

# MORE INTELLIGENT MORE SECURE FOR HARBOR

-Secure  
-Reliable  
-Intelligent



#### More Details

- Panoramic View
- Thermal View
- 4K



#### Better Reliability

- Anti-Corrosion
- Explosion-Proof
- Dustproof



#### Video Analysis

- Container No. Recognition
- License Plate Recognition
- Personnel Identity Verification

# HARBOR THREATS AND REQUIREMENTS

## Environmental Challenges of Harbor Surveillance



## Common Harbor Surveillance Management Requirements

### Container Management



#### Container No. Recognition

- OCR technology recognizes container numbers, avoiding human error and interference.
- It facilitates and enhances harbor management efficiency at the gate.

### Vehicle Management



#### License Plate Recognition

- All-in-one camera captures and recognizes the license plate of vehicles accessing harbor (country-specific).
- Drivers can communicate with command center through video intercom in emergencies or to verify identity.

### Personnel Management



#### Staff identity verification & Access Control

- Staff identity verification at the gate records a subject's facial characteristics, entrance time, and place of entrance.
- The system will generate an alarm if recognized result is on the block list.

# HARBOR LAYOUT



## Perimeter

- Monitor the Harbor perimeter
- Thermal detection



## Berth

- Monitor berth operations
- Anti-corrosion

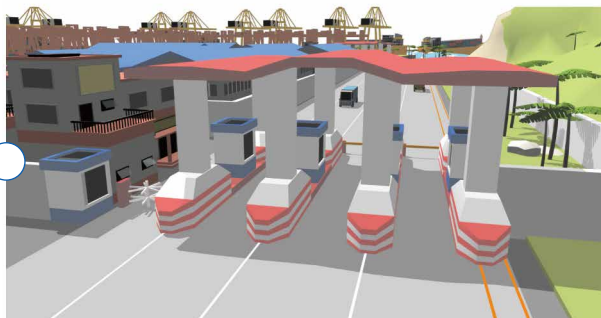


## Shipping Lane

- Monitor ships in shipping lanes
- Thermal detection, long-range zoom, panoramic mode







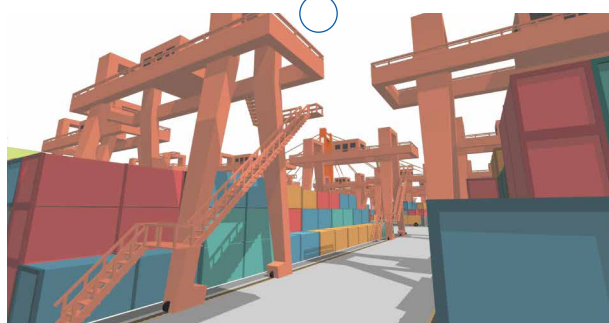
### Gate

- Monitor vehicles and personnel at the gate
- License Plate Recognition
- Container No. Recognition
- Staff identity verification



### Warehouse

- Monitor warehouse cargo and operations in warehouse
- Starlight and low illumination technology
- Intelligent analysis of warehouse stock and movement



### Yard

- Monitor yard operations in detail with 4K HD
- Explosion-proof design
- Anti-corrosion design

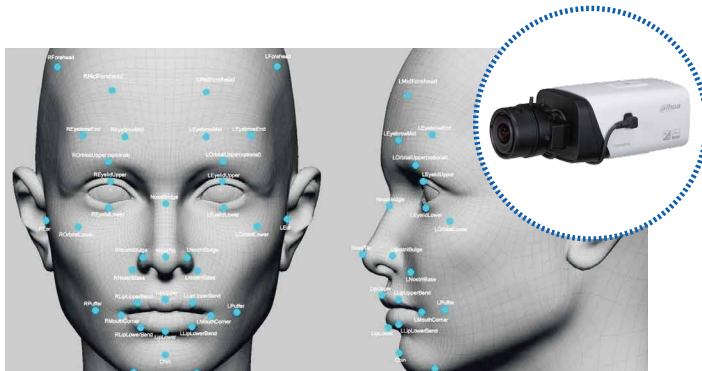


## BUSINESS UNIT

### Gate



- Uses image recognition algorithms to automatically recognize the license plate number
- Capture and recognize container numbers
- Container damage inspection



#### Staff identity verification

- Recognizes distinct facial characteristics with intelligent algorithms
- Set block list entries and alarms for certain facial characteristics and information (such as name, gender, date of birth, ID number, etc.)
- Track when and where the target people shows up.
- Generate an alarm when system detect people are not staff.

### Shipping Lane



- Multi-lens camera with 180 degree panoramic video displays wide-angle video in real-time
- Harbor shipping lane can be viewed more clearly
- Effectively improve the performance of emergency response command
- Thermal camera can work around-the-clock and in all weather conditions

## Berth



- PTZ with corrosion-resistant shell reliably monitors the handling of cargo

## Yard



- PTZ camera with explosion-proof technology monitors the yard in real time
- Record container operation and provide images and video as evidence

## Perimeter



- Configure intelligent intrusion analysis system to automatically detect trespassers and foreign objects
- Alarm is linked to video surveillance and pops up on VMS client
- System displays intruding object and trajectory on video image
- Thermal camera can work around-the-clock and in all weather conditions

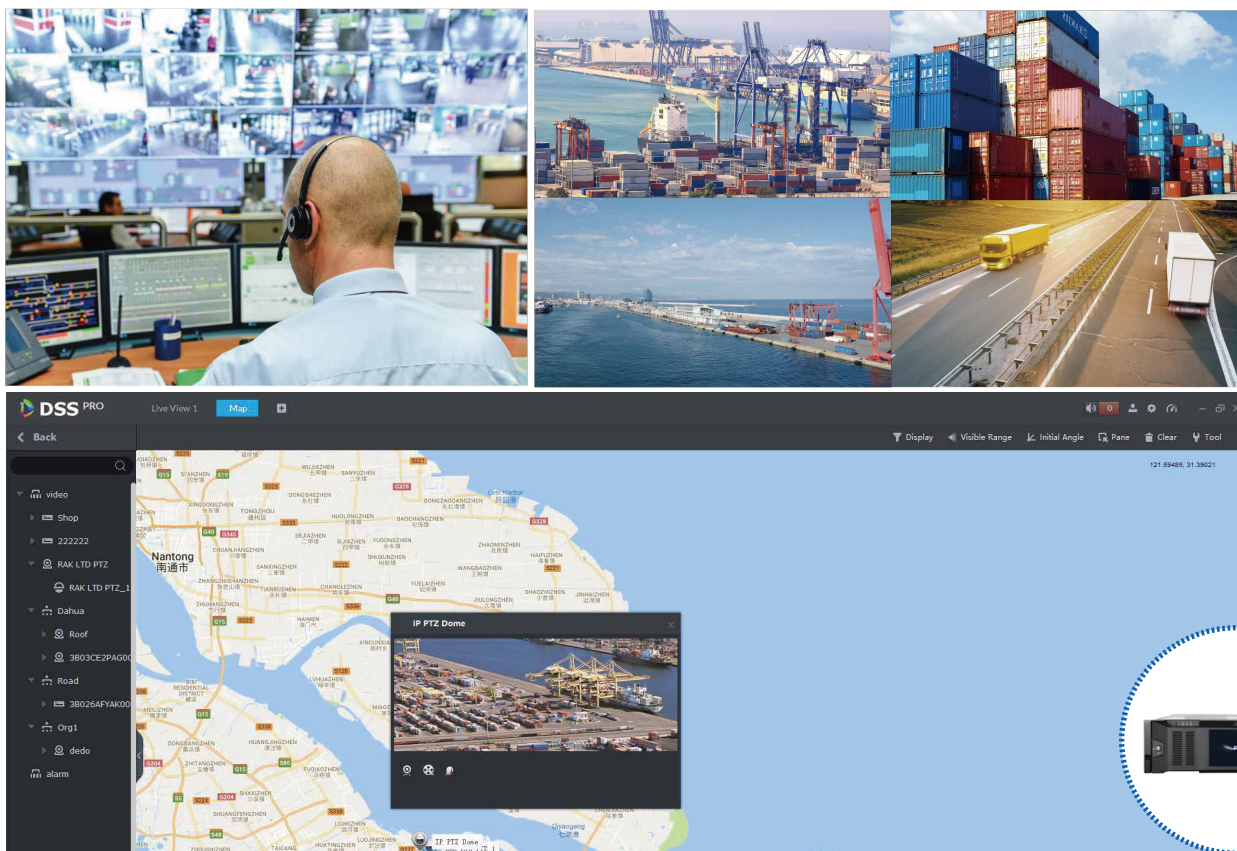


## Warehouse



- Configure cameras to monitor warehouse operations 24/7
- Cameras equipped with Starlight can record color images in dark environments with brightness as low as 0.006 Lux
- Thermal camera can detect abnormal heat sources to prevent fires

## Control Center



- Display map with satellite cloud images, hydrology and meteorology, weather, wave, tidal, and other image information and port operation information
- Manage all devices including viewing real-time video feed and playback
- Intelligent operation and management system allows centralized management of video surveillance, storage, display, and alarm systems
- Video synopsis displays summary of useful information for records sorted by subject and time

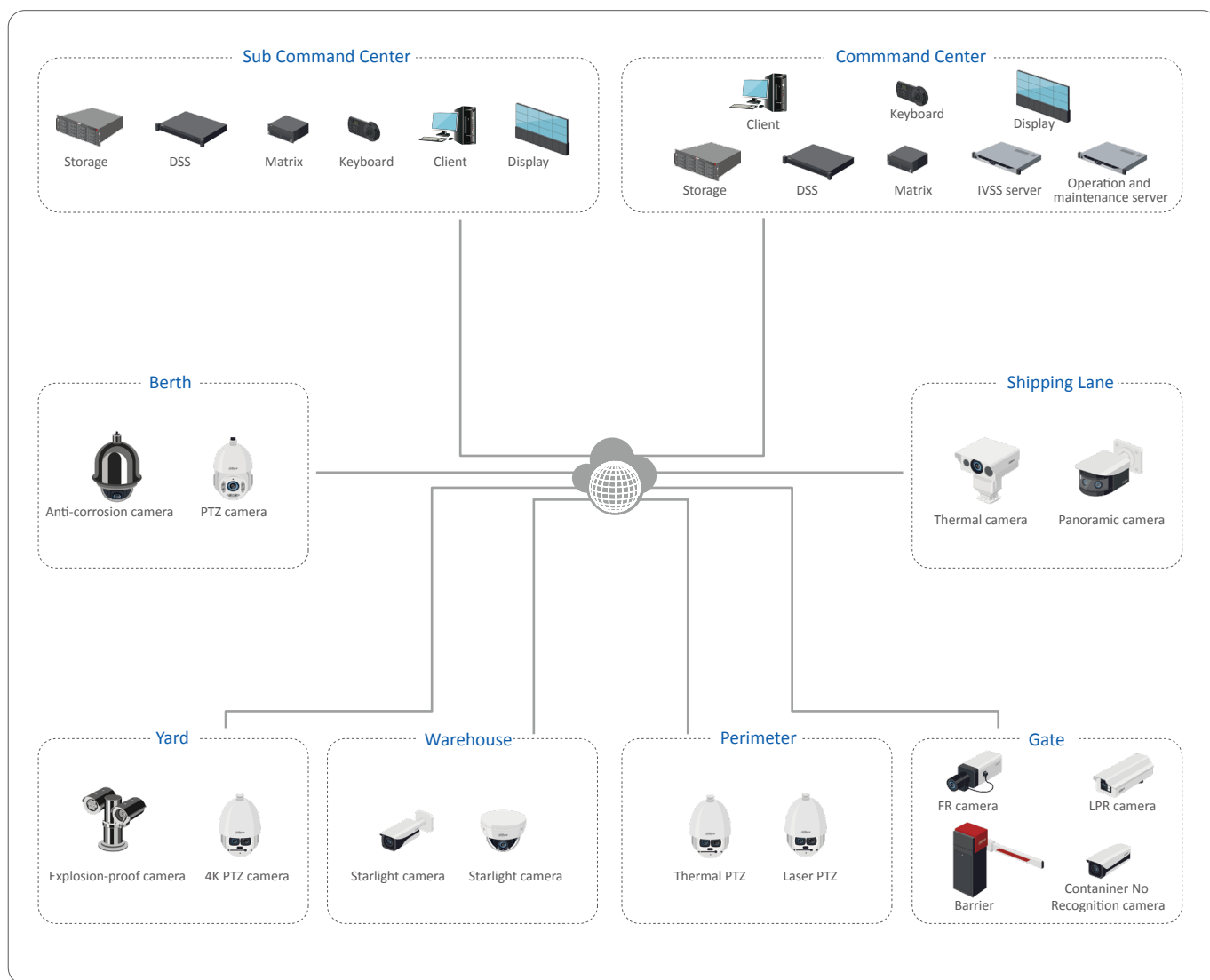


# SYSTEM STRUCTURE AND OVERVIEW

## System Overview

### Highlights:

- Unified management: Centralized management of vehicles, containers, and personnel
- High definition: 4K
- Adaptive camera: Anti-corrosion, explosion-proof, panorama, thermal camera
- High integration: All-in-one, M series for display
- Intelligent functions: License Plate Recognition, Face Recognition, Container Number Recognition, perimeter intrusion alarm, intelligent behavior analysis, etc.
- Easy to upgrade: HDCVI technology is cost-effective and easy to install
- High storage reliability: Local SD card storage, RAID technology, N+M solution, and hot spare
- High system efficiency: E-map, self-diagnosis



## Highlighted Technology

- 4K Resolution: Provides 4 times the details of 1080p in the same scenario



4K Ultra HD Resolution (3840x2160P)



HD Resolution (1920x1080P)

- Panorama Mode: One camera with a 180 degree field of view seamlessly covers shipping lanes like never before



- Optical Defog: Advanced optical defog with IR filter can remove 98% of fog, allowing you to see clearly

Optical defog OFF



Optical defog ON



- Thermal Detection: Better night effect and contrast effect for shipping line cargo area and perimeter



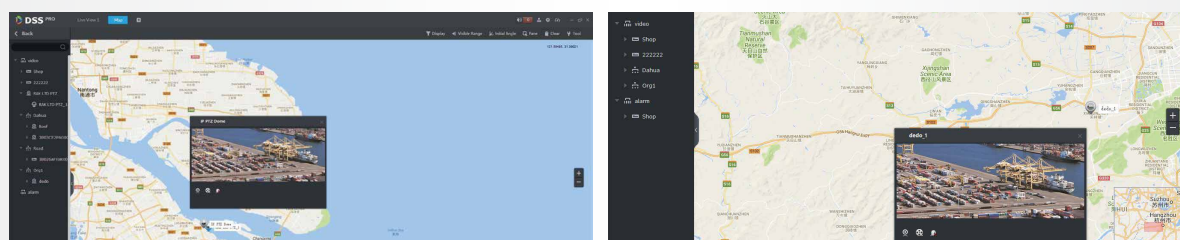
- License Plate Recognition: Recognize and record license plates and unauthorized actions. Block list alarm notifies command center if plate (on the block lists) is detected



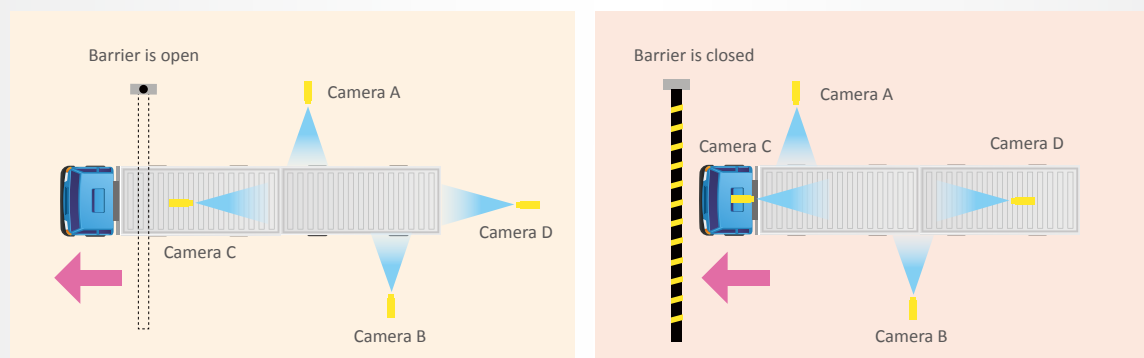
- Staff identity verification: Staff images recording, block list alarm, and search by images make it easy to keep track of personnel



- E-Map Display: Smart tools provide an easy to use and intuitive visual experience



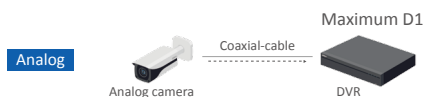
- Container Recognition: Recognize and record container numbers automatically and easily manage container data



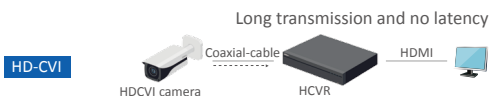


- HDCVI: High definition, low latency image paired with high scalability presents cost-effective system

#### Easy upgrade for existing analog system



#### Low latency for surveillance



- Intelligent Operation and Maintenance: Find malfunctioning devices instantly



Video quality diagnosis



Device information diagnosis

Intelligent Network Management

Channel Name Device Name Earliest Record Time Record Storage Day Today's Record Operation Record Detail

Channel Name	Device Name	Earliest Record Time	Record Storage Day	Today's Record	Operation	Record Detail
CH001_1	CH001	2017-03-05	15 day	No	▶	0:1:2:3:4
通道一 PTZ	IPC100	2017-03-05	24 day	No	▶	0:1:2:3:4
57-162通道二	57-162	2017-03-05	24 day	No	▶	0:1:2:3:4
通道二	57-162	2017-03-05	24 day	No	▶	0:1:2:3:4
通道三	57-162	2017-03-05	24 day	No	▶	0:1:2:3:4
通道四	57-162	2017-03-05	24 day	No	▶	0:1:2:3:4
通道五	57-162	2017-03-05	24 day	No	▶	0:1:2:3:4
通道六	57-162	2017-03-05	24 day	No	▶	0:1:2:3:4
通道七	57-162	2017-03-05	24 day	No	▶	0:1:2:3:4
通道八	57-162	2017-03-05	24 day	No	▶	0:1:2:3:4
通道九	57-162	2017-03-05	24 day	No	▶	0:1:2:3:4
通道十	57-162	2017-03-05	24 day	No	▶	0:1:2:3:4

Storage status diagnosis

## PRODUCT SHOWCASE

### VTO2000A



- 1/3" 1.3Mp CMOS, 2.8mm lens
- Audio compression: G.711, Audio Input: omnidirectional mic
- Audio output : built-in speaker, keypad: single mechanical button
- Ethernet: 10M/100Mbps self-adaptive
- Ingress protection: IP54, IK07

### DHI-ITC352-AU3F



- All-in-One camera
- GS-CMOS image sensor, high color reduction degree
- Embedded design, built-in a variety of algorithms
- Built-in thunder-proof module to prevent being struck by lightning
- Temperature -40°C~+80°C, humidity 10%~90%, suitable for harsh environments

### DH-IPC-HF8231F



- 1/2.8" 2Mp STARVIS™ CMOS
- H.265&H.264 triple-stream encoding
- 50/60fps@1080P
- WDR(140dB), auto back focus(ABF)
- Micro SD memory, PoE

### DH-PSDW8842ML-A180-D237



- 4x2MP Multi-Sensor Panoramic + PTZ WizMind Network Camera
- Panoramic: Four 1/1.8" 2 Megapixel progressive scan CMOS
- PTZ: One 1/1.8" 2 Megapixel progressive scan CMOS
- Support 180-degree panoramic view
- Starlight+ technology
- IR distance up to 220 m

### TPC-ACPT8620C-B



- 640x512 VOx uncooled thermal sensor technology
- Athermalized Lens(thermal), autofocus
- 1/1.9" 2Mp progressive scan Sony CMOS
- Powerful optical zoom lens(Thermal&Visible)
- Laser range finder or laser illuminator optional
- Supports fire detection & alarm
- Anti-corrosion/NEMA 4X, IP66

### DH-SD6AL445XA-HNR-IR



- 4MP 45x Starlight IR WizMind Network PTZ Camera
- 1/2.8" 4Megapixel CMOS
- Powerful 45x optical zoom
- Starlight technology
- Deep-learning-based auto tracking and perimeter protection
- Support Hi-PoE
- IP67

## PRODUCT SHOWCASE

DH-SD60230U-HNI-SL



- 1/2.8" 2Mp STARVIS™ CMOS
- Powerful 30x optical zoom ,Starlight
- Max. 50/60fps@1080P, H.265
- PoE+, IP68, IK10, NEMA 4X report
- Material: 316L Stainless steel
- Anti-corrosion

DH-SD8A840-HNF-PA



- 1/1.8" 8Megapixel STARVIS™ CMOS
- Powerful 40x optical zoom , Starlight technology
- Perimeter protection · Metadata · Face detection(selecting of face in motion, and output the best face picture of the face) · Auto-tracking
- Smart wiper , IP67 IP67, IK10, Hi-PoE

DH-EPC230U-PTZ-IR



- 1/2.8" 2Mp STARVIS™ CMOS
- Powerful 30x optical zoom
- 316L stainless steel housing
- H.265/H.264 Triple-stream Encoding
- Max. 50/60fps@1080P
- Explosion Proof

DH-TPC-SD8421-T



- 400 × 300 uncooled VOx thermal sensor technology
- Athermalized lens (thermal), focus-free
- 1/2.8" 2 megapixel progressive scan CMOS
- Support detection and alarm of fire
- Micro SD memory, IP66

TPC-BF5601



- 640x512 vox uncooled thermal sensor technology
- Athermalized Lens(thermal),Focus-free
- Supports Fire detect&alarm
- Various lens optional(9/13/19/25/35mm)
- Micro SD memory, IP67,POE

IPC-HFW5241E-ZHE



- 2MP IR Vari-focal Bullet WizMind Network Camera
- 1/2.8" 2Megapixel progressive scan STARVIS™ CMOS
- 25/30 fps@1080P (1920 × 1080)
- WDR (120 dB), Day/Night (ICR), 3D DNR, AWB, AGC, BLC
- Multiple network monitoring: Web viewer, CMS (DSS/PSS) & DMSS
- 2.7 mm–13.5 mm motorized lens
- Max. IR LEDs Length 50 m
- Micro SD memory, IP67, IK10, PoE+, Heater



## PRODUCT SHOWCASE

### DSS Pro V8



- High performance stream media transfer and storage capability
- Supports distributed and cascade deployment, hot standby.
- Supports local storage and IP-SAN storage
- Supports 2,000 channels video, 500 doors, 2,000 VDP
- Powerful application : Basic video management function , Access control, Vehicle management, Face application, alarm center and other AI application.

### DH-EVS7124S



- 24-bay Embedded Video Storage
- 64-bit High-performance multi-core processor
- Max 512-ch IP camera inputs
- Max 1024 Mbps incoming/recording/forwarding bandwidth
- 24 HDDs, SAS/SATA, Hot-Swap
- Supports RAID 0/1/5/6/10/50/60, JBOD, Hot spare
- Supports video stream/ Picture direct storage mode and IPSAN storage mode
- Supports N+M cluster
- Supports Automatic Network Replenishment (ANR)

### DHL550UDM-EG



- 55" FHD Video Wall Display Unit (Ultra Narrow Bezel 1.8mm)
- Industrial level IPS LCD panel, suitable for extensive 24/7 continuous works
- Ultra-narrow 1.8mm bezel-to bezel design(0.9mm even panel bezel)
- High contrast ratio and high brightness greatly enhance the video layering, and present the details of the video
- > High fidelity digital processing, brilliant and vivid video
- > Built-in 3D COMB filter and 3D Noise Reduction
- > Abundant interfaces HDMI, DVI, VGA, BNC, USB, support video loop

### DHI-M70-4U-E





- Easy and flexible configuration with pluggable card module design
- 80ch@1080P or 320ch@D1 signal encoding
- 80ch@4K or 320ch@1080P or 720ch@720P or 1500ch@D1 signal decoding
- Supports max 60 screens splicing
- 6 RJ-45 gigabit network ports for matrix control, preview and online central storage

### DHI-IVSS7016DR



- 3U 16HDDs Intelligent Video Surveillance Server
- Industry embedded micro-controller
- Max 768Mbps incoming bandwidth
- 256-channel IP video access
- Face detection, video metadata, staff identity verification
- IVS (tripwire, intrusion, abandoned object, missing object, fast moving, parking detection, crowd gathering, loitering, parking, and fence-crossing),
- people counting, smoking detection, call detection

## PRODUCT OVERVIEW

Product	Description	Gate	Shipping line	Berth	Yard	Warehouse	Perimeter	Control center
 VTO2000A	Emergency Video Intercom	●						
 DHI-ITC352-AU3F	3M Traffic Picture Capture Camera	●						
 DH-IPC-HF8231F	2MP WDR Box Network Camera	●						
 DH-PSDW8842ML-A180	Multi-Lens Panoramic Network IR Camera		●					
 DH-TPC-ACPT8620C-B	Thermal Network Tribrid PTZ		●					
 DH-SD6AL445XA-HNR-IR	4MP 40x IR PTZ Network Camera				●			
 DH-SD60230U-HNI-SL	2MP 30x Anti-Corrosion PTZ Network Camera			●				
 DH-SD8A840-HNF-PA	4K 40x Starlight IR PTZ Network Camera				●			

## PRODUCT OVERVIEW

Product	Description	Gate	Shipping line	Berth	Yard	Warehouse	Perimeter	Control center
 DH-EPC230U-PTZ-IR	2MP 30x Explosion-Proof IR PTZ Network Camera				●			
 DH-TPC-SD8421-T	Thermal Network Anti-corrosion Hybrid Speed Dome Camera						●	
 TPC-BF5601	Thermal Network Bullet Camera					●		
 IPC-HFW5241E-ZHE	2MP IR AI Bullet Network Camera					●		
 DHI-DSS Pro V8	General Surveillance Management Center							●
 DH-EVS7024S-R	24-HDD Enterprise Video Storage							●
 DHL550UDM-EG	55" Full-HD Video Wall Display Unit (Ultra Narrow Bezel 1.8mm)							●
 DHI-M70-4U-E	Multi-Service Video Management Platform							●
 DHI-IVSS7016DR	Staff identity verification Server							●



## SUCCESS STORIES



### Pescara Harbor in Italy

Dahua Technology and its megapixel solution successfully secured the Pescara Port. Dahua solutions overcame unpleasant weather conditions which threatened to corrode devices, shorten their lifespan, and affect network transmissions.

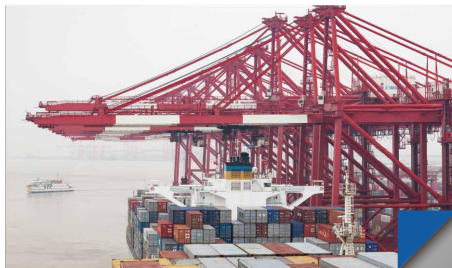
- Dahua cameras provided a comprehensive solution for all types of surveillance scenarios including superb night surveillance.
- Dahua NVR devices satisfied storage requirements, and their RAID functionality enhanced system reliability and stability.
- The system adopts a ring networking structure with optical fiber, and guaranteed an adequate bandwidth at 108Mbps. The radio transmission system was configured at an access point of dual band 2.4/5.8GHz.



### Suva Harbor in Fiji

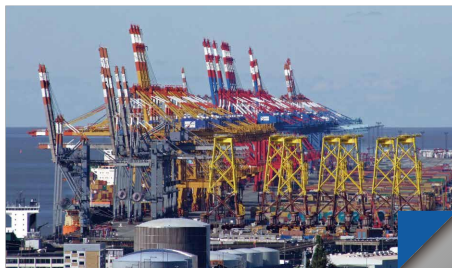
Dahua completed video surveillance for Suva Harbor in Fiji to guarantee the security of daily operation work.

- Multiple types of IP cameras met the various requirements of different scenes, including the outdoor working area, office hall, etc.
- 5.8G wireless transmission overcame need for wiring and ensured reliable transmission speeds.



### Manila North Harbor in the Philippines

Dahua provided a video surveillance solution for Manila North Harbor( PHMNN ). Dahua installed dozens of PTZ cameras to guarantee the security of daily operations.



### Hainan Yangpu Harbor in China

Dahua Technology and its megapixel solution successfully secured Hainan Yangpu Harbor through an HD surveillance solution, including HD IP cameras, encoders, IP storage and VMS platform.

- Hundreds of network cameras and speed domes
- Back end eco-savvy NVR and super NVR at monitoring center for back up storage.

# ENABLING A SAFER SOCIETY AND SMARTER LIVING

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\* Design and specifications are subject to change without notice.

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