

SHAPING INTELLIGENCE  
MEET AIOT.  
TOUCH THE FUTURE.

# Hikvision AIoT Technologies and Ecosystems





# AIoT Technology Implementation Difficulties

**AIoT products are getting diversified.**



**Scenarios are getting fragmented.**



**Applications are getting richer.**





# AIoT 4I Strategy Helps Ecosystem Partners Boost Customer Value





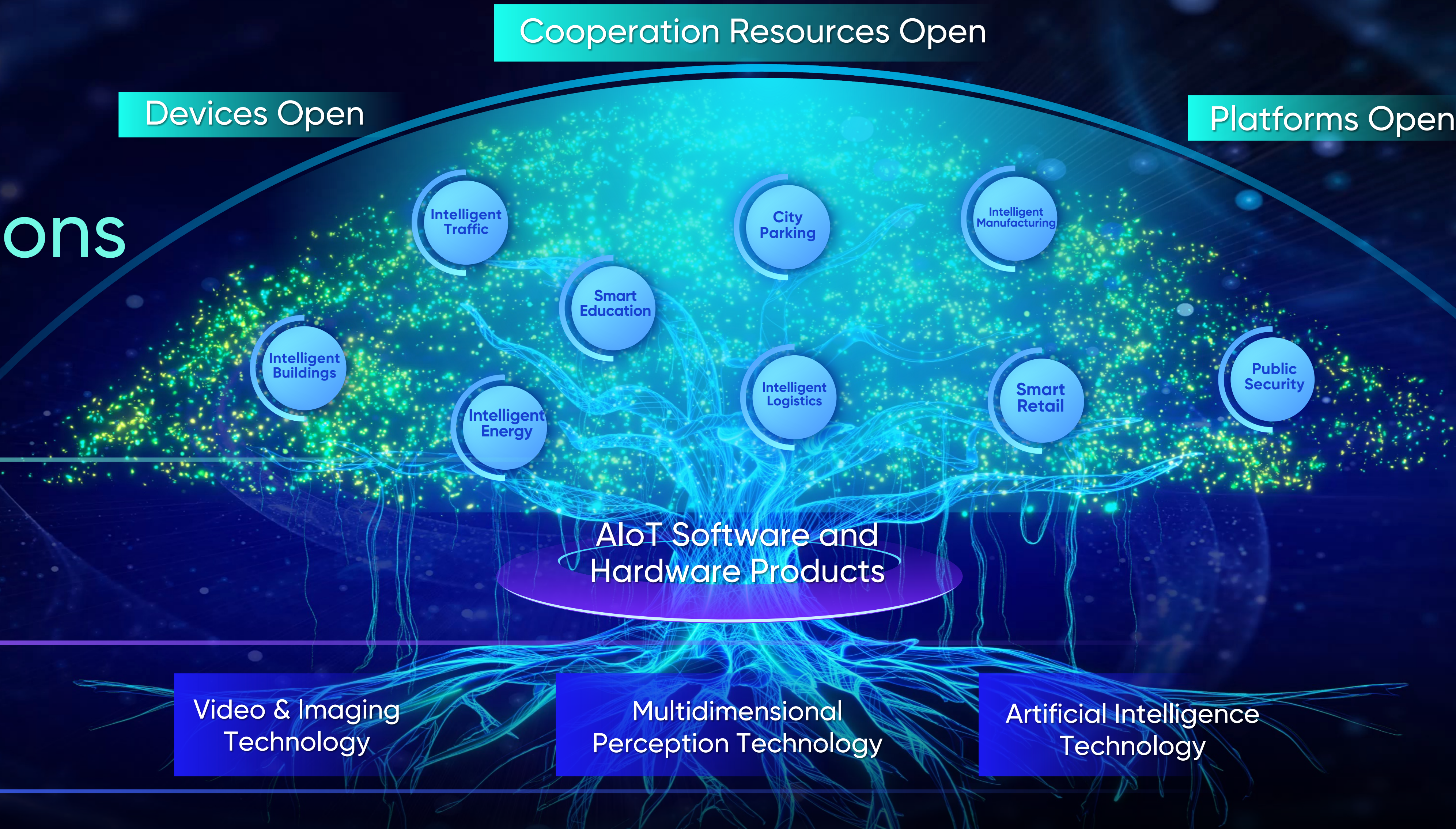
# AIoT 4I Strategy Helps Ecosystem Partners Boost Customer Value

Intelligent Applications

Intelligent Ecosystems

Intelligent Devices

Intelligent Technologies



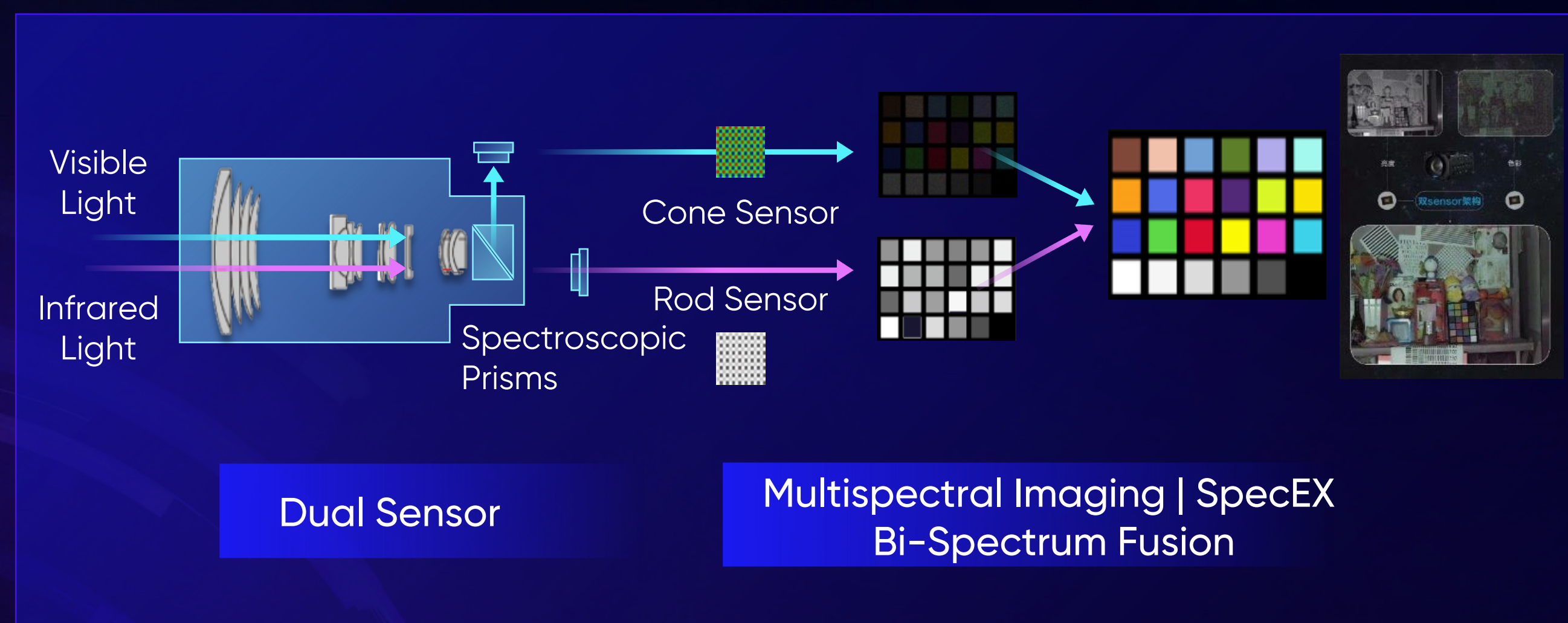


# Video and Imaging Technology

Optimize image effects continuously to pursue the ultimate 24/7 visual experience

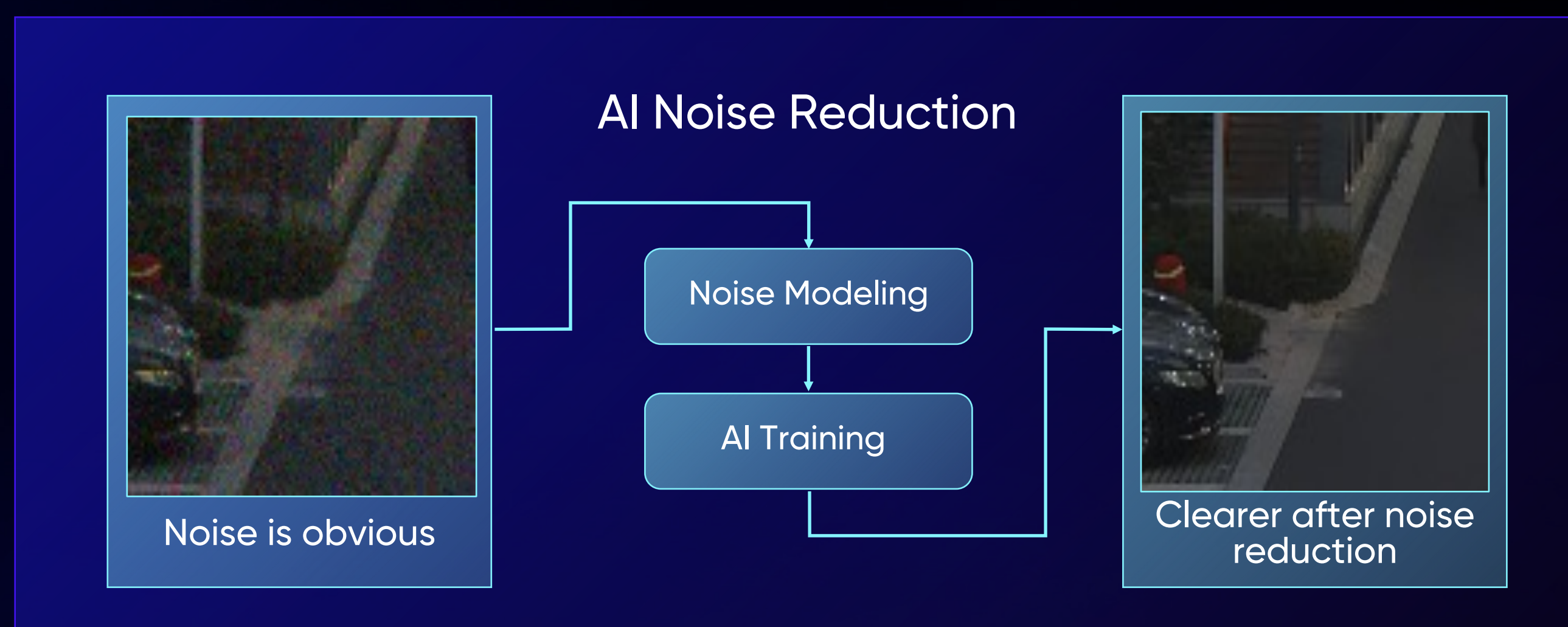
## Bi-Spectrum Image Fusion

Combining IR and visible light imaging to reproduce vivid colors



## AI-ISP Image Processing Engine

AI noise reduction to optimize nighttime image quality based on deep learning algorithms



## Patented Hybrid Supplemental Lighting

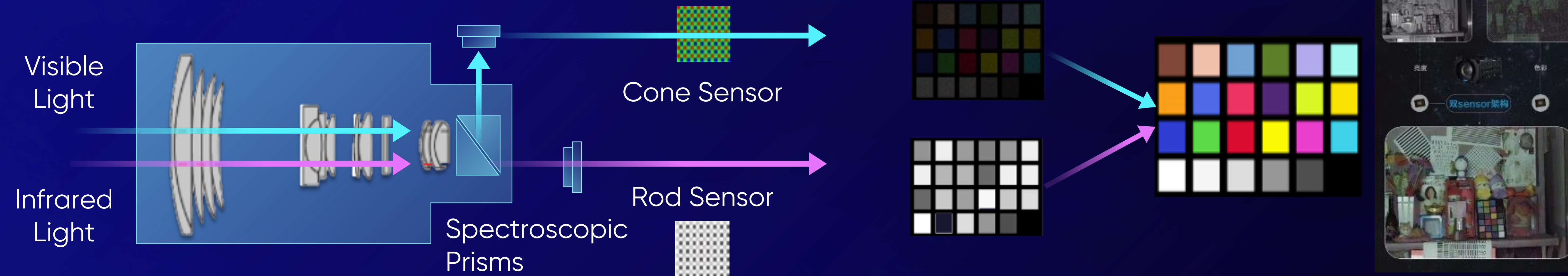
More environmental-friendly supplemental lighting to minimize white light pollution





# Bi-Spectrum Image Fusion

Combining IR and visible light imaging to reproduce vivid colors



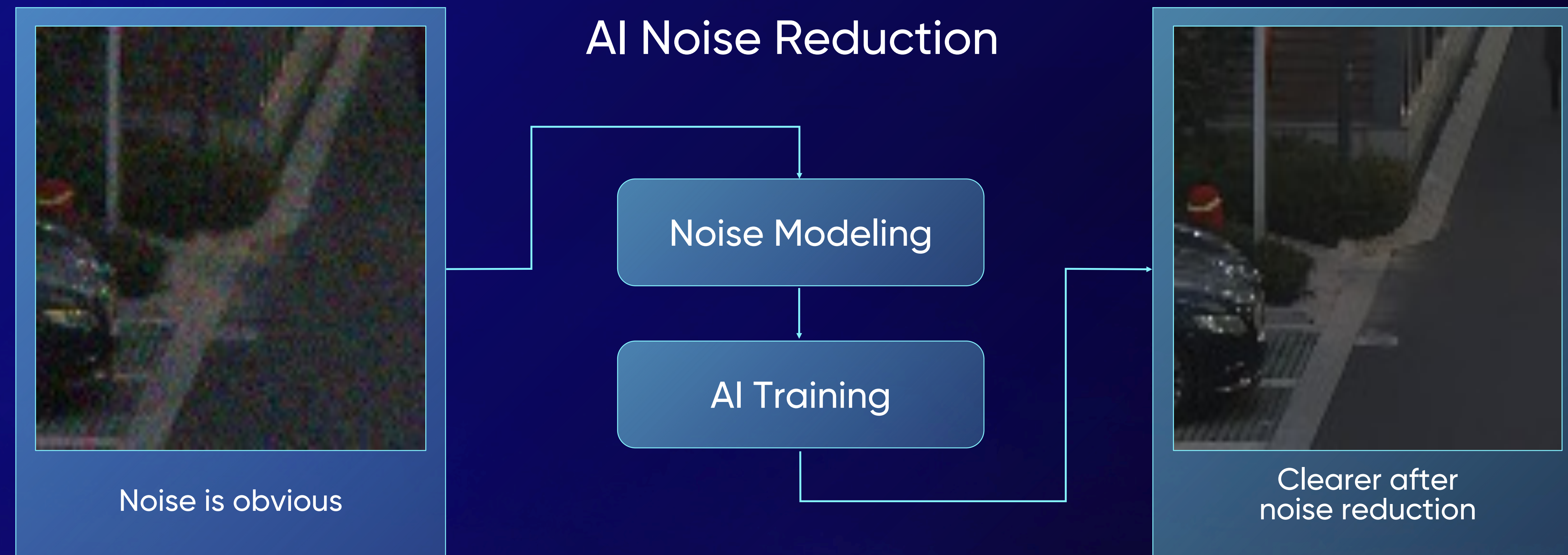
Dual Sensor

Multispectral Imaging | SpecEX  
Bi-Spectrum Fusion



# AI-ISP Image Processing Engine

AI noise reduction to optimize nighttime image quality based on deep learning algorithms

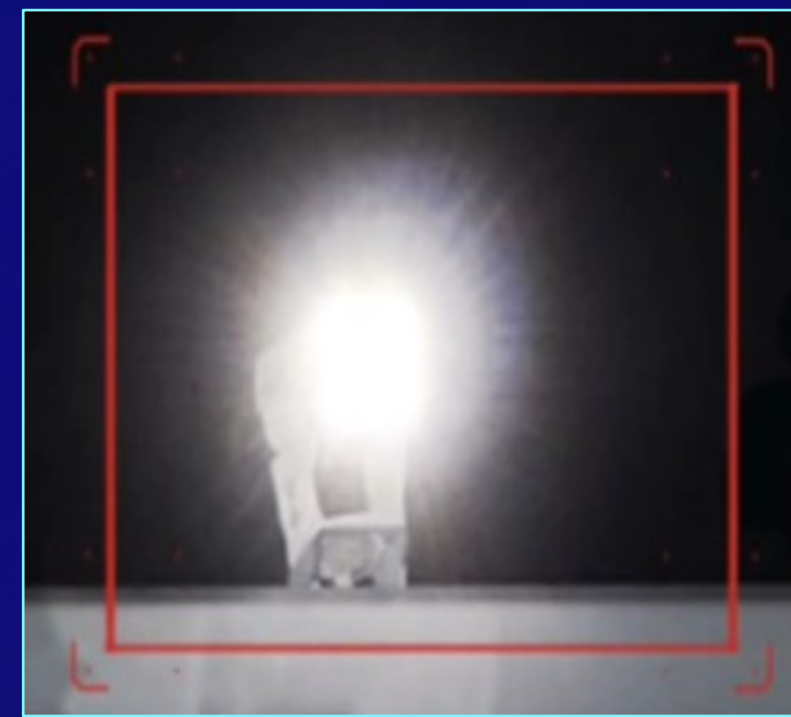




# Patented Hybrid Supplemental Lighting

More environmental-friendly supplemental lighting to minimize white light pollution

## Low-Light Imaging with Gentle Lighting



Conventional Supplemental Lighting  
90 lux



Infrared light is  
dominant

+

White light is  
supplementary



Gentle Supplemental Lighting  
0.13 lux

## Adaptive Adjustment of Brightness

Dynamic adjustment of supplemental lighting based  
on the proximity of the target



Far

Near

Strong Light

Weak Light



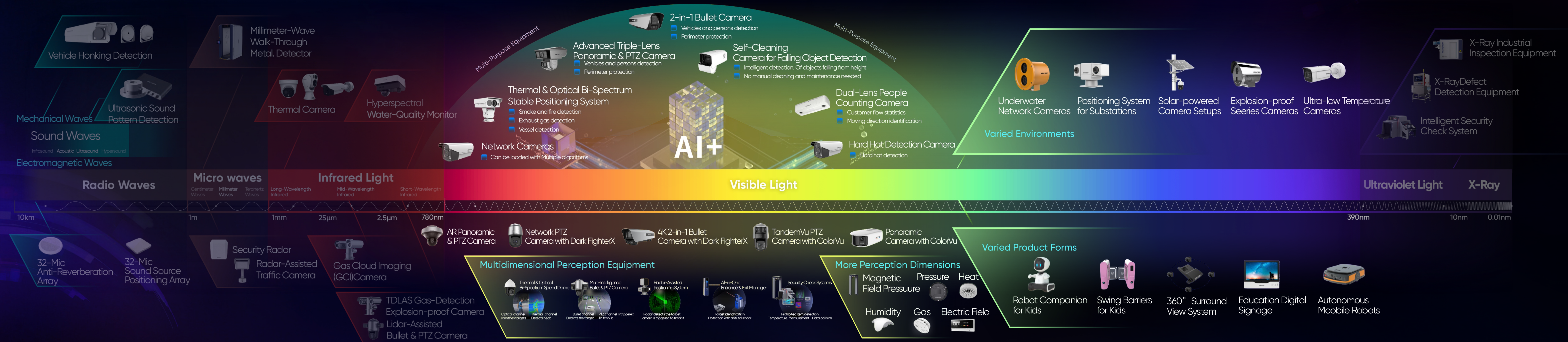
# Multidimensional Perception Technology

Perceive the physical world in full spectrum, expanding awareness from various dimensions in various scenarios



# Multidimensional Perception Technology

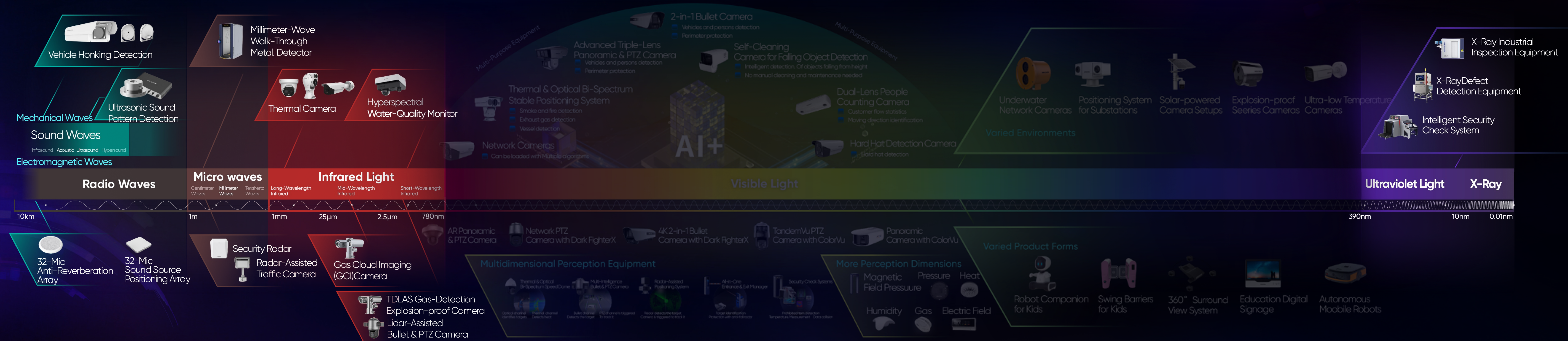
Perceive the physical world in full spectrum, expanding awareness from various dimensions in various scenarios





# Multidimensional Perception Technology

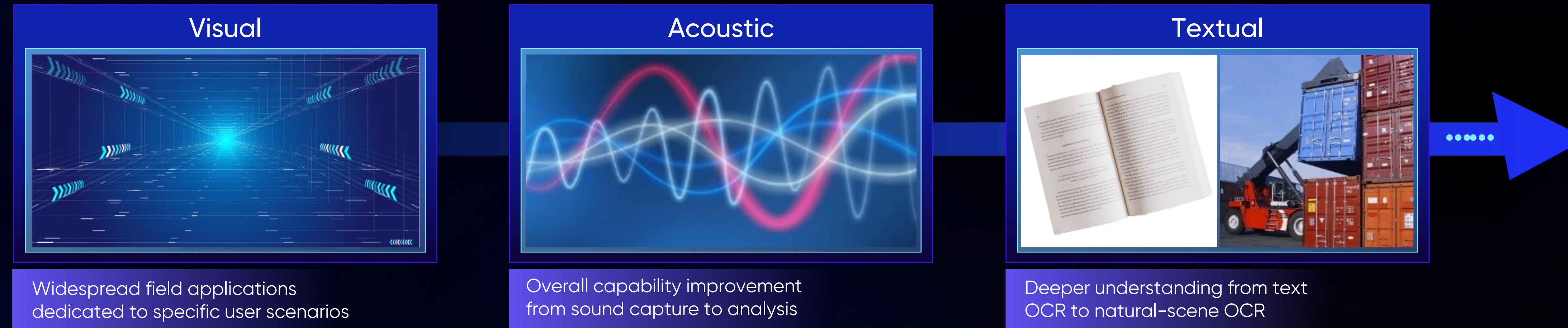
Perceive the physical world in full spectrum, expanding awareness from various dimensions in various scenarios





# Artificial Intelligence Technology

From visual to acoustic and textual, from unimodal to multimodal,  
tapping into the power of valuable IoT data

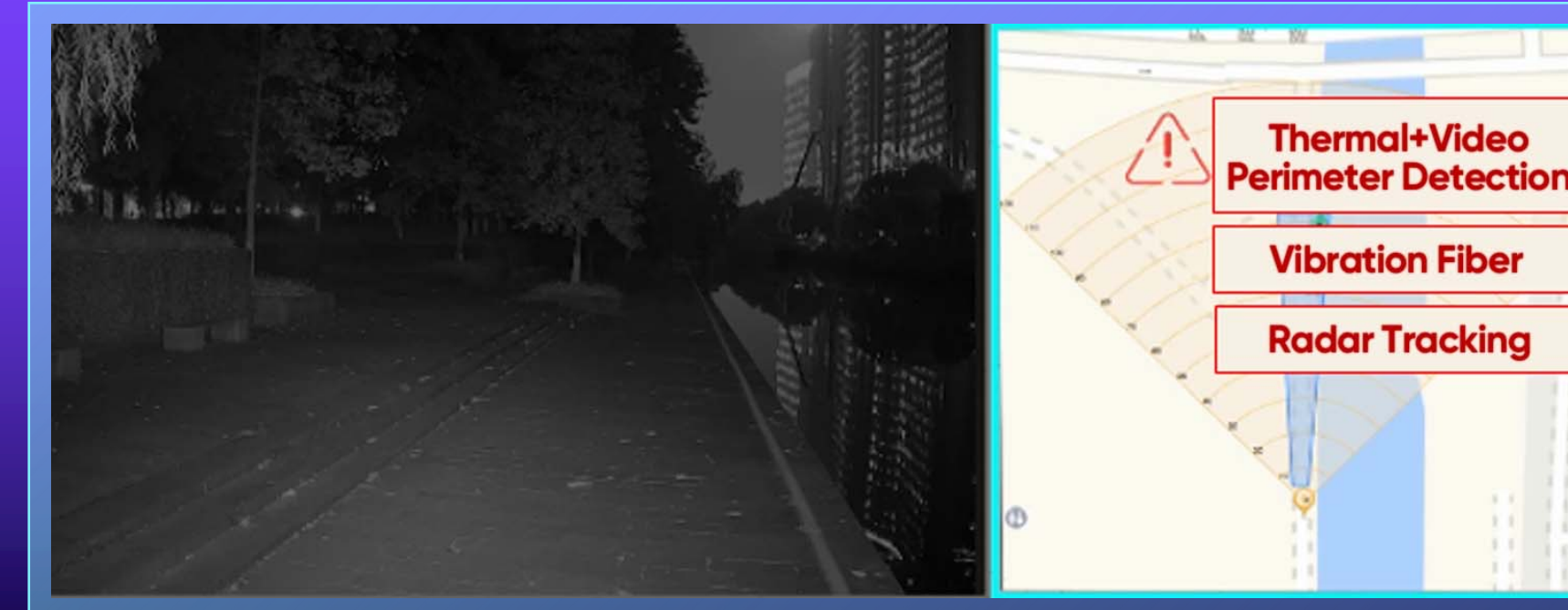




# Artificial Intelligence Technology

From visual to acoustic and textual, from unimodal to multimodal, tapping into the power of valuable IoT data

## Multimodality



Fusing various intelligent perception technologies to achieve all-weather, multi-scenario applications



Thermography



Visible Light



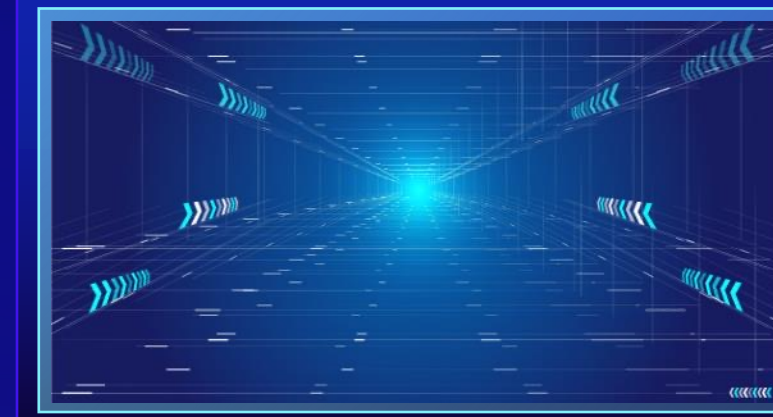
Vibrating Optical Fiber



Radar

An intelligent perimeter protection example: Using vibrating optical fiber or radar for preliminary alarms and linking a PTZ or thermal camera to identify the objects. The multimodal application significantly reduces false alarms.

### Visual



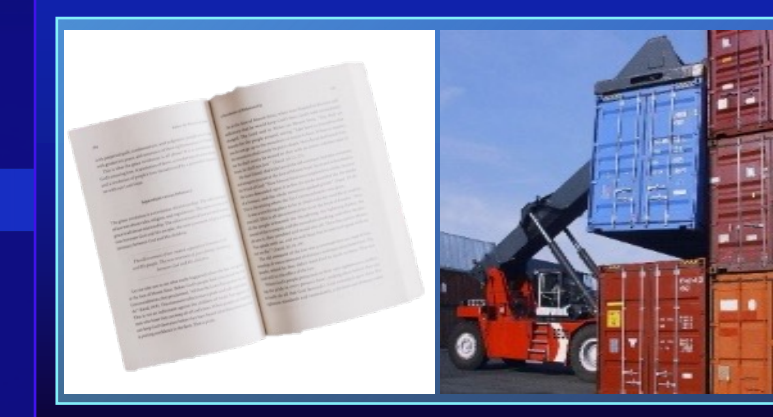
Widespread field applications dedicated to specific user scenarios

### Acoustic



Overall capability improvement from sound capture to analysis

### Textual



Deeper understanding from text OCR to natural-scene OCR





# Artificial Intelligence Technology Implementation

AI Open Platform helps partners quickly generate algorithms for fragmented scenario applications

## AI Open Platform

Zero Threshold

Privatized Deployment

Rich Scenarios Coverage

High Accuracy

Rich Product Options

Small Amounts of Data

## AI Training Server



Rapidly train and deploy fragmented AI applications while keeping data private

A variety of products, adapted to diverse application scenarios



**50,000+**

Number of models

**4000+**

Implemented Projects

**100+**

Application Industries

**8000+**

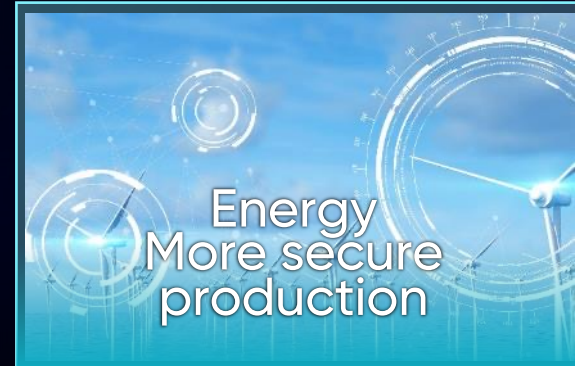
Served Companies



# Continuously Enriching AIoT Products, Enabling Partners to Maximize the AIoT Value for the Vertical Industries

Ecosystem Partners

SaaS



Providing Capabilities to Create Vertical Ecosystems and Empower All Walks of Life

Third-party Systems

BMS

MES

CRM

Payroll

HVAC

...

Hikvision

PaaS

AIoT Devices  
Proactive  
O&M

AIoT Convergence

Scenario-based Applications

Integrated Cloud & Edge  
Deployment

Security Applications

Access Control

Vehicle Management

Security Services

Evidence Management

Third-party Services

Converged Scenario-dedicated Applications



CCTV System



Access Control System



Alarm System



Vehicle Mgmt. System



Third-party Devices Management Module



And More

AIoT Device Access and Unified Management

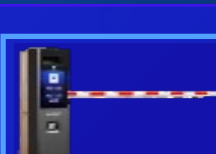
Nearly 30,000 AIoT hardware product models from Hikvision



IPC



NVR



Parking



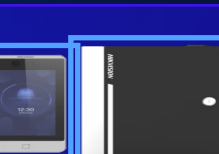
LED



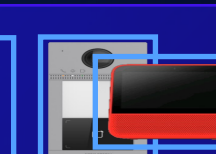
Interactive  
Flat Panels



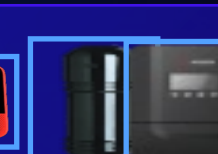
Speed Gate  
and Turnstiles



Access  
Control



Video  
Intercom



Alarm



Display  
and Control



Transmission  
Routers

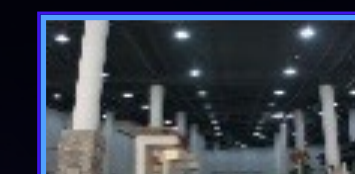


Intelligent  
Fire Safety

Third-party AIoT device integration



Fire-fighting  
Devices



Lighting  
Devices



UPS  
Devices



Energy  
Consumption  
Sensors



# Empowering Partners and Accelerating Development

based on the 1+1+1 ecosystem and to achieve win-win and boost innovation

## Devices Open

Help ecosystem partners integrate quickly through our rich AIoT product lines and open capabilities

### OTAP

Open IoT architecture protocols, one set of framework covering all Hikvision products and mainstream IoT protocols

### Integration Gateway

### ISAPI

### Hikvision Open Embedded Platform (HEOP)

## Platforms Open

Unified management based on AIoT devices, providing converged applications and industry capabilities, effectively reducing the development cost of upper layer applications

### HikCentral OpenAPI

### Cloud OpenAPI



# Empowering Partners and Accelerating Development

based on the 1+1+1 ecosystem and to achieve win-win and boost innovation



Algorithm Developer



VSaaS Partner



Service Provider



VMS Partner



Solution Developer



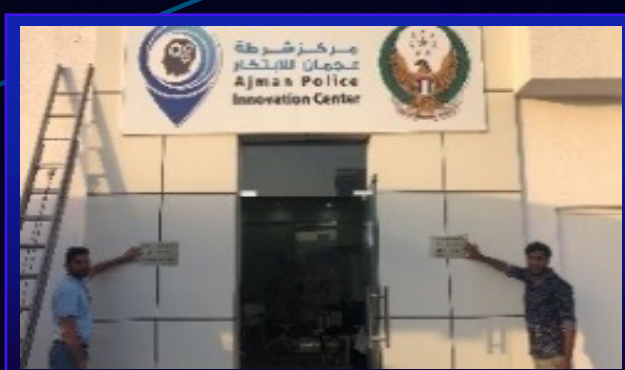
IoT Partner

.....

## Cooperation Resources Open

Global Technology Partner Program

We share technologies, channels and other resources deeply with ecosystem partners based on the TPP program, together for win-win cooperation.



Integration Development



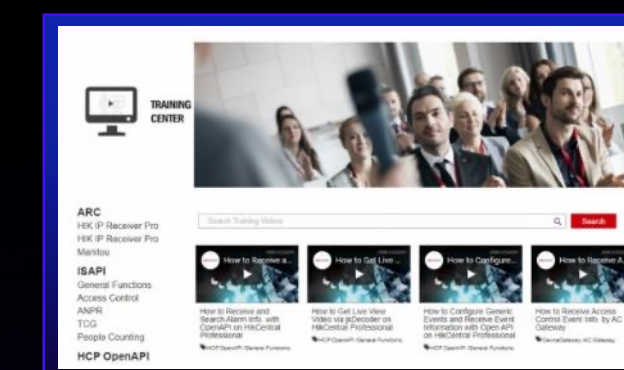
Channel Sharing



Co-Marketing Events & Tradeshows



Integration Support



Training Service

## Devices Open

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### OTAP

Open IoT architecture protocols, one set of framework covering all Hikvision products and mainstream IoT protocols

ISAPI

Integration Gateway

Hikvision Open Embedded Platform (HEOP)

## Platforms Open

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HikCentral OpenAPI

Cloud OpenAPI



# Cybersecurity & Privacy

Cybersecurity and privacy are the foundation for Hikvision, motivating us to keep practicing “Security by Design” and build a network of trust.

## Product Security Framework

### Network Security

Secure Transmission Protocol

Wireless Security

Port Security

Secure Network Services

Session Security

IP Filtering

Web Security

### Device Security

Safe Chip

Safe Start

Software Update

Security Shell

Key Management

### Data Security

User Data Protection

Storage Media Encryption

Digital Watermark

Audio/Video Data Security

### Application Security

Application Code Signing

Cryptographic Algorithms

Identity Authentication

Access Control

Log Audit

Components Security

Privacy Security

## Privacy Data Security Lifecycle

### Collection Security

Privacy Informed Consent  
Privacy Withdrawal Consent  
Privacy on Demand

### Transmission Security

Encrypted Transmission

### Storage Security

Storage Protection  
On-demand Desensitization  
Retention for a Limited Time

### Usage Security

Access Control  
Desensitized Display  
Authorization Export

### Destruction Security

Data Delete  
Device Rework  
Data Reset

### ISO27001



ISO 27001 is an international standard published jointly by ISO and ICE about how to manage information security.

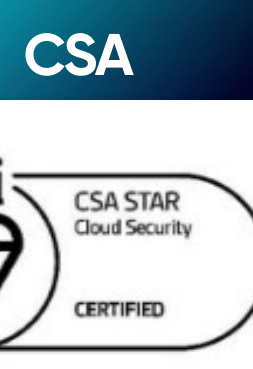
### ISO28000



ISO 28000 is a specification published by ISO for security management systems for the supply chains.



ISO/IEC 27701: 2019 is by far the most authoritative privacy standard worldwide.



The CSA Security, Trust & Assurance Registry (STAR) is an independent third-party cloud service provider.

### FIPS



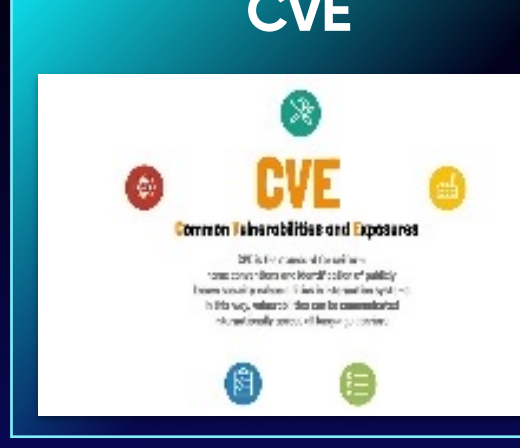
FIPS are a set of publicly announced standards by NIST which establish requirements for ensuring computer security and interoperability.

### CC EAL 3+



CC EAL 3 is an IT product or system certificate assigned by Common Criteria which represents the highest level of safety certification granted to products in the video security category.

### CVE



The Common Vulnerabilities and Exposures (CVE) system provides a reference-method for publicly known information-security vulnerabilities and exposures.



# Tech for a Better World

We are dedicated to fulfilling our global responsibilities to create lasting value for customers, improve social well-being, and work together with partners for a better world.

Technology  
for Goodwill



Green and Low-Carbon  
Development



Integrity and  
Compliance



Harmonious  
Co-existence





# Meet AIoT. Touch the Future.

## Enrich AIoT Capabilities

### Multidimensional AIoT Perception



Multidimensional perception  
through intelligent IoT

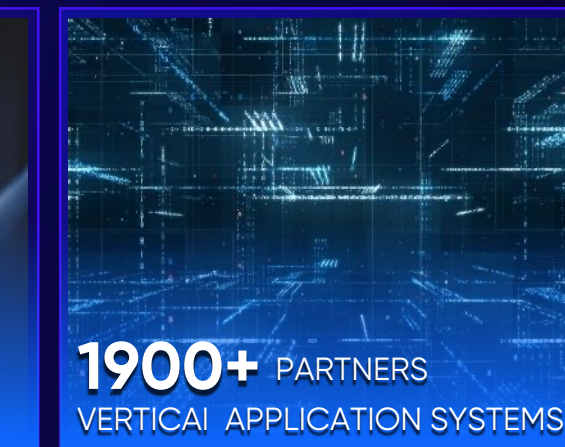
## Win as an Ecosystem

### 1+1+1 Open Ecosystem Together, we can go further

Currently over  
**8000**  
technology partners

**170**  
joint-value solutions

Cover more than  
**40**  
vertical markets and  
applications



Open up capabilities and win  
together as an ecosystem

## Maximize Customer Value

### Empower the Digital Transformation of Diverse Vertical Industries



More efficient logistics



More secure societies



Much smoother traffic



More inclusive  
education



Smarter retail  
services



More livable  
environments

Boost customer value and  
create a brighter future for all