Architectural and Engineering Specifications

GV-IP Speed Dome

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The document is written using industry standard formatting and language, and is designed for use by architects, consultants, and specifying engineers who are preparing bid specifications for security cameras, surveillance systems and access control systems.

The electronic version of these specifications may be copied into the appropriate sections of a complete bid specification by using the "cut and paste" method. They are written to highlight the features and specifications of GeoVision products. Section headings mention specific models only for clarity – these may be deleted after insertion into the complete specification.

Products covered in this document include:
GV-SD220-S.

The GV-IP Speed Dome (GV-SD220/GV-SD220-S) is a network PTZ camera designed for image quality and adaptability in various environments. This camera offers the image of 1080p at 30 fps, 720p at 60 fps and 20x / 30x optical zoom, capable of showing smooth live view with great detail. In low-light environments, image quality is promised with its image processing tools, such as IR cut filter (ICR), Wide Dynamic Range pro (WDR pro), Backlight Compensation and noise reduction.

All specifications are subject to change without prior notice. *For more information on GeoVision products, please visit www.geovision.com.tw.*

GV- IP Speed Dome

A. General Requirements

1. The camera shall be a dual-stream, day/night, network camera equipped with the following image sensor:

GV- IP Speed Dome	Image Sensor
GV-SD220-S	1/2.8'' progressive scan CMOS

2. The main stream shall utilize H.264 and MJPEG video compression methods with the maximum resolution and frame rate as below:

GV- IP Speed Dome	Max. Resolution & Frame Rate
GV-SD220-S	1920 x 1080 at 30/25 fps (60/50 Hz) 1280 x 720 at 60/50 fps (60/50 Hz)

3. The sub stream shall utilize H.264 and MJPEG video compression methods with a resolution up to 1920 x 1080 at a maximum frame rate of 30 fps.
4. The maximum numbers of streams supported for the camera over the network, using the H.264 codec are described as below.

GV- IP Speed Dome	Max. Number of Streams
GV-SD220-S	4

When the camera is connected to GV-System (GV-DVR/NVR) or GV-VMS, video management software, it shall take up two (2) streams and when it is connected to IE browser or any other application, it shall take up one (1) stream.

5. The camera shall provide administrator and guest account settings on the Web interface. The administrator account shall have full access to all the functions, and the guest account shall only have access to camera live view and network status information.

B. Operation Requirements

1. The camera shall pan up to 360° endlessly and tilt from 0° to 180°.
2. The camera's speed shall range from 0.5° per second up to 460° per second with the pan accuracy of 0.2°.
3. The camera shall activate auto calibration when it detects any inaccuracy. In addition, the users shall be able to calibrate the camera manually.
4. The camera shall perform automatic function, including preset, sequence, auto pan, cruise and tour.
5. The users shall be able to set up a preset position toward which the dome view moves. Up to 255 preset points shall be configured and saved.
6. The camera shall perform a pan movement up to 360° endlessly to survey the dome view between two user-defined positions, called the Auto Pan. The users shall be able to configure up to 8 sets of auto pan mode.
7. The users shall be able to set the dome view move in a series of predefined movements, called a Sequence.
    a. Up to 8 Sequences shall be created, and one Sequence group shall include up to 16 Preset Points.
    b. The users shall be able to specify the duration of the dome to stay at a Preset, ranging from 1 to 255 seconds.
8. The users shall be able to set up a route consisting of different directions, angles, and zooms for the camera to follow, called the Cruise. Up to 4 Cruises shall be created.
9. The users shall be able to set up the camera to move in a combination of preset positions, sequence, cruise and auto pan, called the Tour. Up to 8 Tour routes shall be configured. The maximum number of Preset, Sequence, Auto Pan and Cruise for the Tour is 16.
10. The pan and tilt speed of the camera shall be proportional to zoom ratio.

11. The camera shall perform Mechanic Flip, in which the dome view rotates 180° when it is tilted to the maximum angle (vertically 0° or 90°) and is thus able to track objects continuously.
12. The users shall be able to define the dome view movement when the camera reboots.
13. When the dome is idle for a period of time, a defined movement such as automatic monitoring shall be activated. The idle time length shall be set from 0 to 120 minutes.
14. Dome movements such as Preset, Sequence, Auto Pan, Cruise and Tour shall be available to be programmed and activated by schedule.

C. Alarm and Notification Requirements

1. The camera shall be capable of motion detection.
2. A privacy mask function shall be provided for users to specify up to 8 areas to be blocked off on the camera view for privacy purpose.
3. The camera shall be capable of triggering an output device or sending E-mail alert when recording errors occur and when the memory card is full.
4. The camera shall have E-mail and FTP ability for alert notification. When motion is detected or when an input device is triggered, a captured still image shall be sent by E-mail or to the FTP server.
5. The camera shall be capable of integration with video management software or a central monitoring station. The video or text alerts shall be sent upon alarm event.

D. Recording and Playback Requirements

1. The camera shall be capable of beginning recording according to a schedule, upon input trigger, and upon motion detection.
2. The camera shall be capable of storing recorded data on an inserted micro SD/SDHC memory card (version 2.0, Class 10), an FTP server, GV-Systems (GV-DVR/NVR), GV-Backup Center and GV-Recording Server, and GV-VMS.
3. Scheduled backup shall be supported when connected to a server installed with the GV-Backup Center program.
4. Pre-recording and post-recording functions shall be available.
5. Users shall be able to play back recorded data over network or on a video management software, GV-System (GV-DVR/NVR) or GV-VMS.

E. Video Requirements

1. The camera shall support both constant bitrate (CBR) and variable bitrate (VBR). For variable bitrate (VBR), the maximal bit rate shall be selectable to restrict the system from exceeding a specified bit rate.
2. The following white balance settings shall be selectable on the Web interface: auto and manual. The manual white balance range shall be approximately 2800 degrees to 8500 degrees Kelvin.
3. The camera shall have an automatic and manual shutter with the speed range of 1/1 – 1/10000 seconds.
4. The camera shall support the following image adjustment on the Web interface: image brightness, contrast, saturation, sharpness, white balance, flicker-less, shutter speed, image orientation, backlight compensation, D/N sensitivity, WDR and noise deduction.
5. The camera shall support one (1) aspect ratio:16:9.

GV-SD220-S	**Main Stream**	1920 x 1080 (Default), 1280 x 720, 640 x 360, 488 x 252
	Sub Stream	640 x 360, 448 x 252 (Default)

6. The S/N ratio for the camera shall be as described below.

Models	**S/N Ratio**
GV-SD220-S	50 dB (AGC off)

F. Audio Requirements

1. The camera shall support audio codec G.711.
2. The camera shall support two-way audio transmission.
3. The camera shall be equipped with stereo phone jacks (3.5 mm / 0.14”) to support an external microphone and speaker.

G. Networking Requirements

1. The camera shall be equipped with a 10/100 Ethernet, RJ-45 connector as a network interface.
2. The camera shall be built with a Web server with which the live view is accessible using Web browsers, without the need for special viewer software.
3. The camera shall support the following network protocols: DHCP, DynDNS, FTP, HTTP, HTTPS, NTP, ONVIF (Profile S), PSIA, QoS

(DSCP), RTSP, SNTP, SMTP, TCP, UDP, UPnP and 3GPP/ISMA.

4. Port settings shall be configurable.
5. The camera shall be able to filter or allow specific IP addresses to restrict access to the camera.
6. QoS (DSCP) shall be supported to allow differentiated bandwidth control.

H. H. Lens Requirements

1. The camera shall be equipped with a lens of focal length as below.

Models	Optical Zoom	Focal Length
GV-SD220-S	20x	4.7 ~ 94.0 mm
	30x	4.3 ~ 129 mm

2. The camera shall be equipped with a removable IR-cut filer.
3. The maximum aperture of the camera shall be F/1.6.
4. The camera shall support automatic and manual gain control. In the case of manual gain control, the users shall be able to change the white balance values to adjust R Gain (red color of images) and B Gain (blue color of images) values.
5. The camera is a WDR Pro model and shall be equipped with a WDR sensor to process scenes with contrasting intensity of lights.
6. The dynamic range for this camera shall be as described below.

Models	Dynamic Range
GV-SD220-S	Up to 100 dB

7. The camera shall have the minimum illumination as described below.

Models	Minimum Illumination
GV-SD220-S	0.05 Lux at F/1.6 in color mode 0.005 Lux at F/1.6 in B/W mode

I. Mechanical Requirements

1. The camera shall pan and tilt up to the following angles.

GV- IP Speed Dome	Travel Angle
GV-SD220-S	Pan Travel - 360° endless Tilt Travel - 0° ~ 180°

2. The camera shall achieve the speed of the following range:

GV- IP Speed Dome	Movement Speed

GV-SD220-S	0.5° ~ 460° per second

3. The camera shall support 20x / 30x optical zoom and 12x digital zoom
4. The camera shall be equipped with interface for 4 sensor inputs (dry contact) and 1 alarm output (200 mA, 5V DC).
5. The camera shall have a dimension of Ø 220 (diameter) x 297.75 (height) mm (8.7” x 11.7”).
6. The camera shall have a weight of 4.7 Kg (10.4 lb).
7. The camera shall have a built-in temperature detector to detect the chipset temperature inside the camera.
8. The camera shall support wall installation with the standard package.
9. The camera shall contain an IR-cut filter to switch the camera from color to monochrome mode automatically by sensing the illumination level or via an input device.

J. Power Requirements

1. Power shall be connected using the power adapter or the Power over Ethernet (PoE).
2. The camera shall be capable of receiving power from 24V AC / 24V DC and PoE++ (60 W).
3. The maximum power consumption for the camera shall be 60 W, in which 30 W shall be consumed once the heater is activated.
4. A compatible PoE adapter shall be required for applying PoE function.

K. Environmental Requirements

1. The camera shall tolerate between -40°C ~ 50°C (-40°F ~ 122 °F).
2. The humidity shall be within the range of 20% to 90% with no condensation.
3. The camera shall comply with IP67 protection classification.
4. The camera shall comply with IK10 vandal resistance for metal and polycarbonate casing.

5. The camera shall be equipped with 2 heaters, and they shall be activated when the following temperatures are met:

GV- IP Speed Dome	Heater 1	Heater 2
GV-SD220-S	On: 5°C (41°F); Off: 8°C (46.4°F)	On: -7°C (19.4°F); Off: -2°C (28.4°F)

6. The camera shall be equipped with 1 fan, and it shall be activated when the following temperatures are met:

GV- IP Speed Dome	Fan On
GV-SD220-S	45°C (113°F)

L. System Requirements

1. The camera shall be accessible through Web browsers including Microsoft Internet Explorer (version 7.0 or later), Google Chrome, Mozilla Firefox and Safari.

M. Language Requirements

1. 1. The camera shall support 31 languages on the Web interface, including Arabic, Bulgarian, Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hebrew, Hungarian, Indonesian, Italian, Japanese, Lithuanian, Norwegian, Persian, Polish, Portuguese, Romanian, Russian, Serbian, Simplified Chinese, Slovakian, Slovenian, Spanish, Swedish, Thai, Traditional Chinese and Turkish.

N. Applications

1. The camera shall support the following software for network storage:
   - Video management software: GV-System (GV-DVR/NVR), GV-VMS
   - Backup and Recording software: GV-Backup Center, GV-Recording Server
2. The camera shall support smart device access using mobile application GV-Eye for live view display and remote playback.
3. The camera shall allow remote access from central management stations, such as GV-Control Center, GV-Center V2 and GV-Vital Sign Monitor.

O. Packing List shall include:

1. GV- IP Speed Dome

2. Pendant Tube
3. Hex Keys x 2
4. M6 Screws x 4
5. Desiccant pack x 4
6. GV-IP Speed Dome Software CD
7. GV-NVR Software DVD

P. Certifications and Approvals

1. CE, FCC, RCM, RoHS Compliant