

# Enhanced Receiver for Autonomous MObility

GSA/GRANT/03/2018



## ERASMO software architecture

### About ERASMO project

Funded by the European Union Agency for the Space Programme (EUSPA), The ERASMO project was officially launched in June 2021. It aims at developing an innovative positioning On-Board-Unit (OBU) to enable highly automated driving. The project is being carried out by a consortium comprising of Renault, Idneo, Kudan Germany GmbH, GMV, ZN, Septentrio and CNRS-UTC.

### The solution

The architecture and algorithms of the ERASMO software are designed to easily handle several sources of position information like High-Accuracy GNSS module, Road Features Map-Matching (RFM) and Visual-Inertial Navigation System (VINS). This cost-effective combination of different sources of positioning information allows to provide a robust high-accuracy solution. Expect good performances in a wide range of environments even if one of the positioning sources is degraded, as well as consistency checks that increase the safety of the provided navigation

The ERASMO system estimates the vehicle position alongside the associated protection levels.

### Key advantages of the ERASMO solution

- 1 Applicable to different types of vehicles** and integral part of localisation dependent vehicle navigation systems.
- 2 Uses signals from the Galileo constellation** by means of a Global Navigation Satellite System (GNSS) chipset and combines information from the vehicle's sensors with information from exteroceptive sensors that capture the immediate surroundings.
- 3 Includes:**
  - V2X communications capabilities for cooperative information exchange between vehicles and the infrastructure
  - GNSS-based high-precision and multi-sensor fusion algorithms to provide the connected autonomous vehicle with positioning integrity.
- 4 Embeds the solution by means of an innovative positioning OBU** that integrates the different system components.

# What is ERASMO software architecture based on?

It is based on a combination of a High-Accurate GNSS absolute position solution and relative positioning sources in order to:

- Use the most pertinent sources of position information
- Output position estimates with its associate protection layer (Integrity)
- Perform consistency checks

# What is capable of?



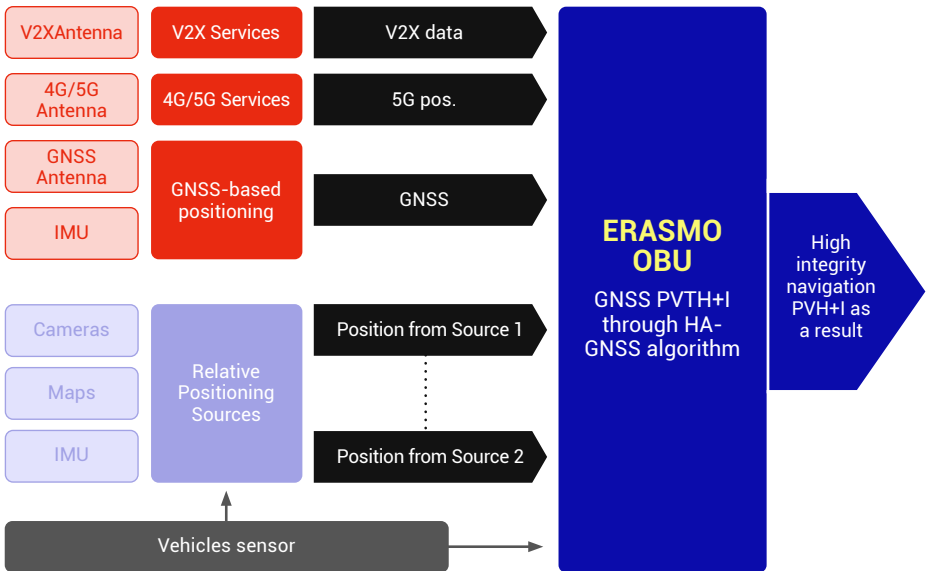
**Handling several sources** of position information



**Managing a single output** with its corresponding integrity layer



**Performing consistency checks** that increase the safety of the provided navigation



\* IMU - Inertial Measurement Unit  
\* PVTH+I - Positioning, Velocity, Time and Heading + Integrity

Find out more on: @ERASMO\_GNSS ERASMO

ERASMO - Enhanced Receiver for Autonomous Mobility: <https://erasmo-gnss.eu/>

