

## Press Release

# ELEVATING POSITIONING AND NAVIGATION IN CITY-BASED CONSUMER APPS

Horizon Europe project **egeniouss** – led by Austrian Institute of Technology – develops cloud-based localization service for positioning and navigation in cities.

*Vienna, March 23, 2023.* The EU project **egeniouss** makes accurate and reliable navigation available for everyone. Navigation and positioning apps for cyclists, solutions for professional surveyors and mappers, drone operators and automated driving applications rely on satellite-based navigation signals. But in cities, urban canyons – shaped by tall buildings – often interrupt these satellite signals and make many applications unreliable, unsafe or even unusable. Cyclists lose track, turn late, and evoke critical situations which in the worst-case can lead to accidents. Safety for autonomous driving requires exact and reliable positioning at all times.

### Three complementary use cases to explore the full potential of AAA-PNT

In collaboration with six European partners, the AIT Center for Vision, Automation & Control (VAC) successfully started the 3,5 years lasting Horizon Europe project with three exemplary use cases - a cycling app, a surveying app, and drone delivery (e.g. for medical supplies) to develop “**AAA-PNT – Affordable, Accurate and Assured Positioning, Navigation and Timing**”. The **egeniouss** GNSS- and cloud-based visual localisation technology will be applicable to any device with a camera, computing power and a GNSS receiver (e.g. smartphones and -watches, tablets, drones). By the choice of the use cases, **egeniouss** contributes to more safety and comfort making our cities more liveable in the age of digitalisation. Two smartphone-based use cases, namely bicycle navigation and smartphone-based surveying & mapping, and one robotic use case – drone delivery – will demonstrate complementary features of the combined EGNSS – Visual Localisation service. Coordinator Phillipp Fanta-Jende from the VAC, emphasises that “Although **egeniouss** will be compatible with other satellite navigation systems, such as GPS, GLONASS, BeiDou etc., only the European GNSS infrastructure offers the ideal foundation to enable **egeniouss**’ full potential to democratise high-performance positioning and leverage its high transferability to other value-added services.”

### **egeniouss** base technology as a global market driver

Besides the three quick starters – firstly GNSS-based mapping, secondly navigation & tracking for cyclists and pedestrians and thirdly drone based operations - **egeniouss** lays the basis for the improvement of other location-based and -dependent services and the development of still unknown service opportunities in growing market segments (e.g. wearables in the health & lifestyle market) and fills technological gaps for previously hyped solutions offered too early in the markets (e.g. AR/MR augmentation devices like Google Glasses and other geo-advertising and geo-tagging services in the tourism and social network segments). Drone-based delivery will be applicable to the emergency market to fulfil the high standards in safety & time critical applications. **egeniouss**-equipped tramways in urban environments (rail market) can use **egeniouss** for accurate and low-cost inspection of rail infrastructure and enable accurate tracking of trams for enriched passenger

information systems. Autonomous vehicles greatly benefit from **egeniouss**' accurate localisation capability for safety reasons and better navigation.

### Maximising the progress of all research fields to achieve the eager technology

Ismael Colomina, CEO and Chief Scientist of GeoNumerics, a high-tech SME in GNSS research, remarks, that “**egeniouss** is an ambitious initiative. Unlike other navigation projects, this one is based on a multidisciplinary approach, from robotics and computer vision to advanced satellite geodesy. These synergies will enable great progress in these fields.”.

### The potential of augmented European GNSS

It is imperative that satellite-based positioning, navigation, and timing (PNT) run smoothly to support numerous infrastructures, such as communication, transport and even finance. When signals from global navigation satellite systems (GNSSs) are interrupted, it can pose a threat to safety and security. Meanwhile, satellite augmentation systems that enhance GNSS performance can be very expensive while not solving all problems at once. The goal of the EU-funded **egeniouss** project is to improve the existing European GNSS Galileo with its adjunct services by developing an accurate and – highly relevant for consumer apps – affordable cloud service that can overcome common GNSS issues, such as multipath, jamming or spoofing.

#### More on

[Projekt \*\*egeniouss\*\*](#)

[Horizon Europe - CORDIS](#)

[AIT Center for Vision, Automation & Control](#)

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#### Keywords

#navigation #GNSS #positioning #mapping #vision  
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#### Fact Box

##### Facts & Figures:

- 3 Mio. EUR funding
- 7 partners from 4 countries
- December 2022 – May 2026

##### Partners:

- AIT - Austrian Institute of Technology (AT)
- Technical University of Braunschweig (GER)
- GeoNumerics (ES)
- Crayon (AT)
- CATUAV (ES)
- Centro Español de Logística (ES)
- OPENGIS.ch (CH)



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