

MACHINE TO MACHINE (M2M) & INTERNET OF THINGS (IOT)

PRODUCT **PORTFOLIO**





HALOTEC SMART VISION

Utilizing Deep Learning in Artificial Intelligence, Halotec Smart Vision can deliver any Object Recognition with Edge Technology to deliver fast, real-time Machine Vision results to automate business processes. HI Smart Vision is designed based on Edge Computing Technology that has the ability to process and store data faster so that it can deliver more efficient real-time applications and at the same time save bandwidth costs. The smart camera vision has embedded AI module that makes the Smart Camera capable of performing Any Object Recognition, Any Object Tracking, Counting and Classification, and the last feature is People Face and Body Posture Recognition.

1. CONTAINER OPTICAL CHARACTER RECOGNITION (OCR)

Container Optical Character Recognition (OCR) is only one of the features of the Halotec Smart Vision. For Container OCR, the Halotec Smart Vision is capable of recognizing Container Number, ISO Code, Max Weight Gross Weight, and even Vehicle Licence Plate number. The accuracy of Halotec Smart Vision's OCR has been proven and has also been given a Certificate by Indonesian Classification Bureau at a level of 99.25%.



BEST FEATURES

- 1 Container Optical Character Recognition (OCR)
 - Container ID
 - Container Size
 - Container Type (G1, U1, R1, P3)
 - Batch Number / TAG Number
 - ISO Code
 - Max Gross Weight (MGW)
- 2 Container Automatic Damage Detection
- 3 Object Recognition
 - Door direction
 - Detection & positioning of 2 x 20 ft container on trailer (front/rear)
 - IMDG Label Presence
 - Seal Presence
 - DG label incl class and UN No.
 - Truck Axle Number

Day time

Night time

DETECT AT ANY TIME

Detect container number and multiple seals present in any location at any time.



EXAMPLE RESULT OF OUR OCR SYSTEM

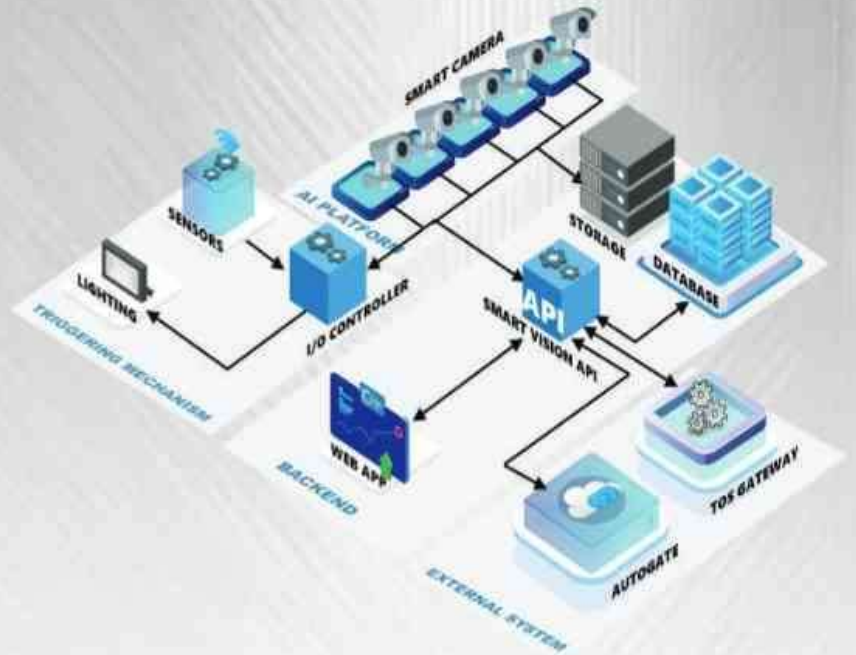


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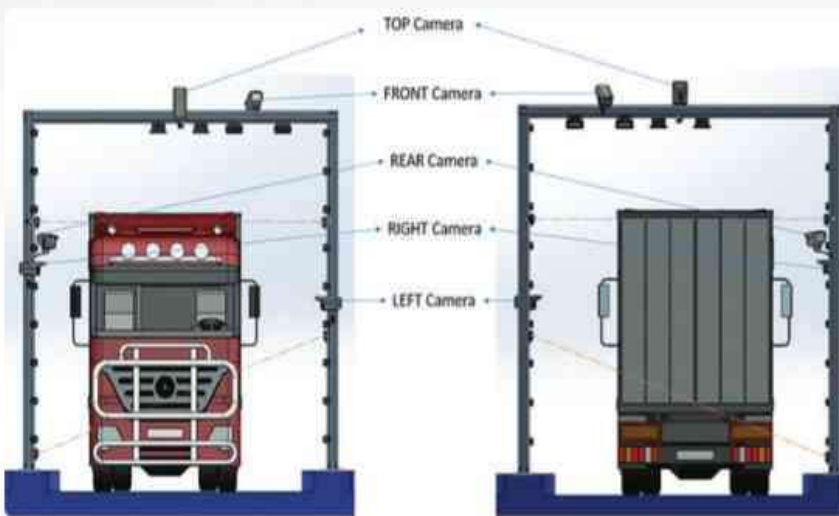
SYSTEM ARCHITECTURE

The HI Smart Vision system uses optical machine vision and image recognition. The produced result is generated and processed by a smart camera and can be sent to the server via API. The data produced can be used along with the current existing TOS System.

Smart camera is a self-contained, standalone vision system with built-in image sensor and processing unit. When information from the trigger meets the required criteria to start the process, the smart camera will capture an image or video to be used in the AI process, this is the core process of our smart vision system.



FUNCTIONAL PRINCIPAL



- ✓ Five cameras are used to capture surface images of five sides of the container.
- ✓ Three of those five cameras implement stitching image technology to produce LEFT, RIGHT, and TOP side of the container's surface images. The REAR camera takes picture of the REAR side of the container and do all the recognition process.
- ✓ The resulted images are processed by Machine Vision Technology employing the current state of the art technology in Artificial Intelligence to recognize the containers.

KEY BENEFITS

Cost

HD Camera for general use cost from 400 USD to 1,500 USD.

Durability

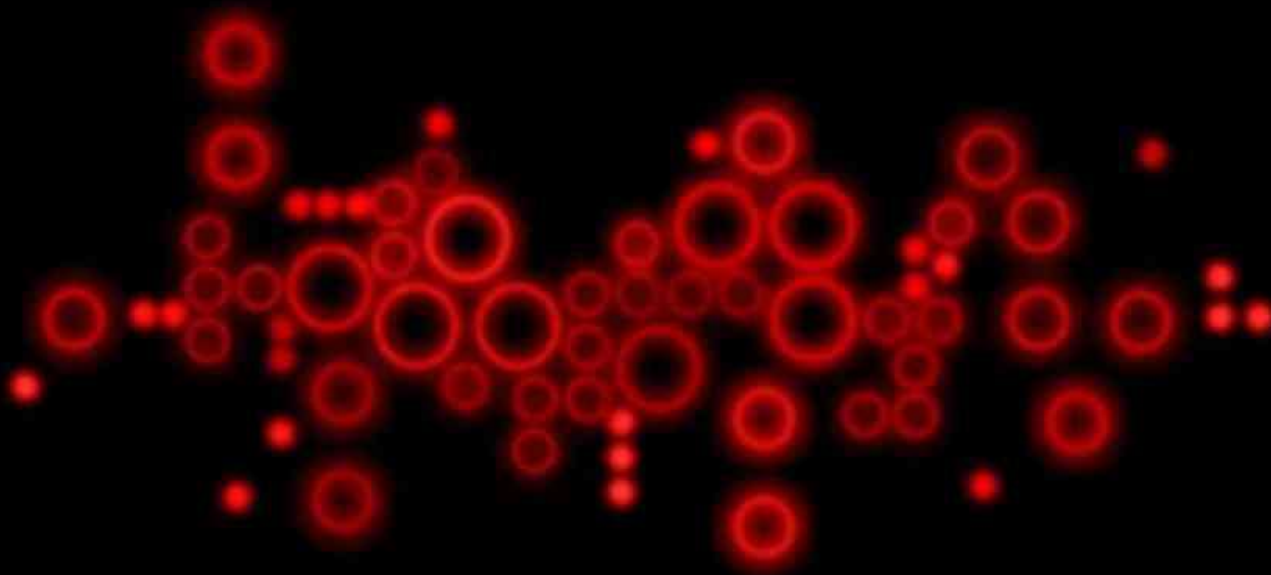
Generally speaking, cameras will last anywhere from 5 years and up.

Accuracy

The accuracy of using camera technology will depend on the accuracy of the driving software to produce the desired result.

With the rise in AI technology, Machine Vision will get better and better result since it continuously improves the more data available for learning.

IT SOLUTION FOR BETTER BUSINESS



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