

## **Multipix MP1000 & MP264HS Technical Specifications**

### **1.1 Specifications for MP1000 Networked Video Management Platform**

#### **A GENERAL**

1 The MP1000 Network Video Management platform (MP1000) shall be software based solution running on standard off the shelf computer server and communicating over Ethernet network using the TCP/IP network protocol.

2 The MP1000 solution shall not require proprietary computer hardware.

3 The MP1000 solution shall be based on Windows XP SP2.

4 The MP1000 system shall be based on advanced Visual C++ software programming technology for maximum system performance.

5 The MP1000 shall sustain full operation using QCIF, CIF, 2CIF, 4CIF, 9CIF, 20CIF and QVGA, VGA, XVGA video resolutions.

6 The MP1000 shall be able to support MJPEG, MPEG-4, H.264 video / audio compression technology.

7 The MP1000 shall be able to support all cameras at the maximum frame rate and the maximum resolution while maintaining less than 80% load on the Server

8 The MP1000 in addition to Video shall provide full bi-directional audio monitoring and various recording functionalities.

9 The MP1000 storage system shall be based on advanced recording methods and shall not rely on the Windows Operating System to manage the storage.

10 The MP1000 shall provide the coactivity to an external storage system (NVS)

11 The MP1000 shall allow the recording, live monitoring, playback of archived video audio, and data simultaneously.

12 The MP1000 shall allow the user to view live video at 30fps NTSC/25fps PAL while recording at a lower frame rate for more efficient video storage.

13 The MP1000 shall allow the user to view live video at a lower CIF while recording at 4CIF for higher resolution video storage.

14 The MP1000 client application shall support multiple flat panel monitors to be connected to

a single computer.

15 Each monitor shall have independent controls and shall support different software modules in MP1000.

16 The MP1000 shall provide porting utility for racking but not limited to the following options. Video and images shall be stored with reports for documenting events.

- a) Alarms
- b) Incidents
- c) Operator logs
- d) Service requests

17 The MP1000 shall provide file export tool for export of single frames of video in BMP file formats and for export of motion video files in H.264 file format for transport and playback on computers utilizing a Windows environment via standard Windows Media Player.

18 The MP1000 data base and video storage shall be based on leading data base technologies like MS Access, SQL Server, ORACLE or better

19 The MP1000 shall be based on client–server architecture.

## **B MP1000 SERVER SOFTWARE**

1 The MP1000 shall consist of MPXP Video Relay Server, MPNVR Network Video Storage, MPDM Virtual Digital Matrix, MPWEB Enterprise Network Video Management, MPMAP e-Map Center, MPEVENT Event Programming Center and Watchdog modules.

2 The MPXP Video Relay Server (MPXP) shall maintain all MP264HS ip camera video sources.

a) The MPXP shall connect with 500 channels MP264HS ip camera, video server

b) The MPXP shall connect MP264HS via TCP, UDP, Multicast.

c) The MPXP shall provide the video sources to MPWEB, MPMAP, MPDM at the same time.

d) The MPXP shall connect with other MPXP machine for video distribution

3 The MPNVR shall support min 200 camera connections, through video Encoders or IP cameras, all recording at 30fps NTSC/25fpsPAL via standard FTP protocol.

4 The MP1000 shall record all video in real time simultaneously at bandwidth ranging from 10Kb/sec to 5Mb/sec, frame rates ranging from 1fps to 30fps NTSC/ 25fps PAL and resolution ranging from CIF (352X240 NTSC,352x288PAL) to 20CIF(1920\*1080).

5 The MP1000 shall be able to set each camera frame rate, bit rate and resolution independently from other cameras in the system, and altering these settings shall not affect the recording and display settings of other cameras.

a) The MP1000 shall utilize multicast network communication for video monitoring.

b) Unicast based equipment shall not be considered as an approved equal for alternate system

6 The MP1000 shall not require any proprietary hardware for video and audio recording servers.

7 The MP1000 shall not utilize any hardware or software multiplexer or time division technology for video or audio recording and monitoring.

8 The MP1000 shall support a built-in Digital Virtual Matrix

a) The Digital Virtual Matrix shall provide a full matrix operation of IP video to VGA output.

b) The Digital Virtual Matrix shall provide a full matrix operation of IP video to digital

monitors.

9 The MP1000 shall support a built in Watch dog module

a) The Watch dog shall monitor operation of all services and automatically restart them if they are malfunctioning.

b) The Watchdog shall be responsible for restarting the application or in a last resort restart the server in case of malfunction of software components

10 The MP1000 shall have the capability to program each IP viewing station to view and control selected cameras only.

11 The MP1000 shall provide a Windows based GUI (Graphical User Interface).

12 The MP1000 shall be based on a true open architecture that allow for use of non-proprietary PC and storage hardware that shall not limit the storage capacity and shall allow for gradual upgrades of recording capacity.

13 The MP1000 shall provide alarm dry contact interfaces to allow for any alarm input initiating any action in the MP1000 system.

a) The MP1000 shall transmit dry contact information over the IP Digital Transmission Network.

14 The MP1000 shall connect IP alarm input to allow for any alarm input initiating any action in the MP1000 system.

a) The MP1000 shall transmit alarm serial information over the IP Digital Transmission Network.

15 The MP1000 shall support full duplex audio communication and transmission signals over the IP Digital Transmission Network.

## **1.2 MP1000 CLIENT Software**

17 The MP1000 client shall consist of MPWEB Video Manager and MP16 Video Player, a Web Monitoring access, windows media player access.

18 The MP1000 client shall perform the following applications simultaneously without interfering with any of the Storage Server operations (Recording, Alarms, etc.):

- a) Live display of cameras
- b) Live display of camera sequences
- c) Control of PTZ cameras
- d) Playback of archived video
- e) Retrieval of archived video
- f) Instant Replay of live video
- g) Use of graphical controls (maps)
- h) Use of procedures
- i) Configuration of system settings
- j) Event programming

19 The MP1000 client applications shall support any form of IP network connectivity, including: LAN, WAN, VPN, Internet, and Wireless (WiFi and Cellular) technologies.

20 The MP1000 client applications shall support IP Multicast (UDP) and Unicast (TCP or UDP) video streaming.

21 The MP1000 client applications shall automatically adapt to the network topology and use the best available method to receive streaming video.

22 The MP1000 client applications shall provide an authentication mechanism, which verifies the validity of the user.

23 MP1000 Client Monitor Applications

- a) The Client Monitor application shall allow for live monitoring of video and audio.

The Monitor shall enable view of 1 to 64 video tiles simultaneously on a single FULL HD (1920\*1080) monitor at 30fps (NTSC)/ 25fps (PAL) per camera.

the Monitor shall enable view of up to 64 video tiles simultaneously on a computer.

the IP Based MP1000 shall provide on each of the VGA monitors independently the following tile views:

- 1) Full screen
- 2) Quad
- 3) 3x3(9-view)
- 4) 4x4(16-view)
- 5) 8x8 (64-view)
- 6) 1+5(One large and 5 small view)
- 7) 1+7(One large and 7 small view)
- 8) 1+12(One large and 12 small view)
- 9) 2+8(Two large and 8 small view)
- 10) 3+4(Three large and Four small view)
- 11) 4+28(Four large and 28 small view)
- 12) 64(sixty four small view)

b) The MP1000 Monitor application shall allow operators to view an instant replay of any camera.

i The operator shall be able to define the amount of time he wishes to go back from a predefine list or through a custom setup period.

ii The operator shall be able to control the playback with play, pause, forward, and speed buttons.

c) The operator shall be able to choose and trigger an action from a list of available actions included but are not limited to:

- i View camera on a Decoder (analog monitor)
- ii View Map or procedure in a video tile
- iii Starting/stopping PTZ pattern
- iv Go to PTZ Preset
- v Sending alert messages or SMS
- vi Sending emails
- vii Event programming

d) The MP1000 Monitor application shall provide management and control over the system using a standard PC mouse, keyboard and 3D joystick.

e) The MP1000 Monitor application shall display all cameras attached to the system regardless of their physical location on the network.

f) The MP1000 Monitor application shall display all camera sequences created in the system.

g) The MP1000 Monitor application shall allow operators to control (Pause/Play, skip forwards, skip backwards) Camera Sequences, without affecting other operators' ability to view and control the same sequence.

h) The MP1000 Monitor application shall display all cameras, sequences and analog monitors in logical tree.

i) The MP1000 Monitor application operator shall be able to drag and drop a camera from a tree of available cameras into any video tile or analog monitor icon for live viewing.

j) The MP1000 Monitor application operator shall be able to drag and drop a camera group from a tree of camera camera groups into any video tile or analog monitor icon for live viewing.

k) The MP1000 Monitor application shall support Graphical Site Representation (Maps) functionality, where digital map used to represent the physical location of cameras and other devices through out facility.

i The MP1000 Maps shall have the ability to contain hyperlinks to create a hierarchy of inter linked maps.

- ii The MP1000 Maps shall be able to import maps from any graphical software supporting BMP image formats.
  - lii The MP1000 Maps shall be able to manage I/O devices on the map
  - lv The MP1000 Maps shall be able to manage all video encoders or IP cameras
  - v The MP1000 Maps shall have the digital video matrix client
  - vi The MP1000 Maps shall have the instant video playback in the matrix client
  - vii The MP1000 Maps shall have the event programming function between ip camera and IO devices
- l) The MP1000 Monitor application operator shall be able to drag and drop a camera from a map into a video tile for live viewing.
- i The operator shall be able to click on an icon in a map to initiate PTZ camera preset, run PTZ pattern, view camera in an analog monitor or send an I/O stream.
- m) The MP1000 Monitor application shall support the procedure functionality, where procedures shall be triggered to appear during a certain event and shall be used to provide detail written or verbal instructions to the operator as to the actions to be taken.
- n) The MP1000 Monitor application shall support digital zoom on a PTZ camera's live video streams
- 24 The MP1000 shall support full control for PTZ (Pan Tilt and Zoom) cameras as well as H.264 compression megapixels cameras.

### **1.3 Specifications for MP-Map Digital Map software**

1 The MP-Map digital map software shall be software based solution running on standard off the shelf computer server and communicating over Ethernet network using the TCP/IP network protocol.

2 The proposed solution shall not require proprietary computer hardware.

3 The proposed solution shall be based on Windows XP

4 The MP-Map digital map software shall be based on Visual C++ software programming technology for maximum system performance.

5 The MP-Map digital map software shall support BMP map format

6 The MP-Map digital map software shall have hotspots on the map layers

7 The MP-Map digital map software shall have camera / alarm device icons.

8 The MP-Map digital map software shall be able to search the map layers, cameras, and alarm devices by the name

9. The MP-Map software shall have one user-friendly GUI that quite easy for users to add, remove, open, close, delete and rename.

10 The MP-Map software shall support live viewing, PTZ controlling the camera through the active icons on the map layer.

- a. display the video
- b. PTZ control
- c. configuration
- d. locate the camera on the map

11 The MP-Map software shall support alarm notification on the map layer

- a. Disconnect and connect
- b. Instant control
- c. Status display
- d. locate the alarm device on the ma player

12 The MP-Map software shall create system's event log

- a. general operations
- b. video events
- c. Alarm notifications

13 The MP-Map software shall receive all incoming events (motion detection and triggered digital input and replay output) in the system and take appropriate actions based on user defined on user defined event/action relationships. Moreover, there is no limitation of numbers of alarms and events such as:

- a Map Layer Pop-up
- b Video Pop-up on 2nd Screen
- c IO Device Trigger
- d Instant playback
- e Pop up virtual matrix client

## 1.4 Specifications for MP-Event Handler software

### A GENERAL

1. MPEvent is part of Multipix MP1000 Integrated Security System Platform; The MPEvent provides comprehensive event programming for all kinds of security hardware, which connect with Multipix MP1000 System. Each device shall be programmed to trigger any other device by powerful MPEvent. There is no limitation of numbers of devices for either trigger or activation; no limitation of numbers of trigger conditions; no limitation of numbers of trigger results. With MPEvent, the tough security system's integration comes true. CCTV Camera, Alarm Sensor, Output Device, Analog Sensor, Door Lock, Access Control Card Holder, Elevator Control, Building Automation, SMS, MMS, email, phone call, and so on..

### B MP-Event Handler server

1 The MP-Event Handler shall work with MPWEB Enterprise video manager software that receive the incoming events (camera's connection or disconnection and motion detection) in the system and take appropriate actions based on user defined event/action relationships. Moreover, there is no limitation of alarms and events.

2. The MP-Event Handler shall work with MPMAP that receive the incoming events in the system and take appropriate actions based on user defined event/action relationships. In addition, there is no limitation of alarms and events.

3. The operator shall be able to choose and trigger an action from a list of available actions included but are not limited to:

- i. Map layer pop up
- ii. Video pop up on the second screen
- iii. Starting/stopping alarm recording
- iv. Starting/stopping PTZ pattern
- v. Go to PTZ Preset
- vi. Sending alert messages, SMS or MMS
- vii. Sending emails with snapshot
- viii. Dial phone call with voice
- ix. Play alarm sound

x. Alarm input status changed, output device open/close

xi. Door access control: open/close

### **1.5 Server Hardware Specifications:**

1 The MP1000 computer server shall be of reputed make like Dell, HP or IBM make

2 The MP1000 Server shall be of the most recent computer technology and shall cover the MP1000 minimum requirements

a) As a minimum the MP1000 server shall be:

i Dual Xeon 1.2GHz processor or better

ii 2GB of RAM or Better

iii Dual/redundant power supply

iv Dual/redundant/100/1000 network interface card (NIC)

v. To provide an advanced and reliable system, the following must be provided for the recording system.

1) Dual mirrored 40G Hard drive for Windows XP Server based Operating system and MP1000 server software

2) Video storage on an internal storage of 6TB

VI. If storage requires external attached RAID system a Fiber Channel Interface Card shall be used to interface external RAID to the MP1000 Server.

Vii. To provide an advanced and reliable system the operating system shall be Windows XP or better.

The server shall be supplied with suitable enclosure/cabinet to house the server hardware neatly.

## **1.6 IP PTZ Dome Specifications: (MP264HS-709+ 9CIF IP High Speed dome)**

### **A GENERAL**

The network (IP) PTZ Dome camera shall consist of a dome drive with a variable speed for pan and tilt with continuous 360° rotation; 1/4 inch high resolution color camera; motorized zoom lens with optical and digital zoom and auto focus and high resolution digital video of up to 9CIF (1280\*720); using the H.264 compression algorithm and TCP/IP transmission.

### **B Camera specifications**

1 The camera shall be a network (IP) based camera. Analog cameras extended to a central IP encoder using coaxial cables shall not be permitted.

2 The camera shall be available in NTSC and PAL formats.

3 The camera shall operate from 230 VAC. Any external converters required to convert 230VAC to suitable voltage required by the camera will have to be supplied by the contractor.

4 The camera shall maintain 30 fps NTSC / 25 fps PAL video, also shall be able to support higher resolution 800\*600, 1024\*768 and 1280\*720.

5 The camera shall digitize and compress the video using the latest in video compression technology and shall utilize H.264 video compression.

6 The camera shall provide minimum dual encoded video streams to allow simultaneous and independent viewing and recording of live video at different frame rates and image quality.

a) The camera shall provide the option to set each stream at a frame rate between 1-30NTSC/1-25PAL

b) The camera shall provide the option to set each stream at the following video resolutions:

- i. CIF (352x240NTSC/352x288PAL)
- ii. 2CIF (704x240 NTSC/704x288 PAL)
- iii. 4CIF (704x480 NTSC/704x576 PAL)
- iv. SVGA(800\*600)
- v. XVGA(1024\*768)
- vi. 9CIF 1280\*720

c) The camera shall provide the option to set each stream at variable bandwidth from 10k bps to 5M bps

d) Auxiliaries shall be accessible over the Ethernet IP network

e) The camera shall provide dual video & audio stream in H.264 video compression

7 The camera shall have an Ethernet (IP) interface using an RJ45 CAT5, CAT5e or CAT6 UTP cable

8 The camera shall as minimum provide the following communication protocols:  
TCP/IP, UDP/IP, HTTP, ARP

9 The camera IP protocol shall communicate over the Ethernet network using Multicasting technology

10 The camera shall provide a Bidirectional audio in and out

a) Audio input 46–3dBV into one ohm

b) Audio output 45–3dBV into 16 Ohms minimum

11 the camera shall be comprised of a camera block “driver” which cons is to a ¼ dbl quote CCD

12 The camera shall as minimum support the following mechanical and technical specifications:

a) The camera shall deliver a 360°continuous pan travel

b) The camera pan travel speed as minimum shall support a variable speed between 0.1° per second continuous pan to 360°per second

c) The camera tilt travel as minimum shall be between 0° to 180°

d) The camera shall provide 128 preset positions

i Camera shall provide Preset Accuracy of +/-0.01°

e) The camera shall provide 8 users defined patterns including pan, tilt, zoom, functions and one pattern shall contain up to 16 presets; pattern programming shall be available through the digital IP management system.

f) The camera shall provide "home" settings for the camera to return after preprogrammed time frame

g) The camera shall provide eight privacy windows blanking invariable color options from white to black colors.

h) All video covered by privacy window shall be obscured at any user defined pan, tilt and zoom angles

13 The camera shall provide high resolution 1280\*720 and minimum 36X color, Day/Night camera optical zoom with a minimum of 12X digital zoom and shall have the following specifications:

a) The camera shall be a high resolution 520 TV lines color and 550 TV lines in monochrome mode

b) The camera shall be a 1/4 inch color CCD type with 520/550 lines of resolution 2:1 interlacing

c) The camera shall have light sensitivity of 1.4 lux color/day and 0.01 monochrome/night

d) The camera shall have white balance controls, manual or automatically

e) The camera shall have Digital Slow Shutter (DSS)

f) The camera shall have automatic back light compensation (BLC)

g) The camera shall have automatic gain control (AGC).

h) The camera shall provide Day/Night option—on/off

i) The camera shall provide the Wide Dynamic Range.

14 The camera shall maintain operation at temperature of -40°C -80°C in normal operation.

15 The camera shall provide for outdoor operation a fan and heater and shall maintain operation at temperature of -40°C -80°C in normal operation.

16 The housing shall be mountable in Outdoor bracket mount and the mounts shall be quoted along with the cameras.

17 The camera housing shall be constructed of aluminum

a). The camera dome shall be of a cyclic material.

b). The camera shall provide the option to install vandal resistant bubble constructed of polycarbonate.

### **1.7 IP Fixed Dome Camera Specifications: (MP264HS-500 9CIF H.264 IP Fix Dome)**

#### **A GENERAL**

1 The network (IP) fixed Dome camera shall consist of a dome housing, 1/3 inch high resolution color camera, high resolution digital video of up to 9CIF (1280\*720); using the H.264 compression algorithm and TCP/IP transmission.

#### **B Camera specifications**

1 The camera shall be a network (IP) based camera.

2 The camera shall be available in NTSC and PAL formats.

3 The camera shall maintain 30 fps NTSC / 25 fps PAL video at 4CIF digital video resolution (704x480 NTSC/704x576 PAL), also shall be able to support higher resolution 800\*600, 1024\*768 and 1280\*720.

4 The camera shall digitize and compress the video using the latest in video compression technology and shall utilize H.264 video compression

5 The camera shall operate from 230V AC. Any external converters required to convert 230 VAC to suitable voltage required by the camera will have to be supplied by the contractor.

6 The camera shall build in IEEE802.3af PoE.

7 The camera shall provide dual encoded video streams to allow simultaneous and independent viewing and recording of live video at different frame rates and image quality.

a) The camera shall provide the option to set each stream at a frame rate between 1-30NTSC/1-25PAL

b) The camera shall provide the option to set each stream at the following Video resolutions:

- i CIF (352x240NTSC/352x288PAL)
- ii 2CIF (704x240 NTSC/704x288 PAL)
- iii 4CIF (704x480 NTSC/704x576 PAL)
- iv SVGA(800\*600)

v XVGA(1024\*768)

vi 9CIF 1280\*720

c) The camera shall provide the option to set each stream at variable bandwidth from 10 k bps to 5 M bps

8 The camera shall have an Ethernet (IP) interface using an RJ45 CAT5, CAT5e or CAT6 UTP cable

9 The camera shall as minimum provide the following communication protocols: TCP/IP, UDP/IP, HTTP, ARP.

10 The camera shall communicate over the Ethernet network using Multicasting technology.

11 The camera shall consist of a dome drive with a variable speed for pan and tilt with at least 360° rotation.

12 The camera shall support Day/Night Operation. The minimum illumination 0.5 lux

13 The camera shall be fitted with auto iris, 16 mm lenses.

14 The camera shall be able to switch the LENS.

15 The camera shall be comprise of a camera block "driver" which consist of a 1/3" CCD with 520TV Lines in minimum

16 The camera shall maintain operation at temperature of -35°C -50°C in normal operation

17 The camera shall be fitted in housing capable of withstanding rough conditions.

## 1.8 IP IR Camera Specifications: (MP264HS-300 9CIF H.264 IP IR Camera)

### A GENERAL

The network (IP) camera shall be with 1/3 inch high resolution color camera, sensitivity infrared light sensor, high resolution digital video of up to 9CIF (1280\*720); using the H.264 compression algorithm and TCP/IP transmission.

### B Camera specifications

1 The camera shall be a network (IP) based camera.

2 The camera shall be available in NTSC and PAL formats.

3 The camera shall maintain 30 fps NTSC / 25 fps PAL video at 4CIF digital video resolution (704x480 NTSC/704x576 PAL), also shall be able to support higher resolution 800\*600, 1024\*768 and 1280\*720.

4 The camera shall digitize and compress the video using the latest in video compression technology and shall utilize H.264 video compression

5 The camera shall operate from 230V AC. Any external converters required to convert 230 VAC to suitable voltage required by the camera will have to be supplied by the contractor.

6 The camera shall provide dual encoded video streams to allow simultaneous and independent viewing and recording of live video at different frame rates and image quality.

a) The camera shall provide the option to set each stream at a frame rate between 1-30NTSC/1-25PAL

b) The camera shall provide the option to set each stream at the following Video resolutions:

vii CIF (352x240NTSC/352x288PAL)

viii 2CIF (704x240 NTSC/704x288 PAL)

ix 4CIF (704x480 NTSC/704x576 PAL)

x SVGA(800\*600)

xi XVGA(1024\*768)

xii 9CIF 1280\*720

c) The camera shall provide the option to set each stream at variable bandwidth from 10k

bps to 5M bps

7 The camera shall have an Ethernet (IP) interface using an RJ45 CAT5, CAT5e or CAT6 UTP cable

8 The camera shall as minimum provide the following communication protocols: TCP/IP, UDP/IP, HTTP, ARP.

9 The camera shall communicate over the Ethernet network using Multicasting technology.

10 The camera shall be able to take lenses using the standard C/CS mounts.

11 The camera shall support Day/Night Operation. The minimum illumination at 40 IRE, F1.2 shall be 0.5 for day and 0 Lux for night.

12 The camera shall be fitted with auto iris, 1/3" 16 mm lenses.

13 The camera shall be comprise of a camera block "driver" which consist of a 1/3" CCD with 520TV Lines in minimum

14 The camera shall build in with infrared light 30m in minimum.

15 The camera shall maintain operation at temperature of -20°C-50°C in normal operation

16 The camera shall be fitted in housing capable of withstanding rough conditions.

## **1.9 IP Fixed Camera Specifications: (MP264HS-200 9CIF H.264 IP Fixed Camera)**

### **A GENERAL**

The network (IP) camera shall be with 1/3 inch high resolution color camera, high resolution digital video of up to 9CIF (1280\*720); using the H.264 compression algorithm and TCP/IP transmission.

### **B Camera specifications**

1 The camera shall be a network (IP) based camera.

2 The camera shall be available in NTSC and PAL formats.

3 The camera shall maintain 30 fps NTSC / 25 fps PAL video at 4CIF digital video resolution (704x480 NTSC/704x576 PAL), also shall be able to support higher resolution 800\*600, 1024\*768 and 1280\*720.

4 The camera shall digitize and compress the video using the latest in video compression technology and shall utilize H.264 video compression

5 The camera shall operate from 230V AC. Any external converters required to convert 230 VAC to suitable voltage required by the camera will have to be supplied by the contractor.

6 The camera shall build in IEEE802.3af PoE.

7 The digital video shall provide dual encoded video streams to allow simultaneous and independent viewing and recording of live video at different frame rates and image quality.

a) The camera shall provide the option to set each stream at a frame rate between 1-30NTSC/1-25PAL

b) The camera shall provide the option to set each stream at the following Video resolutions:

i、 CIF (352x240NTSC/352x288PAL)

ii、 2CIF (704x240 NTSC/704x288 PAL)

iii、 4CIF (704x480 NTSC/704x576 PAL)

iv、 SVGA(800\*600)

v、 XVGA(1024\*768)

vi、 1280\*720

- c) The camera shall provide the option to set each stream at variable bandwidth from 10 kbps to 5 Mbps
- 8 The camera shall have an Ethernet (IP) interface using an RJ45 CAT5, CAT5e or CAT6 UTP cable
- 9 The camera shall as minimum provide the following communication protocols: TCP/IP, UDP/IP, HTTP, ARP
- 10 The camera shall communicate over the Ethernet network using Multicasting technology.
- 11 The camera shall be able to take lenses using the standard C/CS mounts.
- 12 The camera shall be fitted with auto iris, 1/3" 3.5-8 mm lenses.
- 13 The camera shall be comprise of a camera block "driver" which consist of a 1/3" CCD with 520TV Lines in minimum
- 14 The camera shall maintain operation at temperature of -20°C-50°C in normal operation
- 15 The camera shall be fitted in housing capable of withstanding rough conditions.

## **1.10 IP Video Server Specifications: (MP264HS-100 9CIF H.264 IP Video Server)**

### **A GENERAL**

The network (IP) Video Server shall be high resolution digital video of up to 9CIF (1280\*720); using the H.264 compression algorithm and TCP/IP transmission.

### **B Camera specifications**

1 The IP video server shall be a network (IP) based.

2 The IP video Server shall be available in NTSC and PAL formats.

3 The IP video Server as a minimum shall maintain 30 fps NTSC / 25 fps PAL video at 4CIF digital video resolution (704x480 NTSC/704x576 PAL), also shall be able to support higher resolution 800\*600, 1024\*768 and 1280\*720.

4 The IP video Server shall digitize and compress the video using the latest in video compression technology and shall utilize H.264 video compression

5 The IP video Server shall operate from 230V AC. Any external converters required to convert 230 VAC to suitable voltage required by the camera will have to be supplied by the contractor.

6 The IP video Server shall build in IEEE802.3af PoE.

7 The IP video Server shall provide dual encoded video streams to allow simultaneous and independent viewing and recording of live video at different frame rates and image quality.

a) The IP video Server shall provide the option to set each stream at a frame rate between 1-30NTSC/1-25PAL

b) The IP video Server shall provide the option to set each stream at the following Video resolutions:

i CIF (352x240NTSC/352x288PAL)

ii 2CIF (704x240 NTSC/704x288 PAL)

iii 4CIF (704x480 NTSC/704x576 PAL)

iv SVGA(800\*600)

v XVGA(1024\*768)

vi 1280\*720

c) The IP video Server shall provide the option to set each stream at variable bandwidth from 10 kbps to 5 Mbps

8 The IP video Server shall have an Ethernet (IP) interface using an RJ45 CAT5, CAT5e or CAT6 UTP cable

9 The IP video Server shall as minimum provide the following communication protocols: TCP/IP, UDP/IP, HTTP, ARP

10 The IP video Server shall communicate over the Ethernet network using Multicasting technology.

11 The IP Video Server shall maintain operation at temperature of -0°C-55°C in normal operation

12 The IP Video Server shall support PAL / NTSC camera.

13 The IP Video Server shall support PTZ camera via PELCO-D protocol.