



AI-based OCR Technology Empower Gate Automation

Dahua container OCR solution



Automatic



Traceable



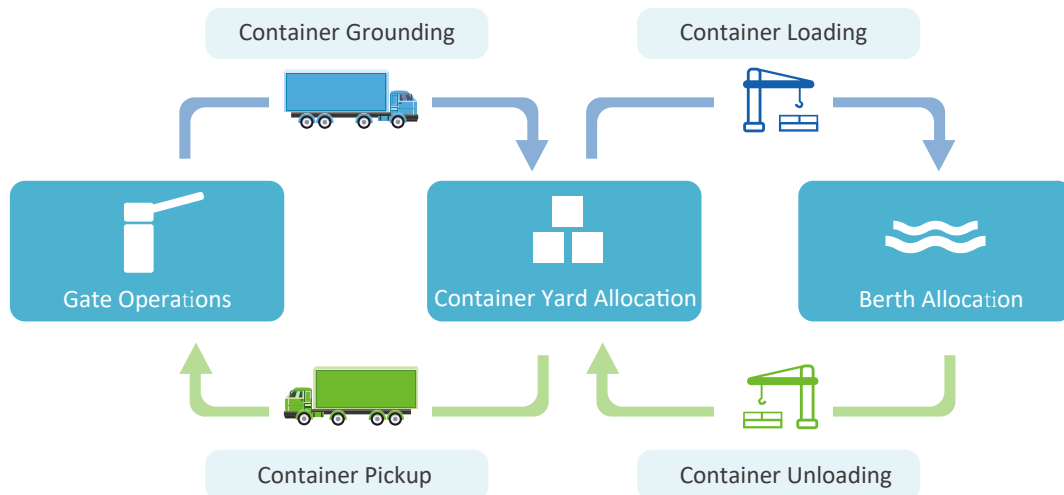
Flexible



Background

Terminal Gate Operation:

Handle container pickup and ground applications, and record related information.
Conduct inspection, weighing of container etc.



Challenges



Manual acquisition of data with low efficiency and frequent mistakes



Difficulties in container inspection

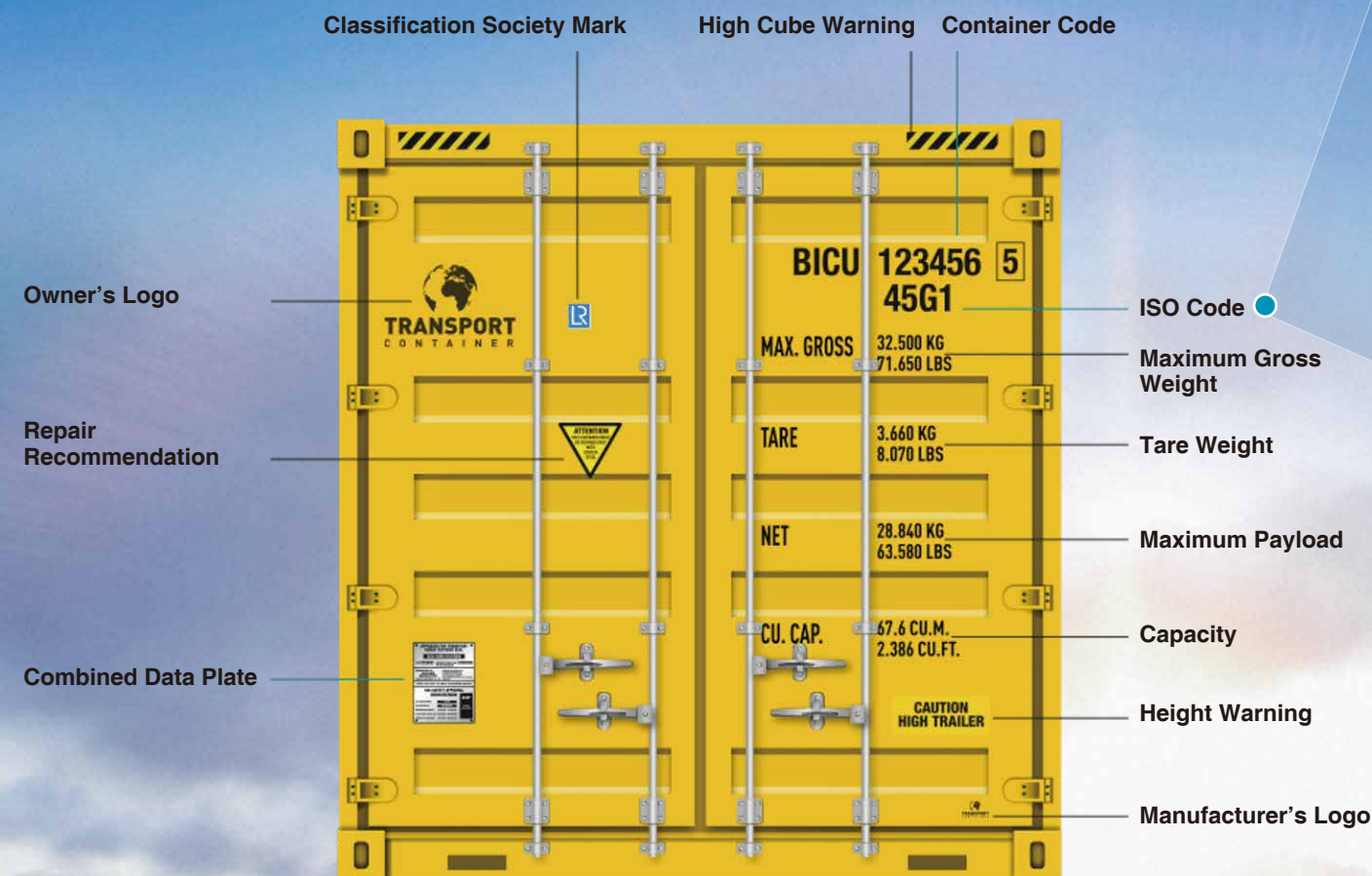


Lack of effective data collection solution to improve IT capability

High Performance Algorithm

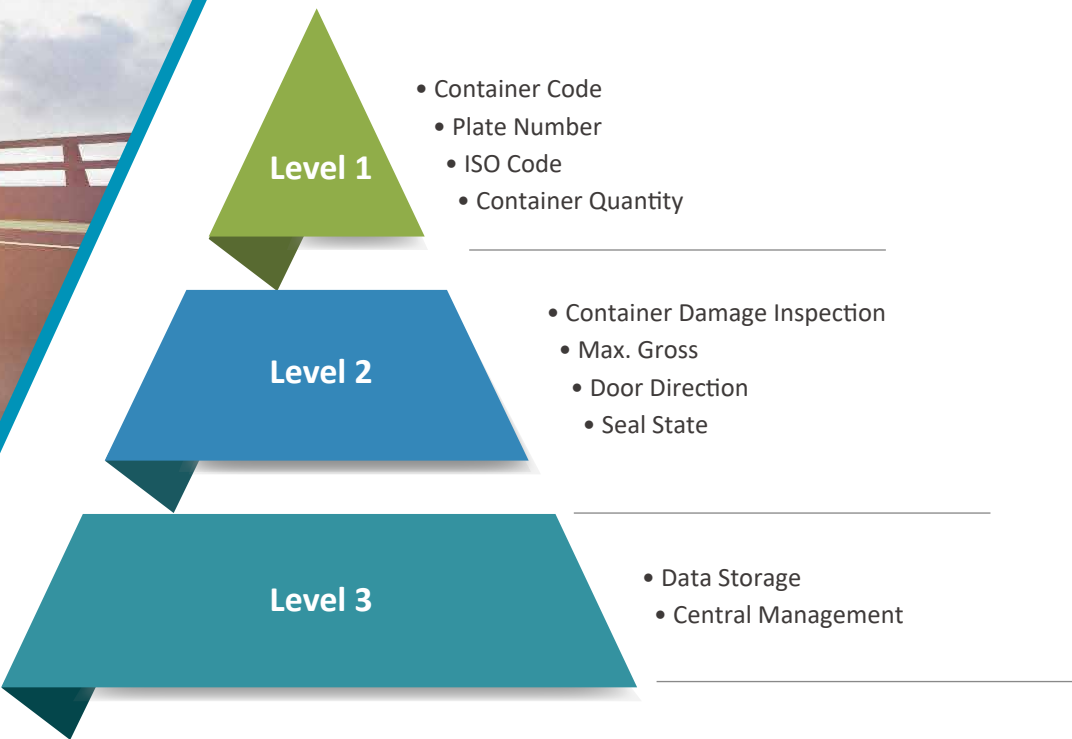


Container Information



Length		Height	Characteristics
4		5	G1
ISO Code Definition			
Length	Height		Type
2-20 Feet	2-8 Feet 6 Inches		G1-General Purpose Container
4-40 Feet	5-9 Feet 6 Inches "High Cube"		R1-Refrigerated Container
L-45 Feet			U1-Open Top Container
M-48Feet			P1-Platform Container
			T1-Tank Container

Requirement



Owner Prefix	Equipment Identifier	Serial Number	Check Digit
BICU		123456	5

- The owner prefix (BIC code): three capital letters of the Latin alphabet to indicate the owner or principal operator of the container.
- The equipment category identifier: one capital letter as follows
 - **U** for all freight containers.
 - **J** for detachable freight container-related equipment.
 - **Z** for trailers and chassis.
- The serial number: six Arabic numerals, left at owner's or operator's option.
- The check digit: one Arabic numeral providing a means of validating the recording and transmission accuracies of the owner code and serial number.



HD And Low Distortion Images For Damage Inspection

Container surface inspection is a big challenge for gate management. This solution provides HD and low distortion images for remote surface inspection that can be recorded and stored for later use if needed.



Top Image



Front Image



Left Image



Right Image



Back Image

Solution Value

Automatic

- Supports automatic capturing of container quantity, container code, ISO code and plate number.
- Supports automatic recognition of container door direction, Max. Gross and seal status.
- Supports capturing of container's HD images (max. 5 sides) for damage inspection.

Traceable

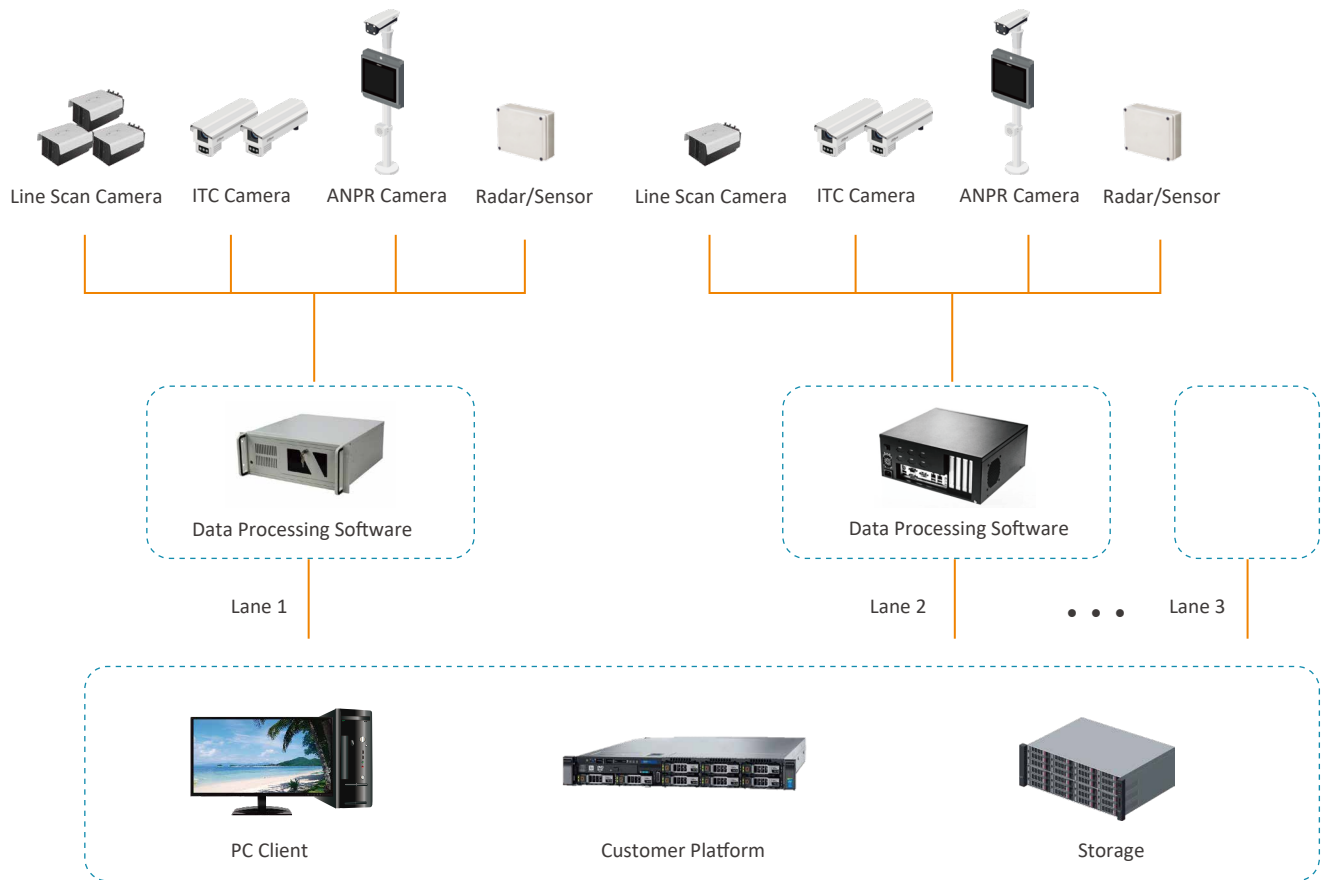
- All data and pictures are stored in the system, enabling easy and convenient tracing of records.
- Supports storage extension.



Flexible

- Provides a variety of solutions for different scenarios and customers.
- Supports central management and standalone management.

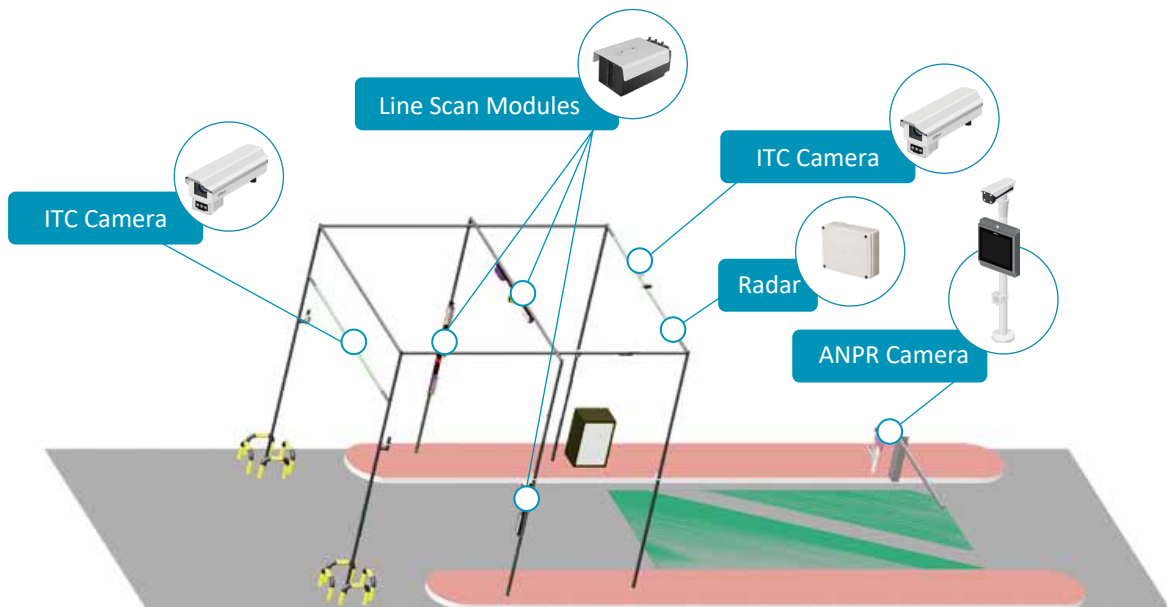
Solution Topology



Solution Installation

3/5-side Scanning Solution:

- 1 or 3 line scan camera, scanning container's top, left and right side image.
- 2 ITC cameras, scanning container's front & rear side image.
- 1 ANPR cameras, recognize vehicle plate number.





Recommended Products



MV-CRB5021CE-10

- Adopts high resolution industrial color line scan camera
- Adjusts the scanning frequency according to speed
- Supports connection with 2-way radar
- Supports connection with LED light
- Supports GigE network
- Protection grade: IP67



MV-CRL5C00CE-00

- High brightness line light LED for line scan camera
- 120° emission angle with 1~2m distance
- Illumination >20000lux@1m
- Supports RS485 and I/O control
- 1~9 level brightest
- DC48V, max. consumption 220W
- Protection grade: IP67



ITC352-AU3F-L

- 1/1.8" GS-CMOS image sensor
- Single shutter/holographic double shutters/three shutters, shutter speed 1/50 s–1/100000 s (auto/manual)
- 2048×1536@50fps
- Supports video detection/radar/coil
- 3 illuminators (white light LED strobe, with adjustable brightness)
- Supports C mount Lens; Supports iris control and focus control
- 2 RJ-45 Ethernet ports, 2 USB 3.0 ports, 2 RS485, 4 RS232, 4 i/o
- Protection grade: IP66



ITALF-300AG

- All-in-one Illuminator
- Color temperature: 5800K±200K for xenon, 3500K for LED
- Trigger mode: Pulse width trigger/edge trigger
- Illumination coverage: 1 lane
- Illumination distance: 16 m-26 m (52.49-85.30 ft)
- Protection grade: IP66



IPMECS-2201C-IR

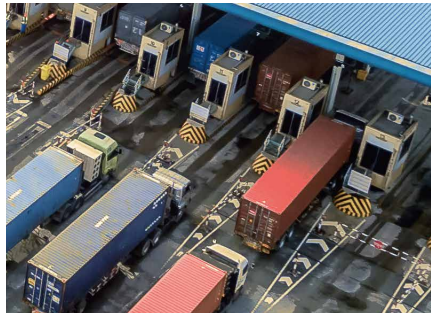
- Integrates capture camera, display screen, audio prompt and audio intercom
- Built-in 2MP deep learning camera that can adopt to more scenes
- Highlight display screen with a large visual angle and long service life
- Simple construction, convenient wiring and easy maintenance
- Embedded with LPR algorithm inside the camera
- Vehicle data structuring: LPR, vehicle size, and vehicle color detection etc.



Application Scenarios



Terminal Gate



Customs/Border Gates



Gate for Bonded Logistics Center

Success Cases

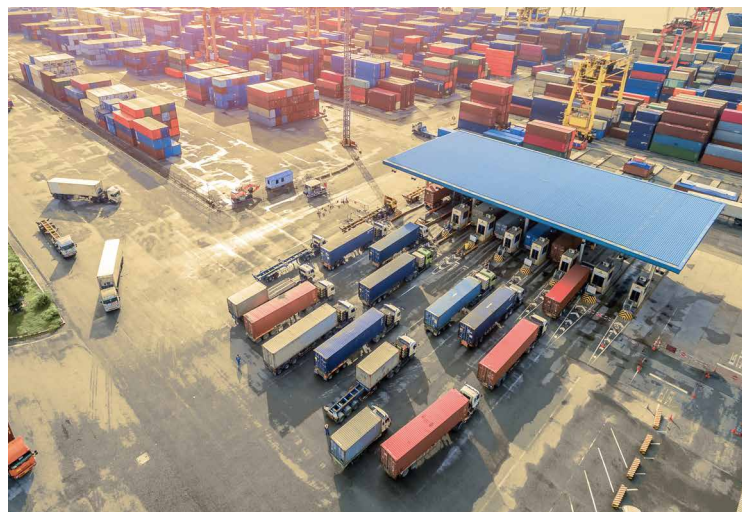
“Being one of the three container terminals in Shenzhen port, the C container terminal has acquired an international recognition for its terminal management and state-of-the-art facilities for the past 15 years. It operates 9 container berths with the total length of 3,100 m, and a yearly handling capacity of 6.2 million TEU.”

Achievements

From 2018, Dahua designed the 5-side container scanning solution for C container terminal.

This solution helps reduce labor by changing from manual to automatic operation. It also significantly improves passage in the terminal, decreasing the average operation time from 5 minutes to 20 seconds.

This solution provides an effective way in handling Container Inspection.



DAHUA TECHNOLOGY

No.1199 Bin'an Road, Binjiang District, Hangzhou, China. 310053

Tel: +86-571-87688883 Fax: +86-571-87688815

Email: overseas@dahuatech.com

www.dahuasecurity.com

