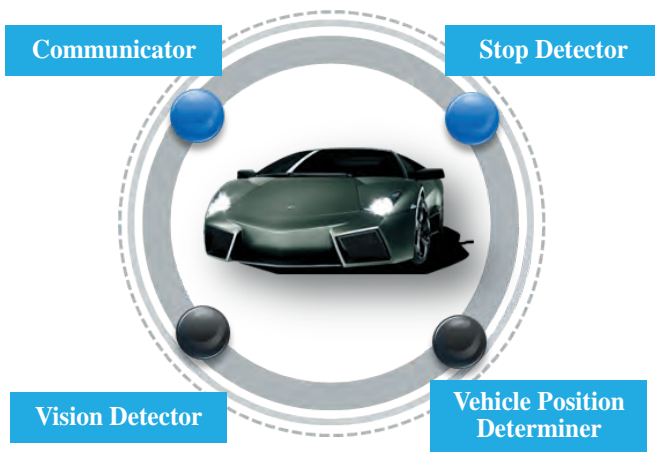


10

Method of determining road lane



Inventor

Senior Researcher Woo Yong KANG

Team

Satellite Navigation Team

Status of right

• US : 9562777

Title

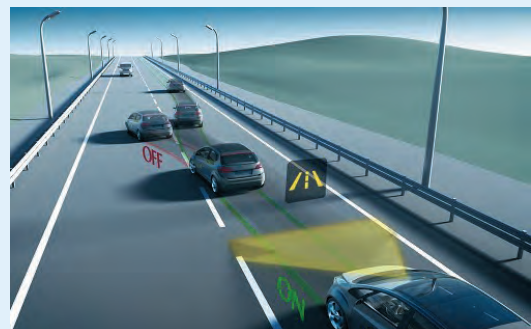
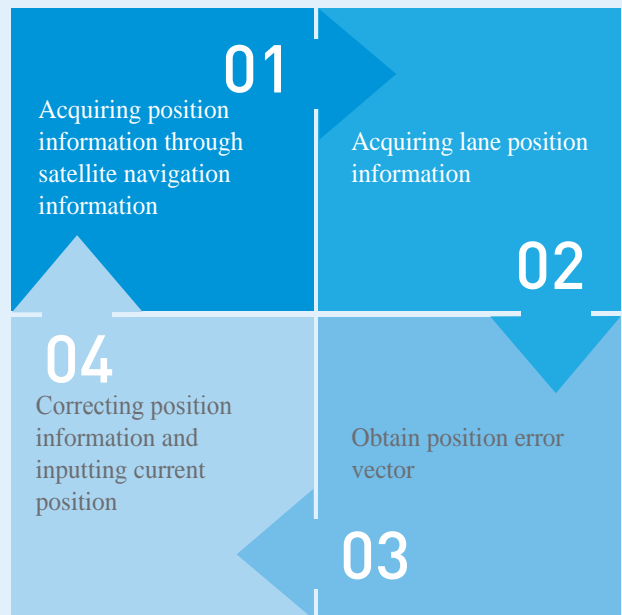
• AUTONOMOUS VEHICLE ASSISTANCE DEVICE

TLO of the KARI

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R&D Performance Diffusion Division

Outline of Technology

This technology uses carrier-based differential GPS information having accuracy of recognizing a road lane and a precise electronic map in which road lanes can be identified. Also, a steering model of a vehicle is used to further exactly determine a road lane on which a current vehicle is being driven.



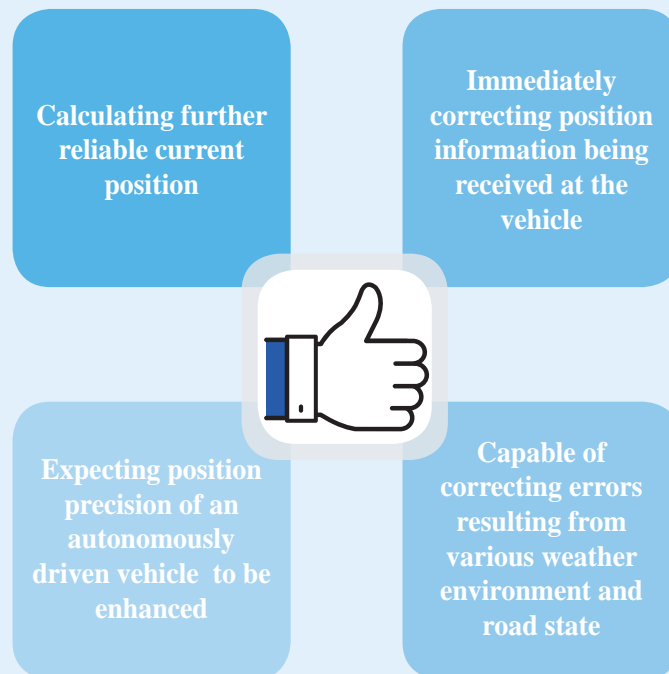
Technical features and advantages

Distinctiveness

- Vector error information in a heading direction of a vehicle on a lane and that in a direction perpendicular to the heading direction of the vehicle are received to be used for correction of a position.
- Position information of the vehicle being currently driven is analyzed to determine a current position, and position error information is reflected.

Technical effects

- Due to an external environment such as a satellite state or weather, an error may be present in vehicle position information based on the satellite navigation information. It is possible to further precisely verify a current position of the vehicle by correcting position information being received at the vehicle based on position error information measured at the fixed body.



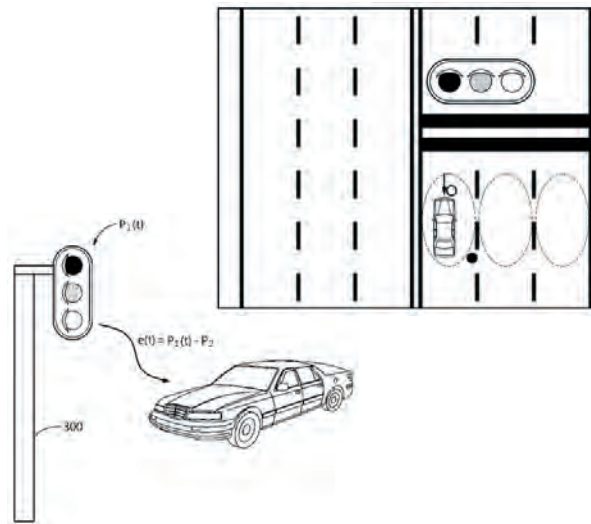
Technical detail

- This technology has great significance in view that in the field to which this technology pertains, limitations of vehicle position recognition using a general GPS satellite navigation code are overcome, and further enhanced position precision can be accomplished.

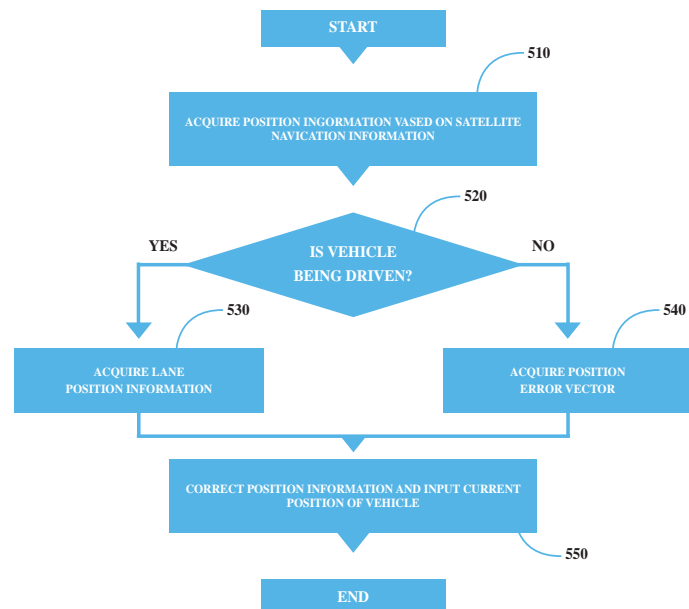
Method of determining road lane

Technical detail

Process of generating/transmitting position error vector and interaction



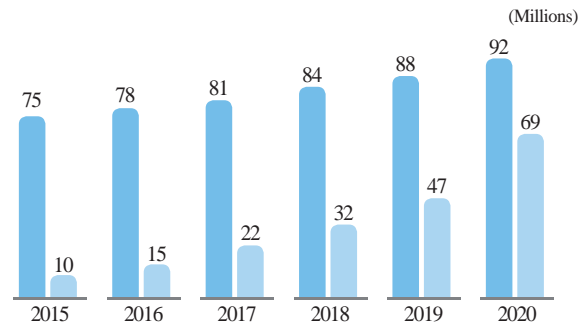
Flowchart illustrating flow of autonomous vehicle assistance method



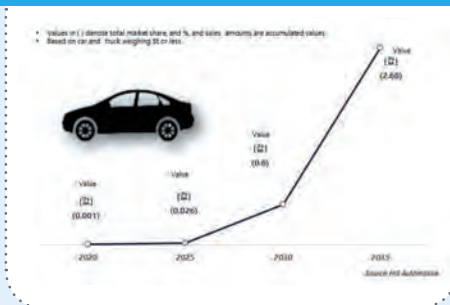
Market and future prospect

• From a long-term point of view, the connected car market is in an intermediate step between development of driverless driving and current vehicle industries. Also, the connected car market that exhibited 7 millions of cars in size globally as of 2014 is expected to reach 69 million cars in 2020 and to rapidly grow.

Average annual growth rate of 45%

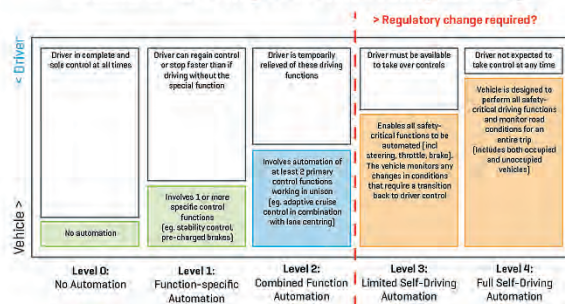


Estimated trends in sales of global autonomous vehicle

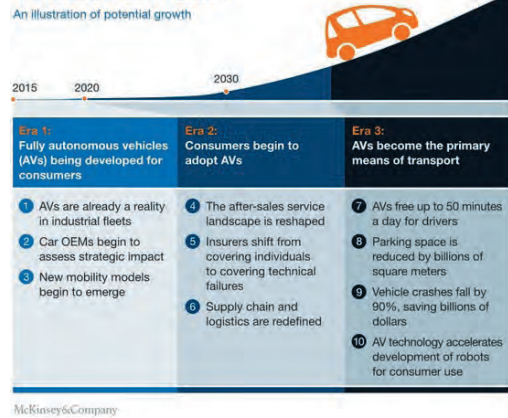


• Most of the connected cars in North America are purchased in the U.S., and about 20 million cars (95%) out of new 21 million cars to be produced in 2020 are expected to be mounted with the automatic Internet connection option.

Levels of driving automation (NHTSA)



The self-driving vehicle revolution



Applications

Vehicle-to-vehicle (V2V) : Multi-home communication technology

- Warning such as emergency brake, front collision warning, supporting intersection safety, and blind spot and lane change warning
- Warning for passing, and warning for out of control

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