

ASECAP DAYS



MILANO 2024



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Eco-innovation and environmental sustainability in road and motorway green management

Valerio Molinari - ECOGEST SPA, Italy

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INNOVATIVE SUSTAINABLE TECHNOLOGIES





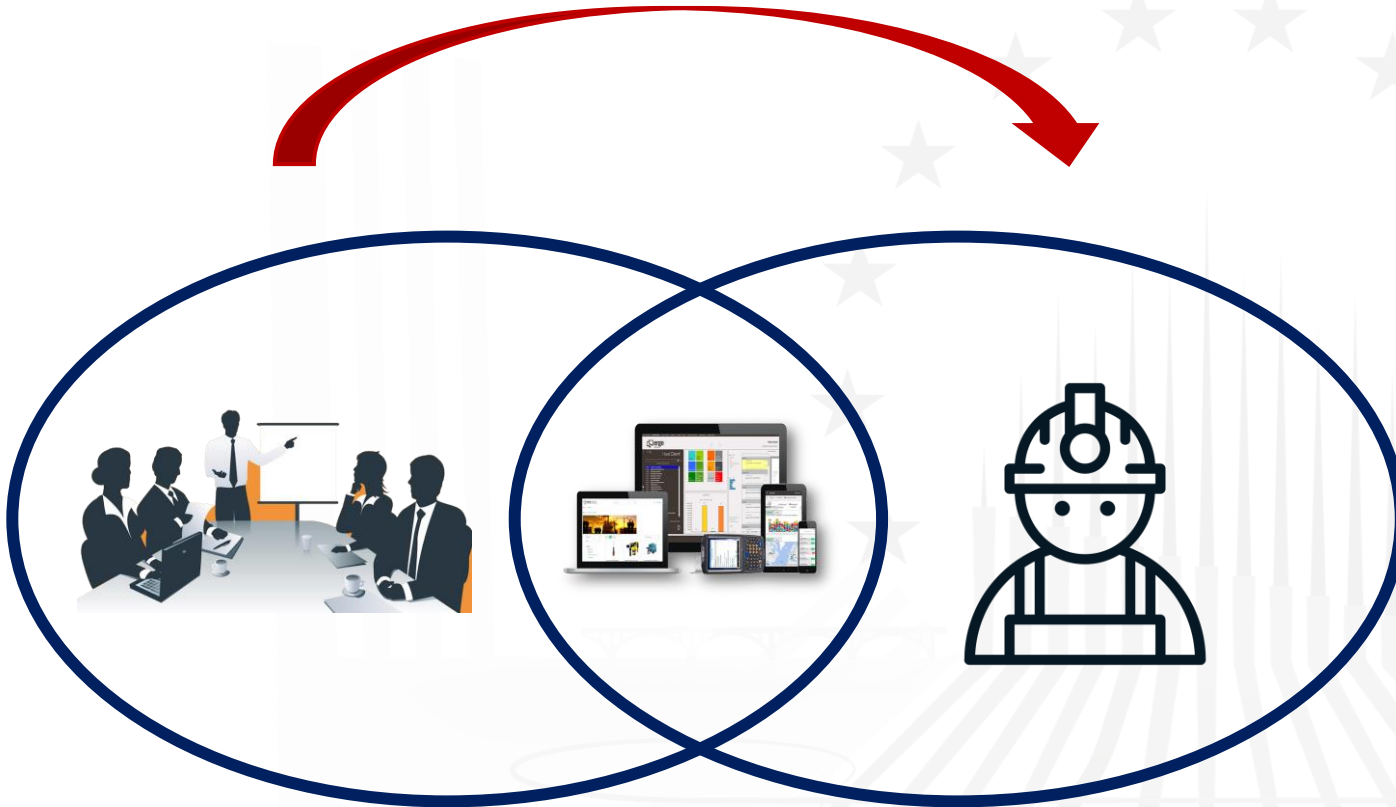
COMPANY



WORKSITE

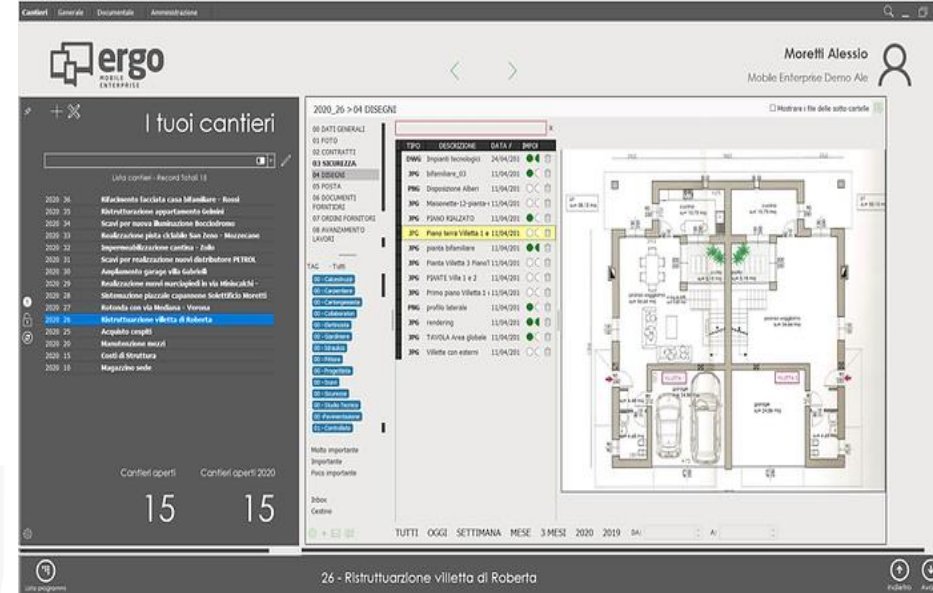
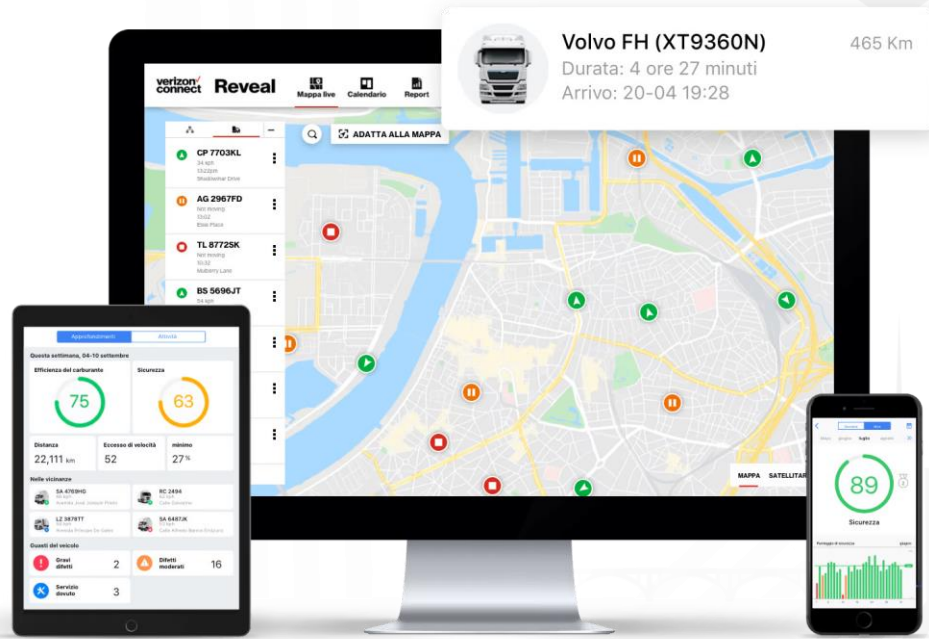


*Connecting the **company** to the **worksite** with **Digital Technology***



- The complete **digitisation** of operating machines and their real-time monitoring
- An **optimisation** of production performance and green management costs
- A **redistribution** of the economic budget for green maintenance
- Greater **sustainability** of interventions to safeguard Biodiversity and Entomofauna

USE OF SENSORS AND INNOVATIVE DIGITAL APPLICATIONS



- Control access and monitor the safety of workers and users
- Automate machine and material tracking processes
- Obtain information in real time and automatically to monitor the progress of the order
- Identify intervention times in a timely manner



OPTIMISATION OF PRODUCTION PROCESSES

ACQUISITION AND ANALYSIS OF DATA COLLECTED BY MACHINES EQUIPPED WITH IoT SENSORS

MONITORING OF WORK AREAS FOR SAFETY PURPOSES

REAL-TIME INFORMATION SHARING BETWEEN OPERATORS, COLLABORATORS, PROFESSIONALS, MANAGERS AND CUSTOMERS



Industry 4.0 passes through the *smart factory* concept which consists of 3 parts:

- ✓ **SMART PRODUCTION**
- ✓ **SMART SERVICES**
- ✓ **SMART ENERGY**

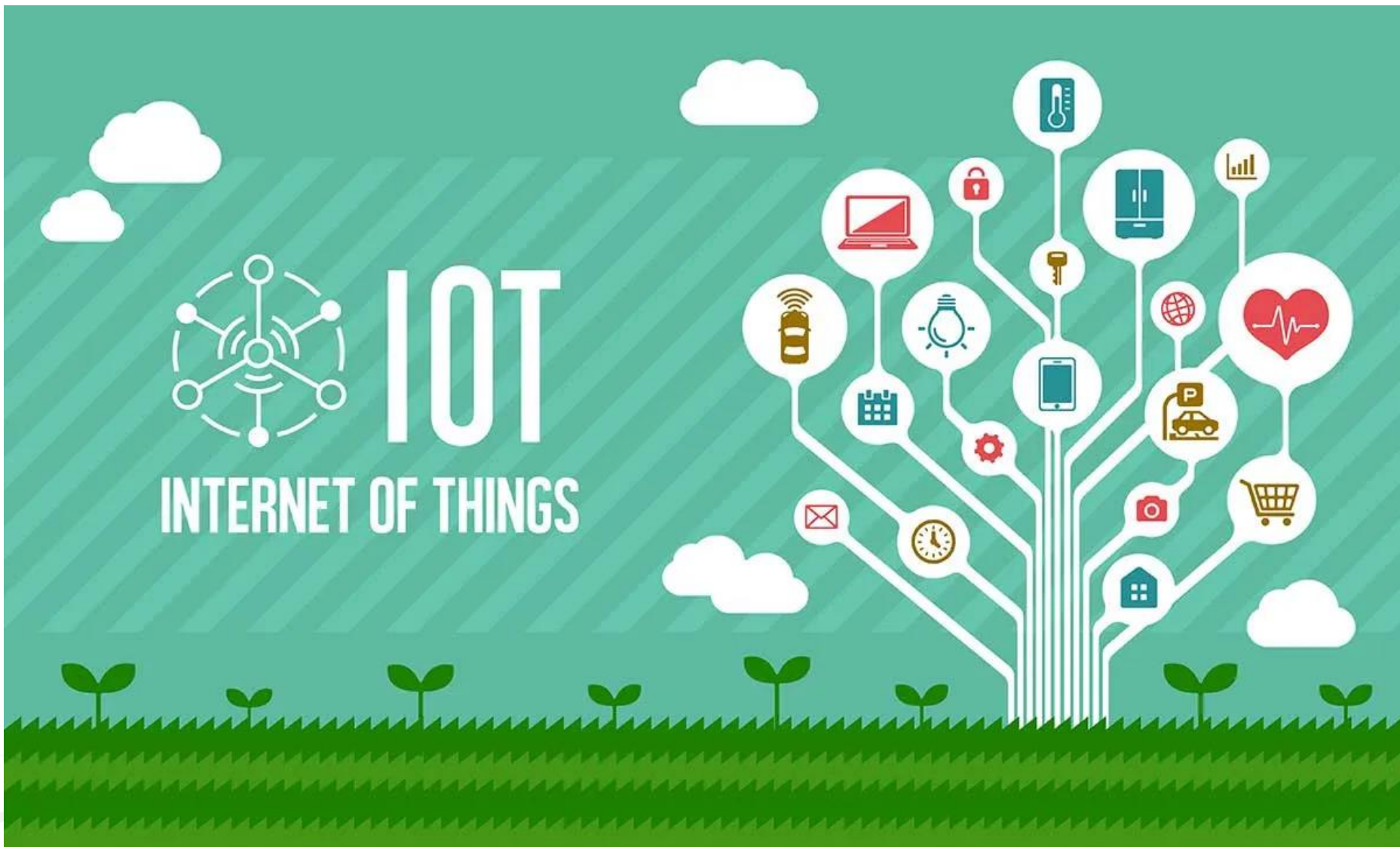
Traditional Yard

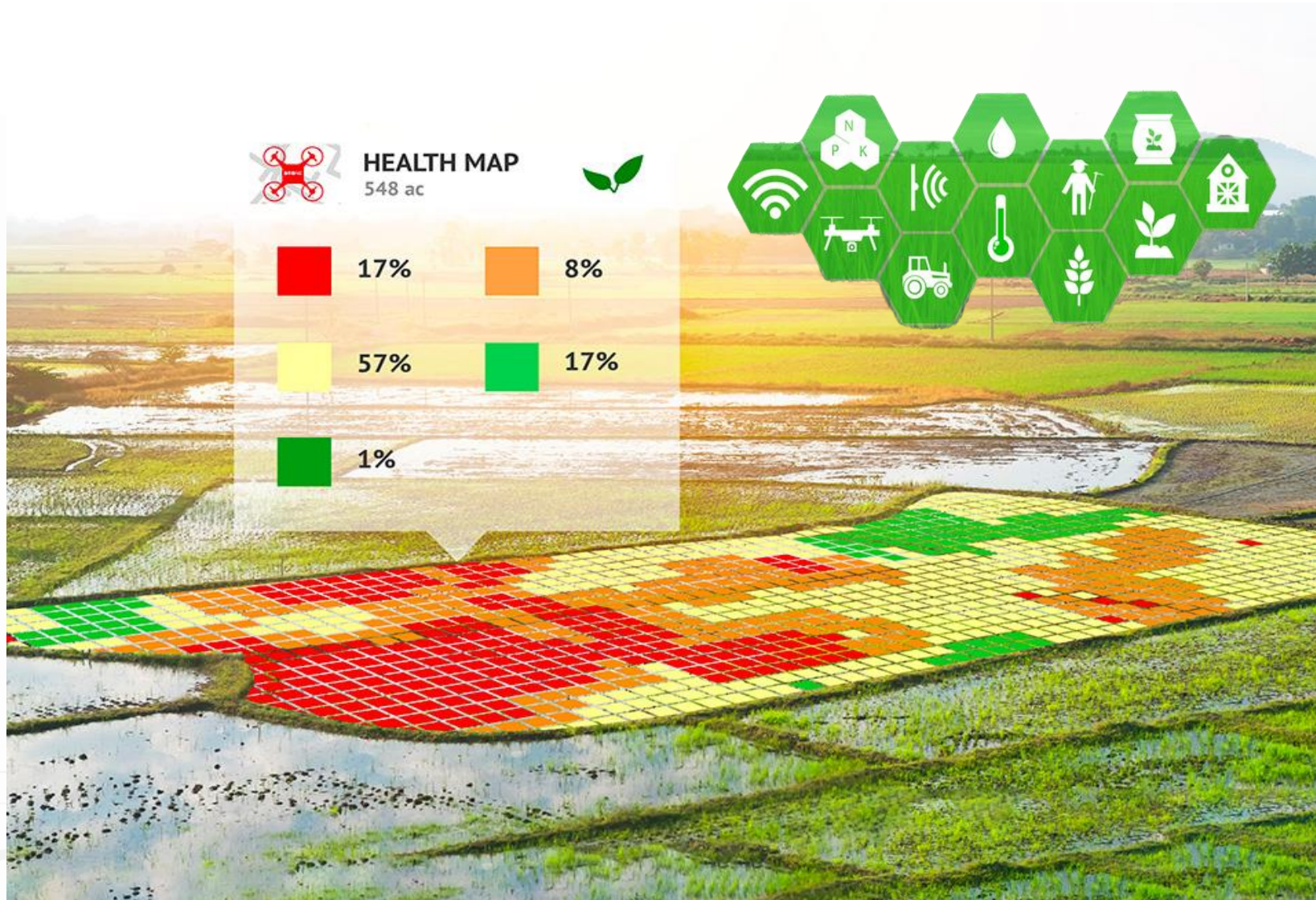


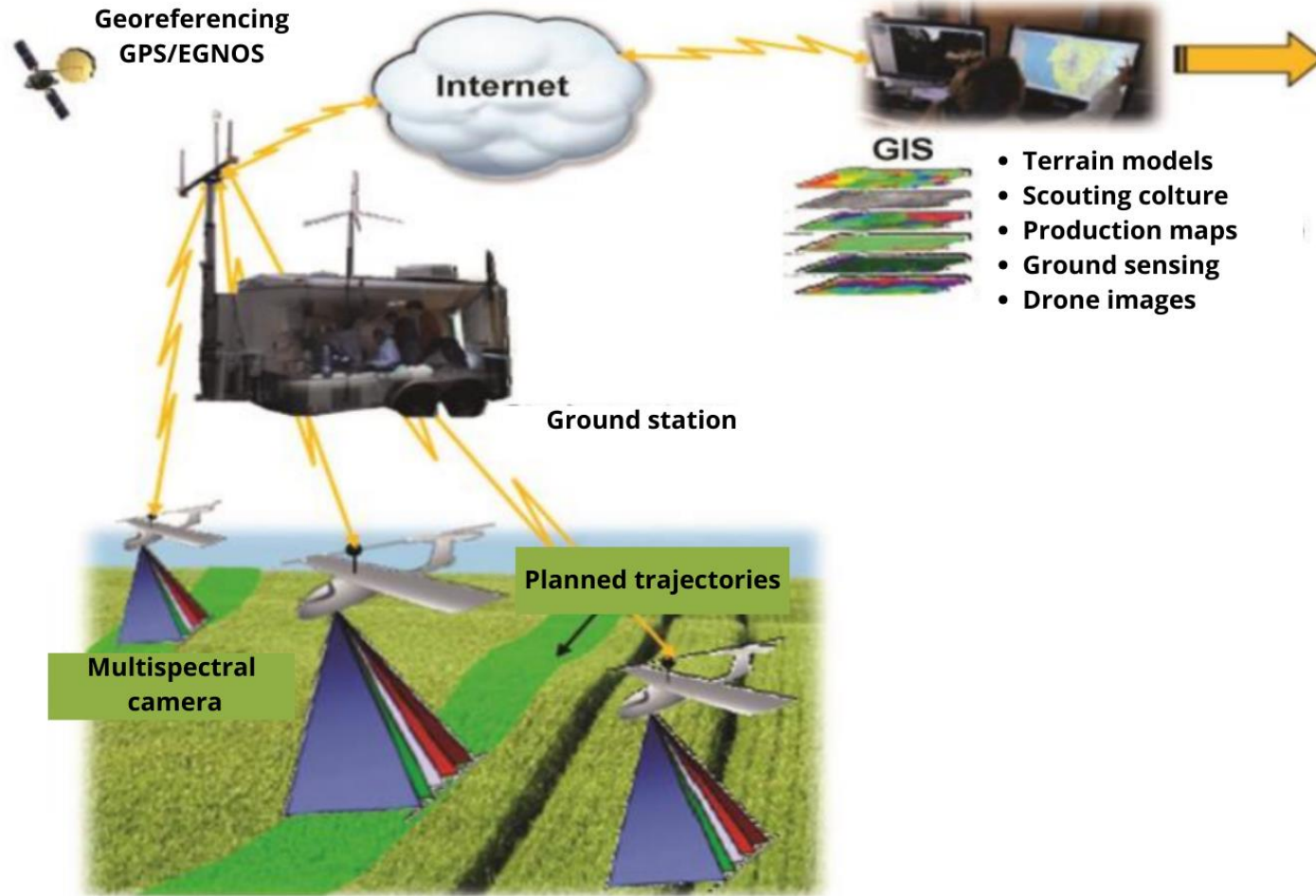
VS

Digital Yard



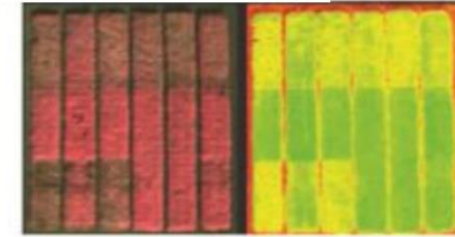






Stress recognition

- Water
- Nutritional
- From weeds
- From diseases



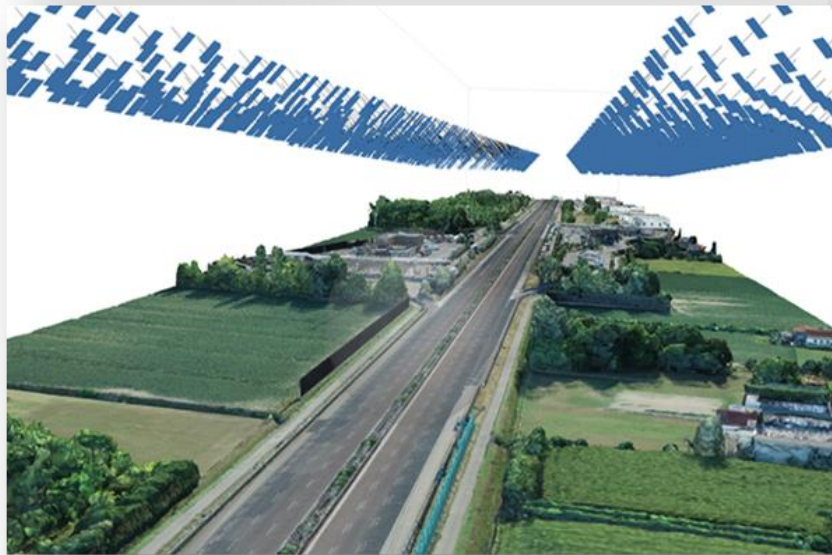
Prescription maps










- Waters
- Fertilisers
- Herbicides
- Pesticides



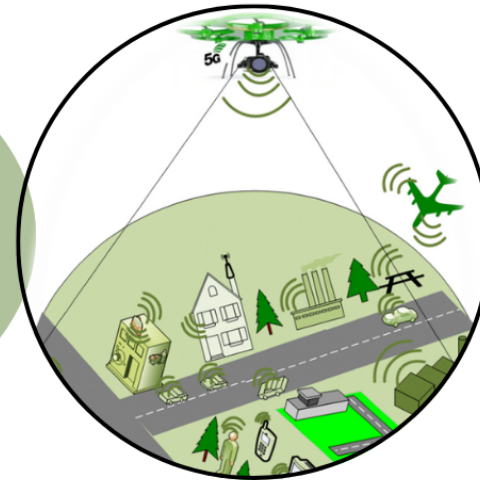
Variable rate distribution

Explanatory diagram of precision agriculture with drones. Source: Paolo Amirante, Università degli Studi di Bari



 Orthophoto	 Vegetation survey	 Road cadastre
 GIS-SIT analysis	 UST UNMANNED SYSTEM & TECH	 Topography
 BIM	 Tactical surveys	 3D reconstructions

In the next steps of expansion and updating ...



FULL DIGITISATION OF GREEN MANAGEMENT

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**THANK
YOU**

GRAZIE

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