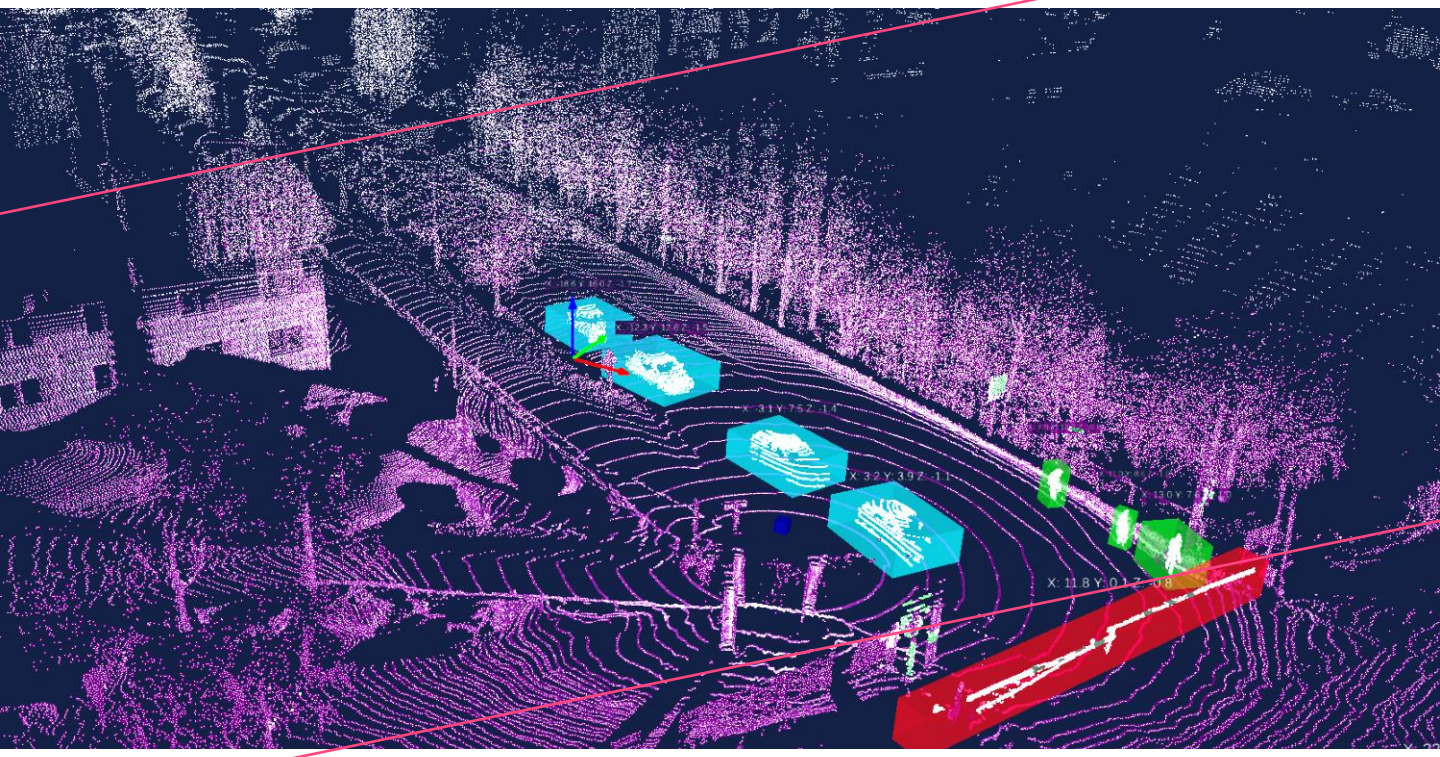
ACUITY 24.01

An award-winning lidar software solution

DETEKTOR INTERNATIONAL AWARD Best Product 2023 IoT SECURITY

Detect events with high precision by using 3D laser technology. Unlike traditional solutions, Acuity delivers instant, reliable information based on laser measurements and advanced 3D analytics.

3D laser technology, like lidar, is an active sensing device sending out laser pulses, making it independent of light conditions and more robust.



> Save X0 000 EUR of installation costs compared to other lidar solutions

> Do it yourself, software configuration takes minutes, not days

> No need of specialized hardware and multi-brand support

> Open platform, integrate with VMS or PSIM systems

Features

Create zones of interest

Create 3D zones in the 3D view or create 2D zones in the top-down map view. Each zone can have different functionalities and they can also be linked together with logic and time operators to create more advanced triggers.

- *Motion detection*: React to small changes independent of object type.
- *Loss detection*: React to something in the area becomes missing.
- *Object detection*: React to objects of a certain type entering a zone, such as human or vehicle.

Object detection

With several steps of filtering the point cloud in real-time, information about moving objects and activities is gathered.

The filter settings allow you to decide how large objects or how big changes need to be for being labeled as an object. This mitigates false alarms effectively and is tunable to each site's unique needs.

Information provided for every detected object:

- Position
- Velocity
- ID
- Class
- Heading

Object classification

Object classification is rule-based, making it possible to add and edit classes in real time depending on object physical dimensions. The pre-configured classes out of the box are human, car, and truck.

Unclassified objects can also be handled and be of interest since the advanced filtering settings already excludes smaller objects and movements from vegetation, etc.

PTZ camera control

The system can dynamically control the full movement of a PTZ camera to follow an object's path without the need of having pre-set camera positions. The camera is following the closest object to the camera or the latest object.

Hardware requirements

Sensors

Ouster, Blickfeld, Velodyne, Cepton, Hybo, Aeva, Innoviz, Hokyuo and SICK are among sensor brands that have been tested by us. We continuously test and integrate new sensors. Almost any sensor can easily be integrated upon request.

Cameras

Axis, Hanwha, Avigilon and Bosch have been tested by us but all cameras supporting ONVIF standard are compatible.

LPU (Lidar processing unit)

Recommended system requirements

- Equivalent of 4000 CPU marks of processor power per 1M sensor points/sec and at least 2 cores per sensor
- 4GB RAM and 100GB disk space per sensor
- Linux OS for running Docker containers

This is used in some systems:

- Splitters and injectors for sensors with no PoE connection
- Switches and modules for digital I/O

Performance

The system has built-in self-diagnostics to detect faults and ensure the best possible performance. The self-diagnostics include dirt detection, anti-tampering, sensor analytics, and system monitoring. This data can activate other systems or be sent as alarms.

User interface

The user interface can be accessed from any PC or Android device using a web browser. The interface includes:

- Map view for calibrating cameras and sensors
- Camera view for calibrating PTZ control
- Lidar view for configuring the 3D zones and settings

Integrations

External integrations:

- Milestone Generic Events
- MQTT
- SIA DC-09

ONVIF support will be added in upcoming releases.

Data

	Data type	MQTT	SIA DC-09	Milestone
Based on zone	**Event (start+stop)** Zone type Object ID Class Number of points (motion detection)	✓	✓	✓ *
Based on zone	**Alarm (continuous)** Zone type Object ID Class Number of points (motion detection)	✓		
Based on zone	**2D zone event** Intrusion Counting	✓		
Based on zone	**3D trace from event** Link to browser based 3D viewer Link or file, PNG 2D image	✓	✓	
Based on objects	**Tracking** ID Speed Sensor name Class Center of mass coordinate Prev. center of mass coordinate AAB min coordinate AAB max coordinate OOB min coordinate OOB max coordinate OOB transform Prev. OOB transform Gravity bounding box min coordinate Gravity bounding box max coordinate Gravity bounding box transform	✓		
Based on objects	**Counting** Number of detected objects at the moment for each class	✓		
System	**Self diagnostics** Dirt detection Anti-tampering	✓	✓	✓

** Milestone's generic event interface does not support variable metadata. ONVIF will.*