OUSTER

Gemini

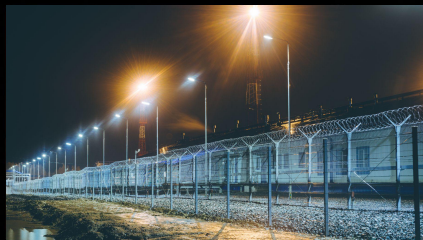## Digital Lidar **Perception Platform**

Gemini is Ouster's digital lidar perception platform designed to simplify the process of bringing spatial intelligence to your smart infrastructure. The Gemini software suite is paired with Ouster's digital lidar sensors to provide the most intuitive setup of monitoring spaces, people, and vehicles with unprecedented accuracy.

Core Applications

Crowd and retail analytics

- Understand traffic flow and user journeys
- Analyze dwell time and advertising impressions
- Maintain real-time occupancy counts over an entire store

Monitoring and security

- Create keep-out zones and trigger real-time alerts
- Monitor outdoor spaces like fence lines and gates
- Fewer false alarms and less wasted time with volumetric detection and sensors that can see in any lighting condition
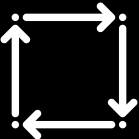

Intelligent transportation systems

- High-accuracy pedestrian and vehicle counting
- Analyze patterns in traffic flows and record incidents to keep vulnerable road users safe
- Build digital twins of intersections and roadways with real-time monitoring
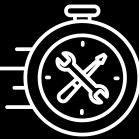
Core Features

Accurate Detection, Classification, and Tracking

Monitor the exact 3D location and movement of people, vehicles, and bicyclists with centimeter-level accuracy.
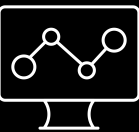
Uninterrupted Tracking

Gemini provides a single 3D view of lidar-covered space, allowing you to continuously track objects across your entire site.

Fast & Flexible Installation

The Gemini platform is configurable for any space and captures more square feet with fewer sensors[1], saving time and money during setup and maintenance.

[1] compared to camera-based systems

Configure Alerts & Analytics

Gemini brings data-driven decision making to your business. Quickly build in alert triggers or output critical analytics to inform how to optimize for profit, safety, and sustainability.

Detection at Long Distances

Gemini is built to leverage the unique power of high-resolution digital lidar from Ouster, enabling pedestrian detection up to 90 meters away.

Intuitive Zone Monitoring

A simplified user interface makes it easy to build out zones in 3D to monitor critical spaces and track key events
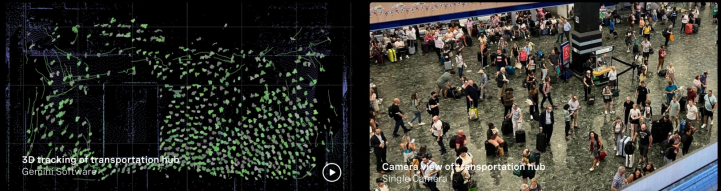
Core Benefits

Complete situational awareness of your site

Indoors or outdoors, Ouster Gemini gives you a single, seamless bird's eye view of your space. Use it to count and track customers, provide unblinking security, and accurately analyze crowd behavior and flows.

Top down view of your site
Satellite view

Real-Time Cloud Based Data
Captured By Three OS1's

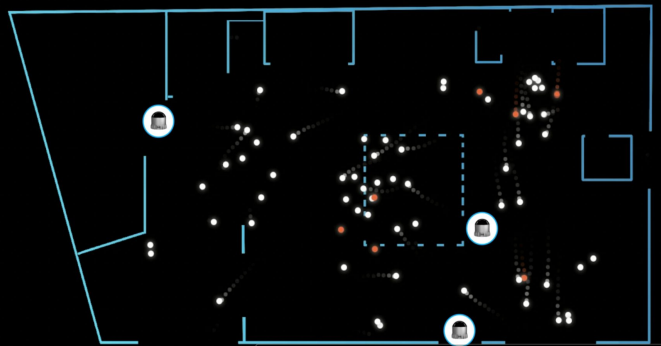## Outperforms camera-based tracking systems

Accurate 3D tracking of people and vehicles, in any weather or lighting conditions - including complete darkness. Cover large areas with fewer sensors and lower total cost of ownership. Continuous tracking across large-area sites. Reduce monitoring costs with fewer false alarms, and automatic alerts and tracking.

3D tracking of transportation hub
Gemini Software

Camera view of transportation hub
Single Camera
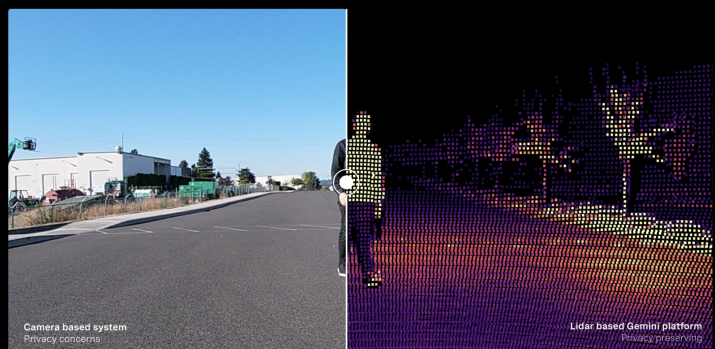
Easy setup and familiar administration

Gemini requires fewer sensors than camera-based systems, yet provides greater spatial accuracy by perfectly fusing data from multiple sensors into a single, unified view.

Familiar ceiling or wall-based installation and cloud-backed administration for easy setup and management.
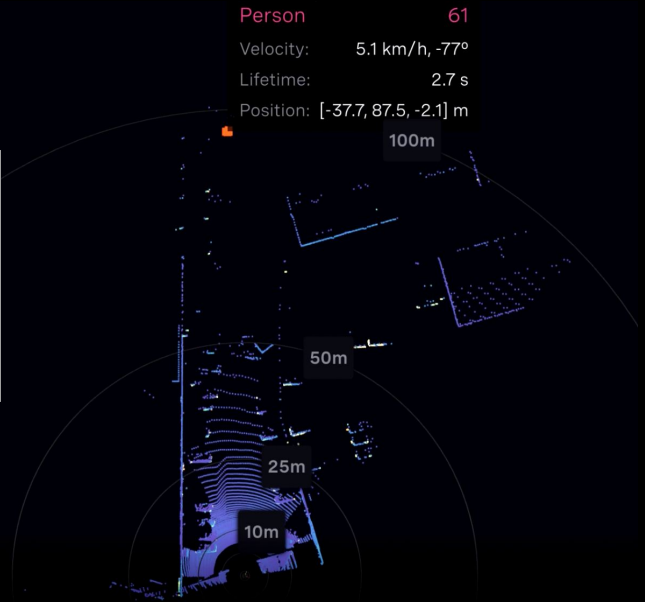

Protects privacy in public areas

Track people and vehicles anonymously without capturing license plates or facial information. Perfect for public spaces or private property that borders public streets or roads.

Camera based system
Privacy concerns

Lidar based Gemini platform
Privacy preserving

Gemini Detection Performance

Pedestrian Detection

Sensor	Detection range
REV7 OS0	55 m
REV7 OS1	90 m

Person   61
Velocity: 5.1 km/h, -77°
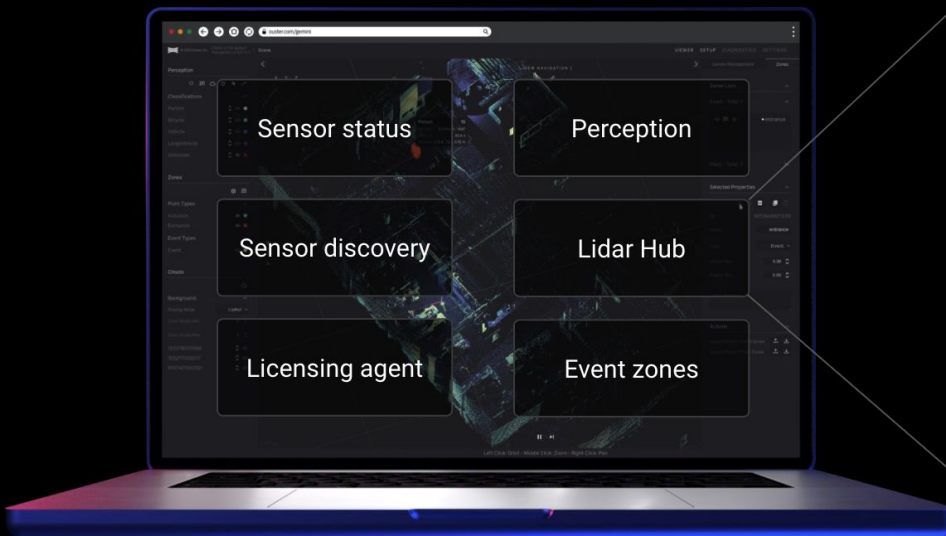Lifetime: 2.7 s
Position: [-37.7, 87.5, -2.1] m
100m
50m
25m
10m

Gemini API

Output

Object Classes	Pedestrian, Bicycle, Vehicle (car, pickup truck), Large Vehicle (Bus, Class 8 Truck)
Object Level Detail	Object Class, Object size, Location (x,y,z), Direction of travel (deg), Velocity
Zone Types	Event, Inclusion, and Exclusion
Event Zone Data	Real-time or Aggregated: - Active Occupants - New Unique Visitors - Total Visits - Average Dwell Time

Gemini Software Modules

Ouster Gemini GUI

Sensor status

Perception

Sensor discovery

Lidar Hub

Licensing agent

Event zones

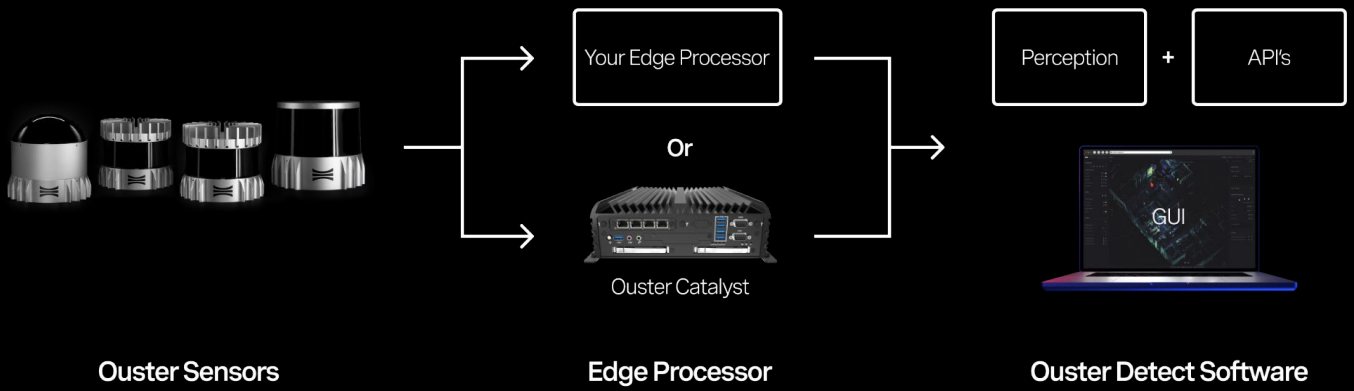## Lidar Hub

Gemini's integration accelerator

Dramatically simplifies output integration into reports, dashboards, and automated responses

End-point configuration (MQTT/TCP)
- Downsampling
- Batching
- Filtering
- Field Mapping
- Data Recording

Platform Setup

Ouster Sensors   Edge Processor   Ouster Detect Software

Your Edge Processor

Or

Ouster Catalyst

Perception + API's

GUI

Sensors

OS**Dome**   OS**0**   OS**1**   OS**2**

	Hemisphere view	Ultrawide view	Mid Range	Long Range
Resolution	64 or 128 channels	64 or 128 channels	64 or 128 channels	64 or 128 channels
Range @ 10% Reflectivity	20 m	35 m	90 m	200 m
Range @ 80% Reflectivity	45m	75m	170m	350m
Vertical FOV	180 º	90 º	45 º	22.5 º

Edge Processor

Catalyst Edge Computer

Catalyst Pro

3-8 lidar sensors

Catalyst Lite

1-2 lidar sensors

OR

Your Edge Processor

Requirements:
2Gb/lidar sensor
1 CPU core/lidar sensor
2 Additional CPU cores

Ouster Gemini Software

Included in Gemini
license package

Detect
Perception

APIs

GUI