

Advanced Road Infrastructure Policy to Prepare for the Era of Self-Driving Cars

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- As self-driving cars are expected to be commercialized around 2020, it is expected that it will be difficult to improve road efficiency due to an increase in traffic accidents caused by unexpected events, etc.
 - Traffic accidents may increase given that self-driving cars show limited recognition of existing road infrastructure and thus cannot effectively respond to abrupt changes in road, traffic, and environmental conditions.
 - Self-driving cars have limitations regarding understanding of unpredictable behavioral patterns of road users (drivers, pedestrians, bicycle users, etc.), which raises safety issues.
 - If self-driving cars are operated alongside general cars, platooning is impossible. This is expected to cause significant difficulties in improving road efficiency.

- In order to proactively address potential issues from the operation of self-driving cars together with general cars, a phased measure is needed depending on the ratio of self-driving cars, and it is necessary to implement an advanced road infrastructure policy customized to each phase.

| Policy Suggestions |

The adoption of self-driving cars should be divided into three phases (early stage of adoption, activation, and stabilization) and proactive measures should be implemented in consideration of the characteristics of each phase.

① Early stage of adoption: To support safe and efficient operation of self-driving cars by upgrading existing road infrastructure.

② Activation: This stage refers to a situation where the ratio of self-driving cars reaches a certain level (about one third of total traffic volume). Self-driving cars should be segregated from general cars (ex: designation of

roads dedicated to self-driving cars) to maximize road capacity and increase the efficiency of road usage for the purposes of reduction in traffic congestion and greenhouse gases.

③ Stabilization: If the environment for self-driving cars is stabilized and there is demand for super highways, it is necessary to review policies to establish new road infrastructure (roads dedicated to self-driving cars) with enhanced design speed (ex: upper limit of 160 km/h) and improve existing systems.