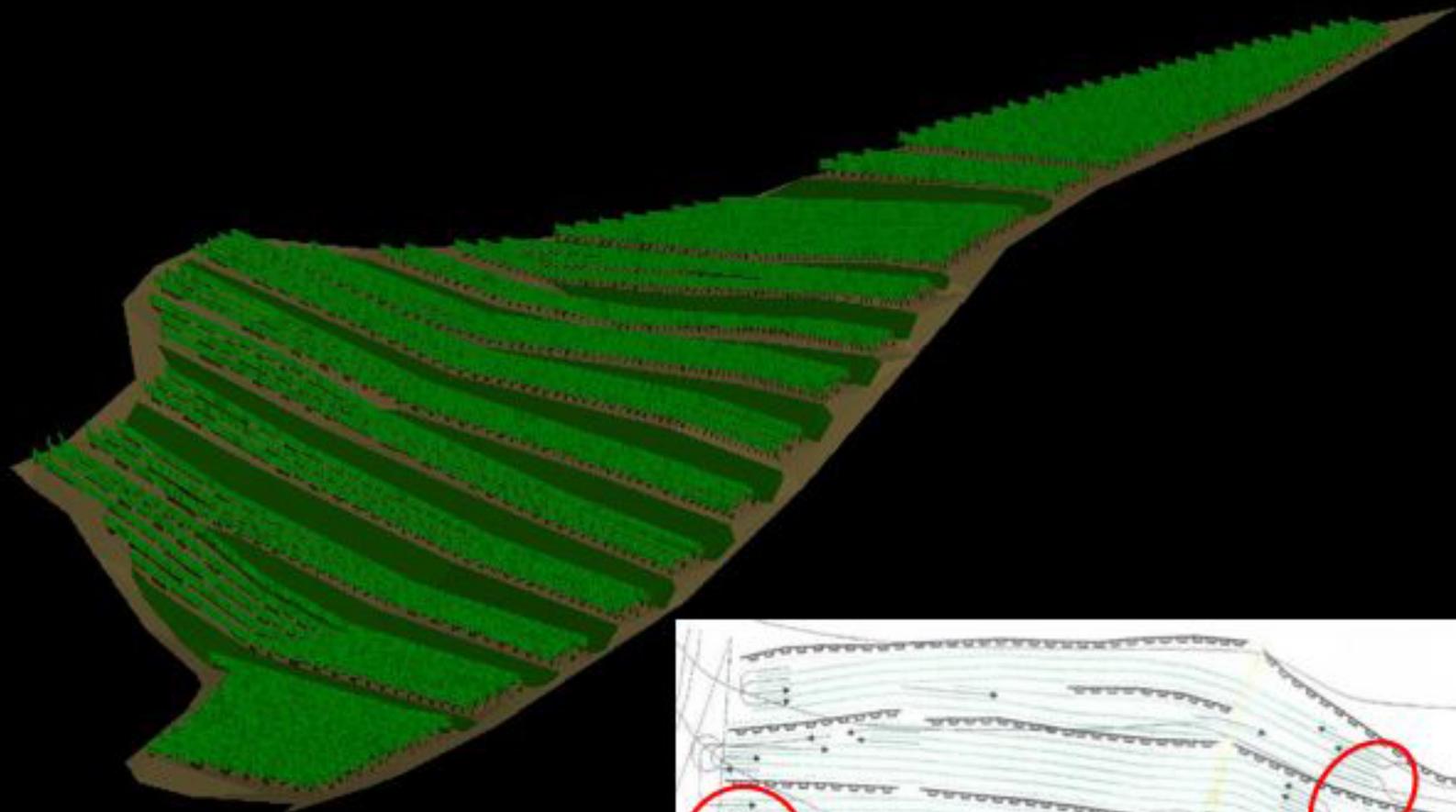


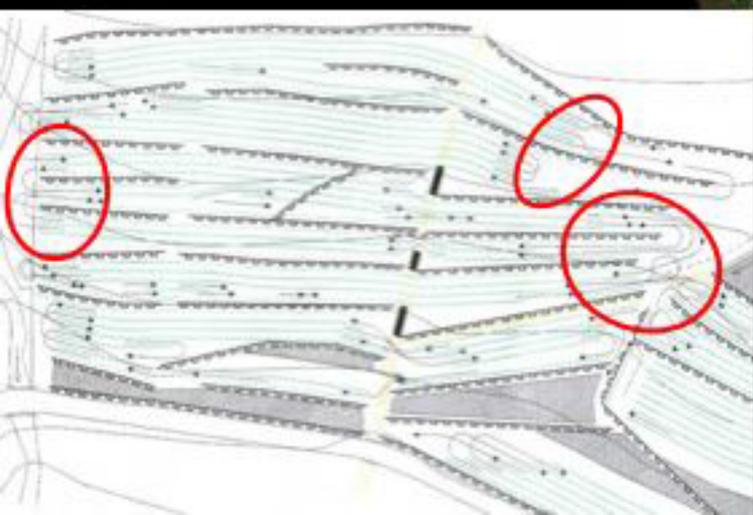
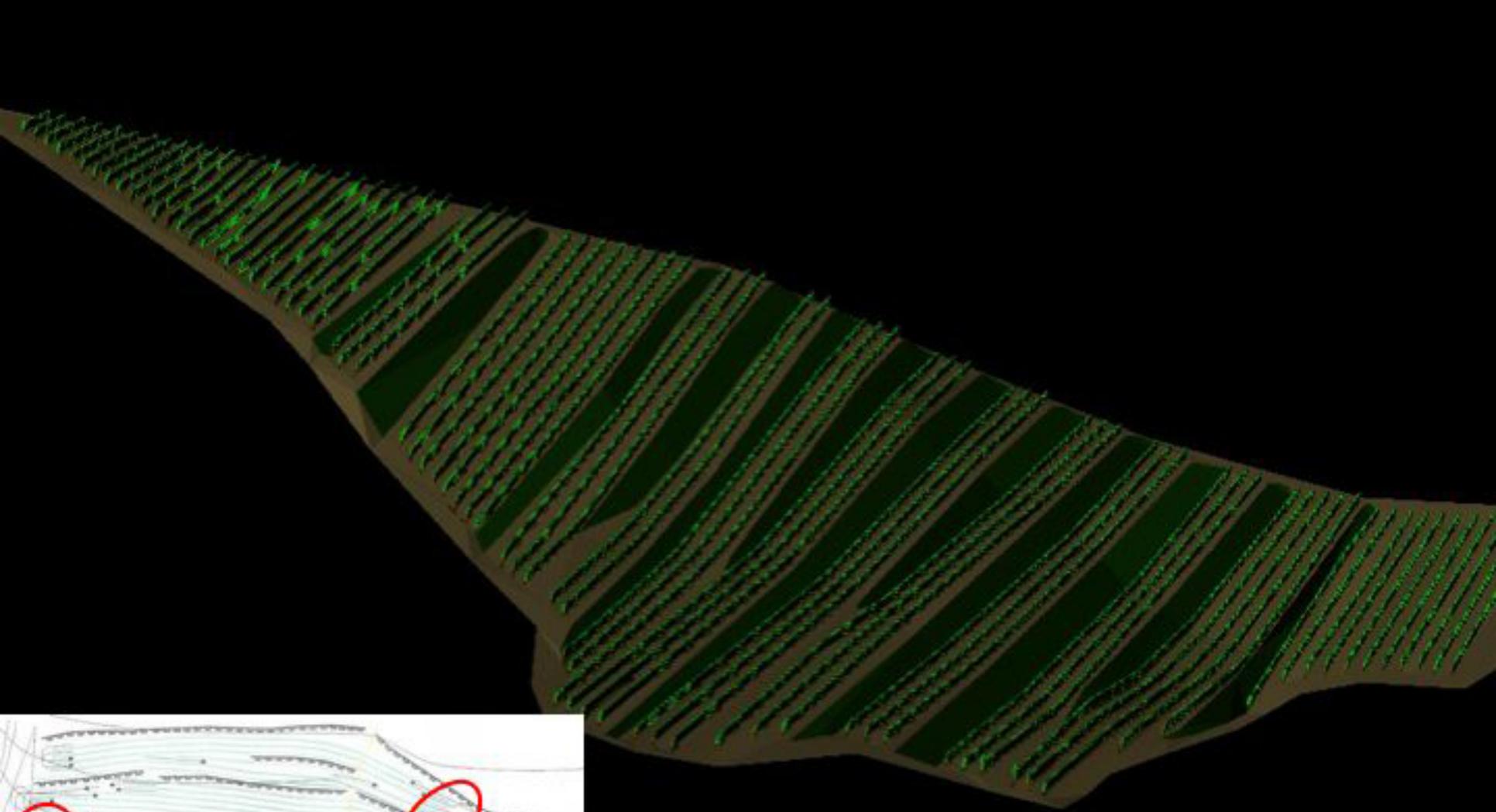
Tag Italia RFID Systems & Technology

Agricoltura di precisione

systems



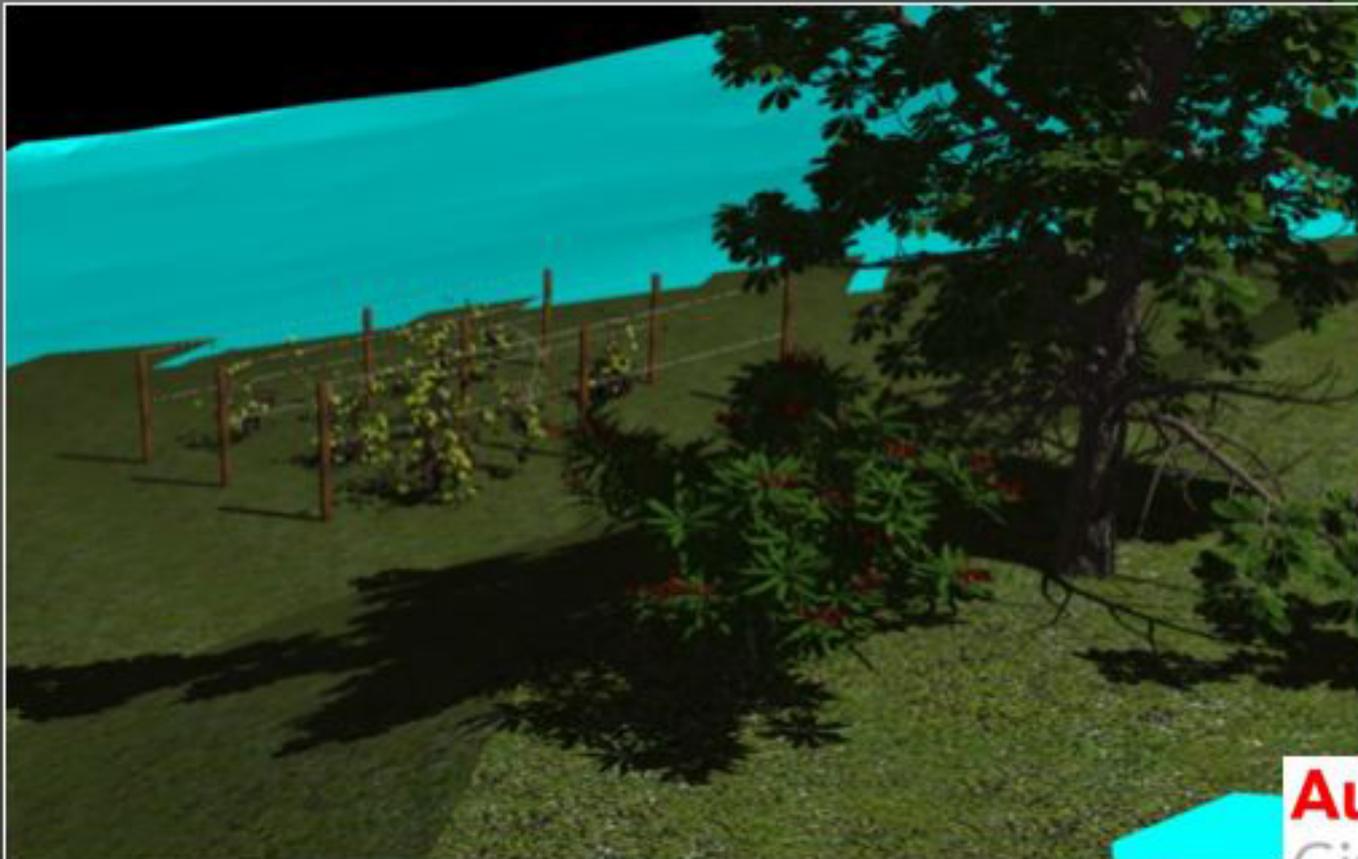




SOFTWARE DEDICATI

AUTOCAD CIVIL 3D- vantaggi

Possibilità di rendering



AutoCAD
Civil 3D

CASI STUDIO

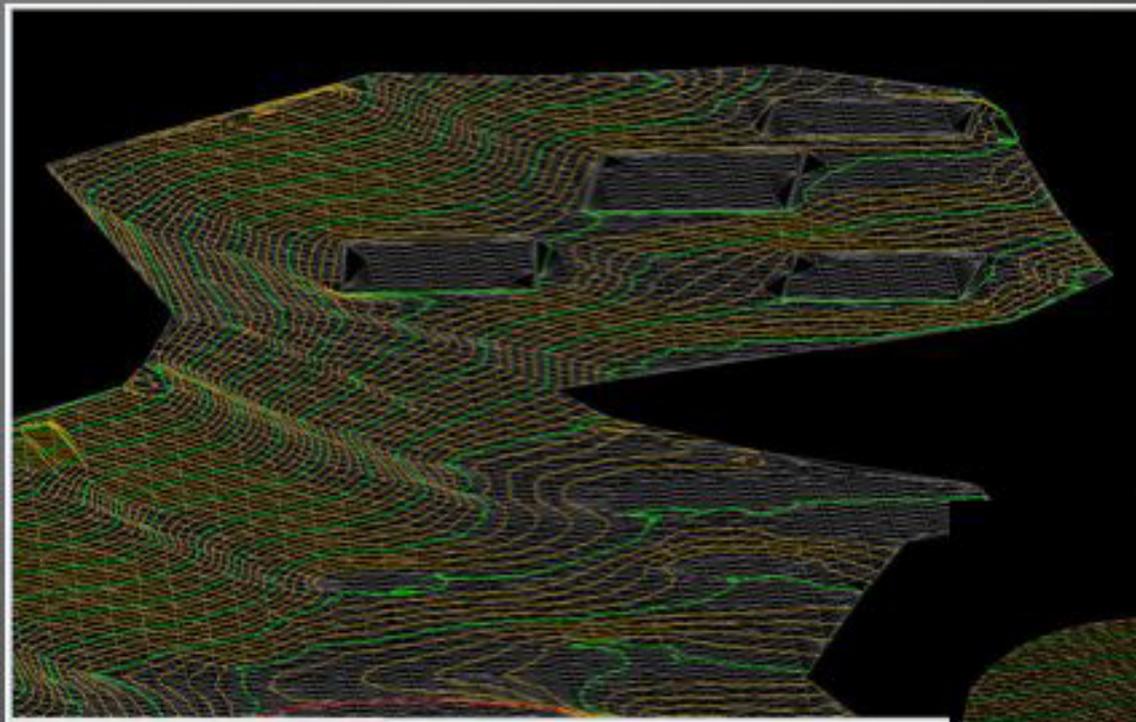
Campo da golf

PLANIMETRIA



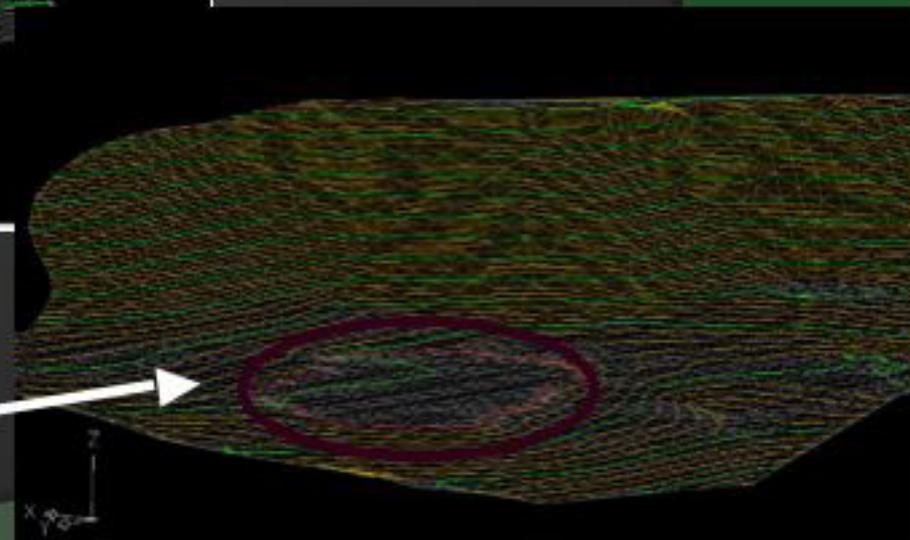
CASI STUDIO

Campo da golf



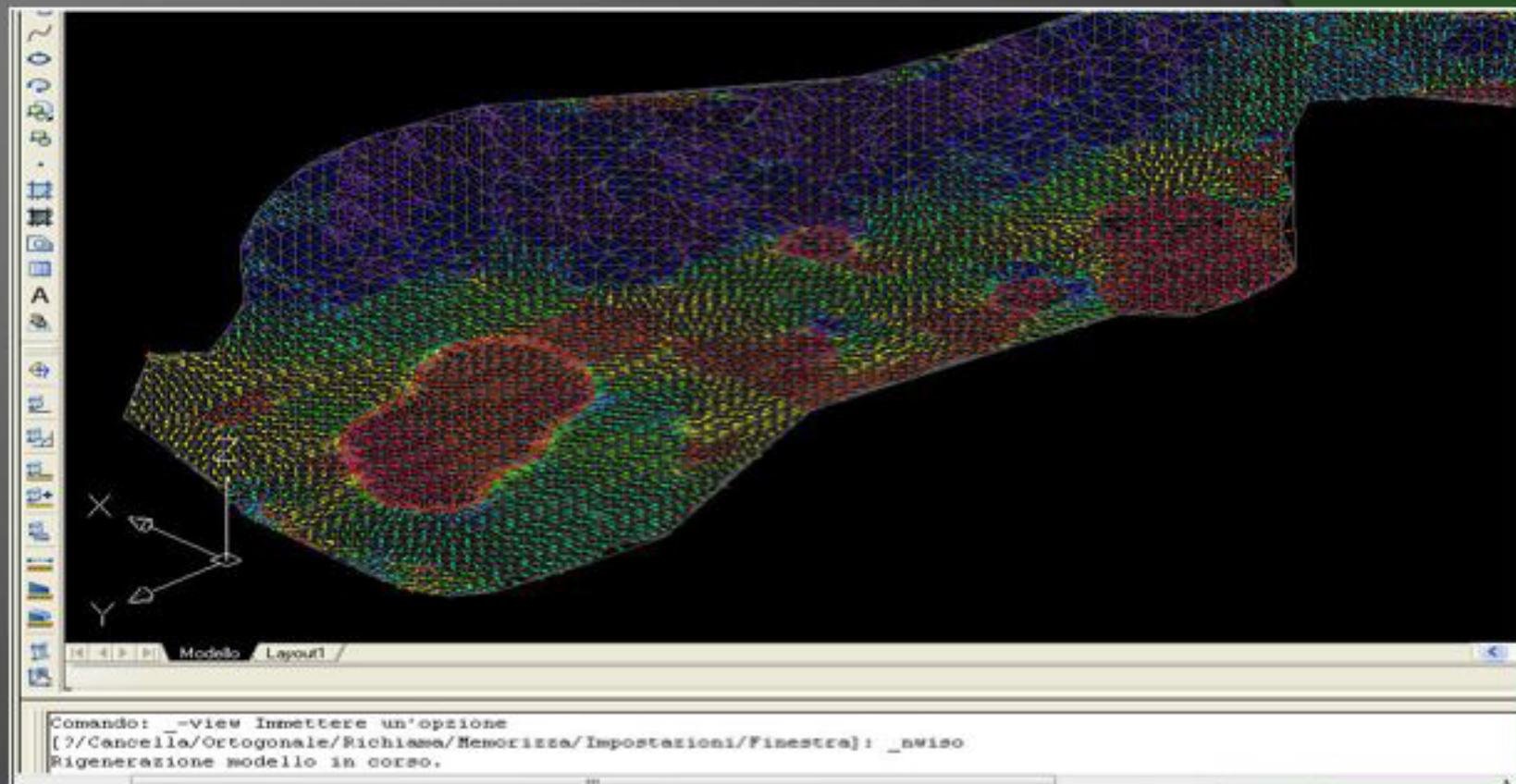
DTM

GREEN



CASI STUDIO

Campo da golf – Analisi della pendenza

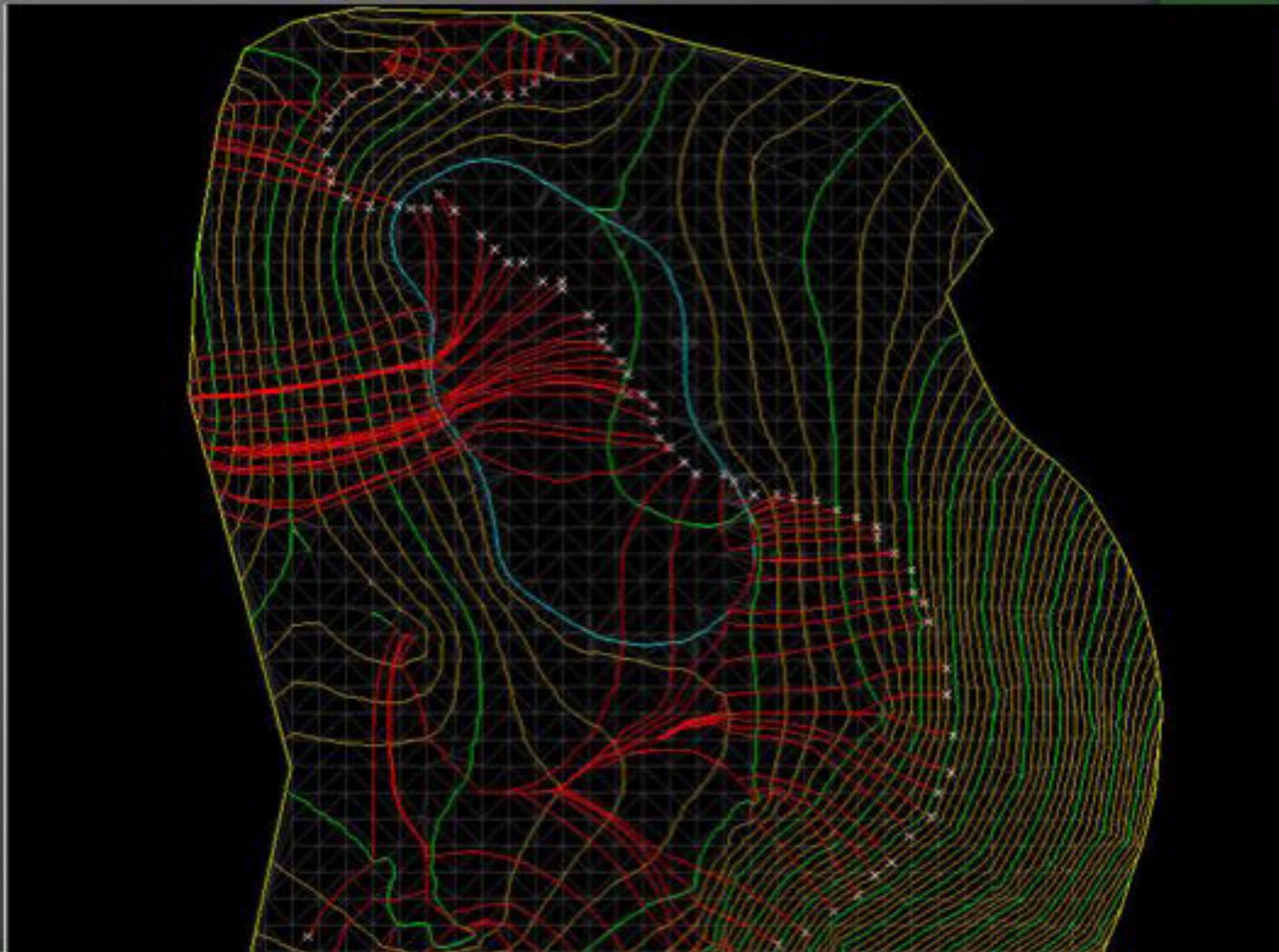


Analisi dei rischi erosivi

Pianificazione degli interventi

CASI STUDIO

Campo da golf – Analisi idrografica



CASI STUDIO

Campo da golf – Analisi idrografica

PUNTI DI RACCOLTA



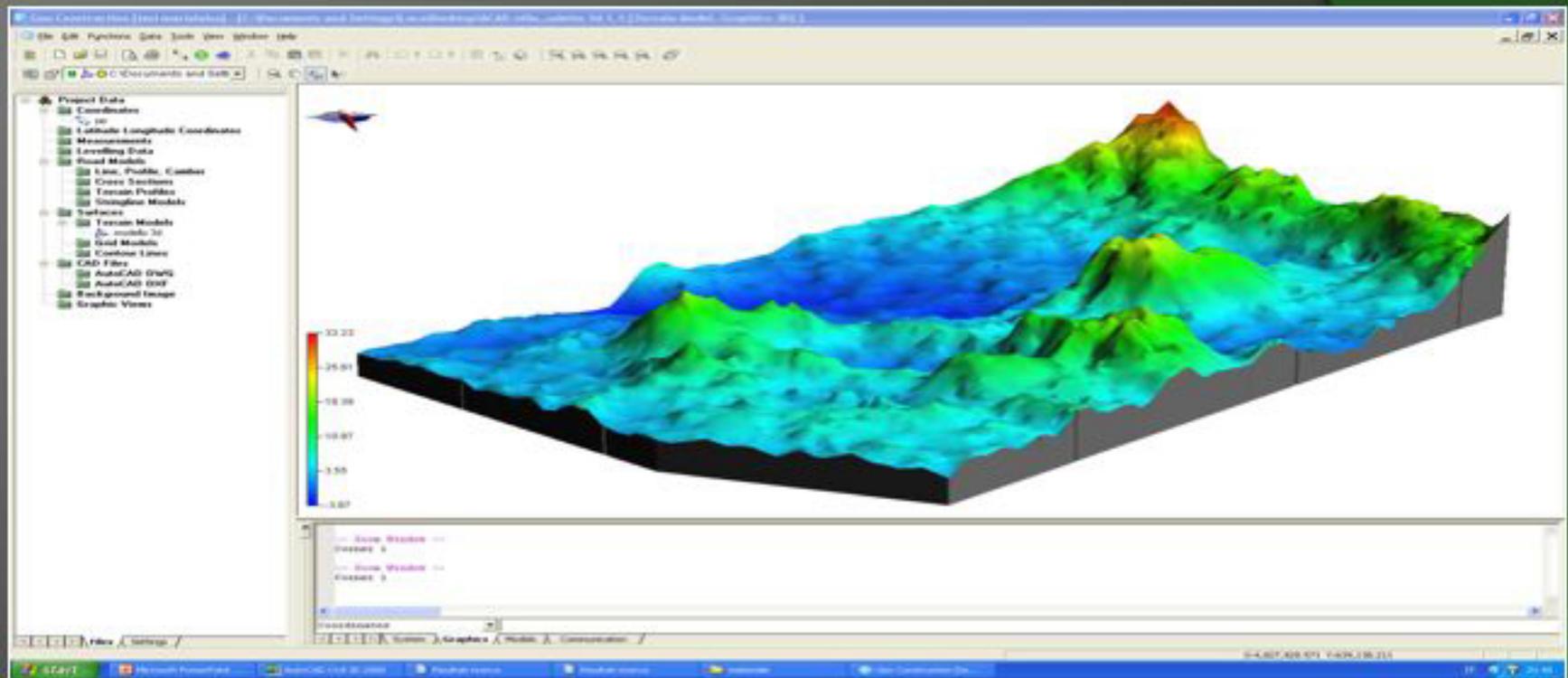
Tecnologie innovative di VP

Proximal sensing per l'indagine del suolo: tecnica ARP (Automatic Resistivity Profiling)

- tecnica geoelettrica per monitoraggio dinamico delle caratteristiche del suolo
- l'analisi di base su rilievi di **Resistività elettrica** (Ohm*m) del suolo
- tre livelli di profondità indagati: 50-100-170 cm, con circa 30.000 rilievi per ettaro
- abbinamento a DGPS per la georeferenziazione dei dati

CASI STUDIO

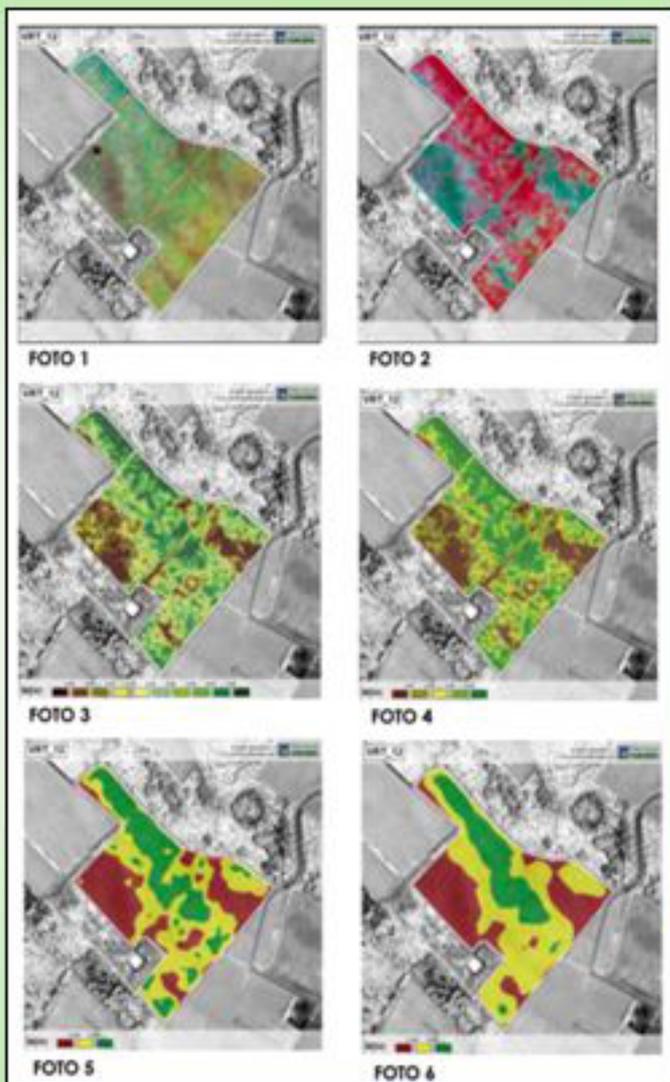
Campo da golf – Analisi ARP



MODELLO 3D ARP

Tecnologie innovative di AP

Fase 1: creazione delle mappe di vigore

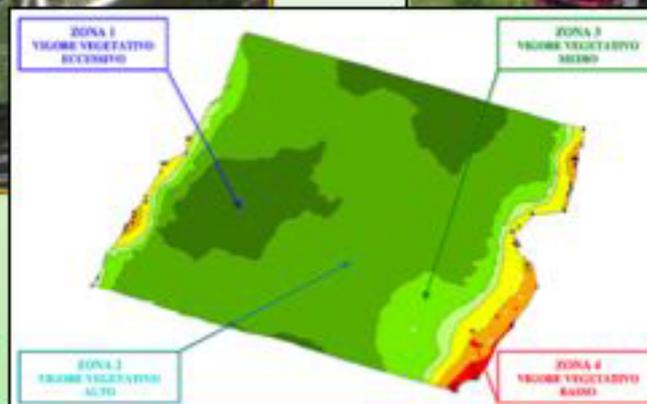


Telerilevamento

Proximal sensing



$$NIR / R = \frac{R_{nir}}{R_r}$$



Mapa del vigore vegetativo (NDVI)

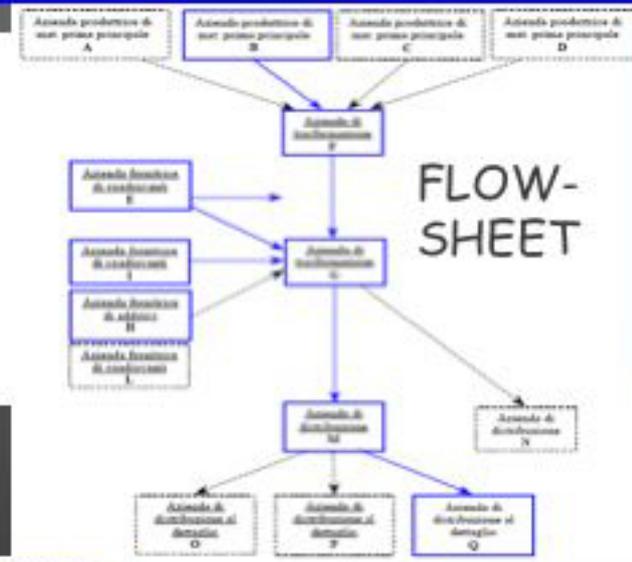
La gestione dei flussi aziendali



BAR-CODE

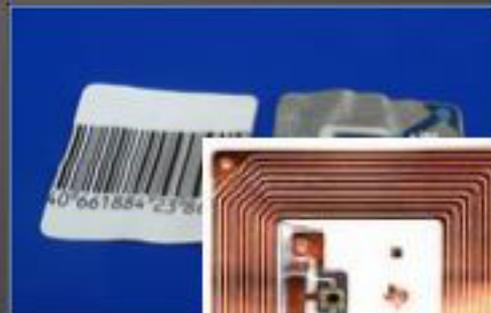


LETTORI

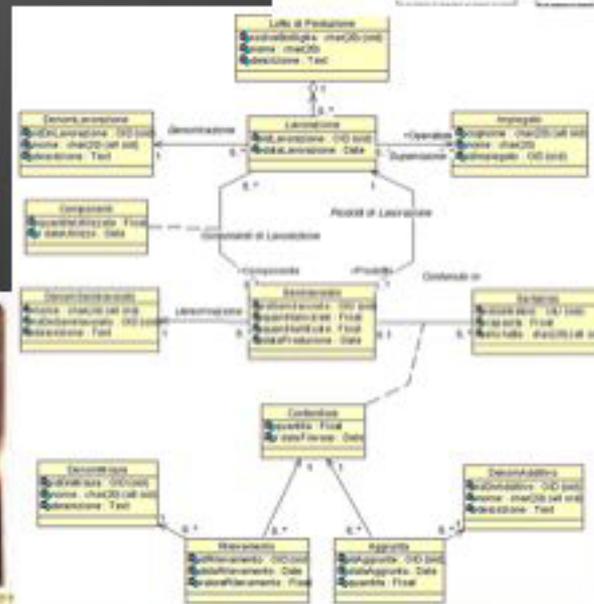
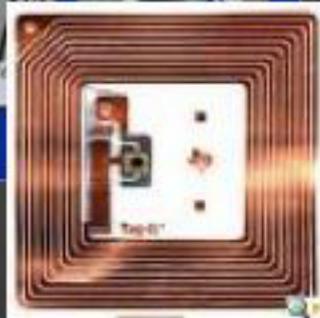


FLOW-SHEET

- Flow sheet dell'azienda
- Modellazione UML
- Gestione dei lotti aziendali



Rfid



La certificazione di prodotto passa anche attraverso la **TELEMETRIA** sulle macchine agricole - nuovo strumento dell'Ingegneria Agraria



+

TSM- Hardware



GSM-Data (P2P)



CDS 5000
REMOTE



+ Internet Browser
+ Connessione Internet



*TSM – Tele Service Modul

Monitoraggio e archiviazione della logistica di lavoro



Pointer lat 53.980414° lon 11.022273° elev 22 m

Streaming [|||||] 100%

Eye alt 649 m

Download Cerca Segnalibri 16 bloccati Controllo Traduci Invia a pdf creator download

Reports Administration Development suggestion Logout

Work status

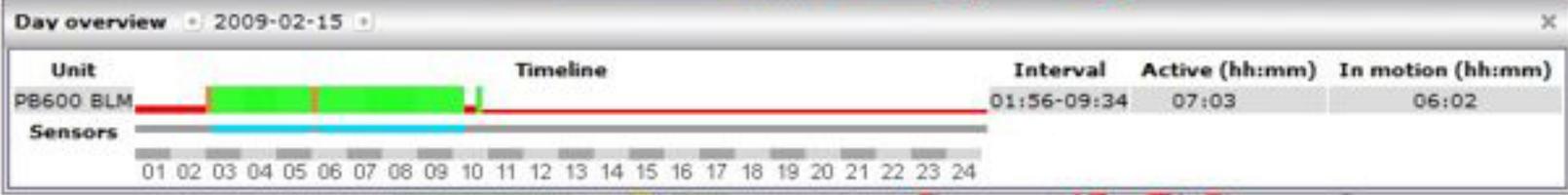
Select area: **Tour Vallorcine**

2009-02-15 17:00 2009-02-15 20:15 (0h)

EMOSSON	100%
PISTE BLEUE	100%
STADE ESF	100%
STADE	100%
ALPAGES	100%
VARIANTE BECHAT	100%
AIGUILLETES	100%
POSETTES	100%
LIAISON BALME	100%

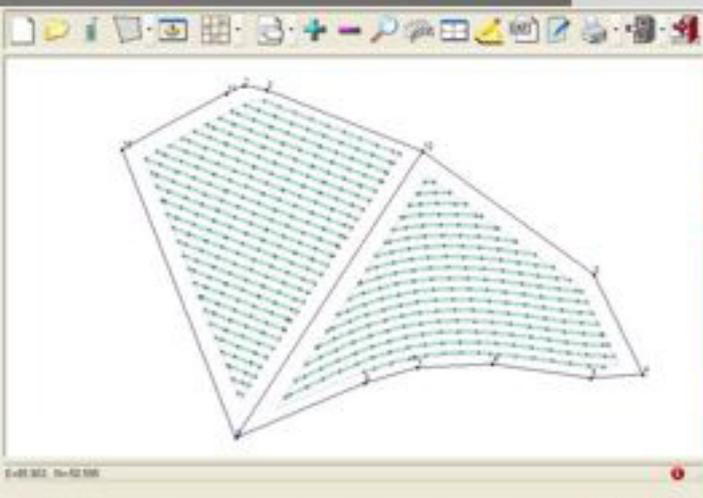
Unit ID	First Activity	Last Activity	Engine on	In motion	Standing still	Efficiency	Sensor 1	Sensor 2	Max Speed	Average Speed
1040	2009-02-15 17:30:11	2009-02-15 20:15:19	01:31:00	01:04:00	00:27:00	70.44%	00:34:00(TREUIL)	00:00:00(FRAISE)	16	6
1041	2009-02-15 17:34:27	2009-02-15 18:57:23	01:22:00	01:22:00	00:00:00	99.59%	00:00:00(Sensor1)	00:35:00(FRAISE)	14	5
1042	2009-02-15 17:53:00	2009-02-15 20:05:16	02:11:00	02:10:00	00:00:00	99.74%	00:00:00(Sensor1)	01:16:00(FRAISE)	14	6
1043	2009-02-15 17:29:06	2009-02-15 20:05:20	02:34:00	02:34:00	00:00:00	100.00%	01:56:00(Sensor1)	01:19:00(Sensor2)	16	8
1044	2009-02-15 17:24:41	2009-02-15 20:07:52	02:41:00	02:41:00	00:00:00	99.79%	01:36:00(Sensor1)	01:52:00(Sensor2)	16	7

Route ● Sensor 1 ● Sensor 2 ● Sensor 3 ●



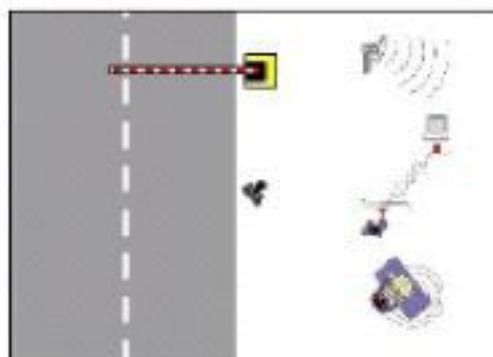
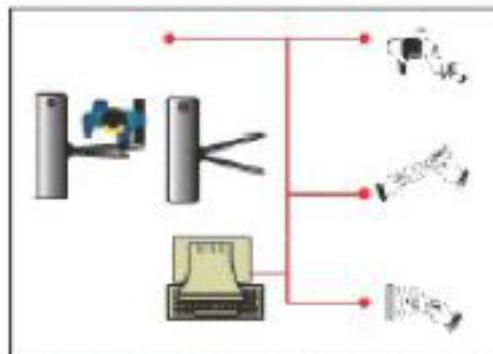
Trapianto a controllo automatico da base SW vettoriale e DGPS

(2006-2007)



Anagrafica piante con controllo RFID al trapianto (2008)

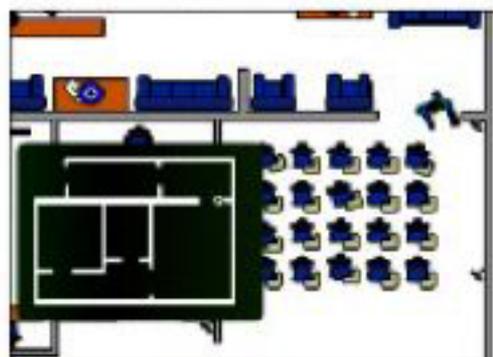
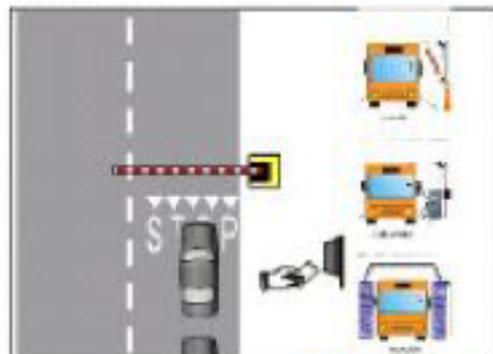
CONTROLLO ACCESSI



NO - STOP



CONTROLLO FLOTTE



LOCALIZZAZIONE

