Ready-made Request For Proposal (RFP) with Sony Network Cameras

SNC-VB640
Fixed-type Full High Definition (FHD) CS-mount Network Camera

(Software version 2.8.0 or later)

A. MAIN FEATURES:

1. Fixed-type Full High Definition (FHD) CS-mount Network Camera

2. The camera shall capture crisp, low-noise Full HD images, even in challenging low-light conditions. The sensitive 1/2.8" type Exmor R CMOS image sensor shall be teamed with XDNR processing, improving low-light performance and achieving the minimum illumination of 0.006 lux(30 IRE) in colour mode.

B. CAMERA:

1. The camera shall utilize a 1/2.8-type progressive scan Exmor R CMOS sensor.

2. The number of effective pixels shall be approx. 2.13 Megapixels.

3. The analog video output of the camera shall be selectable from either the NTSC or PAL standards.

4. The camera shall require a minimum scene illumination of:

   Color:
   0.01 lx (50 IRE [IP], F 1.2, View-DR Off, VE Off, Auto gain control maximum rate MAX, 1/30s, 30 fps)
   0.006 lx (30 IRE [IP], F 1.2, View-DR Off, VE Off, Auto gain control maximum rate MAX, 1/30s, 30 fps)

   B/W:
   0.007 lx (50 IRE [IP], F 1.2, View-DR Off, VE Off, Auto gain control maximum rate MAX, 1/30s, 30 fps)
   0.005 lx (30 IRE [IP], F 1.2, View-DR Off, VE Off, Auto gain control maximum rate MAX, 1/30s, 30 fps)

5. The camera shall have an equivalent 90 dB Wide Dynamic range (Wide-D) capability, realized by a technology that using electronic

shutter to capture multiple images and reproduce each frame. (e.g. One image is taken using a standard exposure time and one image is taken using a very short exposure time.)

6. The camera shall use a technology to optimize the brightness and color reproduction of the image dynamically on a pixel-by-pixel basis.

7. The camera shall limit the maximum amount of gain-controlled automatic exposure control.

8. The electronic shutter speed shall be set from 1/1 to 1/10,000 second.

9. White balance shall be selected among ATW (approx. 2000 K to 10000 K), ATW-PRO (approx. 2500 K to 6000 K), Indoor, Outdoor, Fluorescent lamp, Mercury lamp, Sodium Vapor lamp, Metal Halide lamp, White LED, One push WB, or Manual settings.
The R/B gain offset can be set for the ATW or ATW-PRO settings.

10. The camera shall have a CS-mount 2.9X DC auto-iris type Varifocal lens as a standard equipment.

11. The camera shall also have 4X digital zoom capability.

12. The camera shall have the total zoom ratio of 11.6X with 2.9X optical zoom and 4X digital zoom capabilities.

13. The viewing angle in 1920 x 1080 mode (16:9 aspect ratio) shall be:
Horizontal: 114.2 ˚ to 40.0 ˚.
Vertical: 60.6 ˚ to 22.5 ˚.

14. The focal length shall be 2.8 to 8.0 mm.

15. The aperture range for the lens (F number) shall be F 1.2 (Wide) to F 1.95 (Tele).

16. The minimum object distance shall be 11 7/8 inches (300 mm).

C. CAMERA FEATURES:

1. The camera shall have a True Day/Night (D/N) function to switch to Day mode (color mode) or Night mode (black and white mode) depending on the light level.

2. The camera shall have a functionality to reduce Auto –Gain-Control (AGC) noise to provide clear images without motion blur in low light environment.

3. The camera shall have an Image Stabilizer function, which can display with less video sway when the camera is installed in a place with vibration.

4. The camera shall have a functionality to provide recommended parameter setting-combination as menu to optimize picture quality in various applications for general outdoor, moving object capturing, low noise, less flicker for 50Hz or 60Hz.

5. The camera shall have polygonal privacy zone masking which blocks out unwanted or prohibited area within the video image to protect privacy.
    Mask colors shall be Black, any of 6 shades of Gray, White, Green, Yellow, Red, Cyan, Magenta, and Blue.
    Mosaic patters shall be also selected as masking.
    The camera shall be capable of masking up to 20 areas.

6. The camera shall have a built-in SD card slot for an on-board recording capability (Edge Storage).
    Network-disconnection on recording should be supported, and the recorded video search &replay function should be available in the camera GUI. The video streaming of replay from SD-card memory should be using the same protocols as live streaming such as RTP/RTCP, RTSP over TCP, RTSP over HTTP.

7. The camera shall support the voice alert function, which can automatically play an audio file stored on the camera by an alarm trigger using motion detection, unique Video Motion Filters (DEPA Advanced VMFs), camera tampering detection, or via a sensor input.

D. VIDEO:

1. The supported resolutions shall be 1920 x 1080, 1280 x 720, 1024 x 576, 720 x 576 (PAL), 720 x 480 (NTSC), 704 x 576, 640 x 480, 640 x 360, 352 x 288, and 320 x 184 resolution.

2. The camera shall support the following compression formats: JPEG and H.264 (High/Main/Baseline Profile).

3. The maximum resolution for each compression format shall be 1920 x 1080.

4. The maximum frame rate shall be 60 frames per second in H.264 (High/Main/ Baseline Profile) at 1920 x 1080 resolution and 60 frames per second in JPEG at 1280 x 720 resolution.

5. The camera shall provide smoother and less blurry moving pictures with the High Frame Rate of 50 fps (PAL) or 60 fps (NTSC).

When the High Frame Rate setting is set to off, the maximum frame rate shall be 25 fps (PAL) or 30 fps (NTSC).

6. The camera shall have constant bit rate (CBR) or variable bit rate (VBR) capable of maximum bit rate setting compression mode selectable to correspond with various network conditions.

   When CBR is selected, the bandwidth and storage capacity requirements shall be calculated easily, because the bit rate shall be always constant. On the other hand, image quality shall degrade exhibiting signs of macro blocking depending on the scene situation.

   When VBR is selected, higher quality images shall be always maintained regardless of the bandwidth and storage capacity requirements, because the bit rate shall be variable by a scene. Besides, in VBR mode, the camera shall limit the "Maximum value of the bit rate", while maintaining the image quality and the frame rate, so as to reduce the storage capacity.
   Moreover in VBR mode with the "Maximum bit rate limit", the camera shall accept the frame skip for the bit rate control to minimize the storage capacity.

7. Bit rate (Kbps) shall be selected among 64, 128, 256, 384, 512, 768, 1000, 1500, 2000, 3000, 4000, 5000, 6000, 7000, 8000, 16000, 24000, or 32000.

8. The camera shall be capable of electronic pan/tilt/zoom (e-PTZ) named Solid PTZ.

9. The camera shall be capable of limiting the bandwidth from 64 kbps to 32 Mbps in H.264 (High/Main/Baseline Profile), and from 0.5 Mbps to an unlimited bandwidth in JPEG.

10. The camera shall have the capability of simultaneously encoding up to 3 of the following compression formats in any combination, including multiple streams of the same format: JPEG and H.264 (High/Main/Baseline Profile).

11. The camera shall be capable of supporting up to 20 users simultaneously over the network.

E. INTELLIGENT VIDEO ANALYTICS:

1. The camera shall have a unique conventional intelligent video analytics named Distributed Enhanced Processing Architecture

Advanced (DEPA Advanced) to trigger an alarm based on user-defined rules.

2. The camera shall incorporate a built-in unique Intelligent Motion Detection (IMD) capability.
   To minimize false triggers, this Intelligent Motion Detection shall compare the current image with prior 15 frames within the camera. This algorithm shall allow the camera to discriminate against some environmental noise such as shaking leaves or Auto Gain Control maximum rate noise.

3. The camera shall have a Face Detection function which detects the locations and sizes of human faces.
   It detects facial features and ignores other objects, such as buildings, trees, and bodies.

4. The camera shall have a camera tampering detection function that alerts the operator if the camera is tampered with. Tampering can include spraying of the camera lens, covering it with a cloth, or changing of the mounting direction.

5. The camera shall have the following scene analytics, all of which can be set from the camera setup menu:

   - Intrusion: When a moving object enters the designated area, an alarm is triggered.

   - Passing: A passage line is determined, and when a moving object passes the set line, an alarm is triggered.

   - Left Object Detection: When an object has been left unattended for too long in the designated area, an alarm is triggered.

   - Removed Object Detection: When an object has been removed from the designated area, an alarm is triggered.

F. AUDIO:

1. The camera shall support bi-directional audio, using G.711 (64 kbps), G.726 (40, 32, 24, 16 kbps) and AAC (48, 16 kHz) compression formats.

2. The camera shall be capable of storing and playing back up to 3 audio files.
   Audio files shall be generated and transferred to the camera using either the web browser or the manufacturer provided SNC toolbox software.

G. SYSTEM REQUIREMENTS & NETWORK:

1. The camera shall incorporate a built-in web server, such that the standard web browser Microsoft Windows Internet Explorer (version 11.0) can be used to access the camera without need for special viewer software.

2. The camera shall support the following network protocols: IPv4, IPv6, TCP, UDP, ARP, ICMP, IGMP*, HTTP, HTTPS, FTP (client only), SSL, SMTP, DHCP, DNS, NTP, RTP/RTCP, RTSP over TCP, RTSP over HTTP, and SNMP (v1, v2c, v3). Network security shall be via password (basic authentication) and IP filtering.

   *Source-Specific Multicast (SSM) shall be supported.

3. The camera shall have an FTP client capability which allows the following:

   - Transferring a JPEG image to a pre-specified FTP server when an alarm is triggered by either motion detection, camera tampering detection or sensor input.

   - Periodically capturing a JPEG image and transferring it to the FTP server.

4. The camera shall support QoS technology using Differentiated Services Code Point (DSCP).

5. The camera shall be compliant with the Open Network Video Interface Forum Profile S (ONVIF Profile S) conformance.

H. INETERFACES:

1. The composite analog video output from the camera shall be 1.0 V peak-to-peak @ 75 ohms, unbalanced, sync negative via a BNC type connector.

2. Horizontal resolution shall be 700 TV lines (4:3 aspect ratio, analog video).

3. The camera shall have mini jack connectors to support external microphone and active speakers. Mic/Line input shall be switchable.
   Mic input shall be monaural, 2.2 kilo ohms, DC 2.5 V plug-in-power, Line input shall be monaural, and active speaker output shall have a maximum output level of 1 Vrms.

4. The network interface shall be via an 8-pin RJ-45 connector, 10Base-T/100Base-TX Ethernet.
   Both IPv6 and IPv4 are supported.

5. The camera shall have a 7-pin I/O interface located on the rear of the camera.
   There shall be 2 alarm input ports, and 2 alarm/relay output ports.
   The alarm input ports shall be opto-isolated.
   For the alarm output ports, the timer execution shall be able to be selected.

6. The camera shall support 2 optically isolated sensor inputs, and 2 relay outputs.
   The interface shall be via a 6-pin push type spring lock connector.

7. 2 relay outputs shall be rated at AC 24 V/DC 24 V, 1 A or less.

8. The camera shall have a built-in SD card slot for an on-board recording capability for movies and still pictures.
   The maximum number of recording shall be up to 4,000.
   The camera notify the specified SD card maintenance information.
   SD card up to 256 GB shall be available.
   (The maximum number of event recording in the SD card is 4000. It may not use the full capacity of the SD card, depending on the limitation set for the event recording.)

I. GENERAL SPECIFICATIONS:

1. The camera input power shall be a power voltage of either DC 12 V ± 10%, AC 24 V ± 20%, or shall be Power over Ethernet (PoE) (IEEE 802.3af compliant, Class 0).

2. Power consumption for the camera shall be 6.0 W maximum.

3. The camera operating temperature shall be within the following range:
   +14 ˚F to +122 ˚F (-10 ˚C to +50 ˚C)

4. The camera starting temperature shall be within the following range:
   +32 ˚F to +122 ˚F (0 ˚C to +50 ˚C)

5. The camera storage temperature shall be within the following range:
   -4 ˚F to +140 ˚F (-20 ˚C to +60 ˚C)

6. The camera operating humidity shall be within the range of 20 % to 80 % (non-condensing).

7. The camera storage humidity shall be within the range of 20 % to 80 % (non-condensing).

8. The camera dimensions (W x H x D) shall be approximately:
    2 7/8 x 2 1/2 x 5 3/4 inches (72 mm x 63 mm x 145 mm) (without lens and projecting parts)
    2 7/8 x 2 1/2 x 7 7/8 inches (72 mm x 63 mm x 199 mm) (with lens and projecting parts).

9. The camera shall weigh approximately 1 lb 3.9 oz (565 g) with lens.

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Features and specifications are subject to change without notice. Non-metric weights and measurements are approximate.