PERSON AND OBJECTS 3D DETECTION SYSTEM

Stacker reclaimers

System and detection zones
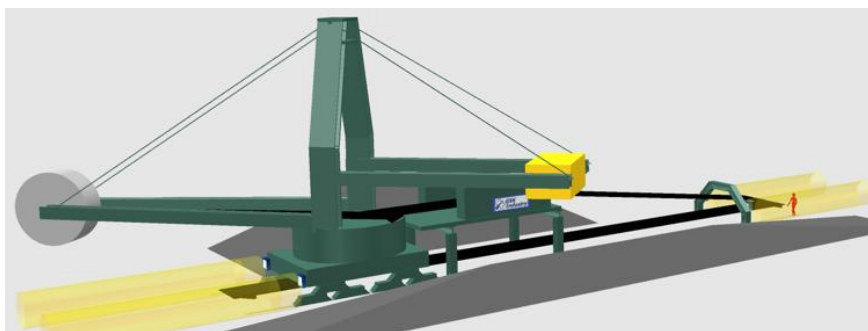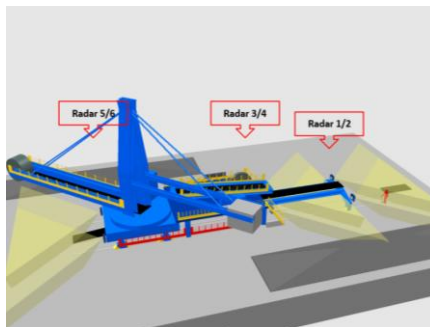
System description

System detects a person / object in the dangerous zones both when the machine is stopped and during movement.
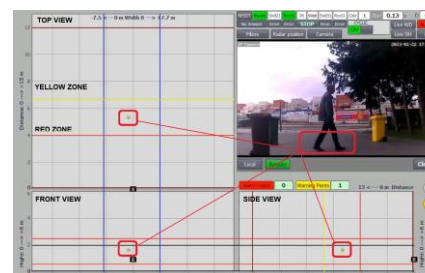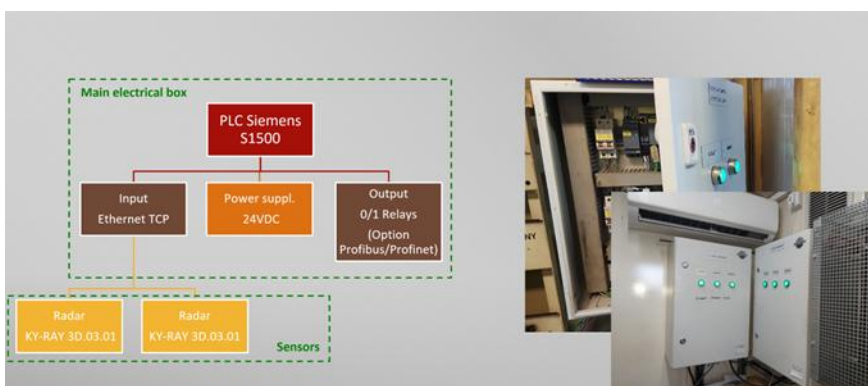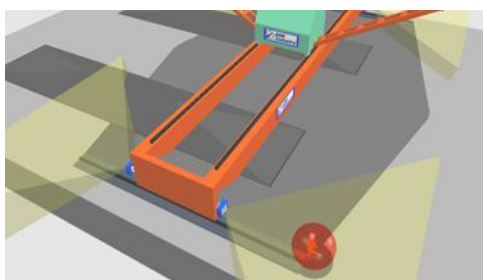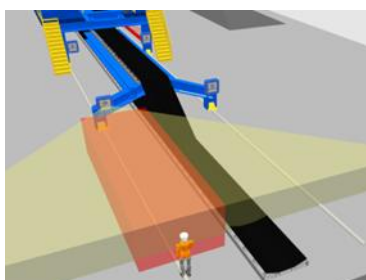
During the movement of the machine, the person / object is detected when they are moving or stationary.

Features:

- Range: ≤ 20m
- Opening angle: +/- 45°
- Warning and alarm zones
- Elimination of interfering signals (metal elements, ground)
- Filtering objects based on their speed
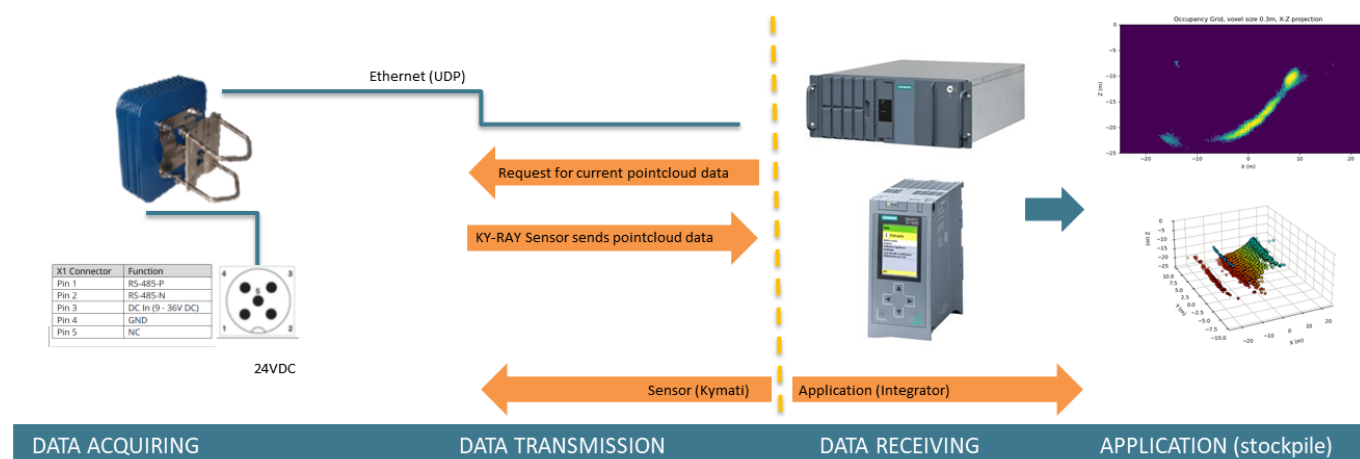- Automatic beam leveling

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How the system works

3D radar, unlike 1D radars (mainly used for distance measurement), generates a data cloud with each measurement cycle. Each point in this set has specific coordinates and velocity.

Dedicated software allows you to group points into sets with similar parameters and filter sets that are unnecessary in a given process. Therefore, in order to determine the set of points characterizing a human in the best possible way and to eliminate the ground, structural elements of the coke oven battery (which reflect the radar beam more effectively from the human) and interference in the detection process, it is necessary to process the data using prepared software.

X1 Connector	Function
Pin 1	RS-485-P
Pin 2	RS-485-N
Pin 3	DC In (9 - 36V DC)
Pin 4	GND
Pin 5	NC

24VDC

Ethernet (UDP)

Request for current pointcloud data

KY-RAY Sensor sends pointcloud data

Sensor (Kymati)   Application (Integrator)

DATA ACQUIRING   DATA TRANSMISSION   DATA RECEIVING   APPLICATION (stockpile)

Therefore, the complete system includes 3D Radars from Kymati, a PLC controller (in an industrial housing) and GSK Industry software for data cloud analysis.

Thanks to such a combination, the user can receive information about the threat in a specific zone, issued on relay outputs or in the network protocol. Optionally, data packages are available that allow you to create a visualization (for example, on your existing PLC system). Data can be sent in any network protocol (Ethernet, Profibus, Profinet). Also as an option, the user can set the desired activation levels of the relay outputs (2 relay outputs warning and alarm zone).