



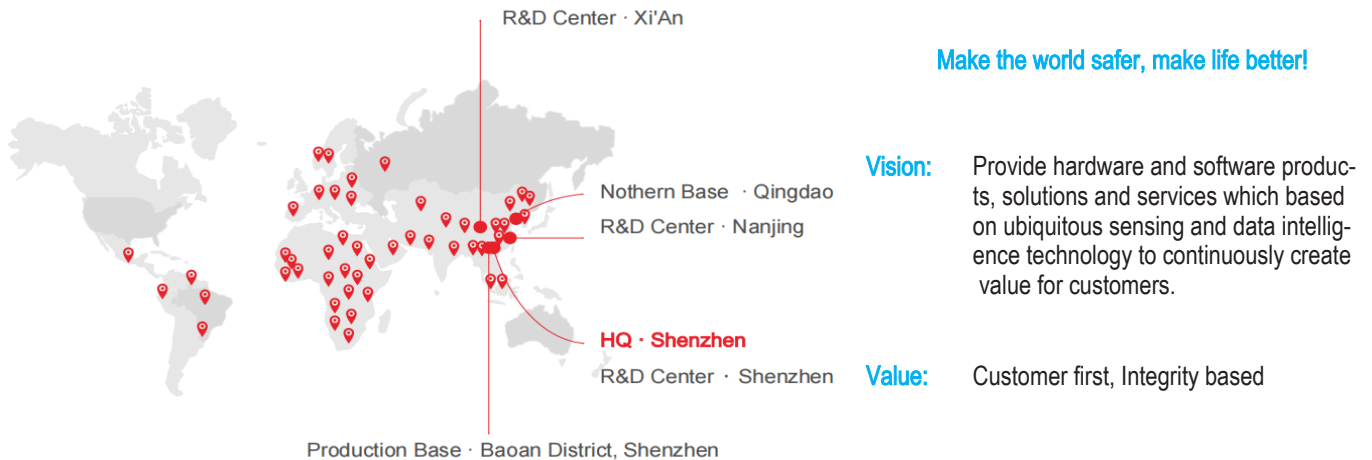
ZNV Solutions and Products Profile



Shenzhen ZNV Technology Co.,Ltd

ZNV Profile

Who am I



Shenzhen ZNV Technology Co., Ltd (Called "ZNV"), **Founded in 2005**. Depend on **AIoT core technologies** such as ubiquitous data access, convergence, big data intelligence, AIoT system integration and delivery capability of **more than 10 years**, ZNV deeply cultivates the market segments of Power&Environment monitoring, intelligent operation and maintenance, safety emergency and one-network management, providing AIoT hardware, software products, solutions and services. At the same time, ZNV is rapidly expanding the field of enterprise digitization and enterprise services, providing AI software, big data software, application services and modeling services for **more than 100 enterprises**.

20+ Years Telecommunication Experience & 10+ Years Industry Delivery Experience



- There are 22 sales and service offices which covering 31 provinces in China
- 4 international regional centers, serving more than 70 countries and regions

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ZNV Social Public Security Solution

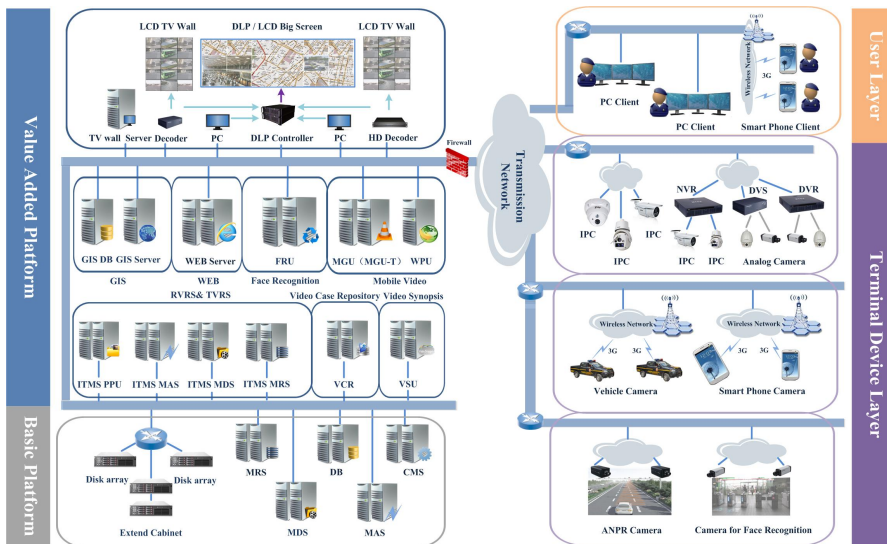
Solution

ZNV EyeSafe Social Public Security system integrates video surveillance, video analysis, video investigation and case management and police dispatch functions for practical police business. Its video surveillance and video investigation functions are fundamentally practical for police business, more importantly social security maintaining, case repository, blacklist arming, and case study are customized according to police business procedure. This system improves law enforcement efficiency and case solving rate.

Police Business Procedure



EyeSafe Practical Platform



The system integrates social videos, integrated social information and hi-tech defending resources to construct a networked social public security surveillance platform. It relies on the surveillance centers of police department and coalition emergency response centers to monitor social industries, sensitive departments and institutions, main roads and public places. The architecture of EyeSafe is extensible that can provide optional value added functions to fit for different customer's needs.

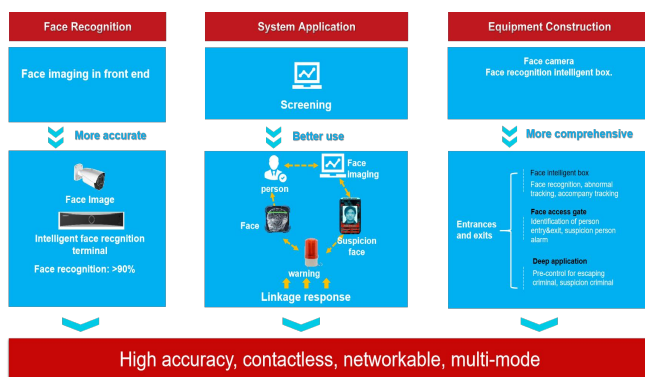
Customer Value

- Unified security protection, comprehensive control, resource sharing, intelligent analysis and smart video investigation Platform for public safety, These capabilities help control incidents before, during, and after they occur
- The visual and unified dispatch of police resources accelerate police emergency response and improve their command abilities
- The contingency management facilitates managers make efficient and effective response to emergencies, so social security and stability is well maintained
- The system improves police management efficiency, saves police resource expenses and makes public resources possible to server more people

ZNV Big-data Face Recognition Solution

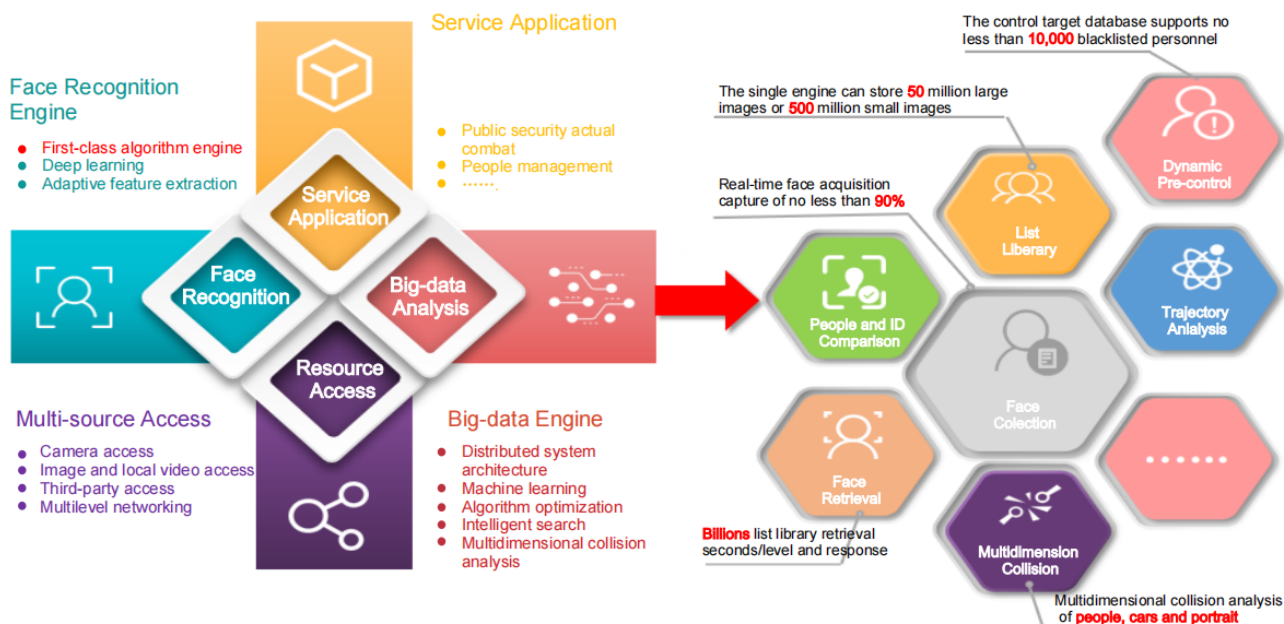
Solution

ZNV Face Recognition System, based on massive video resource information, advanced and highly accurate face recognition technology is adopted to build video big data products with "people" as the core, providing intelligent, accurate and fast face comparison and perfect video face big data analysis and mining applications. Comprehensively solve the personnel management and monitoring problems such as real-time tracking, monitoring and control early warning of portrait, rapid comparison of personnel identity, retrieval and approval, and personnel historical track tracking and reproduction.



Key defense and key units are deployed for video surveillance. Comprehensive coverage of video, increase face recognition system, portrait bayonet, etc., to build a "portrait sky net". Video image analysis platform construction, big data mining, people, vehicles, things structured big data associated resources quickly find, locate people. Resource sharing, data sharing, application sharing, service sharing; Seamless system integration linkage, high data sharing.

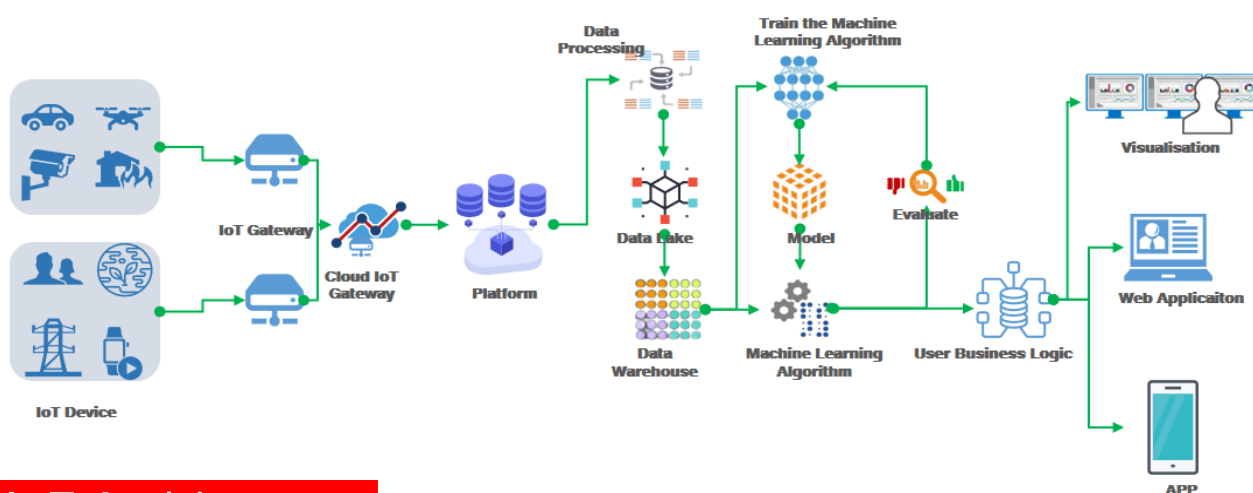
Customer Value



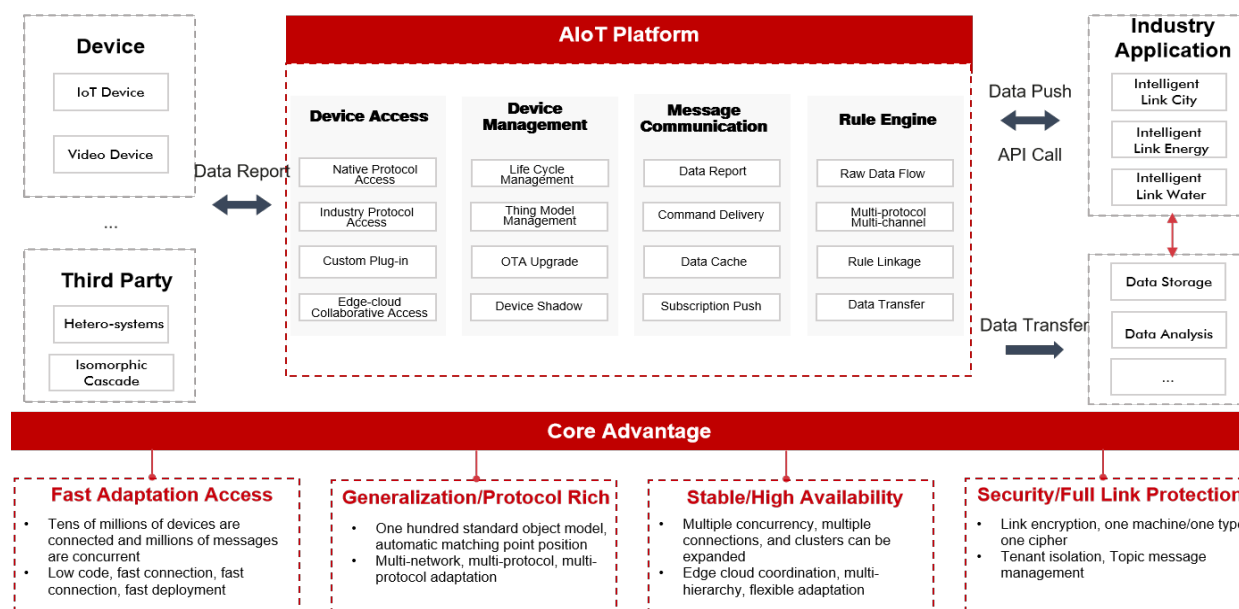
ZNV Construction Concept of the IoT Platform

Solution

- Based on the physical model, all kinds of IoT terminals, control equipment, video equipment, intelligent equipment, etc. can be **unified access**;
- Multi-source heterogeneous protocol**, network component support, plug-in protocol conversion;
- Intelligent management, intelligent layout, **margin AI**;
- Integrate the SDK ability, building ecological data acquisition terminal;



AIoT Architecture

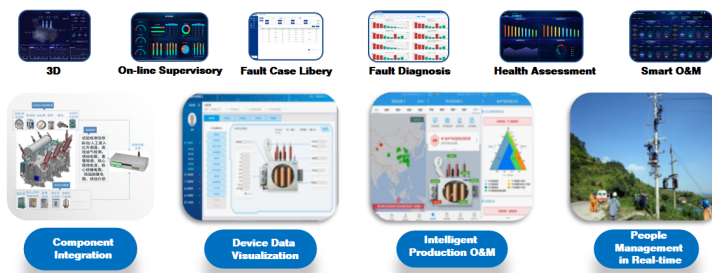
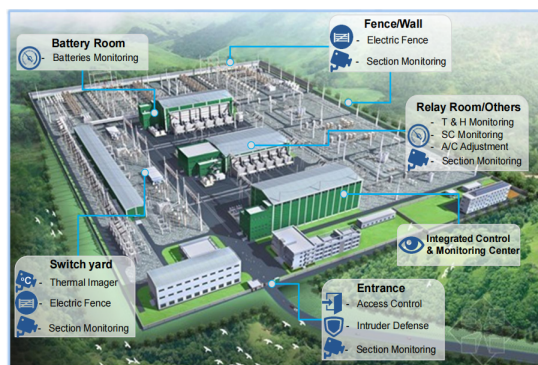


ZNV All-in-one Grid Power Surveillance Solution

Solution

By integrating subsystems such as video surveillance, access control, intrusion prevention, environmental monitoring and fire fighting of substations in the area under its control, it provides

- Inspection integrated view;
- Online monitoring;
- Electrical equipment inspection;
- Infrared temperature measurement;
- Diagnosis of power equipment;
- SCADA linkage;
- AR reality view;



Smart Analysis

- **Machine learning**, device health status analysis, dynamic performance monitoring, integration of expert experience operation and maintenance, forecasting
- **Machine vision security**, P&E, equipment identification monitoring and maintenance real-time control, alarm, analysis and management at a glance

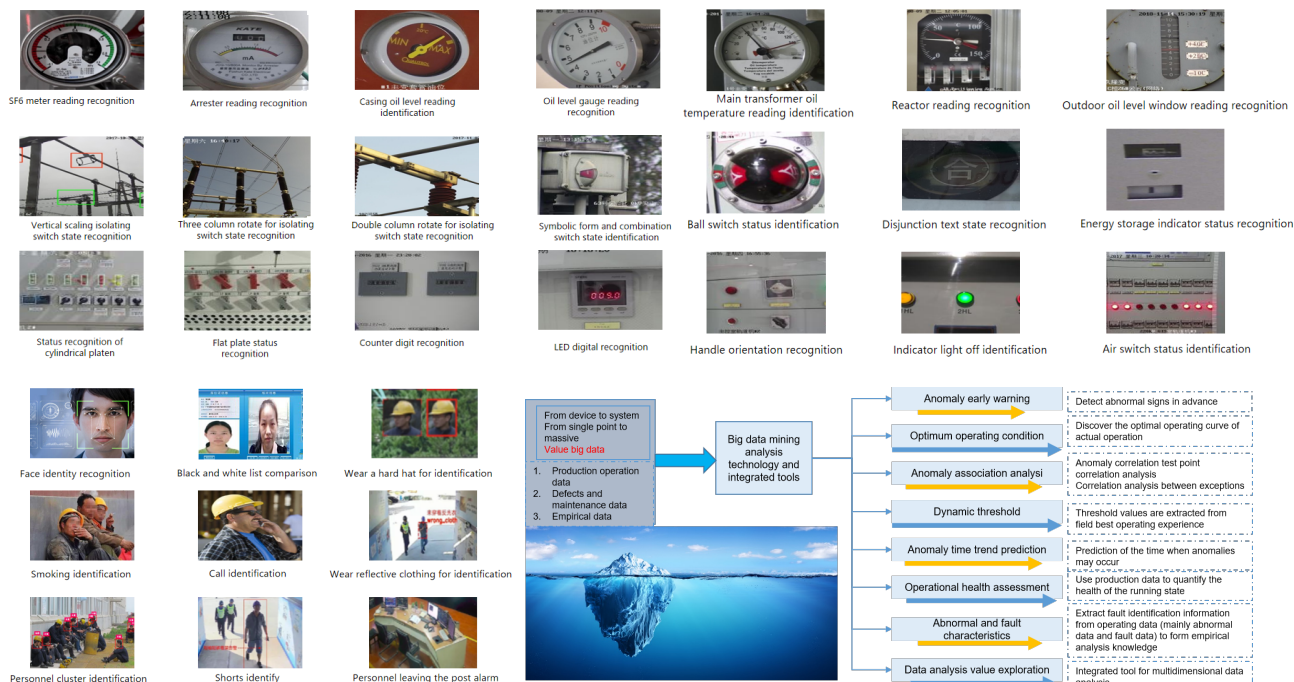
Multi-Cooperation

- **Intelligent analysis and identification** of alarm associated video, inspection associated control, management, and overall improvement of intrinsic security
- Online visual monitoring collaborative operation and maintenance, remote control management to achieve less or unattended, improve management efficiency

Digital AI

- **Using physical model and operation history data**, integrated multi-source heterogeneous data simulation, digital operation and maintenance management of equipment

AI Algorithm



Solution

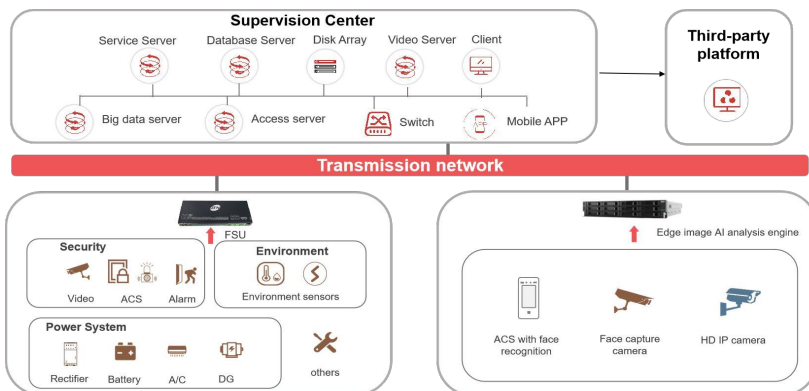
- Integration management of telecom operators' telecommunication infrastructure, energy infrastructure and environmental monitoring equipment.
- "Remote measurement, remote signaling, remote adjustment and remote control" of intelligent and non-intelligent equipment [rectifier, battery, UPS, generator, A/C, etc.]
- Environment monitoring such as temperature, humidity, smoke, and water immersion, etc.
- Realize unmanned on duty and centralized monitoring management, improving O&M efficiency.



Base station



Equipment room and data center



- Power & Environment Management
- Security
- Energy saving
- Asset Management
- Intelligent O&M

Highlights

- **Ubiquitous Connection** The platform supports the access of **5 million measuring points** and supports simultaneous access of more than **100 clients**; Unified interface standards to save data collection costs; numerous experience in protocol development.
- **All-in-one Platform** The Platform integrates video surveillance, access control, P&E Monitoring and other subsystems, realizing an all-in-one platform.
- **O&M Based on Big Data** Provide multiple data analysis modes such as alarm analysis, big data analysis and processing, mining the value behind data from support multiple dimensions such as type, time, trend, level, etc., to provide customers with professional operation and maintenance basis.
- **Flexible Expansion** The system adopts a micro-service architecture design. The functional modules are loosely coupled. Business micro-services can be independently developed and upgraded without affecting each other. Business development is more efficient and fast, and easy to expand.
- **Report Customization** Support multiple report customization.

Product Overview



ARM Embedded Chip

Based on low-power 32-bit Freescale industrial-grade ARM embedded chip8

Linux OS

Effectively avoid system vulnerabilities, sick poison invasion, garbage, stable operation of the system

Embedded Web Server

Large memory, provide convenient embedded WEBservices

PC Software Configuration

Without relying on the network, PC software can complete the centralized monitoring and management of equipment

Built-in Backup Power

In the case of a power outage, the built-in backup power supply can be used to independently power the host and sensor

Power Output

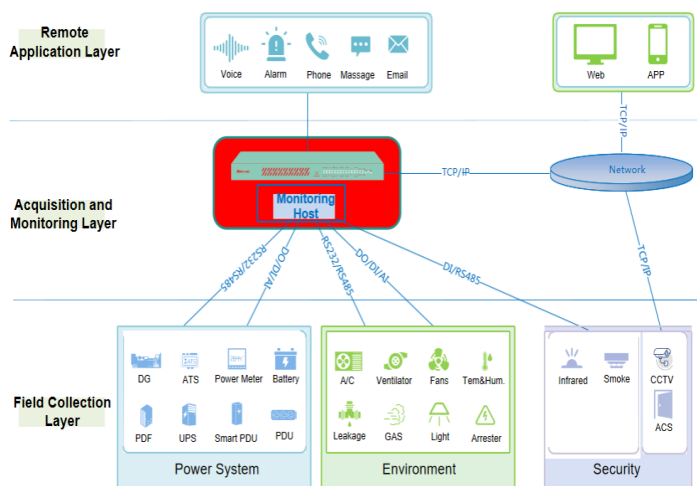
The host provides workingpower for various sensors

Built-in TCP/IP

The built-in TCP/IP function enables flexible networking or seamless cross-platform integration

Solution

- Smart room is a new generation of power and environmental management platform.
- Integrated intelligent behavior video analysis, panoramic image processing, embedded kernel, TTS intelligent voice processing, SMS management, PDA mobile office and other core technologies into traditional equipment room.
- Based on the construction of an independent operation, intelligent perception, real-time monitoring, intelligent alarm, digital map fusion, remote monitoring and other characteristics, monitoring targets cover power, environment, video, personnel, security.
- The integrated system of prevention, fire, equipment and energy consumption management realizes the safety management mode of "real-time monitoring, advance warning, incident alarm and post-evidence collection".



- Centralized Monitoring:** Covers power, environment, security, IT business, energy consumption, network monitoring
- Comprehensive Alarm:** Live sound, phone, SMS, image, sound and light, mail
- Remote O&M:** Remote management via phone, SMS, video, InternetExplorer terminal, and mobile terminal
- Independent Operation:** Built-in power supply and communication module to provide system power supply and alarm information release
- Behavior Analysis:** Intrusion, object removal, residue detection, fireworks detection, etc
- Panoramic View:** Panoramic vision system provides full view of the Equipment room
- Digital Map Fusion:** Fusing parameters, states, images, videos
- Mobile APP:** Support android

Customer Value



Easy Deploy and Convenience

Embedded, low power consumption, maintenance-free, Rack, wall mounted, desktop, easy to install and deploy



Abundant Interface

Sensor interface adopts RJ45 port, self-powered, supporting RS232, RS485, analog, switching, supports ModBus, TCP, HTTP, POST, IEC61850, and B interfaces, open design, support third party access



Abundant Alarm Method

On-site voice, PSTN telephone, SMS, image, sound and light multiple alarm modes



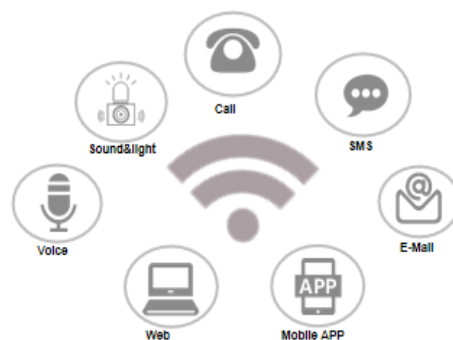
Abundant Application

Integrate Web services to achieve remote O&M, support Android, PDA mobile monitoring



Build-in Battery

Built-in backup power supply, the main engine and core sensors continue to operate after power failure



ZNV IDB Series Outdoor Container for Data Center

Production Overview



ZNV IDB is an integrated solution for outdoor container data center infrastructure, which can be quickly deployed in a short time via factory pre-fabrication.

ZNV IDB can be used in various industries and scenarios, it can also be used as an independent disaster recovery data center, which is the best solution for outdoor small data center.

Application Scenario



Small data centers for enterprises



Small data centers for government, energy, education and other industries



Backup data center for financial industry

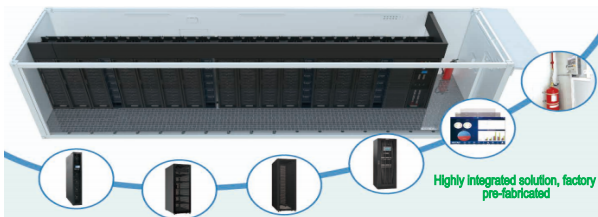


Operator's small computer room and edge site

Valuable

Quick deployment

- Integrated power distribution, cooling system, cabinets, sealed aisles, monitoring, firefighting and other major subsystems, factory pre-integration and pre-commissioning, shortening the delivery time.



High efficiency and energy saving

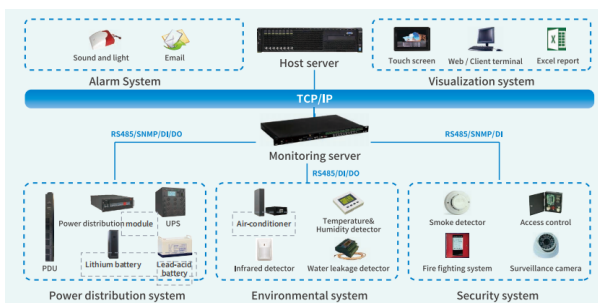
- Fully enclosed structure, sealed hot and cold aisles, improving cooling usage, reducing consumption and saving energy.
- Using high-efficiency power modular, the UPS system efficiency is up to 96.7%.

Sealed hot and cold aisles, greatly reduce the cooling loss of air conditioner, decrease the PUE value.



Intelligent Management

- The centralized monitoring system monitors the status of running, the mains, the ambient temperature, etc.
- Support various alarms, including audible & visual alarms, SMS, telephone, email, etc.
- Using the remote monitoring platform to realize unattended operation and minimize the operation and maintenance costs.



Safety and Reliability

- Fully enclosed design and compliance with IP55, apply to various working conditions.
- Redundancy design of key equipment to ensure the system running stably.
- With multi-level automatic alarm function, providing voice alarm, telephone voice alarm, network video surveillance, etc.
- Built-in automatic fire alarm and fire extinguishing device to prevent and control fire in time.



ZNV iDiscover Series Outdoor Container for Data Center

Product Overview



ZNV iDiscover solution comprises all-in-one, green power-saving and modularization concept, this can help customer to realize rapid deployment, flexible expansion, high-efficient operation, straight forward management for new generation data center.

ZNV iDiscover series data center solution includes three solutions of **IDU (Integrated Data Center Unit)**, **IDM (Integrated Data Center Module)**, **IDR (Integrated Data Center Room)**, covering all of indoor scenes of data center in order to meet the diverse needs of customers.



IDU
(Integrated Data Center Unit)



IDM
(Integrated Data Center Module)



IDR
(Integrated Data Center Room)



Customer Value

Ease of Use

- Modularization component standardization interface, quick installation on site
- Prefabricate assembly, plug and play, simple setting
- Centralized monitor, intelligent management, remote monitor

High Efficiency

- Flexible configuration by high-efficiency power modules
- Short distance of cooling path, sealed aisle, cold air and hot air separation, avoid hot spot, total PUE is less than 1.5

Safety

- Sealed micro environment dust-proof, noise-proof, little affected by the environment, lifetime lengthens 1 to 2 times.
- Key subsystem can be configured as N+1/N design and enhance the stabilization of the system.

Recommendation for the minimal configuration of IDU



Recommendation for the maximum configuration of IDU



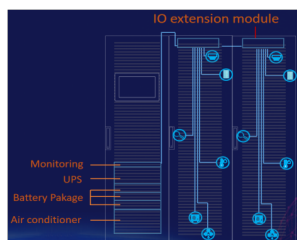
ZNV iSparkle Series Cabinet for Data Center

Product Overview



ZNV iSparkle cabinet comprises all-in-one, green power-saving and modularization concept, this can help customer to realize rapid deployment, flexible expansion, high-efficient operation, straight forward management for new generation data center.

Solution & Features



- Supports up to **10** parallel cabinets (**8** main equipment cabinets)
- On demand growth and flexible scaling
- Factory pre connection for cabinet monitoring, truly achieving
- Plug and play scalability



PUE is as low as **1.5**, saving more than **30%** electricity compared to traditional computer rooms



- ▼ **N+X** redundancy greatly improves system reliability
- ▼ **10% -100%** adjustable cooling capacity, New technology to solve low load condensation problem
- ▼ **10% -100%** adjustable cooling capacity, New technology to solve low load condensation problem

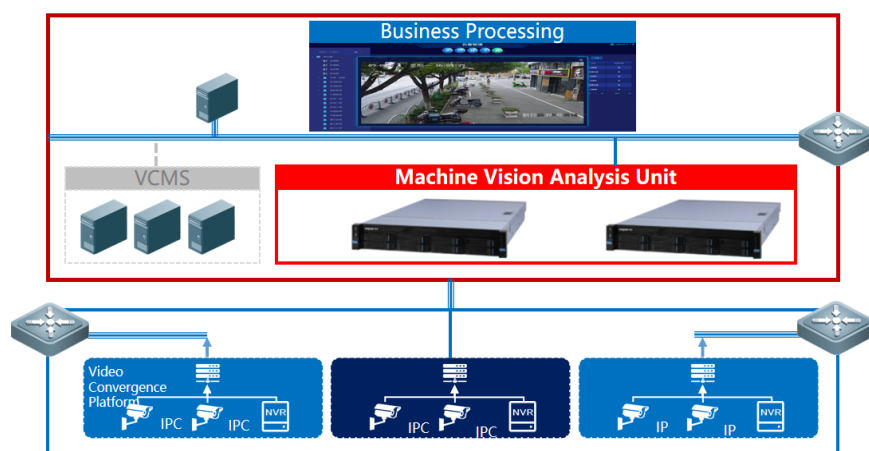
Atlantis Machine Vision Analysis Unit

Product Overview



Atlantis unit is an AI equipment that supports multi-algorithm fusion analysis to detect and identify abnormal behaviors and events in videos/pictures in complex scenes.

Solution



- 2000+ protocol fast connection
- Massive multi-source heterogeneous data accessing
- Distributed deployment, supports tens of millions of connections, can achieve hundreds of millions of connections in intelligent networking mode.

AI Features

City Management	Smart Operation
Litter on Road Non-motor Vehicles Illegal Parking Random Billboard Fire Lane Occupation Cross-door Operation Waterlogging Identification Illegal Drying Garbage Can	Solar Panel Damage Insulation Glove Identification Meter Identification Metal Rust Identification Make Call Play Handset Vehicle Flow Statistics Vehicle Structure

Highlights

More Scenarios, More Industries

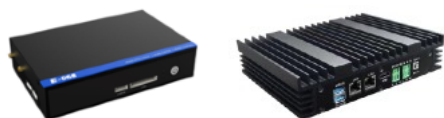
Faster Deploy, Faster Result

Lower Costs, Higher Returns

- Support 300+ types of abnormal scene identification, covering urban, power, water, transportation and other industries.
- One-click deployment saves deployment time and cost.
- The visual layout interface is easy to use, the learning platform is quick to train, and the new scene is online in one week at the earliest.
- Can benefit the old and existing brand/model camera, save investment, increase existing assets.

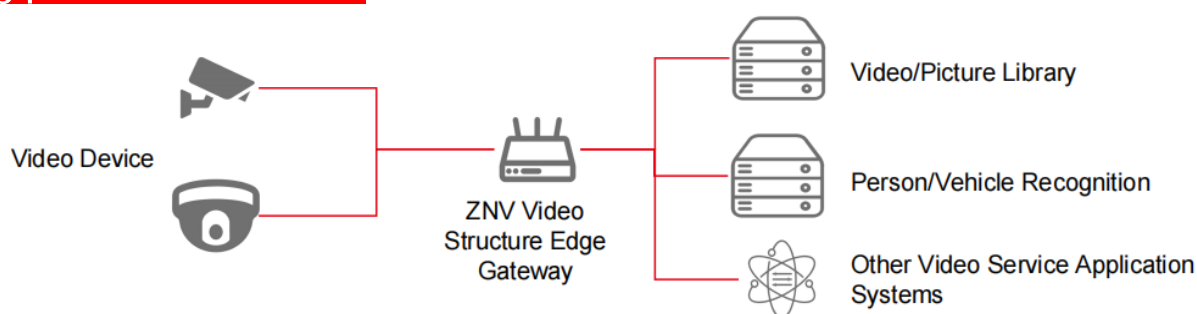
ZNV Video Structure Edge Gateway

Product Overview



ZNV Video structured edge gateway is a lightweight, real-time online view structured gateway created by ZNV based on video industry standards and deep learning algorithm. It can provide accurate and efficient real-time detection and abnormal discovery capabilities of people, cars and objects, and serve various scenarios such as public security monitoring, smart parks, safe cities and smart parking lots. To provide customers with flexible and efficient video structure on the edge of the network.

Typical Network



Scenario and Highlights

ZNV video structured edge gateway can support a variety of intelligent video service scenarios and provide intelligent functions such as face capture, vehicle capture, license plate capture, environmental anomaly warning, video quality diagnosis for front-end view acquisition devices, fully mining the value of front-end view data, and providing more flexible service options for edge side video intelligence. Provide customers with highly available video structuring capabilities and data analysis capabilities.

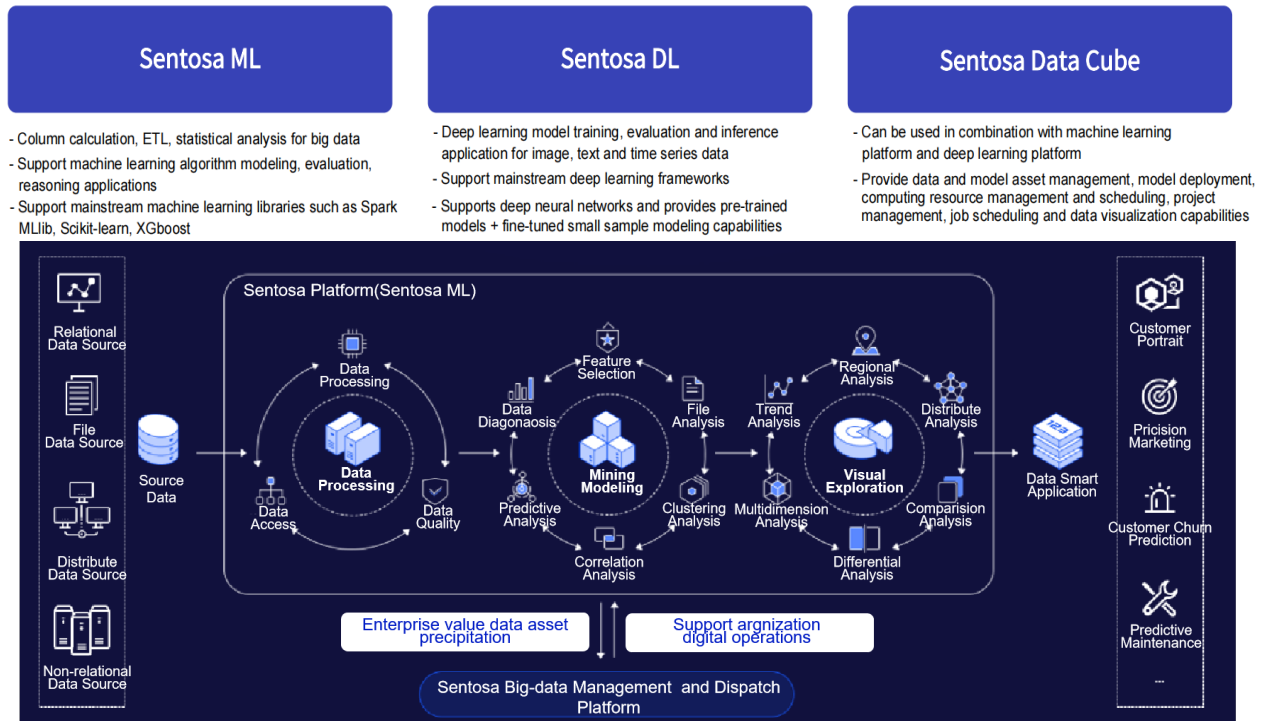


- 1 Connect to mainstream vendors' camera, support access to older devices, and support access to multiple protocols such as SDK, Onvif/RTSP, and GB28181 from mainstream vendors.
- 2 Built-in self-developed high-precision algorithm, can choose algorithm set freely, using standard interface, docking and start immediately once power on
- 3 With lightweight design, small size and diverse functions, the product can be configured and deployed on demand according to different service scenarios, reducing the cost of intelligent video systems.

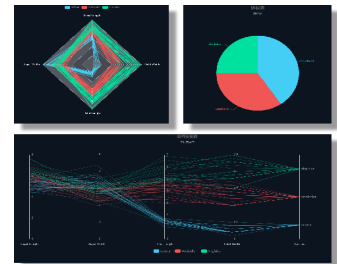
Product Overview



- Sentosa Data Science and Machine Learning platform is ZNV's fully independent intellectual property rights that **one-stop AI development and deployment application platform**
- It can support **zero-code "drag and drop"** and notebook interactive development at the same time, aiming to help customers **achieve AI algorithm model development**, evaluation and deployment through low code.



Sentosa replaces the cumbersome input code programming by **dragging and dropping** the icon selection function, **connects different functional modules with lines**, provides users with a simple and direct **graphical programming form**.



Valuable



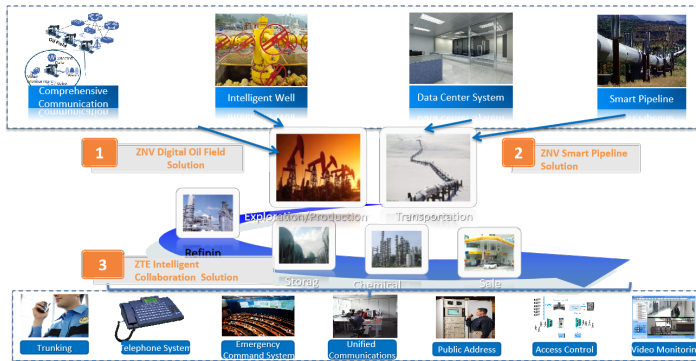
- 1 Zero Code
- 2 Out of Box
- 3 Collaborative Development

Support the whole process **zero code operation** by dragging and dropping the icon, **connects different functional modules with lines**.

Simple deployment for combining with perfect data asset management model and out of the box.

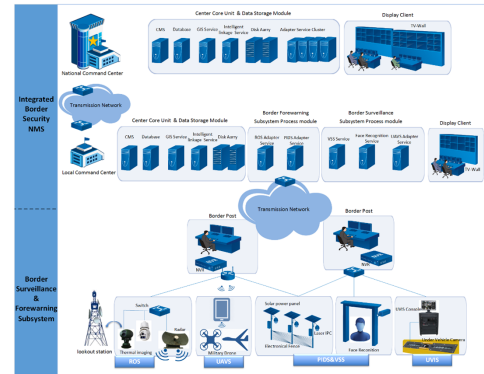
Support collaborative development of different roles, allocate resources and personnel by project unit, and multi-department personnel can easily cooperate.

Oil&Gas Pipeline



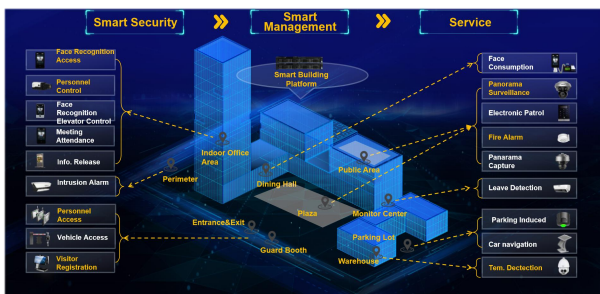
- Operational platform, customized for oil & gas production process
- Multiple system fusion, alarm linkage
- Full HD, remote production watch-keeping, diagnose and process faults
- All IP, multiple-department data sharing in one system
- Development based on the GIS map, ensure safe production, all activities are clear at a glance

Border Security



- The system combines sensors and subsystems that include complete surveillance to ensure border security. All suspected targets will trigger an alarm that will be reported to a border post and the command center so that the on-duty staff can quickly respond.
- The system reduces border patrol difficulties, illegal events, and required manpower in the border patrol. The ZNV border security system can detect and monitor threats in any terrain, no matter it is deserts, grasslands, forests, mountains or coastlines.
- The state of O&M system in the command center ensures the whole border being supervised and alarms pertaining to illegal immigrants will immediately notify the related department to take action.
- Our system promotes economic prosperity and increases the security for the country preventing cross-border crimes.

Smart Community



- Smart community solutions comprehensively improve the living experience and quality of life of owners through intelligent technology, and is committed to providing safe, comfortable and convenient life for residents in the community
- The solution integrates various technologies such as the Internet of Things, cloud computing, big data, and intelligent algorithms, and integrates service modules such as community security management and smart home.

*Make the World Safer
and Life Better!*



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