

# ALRAD Instruments Electronics Spotlight November 2023

Welcome to our November 2023 Electronics Spotlight. In this month's issue we focus on the HLS-LFOM Series ToF (time-of-flight) 3D LiDAR Motion Sensors from Hitachi-LG.

These sensors calculate distance by measuring the time it takes for an infrared laser to emit light and receive the reflection from the object.

Because the sensor measures distance by individual pixel of the image sensor, it shows shape, size and position of the person or object in view in 3 dimensions. Operating at 10 to 30 fps(frames per second) it is possible to detect and track the motion of the person or object in view.

## 3D LiDAR Time of Flight (TOF) Motion Sensor Series

Object distance measurement with high accuracy in real time. Easy to install with Ethernet (POE+) connection. The included Software Development Kit (SDK) allows for use in multiple applications.



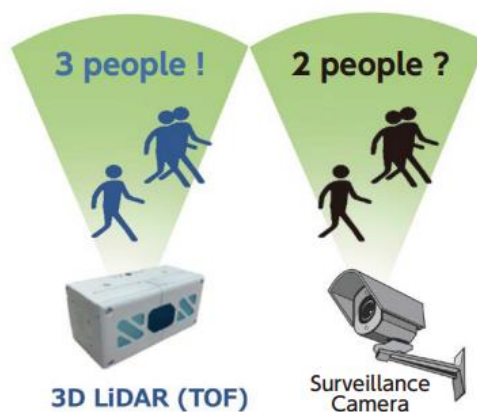
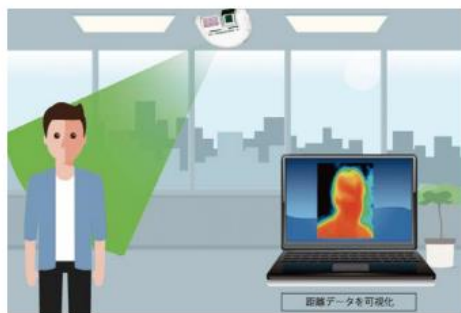
### Features:

#### Privacy Proof

The 3D TOF Sensor can detect humans and objects without identifying individuals. It can be installed in private spaces such as medical facilities and washrooms

#### Accurate Behaviour Data

The 3D TOF Sensor captures behaviours data with high accuracy and reliability even if people cross or pass each other. The acquired data can be useful for marketing, research and extensive use cases



## Available Models



### HLS-LFOM5

**For Ceiling and Wall installation:**

Sensing distance 0.7~10m

Ethernet 100BASE-TX



### HLS-LFOM5A

**For Ceiling and Wall installation:**

Longer Sensing distance 0.7~13m

Ethernet 100BASE-TX



### HLS-FOM1

**For Indoor use:**

Sensing distance 0.7~10m

Ethernet 100BASE-TX



### HLS-LFOM3

**Dustproof, Waterproof IP66 Rated:**

Sensing distance 0.7~10m

Ethernet 100BASE-TX

For more information and to order, please follow the link → or call the ALRAD Sales Team on 01635 937000 , we will be happy to help:

[Hitachi ToF LiDAR](#)

# Application Examples

## Application For Marketing use - Intelligent Behaviour Analysis

### Challenges and Needs:

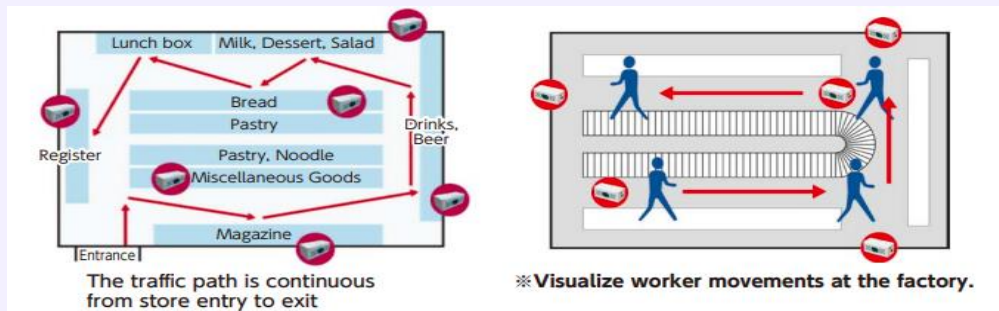
- Visualise customer behaviour and customer service data
- Optimise product line-up & layout
- Analyse effectiveness of marketing promotions

### Benefits:

- Analyse customer behaviour more effectively
- Increase sales revenue
- Improve loss prevention

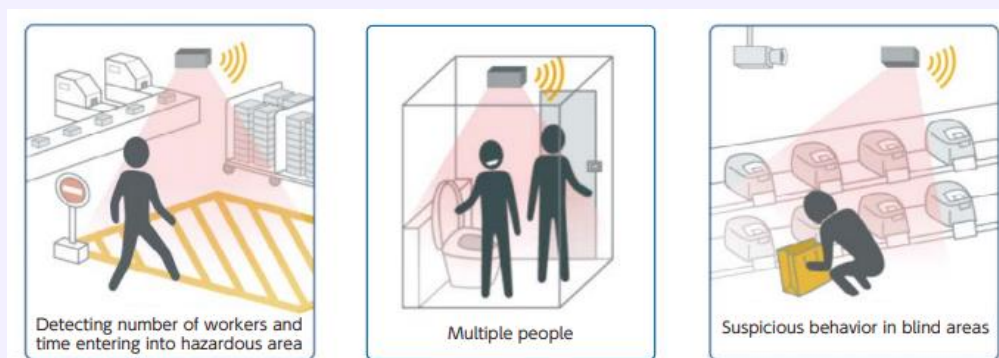


**Installation Space:** In all areas in the store:



### Other Applications:

- Monitoring restricted area access
- Detecting suspicious behaviour and decrease shrinkage loss
- Tailgating prevention
- Detecting numbers of workers in hazardous areas
- Monitoring medical facilities



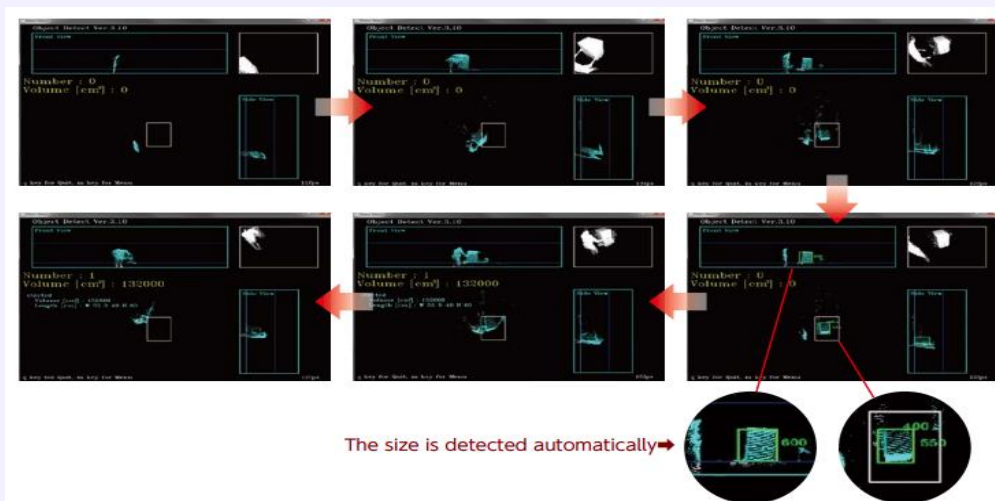
### People Counting Applications:

- Precisely count people traffic in front of digital signage
- Quantify the effectiveness of advertising by measuring the walking speed of passers-by.

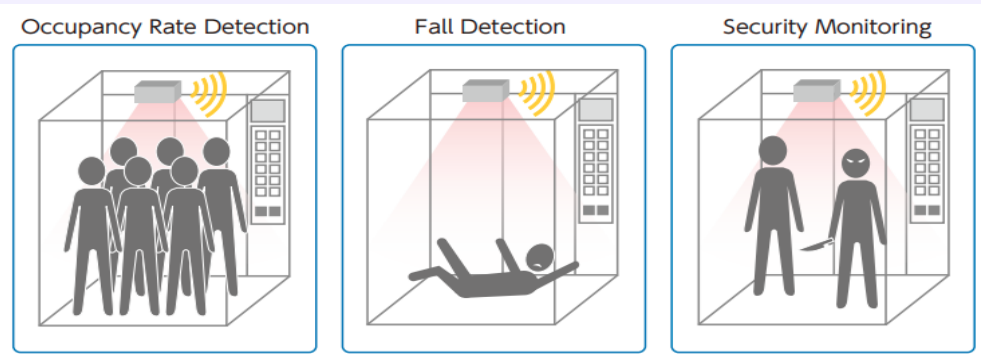


### Metrology Applications:

- Increase work efficiency by automating dimensional measurements



### Elevator Monitoring:



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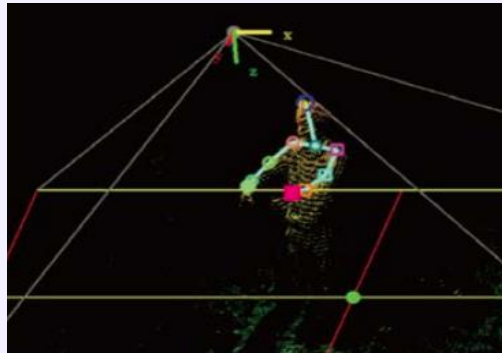
[Hitachi ToF LiDAR](#)



# 3D LiDAR Motion Sensor Software Development Kit (SDK) Included

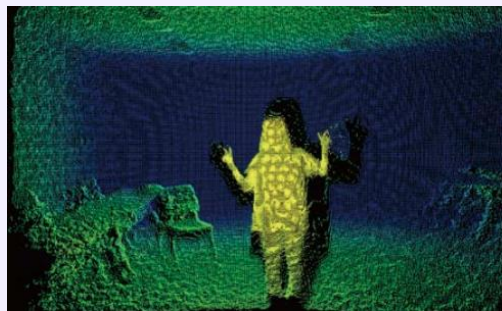
## SDK Features:

- Standard support for Human detection
- API enabling easy use of 3D data
- Ready to use sample applications
- Supports multiple operating systems

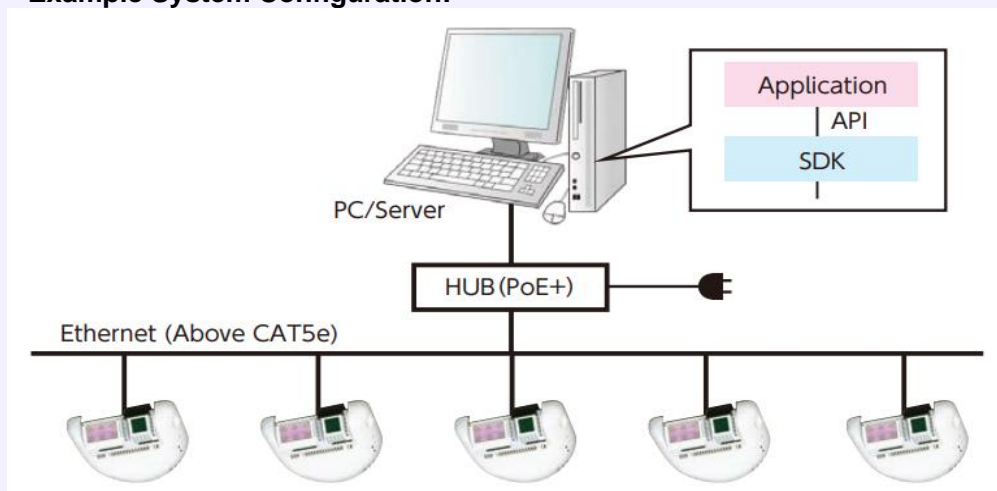


## Key Functions:

- Multiple sensor management
- Distance data capture
- Lens distortion correction and 3D point cloud conversion
- Capture / Emulation
- Human detection
- Background subtraction

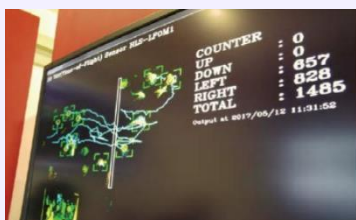


## Example System Configuration:



## Sample Applications

### Human Detection



### Hand Position Detection (Shelf)



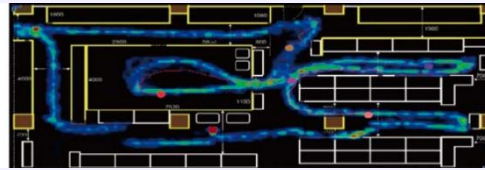
### Hand Position Detection (Table)



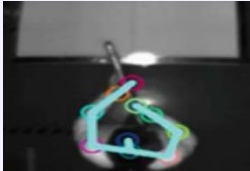
## Multi-Sensor Coordination Kit



## Traffic Flow Analysis with Multi-Sensor Data stitching



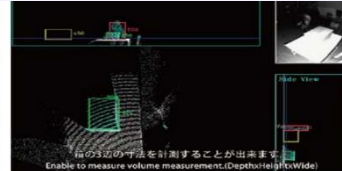
## Skeleton Detect



## Touch Detection



## Volume Sizing



Many other sample applications are available - Please contact us to discuss your requirements.\* Sample applications are not included in the SDK

For more information please call the ALRAD Team on 01635 937000 , we will be happy to help:

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