eMAPS

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Key facts

Full name
eMAPS

Project call number
GSA/GRANT/08/2017

Project call
Development of GNSS receiver technologies for Premium and General mass market

Funding
749 677,61 EUR

EU contribution
524 774,32 EUR

Topic
Mass Market

Market segment
Road, Agriculture

Project start/end
01/08/2019 – 31/05/2022

Galileo differentiators
Multi-frequency GNSS

Context and motivation

Positioning and navigation are key pillars of the GNSS market, being at the basis of PNT (positioning, navigation and timing) service provision. It is also worth highlighting how the requirements in terms of accuracy and reliability for PNT applications have become increasingly stringent.
The eMAPS project set out to tackle the expected challenges inherent to smartcities and autonomous mobility, as well as those characterising the agriculture sector. Within the scope of the former macro-area, solutions such as smart navigation for connected car users, real time fleet management for city public transport, and infrastructure maintenance monitoring for city planners were developed. On the other hand, eMAPS targeted agriculture-oriented solutions with applications such as yield forecast, and detection of plant sickness and anomalies.
By developing **an innovative, low-cost, compact, high-performance premium receiver combined with cutting-edge algorithms,** eMAPS provides **high accuracy positioning** and **high-definition mapping**, both of which are extremely beneficial to all involved stakeholder groups.

Targeted GNSS innovation

High-accuracy positioning and high-definition mapping

Targeted Product

GNSS receiver, Mobile application

Scope

The main objective of eMAPS is the development of a **low-cost, cloud-based multi-sensor premium mass market platform** which hybridises data generated by a multi-frequency multi-constellation GNSS receiver, an Inertial Measurement Unit (IMU) sensor, and cameras.
As a result, eMAPS provides a targeted **30cm vehicle's 2D position accuracy (95%) and high-definition urban maps** enabling benefits for the cross-urban community, as well as **enhanced maps for smart viticulture** applications.

Challenge & technical solution

High accuracy and map definition posed key challenges to eMAPS. To overcome these issues, through the deployment of the eMAPS platforms, **the accuracy and the definition of the maps are continuously improved by the amount of real environment data collected by the fleet of equipped vehicles**.
In addition, eMAPS is not only a passive user of these open license platforms but also an active player and contributor to them, in order to optimise the dissemination of results to the European citizens.

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