Road Weather Information System (RWIS)

RWIS offers drivers real-time updates on road weather hazards, including conditions like icy road surfaces and reduced visibility.

Providing live weather observation data through navigation systems and electronic signboards enhances road safety and reduces the risk of highway accidents caused by adverse weather conditions.

▲ Sensors mounted on highway CCTV poles monitor road weather hazards, such as black ice, and promptly relay the information to drivers.

Issues to Tackle

- Traffic accidents caused by icy roads and fog often have higher fatality rates and lead to severe, large-scale incidents, thus requiring prevention measures.
- Preventing highway accidents requires a system that provides drivers with timely weather hazard information.

Expected Benefits

- Improves road safety by gathering and sharing weather data, helping to alleviate public concerns and enhance driver confidence.
- Facilitates prompt and effective snow removal and road maintenance operations by providing precise information on weather conditions and road status.

Key Services

· Leverages advanced technologies, including optical road surface sensors, integrated weather monitoring sensors, precipitation and visibility sensors, and GPS, to track weather conditions such as snowfall, icy roads, wet surfaces, fog, and visibility levels.

· Classify weather-related road hazards into three levels: Caution, Warning, and Danger, and deliver real-time notifications like "Caution: black ice ahead in 300m" through variable message signs (VMS) and drivers' navigation apps.

* Information on black ice is provided during the snow management period in winter, while road visibility is updated daily all year round.

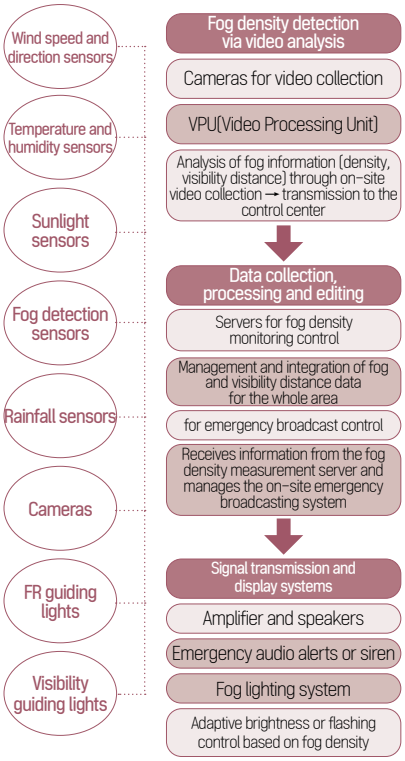
Use Cases

· Starting December 2024, the Korea Meteorological Administration (KMA) began offering real-time road weather updates on major highway routes—Gyeongbu, Jungang, and Honam, through VMS and navigation apps like TMap, Kakao Navi, and Atlan.

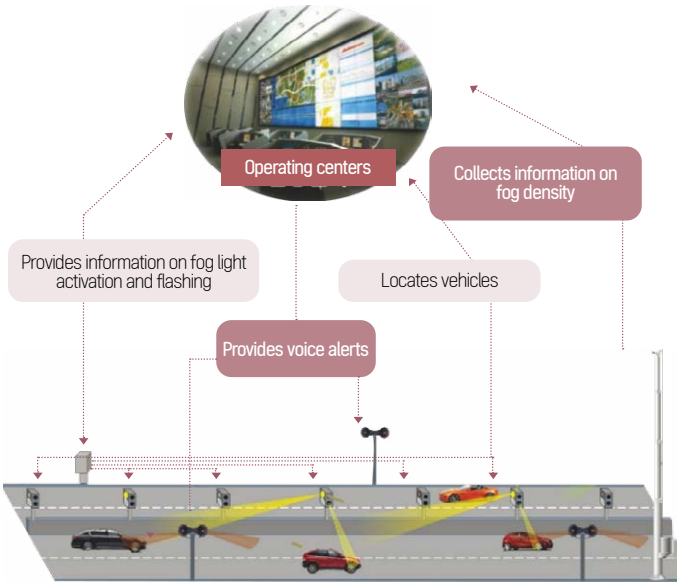
· By 2026, the KMA plans to roll out a comprehensive road weather observation network in partnership with the Ministry of Land, Infrastructure and Transport and the Korea Expressway Corporation.

Key Components

Configuration



· Aligns with various delivery systems, including audio and LED boards.
· Improved detection system with 1~3 cameras
· Targeted detection of abrupt fog event
· Compatibility with existing CCTV infrastructure
· Detects fog within a range of up to 1 km
· Pole-mounted control enclosures



Technologies

1. Fog Density Detection and Video Analysis

· Collects on-site video footage to extract fog-related data, such as density and visibility distance, and transmits it to the control center.

POINT Detects fog up to 1 km in distance and is compatible with existing CCTV systems.

2. Weather Data Collection and Analysis

· Collects data by monitoring temperature, humidity, rainfall, wind speed, and fog density on the roads in real-time.

POINT Supports regional fog data management and visibility distance calculations.

3. Integration with Emergency Broadcasting Systems

· Receives fog density data from the server and connects to emergency broadcasting platforms, including audio announcements and LED display systems, for remote operation.

4. Signal Transmission and Display

· Issues emergency voice alerts or sirens through amplifiers and speakers. Adjusts lighting intensity or activates flashing signals based on detected fog density.

Technology Companies

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