

3D SURFACE IMAGING AND BULK MATERIAL DETECTION SYSTEM

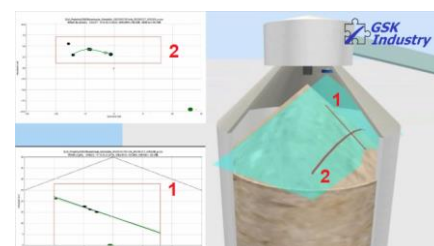
Cement, coal and coke silos



System description

System:

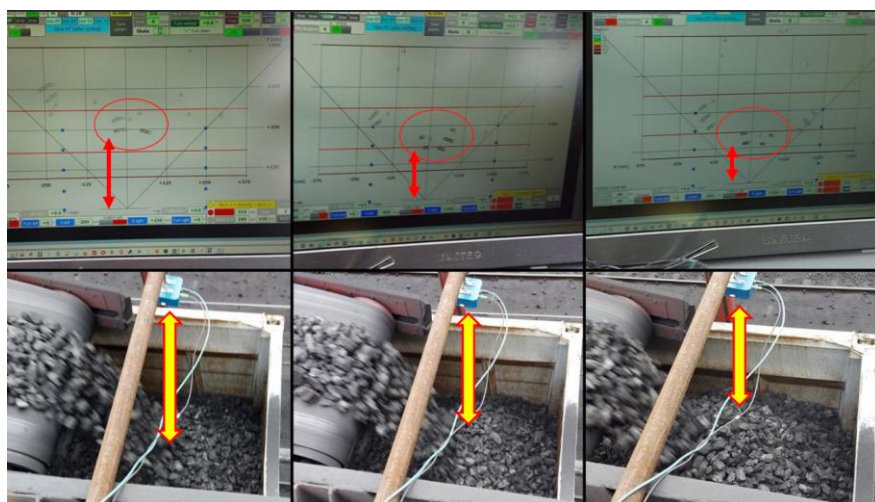
- Performs data packets with information about the level or surface of the tested material
- Displays data enabling the creation of a visualization on the user's existing PLC system.
- Prepares warning and overflow signals to the relay outputs



Features:

- Range: $\leq 40\text{m}$
- Opening angle: $\pm 45^\circ$
- The software allows you to limit the detection zones horizontally and vertically
- Filtering objects based on their speed (elimination of reflections - e.g. of wagon walls)
- Data frame outputs or relay control
- Industrial design for harsh environments

Railway wagon filling

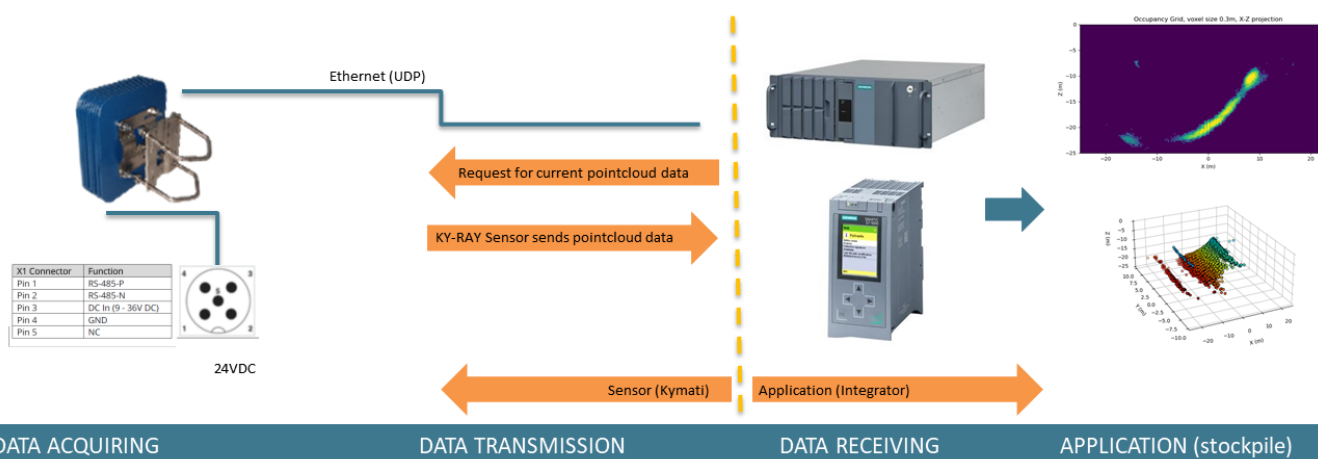


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How the system works

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 metal wagon sides or silo walls (which reflect the radar beam more effectively from the bulk material) and interference in the detection process, it is necessary to process the data using prepared software.



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 receives data packets in the network protocol containing data on the level of the tested material and/or data enabling the creation of visualization on the user's 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 exceeding zone).