



Reimagine Intelligent Retail

Global Leading Digital Store Solution

10/08/2022

CONTENTS



About Hanshow



Digital Store Solutions



Service



Case Study

Who we are



ABOUT HANSHOW

Hanshow provides digital solutions for **global retailers** that increase their **efficiency and profitability** while improving the **customer experience**.

Hanshow in Numbers

30,000

Over **30,000** stores
have installed
Hanshow solutions

50+

Hanshow solutions
are at stores
in **50+** countries

600+

Employees

50%

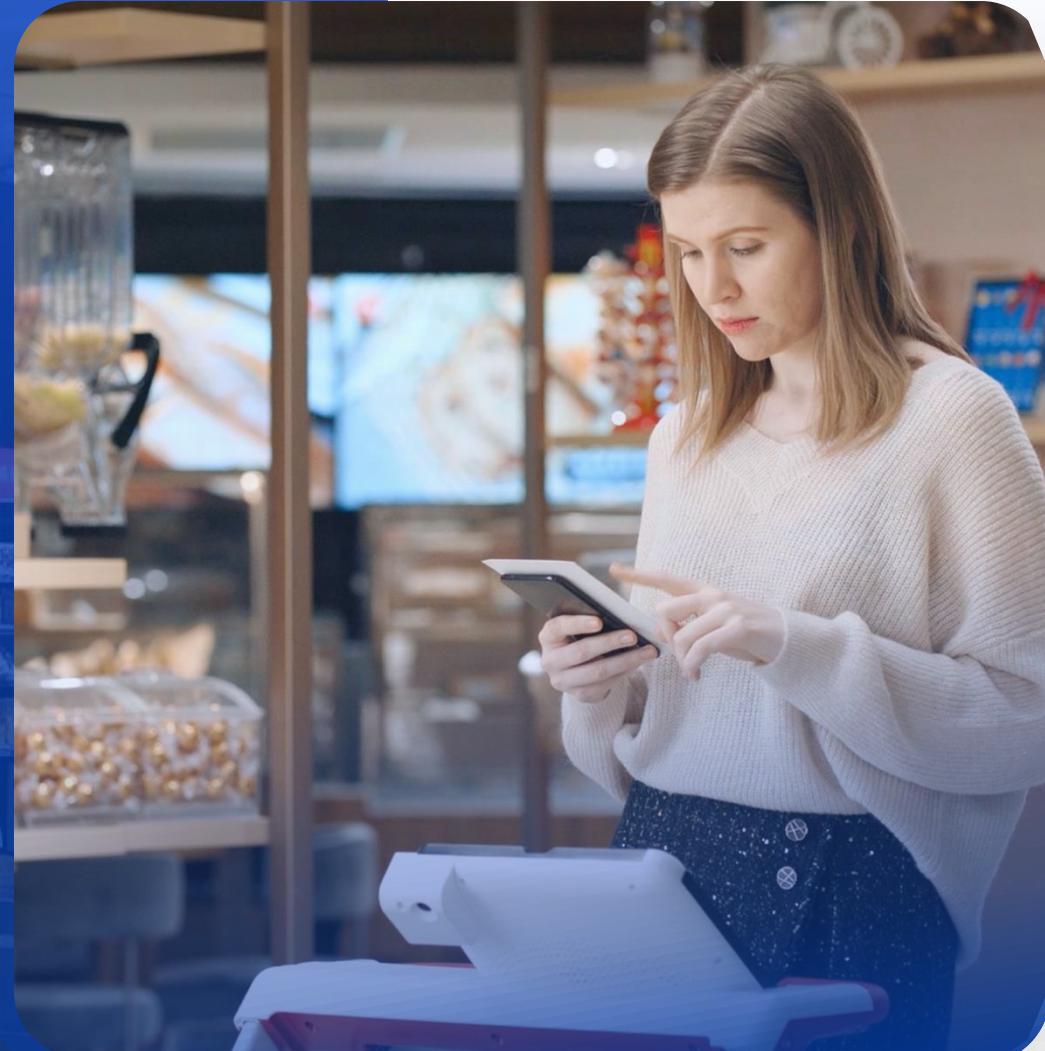
50% of global top
100 retailers
are Hanshow clients

100+

Global intellectual
properties

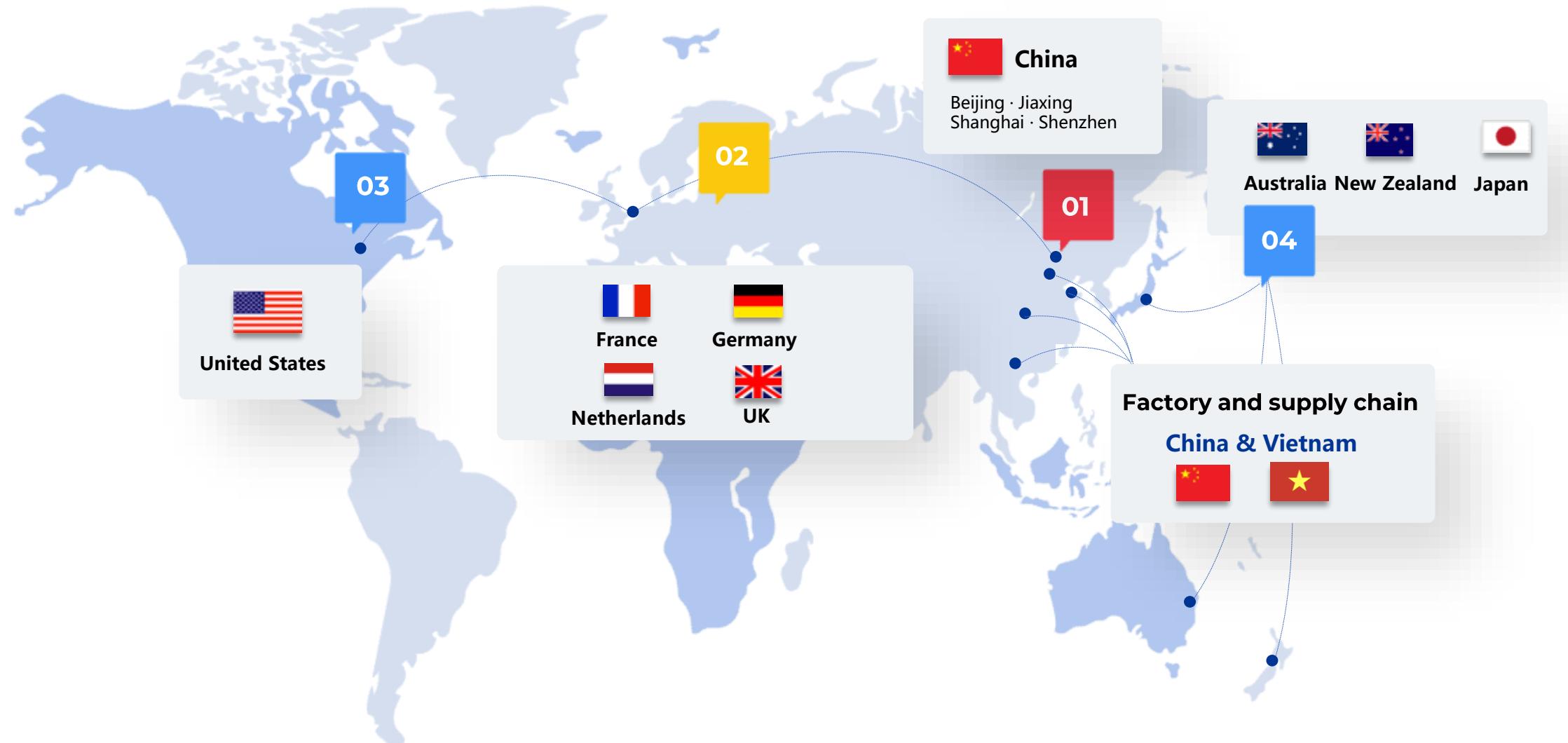
50%

Over half of Hanshow
Staff are focused
on R&D



Global Footprint

Hanshow global offices & subsidiaries



Milestones

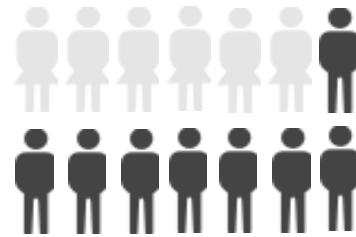


Hanshow Team

Experienced, Inclusive, Global



57%

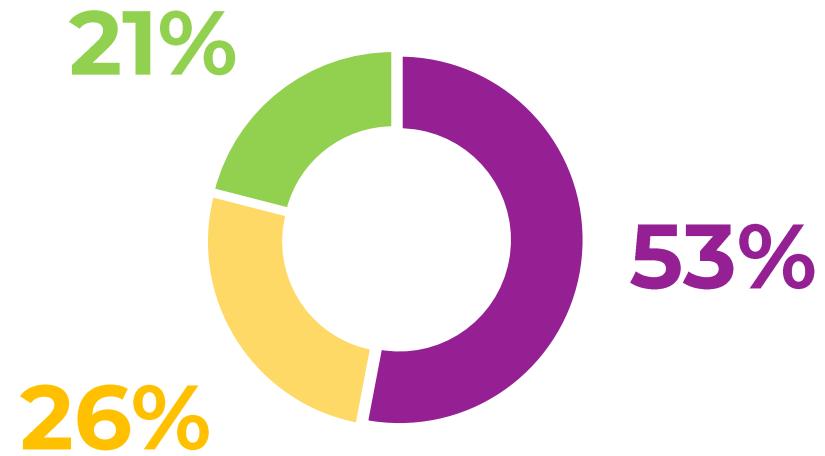


43%

Men

Women

Balanced Executive Team



■ Sales Team ■ Operation Team
■ R&D and Technical Support Team

R&D Focused

Production Capacity - ESL

Annual production capacity in 2022: **140** million pcs.



Henan

35 million pcs/y (BYD)

Hubei

50 million pcs/y (Luxshare)
5 million pcs/y (HKC -LCD)

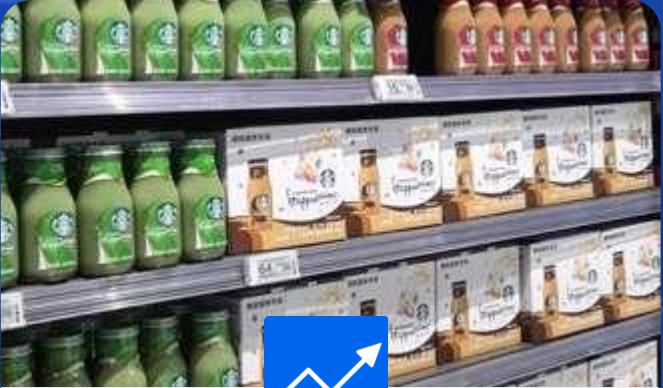
Zhejiang

30 million pcs/y (DBG)

Vietnam

20 million pcs/y (Luxshare)

Driving Sustainability



Enabling Client Sustainability

- Reducing food waste through dynamic pricing
- Eliminating paper label usage
- Longest ESL lifecycle on the market
- Emissions reductions through SaaS



Greening the supply chain

- Shipment packaging reductions
- Sustainable buying practices
- Sea freight vs air freight emissions reductions
- Effective warehousing to reduce transport



Monetization Channel

- Highest certification for (ISO 14001) for environmental production standards
- Pledge to measure company emissions by 2023
- Pledge to be carbon neutral by 2035

Ecosystem Partners

Hanshow combines its technology and services with some of the world's leading companies to provide our clients with the highest quality solutions.



Solutions



Wireless
Integration



Service

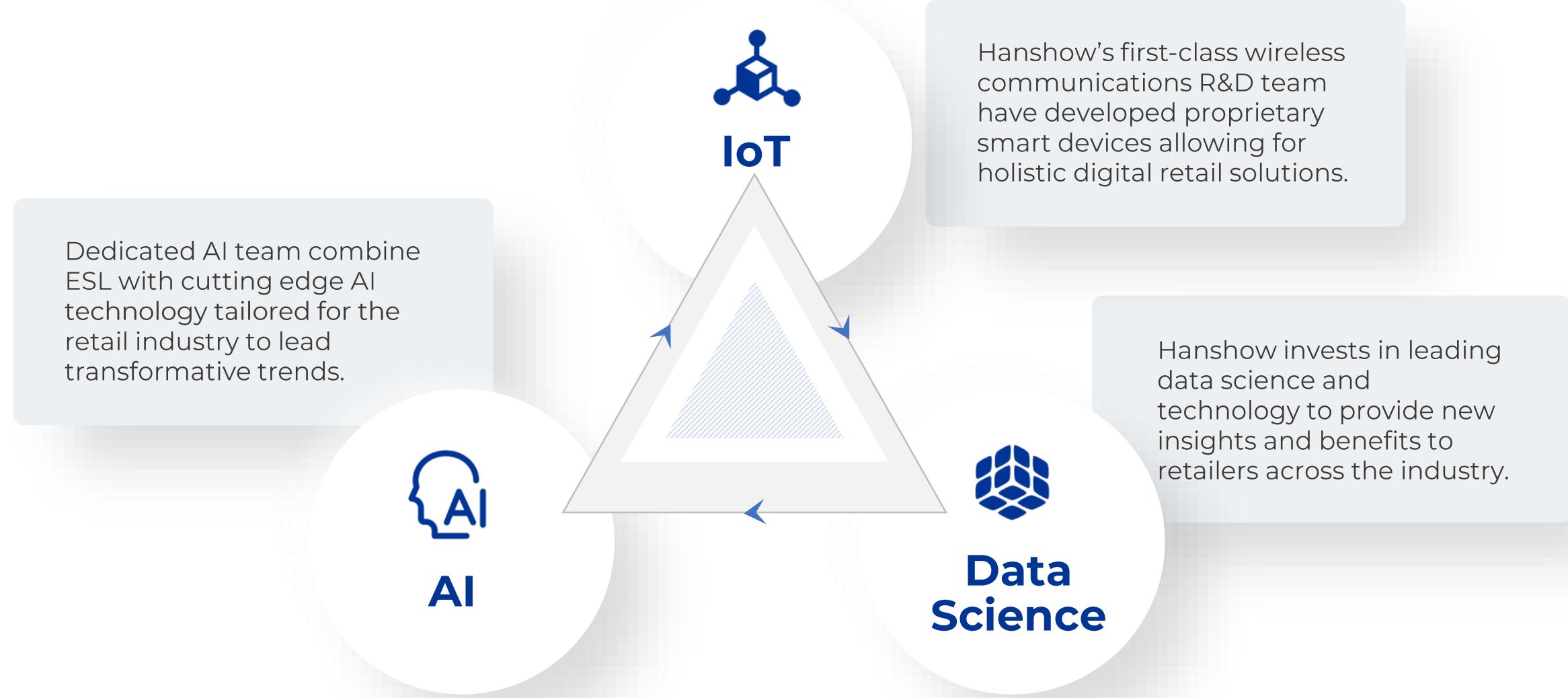
A blurred background image of a modern grocery store. The store features large glass windows, hanging pendant lights, and shelves stocked with various products. Several digital screens are mounted on the walls, displaying promotional messages like "Make the Future FRESH".

Hanshow

Hanshow

Digital Store Solutions

Shaping Digital Stores of the Future



Hanshow's Holistic Digital Retail Solutions

	ESL Business Unit				Smart Store Solutions Business Unit				AI+ Business Unit				
Solutions	Pricing Management	Inventory Management	Picking	Geolocation	Dynamic Pricing	Promotion Board	Interactive Commercial	Digital Payment	Planogram	Passenger Flow Analysis	Automatic Monitoring Patrol		
System Platform	Network Framework	User Management	Map Server	Application Management	Single Sign-in	BLOB	API Gateway	Equipment Monitoring	Authority Management				
PriSmart			Aurora			AMP							
HiLPC			HiLPC + MQTT										
IoT Devices	Stellar	Nebular	Lumina	Self-Checkout Kiosk		AI Camera		Robot					
	Stellar Pro	IoT Module	Digital Signage	Smart Trolley									

Digital Store Overview

ESL Solution

- Scan & Go
- Click & Collect
- Geolocation
- Dynamic Pricing



Digital Signage

- Interactive promotion
- Scan to get e-coupons
- Find out special offers and events
- Tailored ad



LCD Label

- Video playlists
- Product image matching
- Customer engagement
- Cross-selling



Kiosk

- Self-service Checkout
- Loss prevention
- Precision Marketing



AI camera/Robot

- Shelf Monitoring
- BI Data Mining and Visualization



Smart Trolley

- Promotion
- Navigation
- Loss prevention
- Self-service checkout



Products & Solutions

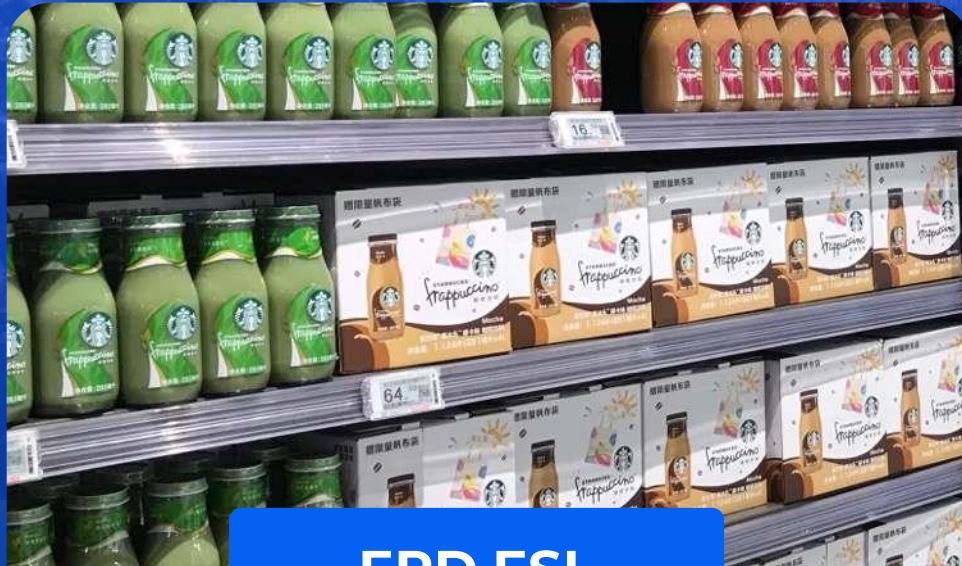
Hanshow

- **ESL Solution**
- **In-store marketing Solution**
- **AI+ Solution**
- **Digital Payment Solution**



Hanshow ESL Family

Hanshow



EPD ESL

- Stellar Pro
- Nebular



LCD ESL

- Lumina

ESL Benefits

- Eliminates manual, physical price updates
- Eliminates price discrepancy between price tag and the register
- Centralized, remote price system management of entire store networks (through SaaS)
- Reduces labor costs, allowing staff to focus on customer service
- Enhances store appearance
- Faster order picking
- More product information for customers
- Reduces out of stock detection and replenishment times



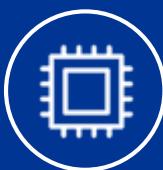
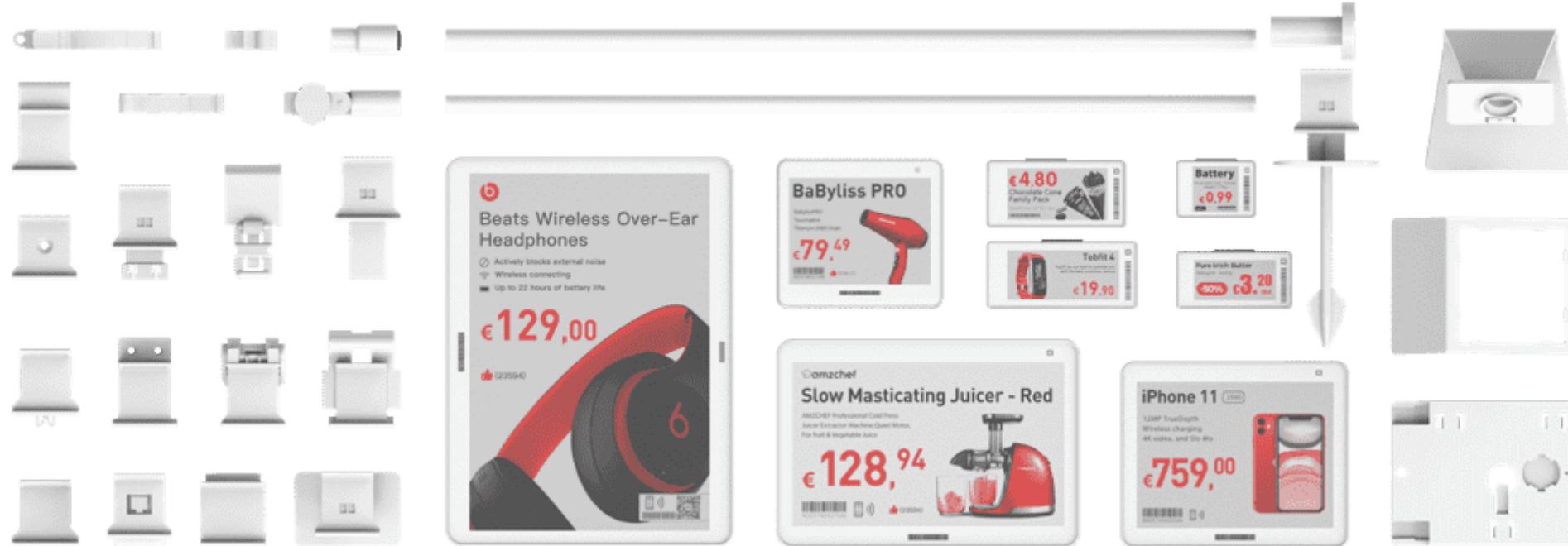
Stellar Pro

The New Classic

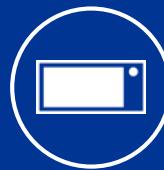


GOOD DESIGN AWARD 2021

Upgrading The Industry Standard



Specialized ESL Chip



10-year service life



Super durable

Specialized ESL Chip



Energy consumption reduction



-30%

Storage increase

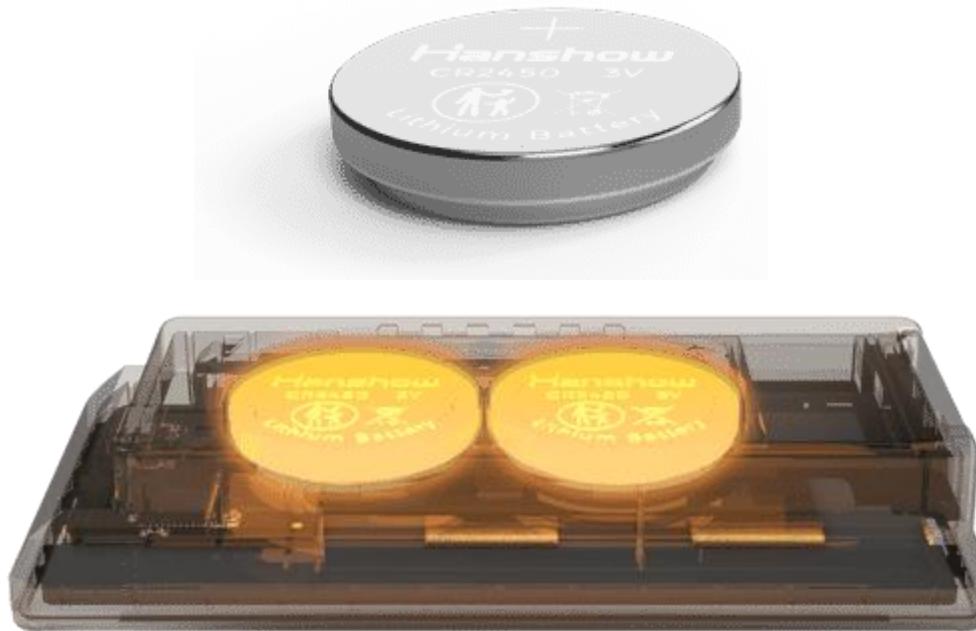


+100%

Stellar Pro

Standard ESL

High Energy Battery Pack



Improved energy saving battery,
self-discharge less than **3%**



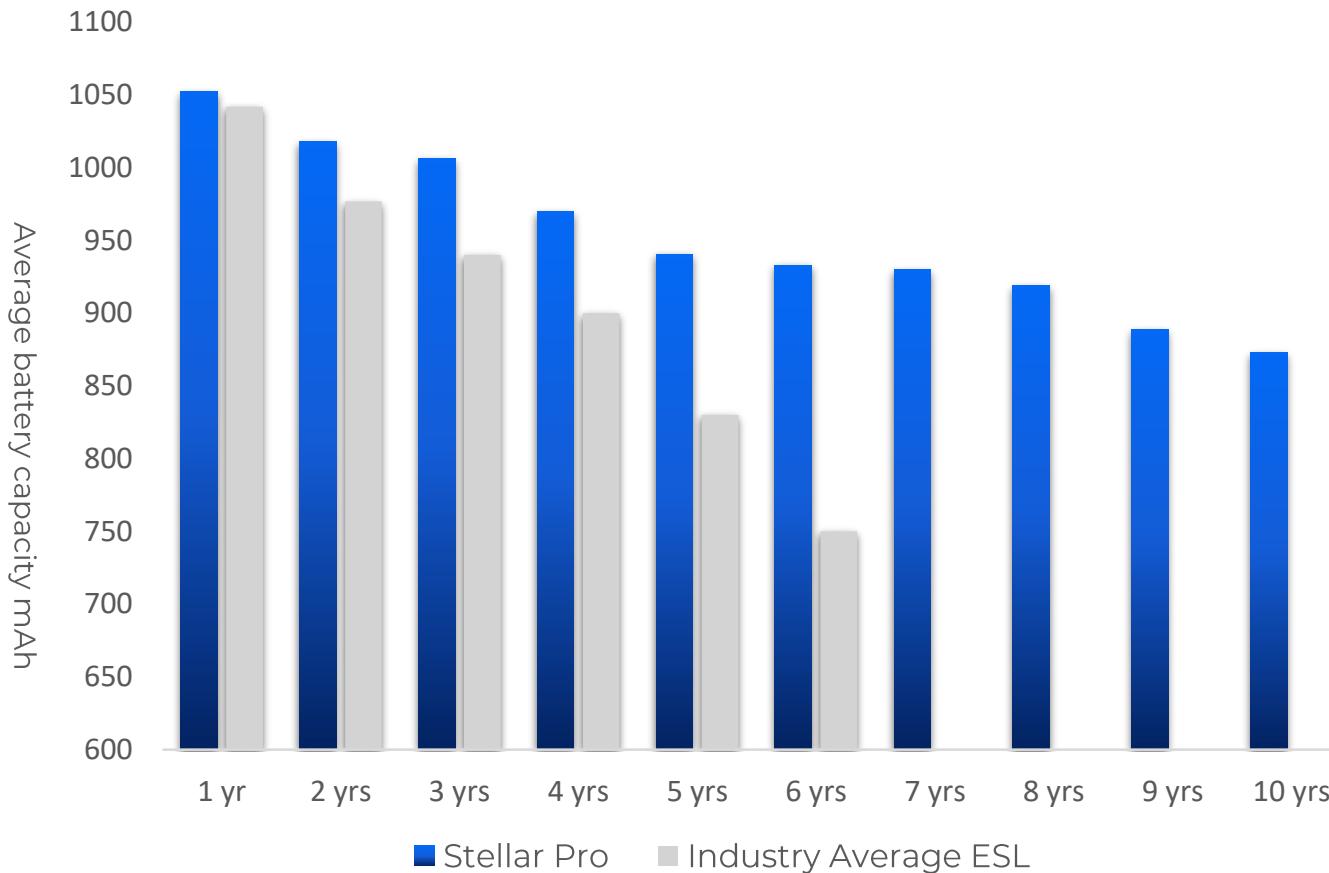
New battery design holds **100%**
more power



Full scene coverage for optimal use
refrigeration, freezers, and room
temperature

10-year Battery Life

Equivalent Battery Aging Test*



Stellar Pro's battery outperforms the industry average ESL in equivalent battery aging test



Long service life up to **10 years****

*The experimental data is calculated according to the battery aging experiment in high temperature and high humidity environment.

**The whole series except Stellar Pro-1.54 can be used for 10 years with 2 refreshes per day; Stellar Pro-1.54 can be used for 5 years in the same situation.

Expanded Storage



8 pages of storage space, full range of product information display



General



Promotion



Inventory



Low Battery



VIP



Detailed Information



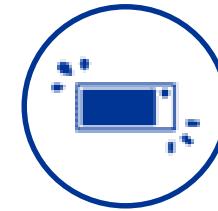
Out of Stock



Unbinding



Enhanced Durability



Large-size Stellar Pro protection level upgraded to IP65*, lens hardness increased to 3H, adaptable to a variety of environments

*IP65 means that the digital product is completely protected from dust ingress and can be insulated from the ingress of splashing water, but does not support water immersion use.

Shock Absorption



Silicone film screen covering to improve product cushioning and shock absorption*

*Applicable to 4.2" and less than 4.2" models

Laser Engraved Barcode



Precision laser engraved ESL barcode maintains clarity throughout the product's lifespan.

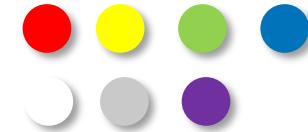
Multi-color flashing lights



3 seconds fast light up



7 colors LED



nebular

Redefining Electronic Shelf Labels



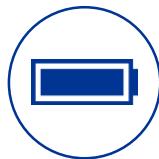
GOOD
DESIGN
AWARD
2020



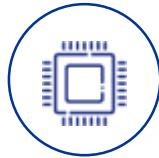
DESIGN
AWARD
2021



Why choose Nebular



15-Year Battery Life



Proprietary SIP



Unibody Design



Up to 15-year battery life

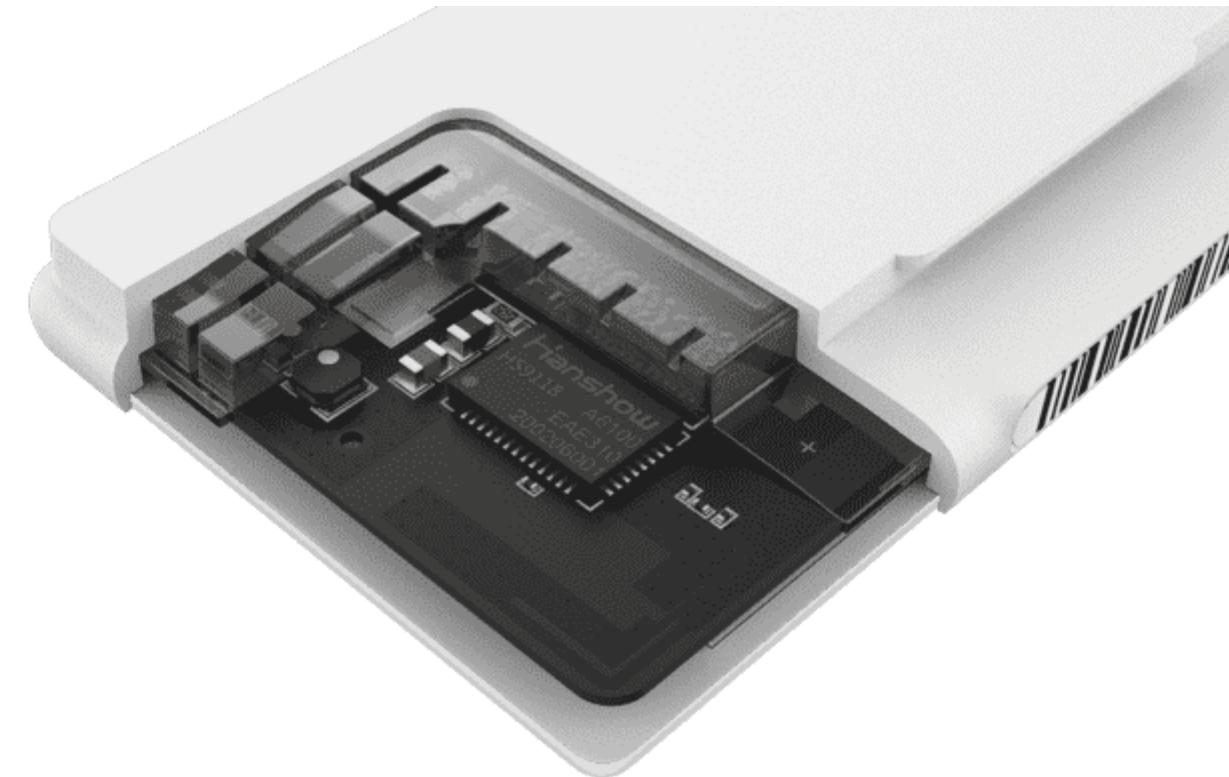
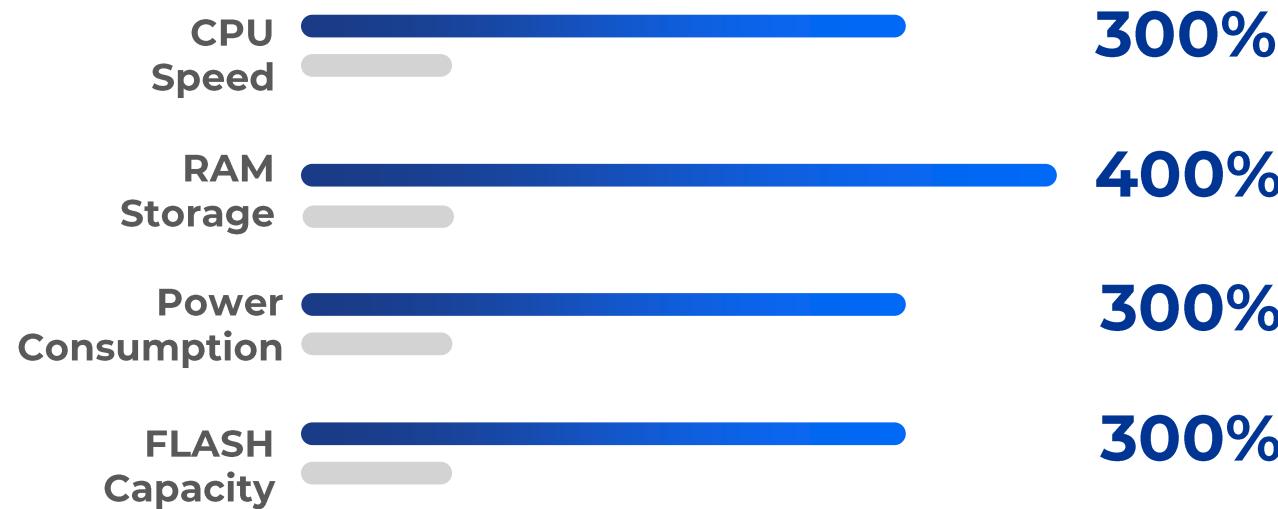
Hanshow

	Hanshow	Others
Application Scenario	2 Updates/Day 0~40°C (cooling/normal areas)	2 Updates/Day 10~30°C (normal areas)
Battery type	Industrial-Grade LiMnO ₂ Flexible Battery	LiMnO ₂ Coin Battery
Power Consumption	Proprietary SIP chipset, 15% less power consumption	Standard
Battery Lifespan	Up to 15 years	5 Years

Dramatically Enhanced Performance

- Proprietary SIP (System In a Package)
- Better Performance
- High Reliability
- High Extendibility
- High Security

● Nebular ● Standard ESL

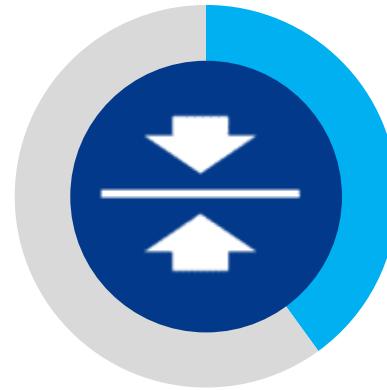


Revolutionary ESL design



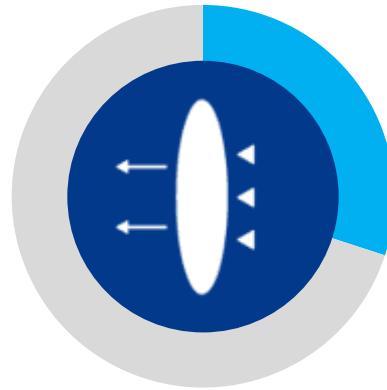
+30%

IP68
Water and
dust resistant



-40%

Reduction
in thickness



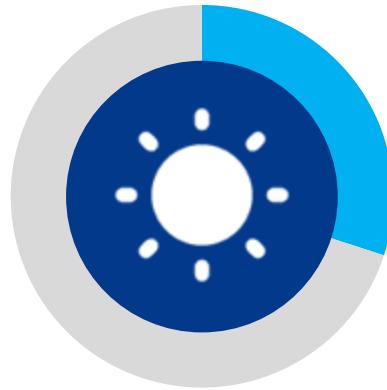
+30%

Increase in
screen
transmittance



+70%

Increase in
solidness



+30%

LED flash
brightness

Hanshow AP



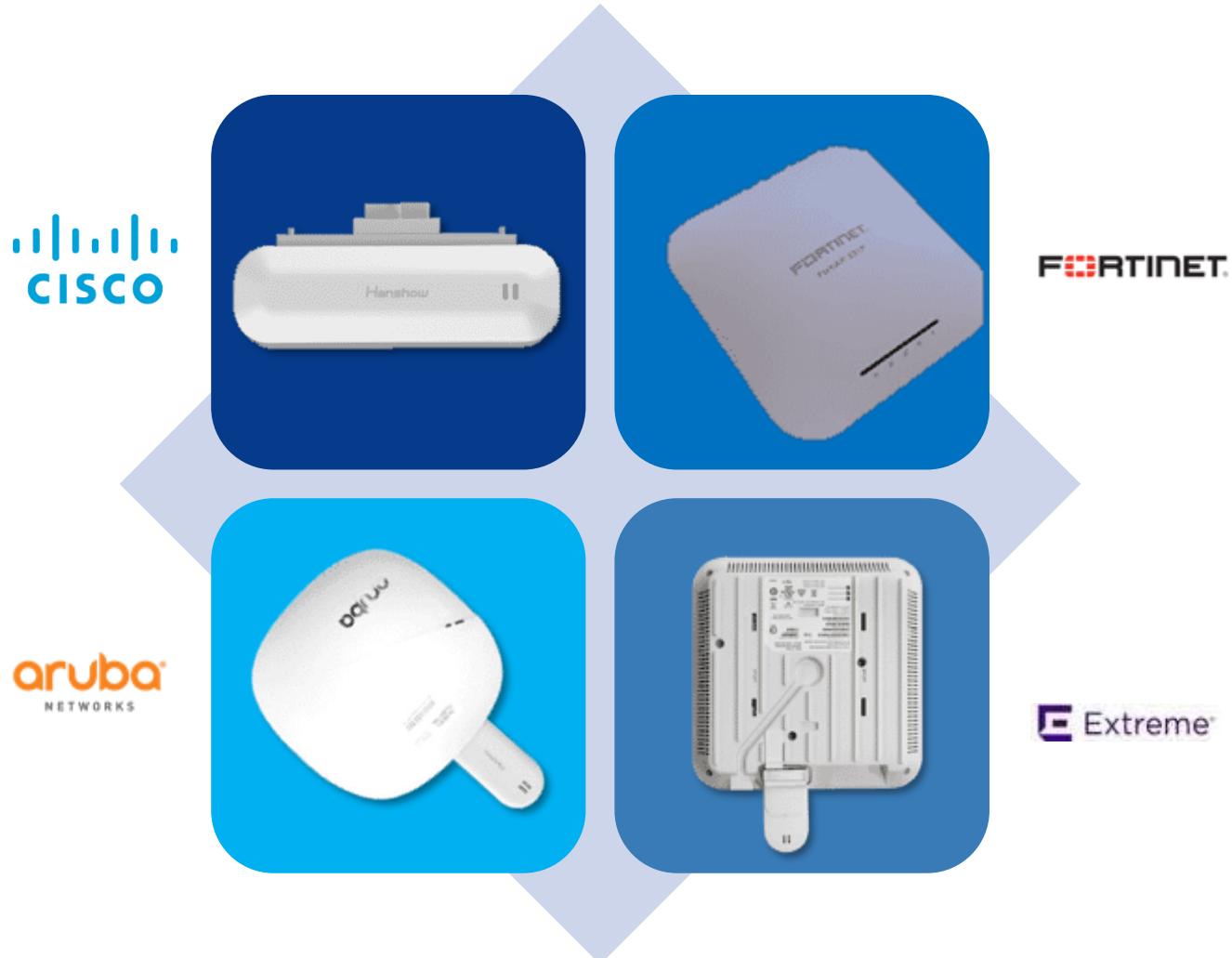
Hanshow ESL Controller – Standalone Access Point

- 30 meters transmission radius
- Super security with SSL connection and AES128
- Parallel communication with multiple Antenna
- Support spread spectrum technology
- Support remotely firmware upgrade
- Clearly visible LED indicator
- Real time status report and monitoring
- Simple Infrastructure Directly connect to the cloud
- Cellular Network Supported
- Automatically establish cellular network for maximum concurrent communications
- Have intergration AP with Extreme, Cisco, and Aruba

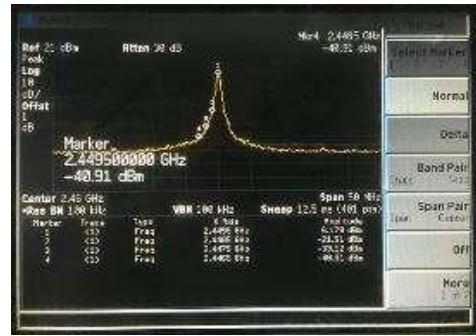


Hanshow ESL Controller – Integrated Access Point

- **Integrated AP Supported:**
- Cisco 3802 Series
- Extreme Network AP-8432i
- Aruba 305/315/335
- Aruba 505/535
- Fortinet FortiAP 421E/423E/431F/433F
- Fortinet FortiAP 231F/231P
- LANCOM LX-6400
- Ruckus R550/650



Hanshow Transmission Technology



AP Transmitting

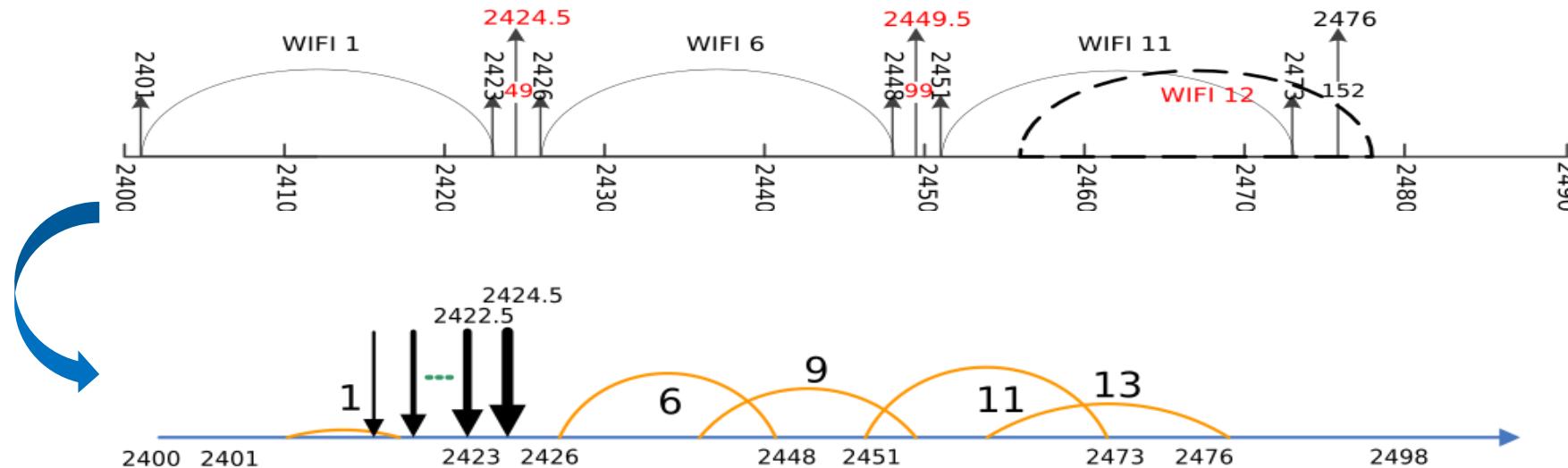


AP Transmitting and Wi-Fi

Real-time scan



Hanshow uses advanced transmission technology to find frequency gaps in cellular networks for communication between the AP and IoT devices.

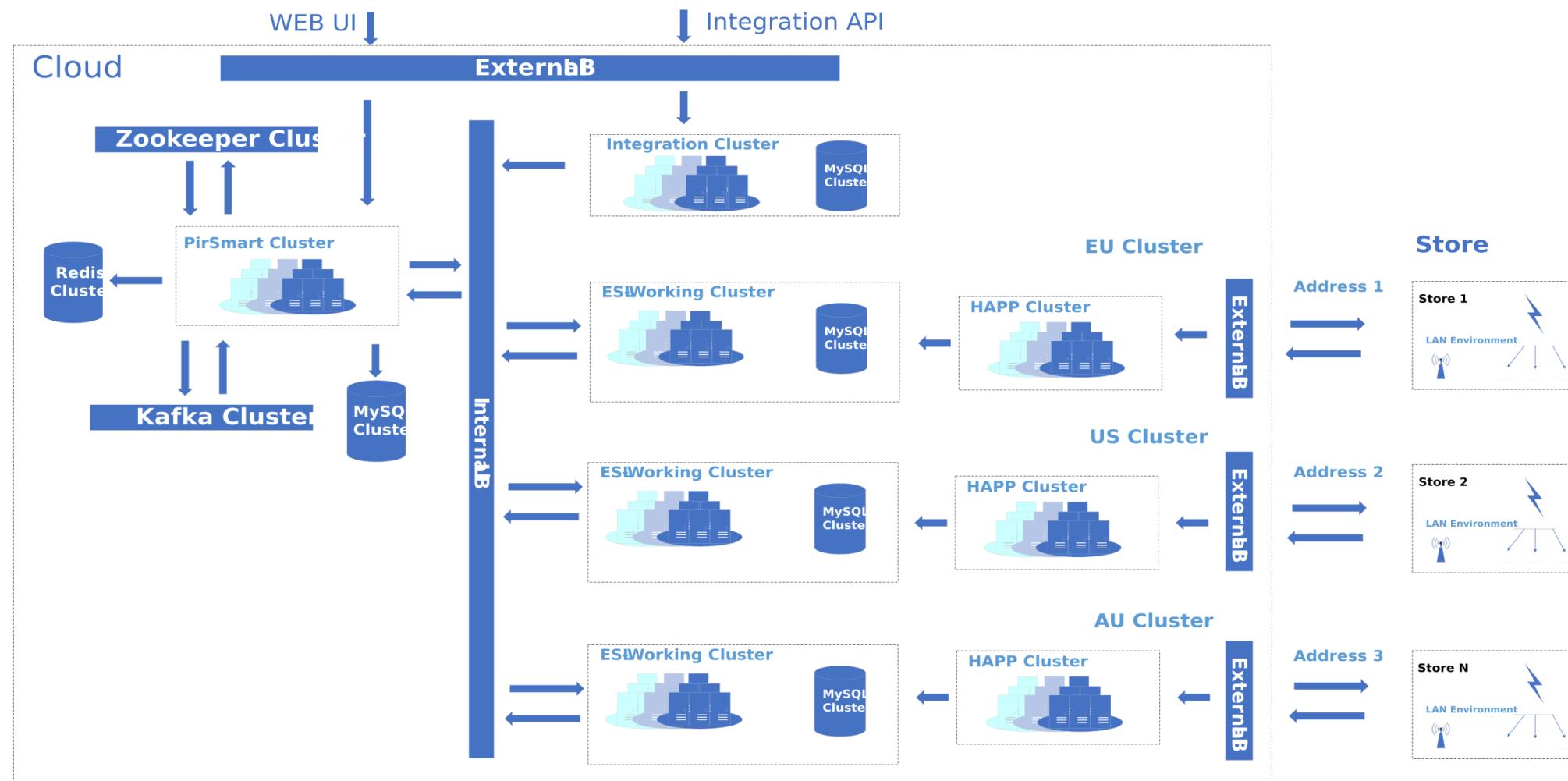


This allows for fast, stable, efficient, and power-saving device communications.

Software SaaS

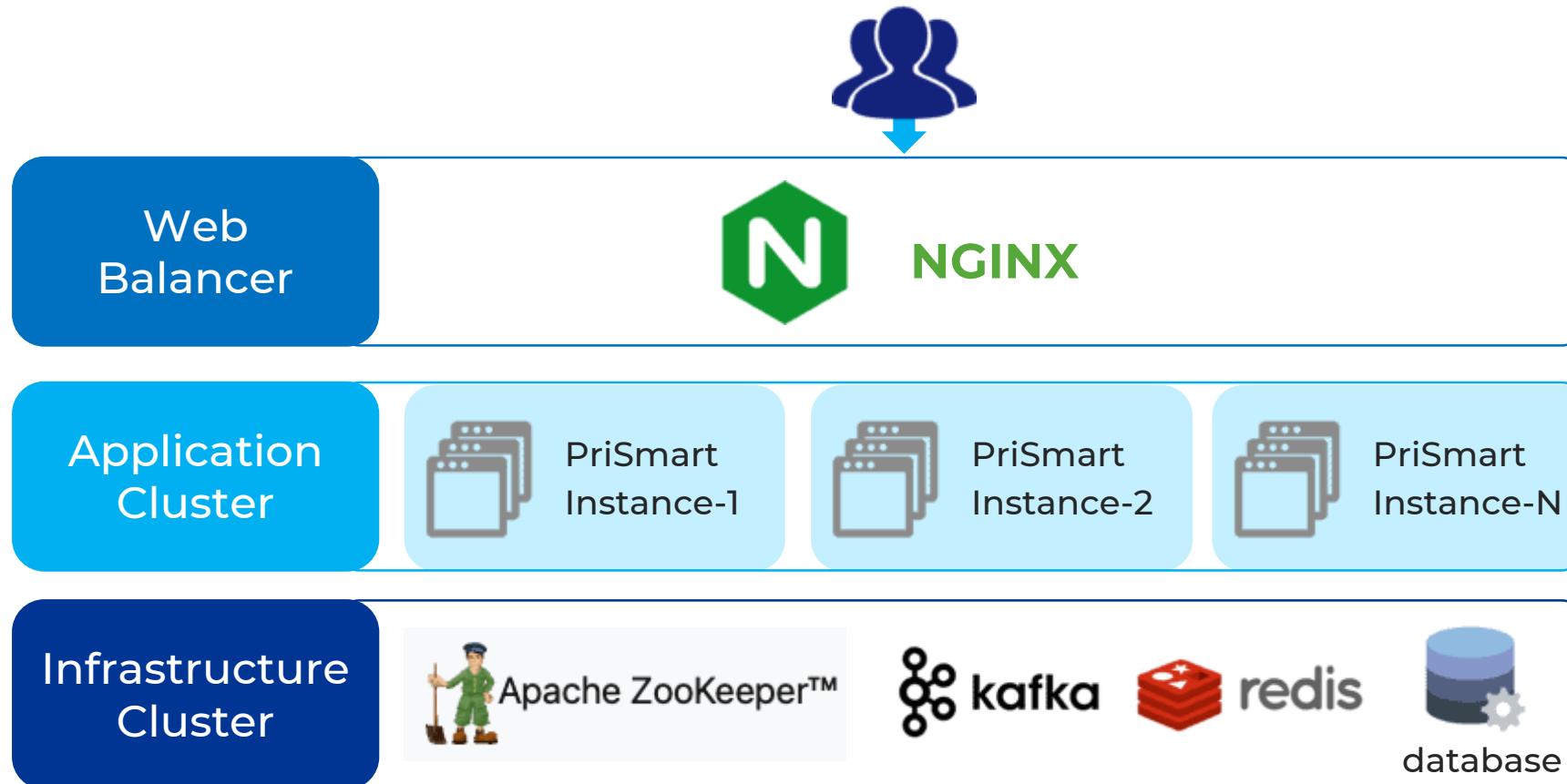


Hanshow Global Cloud Architecture



Easy to manage millions of ESL in ONE platform

Hanshow ESL Management Software



- High Availability
- Auto Expansion
- Load balancing
- Instance based
- Message Queue
- Universal platform
- SQL server and MySQL supported

Cloud vs Localized Servers

More economical, fast, and efficient



- Simple access, global support
- Black box model, easy to expand and upgrade
- All weather, 24/7 monitoring
- Low cost, no server, computer room, team

Software ESL OS



Revolutionizing ESL

Hanshow ESL Operating System

Human-computer interaction

Automatic Geolocation 2.0

OTA technology

Real-time Tasking

Task Management

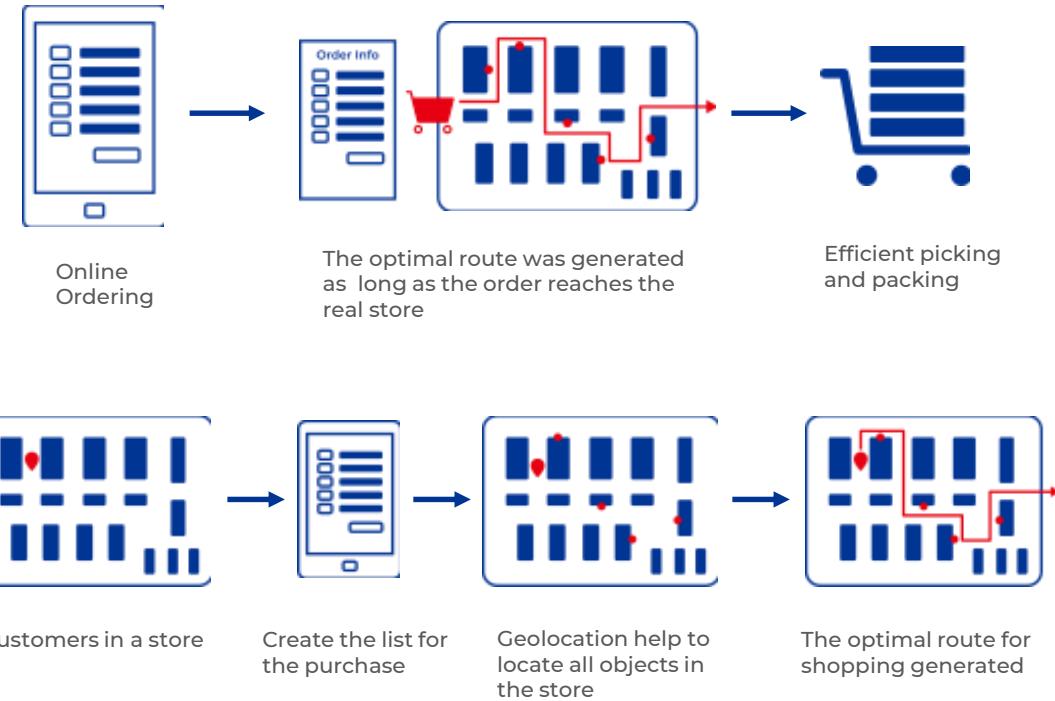
Update Speed



Automatic Geolocation 2.0

- Cost reductions
- Low power consumption
- 95% location accuracy
- Real-time performance: detect and relocate a moved ESL within less than 30 minutes
- Easy deployment

Geolocation Applications

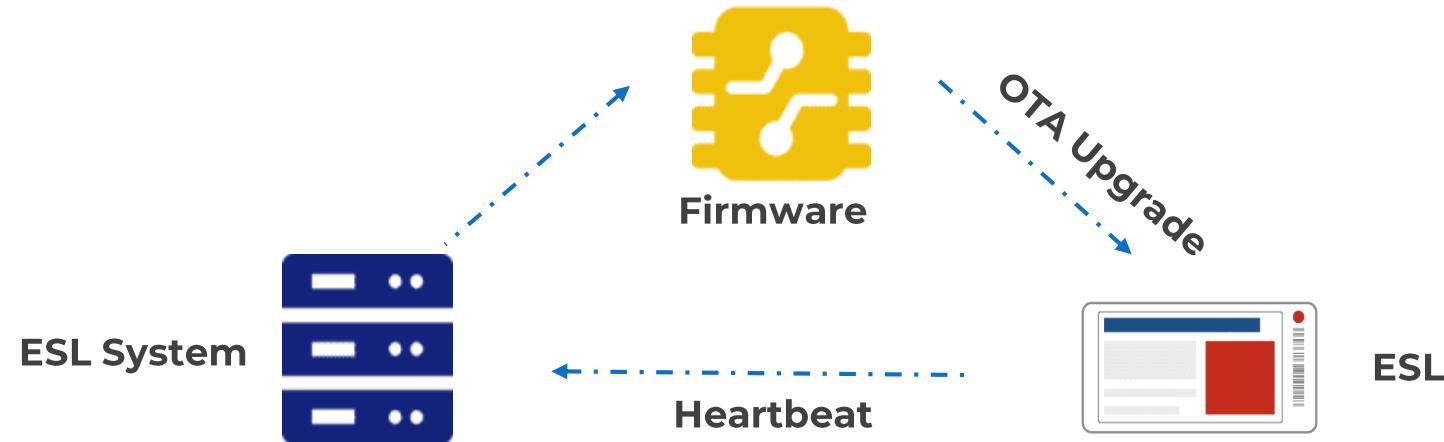


OTA firmware upgrade for future proof

All models of Nebular ESL support OTA (Over The Air) firmware upgrades to ensure seamless updates as technology advances.

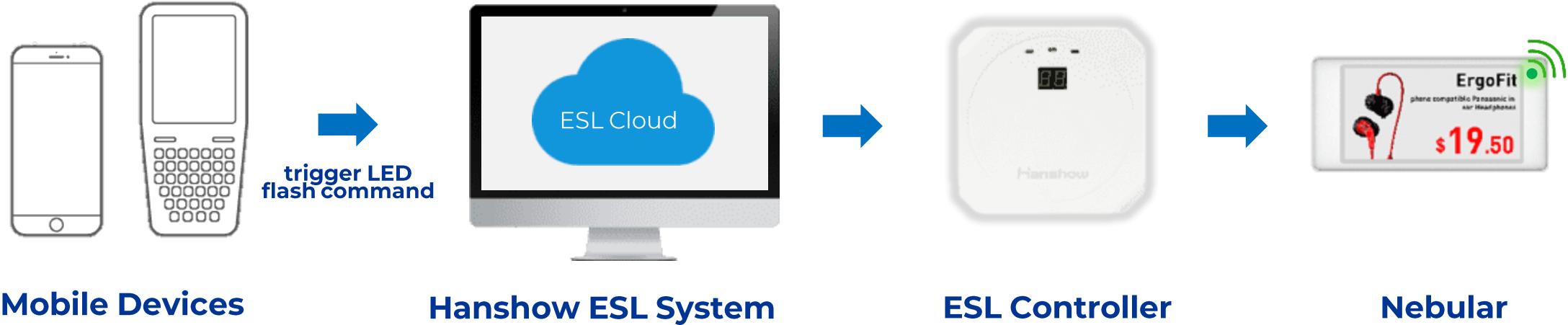
New functionality deployment:

- No extra labor cost
- No extra hardware cost
- No extra maintenance cost
- Super fast upgrading speeds -- **1 hour** to upgrade **36,000** labels



Real-Time Tasking

Hanshow



Turn on any LED lights in 3 seconds.



Pick to Light



Product Locator



Shelf Replenishment

Task Management

Flash Sale



Expired goods check

Shelf Checking



New Product

Clip-ons installation



Replenishment



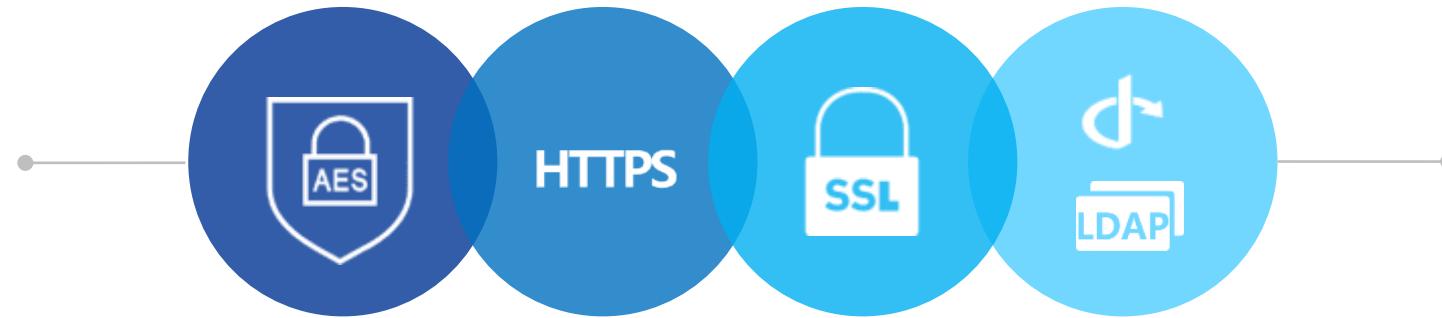
Inventory Check

Up to 8 page displays

- Pricing Data
- Operational Information
- Scheduled page switch

Security

- Built-in AES chipset (AES128/AES256) for secured ESL communication.
- End-to-end secured data transmission using HTTPS, TLS v1.2, etc.
- Various authentication models supported (e.g. OAuth2.0/SAML 2.0/LDAP/OIDC)
- Role Based Access Control



Certified by Leading Global Security Company

Faster Update Speed with 4th Gen ESL protocol



Update Speed

60,000 ESLs
per hour per AP



Sustainability

More power-saving
protocol increases 30%
battery life



Fast Flashing

Turn on any LED lights
within 3 seconds

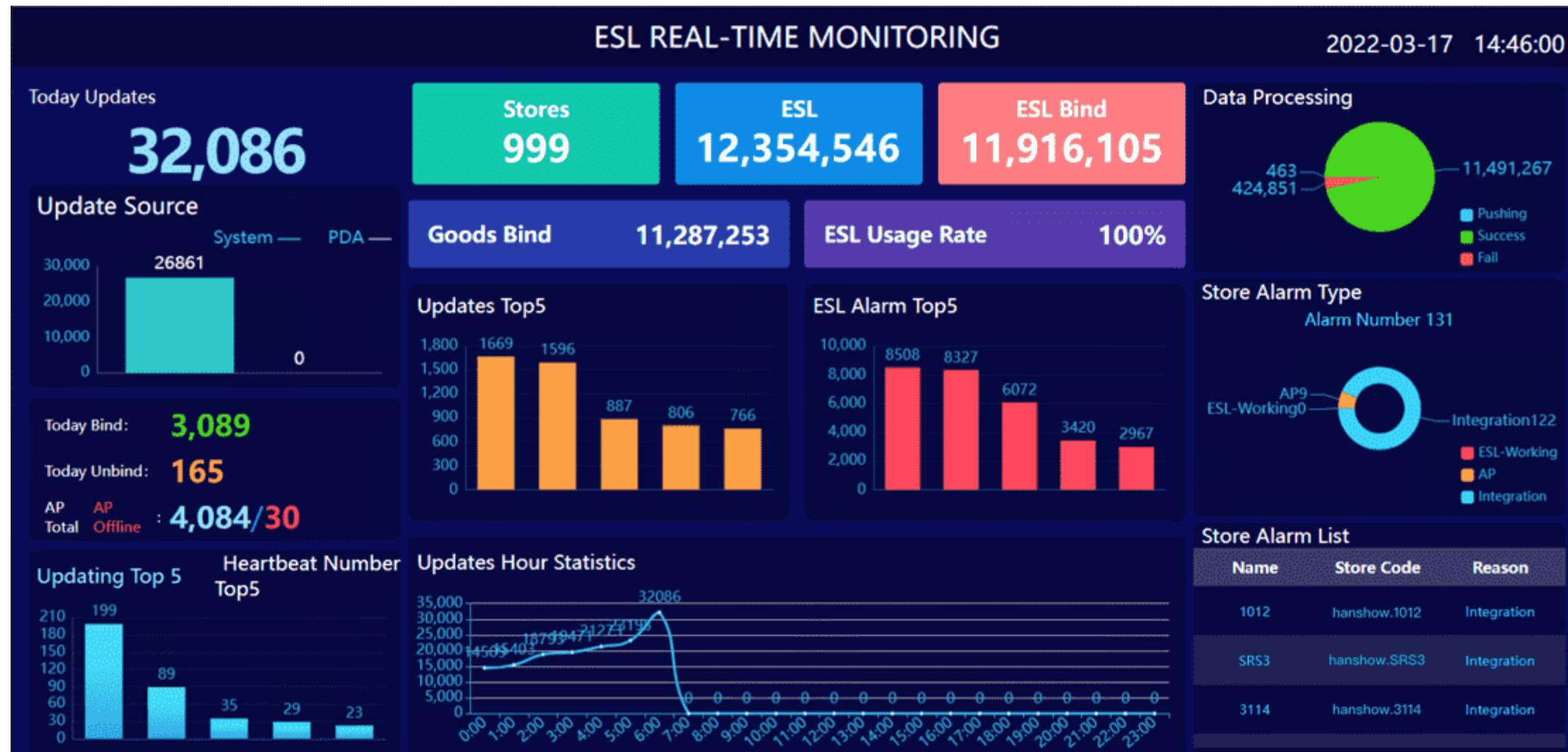


Fast binding

ESL binding in 20
seconds

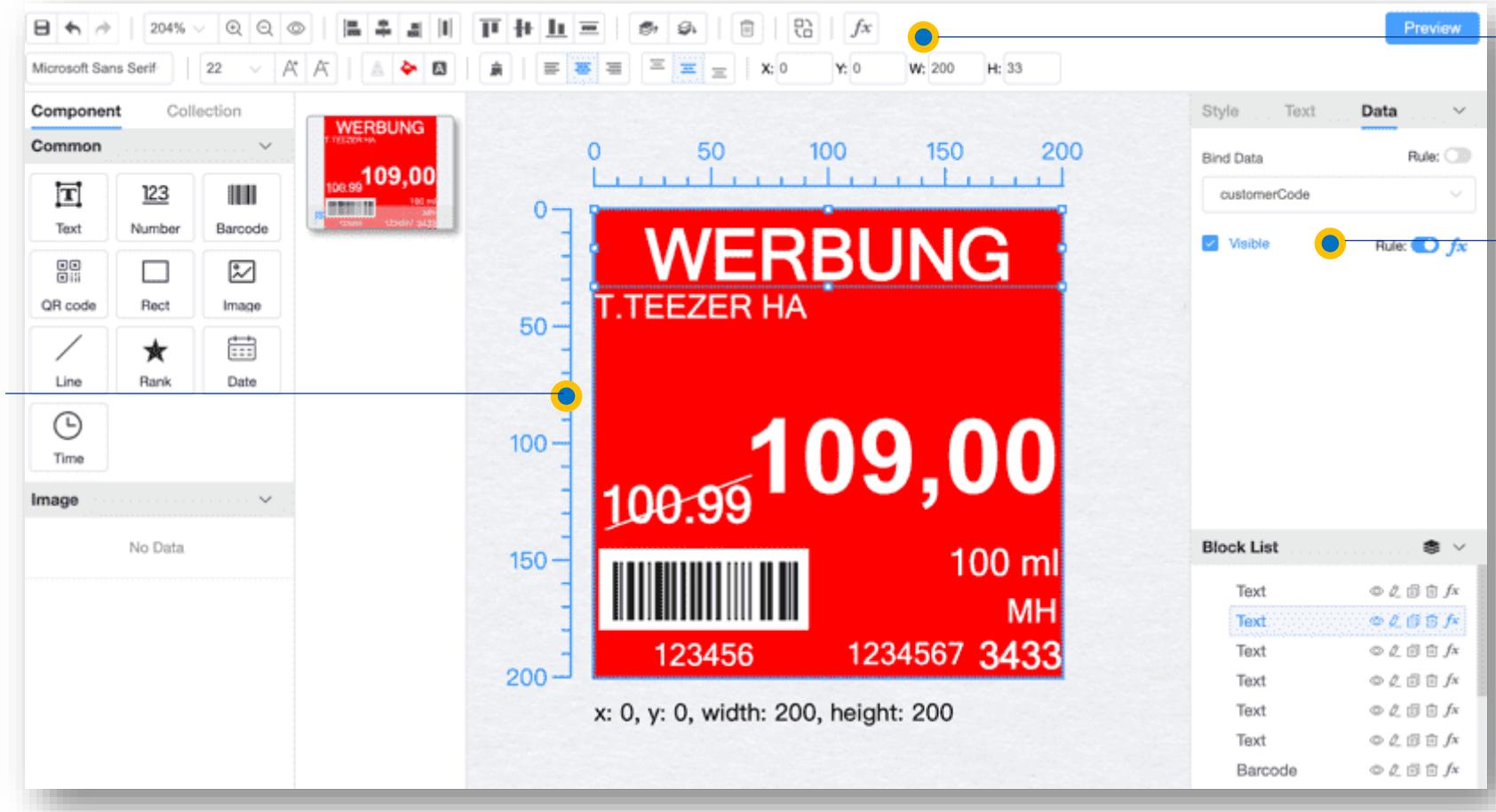
Hanshow Global Monitoring Platform

Hanshow



Hanshow ESL Template Tool

Visualized operations



Online edit and preview in real time

Support logic edit

LCD ESL

- AP
- Platform
- Management

Lumina Aqua Series

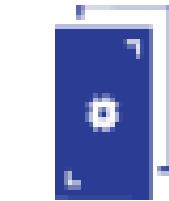
A combination of ESL and digital signage designed for application in a range of retail settings

Lumina Aqua-700	Lumina Aqua-1010	Lumina 1010-X2	Lumina 1010-X1
			

177*115*10.8 151.7*242.7*10.8 244.14*159.1*14.4 244.14*159.1*13.9



Lumina Aqua



Full-color
IPS LCD



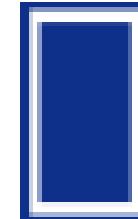
IP65 dustproof and
waterproof



Instant Price
Refresh



Lumina Aqua
7 inch

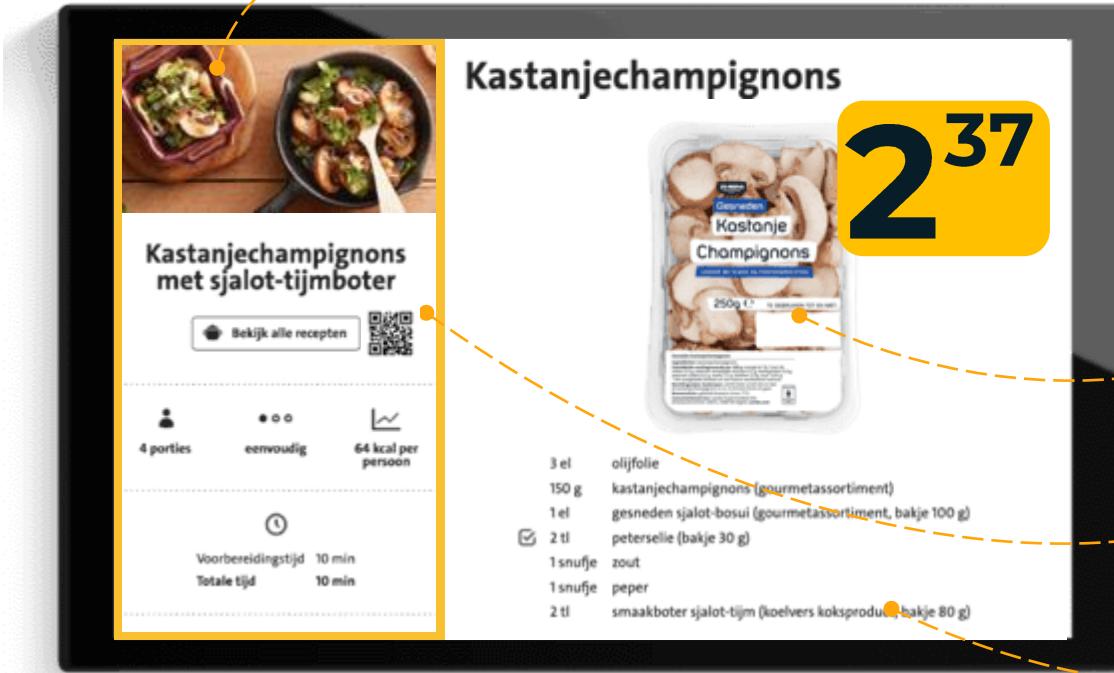


Lumina Aqua
10.1 inch



Ultra-slim dual
side display*

Features



- **Video playlists**

recipes, advertisement, quality perception

- **Product image matching**

Finding the correct price in an easy way

- **Customer engagement**

Enjoyable in-store shopping experience

- **Cross-selling**

Increased UPT (units per transaction)

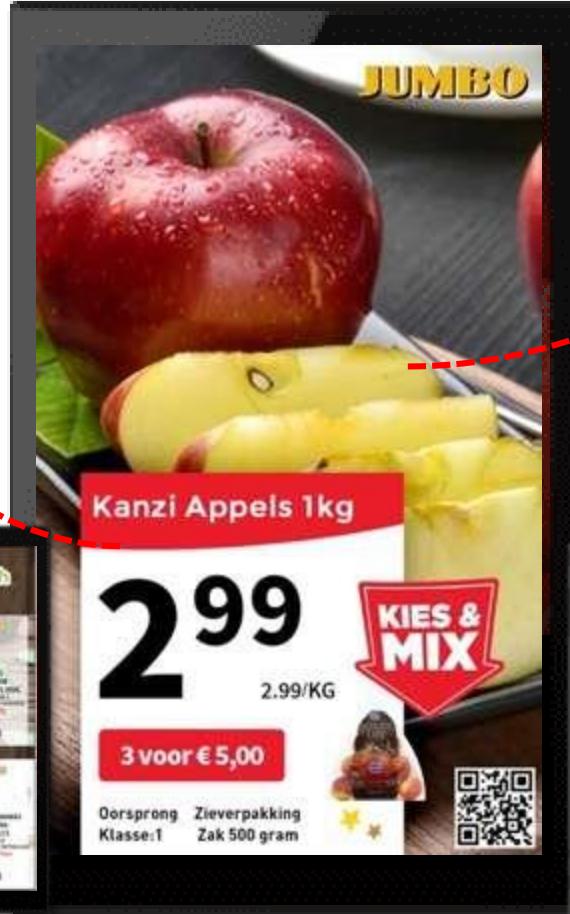
Communicating with the Customer



Price label



Full colour tag

Media content
(Image/Video)

Enhanced Customer Experience



Visual comfort



Clean lining and unified displays deliver a comfortable and modern shopping experience.



Customer communication



Recipes, product videos, and more make retail displays come to life.

Application - Produce Sections

- Fast and automated price changes for
- high price fluctuating produce sections
- Vivid marketing content paired with pricing to boost sales.



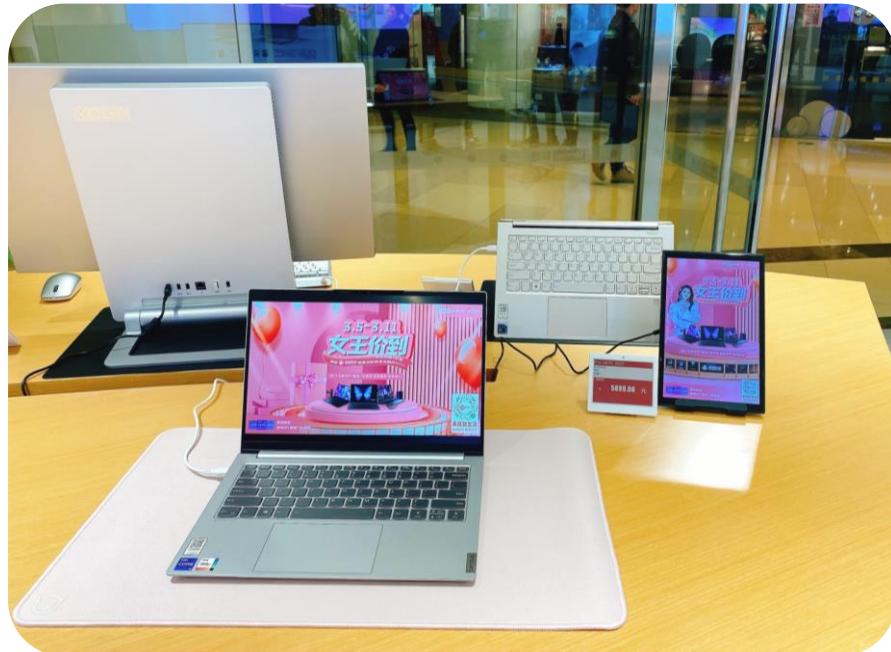
Application - POP Shelf Screens

- Replace POP paper on shelves
- Replaces the isle breakers/isle fins & shelf talkers



Application - Counter-top Screens

- Display interactive content on counter-tops
- Ideal for cafés, fast-food, snack bars, or convenience stores.



Products & Solutions

Hanshow

- ESL Solution
- In-store marketing
- Solution**
- AI+ Solution
- Digital Payment Solution

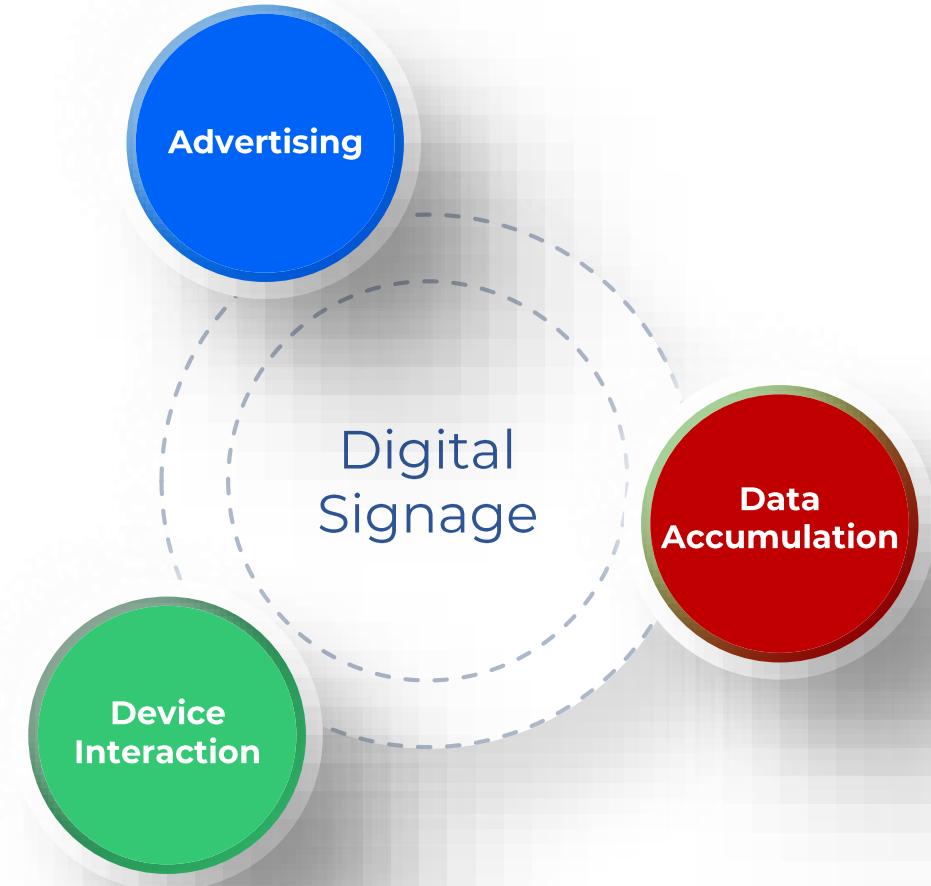


Hanshow In-store Digital Marketing Solution

POP marketing for increased sales

Hanshow's in-store digital marketing solution opens a range of new opportunities for retailers to stimulate sales through promotions and advertising directly at the PoP.

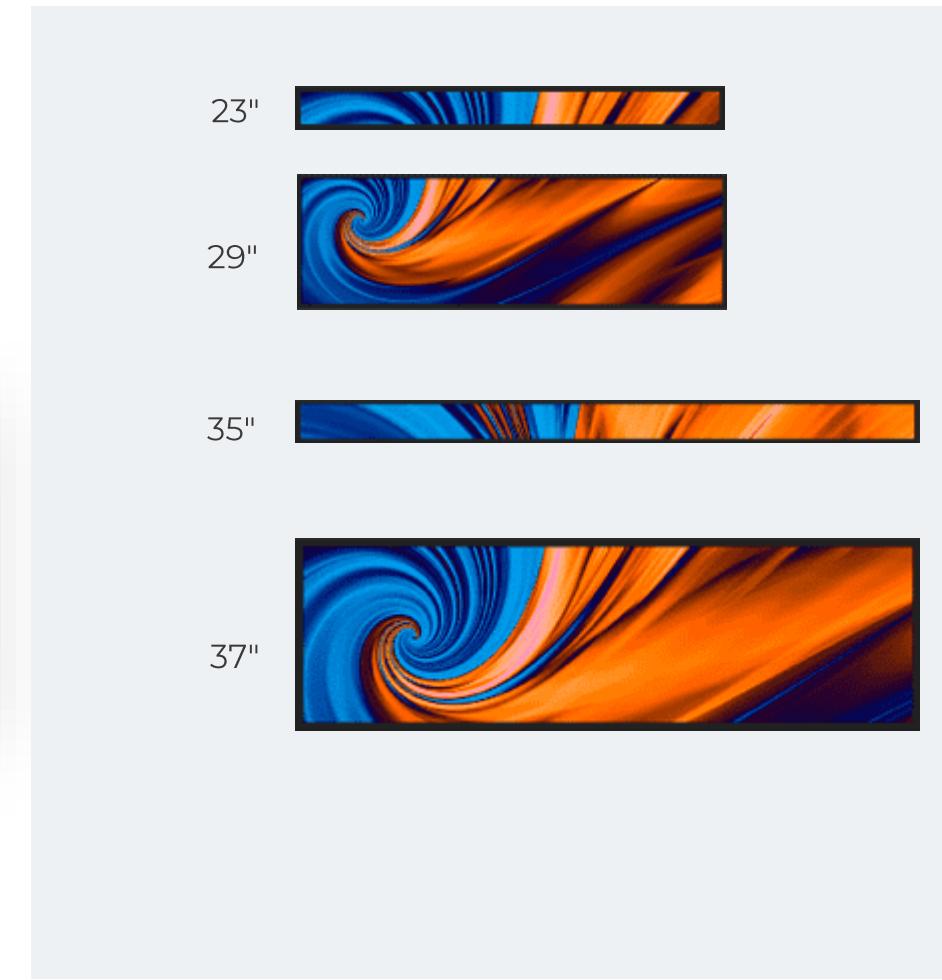
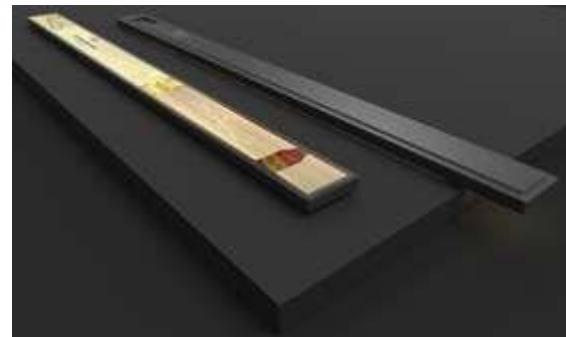
Shelf series



Lumina Edge Series

Digital signage for the shelf edge

Product	Type	Pixel	Size
23.1 inch DS	Shelf Series	1920*158	597.4*60.4*16.2mm
35 inch DS	Shelf Series	2880*158	891.6*60.4*15mm
29 inch DS	Shelf Series	1920*540	720.8*226.3*43.3mm
37 inch DS	Shelf Series	1920*540	915*281*43.5mm



Full-color
IPS LCD



Stripe shaped
display



Android SoC
digital signage

Application – Shelf edge advertising

Hanshow

ANIMATED E-POSTERS

Say goodbye to drab printed posters

- Real-time content updates with one click – reducing operations and labor costs.
- Advanced scheduling capabilities – align with your business planning.
- Signage group and content group management.



Application – Pricing Display

Hanshow

PRICE LABEL TEMPLATE

Designing your displays

- Shares price information with ESL
- Real time price updates
- Template management
- Adjusting label position through PDA
- Support full color & animated display of pictures, barcode, QR-code and other elements.

The screenshot shows the Focusmart software interface for managing ESL templates. On the left is a sidebar with navigation links: CMS, Interact, Device, Content, and ACL. Under 'ESL management', there are links for Bind device, ESL binding, Template binding, Products in store, and Template management. The main area is titled 'Edit ESL template' and shows a preview of a price label for '2 KG ORANGEPAPILLION'. The preview includes product name, origin, barcode, and price (\$8.88). To the right is a detailed view of the template structure with attributes like X and Y coordinates, width, height, text content, barcode format, alignment, data binding, digital display position, and barcode height. Below the preview, there are two examples of physical price labels for Lay's Potato Chips and Oetk-V-SuMüKohlenh.

Products & Solutions

Hanshow

- **ESL Solution**
- **In-store marketing Solution**
- **AI+ Solution**
- **Digital Payment Solution**



Pain points suited to AI solutions



01

Management and Operation

- High cost of headquarters management
- Low efficiency operations and high labor costs



02



02

SKU Management

- Optimizing pricing and product selection can have great influence on sales
- Difficulties to acquire real planogram data



03

Customer Analysis

- Unable to obtain customer information and behavior data
- Unable to track fast-changing market in real time



04

Shopping Experience

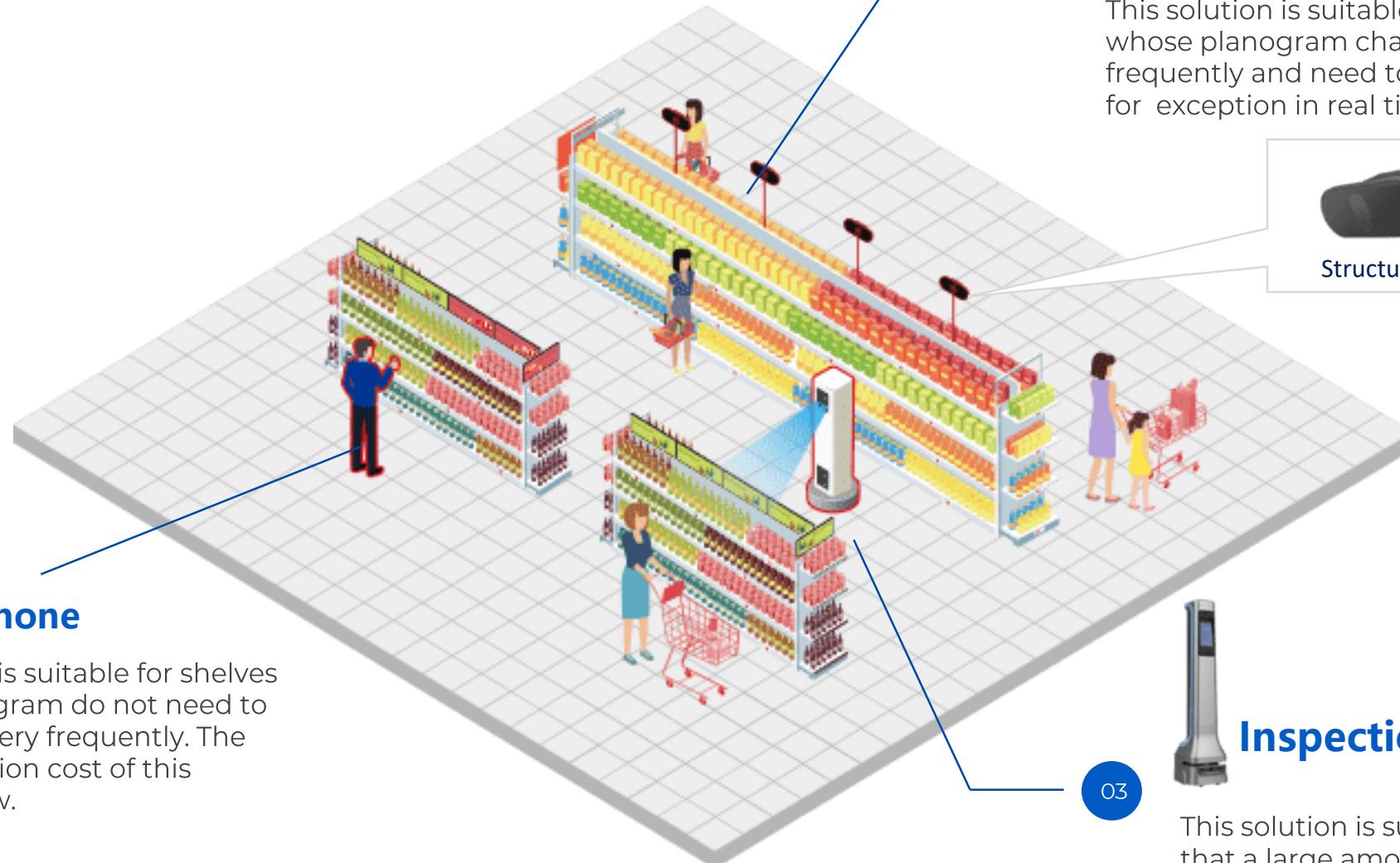
- Low digitalization level of traditional retail
- Pressure from e-commerce

AI+ Solution Overview



02 Mobile Phone

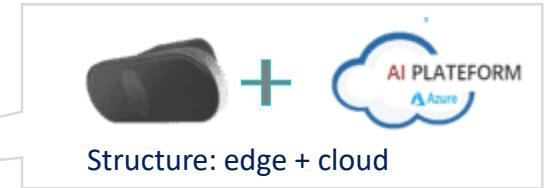
This solution is suitable for shelves whose planogram do not need to be checked very frequently. The implementation cost of this solution is low.



01

Fixed AI Camera

This solution is suitable for shelves whose planogram change frequently and need to be checked for exception in real time



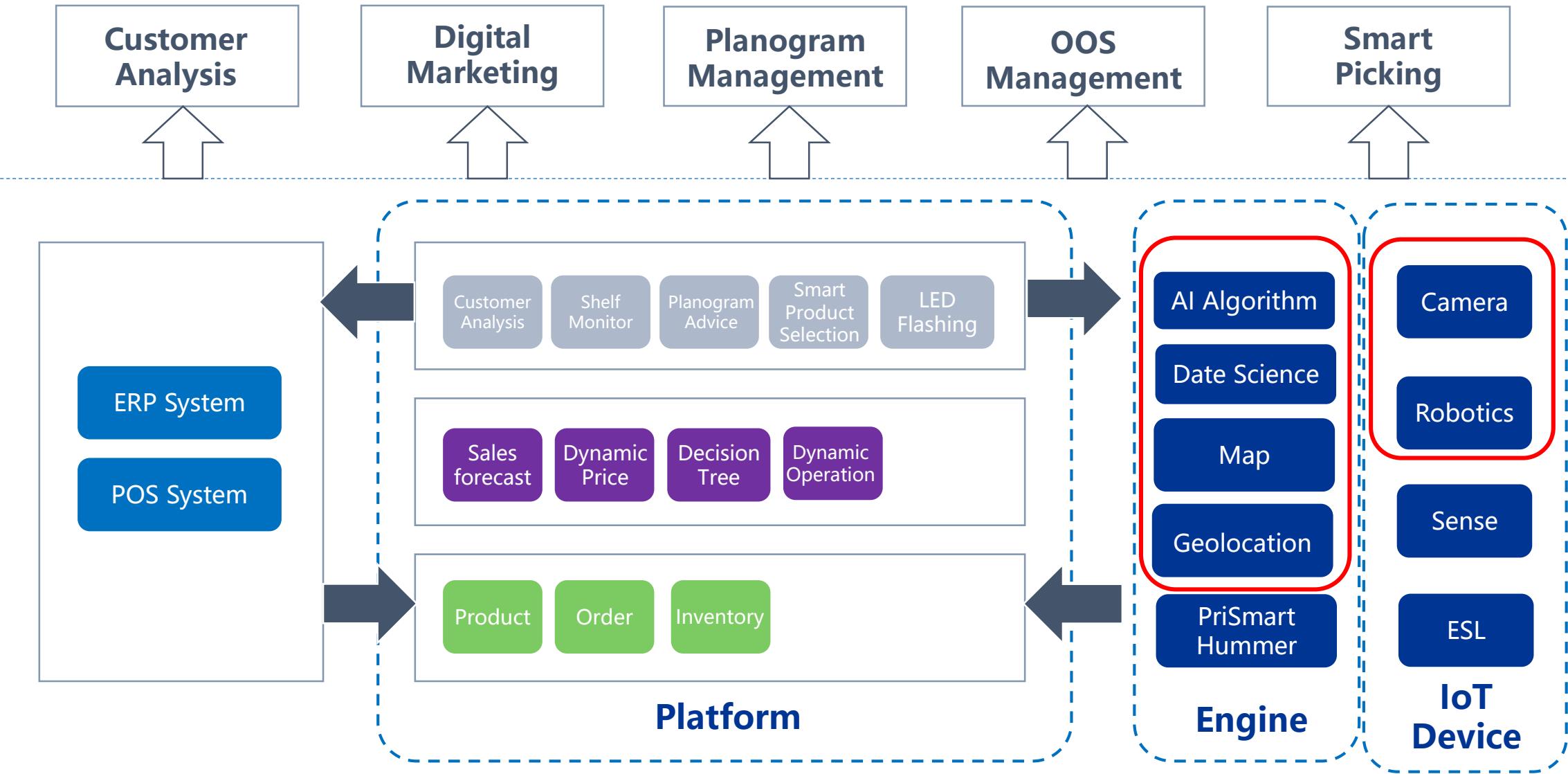
Structure: edge + cloud



03 Inspection Robot

This solution is suitable for scenarios that a large amount of shelves planogram need to be checked.

Solution Architecture



Core Algorithm

ESL Detection

Recognize ESL code, detect products ID

Recognize products based on ESL

ESL detection accuracy **95%**



OOS Detection

Check whether the product is out of shelf

Avoid sales losses due to out of shelf

OOS detection accuracy **90%**



Face Recognition

Recognize gender, age of customers

Recognize VIP/Blacklist

Face recognition accuracy **92%**



Product Recognition

Recognize products based on images

Recognize more accurately with ESL detection

ESL detection accuracy **95%**

OCR

Recognize character on the ESL

Help recognize products

Character recognition accuracy **90%**

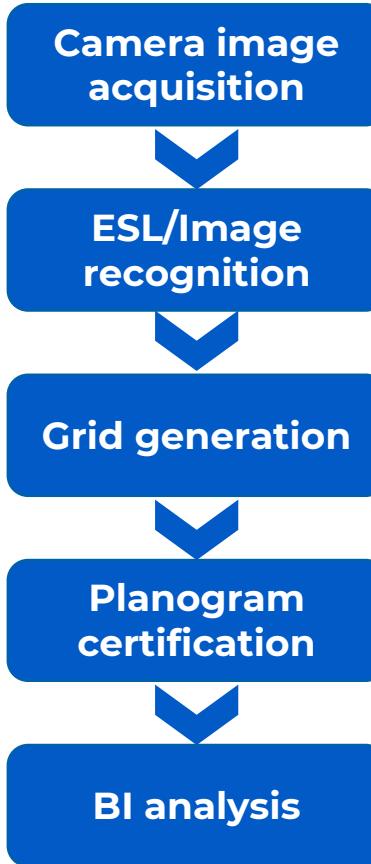
Action Recognition

Detect pick up/put back action

Integrate people and goods data to generate regional sales funnels

People-to-goods interaction accuracy **85%**

Planogram detection



ESL planogram detection

- Generate planogram grid through ESL recognition
- Recognize the product associated with ESL



Product Planogram detection

- Generate planogram facing by product image recognition
- Recognize the product in each planogram space

Planogram detection and check based on ESL and image recognition

Out-of-stock detection

Camera image acquisition



Product Image recognition



Empty space detection



Out-of-stock judgements

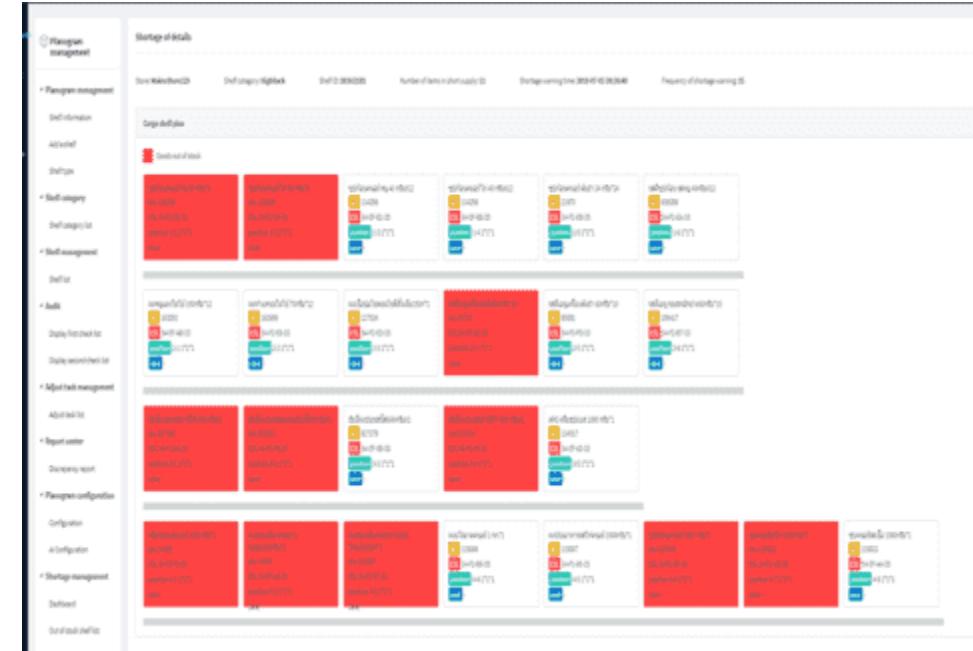


BI analysis



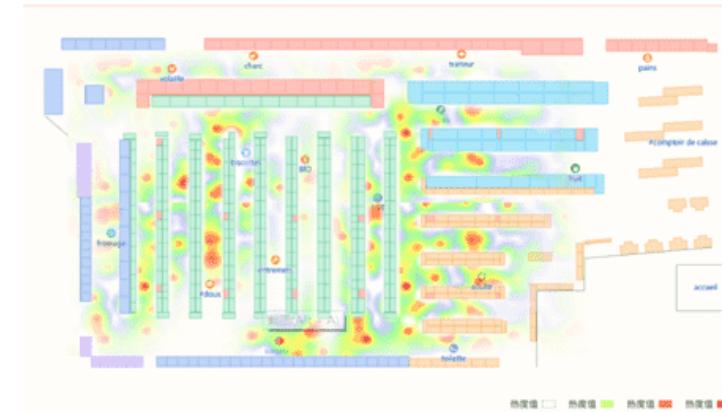
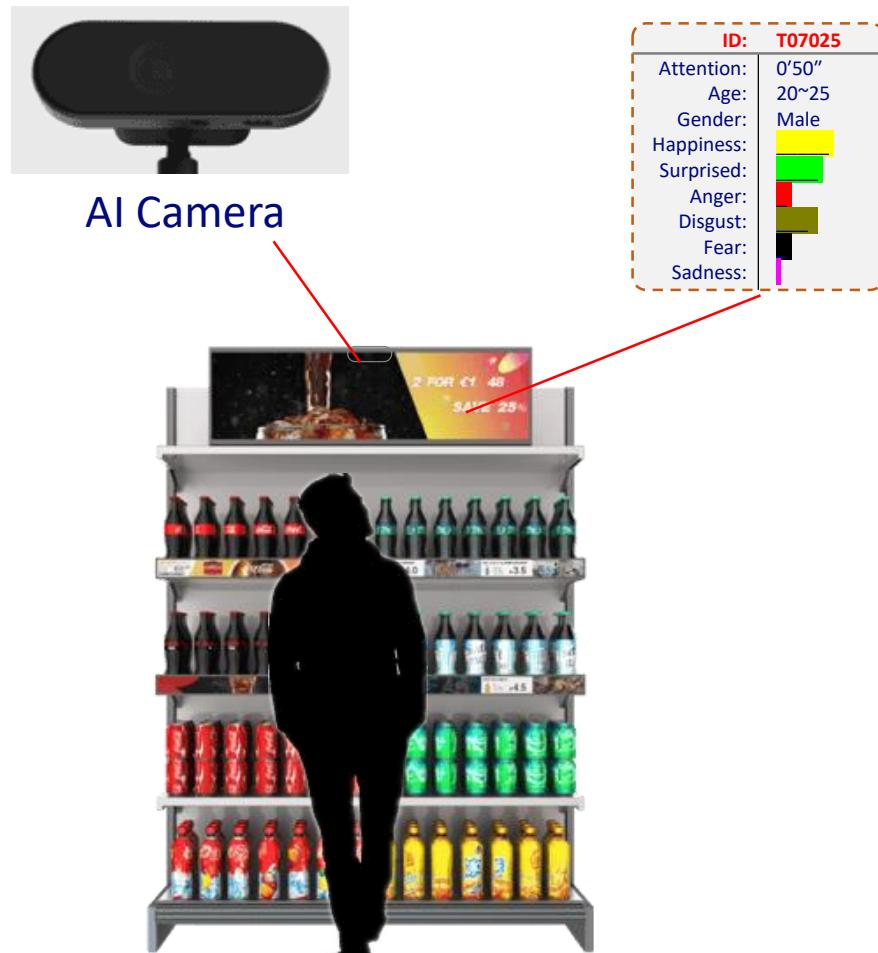
Out-of-stock detection

- Detect out-of-stock status of products
- Calculate out-of-stock ratio



Out-of-stock detection based on product image recognition

Customer portrait and traffic analytics



Portrait and traffic detection

- Face attribute recognition
- ReID recognition
- Customer traffic calculation
- Heat map/customer route
- Membership/blacklist management

Industry-leading ReID recognition/customer traffic detection algorithm

Products & Solutions

Hanshow

- **ESL Solution**
- **In-store marketing Solution**
- **AI+ Solution**
- **Digital Payment Solution**



Digital Payment Solution



reddot winner 2022



Profits



Efficiency



Smart Trolley



Retailer



Labor costs

- Strain from increasing labor costs
- Difficulties balancing customer experience and operating costs

Revenue

- Better understanding of customer's needs, increase their shopping time and purchase amounts

**Reduced costs
Increased revenue**



Customer

Payment queues

- Long queue bring anxiety to the shopping experience.

Promotions

- Receive more targeting promotions

**Improvements to the
checkout process**

AI scale

AI identification camera / Android /Wire or wireless



Cashier area – manual checkout

Automatically synchronize orders with Traditional cash register



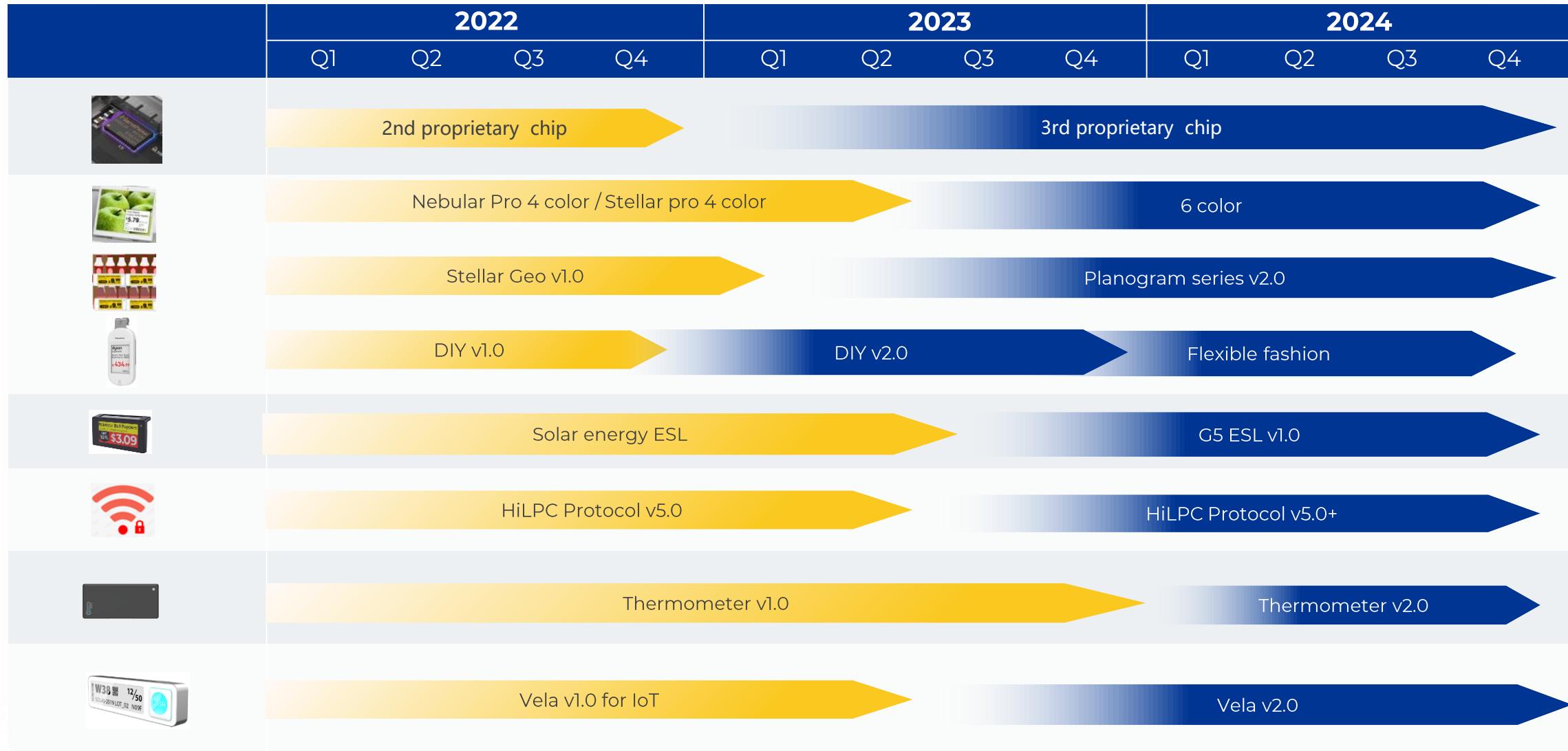
Weighing Area – self service

Print weighing barcode at the Fresh Produce Area

Roadmap

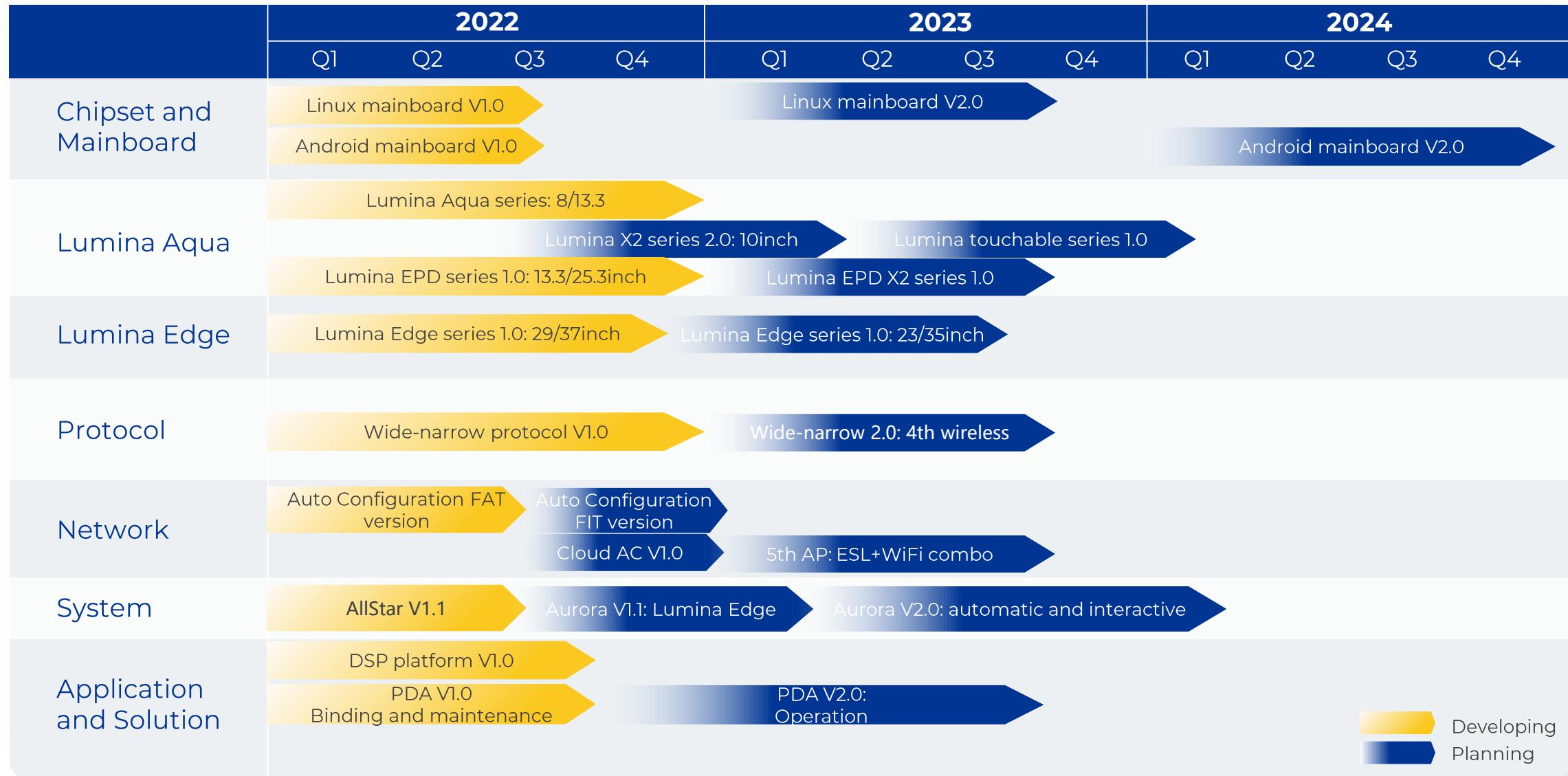


Smart ESL Product Line Roadmap

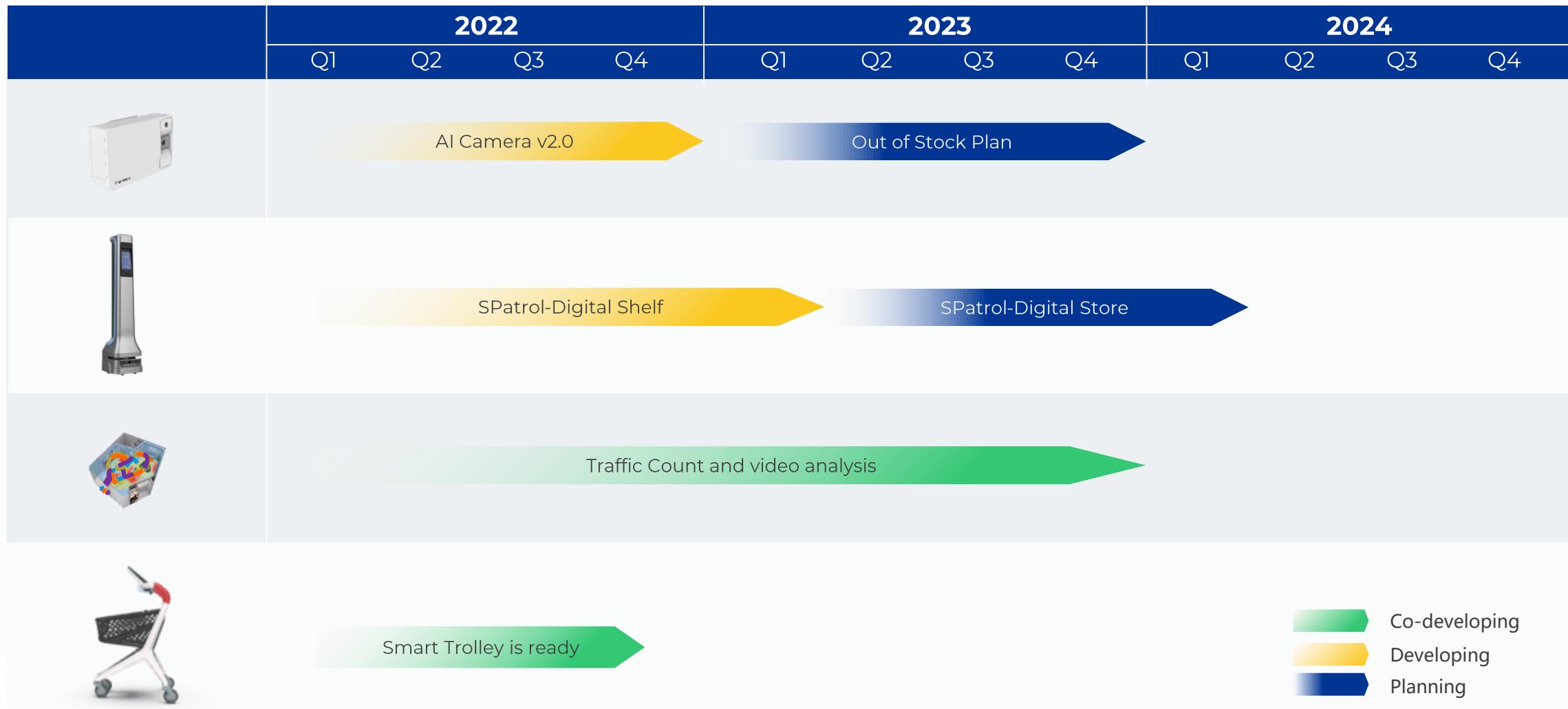


Developing
Planning

Digital Signage Product Line Roadmap



AI+ Product Line Roadmap



Hanshow

Hanshow

Service

Make the Future FRESH

Your service teams at Hanshow

Please modify the following location as necessary.

Product and Technology Team

1. ESL product analysis, size/color selection
2. Digital signage
3. Smart trolley
4. Self-checkout Kiosk



Business Case Team

1. Application for pricing
2. Inventory Management
3. On-shelf product management
4. Application for online order picking
5. Online-offline promotion

Network Team

1. Network architecture design
2. Software management
3. Centralized system
4. Lab Environment

Reference Site Visit

1. Reference store in [Netherlands](#)
2. Reference store in [France](#)
3. Reference store in [China](#)

Co-innovation with customers on digital retail solutions

From 2017

Customer A
HQ in France
In 17 countries

- Stock Data management
- Customer staring management
- Social media integration
- Indoor Geolocation
- Digital Signage
- Centralized deployment management
- LED for replenishment
- Scan & Go
- Employee-less smart box
- A Pets Webstore
- A Picking system
- A E-Coupon solution
- Planogram Management

From 2018

Customer AD
HQ in Netherlands
In 7 countries

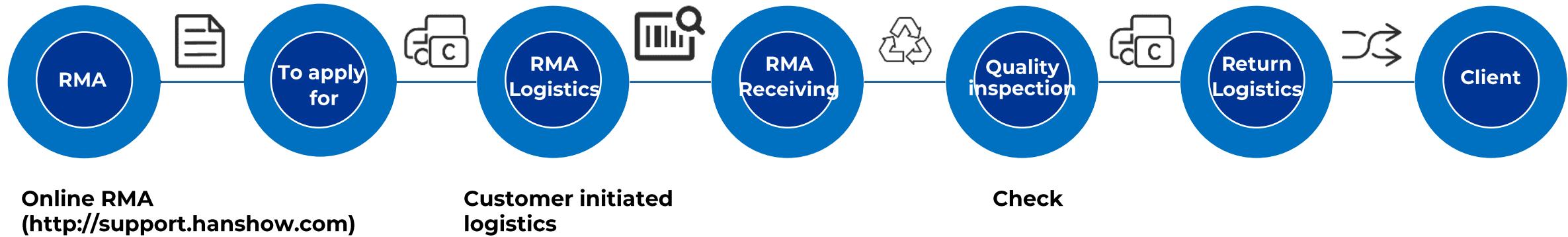
- Instant update
- Digital Signage
- Yes We Scan
- Out of shelf management
- SaaS service
- LED for Promotion
- Pre-link
- Fast implementation
- Smart Marketing
- Smart Shelf
- IoT platform

From 2019

Customer M
HQ in Thailand
In 4 countries

- Full digital store
- AI Camera technology
- Online store
- Interactive Kiosk
- Smart Shelf
- Scan & Go
- Digital Media
- Interactive LCD strip
- PDA Application
- One-Integration
- Picking & Packing Solution
- Online Delivery Management
- Real-time ordering dashboard

RMA Process



The RMA plan:

The customer initiates support system, and after the application, the product is returned and replaced to the RMA center for quality inspection.

After passing the inspection, the product is returned and replaced and returned to the customer terminal.

*If the product is not damaged, the customer shall be responsible for the replacement.

THANK YOU

FRANCE · GERMANY · NETHERLANDS · UK · USA · AUSTRALIA · NEW ZEALAND · JAPAN

BEIJING · JIAXING · SHANGHAI · SHENZHEN · WUHAN

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