Logistics DWS Solutions
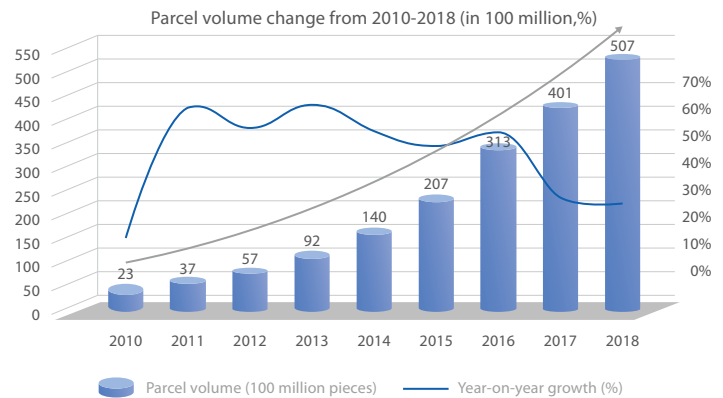
Less Labor, Higher Efficiency and No Human Mistakes

Logistics Industry

With the fast development of modern logistics infrastructure, especially the fast growing of e-commerce industry, like Amazon, Alibaba etc. How to deliver the parcel efficiently and cost-effectively to end user has become a common challenge in the industry.

Annual delivery volume in China has surpassed about 50 billion parcels in 2018. That means over 139 million parcels have been transported every day in average.

Most end-users are expecting 2nd day delivery and even same day delivery in some applications. For most of the regions in China, 2nd day delivery is guaranteed with the high running efficiency of the logistics networks.

Parcel volume change from 2010-2018 (in 100 million,%)

Year	Parcel volume
2010	23
2011	37
2012	57
2013	92
2014	140
2015	207
2016	313
2017	401
2018	507

Parcel volume (100 million pieces) — Year-on-year growth (%)

Current Challenges

Limited man resource and increased cost

❶ Resource Issues

Low operation efficiency and inevitable human mistakes

❷ Operational Issues

Increasing competition and lower profit

❸ Competition Issues

More speed and intact parcels

❹ Satisfaction Issues

Parcel's Identification Information

Parcel's Identification Information needs to be recorded and tracked through the whole transport process.

How to record them efficiently is a common requirement for logistics company.

Dahua logistics DWS (Dimensioning Weighing Scanning) solutions are designed for it.
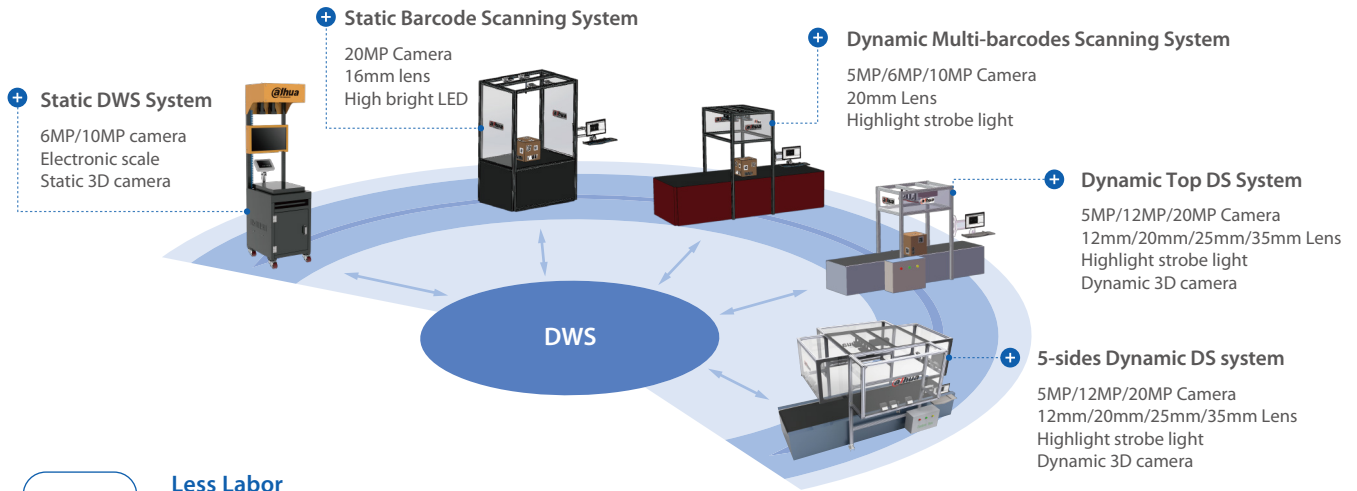
Barcode Number

Parcel Weighing

Parcel Dimension

Static Barcode Scanning System

20MP Camera
16mm lens
High bright LED

Dynamic Multi-barcodes Scanning System

5MP/6MP/10MP Camera
20mm Lens
Highlight strobe light

Static DWS System

6MP/10MP camera
Electronic scale
Static 3D camera

Dynamic Top DS System

5MP/12MP/20MP Camera
12mm/20mm/25mm/35mm Lens
Highlight strobe light
Dynamic 3D camera

DWS

5-sides Dynamic DS system

5MP/12MP/20MP Camera
12mm/20mm/25mm/35mm Lens
Highlight strobe light
Dynamic 3D camera

Less Labor

· Replace manual operation with intelligent system
· Automatic dimensioning, weighting & barcode reading
· Support OCR

Higher Efficiency

· Minimize operational steps and optimize process
· Improve operation speed
· Eliminate the efficiency bottleneck

No Human Mistakes

· Intelligent code reading algorithm
· High recognition rate
· High error-tolerance

Static DWS System

Resolution	6MP
Depth of Field	400mm(0.25mm Barcode)
Min 1D-BarCode Resolution	0.25mm
Weighing Range	≤30kg
Weighing Accuracy	±10g
FOV (Field of View)	420mm*275mm
Dimension Accuracy	±10mm
Dimension Size Range	50mm*50mm*50mm ~ 400mm*400mm*400mm
BarCode Type	1D: CODE128, EAN8, EAN13, CODE39, CODE93, CODEBAR, ITF25, 2D:DM, QR, VERICODE etc.
Dimensions (mm)	510*600*1960
Power Supply	100-240V AC

Static Barcode Scanning System

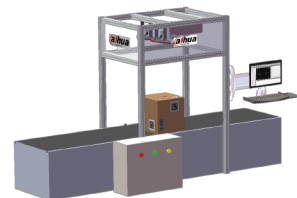|	
Camera and Lens	20MP camera+16mm lens
Depth of Field	450mm
FOV (Field of View)	808mm*583mm
Code Type	1D: CODE128, EAN8, EAN13, CODE39, CODE93, CODEBAR, ITF25, 2D:DM, QR
Min 1D-BarCode Resolution	0.25mm
Min 2D-BarCode Resolution	1mm

Dynamic Multi-barcodes Scanning System

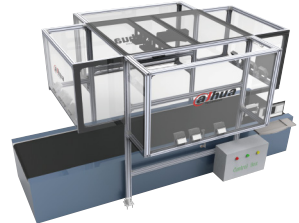|	
Camera and Lens	6MP camera + 16mm lens +12mm lens
Depth of Field	700mm
Fov (Field Of View)	1100mm*470mm
Min 1D-BarCode Resolution	0.25mm
Code Type	1D: CODE128, EAN8, EAN13, CODE39, CODE93, CODEBAR, ITF25, 2D:DM, QR, VERICODE
Conveyer Speed	≤ 1m/s
Maximum Number Of BarCodes	10 pcs

Dynamic Top DS System

Camera and Lens	12MP camera+20mm lens
Conveyor Belt Width	800mm
Parcel Size	160mm*160mm*70mm -1000mm * 550mm * 510mm
Code Type	1D: CODE128, EAN8, EAN13, CODE39, CODE93, CODEBAR, ITF25, 2D:DM, QR, VERICODE
Min 1D-BarCode Resolution	0.25mm
Max 1D-BarCode Length	85mm
Min 2D-BarCode Resolution	1mm
Max 2D-Barcode Size	50mm*50mm
Conveyor Belt Speed	≤ 2m/s
Dimensional Accuracy	±10 mm
Measurement Range	160mm*160mm*70mm - 1000mm * 600mm * 600mm

5-sides Dynamic DS System

Camera And Lens	12MP camera+20mm lens
Conveyor Belt Width	680mm
Parcel Size	100mm*100mm*5mm - 600mm * 600mm * 600mm
Code Type	1D: CODE128, EAN8, EAN13, CODE39, CODE93, CODEBAR, ITF25, 2D:DM, QR
Min 1D-BarCode Resolution	0.25mm
Max 1D-BarCode Length	120mm
Min 2D-BarCode Resolution	1mm
Max 2D-BarCode Size	50mm*50mm
Conveyor Belt Speed	≤ 2m/s
Dimensional Accuracy	±10 mm
Measurement Range	100mm*100mm*5mm - 600mm * 600mm * 600mm

Key Products

Camera Proposal

DH-MV-A3A20MG8E
DH-MV-A3B00MG000E
DH-MV-A5501MG20E

Lens Proposal

MH1220M, MH1620M
MH2028M, MH3520M

Light Proposal

DH-SL2400B-A/S-B-E
DH-SL6500B-A/S-B-E

Light Proposal

MV-L1600W-DWS

3D Camera Proposal

DH-MV-D5201MG100E

Smart Camera Proposal

DH-MV-S5501MG001E
DH-MV-S5A20MG000E
DH-MV-S5B00MG000E

Standard Logistics DWS Software

Dahua logistics DWS software support to manage all the barcode reading cameras, 3D cameras and scales. It integrates the intelligent code-reading algorithm, 3D algorithm and provides rich applications. The client provides intuitive and friendly GUI for operator to easy use and maintain.
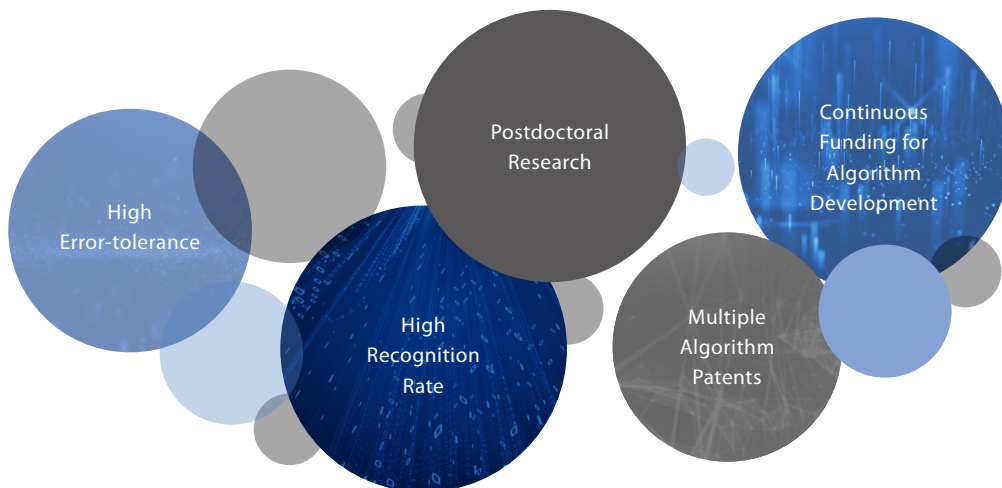
Dahua logistics DWS software is designed with compatibility and openness, it could be seamless integrated with the existing logistics ERP, CRM, and OA etc. system. Designed based on open architecture, it also support to be integrated by third-party platform through SDK mode.
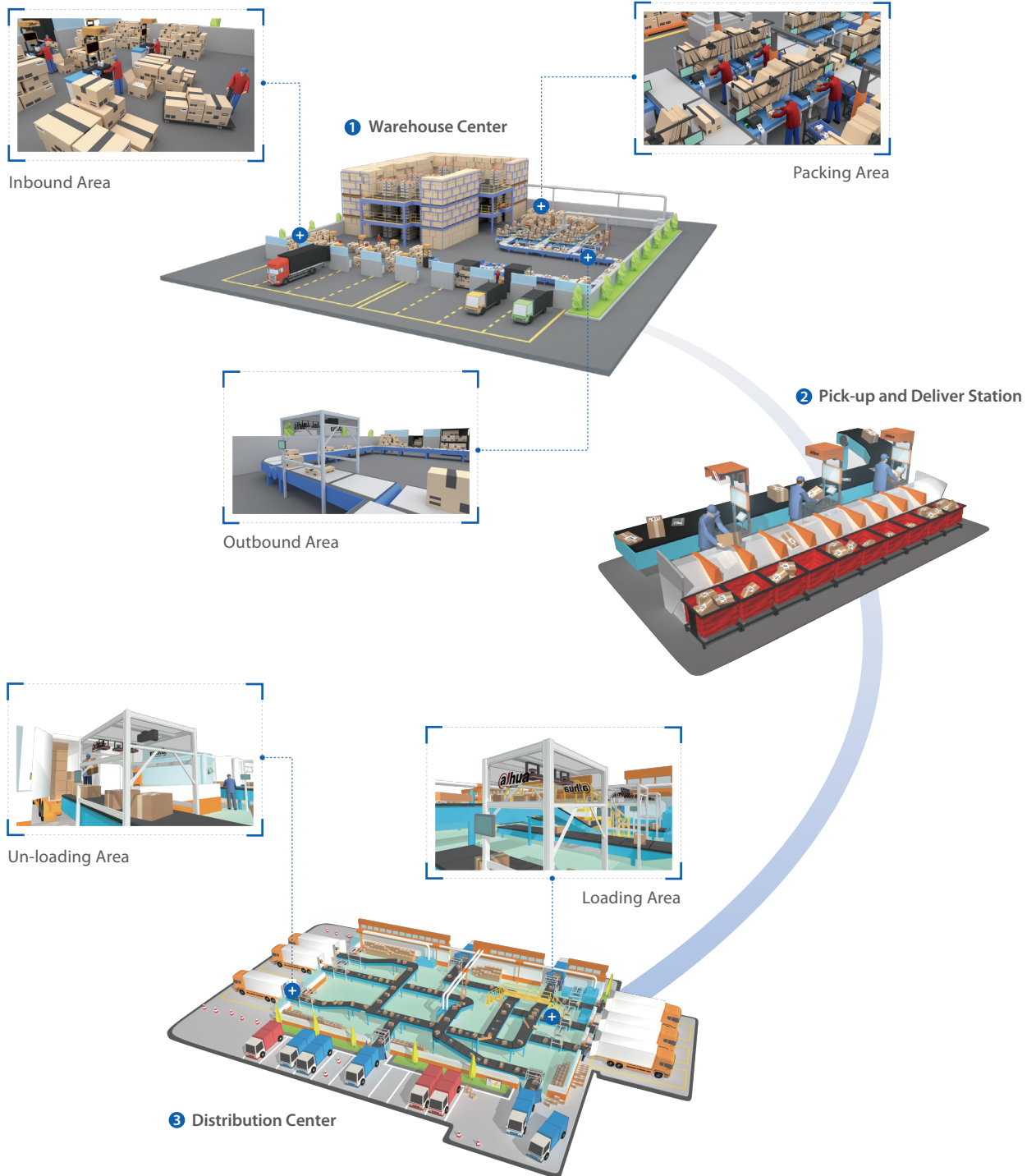
Intelligent Algorithms

Dahua has developed intelligent algorithms with high error-tolerance and recognition rates which have surpassed most international algorithms in real-world recognition applications.

- Supports code128, code39, code bar, code93, interleaved 2 of 5, EAN8, EAN13, UPCE, UPCA, QR, and DM etc.
- Supports recognition 2D barcode of minimum 2 pixels
- Supports recognition 2D barcode of minimum 5 pixel-value difference for white and black blocks
- Supports 45° perspective angle
- Over 99% recognition rate under complex background situations
- Tolerates complex conditions including background texture folds, obstruction, scratches, blurring, and uneven lighting
- Supports high speed output capability of 3D measurement in mm-level
- Supports point cloud and volume measurement

High Error-tolerance

Postdoctoral Research

Continuous Funding for Algorithm Development

High Recognition Rate

Multiple Algorithm Patents

Dahua logistics DWS solutions can be used in warehouse center, pick-up and deliver station and distribution center. As for every customer's actual requirements, Dahua would provide flexible customization and design the most appropriate solutions for customers.

Inbound Area

Packing Area

1 **Warehouse Center**

Outbound Area

2 **Pick-up and Deliver Station**

Un-loading Area

Loading Area

3 **Distribution Center**

Yunda Express

Yunda was founded in 1999, has more than 20,000 stations and more than 50 distribution centers have been established in China. It has developed the oversea market from 2014 year.

• Deployed 50,000 cameras at express branch offices, distribution centers, operations centers. Dahua constructed a national online video monitoring platform for Yunda headquarter.

• 2000+ DWS systems were deployed, most of them are static DWS and code reading system which help them to improve the efficiency and decrease the labor.

• With AI technology such as vehicle and personal recognition, Yunda's management is becoming more refined.

50,000+	2,000+	AI help to improve
Surveillance cameras	Dahua DWS systems	management capability

Best Express

Best Express was founded in 2007, has more than 30,000 stations and more than 200 distribution center in China. It started develop oversea market and has built several operation centers in Southeast Asia.

• Best Express has deployed more than 600 DWS until 2018, most of them are 5-side DWS, more and more distribution center will update the infrastructure.

• Dahua DWS replaced human operation to reduce labor greatly. In every unloading area, 6~7 persons can be decreased to 1 ~ 2 persons. During 2018 double 11, labor requirement decreased from 110,000 to 30,000, which saved about 70% labor.

• Unloading area is efficiency bottleneck, DWS system provides faster speed and lower error than human operation. When the belt speed reach 1.5m/s, it can process 3000pcs/h typically, which is double than traditional operation.

600+	110,000 ↘ 30,000	1,500 ↗ 3,000
Dahua DWS systems	Labor for double 11	Pcs/h

Deppon

Founded in 1996, Deppon has more than 10,000 standardized stations and a total area of over 1.1 million square meters transfer centers across China. They have opened international transportation routes to Korea, Japan, Thailand, Singapore, Malaysia and Vietnam etc.

• Deppon deployed 20000+ cameras in their distribution and pick-up & delivery centers, all the video can be managed in the management center and local client.

• 2000+ cameras were combined with code reading machine in the key checkpoint to make sure the parcels status are recoded.

• With traditional CCTV, it is difficult to confirm where and when the parcel were damaged or missing, with Dahua video tracking solution, it could be define the cause quickly.

20,000+	2,000+	hours ↘ min
Surveillance cameras	Cameras combined with code reading	Tracking time

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