

# Autonomous Mobility (Bus & Taxi)

Autonomous mobility enables vehicles to detect and interpret their surroundings, allowing them to navigate to destinations without human input.

These vehicles can autonomously operate on main roads and handle potential risks. They play a key role in addressing economic and societal challenges, such as reducing traffic accidents, alleviating congestion, and enhancing energy efficiency.



▲ Citizens are using autonomous vehicles.

## Issues to Tackle

- ☑ It is crucial to prevent traffic accidents caused by humans, such as reckless driving and inexperienced drivers, and respond to unexpected road situations to protect both drivers and passengers.  
\* Annual death tolls due to traffic accidents (2023): 2,551 people
- ☑ Public transportation services such as buses and taxis have limited accessibility during late-night hours.

## Expected Benefits

- ☑ Reduces the risk of traffic accidents caused by elderly or inexperienced drivers.
- ☑ Improves accessibility to public transportation during late-night hours.

## 💡 Key Services

- Use a mobile app to set destinations and request an autonomous taxi or shuttle.
- Offers features for users' convenience, such as searching for vehicles, route planning, booking, and payment.
- Using LiDAR and GPS monitors the location and surroundings and navigates autonomously.
- Oversees operations and provides remote support for autonomous vehicles.

## ⚙️ Use Cases

- The Seoul Metropolitan Government chose kakao T as its autonomous driving platform. From September 2024, it will serve as the platform operator for Seoul's autonomous driving services, including the late-night autonomous driving service in Gangnam, Seoul, Metropolitan City.
- The Ministry of Land, Infrastructure and Transport has been working with the Autonomous A2G Consortium since 2023 to implement a pilot program for autonomous mobility, deploying self-driving vehicles for both passenger transportation and logistics services.
- Additional autonomous services: RAXI (Daegu and Gangneung), Olink (Sejong), PantaG Bus (Pangyo), TASIO (Sangam-dong in Seoul, Sejong, Daegu, and Yeosu), WITH:US (Sangam-dong, Seoul), ALT-B (Naver's data center in Sejong), LIMO (Sejong, Suncheon, and Gangneung)

Key Components

Configuration



Technology

1. Driving Environment Recognition by Cameras

- Four cameras provide a 360-degree view of the vehicle’s surroundings.

2. Driving Environment Detection by Image Sensors (LiDAR, RADAR, etc.)

- Emits laser beams and radio signals and analyzes their reflection times to identify nearby stationary objects (e.g., road lanes) and dynamic elements (e.g., pedestrians and vehicles).

3. Precise Localization with GPS and High-Definition Maps

- Drives the vehicle by recognizing its location, speed, and direction of travel, as well as fixed objects in its surroundings.

4. Decision-Making and Routing Strategy

- Performs real-time calculations to determine the optimal driving route using autonomous driving algorithms and monitors speed and paths to analyze unforeseen events and develop strategies.

5. V2X Module

- The vehicle exchanges data with its surroundings by leveraging V2X technology and communication systems, enhancing traffic efficiency and coordination.

6. Control System

- Assists the driver by continuously gathering and processing real-time data from both the vehicle and its surroundings, assessing the driver’s status, and ensuring optimal control of the vehicle.

Technology Companies

**AUTONOMOUS A2Z**  
www.autoa2z.co.kr

**HYUNDAI MOTORS**  
www.hyundai.com

**KAKAO MOBILITY**  
www.kakaomobility.com

**RIDEFLUX**  
www.rideflux.com

**SEOUL ROBOTICS**  
www.seoulrobotics.org

**SONNET**  
www.sonnet.ai

**SWM**  
www.swm.ai

**42DOT**  
www.42dot.ai

