



DSS Professional

A&E Specification



ZHEJIANG DAHUA VISION TECHNOLOGY CO., LTD.

ALL TRADEMARKS ARE THE PROPERTIES OF THEIR RESPECTIVE OWNERS

This A&E specification is written according to Construction Specifications Institute (CSI) 3-Part Format, based on MasterFormat™ (2016 Edition) and The Project Resource Manual – CSI Manual of Practice www.csiresources.org.
Manufacturer is responsible for the accuracy of the technical data included in this specification.

Division 28 – Electronic Safety and Security

Section 28 20 00 – Video Surveillance

Section 28 23 00 – Video Management System

Section 28 23 11 – Video Management System Analytics

Section 28 23 13 – Video Management System Interfaces

Part 1 General

1.1 Summary

A. DSS Professional System

1. *Section Includes:* The DSS system connects clients and servers through its SMC (System Management Center) which provides a unified authorization service. MTS and SS services are responsible for streaming media forwarding and storage.
2. *Compliance:* System and installation shall comply with all provisions and requirements of this specification as well as all applicable national, state and local regulations and standards.

B. Related Requirements

1. Section 27 20 00 Communications
2. Section 28 05 00 Common Work Results for Electronic Safety and Security
3. Section 28 05 19 Storage Appliances for Electronic Safety and Security
4. Section 28 05 19.11 Digital Video Recorders
5. Section 28 05 19.13 Hybrid Digital Video Recorders
6. Section 28 05 19.15 Network Video Recorders
7. Section 28 06 20 Schedules for Video Surveillance
8. Section 28 21 00 Surveillance Cameras
9. Section 28 21 13 IP Cameras
10. Section 28 27 00 Video Surveillance Sensors
11. Section 28 33 00 Security Monitoring and Control
12. Section 28 51 19.13 Video Walls

1.2 References

A. Abbreviations

1. 3G The 3rd Generation Mobile Telecommunications
2. 4G Fourth Generation Wireless Communications
3. AAC Advanced Audio Coding
4. ADS Alarm Dispatch Service
5. ANPR Automatic Number Plate Recognition
6. ARS Auto Register Service
7. ASP Active Simple Profile
8. AVI Audio Video Interactive
9. CPU Central Processing Unit
10. DHCP Dynamic Host Configuration Protocol

11. DVR	Digital Video Recorder
12. EULA	End User License Agreement
13. EVS	Enterprise Video Storage
14. GIS	Geographic Information System
15. HDD	Hard Disk Drive
16. HDMI	High-Definition Multimedia Interface
17. HTTP	Hypertext Transfer Protocol
18. HTTPS	Secure HTTP
19. ID	Identification
20. IP	Internet Protocol
21. IPC	IP Camera
22. iSCSI	Internet Small Computer System Interface
23. IVSS	Intelligent Video Surveillance Server
24. JPEG	Joint Photographic Experts Group
25. LAN	Local Area Network
26. MAC	Media Access Control
27. MCD	Multi-Control Device
28. MD5	Message-Digest Algorithm 5
29. MKV	Matroska Multimedia Container
30. MPEG	Moving Pictures Experts Group
31. MPT	Mobile Portable Terminal
32. MTS	Media Transmission Service
33. MQ	Message Queue Service
34. NVR	Network Video Recorder
35. OSS	Object Storage Service
36. P2P	peer-to-peer
37. PCPS	ProxyList control Proxy Service
38. POS	Point of Sale
39. PTS	Picture Transfer Server
40. PTZ	Pan Tilt Zoom
41. RAID	Redundant Arrays of Independent Disks
42. RAM	Random Access Memory
43. RPM	Revolutions per Minute
44. SDK	Software Development Kit
45. SS	Storage Service
46. SMC	System Management Center
47. TLS	Transport Layer Security
48. UTC	Universal Time Code
49. VDP	Video Door Phone
50. VGA	Video Graphics Array
51. VMS	Video Matrix Service
52. WAN	Wide Area Network

B. Reference Standards

1. Network Standard
 - a. IEEE – 802.3 Ethernet Standards

2. Video Compression
 - a. ITU-T H.264 standard and ISO/IEC MPEG-4 AVC standard (formally, ISO/IEC 14496-10 – MPEG-4 Part 10, Advanced Video Coding), H.264+, H.265, and H.265+ encoding formats

C. Definitions

1. Contractor: Firm selected by Owner and any of Contractor's subcontractors, vendors, suppliers or fabricators, to perform work specified in these contract documents and supporting documentation. Contractor shall supply all equipment, labor, material and services necessary to complete the project construction in accordance with Contract Documents.
2. Central Processing Unit (CPU): General purpose electronic circuitry within a computer that carries out the instructions of a computer program, typically contained in a single integrated circuit chip.
3. Open Network Video Interface Forum (ONVIF): Global and open industry forum for the creation of standards for how IP-networked products within video surveillance and other physical security areas can communicate with each other.
4. Pre-recording: Automatically recording video and audio starting a specified number of seconds just before the event or time condition that initiated the recording.
5. PTZ Tour: Automatically moving a camera through a specified series of preset PTZ positions, dwelling on those positions for a specified amount of time, and transitioning between the preset positions at a specified speed.

1.3 Submittals

A. Submission

1. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data

1. Provide manufacturer's datasheets.
2. Installation and operating manuals on each product to be used.

C. Shop Drawings

1. System network topology.

1.4 Closeout Submittals

1. Warranty: Manufacturer's warranty documentation.

1.5 Quality Assurance

A. Qualifications

1. This product shall be manufactured by an enterprise whose quality systems are in direct compliance with ISO-9001 protocols.
2. All installations, integration, testing, programming, system commission, and related work shall be done by installers who are trained, authorized, and certified by the manufacturer.
3. Contractors /Installers:
 - a. License: Contractors or sub-contractors shall be licensed to perform security installations in the state/region where the work is to be performed if so required.
 - b. Experience: Contractors or sub-contractors shall have a minimum of three years of experience installing and servicing systems of similar scope and complexity.

- c. References: Contractors shall provide four current VMS project references from clients with systems of similar scope and complexity which became operational in the past three years.
 - 1) At least three references shall be utilizing the same system components, in a similar configuration as the proposed system.
 - 2) References shall include a current point of contact, company or agency name, business address, telephone number, and if the contact agrees, include a basic system description and date of project completion. The owner reserves the option to visit the reference sites, with the site owner's permission and representative, to verify the quality of installation and the reference's level of satisfaction with the system.
4. Technician Certification: Utilize professionally-trained technicians to install, program, and service Video Management System.
 - a. Ensure technicians have a minimum of five continuous years of technical experience in electronic security systems including IP networking and VMS solutions.

1.6 Delivery, Storage and Handling

A. Deliver

1. The product shall be delivered in accordance with the manufacturer's recommendations.

1.7 Licensing and Support Agreements

1. Requires no Software Support Agreements with the manufacturer.

1.8 Warranty and Support

A. Manufacturer Warranty

1. Software Warranty
 - a. Manufacturer's software warranty must be described in the manufacturer's EULA for the product.
2. Software Support
 - a. Provide free access to any software service updates or hot fixes released due to a material error or defect in the product.
 - b. Provide new device driver packs, multiple times per year, to extend support for additional devices without the need for a new version of the product.
3. Software Updates and Upgrades
 - a. Make software upgrades available for a period of one year from activation of the software license. Coverage options shall include:
 - 1) Free access to any new product versions for the purchased Dahua VMS software product.
 - 2) 100% credit on owners current Dahua VMS software products when upgrading to a more advanced Dahua VMS product.
 - 3) Case Management online tool for submitting and tracking technical cases.
 - 4) Direct Access to technical support via e-mail and phone.
 - 5) Prioritized handling of support phone call response times based upon criticality of issue, for questions submitted by email or that cannot be answered in initial phone call.
 - 6) Additional years of software upgrades available for purchase separately.

B. Manufacturer Support

1. ITR Technical Support Center in Hangzhou, China.
2. Technical support is available from 8:30 a.m. to 17:30 a.m. on weekdays.
3. Regional technical support teams are responsible for the respective regional technical issues.

C. Contractor Warranty

1. Fully warrant parts, materials and labor for a minimum of one year from date of the final acceptance of the VMS, including wiring, software, hardware and third-party products, including:
 - a. Provision of all new software service releases during the warranty period.
 - b. Provision of all new device driver packs.

D. Maintenance and Service

1. General Requirements:
 - a. Provide all services required and equipment necessary to maintain VMS in an operational state as specified for one year from formal written acceptance of system.
 - b. Provide all necessary material required for performing scheduled adjustments or other non-scheduled work.
 - c. Minimize impacts on facility operations when performing scheduled adjustments or other non-scheduled work.
2. Description of Work: Deployment of VMS includes installation and setup of new server hardware and software.
3. Personnel: Service personnel shall be certified in the maintenance and repair of the selected type of equipment and integrations, and qualified to accomplish all work promptly and satisfactorily.
4. Schedule of Work: Work shall be performed during regular workweek working hours, as determined by the deployment facility's locale, excluding federal/public holidays.
5. Emergency Service Response
 - a. Owner has sole authority for determining catastrophic and non-catastrophic system failures.
 - b. Catastrophic system failure is defined as any system failure that Owner determines will place a facility at increased risk.
 - c. For catastrophic system failures, provide same-day four-hour service response with continued status updates at least every four hours.
 - d. For non-catastrophic failures, provide service response within eight hours with continued status updates at least twice a week.
6. Verification of Operation: As part of scheduled adjustments and repairs, verify operation of system as demonstrated by performance verification testing.

END OF SECTION

Part 2 Products

2.1 Manufacturer

A. Manufacturer

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B. Products

1. DSS Professional manages devices such as IPCs, NVRs, DVRs, EVSs, and Access Control devices deployed across various sites. Camera recording can be stored directly in the video monitoring devices for local storage, but also can be stored in the center through IP SAN. In addition to the basic video features, DSS Professional supports AI functions such as face recognition and ANPR and access control features.

2.2 Description

A. DSS Professional Center Management Service

1. Maximum capacity for device management and sub server management:
 - a. Manages up to 2,000 devices, including encoders, access control devices and alarm controllers per server.
 - b. Manages up to 2,000 video channels per server.
 - c. Manages up to 200 TB central storage per server.
 - d. Manages up to 500 access control devices and 1,000 access control channels per server.
Manages up to 1,500 access control devices and 3,000 access control channels in distributed deployment.
 - e. Manages up to 2,000 VDP devices.

B. Service Manager: An application that manages the following services:

1. System Management Center (SMC): Center management service is to manage each service and provide accessing port.
2. Message Queue Service (MQ): Message queue service is to transfer messages between the platforms.
3. Device Management Service (DMS): Device management service is to register encoder, receive alarm, transfer alarm and send out sync time command.
4. Media Transmission Service (MTS): Media transmission service is to get the audio/video bit stream from the video monitoring device and then transfer these data to the SS, client and decoder.
5. Storage Service (SS): Storage service is to storage/search/playback record.
6. Video Matrix Service (VMS): Video matrix service is to login the decoder and send out task to the decoder to output to the Video wall.
7. Auto Register Service (ARS): Auto register service is to listen, login, or get bit streams to send to MTS.
8. ProxyList control Proxy Service (PCPS): ProxyList control Proxy Service is to login ONVIF device, and then get the stream and transfer the data to MTS.
9. Alarm Dispatch Service (ADS): Alarm dispatch service is to send out alarm information to different objects according to the plans.
10. Multi-Control Device (MCD): Deals with alarm devices access. The MCD service simulates devices and deals with access of SDK of alarm controllers, access control devices and dynamic environment monitoring devices.

11. Object Storage Service (OSS): Deals with storage of face snapshots and intelligent alarm pictures.
12. Picture Transfer Server (PTS): Deals with picture transmission.

2.3 Accessibility and Management Capabilities

1. Support up to 200 users to log in to DSS Professional at the same time using a PC client or a mobile client.
2. There is no license limit on the number of client connections.
3. Support active directory to facilitate the use of domain users to log on to PC Client and DSS Web management.
4. Administration functions and operation functions are performed separately in the following clients:
5. PC Client: All security operator features shall be accessed through the Control Client connected to DSS Professional via LAN, WAN, or Internet.
6. Mobile Client: Basic security operator features shall be accessed through the Mobile Client connected to DSS Professional via LAN, WAN, or Internet.
7. Shall support H.264, H.264+, H.265, and H.265+ encoding formats.
8. Shall support downloading logs from DSS Professional.

2.4 System Requirements

A. System Requirements for DSS PC Client

1. Minimum

Item	Requirement
CPU	Intel® Core i5-9500 @3.00 GHz
RAM	16 GB
Network	1000 Mbps
Graphics Card	Intel® UHD Graphics 630
Hard Disk	100 GB free space for PC Client

2. Recommended

Item	Requirement
CPU	Intel® Core i7-11700 @2.50 GHz
RAM	16 GB
Network	1000 Mbps
Graphics Card	NVIDIA® GeForce® RTX 3060
Hard Disk	200 GB free space for PC Client

B. System Requirements for DSS Server

1. Minimum

Item	Requirement
CPU	Intel Xeon E-2224 @3.4 GHz, 8M cache
RAM	8 GB
Network	2 Ports@1000 Mbps
System Disk	1 TB 7200 RPM SATA Entry 3.5-inch cabled hard drive, 500 GB free space for DSS
Storage Disk	7200 RPM Enterprise Class HDD

2. Recommended

Item	Requirement
CPU	Intel Xeon Silver 4114 @2.2 GHz 10 Core Processor
RAM	16 GB
Network	4 Ports@1000 Mbps
System Disk	1 TB 7200 RPM SATA 6 Gbps 512n 2.5-inch hot-plug hard drive, 500 GB free for DSS
Storage Disk	7200 RPM Enterprise Class HDD

2.5 Operating System

A. Operating System for DSS Server

1. Windows server 2019 standard (64-bit)
2. Windows 10 20H2 Pro (64-bit)
3. Windows 10 20H2 Pro (64-bit) (Virtual machine)
4. Windows server 2019 standard (64-bit) (Virtual machine)
5. Windows 11 21H2 Pro (64-bit)

B. Operating System for PC Client

1. Windows 10 20H2 Pro (32-bit)
2. Windows 10 20H2 Pro (64-bit)
3. Windows 10 20H2 Pro (64-bit) (Virtual machine)
4. Windows server 2019 standard (64-bit)
5. Windows 11 21H2 Pro (64-bit)

C. Operating System for DSS Mobile Client

1. iOS: iOS10.0 or later
2. Android: Android 5.0 or later

2.6 System Design Criteria

- A. High Scalability:** Provide component-based system architecture to support scaling of VMS from small systems (up to 100 devices) to very large systems (several thousand devices) for single-site or multi-site deployment, whereby:
1. For Small Systems: All software components can be installed on the same server if the server is able to handle the combined load.
 2. For Large Systems: Software components can be installed on separate dedicated servers to scale and distribute the load.
- B. High Availability and Impressive Performance:** Provide the following capabilities to ensure high VMS availability and performance.
1. Storage solution shall be configured with RAID10 for Live database and RAID5 or RAID6 for archive database.
- C. Operating Systems:** Provide server and client software Microsoft Windows applications.
- D. Network Addressing:** Support both IPv4 and IPv6 addressing.
- E. Video Standards:** Provide simultaneous live streaming and recording of video from IP cameras and IP video encoders without any software limitations on the number of cameras per Recording Server, with support for the following codecs and options:
1. Codecs:
 - a. H.264 and H.265
 - b. MPEG-4 and MPEG-4 ASP
 - c. MJPEG
- F. Audio Standards:** Provide simultaneous digital two-way audio streaming and recording of audio from IP speaker and IP microphone devices without any software limitations on the number of devices per Recording Server, with support for the following codecs and options:
1. Codecs:
 - a. AAC
 - b. G711
 - c. G726
- G. PTZ Control Priorities**
1. Provide different PTZ priority levels for control of rights between different users and automatic scanning and touring schemes.

2. PTZ Scans and Tours shall pause for higher-priority manual or event-based camera control, and resume after manual session timeout and completion of event camera control period.

H. Multiple Languages: Provide support for multiple languages: Arabic, Bulgarian, Czech, Danish, English (United States), Finnish, French, German, Hungarian, Italian, Japanese, Korean, Macedonian, Polish, Brazilian Portuguese, Russian, Simplified Chinese, Spanish, Thai, Traditional Chinese, Turkish, Ukrainian, Vietnamese, Hebrew.

2.7 System Security

A. User Authentication

1. The system requires password strength to be greater than medium.
2. When you set a password, you are prompted of the strength of the password. Password strength includes three levels: Weak, Medium, Strength.
3. An IP will be locked out from logging in to the platform after 5 failed login attempts with wrong passwords.

B. User Rights Management: Provide common and central detailed management of user rights, using roles and users:

1. User Rights: Define roles, add and delete users, manage permissions for roles and users, generate user rights management reports.
2. Roles: Defining role permissions that determine which system features may be accessed by users.

C. Confidentiality

1. Encrypted transmission of sensitive information.
2. Web client is accessed via HTTPS by default.
3. User password saved with MD5.
4. TLS1.2 is used by default. You will be notified of the security risks if you enable TLS1.0.

2.8 Third-party Integration

- A.** Use a bridge to import events to the platform from third-party systems, and then use these events to create alarms schemes and perform certain linkage actions. A bridge serves as a connector between the platform and third-party systems, and is responsible for importing events from a third-party system to the platform.
- B.** Allow users to manually or regularly synchronize data in the platform to third-party databases, which can be used by third-party personnel to formulate their own reports.

2.9 Logging

- A.** Provide logging of user activity, alarms, system information, errors, warnings, and logs about other related information.
1. User Logs: Log user activities in client applications including, but not limited to, user system login and access, configuration changes, and other actions.
 2. Alarm-Triggered Logs: Log alarms that have been detected and triggered by video monitoring devices.
 3. System Logs: Log all system-related information, warnings and errors for troubleshooting.
 4. Log Search: Logs can be searched and filtered based on user, time, operation time, video source, and more.
 5. Log Exporting: Logs can be exported as .csv (comma-separated-values) files.

2.10 PC Client

- A.** The client can automatically discover platforms on the current network and display them for you to connect to.

- B.** Languages: Arabic, Bulgarian, Czech, Danish, English (United States), Finnish, French, German, Hungarian, Italian, Japanese, Korean, Macedonian, Polish, Brazilian Portuguese, Russian, Simplified Chinese, Spanish, Thai, Traditional Chinese, Turkish, Ukrainian, Vietnamese, Hebrew.
- C.** You can use a domain user account and normal user account to log in to the PC client to achieve the following functions.
1. Client Login
 - a. The client displays IP addresses and port numbers of platforms in a drop-down list.
 - b. The client remembers the information of the platforms that you have logged in to.
 - c. The client discovers IP addresses and port numbers of platforms on the same network.
 2. Homepage
 - a. Toolbar
 - Displays account name, platform model, platform version, client version, software license agreement and company copyright, time and UTC time zone of the PC client.
 - Lock and unlock client.
 - Support changing passwords.
 - Notification Center: Displays system messages, such as an export task is complete, or the information of a device was edited or deleted.
 - b. System Overview
 - Display permitted device information of the user: Total devices, online devices, and offline devices.
 - Display event information under login user permissions: Total events, processed events and pending events.
 - Client PC status: Network, CPU, and RAM.
 - c. Main Panel
 - Applications: Monitoring center, event center, DeepXplore, access management, parking lot, intelligent analysis, and maintenance center.
 - Configuration: Configurations related to basic settings, application and system.
 - Management: Download center, local images, logs, help and quick commands.
 - d. Notification Center
 - Users can view system messages, such as the information of a device was edited or deleted. The permissions of a user will determine what messages can be seen. For example, if user A does not have the permission of device A, then user A will not get the message when device A is deleted.
 - e. Multi-site
 - In DSS Professional, you can add other DSS Professional or DSS Express platforms to the current one.
 - You can view events and real-time videos of the devices on other sites in the current platform.
 - You can download the recorded videos on other sites in the current platform.
 3. Basic Configuration
 - a. Device: Device Management
 - Device group management via organization.
 - Device initialization: Initialize Dahua's device.
 - Multiple ways for adding devices: Auto search, IP, Domain, IP segment, P2P, automatic registration (for 3G, 4G, and DHCP devices). Supports importing devices in batches using a template.
 - Access of various kinds of devices: Network camera, network speed dome, NVR, DVR, MXVR, MDVR, MNVR, access control device, video intercom, alarm controller, decoder, radar, and third-party devices through ONVIF protocol, and more.
 - Device information editing: Support changing Dahua devices' IP addresses, modifying time zones one by one or in batches, and obtaining device information.
 - Bind the associated camera: Link cameras when configuring events.

- Support managing channel features one by one or in batches. Channel features can be configured with the following functions: Intelligent Alarm, Electric Focus, IR Temperature Monitoring, Face Detection, Face Recognition, Video Metadata, Fisheye, Main Sub Track, Smart Track (Radar + PTZ), Privacy Mask, ANPR snapshot, Access Snapshot (NVR supports).
 - Device search: Support filtering devices according to the add mode (IP address, auto registration, IP segment, domain name, and P2P) and access protocol (Hikvision, Dahua, ONVIF, Jiuzhou).
 - Increased port for ONVIF devices to ensure successful streaming even when ONVIF device is connected to WAN and the platform is connected to LAN.
 - Supports voice intercom when using devices added through ONVIF Profile T protocol.
 - Shortened the period between ONVIF devices go offline, and the platform detects that they are offline.
 - Optimized the operations of adding devices.
 - ◇ When adding a device, you can filter the supported device types based on the add mode and access protocol. The system displays only supported information of selected device.
 - ◇ When you select a device type in the second step, you can only select from the supported device types.
 - ◇ The platform displays only the resources supported by the device type.
 - ◇ When you edit a device, the system sorts corresponding resource information based on business priority.
 - Displays an icon that is used to go to the webpages of devices.
 - Optimized the operation of adding a single device by searching for an IP address. The window is automatically closed after the device is added.
 - Optimized the support for obtaining the channel names of EVS.
 - Optimized stream acquiring from ONVIF devices in a LAN and WAN network.
- b. Device: Device Configuration
- Device parameter configuration: Encoder parameters including image, video, snapshot, OSD and audio; intelligence settings for intelligent channels, such as IVS, face detection, people counting, and heat map; door parameters, such as reader direction, door status, NO/NC period, unlock length, method, and more.
 - Recording plan: Configure center recording plans for video channels one by one or in batches, or a recording plan for each video channel.
 - Backup plan: Configure a file backup plan of MPT devices, and a video backup plan for each video channel.
 - Remote device management: Remotely restart access controllers; remotely open device web browser page.
- c. Role and User Management
- Three types of roles: Super administrator, administrator, and normal user.
 - Manage the user's permission by role (device permission, control permissions)
 - User can be assigned with the roles to obtain the corresponding permissions
 - Supports importing domain users and assigning roles to them.
 - Update domain users.
 - Log in to multiple clients at the same time with the same user.
 - Set user parameters: PTZ permissions for user, password expiry date, password validity, forced password change at first login, user email.
 - User can be restricted by the MAC and expiry information.
 - User can be locked.
 - When users forget their passwords, users with higher permissions can help reset their passwords. When the system user forgets the password, resetting through security questions is supported.

- Supports resetting password through email: If the platform has been configured an email server and an email address has been configured in a user, this user can reset its password through the email address.
 - The number of roles can be up to 500. A user can be bound to 32 roles at most.
 - MPT user management: Support setting a user to an MPT user, who can join the group talk for communicating with other MPT users and processing the event.
- d. Storage
- Supports edge storage and central storage, which extends storage via iSCSI.
 - The images of faces, license plates, metadata events, and alarms can be stored on EVS.
 - ◇ Rule 1: If an image is captured by the platform in an alarm, the image can only be stored on the platform no matter the image is captured by the alarm source or a linked channel.
 - ◇ Rule 2: If a device (such as an IPC) is connected to the platform through EVS and an event image (alarm, face, license plate, and target detection event) is generated by the event source, you can select a location to store the image.
 - ◇ Rule 3: If a device (such as an IPC) is directly connected to the platform and an event image (alarm event, face, license plate, target detection event) is generated by the event source, the image can only be stored on the platform.
 - Alarm recordings can be stored on devices such as EVS, IVSS, NVR, and DVR.
 - ◇ Rule 1: If a device (such as an IPC) is connected to the platform through IVSS, EVS, NVR, or DVR, you can normally view alarm videos on the platform, but they are linked to the ones stored on the devices.
 - ◇ Rule 2: If a device (such as an IPC) is directly connected to the platform, alarm videos can only be stored on the platform.
 - ◇ If you store alarm recordings on devices, we recommend you configure a 24-hour device recording plan.
 - ◇ When you configure events, you can view the storage location of recordings of channels.
 - ◇ You can configure and obtain the retention time of videos and images stored on EVS.
 - Notification of storage exceptions.
 - ◇ The platform will notify you when read/write exceptions or faults occur in an IPSAN or local disk.
 - ◇ You can search for records of read/write exceptions or faults in the Maintenance Center.
 - Support IP SAN in normal mode and user mode.
 - Network disks store videos, images and files.
 - Server local disks store videos, images and files as well as evidence files.
 - Disk quota: Group the disk, and cameras can be allocated to different disk groups.
 - Flexible storage: Images of faces, license plates, metadata events and alarms are stored to EVS. Alarm videos can be stored to storage devices such as EVS, IVSS, NVR and DVR.
 - Increased the storage capacity of the platform from 200 TB to 400 TB for a single service.
 - Fixed the issue where indexes were automatically repaired when the storage management service (the SS service) restarts, which led to the deleted data being recovered.
- e. Authorization
- Displays the number of resources that you can add to the platform, such as 100 video channels can be added to the platform besides the 50 video channels that have been added.
 - Displays the detailed information of each activation code.
 - For offline deactivation operations, you will be directed to the license authorization website to complete the process.
 - Optimized permission control on video channels: Video channels of access control devices will also be considered as general video channels.
- f. Resource Monitoring
- Supports saving webpage information in views.

- Displays the buttons for access control functions in the upper-right tool bar only when you are viewing the real-time video of an access control channel.
 - Optimized the function of opening real-time videos on maps.
 - ◇ Double-click a video on a map to open the real-time video of a device in an available window.
 - ◇ When the monitoring center is fully occupied, the system selects an available window from another monitoring center tab to open the real-time video of a device.
 - Zoom level will be kept when you pause a playback.
4. System Configuration
- a. Sever Deployment
- DSS platform supports standalone deployment, distributed deployment, hot standby, cascading and N+M deployment, and LAN to WAN mapping.
- Standalone deployment: Only one DSS server is required.
 - Distributed deployment: Sub servers are used to share system load, so that more devices can be accessed. The sub servers register to the main server, and the main server centrally manages the sub servers.
 - Hot standby: The standby server takes over the system when the active server malfunctions (such as with power-off and network disconnection). You can switch back to the original active server after it recovers.
 - Cascading: The system supports up to three cascading levels.
 - N + M deployment: Each sub server has a standby server to maintain stability. When a sub server malfunctions, the system replaces it with an idle standby server. When the malfunctioning server normalizes, it can be manually switched back. If not manually switched back, the system will automatically make the switch if the standby server malfunctions.
 - LAN to WAN mapping: Perform port mapping when: i. The platform and devices are in LAN, and the DSS Clients are in WAN. To make sure that DSS Clients can access the platform server, you need to map the platform IP to WAN; ii. The platform is in LAN, and the devices are in WAN. For devices added to the platform through auto registration, to make sure that the devices can access the platform, you need to map the platform IP and ports to WAN. For devices added to the platform through IP, the platform can visit device WAN IP and ports.
 - Supports using 2 network adapters. This function is mainly applied to 2 network segments that are separated from each other, such as the Internet and a local network, or 2 local networks. By configuring 2 network adapters, devices on 2 network segments can be added to and accessed by the platform.
 - Supports LAN and WAN mapping with 2 network adapters.
 - ◇ 1 network adapter is connected to a local network, and the other one to the Internet.
 - ◇ 2 network adapters are both connected to a local network, and the IP address of one of them is mapped to the Internet.
 - Supports multiple sites: In the client that you are using, you can log in to multiple platforms, and view their videos and events.
 - Provide tips when you are deploying an independent database, but it is not authorized by the license.
- b. License
- Online and offline activation.
 - Online and offline upgrade.
 - Online and offline deactivation only.
- c. System Settings
- Configuring the data storage duration of logs, alarms, face recognition, vehicle records, access control record, video intercom record, and more.
 - Time synchronization: Synchronizes time for the client and device based on the time of the server.

- Email setting: After an email server has been configured, emails can be sent to users when setting alarm linkage or processing alarms.
 - Domain user configuration: After parameters of domain users are configured, you can import domain users rapidly in User Management.
 - After an HTTPS certificate is configured, you can log in to the platform through the HTTPS protocol to ensure transmission security.
 - Configure the symbol at the end of the POS receipt.
 - Device login modes: Security mode and compatible mode.
 - Connects and sends operator logs to the log server for backup at 3 am every day.
 - Configure an independent database to store data.
 - Supports managing the VoIP certificate for app.
 - Supports turning on or off the push notification function and adding devices through P2P.
 - Supports configuring display duration for alarm pop-up windows. This configuration only applies to the current client.
 - File security: You can configure whether authentication is needed when downloading data, and whether export files need encryption.
- d. Backup and Restore
- Automatically back up system database (by day, week or month).
 - Manually back up system database.
 - Restore system database from server or local file.
- e. Synthesis
- DSS Professional is friendly to other systems in your infrastructure. By developing bridges, different linkage actions can be configured flexibly on DSS Professional based on the events that are triggered in other platform. What's more, DSS professional can synchronize attendance data and access control records to databases of other platforms for their own purposes.
5. Application Configuration
- a. Recording Plan
- Configure center recording plans for video channels one by one or in batches.
 - Configure a recording backup plan for a video channel.
 - Configure image and file backup plan for MPT devices.
 - Added motion detection recording plan.
 - ◇ The platform records videos on motion detection events reported by devices.
 - ◇ The platform can record motion detection videos based on the motion detection recording plans.
 - Optimized device recording management.
 - ◇ The platform can obtain the recording plans of EVS, or configure and send recording plans to EVS. In either way, the recording plans on the device and the platform are the same.
 - ◇ For devices not installed with the latest version, the original configuration logic for device recording plans remains unchanged. The platform only sends recording plans, but not obtain the changes of device recording plans.
 - Increased the maximum number of from 100 to 1,000 when configuring general recording plans and motion detection recording plans for multiple channels at the same time.
- b. Event Management
- You can monitor and process over 200 types of alarms right in the event center. The automatically generated statistics enables you to clearly understand what happens in your area, such as how many alarms are processed and which type of alarm is triggered most frequently. In addition to predefined alarm types that are triggered by devices, manual alarms are available for situations such as taking a snapshot or sending an email to the administrator when you see something important, or custom alarms for events that are supported by devices but not yet by the platform.
 - Supports DHOP events.

- For pre-recording, the pre-recorded video is cached by the platform. When the event occurs, the cached video is written to the central storage.
 - Added combined event to trigger an alarm according to the relationship of the time of trigger for two alarms.
 - Supports configuring a holiday template so that an alarm will not be triggered during the defined period.
 - Supports configuring trigger intervals for alarms so that only one alarm will be triggered during the defined interval.
 - Alarm controller.
 - ◇ Alarm control panels of ARC3000H and ARC3008C can be added to the platform through automatic registration.
 - ◇ The real-time and fault status of the zones of alarm control panels are displayed. This allows you to know whether zones are enabled.
 - ◇ Supports controlling alarm output control and siren.
 - Supports configuring the stream type of the real-time video when an alarm is triggered.
 - For events whose recorded videos are stored on the platform, the platform will obtain the pre-recorded portion in the cache and add it to the event video.
 - Supports up to 100 icons for soft trigger events.
 - Optimized the search function when configuring events for multiple channels or devices: After you select a category of events, all events under that category are selected by default.
 - Supports confirmation when clearing real-time events.
 - Optimized parking lot events.
 - ◇ The default email template contains plate number and vehicle group.
 - ◇ Event details contain information such as plate number and vehicle group.
 - Supports configuring plate number and vehicle group in the email template.
 - Vehicle arming events can display plate numbers.
 - Optimized the search function when searching for history events:
 - ◇ Multiple event categories can be selected at the same time.
 - ◇ After you select an event category, all events under that category are selected by default.
 - ◇ No limit is set on the number of selected events. However, a search timeout occurs if the search range is too large.
 - Supports configuring multiple temperature monitoring rules for a thermal channel. The rules can also be displayed when viewing real-time video.
 - Sequence numbers are displayed in the list of alarms that are searched to help you know the number of alarms on each page.
 - Optimized alarm linkage videos.
 - ◇ When the same alarm source reports the same event, the real-time video will be replaced. When different alarm sources report the same event, the platform will find an available alarm window. If there is no available alarm window, the earliest real-time alarm video will be replaced.
 - ◇ The issue is fixed where the top tool bar covers the OSD information in the alarm video.
 - ◇ The issue is fixed where the top tool bar covers the OSD information when the pop-up window displays real-time alarm video.
- c. Map Configuration
- Google online map, Google offline map, raster map, and satellite map.
 - Submaps can be added on a map. A submap can be up to 8 levels deep.
 - The locations of MPT devices are displayed on the GIS maps in real time. Click the MPT device icon on the map to start a group talk with MPT devices.
 - Supports configuring radar-PTZ linkage parameters.
 - Displays the real-time location of devices used on vehicles.
 - Displays all alarms in a list. Click an alarm to locate the alarm source.

- Google Maps will be in the same language as the client.
 - Supports canceling operations such as selection and visible range by pressing Esc.
 - Supports double-clicking a channel to open its real-time video.
 - Tips are provided for visual area, initial angle, moving resources, selecting a single or multiple channels, adding submaps, measuring length and area, adding marks, and more.
 - For selecting channels, adding submaps, measuring length and area, and adding marks, you can perform multiple operations until you press Esc to cancel the function.
 - View the visual area of a device.
 - ◇ When using the visual area function, all cameras that support it are selected by default.
 - ◇ Double-click a camera to adjust its visual area.
 - ◇ The presentation of the visible range is optimized.
 - Optimized the presentation of measuring length and area.
 - Optimized the selection that you can move the map location when you are looking for channels to select.
 - When you click a channel and the pop-up card is not fully visible, the system automatically adjusts its location to show a full card.
 - The platform only loads the part of the map that is visible in the current page to display icons of channels faster.
 - You can hide the names of resources.
- d. Person and Vehicle information: Personnel List
- Add, edit and delete person and vehicle groups.
 - A group can only be accessed by the selected roles and their users.
 - Upload face pictures by selecting files or taking pictures.
 - Import personnel information (ID, Card, fingerprint, or IR face) from devices or files in batches.
 - Issue the card, fingerprint via USB reader or devices.
 - Issue cards in batches.
 - Card, password, fingerprint and face authentications.
 - Authorize by door group.
 - Person classification: Classify person into normal, VIP, visitor, patrol, blocklist to facilitate person management.
 - Add the person's face to the face comparison group.
 - Add the vehicle information of the person to the entrance and exit vehicle group, and configure the number of parking spaces for the person.
- e. Person and Vehicle information: Vehicle List
- Add, edit and delete person and vehicle groups.
 - Add, edit, and delete vehicles.
 - Import vehicles in batches according to templates.
 - Bind people information to vehicles.
 - Add vehicles to the entrance and exit vehicle group or the vehicle arming group.
 - Export vehicle information.
- f. Watch List: Face Watch List
- Face watch list management.
 - Add, edit and delete face comparison groups.
 - A group can only be accessed by the selected roles and their users.
 - Add face one by one, or import faces from the personnel list.
 - Send face comparison group to face recognition devices, and configure the similarity.
 - For devices connected to the platform have face recognition capability (such as IVSS), the face comparison database will be sent to the device. For devices do not have such capability (such as EVS), the face comparison database will be sent to the face recognition camera connected to the device.
 - Supports sending face comparison groups to face recognition IPC cameras connected to EVS.

- ◇ The platform separates sending and arming face comparison groups.
- ◇ If a device, such as IVSS, supports face recognition, the platform sends face comparison groups to the device.
- ◇ If a device, such as EVS, does not support recognition, the platform sends face comparison groups to the channels connected to the EVS.
- g. Watch List: Vehicle Watch List
 - Vehicle watch list management.
 - Add, edit and delete vehicle watch list.
 - Import vehicles from the vehicle list.
 - Set start time and end time for vehicle restricted list.
- h. Access Control
 - Add, edit, and delete door groups, authorize door group permissions.
 - An access permission group can only be accessed by selected roles and their users.
 - Supports configuring holiday plans.
 - Supports setting public passwords for access control devices.
 - Support holiday management.
 - Advanced door rules, such as anti-passback, first card unlock, inter-door lock, multiple card unlock, remote verification.
 - Quick authorization and view authorization progress.
 - If access control devices go offline and then online again, the platform can automatically synchronize records from them during that period at the defined time.
 - DSS Agile VDP can work as an Indoor Monitor (VTH) to provide certain VTH functions if there is no VTH.
 - ◇ Rooms can be linked to app accounts, and then you can call app users.
 - ◇ Fence station call groups can be edited to customize which devices fence stations can call.
 - ◇ Using call mode management, you can select simultaneous call or group call. In simultaneous call, you can call VTH and App at the same time. In group call, a call will be made to VTH first. If no one answers, the call will be forwarded to App.
 - ◇ QR codes for app download and registration are provided.
 - Lift control.
 - ◇ Floor status is displayed. Global lift control has 3 modes: No authentication, authentication, and lock. No authentication mode: Everyone can use lift control devices without authentication. Authentication mode: Lift control devices can only be used after authentication. Lock mode: No one can use any lift control device.
 - ◇ You can search for elevator control records.
 - ◇ You can use lift control permission groups to assign lift control permissions in batches. A group can only be accessed by the selected roles and their users.
- i. Video Intercom
 - Residence configuration: Set whether to enable Building No. and Unit No.
 - Issue VTH contact list to VTO.
 - Set VTH private password for unlocking VTO.
 - View, delete and freeze users of DSS Mobile for VDP.
 - Supports extracting person information on VTO.
- j. Attendance
 - Set access control devices as attendance stations.
 - Set attendance statistics rules.
 - Automatically synchronizes attendance records.
 - Attendance time period and holiday management.
 - Attendance shift management and arrangement.
- k. Visitor
 - Configure visitor default settings, such as auto visit, auto leave and default permissions.

- Auto visit: An appointed visitor can automatically register the visit through pass or ANPR.
- Auto leave: Support ANPR.
- Configure visitor default permissions of access control, video intercom, and entrance.
- Configures the email template for emails being sent when visitors make appointments (visitors and hosts), arrive and leave.
- Configures pass remark.
- I. Parking Lot Management
 - Manage all your parking lots easily and intuitively. Using parking space detectors or ANPR devices at entrances and exits, and parking space available displays, you can effortlessly guide vehicles to parking spaces in your parking lots in an orderly manner. With the visualization function, you can upload a plan view image of a parking lot, drag and drop your devices on it, and manage them directly on the image.
 - Alarms will be triggered when the vehicle crosses the stop line.
 - Supports using ITC indoor parking space detectors, fisheye indoor parking space detectors, and outdoor parking space detectors for parking space detection.
 - Added indoor, outdoor, and entrance-point parking space available displays to guide drivers to find empty parking spaces.
 - Supports configuring parking space detection for certain parking spaces in a parking lot.
 - Supports configuring parking space available displays for different parking lots.
 - ◇ The style of display content.
 - ◇ Source of data.
 - Supports counting parking spaces by parking space detectors.
 - Supports multiple fuzzy match rules for license plate recognition.
 - Supports excluding certain vehicles from parking space counting.
 - Supports verification before opening the barrier: Manual verification by security and verification by card swiping.
 - Supports managing reserved parking spaces.
 - Supports configuring the parameters of parking lot events, including Parking Overtime and No Entry and Exit Record.
 - Supports searching for parking records.
 - Added visualized parking lots: You can manage the devices at entrance/exit points, parking space detectors, parking spaces, parking space available displays, and monitoring devices in the parking lot layers to manage parking lots intuitively.
 - ◇ You can configure multiple layers for a parking lot.
 - ◇ You can manage the devices at entrance/exit points, parking space detectors, parking spaces, parking space available displays, and monitoring devices in the parking lot layers.
 - ◇ You can view recordings and real-time videos of the channels in layers.
 - ◇ You can quickly search for entrance records, exit records, and capture records.
 - ◇ You can quickly search for the parking records of a parking space.
 - ◇ You can view the number of available parking spaces on parking space available displays.
 - ◇ You can check whether a parking space is occupied by a vehicle.
 - ◇ You can view the plate number of the vehicle occupying a parking space. Plate number can be hidden for privacy protection.
 - ◇ You can search for resources by plate number or resource name.
 - Changed the dual-camera collaboration time from 1 s–10 s to 1 s–5 s.
 - Information displays of the latest version can connect to entrance/exit cameras through RS-485 without being connected to the platform. You can click it and quickly go to the web page of the display to make configurations.
 - Added 2 general passing rules.
 - With custom passing rules, you can configure whether to enable card swiping for opening barriers. If card swiping is disabled, you cannot open a barrier by swiping a card.

- You can send the allowlist and blocklist to specified entrance/exit points.
- Added the vehicle search function so that owners can find their vehicles through the vehicle search system.
- Real-time monitoring at the entrance/exit of parking lots.
 - ◇ The device tree on the left is canceled and changed to the pop-up mode, so that there is more space to display videos.
 - ◇ For dual-camera entrance or exit, the real-time videos of both cameras will be displayed in the same window, so that you can view more real-time videos from more entrance/exit points.
 - ◇ When you open a real-time video, the recent records of barrier not opened will be displayed.
 - ◇ When you open a real-time video, the latest record of not opening barrier is displayed.
 - ◇ A record of will only be displayed for 10 minutes.
 - ◇ If a record of barrier not opened is at an exit point, the corresponding entrance record will be displayed to show the parking duration of the vehicle.
 - ◇ Passing permissions are displayed.
 - ◇ Vehicle passing records can be displayed in a list or card. In list mode, you can view more information.
 - ◇ You can manually open barrier on the real-time video.
 - ◇ When you select opening the barrier directly, you can specify whether to count a parking space.
 - ◇ When you select opening the barrier and record the plate number, you can manually enter the plate number of the vehicle, and then the platform will capture an image of the vehicle and open the barrier.
- Parking lot configuration.
 - ◇ You can select the source of parking space data, including entrance/exit cameras and parking space detectors.
 - ◇ You can set fuzzy matching rules for matching passed vehicles with vehicles in the vehicle group.
 - ◇ You can select a general passing rule, which applies to most situations.
 - ◇ You can set custom passing rules. For example, you can specify that only registered vehicles can pass, all vehicles can pass, or whether vehicles can pass if there is no parking space. You can also set whether verification or card swiping is required to open the barrier, and specify that certain vehicles do not occupy parking spaces after passing.
 - ◇ You can send the allowlist and blocklist to specified entrance/exit points.
 - ◇ You can configure parking space detection using parking space detectors, and parking space available displays for guiding drivers to find parking spaces for any parking lot.
- Added reserved parking space.
 - ◇ You can configure a reserved parking space by binding a plate number to a parking space.
 - ◇ You can configure a reserved parking space event in event configuration. An alarm will be triggered when a reserved parking space is occupied by an unknown vehicle.
- Modified event parameters.
 - ◇ You can configure parking timeout parameters, including overtime parking threshold, detection interval, and vehicles to trigger alarms.
 - ◇ You can configure parameters related to no entry/exit records, including no entry/exit record duration and statistical time point.
 - ◇ After you configure event parameters, the parameters are used to trigger events.
- Optimized the voice talk function.
 - ◇ The real-time video of the VTO will be displayed in the same window as entrance/exit videos. You can switch the videos for on the top of the window.
 - ◇ When a call come through, records of barrier not opened are automatically displayed if there is any. If there is no such record, you can manually open the barrier.
- Optimized information search.

- ◇ You can search for records based on card swiping information.
 - ◇ Record details contain layer information.
 - ◇ Vehicle brand and color are used as separate search conditions.
 - ◇ Added parking record. You can search for parking records from indoor and outdoor parking space detectors, and the information of the vehicle currently parked in a parking space.
- m. Entrance and Exit: Vehicle Group
- Entrance and exit vehicle group management.
 - Add, edit and delete vehicle group.
 - Import vehicles from the vehicle list.
 - Get vehicle information from the personnel list.
 - There are 3 vehicle groups by default, normal, VIP and blocklist.
- n. Intelligent Analysis
- To improve services and profitability, understanding how many people are in an area at any time, where people go to the most, and when peak numbers occur with people number analytics and heat maps can provide valuable and actionable insights.
 - Supports displaying the number of people that passed by.
 - Supports turning off calibrating the number of people staying every day.
 - Supports AI heat maps.
 - Supports sending historical people flow data on a regular basis to one or more email addresses.
 - ◇ Daily report: Data from yesterday will be sent to your email at a defined time. If set to 03:00:00, the data from the day before (00:00:00–23:59:59) will be sent to your email at 03:00:00 every day.
 - ◇ Weekly report: Data from last week will be sent to your email at a defined time. If set to 03:00:00 on Wednesday, the data from Wednesday to Tuesday of each week will be sent to your email at 03:00:00 every Wednesday.
 - ◇ Monthly report: Data from last month will be sent to your email at a defined time. If set to 03:00:00 on 3rd, the data from 3rd of last month to 2nd of the current month will be sent to your email at 03:00:00 on 3rd of each month.
 - Optimized the algorithm of combining regular heat maps to ensure that heat map search and display on the platform are the same as these on devices.
 - Allow you to search for real-time data of regular heat map devices on an hourly basis. However, you can only search offline data on a daily basis.
6. Applications
- a. Monitoring Center: Live View
- With the highly customizable live view function, you can view real-time videos in any way you want. With up to 4 live view pages, you can watch real-time videos from up to 256 channels at the same time, enabling you to keep close attention to more areas. Additionally, the layout can be arranged to display different videos in different sizes, so that areas that are more important can be displayed in a more visible way. On special occasions, you can directly operate on devices, such as talking to nearby people through a camera, or unlocking the barrier of a turnstile to let people in. When something important happens, such as a robbery, the manual recording is only one click away to save that particular part of the video as evidence.
 - Supports displaying the recording status of a device connected to IVSS when you are viewing its real-time video.
 - E-PTZ target tracking in multi-window modes.
 - ◇ 2 window modes.
 - ◇ The tracking function can be disabled.
 - ◇ The camera will be tracking the target until it disappears.
 - Multi-monitor function: You can use multiple monitors where each monitor shall show multiple floating or full-screen windows for display of views or individual view items.

- View window aspect ratios: Support multiple views optimized for 4:3 and 16:9 display settings in both landscape and portrait orientations.
 - Private or Shared Views: Private views can only be access by the user who created them. Views may be shared generally and available to all roles or restricted to specific roles. Viewing of a content item in a shared view is subject to the viewer’s permissions relating to the content item.
 - View groups: View groups facilitate view navigation and simplify searching across multiple views by narrowing search scope.
 - View layout persistence: Same view layout in both live and playback modes.
 - View arrangement and restoration: Support simple drag-and-drop re-arrangement of cameras in views for optimized monitoring of incidents, including replacement of individual cameras with different cameras, with single-click restore of original view layout.
- 1) View Creation: Views that display up to 100 view items including cameras, web pages, still images, text and interactive items. View capabilities include, but are not limited to:
 - 2) Camera View Item: Live and recorded camera video displayed in resizable view windows, utilized in several workspaces within the application. Each camera view item contains the following:
 - Video Status Indicator: A round dot indicating one of four states:
 - Green: A connection to the camera is established.
 - Red: Video from the camera is being recorded.
 - Yellow: Playing back recorded video.
 - Gray: The video has not changed for more than two seconds.
 - 3) Motion indicator: An icon of a moving person that appears only when motion is detected since it was last cleared.
 - 4) Bounding-box display: Display of metadata bounding boxes as provided by supported cameras and integrated analytics in live and playback views.
 - 5) Intelligent area overlay: When viewing real-time videos or playing back videos, detection area and exclusion area can be overlaid on the window.
 - 6) Update on motion only: Optimizes CPU use by allowing motion detection to control whether the image should be decoded and displayed.
 - 7) PTZ Camera View Item: PTZ camera view item can be configured to provide virtual joystick camera control and PTZ navigation overlay buttons on the video image.
 - 8) Overlay Buttons: Used to add manually controlled speakers, events, outputs, PTZ cameras and to start/stop recording.
 - 9) Camera Navigator: User-defined views of specific sets of cameras in relation to each other, for example, according to floor plan, to enable visually tracking people and objects as they move from one camera’s field of view to another. Camera Navigator function provides an add-on to the Map with no special configuration needed.
 - 10) Carousel: Allow a specific view item to automatically sequence rotate through pre-defined set of cameras that are not necessarily present in the view at the same time. Operators may select default or custom display times for each camera, and they are able to manually switch to the next or previous camera in the carousel list.
 - 11) Hotspot: Global hotspot function shall allow users to work in detail with any camera selected from any view. Local hotspot function shall allow users to work in detail with a camera selected from the same view.
 - 12) Matrix: Shows live video from multiple cameras in any view layout with customizable rotation paths, remotely controlled by the computers sending matrix remote commands.
 - 13) Navigable Map Pages: Static or active map pages may be used to provide a good overview of premises, and for switching between different views, such as map page displaying a floor plan.
 - 14) 3rd party plug-ins: Add 3rd party plug-ins to extend the behavior of DSS Client.
 - Live Video: Views provide camera live viewing capabilities including, but not limited to:
 - 1) Live Viewing: View live video of camera view items on the Live tab.

- 2) Manual PTZ Control: Manual PTZ control options:
 - Video overlaid PTZ control.
 - Joystick.
 - Virtual joystick function.
 - PTZ point-and-click control.
 - PTZ preset positions.
 - Overlay buttons to activate PTZ preset positions.
 - PTZ zoom to a defined rectangle.
 - Start, stop, and pause patrolling.
 - View who have PTZ control and time to automatic release, including anonymous users.
- 3) Send Video to Destination: Option to send current camera to the following destinations:
- 4) View item in an existing window.
- 5) New floating window.
 - Digital Zoom: Magnification of video to facilitate detail viewing.
 - Bookmarks: Create quick or detailed bookmarks, to facilitate incident review and documentation.
- 6) System generated headline for quick bookmark.
- 7) Optional headline and description information for detailed bookmark.
 - Independent Video Playback:
- 8) Playback of video in multiple camera view items, each on its own independent timeline.
- 9) Option to initiate playback mode and synchronizing playback timeline with current time in independent playback.
 - Instant Change of Camera: Drag-and-drop placement of a different camera in a camera view item, instantly changes the content to video from the new camera, according to the camera view item's current timeline position.
 - Centralized Search: Initiate Centralized Search for the camera in a new window.
 - Manual Recording: Start and stop manual recording with automatic stop of recording after a configurable number of minutes.
- Timeline: An overview of recorded sequences and bookmarks via integrated video timeline with time navigation and playback controls, including the following functionality:
 - 1) Timeline Video Playback: Video from multiple camera view items integrated to a common video timeline, with common timeline control from any of the integrated camera view item.
 - 2) Single and Consolidated Timeline: Two timelines with the first showing overview of selected camera view item and second showing a consolidated overview of all camera view items in the view.
 - 3) Timeline Period: Select which period timeline covers.
 - 5, 10, 20 minutes.
 - 1, 2, 4, 8, 12, 16, 20 hours.
 - 1, 2, 4 days.
 - 1, 2, 4 weeks.
 - 4) Recorded Sequences Overview: Recorded sequences of video and audio are shown in the timeline. The timeline displaying light-red to indicate recording, red for motion, light-green for incoming audio, and green for outgoing audio. If there are additional sources of data available, these are displayed as other colors.
 - 5) Bookmarks Overview: Bookmarks are shown in the timeline with instant preview of the recorded video.
 - 6) Integrated Time Interval Selection: Integrated function to select a time interval for export or video and audio retrieval from edge storage devices.
 - Visual selection on timeline.
 - Select start and end date/time.
 - Loop selected period on playback.

- 7) Multi-Window Timeline: Ability to use one timeline to control playback of cameras in multiple view windows.
- 8) Recording Search: Search listing of camera sequences or bookmarks.
Preview: Search results may be previewed.
Print: Print of still image from the selected video clip may be initiated.
Export: Export of selected video clips may be initiated, reducing time needed to prepare forensic video material.
- Two-Way Audio: Audio from cameras with built-in or attached microphones can be configured for listening. Camera built-in or attached speakers can be configured for use to talk to individuals near speakers. Additional capabilities include:
 - 1) Broadcast: Broad announcements can be made by selecting the All Speakers option when talking.
 - 2) Lock to Selected Audio Devices: Enables continued use of microphones and speakers from selected cameras, while viewing video from a different set of cameras. This enables, for example, informing an individual at risk about the safety status of nearby areas.
 - 3) Level Meter: Level meter indicates the volume of the speaking operator's voice, to indicate whether the operator is at a correct distance from the microphone.
- Centralized Search: Shall enable users to apply search categories and filters to find recording sequences, recordings with motion and bookmarks. From the search results, users shall be able to preview video and perform various actions, e.g. by exporting the search results or sending the search results to PDF. The search results shall be presented instantly as thumbnail images:
 - 1) Sequence Search: Search in recording sequences on one or more cameras.
 - 2) Motion Search: Search for sequences with motion, or Smart Search for motion in selected areas on one or more cameras.
 - 3) Bookmark Search: Search for bookmark headlines or descriptions.
 - 4) Navigation: Ability to jump to search results through a clickable timeline, or the ability to scroll through the search results.
 - 5) Preview: Selected sequence previews with auto play and direct export support.
- Video Export and Documentation: Smart options for video export and documentation include, but are not limited to:
 - 1) Snapshot: Produce instant visual documentation of a camera by saving the camera image to a file.
 - 2) Print: Produce instant visual documentation of a camera by sending it directly to a printer.
 - 3) Storyboarding: The storyboarding function makes it possible to include video sequences from different or overlapping time intervals from different cameras in the one and the same export.
 - 4) Export Preview: Review video just prior to export, with looped playback option.
 - 5) Export Other Formats: Create evidence material in media player format (AVI files), MKV format, or still image format (JPEG images).
 - 6) Bulk Export: In a single step, export in multiple formats to multiple destinations, including direct export to optical media, to ensure consistency across exported video sequences in various formats, and reduce human error possibilities.
 - 7) Export of Comments: Two video formats support inclusion of comments in exported video.
 - 8) Video Incident Report Printing: Utilize still images rather than clips to print incident reports including images, surveillance details and free-text user comments.
- b. Monitoring Center: Playback
 - The playback function allows you to play back videos stored on the server or devices in the layout that you have tailored to your needs. To help you efficiently wade through tons of videos, you can play them 64X faster to skip the part you are not interested in, and focus on the important content by slowing down to 1/64X minimum. Besides, you can also add tags to mark any important content for later review, and lock it to prevent it from being overwritten when the disk space is full. The filter function can also be very helpful when you only need to deal with a specific type of videos, or a type of target that appear in one or more areas.

- Supports acquiring playback streams directly from devices.
- Supports acquiring real-time video streams and playback streams directly from devices added through P2P.
- c. Monitoring Center: Video Wall
 - Video wall is used to display videos on a large screen that consists of many smaller screens. The layout of the video wall is also highly customizable so that you can display real-time videos or recorded ones on it and be able to magnify every little detail. With the task function, you can display videos from different channels on the video wall at the specified time or in a loop.
 - Optimized the display modes.
 - ◇ Image and video modes are supported.
 - ◇ In video mode, you can open the real-time videos of all the channels bound to the video wall at the same time.
- d. Monitoring Center: Map
 - The map is a very useful function that allows you to keep track of anything with its location information. For example, you can mark a device on the map and be able to immediately know its location when it triggers an alarm and flashes red on the map, or add a submap of an area to the map, such as a plan view of a public square, to know where exactly a person is in the public square.
 - Support satellite map.
 - In radar-PTZ linkage, the detection area configured on the radar will be displayed on the map. After radar alarms are triggered, you can view real-time videos from the linked PTZ cameras.
- e. Monitoring Center: Group Talk
 - Real-time locations of MPT devices will be shown on the map for administrators to know immediately the resources that can be sent to address an issue, such as a break-in alarm triggered in a building. Administrators can start a group talk and engage in real-time conversations with the people to be assigned the task, and guide them through the process efficiently.
- f. Event Center
 - Real-time and history event information.
 - Event display: Displays alarm schemes; event statistics by day, week and month; event information statistics, which include total events, processing and processed.
 - Alarm details: Live video, record and pictures from related camera, event source location on the map.
 - Event processing: Acknowledge the event, forward the event to relevant user, fill out the handling comments, and manually send event email to relevant person.
 - Arming control for event source.
 - Search event by event source, event time, status, handle user, priority.
 - Export the event list.
 - Refresh alarms as scheduled.
 - Count events according to priorities: High, Medium and Low.
 - Event trend report.
 - Analyze event resources and types of the top occurrence frequency.
 - Alarm controller.
 - ◇ Arming for the device, sub systems and partitions; force arming if arming failed; disarming for the device and system.
 - ◇ Enable or disable temporary or eternal bypass functions.
 - Unified the time format of exported cases.
- g. DeepXplore
 - Powered by AI technologies, you can easily search for targets and records, and generate tracks to locate their whereabouts with simple search conditions. For key information, you can organize them into a case and generate a report for your later review.

- h. Maintenance Center
 - You can see the status of channels, devices, server, and the information of faults all in one page, such as a channel is offline or a server has stopped working. Based on this information, scheduled reports can be sent to give you a whole picture of how your system is running. Additionally, you can update the devices on DSS Professional in batches when new versions are available to make sure that you can enjoy the latest functions and stability features.
- i. Access Management: Access Control
 - The integrated access control system gives you the ability to manage access through various types of access control devices added to DSS Professional, while keeping a complete access record for your later exam.
 - Support functions related to the VTH (indoor monitor) by using DSS Agile VDP Mobile Client even when VTH is not used.
 - Event linkage recording on the access control console: Only displays the recorded video of the channel linked to the access control channel.
 - Event linkage image on the access control console: Displays the snapshots reported by access control devices and captured through events.
- j. Access Management: Video Intercom
 - All video intercom devices can be managed based on different in one single interface. With two-way communication and remote access control, you have the ability to secure access to your premises. Also, residents will be able to call and report emergencies quickly, allowing you to take immediate actions. To make building management easier, messages that a lot of people should know, such as the electricity will be out for a few hours for maintenance purposes, can be sent to their indoor monitors with only a few steps.
- k. Access Management: Lift Control
 - As the most used way of traveling throughout a building with a lot of floors, it is essential to guarantee the safety of residents from strangers, or unwanted guests from accessing sensitive areas. With DSS Professional, you will have the ability to give necessary access to a person to go to certain floors. Each authentication to use the lift will be logged for your later review when needed.
- l. Access Management: Attendance
 - DSS Professional is your one-stop solution to keep track of your employees' working hours and manage absence and leave. Detailed reports can be generated for appraisal of employees and calculation of wages.
- m. Access Management: Visitor
 - DSS Professional offers a complete process to manage visitors, including appointment, registration, access permission authorization, and ending visit with all permissions canceled. A complete, detailed record of all visits is available for your review at any time.
- n. Parking Lot Management
 - The current user can view data of parking lots that it has access to on the statistics dashboard.
 - View real-time license plate recognition in split mode or full screen.
 - Open the barriers via VTO with cards or remotely.
 - Support check detail vehicle information.
 - Supports searching for entrance records, exit records, forced exit records, on-site vehicles, snapshot records and ANPR details.
 - Force existing vehicles to leave.
 - Search and export the vehicle records.
- o. Intelligent Analysis
 - View the real-time number of people in the group and the number of people allowed to enter.
 - Search for history people flow statistics of cameras and people counting groups by day, month, week and year and export reports.
 - Generates and exports thermal maps.

- Analyzes the number of people staying in the region and exports the report.
7. Management
- a. Download Center
 - Download record from central storage or device, supports avi, dav, mp4, asf.
 - Download record by timeline, files or tags.
 - Supports multi-task download.
 - Restore face images from face privacy mask.
 - b. Local Picture
 - Open local picture folder.
 - c. Local Recording
 - Open local video folder.
 - Play local or downloaded videos.
 - d. Local Settings
 - General: Configure the window size of the client, synchronize the time of the client with the server, auto startup and login in after restart, set CPU threshold, client auto lock and encrypted transmission of audios and videos.
 - Video: Customizable split screens, select display mode of video window, stream switching rules, the way to obtain real-time stream, play mode and decoding mode. Select video stream type of instant playback and the interval and number of snapshots.
 - Select default stream type, stream switching type, video play duration and the way of video on wall.
 - Configure default or custom alarm tone, and the way to open alarm-related videos and alarm flashing on the map.
 - Video and image storage configurations for file storage.
 - Select PC keyboard or joystick USB keyboard with shortcut keys.
 - e. Log
 - Operator, device, system, and service logs.
 - Search and export log.
 - Download logs are generated by file, with each including detailed device name, IP address, channel name, channel number, start and time of the video, and file name.
 - Live view logs include detailed device name, IP address, channel name, channel number, and start and end time of live view.
 - f. Help
 - Open user's manual quickly
8. Others
- The client supports Windows 11.
 - The SOSO service supports distributed deployment. Device information on sub servers can be obtained.
 - Added SIRA.
 - All services now support 64-bit operating systems to utilize more hardware resources such as CPU and RAM.
 - The maximum size of the logs of a single service is now 200 MB. This prevents logs from occupying too much storage.
 - Optimized the presentation when too many buttons are in the top menu.
 - Optimized how daylight saving time (DST) is processed. This mainly affects searching for recorded videos and time synchronization.
 - Added verification process to APIs that the system will check whether a user have permission when operating a menu.

2.11 DSS Agile Mobile Client

- A. DSS Agile Mobile Client is an App on a smart phone (Apple iOS or Android) for security operators to access the platform remotely via LAN, WAN or Internet. It shall provide multiple operating functionalities, including real-time live view, PTZ control, video playback and alarm notification.
- B. On initial log in, users must input the DSS server IP and Port number in the server address box.
- C. Users shall be able to log in with HTTPS transfer protocol.
- D. DSS Agile Mobile Client shall have the following modules and functions:
 1. History Record
 - Show recently viewed channels; you can open live video or playback via history records.
 - Display up to 20 latest history records.
 2. Live View
 - Even when you are away from your computer, you can also ensure the safety of your area right on DSS Agile. You can watch the real-time videos remotely from up to 16 channels at the same time with 3 stream types for you to choose according to the status of your mobile network. PTZ control is also supported so that you can cover most of the area. When anything of interest happens, you can take snapshots or recordings as evidence that stores on your phone, or send a voice message to deter unwanted activities.
 3. Playback
 - Videos stored on devices or the server can both be played up to 8X faster or 1/8X slower on DSS Agile. You can also use the manual recording function to record important content and save it to your phone.
 - Views provide additional camera playback capabilities including, but not limited to:
 - 1) Playback: Time synchronized play back video of camera view items on the Playback tab.
 - 2) Navigation: Advanced video navigation includes:
 - Forward and backwards playback at different speeds:
Playback Speeds: ¼x, ½x, 1x, 2x, 4x, 8x, 16x.
 - Instant Real-time Speed: Toggle 1x playback speed or selected playback speed.
 - 3) Forward and backwards frame-by-frame.
 - 4) Skip to next or previous recorded sequence.
 - 5) Skip to beginning or end of recordings.
 - 6) Jump to date/time.
 4. Face Recognition
 - Support searching the face database or snapshot records for target faces by uploading a face picture.
 - Support face database management.
 - Face library search.
 - Snapshot library search.
 - Face library management.
 - Face statistics.
 5. Video Metadata
 - Search for targets classified by people, vehicle and non-motor vehicle.
 - a. Alarm Center
 - Alarm subscription.
 - Offline notification push.
 - Search for alarm messages by category.
 - Claim and handle alarm messages.
 - History alarm message search.
 6. Map
 - Support GIS map and raster map.
 - Display the video channel on the map.

- View live and recorded videos by clicking device icon on the map.
- 7. Access Control
 - With DSS Agile, you can remotely monitor and operate all access control devices. For example, you can open a door for someone who has a proven identity, or set a door to be always closed so that no one can access.
- 8. Video Intercom
 - You can receive and process various types of alarms. You can also receive alarms when DSS Agile is not running with a subscription button.
- 9. Favorite
 - Quickly view video of channel added to the favorite.
- 10. File Management
 - Snapshots and videos stored on devices or the server can be managed as you need, such as deleting them or exporting them to your album.
- 11. Target Tracking
 - For suspicious activities, you can locate targets directly in DSS Agile by searching for face recognition records from a period, uploading a face image of a specific target, or searching for capture records of people, non-motor vehicles, and motor vehicles by features.
- 12. Others
 - Supports controlling alarm output channels.
 - Supports adding faces and licenses to person groups and vehicle groups.
 - Support soft trigger.
 - Supports Russian.
 - Supports clipping recorded videos.
 - Updated the UI and interaction of the preview and playback screen.
 - Supports searching for recorded videos by category.

2.12 DSS Agile VDP Mobile Client

- A. DSS Agile VDP Mobile Client shall have the following modules and functions:
1. Resource Monitoring
 - Supports viewing real-time videos of linked IPC channels.
 2. Visitor Management
 - You can easily manage visitors by registering their information and generating visitor passes with necessary access permissions. When they arrive, they can use the passes to gain access to where you are. DSS Agile VDP will log when visitors begin and end their visits.
 3. Intercom Monitoring
 - When guests arrive, they can call you on the door station or you can verify their identities through the live video. After confirming they are who you are expecting, you can remotely open the door for them directly on DSS Agile VDP. If you spot any unwanted activities, tap and call the management center to report an emergency.
 - DSS Agile VDP supports arming VTH remotely.
 4. Message Center
 - The unlock records and alarm messages on the indoor monitor are fully accessible on DSS Agile VDP, allowing you to identify potential threats and ensure the safety of your residence.

2.13 Keyboard

- A. Supports connecting NKB 1000 to client PC via USB. Functions are as follows:
1. Window Control
 - Open/exit full-screen display via the FN key.
 - Set the number of screen and window splits.
 - Select a window on the screen to output video.

- Support switching video input sources.
 - Support switching stream types.
2. PTZ Control
 - Control the eight directions of PTZ camera via joy stick.
 - Set PTZ step length via the number keys.
 - Perform adjustment of aperture, focus, and zoom with buttons.
 - Call PTZ presets via numbers plus buttons.
 - Use buttons for horizontal rotation, scanning, tour, tracking, and menu operation.
 3. Video Wall Control
 - Select TV walls and plans.
 - Set the number of screen splits and clear the screen.
 - Set the number of window splits and clear windows.
 - Select a window on the screen to output video.
 - Support switching windows.
 - Support switching video input sources.
 - Support switching stream types.
 - Support stopping playing video on the wall.
 - Support shortcut operation; shortcut information can be viewed on the client.
- B.** NKB5000 can log in to DSS Professional after entering DSS Professional IP address and port number in itself. The following functions can be achieved
1. Live View
 - Support outputting live videos via VGA and HDMI interfaces.
 - Support screen switching by double-clicking or dragging.
 - Support screen splits, including 1, 4, 9, 16 splits.
 - Support maximizing, multi-selecting, and clearing windows.
 2. PTZ Control
 - The live view supports performing rotating and zooming at the same time.
 - The live view supports PTZ zoom, focusing, aperture, light, and wiper.
 - The live view supports presets, PTZ tour (settings not supported), scanning, and pattern.
 3. Video Wall
 - Support acquiring and switching video wall tasks.
 - Support acquiring and switching video wall layouts.
 - Create, modify, and save tasks.
 - Support for platform TV wall segmentation, including 1, 4, 9, 16, M-N segmentation.
 - Support window maximization, stream type switching, and clearing window.
 - Support using the small keyboard for video switching (number+ Mon, Mult, Win, Cam, Previous, Next), and PTZ operation (Preset, Scan, Tour, Pattern, Pan, PTZ).
 - Support using virtual keyboard for video switching (d number+ Mon, Mult, Win, Cam, previous, next).

2.14 Licensing

A. License Activation

1. VMS shall offer easy-to-use automatic or manual online activation via the Internet and alternatively, offline activation via email and web for closed surveillance networks.

B. License Administration: Provide license information presenting the license use.

END OF SECTION

Part 3 Execution

3.1 Examination

A. Verification of Conditions

1. Inspect the site and confirm that the conditions on the site are in accordance with the project design. Sort out all the conditions and subsequent operations that will affect the installation. Do not take any corrective action without the written permission from the owner.
2. General
 - a. Verify whether existing site conditions are suitable for product installation according to the manufacturer's instructions.
 - b. Verify wire lines and make sure that related conditions are ready.
3. Cable and Wiring
 - a. Check whether the channels used for the cable meets the requirements.
 - b. Check whether wiring channel, cable tray and other components meet the space allocation requirements; check the installation tolerances, cable installation dangers, and other conditions that may affect the installation.
4. LAN/WAN
 - a. Verify the LAN connection between DSS Server and DSS PC Client.
 - b. Provide a fixed public IP address for accessing the DSS service from the public network via port mapping.
5. Power Connections
 - a. According to the manufacturer's instructions, verify whether the installation circuit meets the requirements.

3.2 Preparation

- #### A. Discuss with the owner about the required functions and configuration items.
1. Determine the network deployment and whether public network access is required.
 2. Username and password for servers and workstations for easy installation and commissioning.
 3. The default password set for the software at the beginning of debugging.

3.3 Installation

- A.** Devices shall be installed in accordance with the manufacturers' instructions provided, as well as instructions based off any indicated floor design specifications.
- B.** Location of installation shall provide reasonable conditions for optimum device functionality. Temperature and humidity level conditions shall be taken into consideration.
- C.** All installations shall be performed with qualified service professionals only.
- D.** All devices shall be installed in accordance with the National Electric Code or applicable local codes.
- E.** Ensure location of installation provides a minimum possibility of accidental damage.

3.4 Site Quality Control

- A. Proper testing of all video systems according to the standard operating requirements.
- B. Define, conclude, and report all issues with equipment to the manufacturers' customer service representatives.

3.5 Adjusting

- A. Execute the necessary modifications to the Video Management System for proper operation in accordance with the instructions provided by the manufacturer.
- B. Ensure the customers unique requirements are reflected in the camera settings.

3.6 Demonstration

- A. Upon final inspection, validate the video solutions system and its device functions correctly.

END OF SECTION

ENABLING A SAFER SOCIETY AND SMARTER LIVING

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