

1.0 Manufacturer

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Manufacturer shall warrant the Navigator Control Center to be free from defects in material and workmanship for one year from the installation date.

2.0 Description

Navigator Control Center (NCC) is a total solution for managing network video products including Navigator Enterprise recording servers, IP cameras, NVRs, AHD DVRs, and analogue DVRs. NCC contains (1) Navigator Enterprise, (2) eMap Manager with Google map, (3) Database Manager, (4) Device Management report, (5) recordings backup and download, and (6) synchronized playback.

NAV Control Center major features include (1) managing 20,000 cameras for events and devices monitoring, (2) providing 10,000 users and 64 access rights, (3) allowing 64 view groups with up to 144 concurrent viewing for each group, (4) giving 128 Google map with up to 5000 cameras for each map, (5) managing TV wall for 64 rooms with 64 cameras groups for each room.

The client software NAV Control Center (NCC client) is the video client software to manage video of cameras for integrating features within one system application.

3.0 General Specifications

NCC shall provide H.264 decoding from IP cameras at the resolution of up to 4K in resolution for up to 20,000 cameras. Each camera frame rate shall be up to 120 FPS for H.264 streaming.

NCC shall provide multi-streaming mode for low bandwidth, high quality high bandwidth, and high resolution for both H.264 and JPEG. This allows end-users to manage bandwidth via different network environment.

NCC should provide direct streaming access mode from DVRs, AHD DVRs, NVRs, and IP cameras or streaming relay mode from Navigator Enterprise relay servers.

NCC shall provide video recording for ONVIF IP cameras, analogue DVRs, AHD DVRs, NVRs, and Navigator Enterprise recording servers via network for flexible device management..

NCC client of NCC shall be able to provide any view group configuration (any camera division) for cameras. NCC client and TV wall applications shall support 9:16 camera corridor mode.

NCC client of NCC shall provide digital zoom feature for live monitoring and video playback.

NCC client of NCC shall control IP PTZ features including PTZ preset recall, pan tilt, zoom, and PTZ preset saving operations.

NCC client of NCC shall provide audio feature including volume control for cameras.

NCC shall provide network NVRs, AHD DVRs, analogue DVRs IP cameras with ONVIF scanning for LAN configuration for easy management. The scanning result shall be listed for IP addresses of the cameras which can be used for assigning a channel of NAV Control Center.

NCC shall provide auto cameras import for Navigator Enterprise recording server for easy managing purpose.

Each camera shall be adjusted for its video including bandwidth, frame rate, contrast, brightness, hue, and saturation via network. NCC shall provide load default for the camera video setting.

NCC shall support motion detection area setup for each channel including remote device motion detector and local NCC motion detector. The motion detector shall provide configuring levels for motion detection sensitivity and the motion area.

NCC shall receive an external alarm/event notification from an digital input, face detection, motion detection, audio, and tampering from an IP camera and redirect the event notification outputs to another IP camera's digital output, activate PC sound, recall IP PTZ's preset, activate pre-alarm recording, and post-alarm recording.

If a camera supports virtual fences feature and polygonal fence detection, NCC shall receive the event notifications and redirect to various alarm outputs. NCC client of the NCC shall receive and display the virtual fences, objects detected, people counting, and face detected sent via IP cameras.

When an alarm/event is triggered, NCC can be set for triggering video popup output. NVR can be set for sending email message notification with alarm snapshot attached or sending alarm snapshot to an FTP server.

NCC shall be able to provide TCP/IP network digital I/O integration for supporting digital inputs or output without using IP cameras' digital inputs or outputs. This can further reduce installation cost if cameras are not installed at the sites by using TCP/IP digital I/O box.

NCC shall be able to provide automatic number plate recognition (ANPR/LPR) integration for support ANPR feature where black list and white list can be supported. ANPR can be searched by a NAV Client across Navigator Enterprise recording servers.

NCC shall be able to perform configuring pre-alarm and post-alarm recording after receiving an event for Navigator Enterprise recording servers.

NCC shall have electronic Google map representation in which an alarm notification can show blinking effect, video popup, snapshot, and switching map for a map.

NCC shall document alarm notifications into database for quick video playback.

NCC shall be set for different recording frame rate for each IP camera. NAV shall be set in different recording mode including alarm/motion recording, schedule recording, or continuous recording.

NCC shall provide scheduling camera viewing groups with user authentications and viewing scheduling for users on an hourly basis in a week.

NCC shall support hardware RAID and HDD failure notification for Navigator Enterprise recording server.

NCC client of NCC shall support 144-channel simultaneously playback feature from Navigator Enterprise recording servers, NVRs, AHD DVRs, and analogue DVRs. In 144-channel playback mode, up to 16X fast forward and rewind speed shall be supported.

NCC client of NCC shall provide synchronous playback for cameras from different Navigator Enterprise for up to 144-channel. NCC client can also perform asynchronous playback and live

video for same camera at different recording time.

NCC client of NCC shall provide remote backup feature for multiple channels for up to 36-channel of multiple AVI files for Navigator Enterprise recordings and up to 16-channel AVI files for AHD DVRs, analogue DVRs, or NVRs..

NCC client of NCC shall be able to search the transactions for point of sales (POS) systems where the transactions of cash registers can be recorded into Navigator Enterprise recording servers. The transactions of the cash registers can be used for quick playback purpose.

NCC client of NCC is able to provide hardware acceleration for video anti-aliasing to provide better video quality.

NCC shall be able to receive text inputs for text overlay from the metadata of Navigator Enterprise recording servers for people counting, object detections, tripwire detection, ANPR. These metadata can be recorded into NCC.

NCC shall be able to connect another NCC for hierarchical NCC management. Users of a NCC can access only its NCC and children NCC servers.

NCC client of NCC shall provide recorded video conversion into JPEG and AVI file format with OSD watermark for camera name and time stamp.

NCC client of NCC shall be able to group cameras into a view group for up to 64-grouping for Navigator Enterprise recording servers, AHD DVRs, analogue DVRs, NVRs, and IP cameras.

NCC shall provide automatic configurations importing and exporting when a Navigator Enterprise recording server or a NCC gets added

NCC and NCC client shall be able to limit CPU usage for preventing system overloading.

NCC shall be able to provide a run-time device management including HDD S.M.A.R.T report, device video loss report, IP camera SD card recording report, NVR recording report, HDD temperature report, and device firmware version.

NCC and NCC client shall be accessed by entering user credential for up to 10,000 different users and 64 access rights. Different users can access specific features and specific cameras based on groupings. Camera view grouping can be managed for user groups and be limited for their accesses based on scheduling.

NCC client shall be able to provide camera titles, bandwidth, and timestamp OSD for cameras.

NCC client shall provide run-time cameras' arrangement by using a mouse drag-n-drop.

NCC shall provide watch-dog timer for rebooting Windows system if a system crashed is encountered.

NCC shall be able to provide TV wall for 8x8 monitor outputs for a room. There are up to 64-room TV wall that can be setup. Each TV wall setup can have 64 camera grouping arrangement for sequence display, alarmed video popup, and acknowledgement of alarmed video.

NCC shall support software HDMI TV walls and video decoder TV wall by scanning display devices and adding the HDMI outputs of Navigator Enterprise recording servers.