

A background image showing three construction workers wearing yellow hard hats and blue plaid shirts, smiling and holding a large set of white blueprints. They are standing outdoors at a construction site with blue and orange storage containers visible in the background.

ZKBio CVSecurity Smart Construction Site Solution

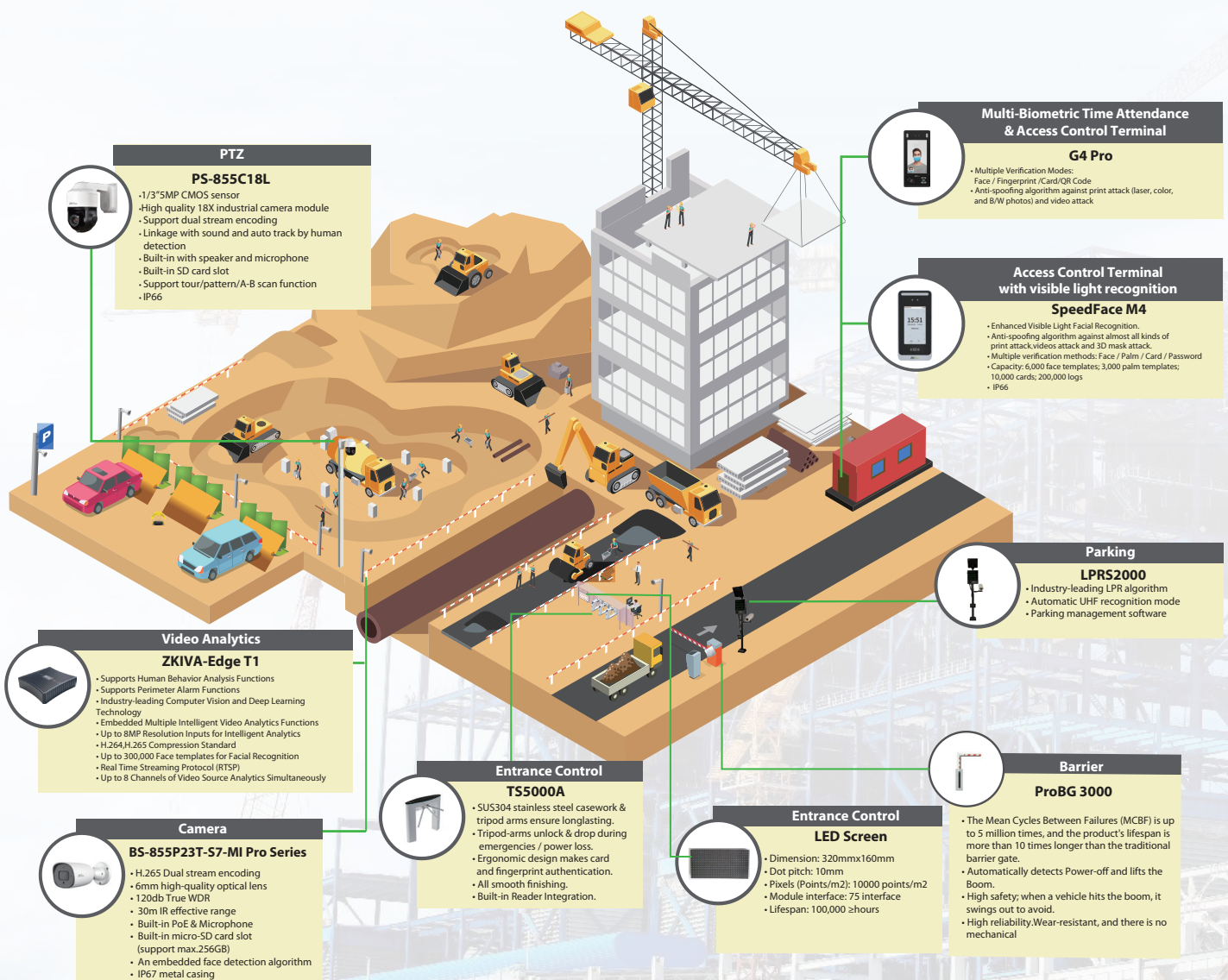
Solution Overview

Addressing Construction Site Security Challenges

ZKTeco offers a **five-in-one** integrated management solution that combines hardware and software, to improve the safety level and efficiency of the construction site. There are more and more construction projects worldwide, and many security problems exist at construction sites.

The solution offers comprehensive and powerful security software, ZKBio CVSecurity, to realize access control, personnel management, vehicle management, video management, attendance management in a unified manner.

In addition, the solution involves deploying various hardware devices such as intelligent analytics edge server, full-color cameras, PTZ cameras, facial recognition access control terminal, barriers, etc. to realize omni-directional video surveillance, facial recognition, people counting, key personnel control, perimeter protection, fire detection, flexible group scheduling, automatic license plates verification & video linkage and other functions, improving the management efficiency of construction sites, reducing the occurrence of safety accidents.



Pain Point Analysis



Paper records are inefficient and easily lost
Manual and paper registration of personnel information and safety event records is easy to lose and difficult to trace events.



ZKBio CVSecurity offers 50+ types of reports
The system has various reports (access, attendance, parking, video), making it easy to track and identify problems.



Random parking situation
External vehicles are often to park in the construction range, affecting the construction environment.



Vehicle management with LPR
Through license plate recognition technology, the solution can prohibit unauthorized vehicles from entering.



It's easy to lose cards and inconvenient to use fingerprint for workers
The site needs access control of personnel, but manual counting is inefficient, while carrying cards is not convenient for workers.



Highly efficient visible light facial recognition
With facial recognition access control terminal at the entrance, workers can pass directly.

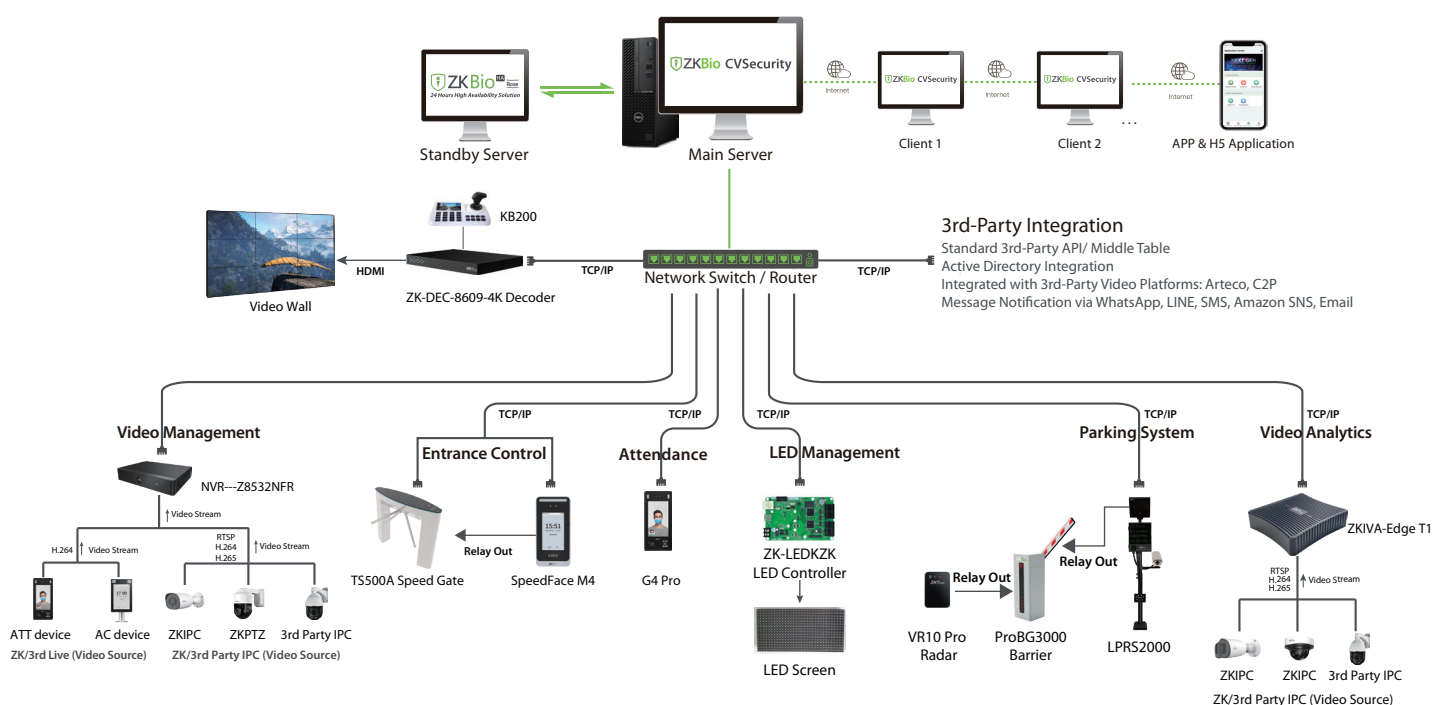


Administrator can not grasp the situation of site personnel in time
The personnel in and out of the construction site is complicated, so it needs real-time statistics and visual management.



Real time "who is inside" personnel information for construction
With a LED display function to show real time "who is inside" personnel information, it's convenient for admin to get informed about who are working inside the site and manpower deployment.

Solution Topology



Solution Highlights

- “Who is inside” information shown on the LED
- Access Control with Biometric Identification
- Global linkage - monitoring video pop-up
- Intelligent Video Analytics
- Construction safety enhancement with PTZ camera
- Automatic LPR technology & video linkage
- Multiple attendance record methods
- Flexible group scheduling



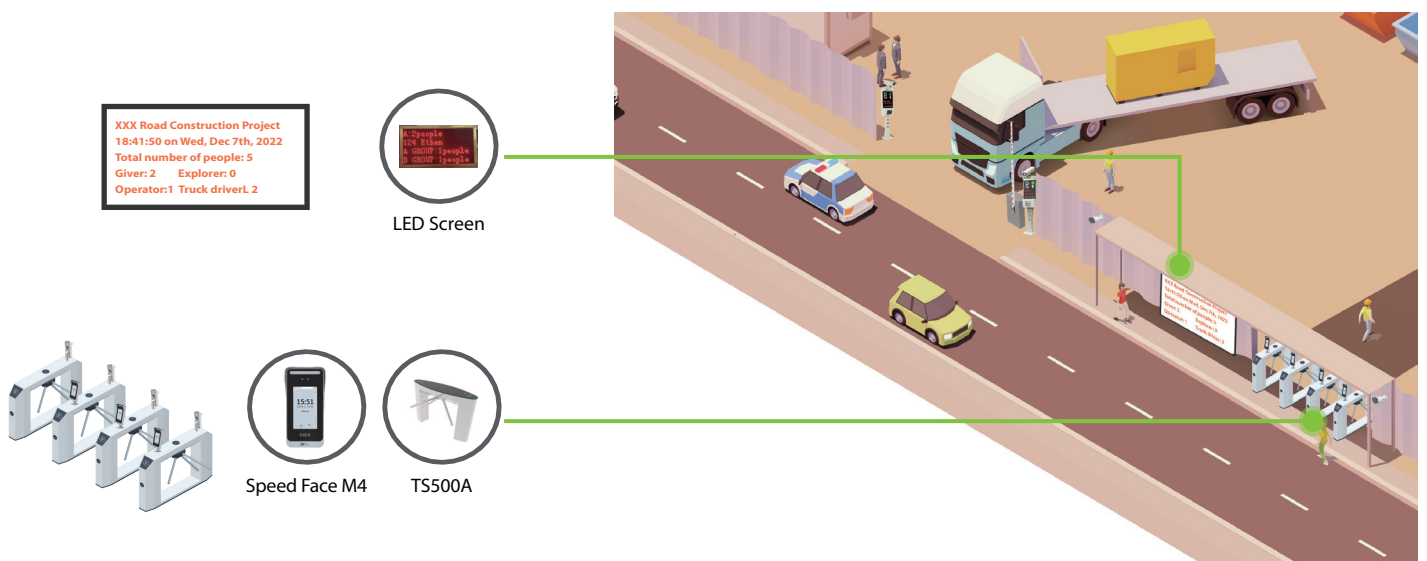
“Who is inside” information shown on the LED

By using the "Who is inside" function, administrators can check how many persons still remain in the specific area/room, with their detailed information such as the personnel ID, first name, last name, department name, access time and last access reader.

“Ethen” is inside the Area A

Personnel ID	Name	Department	Last Access Time	Last Access Reader
124	Ethen	B GROUP	2022-11-16 18:04:57	10.8.14.164-1-In

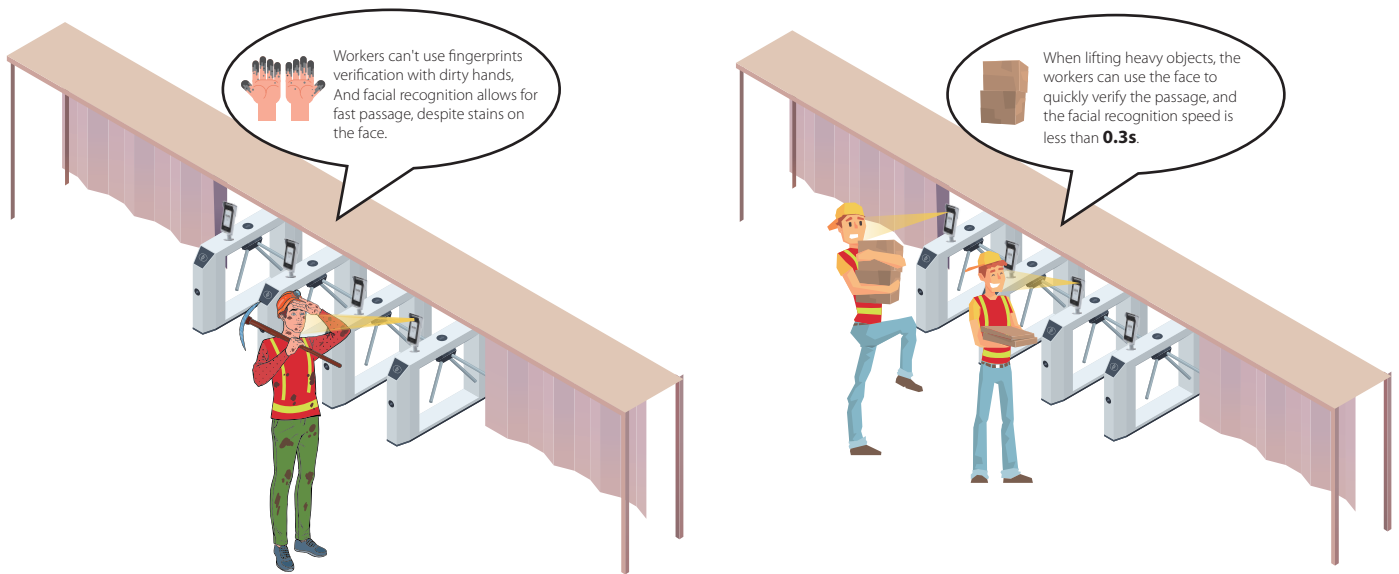
ZKTeco allows user to get informed about who are working inside the construction site at the entrance. Only when a worker verifies and get access to the construction site, his/her name and position and other informations will be shown on the connected LED screen at the same time. ZKBio CVSecurity provides a programmable LED display function to show editable and the real time "who is inside" personnel information.



Access Control with Biometric Identification

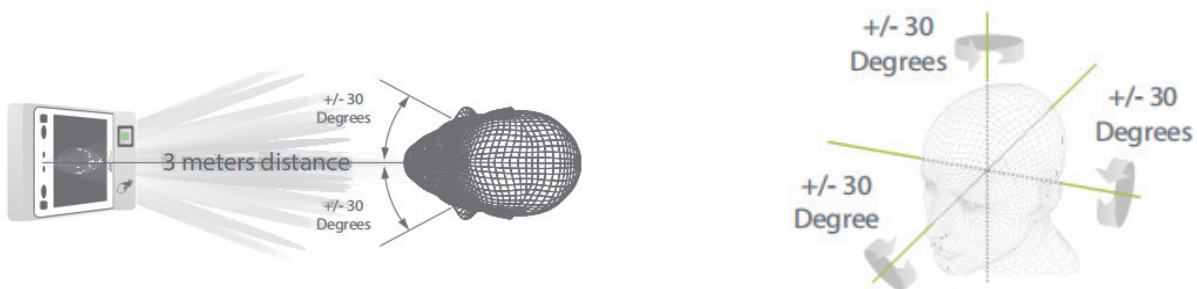
Visible Light Facial Recognition

In the case of access verification, workers are usually not convenient to carry cards or use fingerprints due to construction reasons, resulting in low efficiency. While Visible Light Facial Recognition can effectively solve the problem of authentication, greatly improve the efficiency of traffic.



The visible light facial recognition is way faster than the previous near Infrared facial recognition, and the recognition distance has been greatly extended up to 3 meters long, which significantly improving the maximum traffic rate.

In addition, ZKTeco Facial recognition algorithms supports 30-degree angle facial recognition.

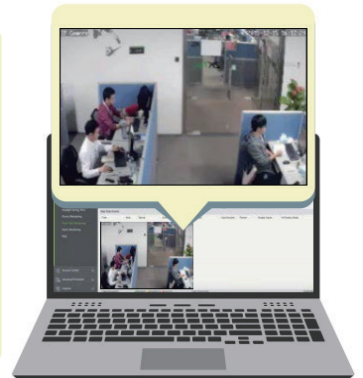


Global linkage - monitoring video pop-up

In case of unauthorized personnel verifying on the access control at the entrance, the system can link with the video and automatically pop out the relevant pop-up window, which is conducive to the administrator viewing the video in real time.

Video POP UP

This pop up video appears in the lower part of the ZKBio CVSecurity software when an unauthorized person verifies his/her face.



Intelligent Video Analytics

Line Crossing Detection

With the line crossing detection algorithm embedded in the ZKIVA Edge, the solution can realize perimeter protection and the key areas control by setting the related boundary, if the camera captures someone crossing the line, the platform will generate an alarm immediately.



Facial Recognition: Key Personnel Control & Tailing Detection

Key personnel like strangers, thieves or other suspicious are key focus of construction site personnel management, through the facial recognition algorithm, it can quickly identify the identity of the personnel, and form the trajectory report of the relevant personnel.

In addition, it also supports tailing detection, an immediate alarm will be generated when a tailing event occurs.



Construction safety enhancement with PTZ camera

Through the installation of infrared HD PTZ, the system can achieve comprehensive management of the site areas.

With pan speed up to 180°/s, and tilt speed up to 100°/s, it would promise a large HD video coverage and secured details. Managers can view the multi-directional construction process of the tower crane and the working layer in real time, timely and effectively master the dynamic situation of the construction site, greatly reducing the difficulty of project management, saving costs, and improving the efficiency of safety and quality supervision.

Also, the PTZ powered by the cutting edge human detection technology, it could guard your region safely and filter out the false alarm.



In addition, the PTZ can support 24H monitoring, even at night, but also can use infrared accurate monitoring and human Detection, effectively improve the safety level of the site at night, and protect the site property.

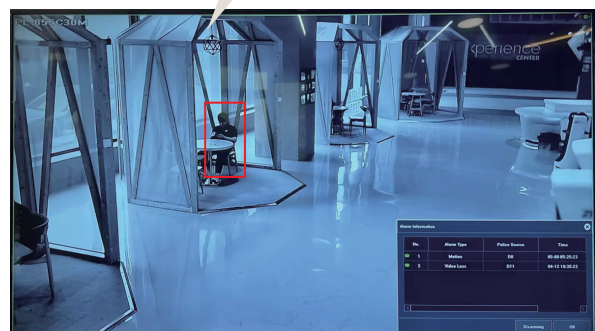
Night Vision:

The night vision of the PTZ with infrared ray can also support human detection, which can monitor the entry of suspicious people or abnormal events.



Night Vision:

When someone enters the system, a pop-up alarm will appear. The administrator can view the real-time monitoring screen.



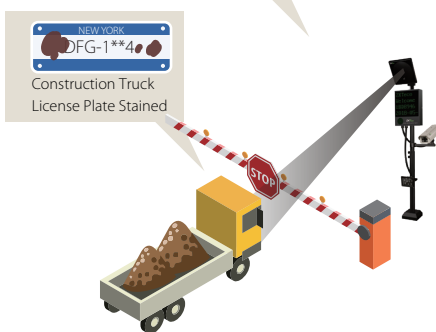
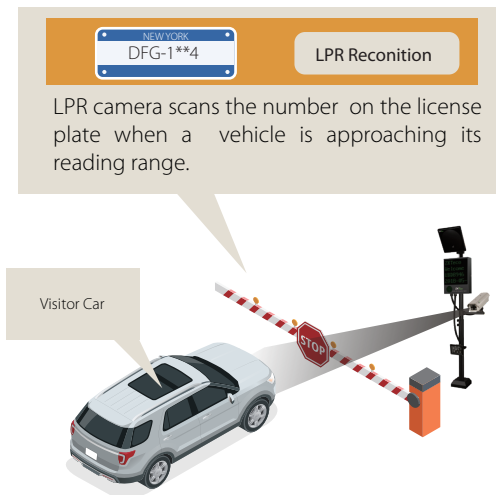
Automatic LPR & UHF technology

LPRS2000 is a hybrid recognition vehicle management terminal, adopts license plate recognition and UHF recognition. It can satisfy the management of both internal and external vehicles.

LPR (License Plate Recognition) technology is an application of computer video image recognition technology in license plate identification area.

The LPR camera will scan the license plate characters, and its recognition technology will identify the license plate number, color and other information.

It is more suitable for vehicles with clear license plates such as visitor vehicles.



The UHF (Ultra High Frequency) reader is equipped with the passive UHF card function, which could be widely used in Vehicle Management and Personnel Management applications.

Because the construction environment is easy to cause the license plate, body dirty can not recognize the license plate, especially some large trucks. The UHF recognition can solve this problem.

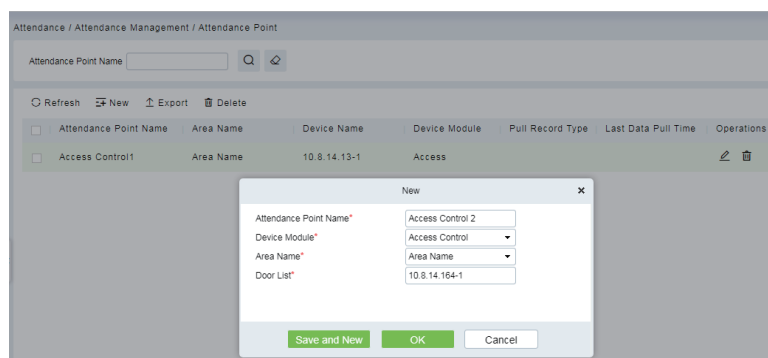
In addition, the system provides an additional function for administrators to have a real time monitoring in the monitor room. Administrators can check video images and information of entrances and exits of all guard booths in all parking lots.



Multiple attendance record methods

The ZKBio CVSecurity software supports to use the access control data, video and LPR Parking data for attendance. The administrators can set the attendance points with attendance terminals, video recognition terminals, access control terminals, and LPR terminals.

Generally, employees can check in on the attendance terminal. However, if employees forget to check in and want to make up the registration, the administrator can check the the video snapshot data, access data or the LPR parking data to process the registration of relevant employees.



Time & Attendance



Video Recognition



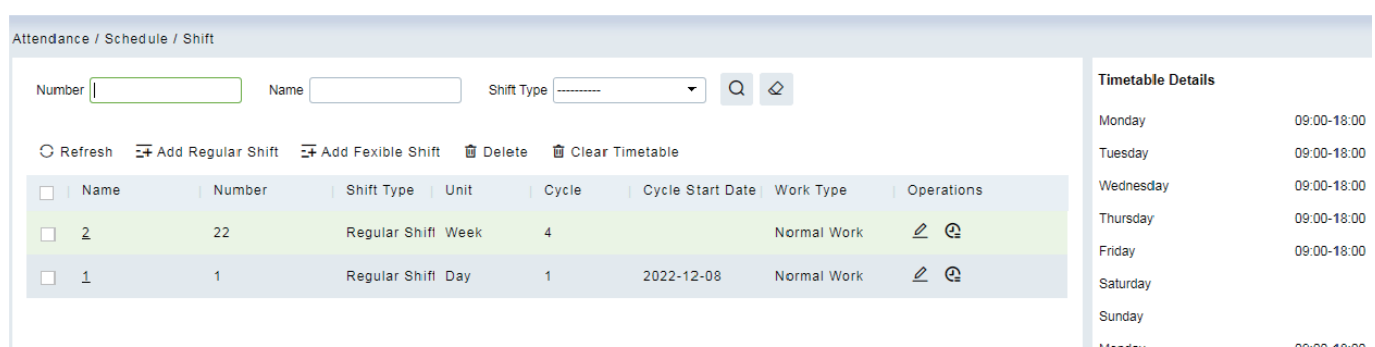
Access Control



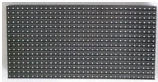
LPR Parking

Flexible group scheduling

ZKBio CVSecurity offers flexible group scheduling to administrators. Administrators can group all employees in the company or in individual departments together and apply the same attendance rules, or users can set the attendance parameter like check-in, check-out, and overtime rules.



Hardware Recommendation

Product Type	Product Model
Barrier	 TS500A
Access Control	  Proface X SpeedFace M4     InBio Pro Controller Pro ID FR1500S QR600-V
Video	    Z8532NFR (NVR) ZKIVA-Edge T1 (Intelligent Video Analytics Edge) PS-855C18L (PTZ) BS-855P23T-S7-MI
LED	  LED Screen ZK-LEDKZK (LED Controller)
Parking	  ProBG 3000 LPRS2000
Attendance	  G4 Pro Horus H1

