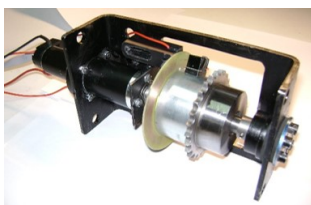


# AUTOSTEERING. Equipment for automatically controlling the steering

Device for the automatic steering control of any road vehicle without driver intervention and minimal modifications in the internal mechanical of the vehicle.



## Contact information

**Address:** INSIA-UPM, Campus Sur UPM. Carretera de Valencia (A3), km.7, 28031, Madrid

**Phone number:** 910678850

**Website:** [insia-upm.es](http://insia-upm.es)

**Email:** [felipe.jimenez@upm.es](mailto:felipe.jimenez@upm.es)

## Technological Offers type

Technological solutions

## Research and innovation areas

- Climate, Energy and Mobility
- Digital Technologies, Artificial Intelligence, Cybersecurity, 5G, Robotics
- Industry, Materials and Circular Economy



Available from: 2020

## Where?

University Automotive Research Institute (INSIA) Vehicle and Transport Safety and Environmental Impact Research Group (GIVET)

Keywords: | [transport](#)

## Brief description of the technology solution and the added value it provides

The present invention is an equipment that allows controlling the steering of a vehicle from a controller by automating the steering wheel and without driver intervention. This solution overcomes the problems found in the state of the art. Thus, it is independent of the type of vehicle and type of steering assistance (electric or hydraulic), including the presence or absence of such assistance. This invention does not enter permanent changes on the vehicle or interfere with the driving task. In addition, the coupling or decoupling of single mode is controlled automatically and no manual and other developments, being able to carry out moving and instantaneously, from the same processor that controls the direction, and the driver does not lose complete control the direction of the vehicle. The device has been mounted on a vehicle and used for the realization of an automatic collision avoidance system.

## Description of the technological base

The solution refers to an equipment that allows controlling the steering of a road vehicle from a controller without driver intervention by automating the wheel.

Consequently, it is a device incorporated in a motor vehicle which includes an assembly comprising an electric motor which drives a toothed wheel which engages on a chain secured to the drag another steering column device gear.

To link or unlink as desired at any time the rotation of the electric motor and the steering column, changing from manual to automatic or vice versa, a clutch consists of an electromagnet is introduced.

***“Universal device for any vehicle type to control the steering of a road vehicle without driver intervention”***

## Market demands

- **Sector 1: ICT applied to mobility, intelligent transport systems**
  - The autonomous vehicles have been identified as a trend for 2014 by different media.
  - Autonomous driving systems: Under certain conditions, the autonomous driving is safer and more efficient alternative, finding studies that claim that autonomous driving dramatically reduce accidents and road deaths.
  - Among the objectives of European Horizon 2020, ICTs applied to transport plays an important role, one of the specific topics using automation.
  - It is expected that autonomous vehicles not only reduce accidents (some estimates talk of rate close to zero accidents), but also emissions and pollution due to drive in a more efficient way vehicles.
- **Sector 2: Transport application**
  - Numerous research about transportation need to automate vehicles to test their developments, for example, collision avoidance systems for autonomous driving or even as support for inductive load dynamic systems.
  - After successful testing by Google, most vehicle manufacturers have been introduced in the autonomous vehicle race.

## Competitive advantages

- The solution is independent of the type of vehicle
- The mounting of the technology involves no permanent modification to the vehicle.
- The steering control is not bound to give orders through the internal bus vehicle communication.
- The engagement or disengagement of the autonomous mode is automatically controlled, and can be carried out in motion.
- The driver does not lose complete control of the direction of the vehicle.
- The interlock and support unit is removable.

***“By 2050 most vehicles will be autonomous vehicles”***

## Development stage

- Concept
- Research
- **Lab prototype**
- Industrial prototype
- Production

## Contact

### Contacto Autosteering

Felipe Jiménez

e: felipe.jimenez@upm.es

José Eugenio Naranjo

e: joseeugenio.naranjo@upm.es

### Contacto UPM

Área de Innovación, Comercialización y Creación de Empresas

Centro de Apoyo a la Innovación Tecnológica - UPM

e: innovacion.tecnologica@upm.es