

Smart City LiDAR Solution

VueTwo

LiDAR Solution Provider

Make people safer
Make life smarter



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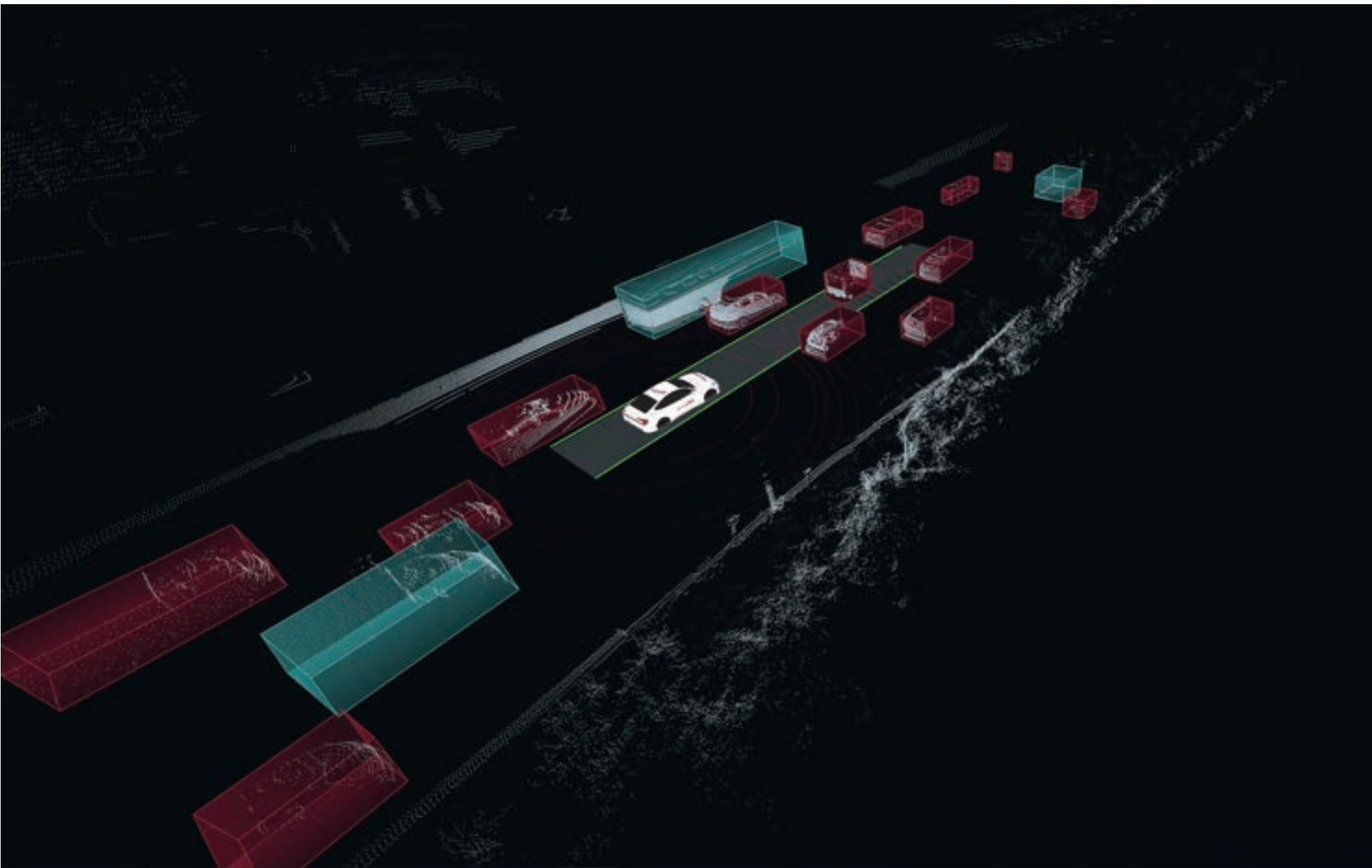
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Making smart cities a reality

Smart City Infrastructure Solution, VueTwo



Following VueOne, the autonomous driving LiDAR solution, VueTwo, Infrastructure LiDAR solution to create a smart city, was born.

VueTwo helps people live in a safer world without disrupting privacy day or night. It can detect, classify, and track physical security breaches in any environment. VueTwo, in cooperation with other sensors and systems, can be applied to traffic management, energy management, intelligent infrastructure, and more in a smart city.

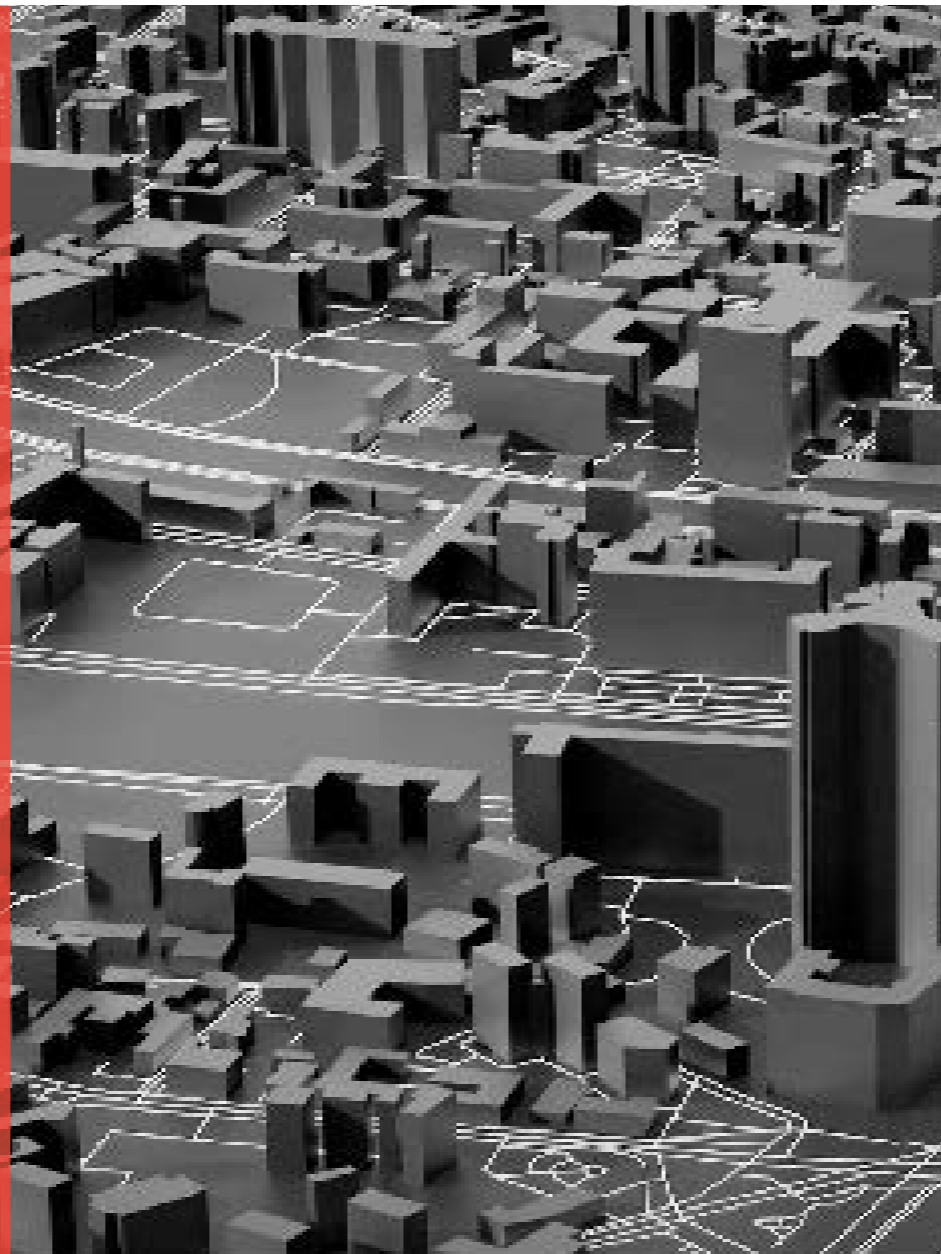
It will be a core technology for building the infrastructure of smart cities by connecting with various systems and services.

Innovation of LiDAR surprised the World

Technology of Vueron will change the World

History

- 2023. 01 Released eco-friendly AV solutions for cold chain logistics service
- 2022. 05 Permitted autonomous driving license in U.S (California/Nevada DMV)
- 2022. 01 Pre-A Investment (Korea Development Bank, Daesung Private Equity, and more)
- 2021. 01 The World's first autonomous driving license with only one LiDAR sensor
- 2020. 11 Released Smart City Infrastructure Solution, VueTwo
- 2020. 07 Released Autonomous Driving Solution, VueOne
- 2020. 05 Seed Investment (Naver, BonAngels Venture Partners)
- 2019. 10 Vueron Technology established



Autonomous driving LiDAR solution

VueOne

Smart City Infrastructure LiDAR Solution

VueTwo

Ambitious start with experts from autonomous driving industry

Vueron Technology is a tech start-up by engineers from an autonomous driving lab in a global OEM. Devoted to technological development with the core belief of creating a safe world with LiDAR solutions, Vueron has concentrated on making the perfect solution to detect all objects. Eventually, VueTwo, a smart LiDAR solution, was born based on AI algorithm to maximize LiDAR usage.

The world's first autonomous driving by using only one LiDAR

Vueron stands out for its LiDAR solutions and autonomous driving technology. Vueron received one of the few self-driving permits issued by the South Korean government, and is the only company to have received the permit by using only one LiDAR sensor. Following the receipt of the government permit, Vueron executed a fully automated, 414 kilometer, LIDAR-only drive from the capital city of Seoul to the southern port city of Busan, at a maximum speed of 100 km/h. The mandated safety driver on board did not hold the steering wheel once during the full five hours of the drive.

Essential for LiDAR application

Without Vueron solutions, LiDAR sensors just show basic information consisting of a bunch of dots. Vueron transforms these 3D dots into valuable information for customers. Vueron aims to create a safer life and a smarter world by providing LiDAR solutions that can be applied to various applications through continuous technological evolution. These solutions cover not only autonomous driving systems, but also intelligent transportation systems (ITS), smart factories, smart security, smart cities, and more.

Make people safer, Make life smarter with Vueron

Across industries and companies, homes and life, The various applications of VueTwo



Smart Factory

Ensuring safety between heavy machinery and workers and providing a highly efficient working environment

Road Traffic

Improve traffic flow and safety through tracking flow of vehicles, pedestrians, and monitoring real-time traffic conditions.



Airport Facility

Improve operational efficiency of the airport facilities and reduce unnecessary time for travelers



Research Institution

Safely protect information assets with a safety net that detects even potential threats and provides access control



Port Facility

Build a high-level security system by real-time monitoring of unauthorized intruders in facilities



Financial Institution

Protect customers and assets of financial institutions with high-level, perimeter security and intrusion detection.



Construction Site

Detect routes and traffic at worksites to prevent incidents and design efficient routes



Building & Office

Provide a safe and secure environment that satisfies both the convenience of employees and the efficiency of companies



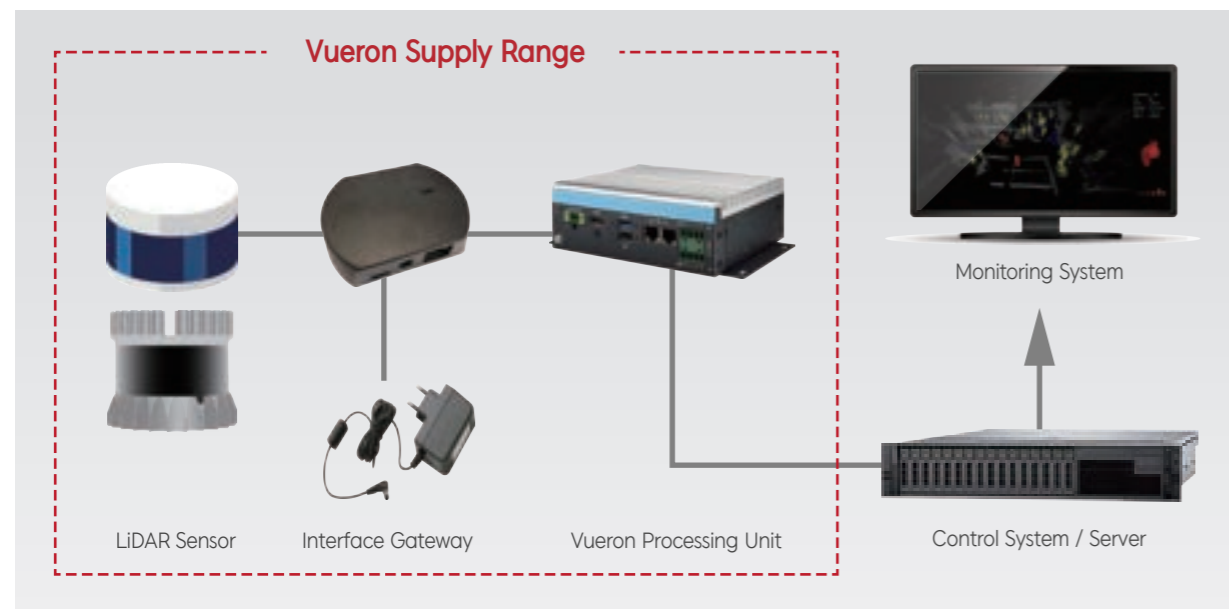
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Flexibility to connect with various devices Capability becomes optimized the more you connect



Immediately applicable as middleware to existing control systems

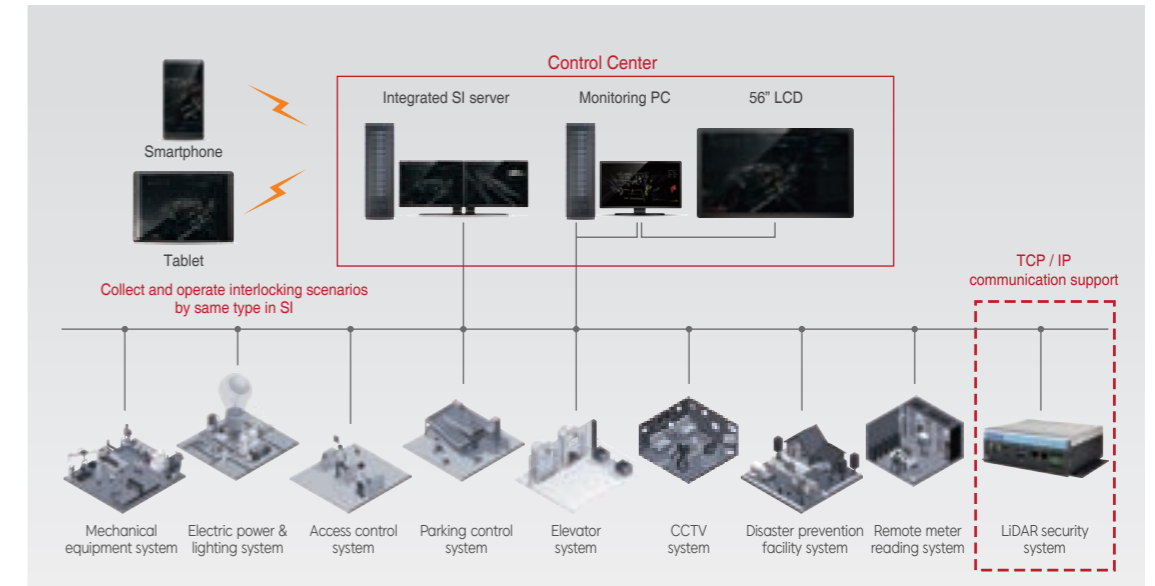
VueTwo can be applied immediately as middleware without replacing existing control systems. This is possible because of the compatibility and flexibility of VueTwo, as it can be connected to any operating system and network.



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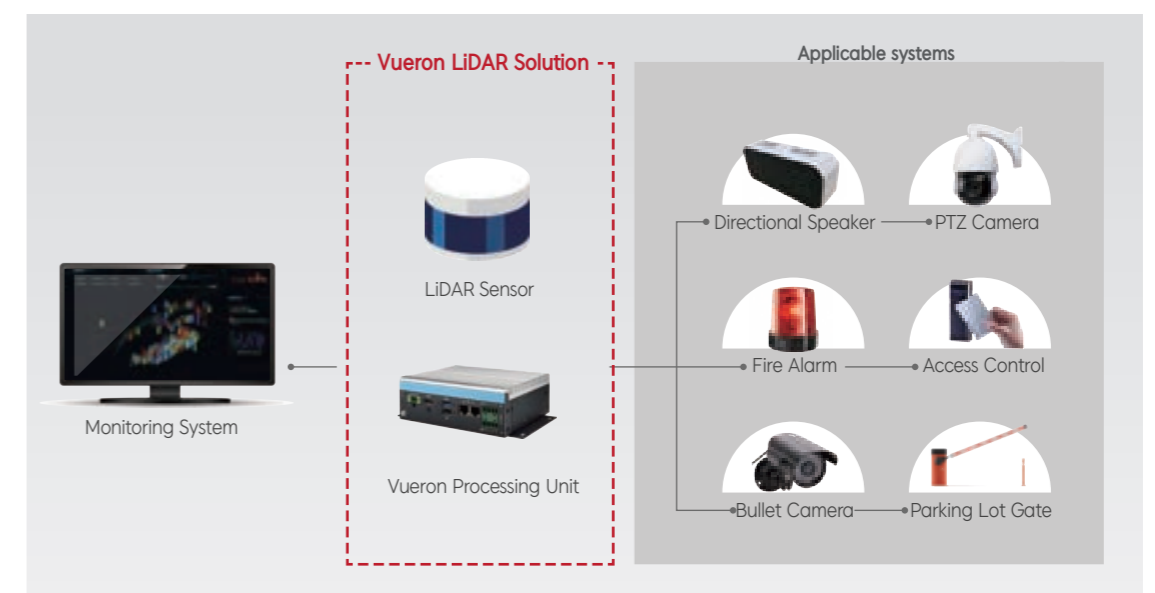
Perfect security by connecting the integrated control system

Scenarios for each situation can be managed and controlled more completely through connection with integrated control systems: security, CCTV, access control, disaster prevention facility, elevator, mechanical equipment, electric power & lighting



Applicable for all environments by customized integration

Integrating LiDAR with other systems can enable a wide range of new applications and capabilities, from enhanced security and access control to more advanced biometric authentication and alarm systems. As LiDAR technology continues evolving and improving, we expect to see even more innovative uses and integrations.



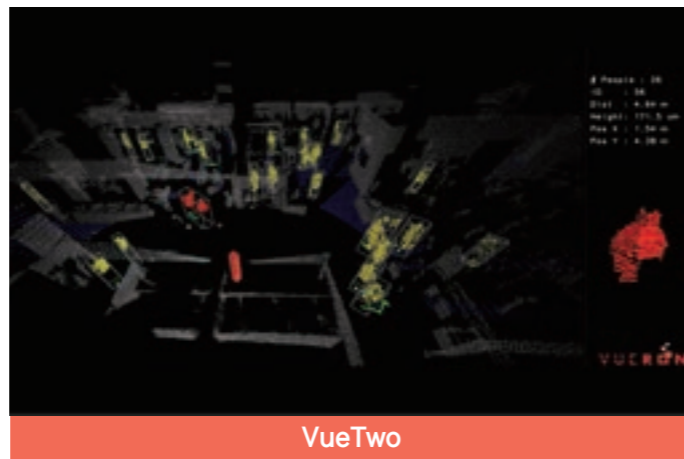
A reliable solution to protect personal information and assets

Security solutions that comply with the Personal Information Protection Act

Existing CCTV exposes limitations due to the strengthened Information Protection Act. VueTwo is a security solution that respects personal information by providing 3D data about the object to be observed in real time without collecting personally identifiable information.



Existing

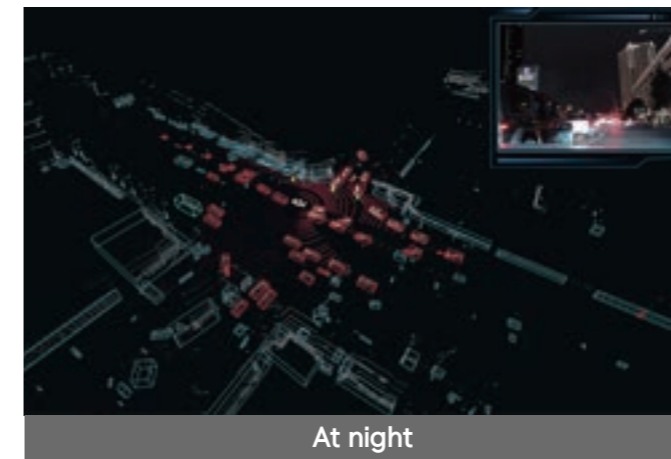


VueTwo

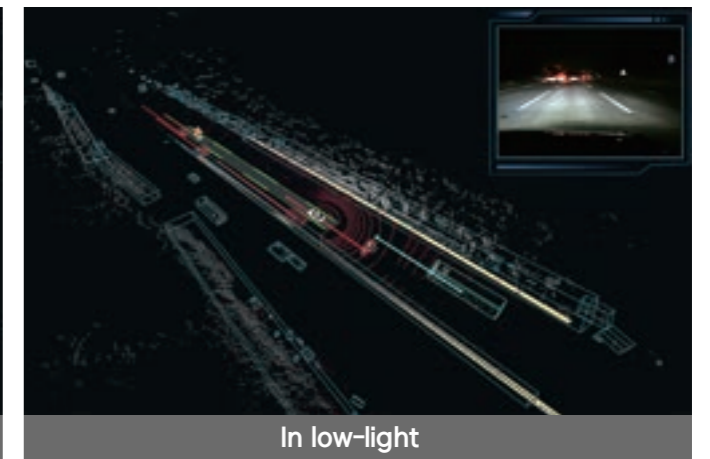
A LiDAR solution without the limits of visibility, both day and night

360° field of view, detect up to 150m range

VueTwo is stably operated both at night and in low-light environments. It is possible because the LiDAR sensor FoV works up to 360° and the detection distance is up to a 150m range.



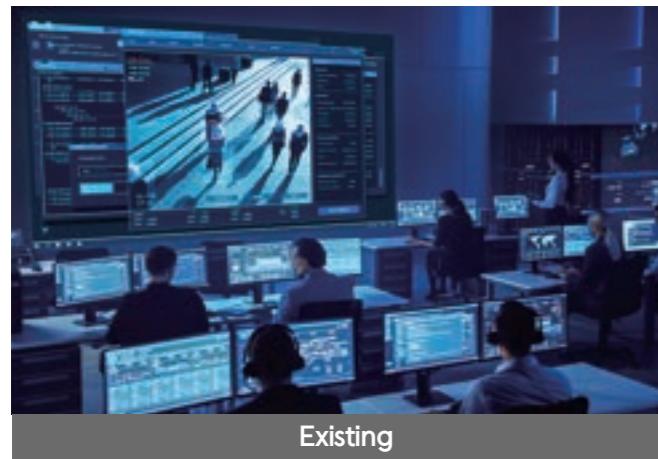
At night



In low-light

Control solutions for reducing the cost of increased manpower

VueTwo is one of the solutions helping budget issues due to manpower increases in the control center. Previously, multiple people monitored multiple screens. However, VueTwo facilitates fewer people to monitor fewer screens.



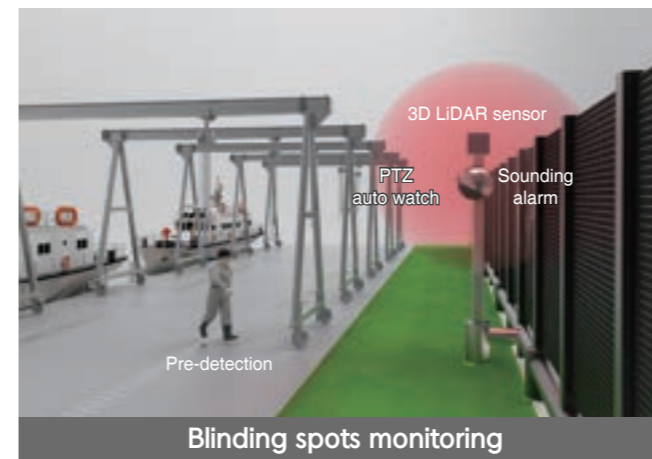
Existing



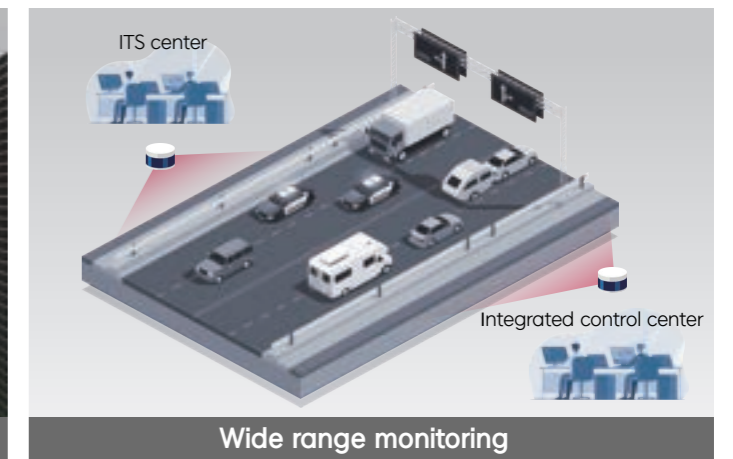
VueTwo

Higher security levels by eliminating blind spots

VueTwo utilizes the wide FoV of the LiDAR sensor to perfectly observe blind spots that existing monitoring systems miss. Additionally, VueTwo can build a more accurate and safer security system by connecting with existing monitoring systems such as CCTV and PTZ cameras.



Blinding spots monitoring



Wide range monitoring

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The starting point of smart cities, State-of-the-art technology, VueTwo

VueTwo is the best among all solutions to build smart cities.

VueTwo, a LiDAR solution, will be responsible for the basis of all systems operating to make people safer and make life smarter in smart cities.

In any area that constitutes smart cities: autonomous driving systems, intelligent transportation systems, smart factories, smart security, and more.

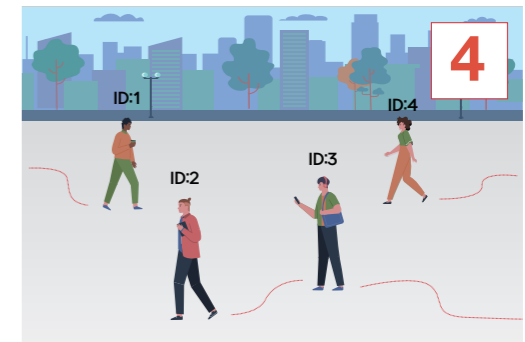
VueTwo is in charge of the safety, security, efficiency, and convenience for smart cities by connecting with all applications and devices.



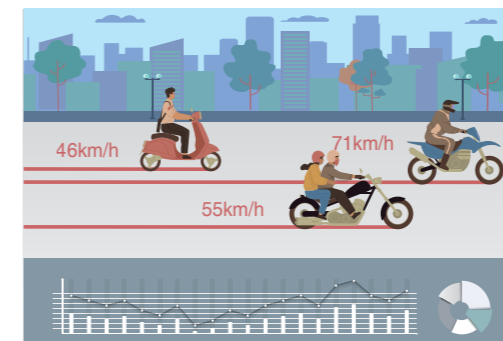
VueTwo provides the following functions



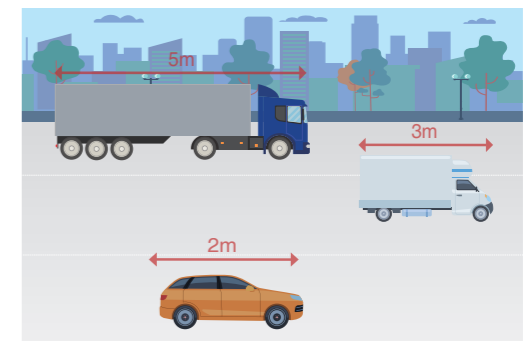
Object classification



People Counting & ID Tracking



Speed measurement



Size measurement



Event zone setting and alarming



Queue management
(Crowd analysis)



Heatmap



Sensor fusion

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Main output data

The screen displays three-dimensional information on detected objects and zones of interest.



Detected objects information

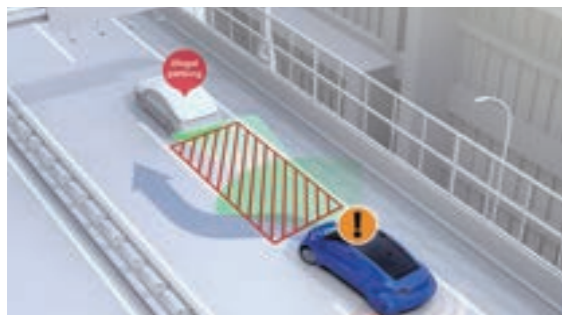
| Output data | Contents |
|-------------------|---|
| Number of objects | The number of all objects recognized within the measurement range |
| Object ID | A number assigned to identify an object |
| Class | Types of objects classified by detected results |
| Trajectory | Route of moving objects |

Zones of interest information

| Output data | Contents |
|--|---|
| Zones of interest | Initially set zone of interest |
| Zones of interest ID | Unique number for each initially set zone |
| Number of objects In zones of interest | The number of all detected objects in zones of interest |
| Object ID of interest | Identification number of all detected objects existing in zones of interest |

Simulation case by application LiDAR

Smart LiDAR Solution VueTwo



ITS (Intelligent Transport System)

1. Contents
VueTwo accurately detects all moving objects on the road and analyzes traffic volume, speed, queues, occupation, stay duration, and more to improve traffic signals. It also detects pedestrians and alerts to prevent accidents on roads and sidewalks.

2. Sites
Intersection, Highway, Crosswalk, Tunnel, etc

3. Functions

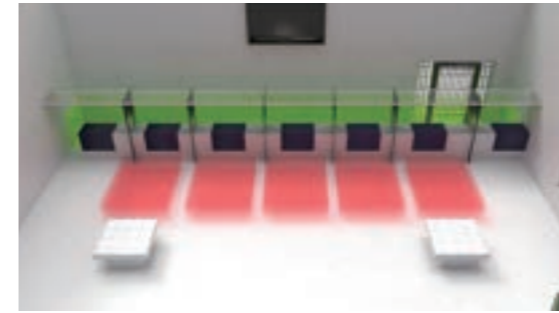


Smart Factory

1. Contents
VueTwo prevents accidents and solidifies operator safety by activating an alarm when an operator's risk of collision is detected. In addition, by monitoring workers' activities in factory, improve operational efficiency by analyzing the heatmap of movement paths.

2. Sites
Factory, Construction site, etc

3. Functions

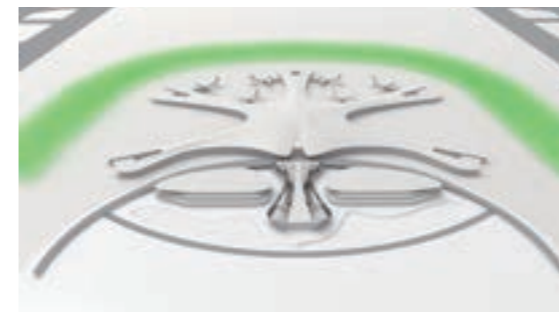


Queue management (Crowd analysis)

1. Contents
VueTwo improves operations and management efficiency by queue management based on crowd analysis in multi-user facilities. 3D-based location information provides accurate object detection data in real-time to proactively prevent accidents in crowded areas.

2. Sites
Airport, Subway, Museum, Department store, etc

3. Functions



Smart parking

1. Contents
VueTwo is possible to analyze parking lot status with accurate vehicle count and parking surface detection in real-time. By integrating with LPR or license plate detection systems, accurate parking lot information can be provided to users to reduce unnecessary time and vehicle idling.

2. Sites
Indoor/Outdoor parking lots

3. Functions



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VueTwo Product Composition

| Product | Specification |
|---|--|
| LiDAR Sensor  <Spinning Type> | <ul style="list-style-type: none"> - Detection range : 0m~120m - Number of channels : 32 channels - Vertical angle : 31° (-16~15°) - Frame rate : 5Hz, 10Hz, 20Hz - Weight : 0.8kg - Size : 76 x 103 mm - Power : DC 9~36V - Temperature : -20°C~65°C |
|  <Solid-state Type> | <ul style="list-style-type: none"> - Detection range : 0m~120m - Vertical angle : 25° - Horizontal angle : 120° - Frame rate : 10Hz - Weight : 1.12kg - Size : 105 x 131.6 x 65mm - Power : DC 9~18V - Temperature : -40°C ~ 85°C |
| Interface Gateway  | <ul style="list-style-type: none"> - Power supply power : 24V, 1.5A / AC-DC converter 120V 60Hz Outlet Power - Protocol : Ethernet TCP/IP |
| Vueron Processing Unit  | <ul style="list-style-type: none"> - Power <ul style="list-style-type: none"> · Supply power : 9V to 55V DC-in · Interface : 3-pin terminal - Size <ul style="list-style-type: none"> · 150.4 x 106.2 x 57 mm · Weight : 1.3kg - Operating environment <ul style="list-style-type: none"> · Temperature : -40°C to 75°C · Humidity : 5% to 95% · Shock : IEC 60068-2-27 · Vibration : IEC 60068-2-64 |
| Supported OS (Operating System) | Windows 10(x64) Ubuntu 20.04.3 LTS <ul style="list-style-type: none"> - Possible to select according to customer requirements |



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Technical and Purchase Inquiries

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