VZ-PRO-IPST Series Bid Document

1 General Performance

1.1 System Management

1. The system shall Support B / S (Browser Server) architecture operation and maintenance management, provide C / S (Client Server) architecture user interface.
2. The system configuration shall be able to done via the web browser, and shall provide a variety of web management tools.
3. The system shall support web interface batch processing the codecs shutdown, restart and codec network interface configuration.
4. The system shall support web browser online monitoring equipment status.
5. The system shall support user account hierarchical management, and support multiple users online management operation simultaneously.
6. The system shall be hot-spared, supporting a main server, and multiple backup server. Once the main server crushes down, then the backup server will switch as main server automatically without interrupting the running of the system. The switching time shall be less than 1 second. (The copy of the test report issued by the 3rd party shall be provided with stamp.)

1.2 Audiovisual Signal Access

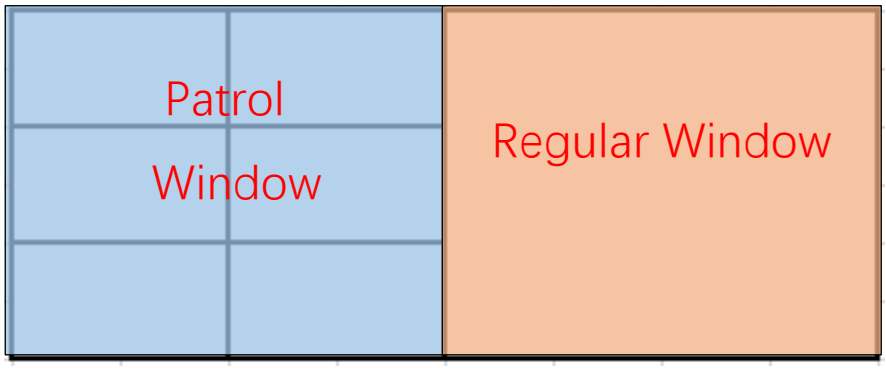
1. In order to provide a highly efficient decision-making information, the system shall access the audiovisual signal from all kinds of media and provide a comprehensive audiovisual information.
2. The system shall enable distributing audiovisual signal to subordinate department via IP, to create a collaborative decision-making environment among multiple departments. It shall support no less than 3 layers hierarchy.
3. The system shall be able to recall the audiovisual signals from the subordinate departments via IP without permission, to gather all needed audiovisual information freely for decision-making. It shall support no less than 3 layers hierarchy.
4. The system shall support accessing the audiovisual signals of PC cameras or other local audiovisual sources via encoders.
5. The system shall support accessing the signals directly from IP cameras.
6. The system shall support accessing the audiovisual signal from video

conference via both encoders and digital access.

7. The system shall support accessing the audiovisual signal from surveillance system via both encoders and digital access.

1.3 Video surveillance system digital access

1. In order to access thousands of audiovisual signals from surveillance IP cameras, and publish all the IP camera signals on the display, the system shall be able to access the stream directly.
2. The system shall connect with the surveillance system platform via IP connection, it shall support digital access the platforms of other surveillance brands which adopts standard ONVIF protocol.
3. The system shall support digital accessing multiple platforms of the brands mentioned above, to enable the user to unified manage the surveillance system of multiple brands.
4. The system shall exact both the camera signals and the directory tree from the surveillance system.
5. The directory tree extracted shall be updated automatically, the period shall be customized accordingly.
6. The system shall support fuzzy searching the signal extracted.
7. The system shall support extracted signals patrol on the videowall, to display all surveillance system cameras sequentially, the patrol method shall support customized.
8. The system shall designate the patrol layout, the display shall be able to be divided into several windows, part of the windows are for the video surveillance signal patrol, the other parts are for the regular signal. The control of the regular window shall not affect the patrol window.



1.4 Unified Management of the CCTV & Video Conference

1. In case that there are several brands of CCTV, or video conference in the existing system, due to the protocol, the products from different brand

cannot be interconnected which results great inconvenience for the end use. In order to solve this issue, the system should digitally converge the signal from CCTV or Video conference of different brands. (for CCTV all brands shall adopt ONVIF, for video conference shall adopt SIP & H.323.)

1.5 Video Conference System IP Stream Digital Access

1. In order to access the multiple channel signals from video conference system with the minimum image loss, the system should be digital access to the signals from video conference, not from the video conference terminal HDMI port and re-encoding, but directly from IP connection to the video conference MCU.
2. In order to manage the video conference system of various brands, the system shall be compatible with the leading brands such as Cisco, Polycom, etc.

1.6 KVM

1. In order to get all the control PC under unified management and contained in the cabinet room to insure the data security, the system should support KVM features, enable the stall to access the PC cabinet remotely.
2. The system shall support one set of Keyboard, mouse to control multiple PC.
3. The system shall support the mouse to move across the screen.
4. The system shall support zooming in or out the control PC interface.
5. The system shall support account authorization management. The PC can be managed under no less than 4 modes: View only, Collaboration, Takeover, Monopolization.
6. The system shall be publish onto the display with layout selection, enabling to publish the PC interface to the designated area on the video wall.
7. The system shall support auto lock features, when the KVM is vacant for a period, the interface is lock down.
8. The system shall support OSD menu, support hotkey customization.
9. The latency shall be no more than 20ms.

1.7 KVM over Control Panel

1. In order to control the PC more freely, the system shall support the control the PC via the control panel (like an iPad).
2. The system shall support to launch the Apps, editing, replicating, pasting, flipping, etc. via the preview of the PC signal on the control panel.

1.8 System Cascading

1. In order to cascading several control centers into a big one, the system shall support cascading via private network.
2. The system shall support at least 5 hierarchy system cascading, to combine into a mega system.
3. The system shall support all the video signals from all hierarchy system to be previewed on any control panel in the cascaded system, the video signals shall be categorized as a directory tree and updated dynamically.
4. The higher hierarchy system shall be able to not only publish the video signal to the lower hierarchy system, but also to recall and shot any audiovisual signal of the lower hierarchy system without permission on to the local screen.
5. The same hierarchy system shall be able to share video signals freely.
6. The higher hierarchy system shall be able to publish some video signal to all or part of the lower hierarchy system.
7. The system shall support cascading bandwidth management, once the recalled video from the lower hierarchy system exceeds the cascading bandwidth, the recalled video quality shall be lowered, without lowering hierarchy system high definition display and still getting a fluent video without exceeding the bandwidth limit.

1.9 Control

1. The system shall support smart control of the power on/off, signal switching, volume control, light control, curtain control and so on.
2. The system shall support scene control, support multiple scene preset, and recall.
3. In order to lower the chance of operation mistakes, the system shall support visual control, the audiovisual signals shall be previewed on the control panel, no less than 20 channel previews shall be supported. And the video signal switching shall be done via “dragging and dropping” way.
4. The system shall support control feedback, enabling the control via an interactive way.
5. The video signal can be zoom in/out on the layout via pinching.
6. The control media shall support iPad, Windows touch panel, PC and son on.
7. The control account shall support user name and passcode.
8. The new control media shall be accessed without uploading program

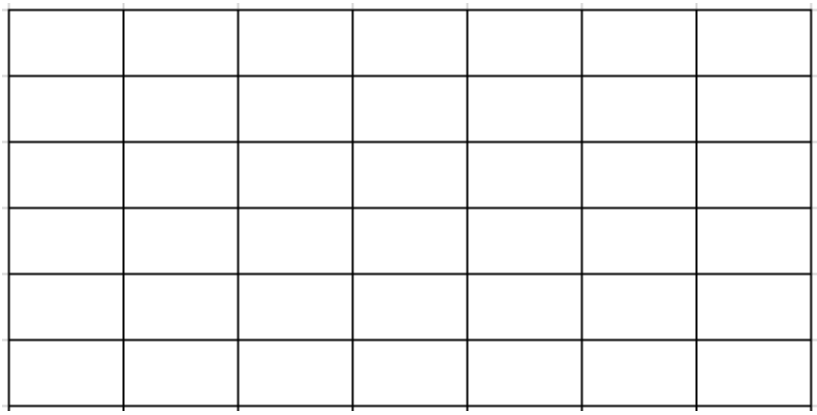
1.10 Multi-View

1.10.1 Built-in Multi-Viewer

1. The system shall support video wall multi-view feature. It shall support to control videowall without extra video wall controller required.
2. The system shall support control multiple videowalls in the same system, the videowall numbers shall be no less than 40.
3. The system shall support no less than 250 screen unit slicing, each screen unit shall support being divided into no less than 16 small windows.
4. The system shall support customized resolution (such as 1920x720, 640x90).

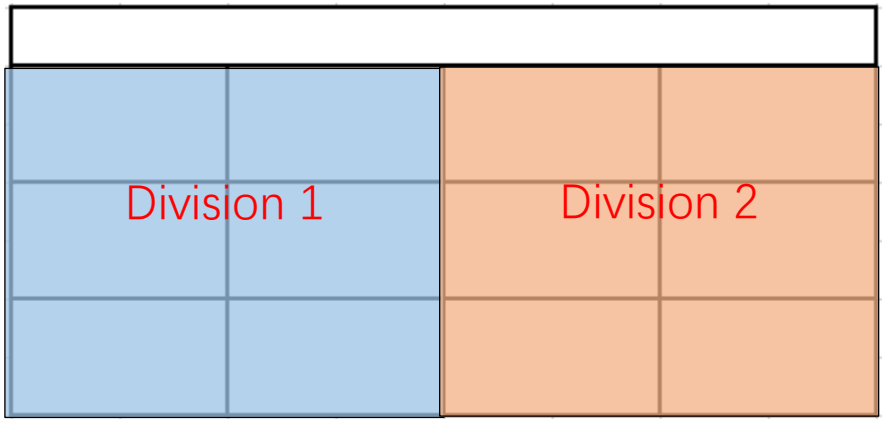
1.10.2 Window split or slicing

2. The whole display shall support to be divided into several small windows. Each screen unit shall support to be divided into no less than 16 small windows and each window shall be able to display individual video source.
3. The system shall support slicing video to display on the whole video wall, and support video zooming in and out between screen units.
4. The system shall support controlling the video via dragging and dropping, the video preview shall be display in real time on the control panel.



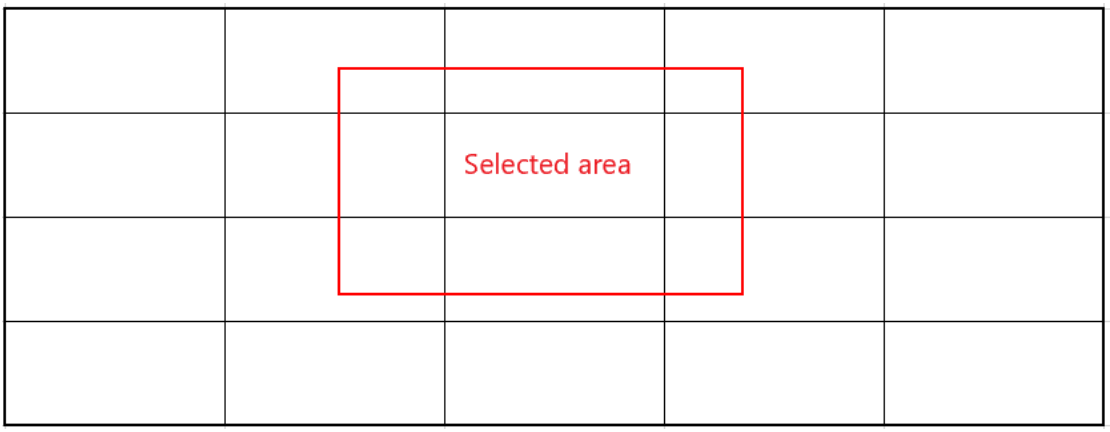
1.10.3 Screen layout designation

2. The screen can be divided into several divisions, each division can be designate a set of video sources and be authorized to control the video only within his own division and not interfering other divisions.

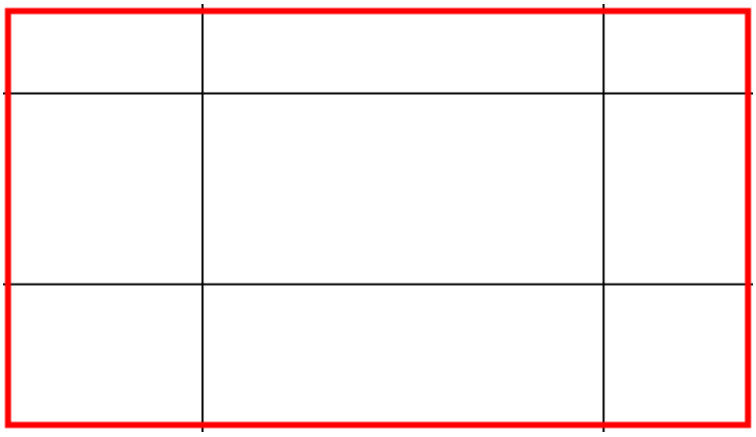


1.10.4 Magnify the selected image

2. The real time video of the video wall shall be previewed on the layout on the control panel, and shall support selecting an area on the control panel layout and then fullscreen displaying, in order to observe more details of the selected area.



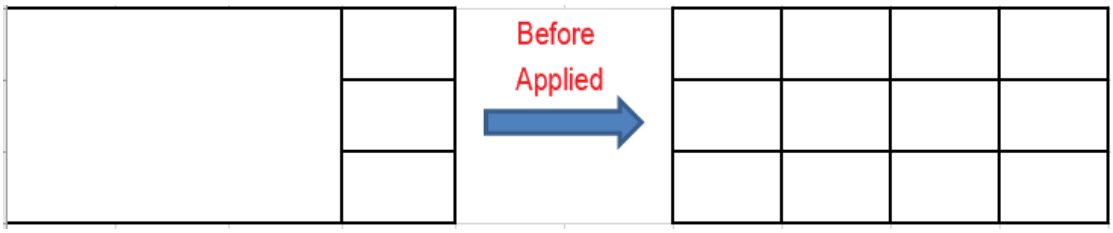
Select an area needing magnifying



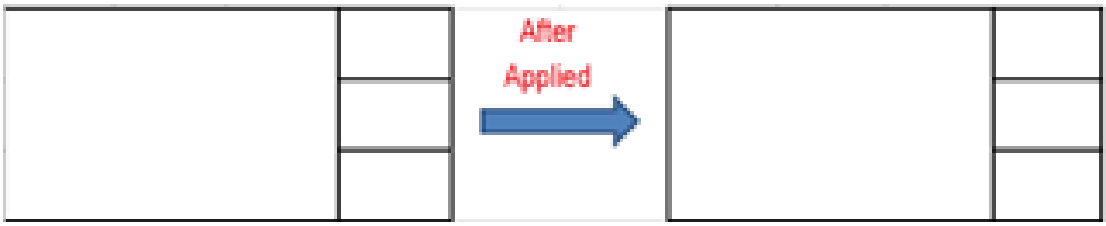
Fullscreen the selected area

1.10.5 The Layout Pre-edit

2. The system shall support both real time layout control and layout pre-edit. In the real time layout control, the control panel layout shall be synced with the screen in real time. In the layout pre-edit mode, the video sources shall be able to be edited on the control panel layout, such as the location on video wall, video zooming in or out, etc., The operation shall not interfere the video displaying on the screens. After the pre-edition is done, then the pre-edited layout can be applied by one key clicking. The screen will display exactly the same content as pre-edited.



Pre-edit layout The Screen



Pre-edit layout The Screen

1.10.6 Video wall replication

2. In order to display the same layout and contents of one video wall on another video wall, the system shall support the video wall layout and content replication, the two video wall configuration shall be the same.

1.10.7 4K Video (Option)

2. The system shall support 4K encoding.
3. The system shall support 4K and 1080P compatibility, in case that the system needs to be updated into a 4K system after a 1080P system is built.

1.10.8 IP based

2. The system shall be IP based, using the existing IP network. It shall support transmitting no less than 80 channel 1080P video stream over single cat.6 network cable.
3. The system shall support both central control & distributive control. The central control shall be authorized to control all equipment in the network, including video dispatching, light control, curtain, and so on. The distributive control shall be authorized to control the local video resources, and equipment.
4. The control feedback shall be synced on all control panel in real time.

1.11 The PTZ Camera Image and Control Binding

1. Among the video previews, when the PTZ camera preview is selected, the interface of the PTZ control shall appear on the control panel simultaneously, which enable the user to control each PTZ camera quickly and easily via click the PTZ camera preview.

1.12 Stream Audio Switch

1. The system shall support route the audio of the video stream to the sound reinforcement system via click a switch on the preview on the control panel.

1.13 Scene Management

1. The system support scene preset and recall. The video signal distribution route, audio meter level, camera position, light etc. all these configuration can be stored as a scene, and once the preset is recalled, the configuration will be applied, which enable the client control the system quickly and easily.

1.14 Audio System Digital Access

1. The system support controlling the digital audio processor via IP, which enable the audio to be synced along with the distributive system, and the audio level, mute, and other features shall be managed via the control panel of the MIDIS system.

1.15 Recording

1. The system shall include a recording platform, the platform shall record any of the encoders of the system. the recording layout shall be customized and the signal source can be composed accordingly. The recording source can be replaced via the control panel in a “drag and drop” way.
2. The system shall support VOD and playing the video according to the room layout.

1.16 API availability

1. The system shall provide open API, supporting the 3rd party devices access and integration without recall SDK.

2 The technical requirements

The tender shall provide a complete response to each of the requirements

2.1 The Central Service Platform Server

1. The server shall adopt industrial-grade system architecture, stable and safe;
2. The server shall support the backup mechanism, no less than 5 hot backup servers, and support multi-user management;
3. The server shall support no less than 1000 channels of signal access capabilities, which can support expansion;
4. The system shall support the digital access of the surveillance platforms of leading brands in the market,
5. The server shall support to digital access of the video conference MCU, to achieve unified management of multiple code streams and on-screen services;
6. The server shall support cascading, lower and higher level signal sharing;
7. The server shall provide an open API interface;
8. The system shall support for DANTE, AAC, G.711, H.264, H.265, ONVIF, RTSP, GB / T28181, H.323 / SIP, TCP / UDP, RS-232 / 422/485, IR protocols;
9. The server shall support visual control, audio and video signals real-time feedback, input signals can be previewed, and output signals can be displayed on the layout on the control panel;
10. The server shall support B / S, C / S dual architecture, built-in web management tools, flexible configuration through web port,
11. The server shall support batch management of the codecs, switching on and off control, and configuration information checking by the web interface;
12. The server shall support web interface to monitor equipment status online;
13. The server shall support user permission setting, support multiple user’s online management at the same time, support multiple terminal login with the same permission;
14. The server shall support online batch upgrade and maintenance of all encoders and decoders;
15. The server shall support one-click saving and loading of system configuration information;

16. The server shall support exporting of login log, debug log, operation log, and alarm log;
17. The server's hardware configuration shall match: the processor is not less than quad-core, the performance is equal to or higher than Intel Xeon E5-2600 series, the memory is not less than 8GB, the hard disk capacity is not less than 1TB, the standard RJ45 interface x2, dual power supply redundant backup;

2.2 The Central Service Platform Server Software

2.2.1 Basic function requirement:

1. The software shall support the selected video signal patrol in designated area;
2. The software shall support automatic detection and discovery of the new added devices; (Shall provide a copy of the software test report of the CNAS accredited institution with the official seal)
3. The server shall support multiple hierarchy permission setting function;
4. The system shall be upgraded online, and the signal will not be disconnected and the screen will not be black during the upgrading process to ensure the normal operation of the system;
5. The software shall support customizable user management interface layout and content, customized design;
6. The software shall support built-in equipment library, such as camera, DVD, matrix, projector, etc., can be recalled directly;
7. The software shall support multiple scene scenarios setting and recalling, scene contents include signal route, audio mode, light dimming, multi-function linkage, etc.

2.2.2 The control software requirements:

1. The software shall support visual interface management, no less than 20 real-time dynamic image previews;
2. The software shall support pushing the video signal source to each display terminal by dragging and dropping;
3. The software shall support multi-touch mode to zoom the signal;
4. The software shall support previewing and the previewing resolution shall support up to 1080P.
5. The software shall support real-time feedback of audio level, real-time preview and display of video signals on the layout of the control panel.
6. The software shall support the adjustment of the volume of any encoders and decoders;

7. The software shall support infrared control for controlling DVD / set-top box and other equipment;
8. The software shall support the control of third-party equipment such as lights and air conditioners;
9. The software shall support PTZ control of IPC or analog camera;
10. The software shall support multiple account management, and multiple UIs in the same account shall be supported.
11. The software shall support the control Interface refresh: the control panel app shall be able to get the latest control interface and date from the server without any uploading procedures.
12. The software shall support multiple users to log in at the same time and access the control interface designated to the accounts;
13. The preview of the screen layout shall be synced automatically on every control panel.
14. The control App shall support automatic password saving and login

2.2.3 Hot-Spare Function Requirements:

1. The hot-spare shall support no less than 5 hot spares, switching time shall less than 1 second, original audio and video control services will not be interrupted during the switching process.
2. After the main server goes offline, it will automatically switch to the backup server to automatically back up the user's topology information and system configuration.
3. The User data, working status shall stay as the same before and after the switch;

2.2.4 Remote KVM Function Requirements:

1. The KVM shall supports access of no less than 500 computers.
2. The KVM shall support group function. Each group shall support no less than 16 displays at the same time. The mouse shall support move cross-screen, roaming mouse operation, and support zoom in and out among multiple screens in the same group.
3. The KVM shall support authorization management; support automatic lock KVM agents when idle;
4. The KVM shall support shortcut key to hide / show OSD menu;
5. The KVM shall support shortcut keys to select and control different computers;
6. The KVM shall support pushing any video source of the computers desktops to the local or remote splicing large screen, full screen display or designated area shall be supported.
7. The KVM shall support soft KVM control function: control the computer

remotely through the system control panel (such as IPAD), it shall support launching the PC application in the control panel layout preview and control (modify editing, copy and paste, page up and down, playback pause Wait).

2.2.5 APP Encoding requirements:

1. The software shall support encoding the PC desktop and push to the video wall. It shall support both WINDOWS and MAC. The stream encoded via APP shall support wireless / wired network and support simultaneous audio and video transmission.
2. The highest resolution shall be no less than 1920x1200 / 60Hz;
3. The signal transmission code rate shall be 128K-8M adjustable;

2.3 Surveillance Digital Access Service Platform

1. The server shall adopt industrial-grade system architecture, stable and safe;
2. The server shall support no less than 16 channels of HD 1080P monitoring platform signals on the screen, and the server shall support digital access of multiple monitoring platforms to get streaming at the same time;
3. The server shall support IPC direct access management, no less than 4000 channels of signal access shall be supported, no less than 60 channels of IPC shall be displayed on the screen Simultaneously;
4. The server shall support directly connecting to the monitoring platform via network connection, automatically accessing the directory tree of the surveillance system. automatically updating the directory tree, previewing the monitoring platform stream, and displaying on the screen;
5. The server shall support digital access to standard monitoring platforms which supports the national standard GB / T28181 protocol Or ONVIF;
6. The server shall be compatible with standard H.264, H.265, support IPC camera PTZ control, supporting IPC audio and video synchronous decoding;
7. The system shall support control terminal UI interface management, real-time video preview;
8. The surveillance stream shall be presented in the form of a tree directory on the control panel, and support fuzzy search based on the camera name;
9. The server shall support IPC signal patrol on the designated area on the screen. The patrol period shall support customized;
10. The server hardware configuration shall be: the processor is not less than quad-core, the performance is equal to or higher than Intel Xeon E5-2620, the memory is not less than 8GB, the hard disk capacity is not less than 1T, the standard RJ45 interface x2, dual power supply redundant backup;

2.4 Video Conference Digital Access Service Platform

1. The server shall adopt industrial-grade system architecture, stable and safe;
2. The server shall support no less than 40 channels of video conference digital access
3. The server shall support no less than 16 channels of video conference signal displayed on the screen simultaneously;
4. The sever shall support directly connecting the video conference MCU via network connection, automatically accessing the video source list and video stream of the video conference;
5. The server shall support SIP / H323 protocol;
6. The server shall support control terminal UI interface management, real-time video preview;
7. The server shall support video conference signal patrol;
8. The server shall support automatic application of I frames in the case of easy packet loss on the network;
9. The server shall support digital access of leading video conference brands such as Huawei and Polycom;
10. The hardware configuration shall meet: the processor is not less than quad-core, the performance is equal to or above Intel Xeon E5-2640, the memory is not less than 8GB, the hard disk capacity is not less than 1T, the standard RJ45 interface x2, and dual power supply redundant backup;

Recording Service Platform

1. The recording service platform shall adopt industrial-grade system architecture, stable and safe;
2. The recording service platform shall adopt distributive architecture design,
3. The recording service platform shall support simultaneous audio and video recording, MP4 format storage;
4. The recording service platform shall support multiple audio and video signals synchronized live broadcast, video-on-demand.
5. The recording service platform shall support multiple user operations;
6. The recording service platform shall support no less than 32 channels of 1080P signal recording, and support multi-machine extension;
7. The recording service platform shall support B / S architecture management, support FLASH, HTML5 multiple playback formats;
8. The recording service platform shall support multi-channel high-definition audio and video stream synchronous recording, ensure smooth viewing in low-bandwidth network environments,
9. The recording service platform shall support the third-party editor editing record files;
10. The recording service platform shall support “Drag and Drop” signal source to the recording window for program recording;

11. The recording service platform shall support multi-video source screen composite recording; The recording service platform shall support any kind of encoder signal source for program recording;
12. The recording window shall support multiple layouts for invocation;
13. The recording service platform shall support recording layout management on control terminal UI interface, and support real-time recording and preview;
14. The recording service platform shall provide C / S architecture type user interface, support Web port system configuration, web interface recording and broadcast resource management;
15. The recording service platform shall support double-click a signal to full screen zoom during playback;
16. The recording service platform shall support flexible playback layout, and adjust the viewing layout;
17. The recording service platform shall support flexible authorization configuration, support user group management;
18. The recording service platform shall support multi-machine stacking, unified management and control; unified portal access; support IPSAN extended storage;
19. The Hardware configuration shall meet: the processor is not less than quad-core, the performance is equal to or above the Intel Xeon E5-2600 series, the memory is not less than 8GB, the hard disk capacity is not less than 1TB, the standard RJ45 interface x2, and dual power redundancy backup

2.5 Media Service Platform software

The media service platform software is installed in the Surveillance Digital Access Service Platform, the Video Conference Digital Access Service Platform, or Recording Service Platform

2.5.1 The Surveillance System Digital Access Requirements

1. The media service platform software shall support various network IPC camera access (ONVIF standard), and push the IP camera stream on the screen.
2. The media service platform software shall support IP camera PTZ control;
3. The media service platform software shall support digital access to standard monitoring platforms which supports the national standard GB / T28181 protocol or ONVIF;
4. The media service platform software shall automatically access the directory tree of the surveillance system, automatically updating the

directory tree, previewing the monitoring platform stream, and displaying on the screen;

5. The media service platform software shall support adding, subtracting, and adjusting IP camera amounts in the future, without the secondary development of the platform, the platform can automatically update the tree directory information, and the update period shall support customized;
6. The media service platform software shall support no less than 40,000 IPC access, no less than 500 IPC automatic patrol on the designated area of the screen
7. The IP camera signal patrol setting can be preset as a scene and recalled;
8. The media service platform software shall support direct IPC streaming, RTSP and ONVIF protocols, and transfer the streams through the RTP protocol;
9. The media service platform software shall support IPC signal real-time preview on the control terminal;

2.5.2 Video Conference MCU Digital Access Function Requirements

1. The media service platform software shall support video conference MCU digital accessing , directly accessing the multi-channel CMU code stream and pushing to the display;
2. The media service platform software shall support accessing the real-time preview and display of both the main and auxiliary stream signals, and any video conference terminal signal shall support being scheduled to be displayed on the screen by dragging and dropping on the control terminal;
3. The media service platform software shall support video conference signal patrol;

2.5.3 Platform cascading function requirements

1. The media service platform software shall support at least 5 hierarchy system cascading, and all the video signals from all hierarchy system shall be previewed on any control panel in the cascaded system, the video signals shall be categorized as a directory tree and updated dynamically.
2. The media service platform software shall support cascading permission management based on subordinates and superiors. Users of higher hierarchy shall be able to access all the video source of lower hierarchy platforms and push the video signals on the local large screen via dragging and dropping without the cooperation of users of lower hierarchy platforms;
3. The media service platform software shall support one-key broadcast of the selected video and audio source to some or all of the lower hierarchy

system when cascading;
4. The media service platform software shall support cascading bandwidth management, once the recalled video from the lower hierarchy system exceeds the cascading bandwidth, the recalled video quality shall be lowered, without lowering hierarchy system high definition display and still getting a fluent video without exceeding the bandwidth limit;

2.5.4 Recording function requirements

1. The media service platform software shall supports audio, video, and video streaming recording, video-on-demand, and live streaming functions, support MP4 file-based recording management, and provide users with video query, download, on-demand, and real-time streaming preview functions;
2. The media service platform software shall support program recording by room, support room addition, deletion, modification and viewing;
3. Recording files shall be able to renamed and deleted as needed;
4. The media service platform software supports multi-machine stacking, unified management and control, and unified portal access;
5. The system shall support IPSAN extended video storage;
6. The media service platform software shall support simultaneous recording of multiple video sources to a scene file;
7. The media service platform software shall support recording according to the layout of the room, support playback according to the layout of the room, double-click to enlarge a single video to full screen;

2.6 MIDIS Central Service Platform Business Version

1. The MIDIS Central Service Platform shall adopt embedded system architecture, which is stable and safe;
2. The MIDIS Central Service Platform shall support an open API interface;
3. The MIDIS Central Service Platform shall support for DANTE, AAC, G.711.H.264.H.265.TCP / UDP, RS-232 / 422/485, IR protocols;
4. The MIDIS Central Service Platform shall support visual control, audio and video signals support real-time feedback, status synchronization, signal preview and echo;
5. The MIDIS Central Service Platform shall supports B / S, C / S dual architecture, built-in web management tools, and flexible configuration through the web port;
6. The MIDIS Central Service Platform shall support web interface to manage node devices in batches, control switch on and off, and view configuration information;
7. The MIDIS Central Service Platform shall support user authorization setting,

support multiple users online management at the same time, support multiple terminal login with the same permission;

8. The MIDIS Central Service Platform shall support online upgrade and maintenance of all node devices in batches;
9. The MIDIS Central Service Platform shall support one-key saving and loading of system configuration information;
10. The MIDIS Central Service Platform shall support storage and export of login log, debug log, operation log, and alarm log;
11. The MIDIS Central Service Platform shall updated and upgraded online, and the signal of the upgrade process will not be disconnected and the screen will not be black to ensure the normal operation of the system;

2.7 MCN-100E

1. The device shall adopt Linux system, long time running without crashing;
2. The device shall be low power design, no fan integrated and silent design, shall support 1U cabinet independent installation or 2 side by side installation at the same time;
3. The device shall build in no less than 2 HD interfaces, support selection of any 1 channel encoding, support independent balanced audio input interface;
4. The device shall support audio synchronous, asynchronous and mixing;
5. The device shall support RS232, IR control interface;
6. The device shall adopt standard RJ45 interface, 1000Mbps rate, support cross-network segment communication, support DHCP to obtain IP address dynamically;
7. The input signal resolution shall be no less than 1920x1200 @ 60Hz, the resolution is adaptive;
8. The device shall support fixed bit rate transmission, adjustable range 128kbps ~ 40Mbps;
9. The device shall support network hibernation and wake-up;
10. The device shall support remote KVM control: mouse cursor shall support moving across multi-screen, no delay when roaming, support zooming between multiple screens; support authorization management; support automatically locking KVM agents when idle; support shortcut keys to hide / show OSD menu and support pushing any video source of the KVM computer desktop to the local or remote splicing screens, with full screen display or designated area selectable;
11. The device shall support web interface management, provide quick configuration device port, support web port to modify password, modify IP address, network packet capture, serial port code collection, clear user settings, restore factory settings, export logs, and upgrade;
12. The device shall support OSD subtitle overlaying and replacing background picture;

13. The device shall support EDID extended display identification automatic identification, support HDCP;
14. The device shall support codec protocol: audio support AAC, G.711.G.722; video shall support H.264, RTSP protocol;
15. The device shall support the upgrading operation of encoding equipment through the network and USB storage device;
16. The device shall support POE power supply and external power supply mutual backup;

2.8 MCN-100D

1. The device shall adopt Linux system, long time running without crashing;
2. The device shall be low power design, no fan integrated and silent design, shall support 1U cabinet independent installation or 2 side by side installation at the same time;
3. The device shall support no less than 2 HDMI interfaces, support port backup, shall support video split and support independent balanced audio output interface;
4. The device shall support audio synchronous, asynchronous and mixing;
5. The device shall support multi-channel audio mixing playback;
6. The device shall support RS232, IR control interface;
7. The device shall adopt standard RJ45 interface, 1000Mbps rate, support cross-network segment communication, support DHCP to obtain IP address dynamically;
8. The output signal resolution shall be no less than 1920x1200 @ 60Hz;
9. The device shall support customized resolution, range 360x240 ~ 1920x1200, and support adaptive transmission code rate range 128kbps ~ 40Mbps;
10. The device shall support network hibernation and wake-up;
11. The device shall support video wall multi-view function: splicing, zooming in and out among screen units, window opening, overlapping.
12. The video output shall support no less than 16 real-time active windows;
13. The device shall support remote KVM control: mouse cursor shall support moving across multi-screen, no delay when roaming, support zooming between multiple screens; support authorization management; support automatically locking KVM agents when idle; support shortcut keys to hide / show OSD menu and support pushing any video source of the KVM computer desktop to the local or remote splicing screens, with full screen display or designated area selectable;
14. The device shall support web interface management, provide quick configuration device port, support web port to modify password, modify IP address, network packet capture, serial port code collection, clear user settings, restore factory settings, export logs, and upgrade;
15. The device shall support OSD subtitle overlaying and replacing background

picture;

16. The device shall support EDID extended display identification automatic identification, support HDCP;
17. The device shall support codec protocol: audio support AAC, G.711.G.722; video shall support H.264, RTSP protocol;
18. The device shall support the upgrading operation of encoding equipment through the network and USB storage device;
19. The device shall support POE power supply and external power supply mutual backup;
20. The device shall support 90 °, 180 °, 270 ° rotation of the picture;
21. The device shall support POE power supply and external power supply;

2.9 Encoder & Decoder Software

1. The software shall be installed in encoders or decoders;
2. The software shall support checking encoder or decoder information for binding and unbinding operations;
3. ★ The software shall support subtitle editing and deletion;
4. ★ The software shall support network hibernation and wake-up;
5. The software shall support to configure network access address;
6. The software shall support user rights restriction.