



How Galileo and EGNOS are being used in agriculture today?

Galileo, EGNOS, and Copernicus for Agriculture

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How EGNSS helps farmers?



Market Development is a key activity within the European GNSS Agency



At all levels of the value chain



For each market segments



Market & User Knowledge

Market and technology monitoring and forecasting (i.e. market and tech reports)

User and industry consultations (i.e. user consultation platform, receiver workshops)

User satisfaction monitoring (i.e. EGNOS and Galileo surveys)

Demand Support

Definition of roadmaps with key stakeholders

Cooperation with receivers and apps developers

Technical support to EC to ensure EGNSS use in regulated applications

Offer Creation

Creation of new "made in Europe" products and services

HORIZON 2020

Today's way of life is transforming agriculture needs



World **population** is growing



Climate change



Impact of **urbanisation** on rural labour



Eating habits and **consumption patterns** are changing



Shrinking of arable land



Price and availability of energy



People are "connected" and globally networking

Precision and Digital Farming help to cope with the food, agriculture and climate challenges

Bigger machines are no solution for today's challenges



Image courtesy CLAAS



Image courtesy MM Channel



However, the uptake of Precision Farming is still very low in Europe



Image courtesy Aerovision



Precision agriculture without GNSS

Ageing
workforce



Farm size
structure



Machine
renewal



Key market and technology trends in agriculture



Increased connectivity (**IoT**), advanced sensing capabilities (e.g. via **satellites** and **drones**) and **big data**

GNSS has become an integral part of smart, connected and integrated farm management solutions and a key driver for precision farming across the whole crop cycle

Precision Farming market is growing at a **CAGR of 14%**, driven by increased adoption of **GNSS-enabled telematics solutions**

5G: a key to unlock the benefits of **digital farming**

Vertical Farming and inter-cropping



Spoofing, the emerging threats across all segments



Image courtesy Aerovision



User needs drive EGNSS: the Users Consultation Platform



- The interaction with users is essential for the success of E-GNSS
- User needs drive E-GNSS
- During the UCP all available knowledge on user needs shared
- Discussed with industry leaders, users and experts to shape the future of Galileo Services



USER REQUIREMENT DOCUMENT



European GNSS powering cutting edge solutions, from R&D to the market



The **GreenPatrol** project makes direct use of the added value provided by European GNSS to develop an **innovative robotic solution for Integrated Pest Management in greenhouses**

Project relies on increasing accuracy provided by Galileo, thanks to its signal strength inside the greenhouse and to the availability of multiple frequencies



Enabling the digitisation of agriculture government controls through EGNSS



EGNSS4CAP

Enabling the digitalisation of agri-government controls through Galileo & EGNOS



Open Source Android application using GNSS raw measurements and **EGNSS differentiators (Galileo dual-frequency and Galileo authentication service OS-NMA)**

- Increasing accuracy
- Increasing robustness against data manipulation (position and time)
- Can be integrated and customised for end-user solutions
- Generating input for the Integrated Administrative Control System (IACS) of the Common Agricultural Policy (CAP)

Get the app: www.EGNSS4CAP.eu