



ESCAPE

EUROPEAN SAFETY CRITICAL APPLICATIONS POSITIONING ENGINE

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ESCAPE DEVELOPS TODAY THE POSITIONING ENGINE FOR TOMORROW'S DRIVERLESS CAR

Under the flagship of the European GNSS Agency and its Fundamental Elements programme, ESCAPE develops an innovative positioning engine enabling the deployment of highly automated driving functions. The core of this positioning engine is the European global navigation satellite system, Galileo, which offers enhanced precision, high availability and maximum reliability.

Ability to exploit the Galileo Open Service authentication service

GNSS/ Galileo multi-constellation multi-frequency chipset for road applications

Also compatible with Galileo Commercial Service



Hybridization of cameras, maps, vehicle sensors, and GNSS integrated in a tight coupling filter

Provision of an integrity layer for the end-user applications

Integration of ESCAPE technologies into an engine close to commercialization



European Global Navigation Satellite Systems Agency



Fundamental Elements

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"TO NAVIGATE AUTONOMOUSLY AND SAFELY, VEHICLES REQUIRE PERCEPTION SYSTEMS THAT LOCATE, RECOGNISE, IDENTIFY, AND CLASSIFY OBJECTS AROUND THEM. THE MORE COMPLEX THE NAVIGATION FUNCTIONS, THE MORE SENSORS ARE NEEDED TO ACHIEVE THE DEGREE OF ROBUSTNESS REQUIRED TO DRIVE SAFELY IN COMPLEX TRAFFIC CONDITIONS. THIS IS WHERE GNSS-BASED ABSOLUTE LOCATION ESTIMATES COME IN."

ESCAPE AIMS AT CREATING A NEW PARADIGM OF SAFETY-ORIENTED NAVIGATION TECHNOLOGY FOR VEHICULAR APPLICATIONS

The project combines three key factors:

- 1 THE **SMART EXPLOITATION OF DIFFERENT LOCALIZATION DATA SOURCES**, INCLUDING GALILEO AND GPS MULTI-FREQUENCY NAVIGATION SATELLITES, INTELLIGENT CAMERAS, INERTIAL MEASUREMENT UNITS, VEHICLE ODOMETRY AND ADVANCED NAVIGATION MAPS
- 2 THE **UNIQUE PROVISION OF REAL-TIME INTEGRITY LEVEL**, ASSOCIATED TO THE LOCATION ESTIMATES. THIS INFORMATION EXPRESSES A "DEGREE OF TRUST" OF THE LOCATION INFORMATION FOR SAFETY-CRITICAL APPLICATIONS THAT INVOLVE HIGH LEVELS OF AUTOMATION
- 3 THE **FULL INTEGRATION OF THE ESCAPE ENGINE ONTO A VEHICLE WITH AUTONOMOUS DRIVING CAPABILITIES**, AND ITS TEST ON SEVERAL DIFFERENT REFERENCE PATHS AND CONDITIONS

TOP-TIER PROFESSIONALS WORKING TOGETHER ACROSS EUROPE



If you need some information about the project and its activities, you can contact Jessica García Soriano, ESCAPE Project Leader, FICOSA - Advanced Communications Dpt.

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