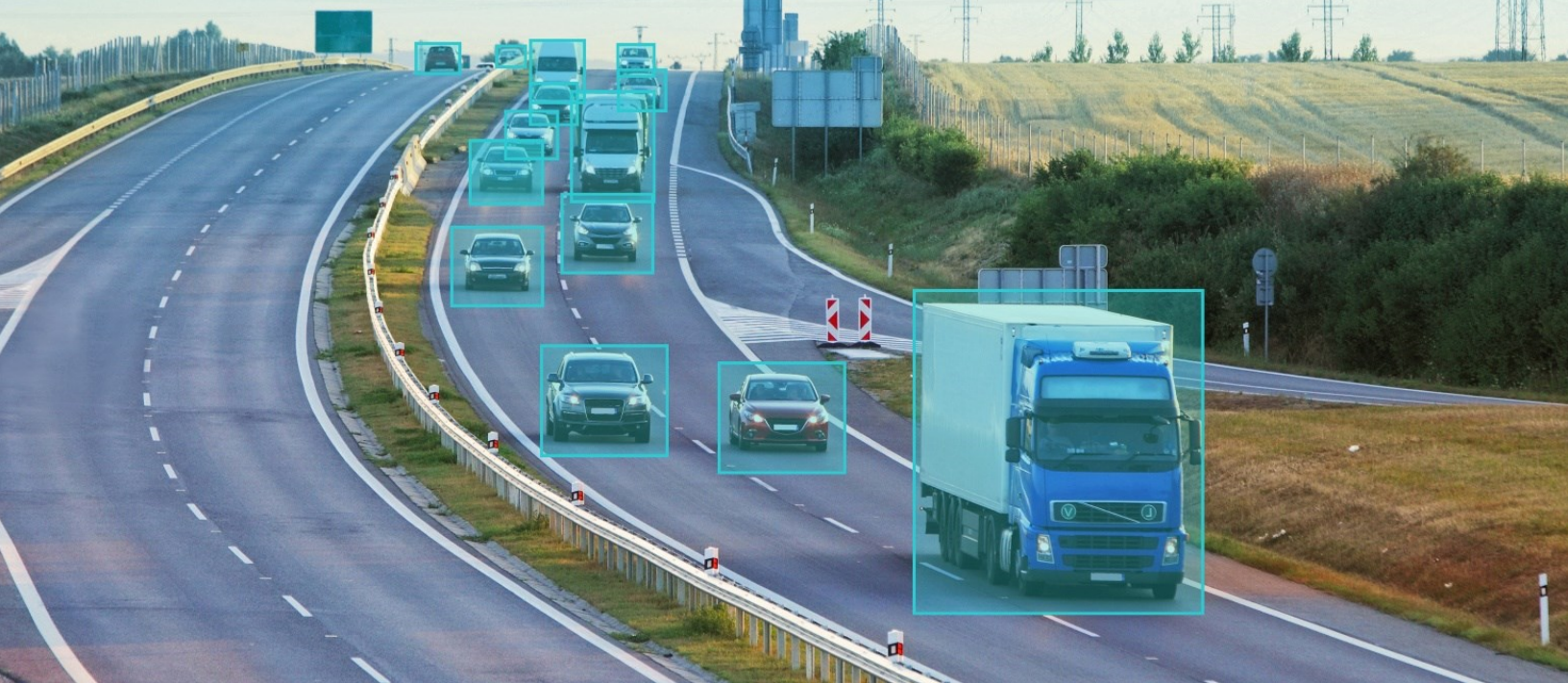


WHITE PAPER

South Korea Accelerates Commercialization of Autonomous Vehicles



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Abstract

Not all countries are equally invested in setting ambitious goals and taking meaningful actions to encourage safe and reliable autonomous driving practices. The thoughtful approach and commitment of the South Korean government from both a local and federal level in developing regulatory policies and in the urban preparedness for the commercialization of autonomous driving is an example for other countries that have not already done so to consider.

In September 2022, the Ministry of Land, Infrastructure and Transport of South Korea laid out its updated plans for the future of autonomous vehicles and the path to commercialization and testing of autonomous vehicles over the next decade in the country. The updated national plans put timelines for achieving goals in commercialization targets, creating and/or updating safety and insurance policies, and setting up autonomous vehicle testing zones and infrastructure development. The release of the updated plan is yet another milestone in a series of actions the country has taken to accelerate the commercialization of autonomous vehicles.

Autonomous Vehicle Commercialization Timeline

In this latest update, the government provided a roadmap and policy objectives to power an autonomous future in the country. The country aims to commercialize at least one Level 4 autonomous vehicle in 2027 and targets half of the new vehicles sold in 2035 to be Level 4 or Level 5 autonomous. The country aims to approve Level 4 autonomous buses by 2025 and passenger vehicles by 2027. This update comes amid speculation of regulatory changes to harmonize Level 3 autonomous vehicle testing by removing the 60 km/h speed barrier and allowing autonomous vehicles to drive at the same maximum speed of 80 km/h on expressways as non-autonomous vehicles. In the meantime, the country aims to commercialize at least one vehicle with Level 3 systems in 2022, becoming one of the first countries to do so, along with Japan and Germany.

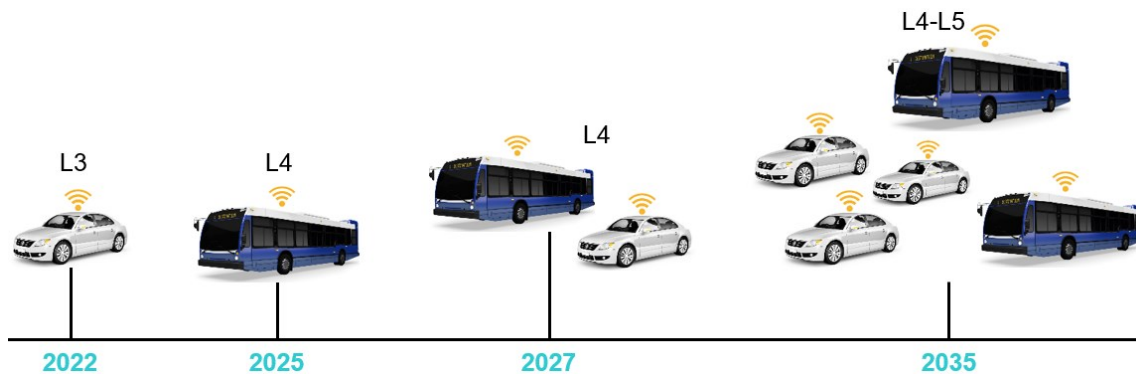


Figure 1 – Korea’s autonomous vehicle commercialization timeline

Updates to Safety Standards

In its September 2022 plan, the Ministry of Land, Infrastructure and Transport of South Korea set new timelines for creating safety standards and insurance requirements for fully autonomous vehicles. The country aims to develop rules regarding safety standards, performance evaluations, redundancy requirements and malfunction-related measures by 2024. The country developed the world’s first safety standards for Level 3 autonomy in December 2019.

Updates to Insurance Policy

The Guarantee of Automobile Accident Compensation Act was amended in April 2020. This amendment paved the way for any damage resulting from the operation of an autonomous vehicle to be covered by the insurance policy maintained by the vehicle owner, as opposed to the indemnification of the vehicle manufacturer, even if such damage could be attributed to a defect in the vehicle. In addition, the manufacturers of autonomous vehicles must equip each autonomous vehicle with a self-driving information recording device enabling technical investigation into the causes of an accident. Similarly, the vehicle owner is required to keep the information provided by the self-driving recorder for one year. Additionally, the country has created an accident investigation committee to determine the cause of the accident for autonomous vehicles.

Infrastructure Plans

The country has committed to investing 4 trillion won (USD 2.8 billion) in research and development to build cooperative intelligent transport systems and precision maps. South Korea also established seven dedicated autonomous driving pilot zones with plans to increase to at least one per province. Furthermore, the country has a long-term goal of transitioning to negative zones wherein all areas can be used for autonomous vehicle testing except those marked negative. In the shorter term, the

government will designate exclusive lanes for autonomous vehicles on highways by the first half of 2023 and a real-time communication system. By 2030, the government aims to have developed a detailed precision map of roads and traffic on major roads with real-time updates.

Autonomous Vehicle Testing

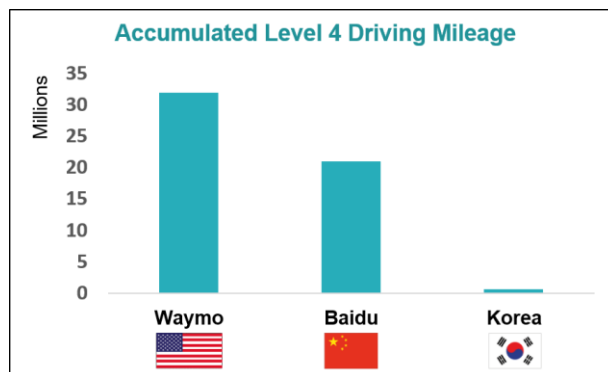
Seven dedicated autonomous driving pilot zones have been created since 2017 to allow autonomous vehicles’ testing in a real-world environment, with plans to add more zones. The existing pilot zones are in the following places:

- Gangnam area in Seoul
- Sangam-dong / DMC area in Seoul
- Yeouido area in Seoul
- Magok area in Seoul
- Pangyo city zone
- Gwangju city zone
- K-City

There are further discussions to add the Cheonggyecheon area in Seoul in late 2022 or early 2023 to the pilot zone and to add Sejong city as well.

Hyundai’s RoboRide (robotaxi) was launched in July 2022 in Gangnam, demonstrating Level 4 technology with a human driver seated to take control under emergency conditions and in school zones. The robotaxi service operates from 10 a.m. to 4 p.m., from Monday to Friday, with up to three passengers per ride, and is connected to traffic lights.

The country’s auto giant Hyundai is expected to start selling Level 3 technology on its flagship model Genesis G90, but the country lags in testing Level 4 autonomous vehicles. As a result, South Korea’s cumulative mileage of self-driving totaled only 720,000 km⁽¹⁾ using a fleet of 200–250 vehicles as of January 2022, as per Korea’s Automotive Driving Development Innovation Foundation. In comparison, China’s Baidu has accumulated approximately 21 million kilometers, and USA-based Waymo has collected 32 million kilometers worth of driving data¹.



¹ Hyun-bin, Kim. “Korea lacks data to operate autonomous vehicles.” *Koreatimes*, The Korea Times, 15 Aug. 2022, https://www.koreatimes.co.kr/www/tech/2022/08/419_334345.html.

Summary

After drawing criticism from the industry and think tanks, South Korea started making noticeable strides in infrastructure, commercialization and regulations to accelerate the country's path to an autonomous and connected future. The country made headlines by creating a new city (K-City) for testing autonomous vehicles in 2017 and again in April 2019, when the National Assembly of South Korea passed the Act on Promotion and Support of Commercialization of Autonomous Vehicles. This Act paved the way for developing infrastructure support to enable autonomous vehicle commercialization. Since then, the Ministry of Land, Infrastructure and Transport has been tasked to present a five-year master plan, providing a clear roadmap and guidelines for accelerating fully autonomous vehicle deployments in the country.

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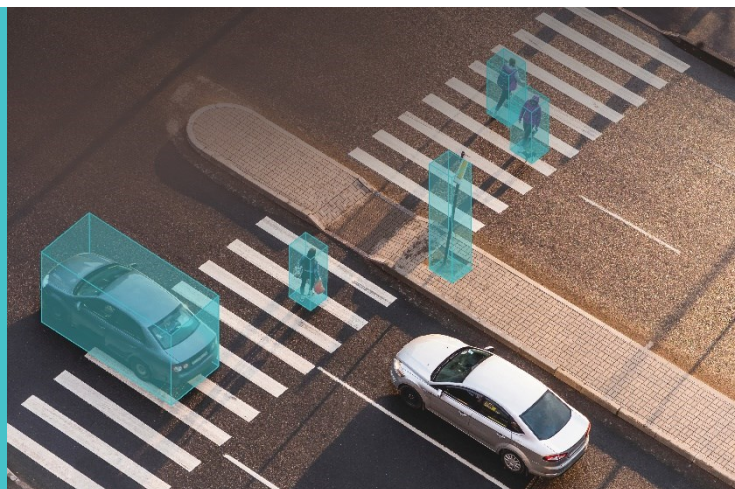
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A global software company founded in 2007 and headquartered in Quebec City with additional R&D centers in Montreal, Toronto and Tel Aviv, Israel, LeddarTech develops and provides comprehensive AI-based low-level sensor fusion and perception software solutions that enable the deployment of ADAS, autonomous driving (AD) and parking applications. LeddarTech's automotive-grade software applies advanced AI and computer vision algorithms to generate accurate 3D models of the environment to achieve better decision making and safer navigation. This high-performance, scalable, cost-effective technology is available to OEMs and Tier 1-2 suppliers to efficiently implement automotive and off-road vehicle ADAS solutions. LeddarTech is responsible for several remote-sensing innovations, with over 150 patent applications (80 granted) that enhance ADAS, AD and parking capabilities. Better sensory awareness of the environment around the vehicle is critical in making global mobility safer, more efficient, sustainable and affordable: this is what drives LeddarTech to seek to become the most widely adopted sensor fusion and perception software solution.

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