

● Intelligent Video Analysis

● Agentic AI Platform

● AI Solution

● Customizing

PERCEPTION INTELLIGENCE

THE SMARTEST AI TECHNOLOGY

THE SMARTEST AI TECHNOLOGY

PINTEL

Leading a safer and more convenient future

PINTEL, an AI specialist

PINTEL is a leading AI technology company dedicated to creating a safer and more convenient future through high-resolution video analysis technology.

We pioneered the development of Korea's first AI model capable of real-time video analysis without resolution degradation. By going beyond simple object detection to accident prediction, we have spearheaded the innovative high-resolution AI video analysis market.

Moving forward, PINTEL will continue to enhance AI technology, striving for technological innovation that inspires humanity, and growing into the world's No.1 AI technology company.

CEO Dong-Key, Kim

High-Resolution AI Video Analysis



Object Detection



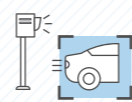
Behavior Detection



Facial Detection



Fire/Smoke Detection



Traffic Violation Detection



People/Car Counting



Traffic Information Collection



Traffic Accident Risk Prediction



Collision Prediction

COMPANY HISTORY



Business Areas



PREVAX

Agentic AI Platform & Solution for a Better Smart City

Point 01

Korea's only high-resolution video analysis system



FHD analysis without loss of pixels

Point 02

Fastest video analysis in Korea



10msec for FHD

Point 03

Highest analysis channels in Korea.



Real-time processing of 100+ channels per server



Technology & Performance Certification



PINTEL AGENTIC AI PLATFORM

PREVAX 4.0

It is a web-based software that integrates individual systems, such as transportation, facilities, and safety (security and crime prevention), into a single platform, providing all services in one place. It offers an all-in-one service that enables real-time monitoring, comprehensive indicator analysis, and real-time system management for seamless operation and management.



- ▶ GIS-based real-time dashboard**
 - Real-time analysis and visualization of vast amounts of data.
 - Instantly grasp the current operational status through various indicators, graphs, and maps.
- ▶ Various event indicator analysis and insights**
 - Analyze changes over time using real-time and historical data.
 - Reduce costs and time for decision-making through digital twin representation.
- ▶ Optimization of real-time operation/management**
 - Real-time inquiry and systematic management of history information required for operational maintenance.
 - Resource Allocation Optimization.

PINTEL AI SOLUTION

Urban Management | Smart Traffic

Smart Traffic Management System

Smart Intersection System

Traffic Information Collection System

Adaptive Signal Control System

Personal Mobility Monitoring System

Smart Parking Management System

Urban Safety

Smart Selective Monitoring System

Traffic Accident Risk Prediction & Prevention System

Pedestrian Safety System

Smart School Zone System

Incident Detection System

Automated Enforcement System

Urban Management | Smart Facilities

Smart Apartment Complex Operation & Management System

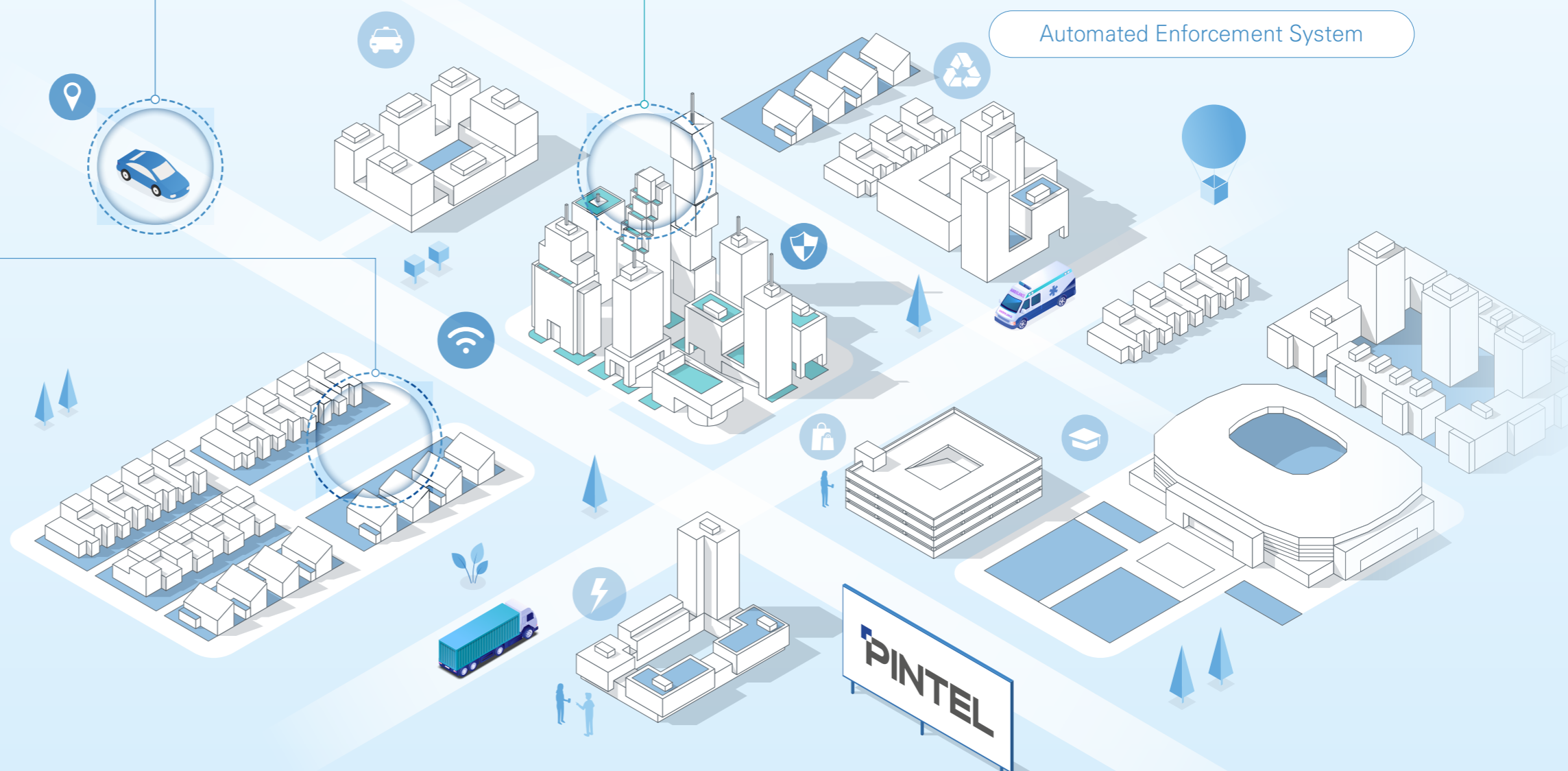
Industrial Safety Management System

Integrated Performance Safety Management System

Park Safety Operation System

Walk-through Dining Count Management System

Smart Urban Flood Management System



01 Smart Traffic Management System

It is a web-based platform that enables the comprehensive operation and management of various traffic systems, including smart intersections and adaptive signal control systems.

The platform provides Integrated operation management function such as real-time control, and statistical & historical data management for efficient traffic system operations.

Additionally, based on data collected from smart intersections and adaptive signal systems, it offers an AI-powered signal optimization function designed to minimize delays and queue lengths for each lane and direction at intersections.

The signal optimization results can be implemented through digital twins and the metaverse, reducing costs and time for decision-making while leveraging data analysis to identify and resolve operational challenges.

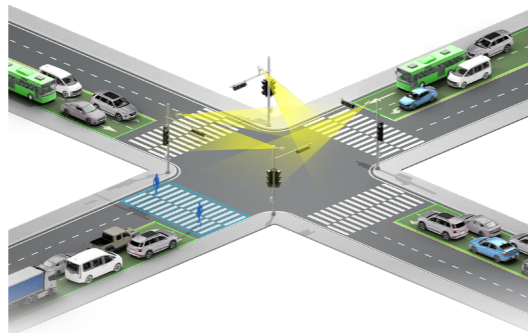
- Real-time AI video analysis-based monitoring and operations
- Real-time signal optimization and TOD(Time-of-Day) optimization
- Optimization validation using digital twins and the metaverse
- Real-time system monitoring of field equipment and central hardware
- Operations management, including statistical and historical data analysis



02 Smart Intersection System

It is an intelligent traffic system that applies AI-based algorithms to collect real-time traffic information and seamlessly integrate this data with traffic signal control.

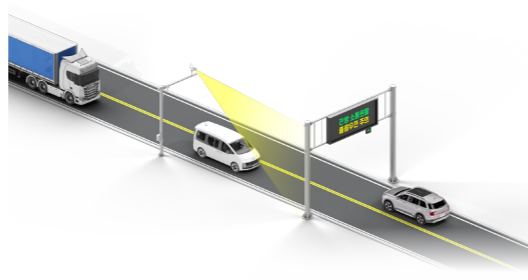
- Traffic volume count by direction
- Vehicle classification
- Initial queue length
- Stopped vehicle detection
- U-turn vehicle detection
- Occupancy measurement
- Traffic violation detection (tailgating, illegal U-turns, speed/signal violations, illegal parking, crossing the centerline, cut-ins, dedicated lane/stop line violations, wrong-way driving, jaywalking, etc.)



03 Traffic Information Collection System (VDS, Vehicle Detection System)

It is a system that collects traffic information through intelligent video analysis in environments such as high-speed roads or two-lane roads, without external influences. It provides functions to detect traffic volume, vehicle passing speed at specific points, as well as jaywalking, accident vehicles, and stopped vehicles.

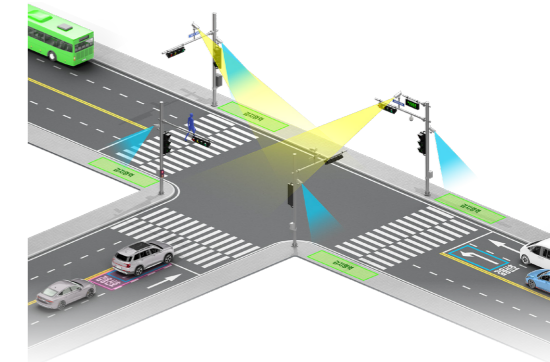
- Traffic volume count
- Vehicle speed monitoring
- Occupancy measurement
- Stopped vehicle detection
- Accident vehicle detection



04 Adaptive Signal Control System

It is a system that determines the presence or absence of vehicles in a detection area through video analysis and integrates with traffic signal controllers to either skip or terminate the signal early. The system is designed to avoid unnecessary signal operations and reduce vehicle waiting time, aiming to improve traffic flow and operational efficiency.

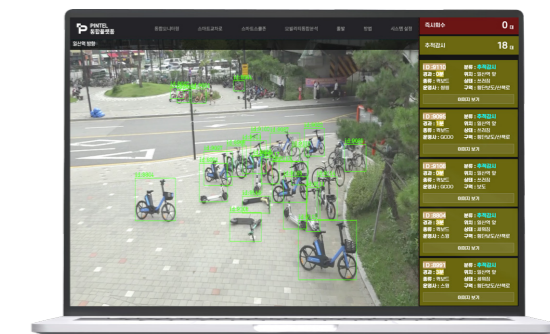
- Vehicle detection
- Pedestrian detection
- Signal skipping and early termination



05 Personal Mobility(PM) Monitoring System

It is a system that uses AI technology to monitor the parking and stopping of PMs(personal mobility devices such as scooters, e-bikes, etc.) that illegally occupy pedestrian and vehicle lanes in real-time through the municipality's integrated control center. This system manages road safety on residential streets by ensuring safe pedestrian pathways through towing and retrieval by local authorities or operators.

- PM(Personal Mobility) fall detection
- Analysis of PM obstruction on pedestrian paths
- Reporting of illegal PM parking and towing/retrieval



06 Smart Parking Management System

By recognizing the vehicle type and license plate number of vehicles entering and exiting, this system provides parking fee collection, vehicle control, and management services, creating a convenient and safe parking environment.

- License plate detection
- AI parking space analysis



Smart Intersection System Performance Test Report
Ministry of Land, Infrastructure and Transport, Korea Institute of Civil Engineering and Building Technology

100%

VDS(Vehicle Detection System) Test Report
Ministry of Land, Infrastructure and Transport, Korea Institute of Civil Engineering and Building Technology

Highest Highest

Performance Test Report for Detection Devices for Adaptive Control
Korea Road Traffic Authority

98% & UP

01 Smart Apartment Complex Operation & Management System

It provide convenient living services designed according to the spatial characteristics of apartment complexes and safety services through prediction of spatial risk situations. This system. It enhances the safety and convenience of residents through facial detection, customized safety services for the elderly, and other services, thereby ensuring a better residential life.

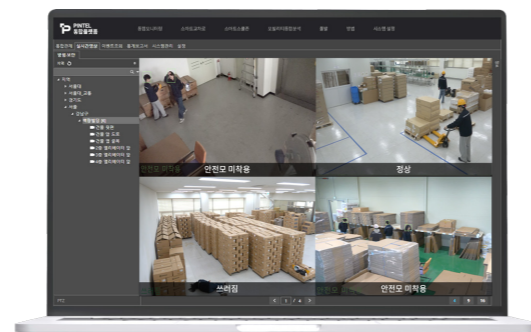
- Convenience Services:
 - Main Entrance Facial Detection Access Control System
- Safety Services
 - Electric Vehicle Fire Detection in Common Parking Areas
 - Elderly Loitering Detection
 - Recognition of Risk Situations within the Complex(loitering, drunk people, fire)
- Risk Management Services
 - Pre-collision Alert System within the Complex



02 Industrial Safety Management System

It is a system that real-time detects industrial accident risks occurring in industrial workplaces and provides alerts to managers. Utilizing AI Video analysis technology, it accurately recognizes the status of distant small objects and enables multi object detection and tracking through a connected tracking algorithm.

- Work Management : Fall detection, Drop detection
- Safety Management : Helmet non-wearing detection, Collision prediction between workers and forklifts/trucks
- Risk Management : Falling object detection
- Accident Management : Fire detection, Gas leak and explosion detection



03 Integrated Performance Safety Management System

Based on multi-sensor integration, this system real-time monitors crowd congestion, accident risks, and safety management in performance venues without any blind spots. In the event of a risk situation, it is linked with the National Disaster Safety Network to provide location-based situational detection information to on-site managers, enabling rapid response.

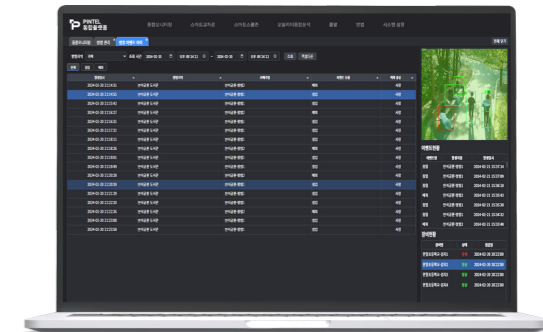
- Crowd Risk Detection
 - Density changes, crowd surges, collapse, wave formation
- Risk Situation and Abnormal Behavior Detection
 - Stage intrusion, falls, fights, intrusions, loitering, drunk people, fire, explosions
- National Disaster Safety Network Integration Service



04 Park Safety Operation System

It is an urban park safety service that utilizes AI video analysis technology to pre-analyze risky behavior patterns within urban parks, ensuring that anyone can safely and conveniently use the park at any time.

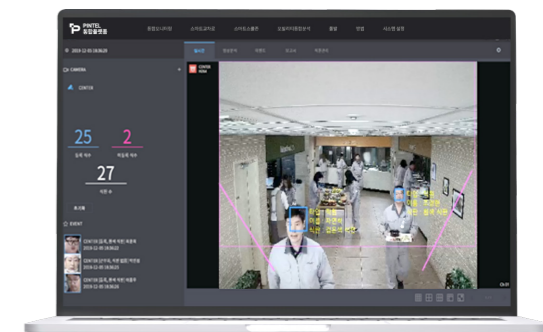
- Detection of Risky Behavior Patterns in Urban Parks (drunk people, fights, loitering, arson)
- Real-time crowd flow status by location, analysis of the number of people per unit area to identify congestion
- Analysis of urban park congestion by time of day, daily, and weekly
- Crowd density risk analysis and alarm notifications for different risk states



05 Walk-through Dining Count Management System

It is a system that uses facial detection technology to count people. It can detect faces at distances of up to 12 meters and has an accuracy rate of 97%.

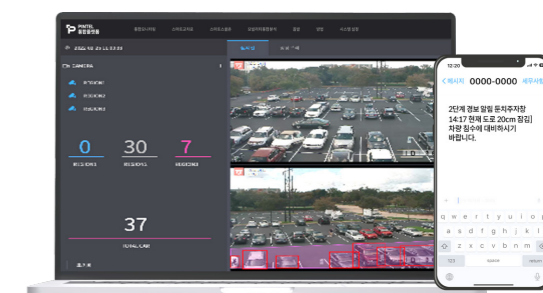
- Real-time facial detection
- Event lookup
- Staff list lookup



06 Smart Urban Flood Management System

It monitors real-time water levels through intelligent video analysis and IoT sensor data. In case of flood risk, it coordinates with embankment parking lots, local governments, integrated control centers, and relevant agencies to communicate parking status and disaster alerts. Emergency notifications are displayed on LED boards, and SMS alerts are automatically sent to parked vehicle users, minimizing vehicle flooding and secondary accidents caused by heavy rain or typhoons, thereby protecting citizens' lives and property.

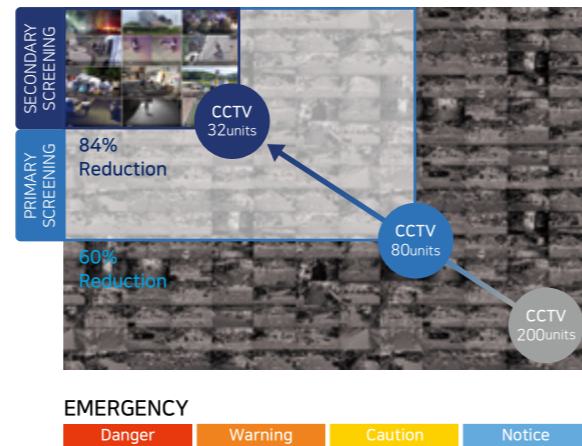
- Real-time monitoring and information management based on Open Map
- Event detection when defined events occur within specified areas
- Detection of vehicle count and number of people in parking lots
- SMS alerts sent to vehicle owners immediately upon flood risk occurrence, in coordination with relevant agencies
- Statistical information management of system and process operation patterns



01 Smart Selective Monitoring System

It is an AI-based video analysis platform that can accurately monitor and control tens of thousands of videos without the need for additional hardware or software. It detects objects such as people and items, automatically identifying accidents or risk situations, and selectively monitors only the videos that require supervision. Compared to existing technologies, it enables accurate monitoring with only 16% of the workforce, improving infrastructure availability and minimizing response times to protect citizens' property and lives.

- Park Safety Management System
 - Detection of offensive acts such as intrusion, loitering, fighting, abandonment, arson, falls, etc.
 - Analysis and statistical representation of user walking behaviors, density, and congestion
- Drunk People Detection System
 - Motion analysis of forward, backward, left-right movements, and stopping
 - Temperature check for facial detection
- Hand-waving Event Detection System
 - Detection of long/short two-hand waving
 - Detection of one-hand waving
- Abnormal Behavior Detection System for Escalators
 - Detection of tipping accidents, walking or running, reverse direction, and emergency/extra sudden stops



02 Traffic Accident Risk Prediction & Prevention System

It analyzes various data such as weather, driving records, road infrastructure, traffic flow, and accident situations using AI. Through this, it predicts road risk sections and provides operators with customized improvement plans for each point according to risk factors.

- Video-based Traffic Situation Detection Solution
 - Real-time generation of traffic congestion, road conditions, weather, events, and other relevant information by location and traffic situation detection.
- Traffic Accident Risk Prediction and Prevention Solution
 - Traffic accident risk analysis (location rankings, current status of locations)
 - Identification of accident risk factors
 - Customized improvement suggestions (immediate, short-term, and long-term)



03 Pedestrian Safety System

It is an edge-based system that prioritizes pedestrian safety by installing various on-site devices such as cameras and LED displays in areas like crosswalks, residential roads, and elderly protection zones. The system uses AI video analysis to detect pedestrian accident risks and provides alerts to both vehicle drivers and pedestrians.

- Crosswalk Pedestrian Safety System
 - Pedestrian detection based on general pedestrians and vulnerable pedestrians, triggering pedestrian-sensitive signal changes and automatic signal extensions
 - Warning alerts when entering the crosswalk during red pedestrian signals
- Residential Road Pedestrian Safety System
 - Detection of pedestrians, vehicles, and PM
 - Detection and alerting of potential vehicle-pedestrian collision situations in blind spots within residential roads
- Senior Safety System
 - Senior Pedestrian Recognition and Pedestrian/Vehicle Detection
 - Detection of vehicles violating stop lines
 - Speed analysis of passing vehicles and alert notifications



04 Smart School Zone System

It is a system that uses an AI-based real-time video analysis system to continuously monitor pedestrians and vehicles in school zones to prevent accidents between children, pedestrians, and vehicles. The system automatically identifies conflict risks and displays alerts on LED boards, helping to prevent traffic accidents in advance.

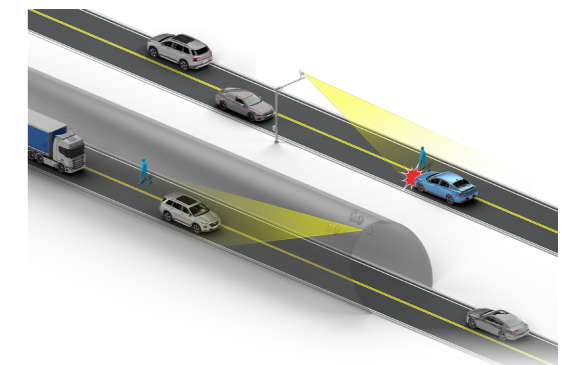
- Vehicle Speed Alert
- Stop Line Violation Alert
- Illegal Parking Alert
- Left Turn and Right Turn Warning Alert
- Jaywalking Alert
- Pedestrian Alert on Crosswalk When No Signal
- Emergency Vehicle Entry Alert
- Pedestrian Waiting to Cross Alert



05 Incident Detection System

It is a system that detects and provides alerts for various emergency situations such as stopped vehicles and wrong-way vehicles in road environments like tunnels, bridges, and highways, through real-time video analysis.

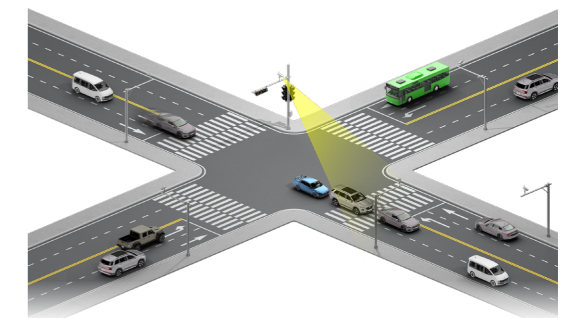
- Stopped Vehicle Detection
- Pedestrian Detection
- Wrong-way Vehicle Detection



06 Automated Enforcement System

It is a next-generation multi-functional enforcement system that simultaneously detects and monitors various traffic violations such as red-light violations, speeding, and tailgating vehicles, using self-developed deep learning-based rapid object detection and tracking technology.

- Red Light Violation Vehicle Detection
- Speeding Vehicle Detection
- Tailgating Vehicle Detection



ACHIEVEMENTS

2018
2019

Project

- Deep Learning-based Smart Intersection Traffic Data Collection System Construction Project **ETRI**
- Traffic Simulation Traffic Data Collection System Construction Project **ETRI**
- Video-based Road Weather Information System Software Development Project **Korea Expressway Corporation**
- Escalator Detection System Construction Project **Busan Transportation Corporation**
- Urban planning facility in Dangwang(security and surveillance) Creation Project **Anseong**
- Facial Detection and Facial Expression Analysis System Construction Project **WithMind Co., Ltd.**

R&D

- AI-based Mock Interview Simulation and Coaching Service Platform Development Project **Ministry of SMEs and Startups**
- Deep Learning Video Surveillance System Technology Development Project for Video Screening and Specific Object Searching **Ministry of SMEs and Startups**
- AI-based Integrated Smart Vehicle and Pedestrian Detection System Construction Project **Gyeonggi-do**
- Smart City Intelligent Traffic Safety and Traffic Control Technology Development Project **Ministry of Land, Infrastructure, and Transport**

2020
2021

Project

- AI Video Information-based Smart Intersection Management Technology Development Project for Pedestrian Crossings and Traffic Flow **Seoul**
- Construction Project an unexpected incident detection system on the Seobu Arterial Road **Seoul**
- Gangseo-gu Smart Crosswalk(Hwagok Elementary, Sinjeong Elementary) Construction Project **Seoul**
- Guro-gu Alley Pedestrian Safety Creation Project **Seoul**
- Seongdong-gu Intelligent Smart Screening Control System Construction Project **Seoul**
- Smart City Intelligent Traffic Safety and Traffic Control Technology Development(KAIA) Project **Daegu**
- Construction Project an unexpected incident detection system on the Seobu Arterial Road **Paju City Hall**
- Uiwang Intelligent Transport System(ITS) Construction Project – Smart Intersection Construction Project **Uiwang**
- Construction Project a smart pedestrian safety system at Jinseong Elementary School **Jinju**
- Traffic Volume Collection(Smart Intersection) System Construction Project **Suwon**
- Intelligent Transport System(ITS) Traffic Information Collection System Construction Project(VDS) **Wonju**
- Intelligent Hazard Situation Detection System Enhancement and Verification Project **Korea Construction Technology Research Institute**
- Security System Construction Project for the radio protection zone of the 1648 4th runway, Air Navigation Office **Incheon International Airport Corporation**
- Construction Project a security and surveillance system within the National Assembly premises **National Assembly Secretariat**
- CCTV Maintenance and Installation Operation Project **Korea Midland Power Co., Ltd.**
- C-ITS Pedestrian Detection System Application Project **Ulsan**
- Smart Intersection System Construction Project **Wonju**

R&D

- AI Convergence Coastal Guard System Construction Project **Ministry of Science and ICT**
- Smart City Region-Specific Pedestrian Traffic Safety Service AI Solution Application Project **Ministry of Science and ICT**
- AI-Based Pedestrian Signal Automatic Extension System Commercialization Project **Ministry of Science and ICT**
- AI Video Information-Based Smart Intersection Management Technology Development Project for Pedestrian Crossings and Traffic Flow **Ministry of Science and ICT**
- Video Surveillance Operation System Technology Development Project for Video Screening and Object Search **Ministry of Small and Medium Enterprises and Startups**
- Development Project of Traffic Safety Risk Alert Technology for Blind Spots on Residential Roads **Ministry of the Interior and Safety**
- S-BRT Pedestrian Safety Assurance Technology Development Project **Ministry of Land, Infrastructure, and Transport**

2022

Project

- Operation Project of Old Intelligent Transport System(ITS) Traffic Communication Information Collection Facility(VDS) **Suwon**
- Deep Learning-Based Video Traffic Safety System(Public Procurement Innovation Pilot Purchase) Construction Project **Jecheon**
- Intelligent Transport System(ITS) VDS Center and Sudden Incident Detection System Construction Project **Gwacheon**
- VDS Construction Project **Wonju**
- Vehicle Flood Risk Alert System Construction Project **Anyang**
- Construction Project for children's safety **Yongin**
- CCTV surveillance Systems Construction Project for safety-vulnerable areas **Korea Western Power Taeon Power Plant**
- Nara Kium Daejeon Center Video Surveillance System Construction Project **Korea Asset Management Corporation National Property Management**
- CCTV Security Equipment Construction Project **National Assembly Secretariat**
- Video Incident Detection System Construction Project **Automobile Convergence Technology Institute**
- Intelligent Transport System(ITS) Smart Intersection Construction Project **Iksan**

R&D

- Smart City Regulatory Sandbox Activation Project **Korea Institute of Civil Engineering and Building Technology**
- International Cooperation in Industrial Technology(R&D) and International Joint Technology Development(UK) Project **Korea Institute for Advancement of Technology**
- Smart City Innovative Technology Discovery Project **Korea Institute of Civil Engineering and Building Technology**
- Scientific Crime Prevention Public Research Results Practical Application Demonstration Project **Korea National Police Agency**
- Baby Unicorn 200 Fostering Project **Korea Entrepreneurship Foundation**

2023

Project

- Seoul National University Saemangeum SMTB Pedestrian Detection System Construction Project **Seoul**
- Intelligent Transport System(ITS) Expansion Construction Project **Anyang**
- Intelligent Transport System(ITS) Construction Project **Suwon**
- Deogeun District Smart City Smart Intersection System Construction Project **Goyang**
- VDS Gwacheon Circular Expressway Construction Project **Gwacheon**
- National Road Traffic Signal Construction Project **Wonju**
- Intelligent Transport System(ITS) Pedestrian Crosswalk Construction Project **Iksan**
- Taeon Smart City(Small But Strong) Creation Project **Taeon-gun**
- National Road 17 Yangchon Pedestrian Crossing System Construction Project **Daejeon Regional Land Management**
- Guryong Tunnel Video Surveillance System Construction Project **Seoul Facility Management Corporation**
- Namsan Tunnel 2 & 3 Video Surveillance System Construction Project **Seoul Facility Management Corporation**
- Traffic Vulnerable Protection Safety System Construction Project Korea **Expressway Corporation**
- Intelligent Transport System(ITS) Construction Project **Ansan City Urban Information Center**
- Construction Project an automatic flood barrier system in flood-prone areas **Yangsan**
- Construction Project a video detection device at the Happiness Welfare Center **Anseong**
- Construction Project a parking lot control system at the Han River Peace Park **Goyang**
- Construction Project a Yeonsu-gu wildfire unmanned surveillance camera information system **Incheon**
- Construction Project a video detection system for crime-vulnerable individuals **Yeongdong**
- Construction Project a crime prevention video surveillance system in children's parks **Seoul**
- Construction Project an overspeed warning system on the bicycle paths of Han River Park, managed **Seoul Metropolitan Government's Hangang Project Headquarters**
- Construction Project a video surveillance system at the Smart City Integrated Control Center **Seoul**
- Construction Project a video surveillance system for illegal waste dumping **Jeonju**
- Construction Project an automatic flood barrier system in flood-prone areas during the summer **Gimpo**

R&D

- SBA Testbed Seoul Demonstration Project **Korea Institute of Civil Engineering and Building Technology**
- AI Training Data Construction Project **Ministry of Science and ICT**
- AI-Based Park Safety Operation System Demonstration Project **Gyeonggi-do Economic and Science Promotion Agency**

ACHIEVEMENTS

PERCEPTION INTELLIGENCE
PINTEL

2024

Project

- Intelligent Transport System(ITS) Construction Project **Suwon**
- Child Protection Zone Pedestrian Safety System Construction Project **Gwangmyeong**
- Construction Project a smart intersection and responsive signal system **Yeoncheon**
- AI Smart Intersection Pilot Project **Hungary**
- Gyeongui Road Smart Intersection Construction Project **Goyang**
- Pedestrian Safety Improvement Expansion Project **Siheung**
- Intelligent Transport System(ITS) Construction Project **Yangju**
- Intelligent Transport System(ITS) Region 1,3 VDS Construction Project **Ministry of Land, Infrastructure, and Transport Busan Office**
- National Route Intelligent Transport System(ITS) Region 2 VDS Construction Project **Ministry of Land, Infrastructure, and Transport Wonju Office**
- Smart Responsive Signal System Construction Project **Yangju**
- Construction Project an automatic flood barrier system along major rivers **Pyeongtaek**
- Construction Project a video surveillance system at the 119 Safety Center **Seoul Metropolitan Government's Urban Infrastructure Headquarters**
- Construction Project for parking control system **Asan**
- Improved Project the video surveillance system at Gunsan Airport **Korea Airports Corporation Gunsan Branch**
- Expanded Project the smart city safety network **Chilgok**

R&D

- AI-based Child Protection Zone Safe Walking System Construction Project **Seoul**
- Development Project of Traffic Enforcement Equipment and Operation Platform Based on Video Analysis Technology **Korea National Police Agency**
- Construction Project for AI-based Crowd Density Accident Prediction and Real-time Response Platform for Performance Venues **Ministry of Culture, Sports and Tourism**
- Development and Demonstration Project of Traffic Accident Risk Prediction and Prevention Solution **Ministry of Science and ICT**
- Development Project of CCTV-based Intelligent Monitoring Platform for Suspicious Overloading Vehicles **Ministry of Science and ICT**
- System Construction Project a City-wide Parking Management System Including Personal Mobility **Public Procurement Service**
- Development and Demonstration Project of Traffic Accident Risk Prediction and Prevention Solution **National Information Society Agency(Inter-ministerial Collaboration)**

MEMO

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PERCEPTION INTELLIGENCE