Earth observation and space big data for a sustainable agriculture
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(e-Geos)
We tailor Geoinformation Services & AI Earth Observation solutions for operational needs over land and sea, based on multi sensors & geo–spatial data combined with IoT Big Data. We are COSMO-SkyMed constellation exclusive commercial worldwide distributor.
Investors Can Get an Eye in the Sky

The latest technological innovation for data-hungry hedge funds is a fleet of five drones that have one unorthodox component called Planet Labs. The company, founded by three former NASA scientists, has been described as “revolutionizing” the world of high-definition satellite images taken from space. These drones, made at the urging of hedge fund clients, are expected to revolutionize the way investors track stocks.

Tiny Rover

I Big data arrivano dall’alto dei cieli

L’accordo di Leonardo con Spacsight rafforza la presenza italiana nel settore dei mini-satelliti. Sempre più strategici e rilevanti per la comprensione del contesto del mondo, le immagini spaziali permettono di analizzare la realtà a scala planetaria, fornendo un’ampia gamma di applicazioni.

Earth-i leads consortium to develop on-board processing for video imagery from space

Il grande occhio

Così si guarda il respiro della Terra

Intelligenza artificiale

Un progetto ambizioso: capire l’evoluzione del mondo grazie alle immagini trasmesse dai satellite e analizzate dalle AI. È possibile fare, dove e quando intervenire.

L’approfondimento
despite delay in some announced programs the number of EO satellites in orbit and the corresponding amount of generated data starts to grow fast.

use of EO data is exponentially growing and large potential through analytics exists to feed new information driven services
Geo Spatial paradigms and Business Models are fast changing

- Data, more and more, are just a part of the game
  - High temporal resolution to complement high and very high spatial resolution sensors
  - Federation of space assets through smart multi missions tasking platforms
- EO data definitive entered in the wider Big Data Analytics & IoT game
- Convergence in the data analytics and AI business for the EO
- Advanced algorithms, ML/DL/AI techniques are essential to address the Information driven market push for timely delivery of reports/insights
• No more images but information, tailored according to end user needs and delivered in different formats
a farming management concept based on observing, measuring and responding to inter and intra-field variability in crops. The goal of precision agriculture research is to define a decision support system (DSS) for whole farm management with the goal of optimizing returns on inputs while preserving resources.

a whole-farm management approach using information technology, satellite positioning (GNSS) data, remote sensing and proximal data gathering. These technologies have the goal of optimizing returns on inputs whilst potentially reducing environmental impacts.

managing crop production inputs (seed, fertilizer, lime, pesticides, etc.) on a site-specific basis to increase profits, reduce waste and maintain environmental quality.
ADOPTION OF EARTH OBSERVATION DATA FOR PRECISION FARMING

COLLECTION

PROCESSING
ADOPTION OF EARTH OBSERVATION DATA FOR PRECISION FARMING

Average area per farm:
- Average Italian farm: 5 ha arable
- 2 ha permanent crops

Average area distribution per farm:
- Eurostat

Images of land and flags of different countries.
ADOPTION OF EARTH OBSERVATION DATA FOR PRECISION FARMING

From satellite to fertilization in 4 steps

1. Vegetative expression mapping

2. Optimised positioning of field surveys

3. Modulation map

4. Geolocated and modulated fertilization
**PRECISION FARMING COSTS**

**BENEFITS**
- Cost savings
- Better yield

**SET UP COSTS**
- Assisted guidance (2-4k€)
- Semi-automatic guidance (18-40k€)
- Semi-automatic guidance + VRT (28-50k€)

**THE CHALLENGE OF EO DATA**
- To enable low cost services based only EO data
- Low set-up and management costs
- Services that can be integrated with other data sources
- Supporting small/medium sized farmers

**MINIMUM FARM SIZE FOR CORN**
- Assisted guidance 15 ha
- Semi-automatic guidance 30-60 ha
- Semi-automatic guidance + VRT 40-80 ha
Identification of flooded area

Identification of cotton plots

Identification of cotton growing stage

Analytics delivery

**EO DATA FOR AGRICULTURE INSURANCE**

- Damage assessment based only on EO data
- Relevant reduction of surveys cost
- Introduction of parametric insurance contracts based on EO-provided information
BENEFITS

• support farmers and improve agricultural productivity, ensuring a stable supply of affordable food
• help tackle climate change and the sustainable management of natural resources
• maintain rural areas and landscapes across the EU

SATELLITE BASED SERVICES

• Farmers activity markers
• Crop confirmation
EO DATA FOR COMMODITIES TRADERS

BENEFITS

• Identifies acreage of valuable crops
• Identify crop conditions and availability that can have impact on market price
• Better planning crop transportation

SATELLITE BASED SERVICES

• Crop analytics
• Crop monitoring analytics
AgriGeos platform collecting all services dedicated to agriculture

- Imaging Service
- CROP ANALYTICS
- DAMAGE MAPPING
- SOLAR IRRADIANCE
- EU-CAP SERVICES
- CROP MAPS
- GEO TAGGING
- CROP FIELDS COMPARISON
- PRESCRIPTION MAPS
- CROP MONITORING
- HISTORICAL ANALYSIS
- FIELD ANOMALIES
- SURVEYS PLANNING
- WE SCAN THE EARTH
- WE MONITOR THE CHANGES
- WE GIVE MAPS & REPORTS