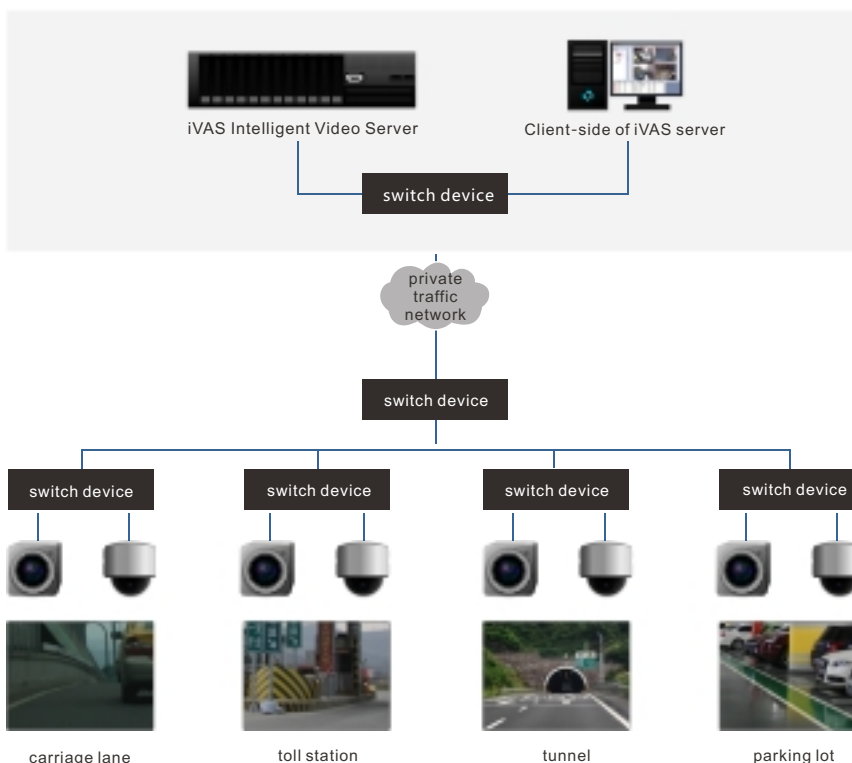# Road Transportation

Industrial Status

During the state's 12th Five-Year-Plan period, it's expected to build a larger scale of highway mileages to perfect the whole highway network, which is supposed to keep a natural growth to a certain level between the highway mileage and vehicle flow. Presently, China's total highway mileage has arrived at 4 million kilometers. Vehicles on the highway, with the advantage of fast speed and high flow, are the major means of current traffic transportation with undertaking 70% of passenger transportation and 40% of goods transportation in China. The contradiction between vehicle and highway become more and more obvious, which is completely owing to the increasing vehicles and expanded highway scale with bringing out a series of awkward issues, for instance, road congestion, vehicles violating laws and et al. There were totally 26.49 million traffic violation cases with breaking the traffic signal light instruction law in China in 2012, equally 70 thousand cases every day. Thus, the highway security equipments and management forces should be put into rapid combination as the emergency defense measures are further worked out.

The Needs

The video surveillance system, as one major part of road traffic command system, plays an indispensible role in the smart city construction process. Owing to the surveillance tasks increasing in the modern society, the existing road video surveillance system can't meet people's daily security requirements. Accordingly, the traffic department begins to propose higher demands towards the road video surveillance system: a) promote alarm accuracy, reduce mistaken & missing alarms; b) make pre-alerting, improve the response speed of governmental traffic department. The video surveillance on the road consists of the following major functions: road-segment surveillance, road-port monitoring, video records storage & checking and et al; they majorly presents in monitoring and alerting on account of vehicle converse driving, running the red light, illegal parking and et al.

count driving vehicles

send alerts on account of the vehicles with illegal converse driving

timely find people passing through the isolation zone

timely find vehicles with illegal stay

timely find vehicles in traffic congestion

send alerts towards the vehicles with illegal turning-back

send alerts towards the big vehicles running in the small-vehicle carriageway

iVAS Intelligent Video Server

Client-side of iVAS server

switch device

private traffic network

switch device

switch device

switch device

switch device

switch device

carriage lane

toll station

tunnel

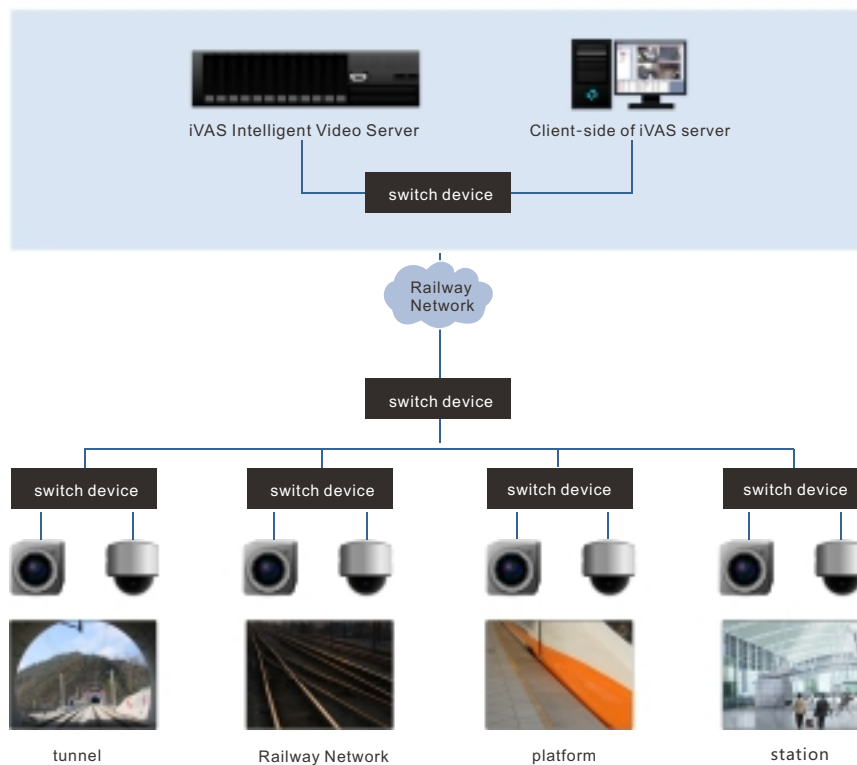parking lot

Railway Network

Industrial Status

China's urban track traffic construction is entering into the fast, orderly development stage. According to the data provided by State development & reform committee and state construction department, there were 30 urban pathway traffic circles in 10 domestic cities, with the total road length arriving at 813.7 kilometers during the yearended 31 December 2011; it added up to 2,042 kilometers during the year ended 31 December 2012; also, it is expected to reach 6 thousand kilometers during the year ended 31 December 2020.

Under the influence of rapid urban development, the urban traffic contradiction becomes more and more dominated while the solution of constructing urban pathway traffic is the first-choice to solve the immerse traffic issue. Whereas, in fact, a series of traffic accidents constantly occurred in lots of cities, for instance, Beijing, Shanghai, Guangzhou and et al, which lead a mass of economic losses. Thus, the urban pathway traffic security attracts people's more attentions.

The Needs

The track traffic，one brand new means of transportation，is well accepted by more people. Anyway, passengers constantly increase which propose higher demands towards the video surveillance areas, to promise the safety of people's lives and financial properties. Owing to its own inborn disadvantages, the traditional video surveillance system cannot make the secure defense effect. Thus, it's urgent for people to exploit a more intelligent video surveillance system to ensure their safe trips.

The video surveillance consists of the following major functions in the track traffic area: a) monitor the pathway conditions, prevent people from going across the track channels; b) monitor the persons standing on the platform, and prevent people from dropping into the track& alarm line; c) monitor orbit electric cables and other equipments, prevent theft behaviors and et al.

send alerts towards the individuals illegally passing the rail way

protect transformer substation perimeters

timely find suspicious package

detect the people density on the platform

timely find vehicles with abnormal parking

iVAS Intelligent Video Server

Client-side of iVAS server

switch device

Railway Network

switch device

switch device switch device switch device switch device

tunnel

Railway Network

platform

station

Port Infrastructure

Industrial Status

Port is one of state's major investment areas, now staying in the accelerated capacity-expansion stage. Moreover, the construction investment always keeps growing gas the total numbers of both ports and parking places constantly increase. The national ports have production-usage parking places during the year ended 31 December2011, increasing 334 ones more than the previous year. Moreover, the cargo handling capacity in the national ports arrives at 10.041 billion tons, increasing 12.4% more than the previous year. The rapid development of port business also requires the monitoring ability of video surveillance system to be greatly enhanced. Anyhow, by contrast, the traditional port surveillance is realized through on-duty personnel with limited monitoring efficiency; the human surveillance model has many uncertain potential safety hazards while many occasional incidents are unpredictable.
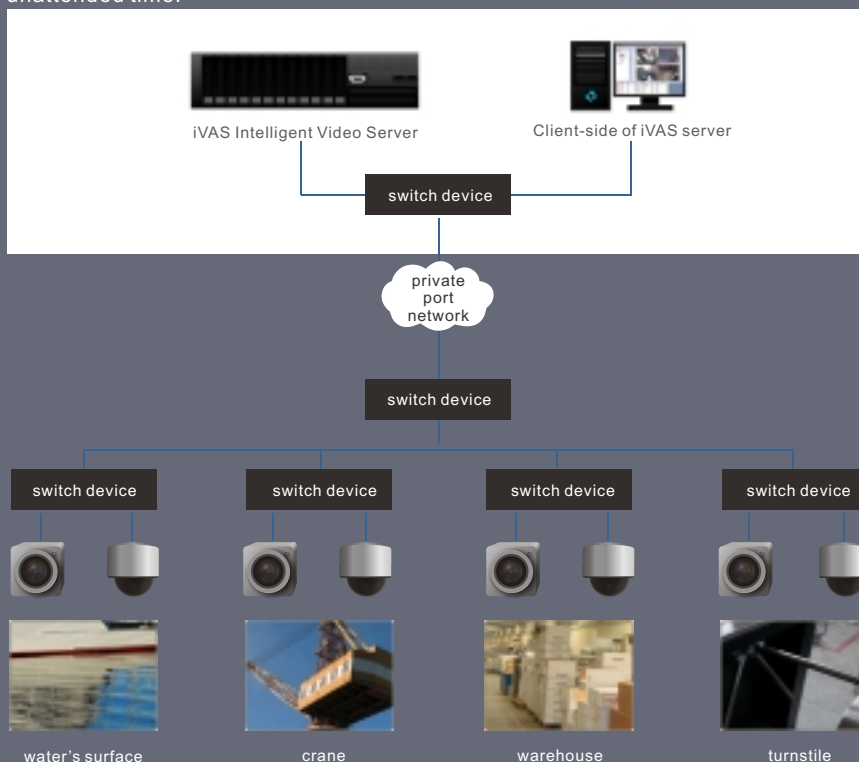
The Needs

Under the influence of complicated port operation affairs, it's necessary to reduce the accidental injuries of production personnel and the major losses of port equipments, to make fast and effective emergency rescue in the port's incidents. Thus, it's required to execute multi-dimensional surveillance model on the ports to prevent the disastrous influence of expanded accidents.

Major Surveillance Aspects in Ports:

Water Area Intrusion Surveillance: the larger the port extent becomes, the more the water areas are; it's necessary to monitor all unidentified objects and vessels on the water area with potential safety hazards, and to send related alerts in real time.

Navigation channel surveillance: to execute the monitoring alarm at the vessels with irregular navigation lines, driving directions& orders and et al.

Freight yard intrusion surveillance: container terminal and bonded warehouse are the key sites for the customs to monitor, and thus it's required to implement the monitoring alarm when personnel and vehicles pass in and out of those sites at standby unattended time.

send alarms towards individuals climbing over the port's fence illegally

monitor the vehicle's driving direction on the spot

monitor the intrusion movement on water area

find the goods dropping timely

monitor the goods or personnel staying on the port

iVAS Intelligent Video Server

Client-side of iVAS server

switch device

private port network

switch device

| switch device | switch device | switch device | switch device |

water's surface

crane

warehouse
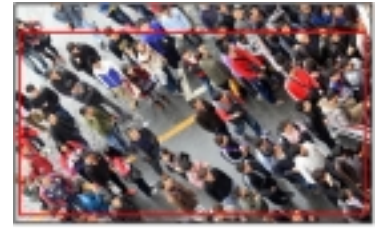
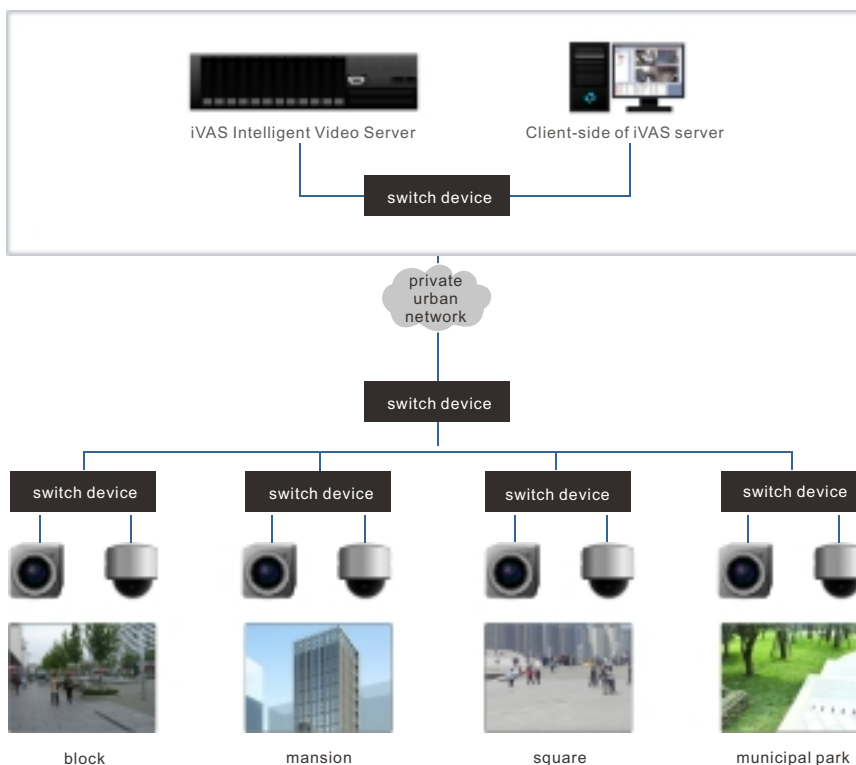turnstile

Urban Safety

Industrial Status

In recent years, the state has developed a series of engineering projects closely related with residents' safety issue. Urban safety project is organized by the Ministry of Public Safety to promote the nationwide urban security surveillance construction, with covering many areas including civilian streets, business buildings, banks, road monitoring, schoolyard, air port, oil depot, power plant, water plant, metro and et al.

In the accelerated urbanization process, the urban public security becomes people's major daily concerns. A lot of potential safety hazards, including theft, fire hazard, traffic accident, toxic leakage and et al, constantly threaten the safety of people's lives and properties. Presently, people need a highly intelligent video surveillance system to prevent the occurrence of accidental cases, or in another saying, to help them to take timely effective measures to reduce the losses to the minimum extent.

The Needs

In the ongoing process of safe city construction, a lot of local government departments clearly define their requirements of public urban security surveillance while the urban construction needs a surveillance system with a wider monitoring range and larger quantity. Anyway, the video surveillance network is always the center of entire urban security area, to present its key role in the whole social security defense and control system. However, the existing video surveillance network needs to introduce a more advanced and practical modern intelligent video analysis technology, to realize the transformation from artificial monitoring into technology-oriented intelligent surveillance.

The video surveillance is applied in the modern city construction with covering multiple aspects that that building perimeter, shopping mall, museum, exhibition hall, important goods, gas station, urban road traffic conditions, the crowded in the square and et al.

iVAS Intelligent Video Server   Client-side of iVAS server

switch device

private urban network

switch device

switch device   switch device   switch device   switch device

block   mansion   square   municipal park

monitor the individuals gathering in the square

timely find the chasing behaviors

monitor people lingering around the outside perimeter of major areas

monitor the behaviors of climbing over the PE perimeter

timely monitor the theft action concerning the public equipments

timely find people's fast movement

Petroleum

Industrial Status

In China, the rapid development of social economy results in the fast increase of petroleum requirements. According to the report from China's petroleum economic technology institution, the total petroleum consumption value arrived at 460 million tons in China in 2011, increasing 4.5% compared to the last year. In terms of the existing large market requirements, the state also increases the exploiting forces on account of the petroleum. Anyway, due to weak focus on safety production, people witnessed 179 various incidents in 2011, with 149 deaths, 1234 injuries as well as 5 disappearances. Therefore, it's very urgent for government departments to take effective measures to promote the high-efficiency surveillance in the whole petroleum production industry, to promise the safety of state petroleum production as well as people's reliable, harmonious living environment.

The Needs

In China's petroleum industry, the total safety production steps into a better status,though it is still far away from the level of developed countries in the same industry. Presently, the safety production is still serious. It's very important to monitor the petroleum production due to such a high-risk industry. It's required to monitor the pumping unit to prevent suspicious personnel from disturbing normal operation in the process of keeping the safe operation in the oil field; also, it's necessary to monitor oil pipeline and oil storage tank to prevent the environmental pollution caused by oil leakage, while stopping the crude oil stealing and robbing.

monitor the oil pipeline

timely find people climbing over the oil storage perimeter

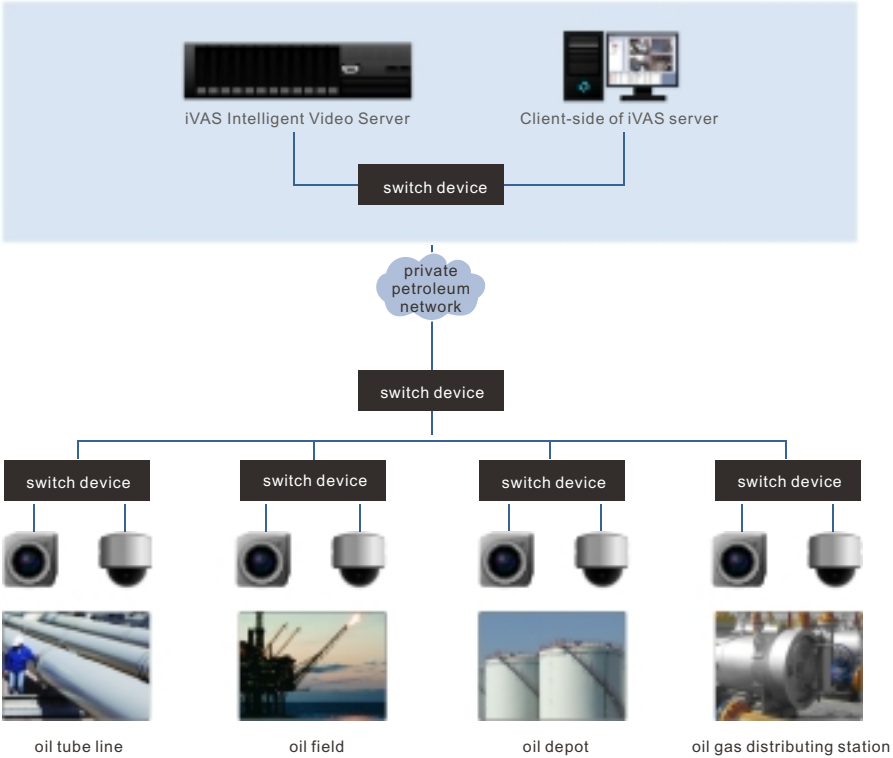timely find people lingering around oil and gas pipeline

monitor the equipment operation in the oil field station

timely find objects and individuals staying in the major places
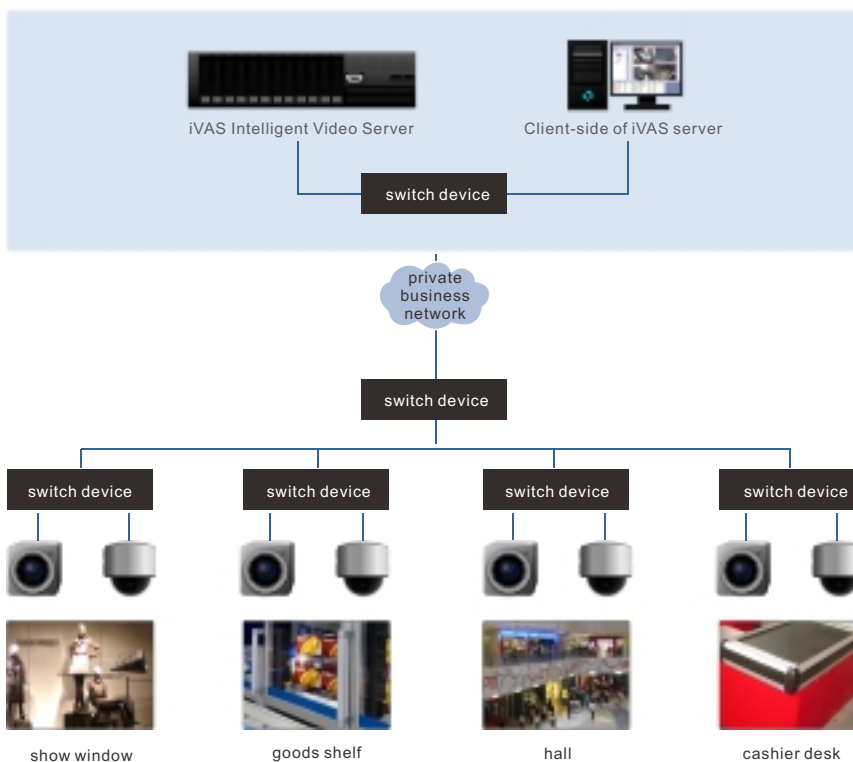
timely find the blowout accidents

iVAS Intelligent Video Server

Client-side of iVAS server

switch device

private petroleum network

switch device

switch device

switch device

switch device

switch device

oil tube line

oil field

oil depot

oil gas distributing station

Business Entity

Industrial Analysis

With the social economy and business industry constantly developing in China, the business area become one of the most centralized activity areas. According to the file that "State Business Department's guidance on promoting the development of retail industry during the twelfth-five period", the total scale of China's products will keep a rapid, stable development, and the average annual growth rate of consumers' goods will arrive at 15%. It's predicted that the total retail sales will arrive at 2000 billion RMB during the year ended on 31 December 2020. Despite of its speedy development, a lot of issues, fire hazards, thefts, stampede incidents and et al, occur in shopping malls and supermarkets with bringing damages to people's lives and financial properties. Although most malls have already installed traditional or digital video surveillance system, it's still not enough to display its security defense function properly because of its inherent drawbacks.

The Needs

Owing to its particular features as well as the public security issues, the retail industry is required to take a series of measures to ensure customers' life safety and shopping malls' financial safety. Thus, the video surveillance should realize the following functions: a) monitor expensive goods in the shopping mall to prevent theft actions; b) monitor export, import and parking lot channels, and send alerts while finding the left-behind objects; c) to monitor the perimeter of shopping mall; immediately send alerts as soon as the non-staffs presents in the mall in non-business time; d) monitor the individuals getting in and out of the mall to make human counting, and et al.

count the customer flow in the doorway

monitor the abrupt speed-increasing run in the lobby

monitor major products on display

timely find individuals conversely running in the bank channel

monitor individual density

iVAS Intelligent Video Server

Client-side of iVAS server

switch device

private business network

switch device

switch device

switch device

switch device

switch device

show window

goods shelf

hall

cashier desk

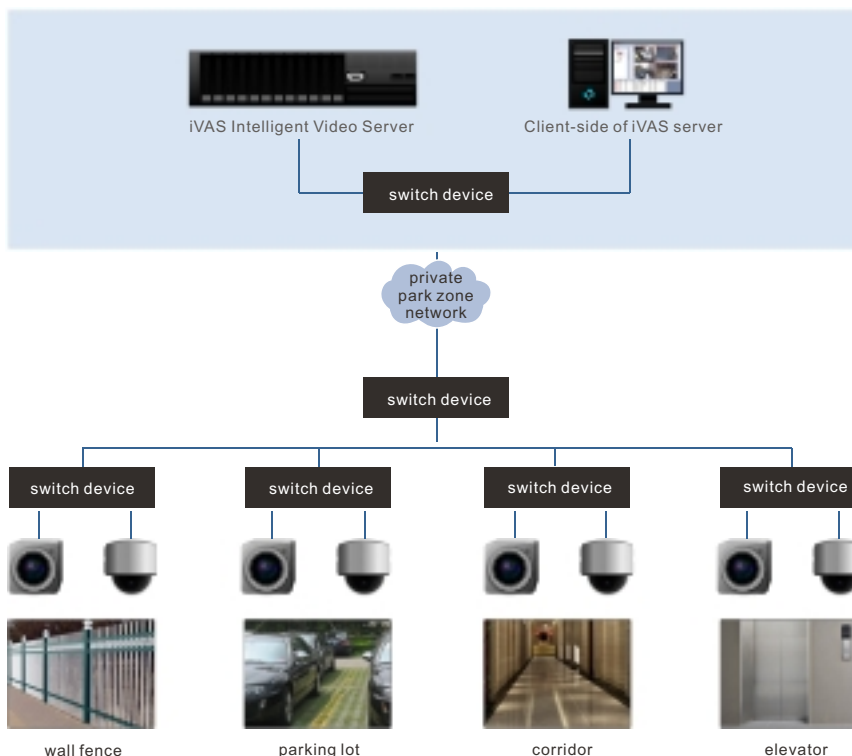timely find the queue too long in the cashier desk

Industrial Park

Industrial Status

In recent years, a variety of industrial parks including export processing zones, free trade zones, bonded zone, industrial zones, science and technology parks, tourism scenic areas and et al, have respectively sprung up. As the park's economic development becomes the main driver in China's economic growth, the data from State commerce department indicates that the gross regional production value reached 1,773 billion RMB in 54 state economic technological development areas in 2009, with total industrial output value as high as 5,127.1 billion RMB. The development of technology-park promotes our economy to become more and more prosperous, while a variety of security accidents also increase. Despite of the surveillance effect at a limited extent, the traditional video surveillance system cannot realize the expected goal of security and defense.

The Needs

Gradually, people pay more attention to the security problem in the prosperous development of technology park construction. It is necessary to strengthen the park's security defense due to the security incidents of abruptness and consequent severity and et al. The traditional video surveillance system can only support the function of recording more than pre-alerts, so that the video surveillance cannot realize the timely prevention. It's required to introduce another advanced intelligent video analysis system to strengthen the security protection of the technology park, for instance, dangerous products, major equipments, perimeter surveillance, warehouse monitoring and et al.

iVAS Intelligent Video Server

Client-side of iVAS server

switch device

private park zone network

switch device

switch device   switch device   switch device   switch device

wall fence   parking lot   corridor   elevator

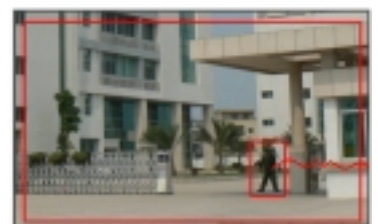
timely find someone climbing over the fence

timely find vehicles illegally parking

monitor individual intruding in the equipment room

monitor object being removed in the room

timely find individual suddenly appearing

timely find vehicles conversely running in the industrial park