# ERASMO

**E**nhanced **R**eceiver for **A**utonomouS **MO**bility

## Key facts

**Full name**
**E**nhanced **R**eceiver for **A**utonomouS **MO**bility

**Project call number**
GSA/GRANT/03/2018

**Project call**
Enhanced Receiver for autonomous driving/navigation

**Funding**
3 465 593.10 EUR

**EU contribution**
2 000 015,79 EUR

**Topic**
Road

**Market segment**
Road

**Project start/end**
01/06/2021 – 31/05/2024

**Galileo differentiators**
Multi-frequency GNSS

## Context and motivation

Autonomous Driving is transforming the mobility concept enhancing road safety, reducing traffic and, as a consequence, pollution from vehicle exhaust, and will increase comfort for both drivers and passengers. Indeed, the 'Autonomous Driving' concept aims to transfer the vehicle control function from the human driver to the automated system, which has to be aware of its location, sense the surrounding environment, and navigate making decisions without human input. This application belongs to the demanding category of Safety Critical applications, as its failure may have serious consequences for people, properties, and the environment. Therefore, autonomous cars need highly performing positioning engines making optimal use of a complete set of sensors complementing each other in a tightly hybridised solution, necessarily based on GNSS technology, due to its unique capacity of providing accurate absolute positioning and precise timing information.
Within this context, the ERASMO project was conceived with the aim to develop an **innovative engine to provide localisation estimates for the navigation of automated vehicles with precision, integrity and high availability**, by leveraging the information being broadcasted by the Galileo GNSS as well as the combination of absolute and relative localisation methods.

### Targeted GNSS innovation

GNSS for autonomous driving

### Targeted Product

GNSS-based On Board Unit (OBU)

## Scope

ERASMO focuses on the development of an **innovative positioning On-Board-Unit (OBU) that will enable fully automated driving**.
To meet the required performance targets, the proposed OBU makes use of a dedicated communication channel in order to take advantage of the cooperative positioning concept. The output of the ERASMO project is a OBU receiver close-to-market prototype, which corresponds to reaching a Technology Readiness Level (TRL) of at least 7, and is deemed to be **cost-efficient.**

## Challenge & technical solution

**Localisation estimates** for the navigation of automated vehicles **with the highest level of precision, integrity, and availability** are among the key challenges in ERASMO.
To overcome them, the OBU **leverages Galileo GNSS broadcasted information as well as the combination of absolute and relative localisation methods.**
The ERASMO solution allows as well to determine the relative localisation of the vehicle equipped with such OBU by leveraging the perception sensors available for autonomous driving as well as a priori information stored in navigation maps.

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**GMV Aerospace and Defence, ES**
**Grupo Mecanica del Vuelo Sistemas, ES**
**Renault, FR**
**VVA Brussels, BE**
**Septentrio, ES**
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