



**Closed-Circuit Television Camera Equipment
EQUIPMENT SPECIFICATION
Dated 11/2015**

1 **SECTION 1 – GENERAL EQUIPMENT SPECIFICATIONS:**

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3 **SPECIFICATION OUTLINE:**

4
5 The following specifications describe components for a Closed-Circuit Television Camera
6 (CCTV) System for Traffic and Transit Monitoring Applications. The specifications are divided
7 into two complete sections. The first section outlines the overall specification requirements.
8 The second section details the camera system and its functional capabilities and each
9 component of the camera system.

10
11 **ALTERNATES:**

12
13 When the name of a manufacturer, brand or make, with or without model number, is used in
14 describing any item in this specification, bids for similar articles will be considered unless
15 otherwise stated. Bidders may also propose items of equivalent features or manufacturer's
16 updated part or part number. Purchasing shall be the sole judge as to whether such alternate
17 articles are acceptable. Unless bidder states to the contrary, articles offered will be assumed
18 to be the specific article named in this specification. If not offering the specific article named,
19 bidder should enclose with its bid, full information, specifications and descriptive data on items
20 offered. Purchasing reserves the right to permit deviations from the specifications if any article
21 offered is substantially in accord with Purchasing's specifications and is deemed by Purchasing
22 to be of as good quality and as fully satisfactory for its intended use, Bidder is responsible for
23 identifying any deviations from Purchasing's specifications. Bidders should not assume an
24 alternate offered is an approved equal. The City will evaluate the alternate and inform the
25 bidder if the alternate is acceptable. Purchasing must approve all alternates.

26
27 **GENERALITIES:**

28
29 To allow for manufacturer's specific designs, and insure a level of competitiveness, we have
30 left certain areas of our specifications general by design. In such cases, the items being
31 referred to may be general, but adherence to the requested end product and /or result must be
32 met. This is especially important in areas where critical dimensions, distances, etc. are
33 specified. In the cases where the word SHALL is used, no substitution will be allowed.



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34 **MANUFACTURER'S SPECIFICATION:**

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 36 Complete manufacturer's specification, published literature and photos or illustrations of unit
 37 proposed, should be furnished with bid. Only new models in current production which are
 38 catalogued by the manufacturer and for which printed literature and specifications are available
 39 will be accepted. Bidders should prepare and submit their own proposals addressing each
 40 section, item or component of these specifications if they differ from these specifications.
 41 These shall indicate full compliance without exception, or explaining in detail any exception,
 42 deviation or non-compliance. Bidders should not simply submit a copy of these specifications
 43 if they differ from these specifications. Nor should they submit copies of manufacturer or third
 44 party quotations as a response to the City's bid solicitation.

45
 46 **BID QUANTITIES:**

Bid Item #	Item Description	Quantity
1	Network Pan-Tilt-Zoom (PTZ) Dome Camera Samsung Techwin, Model #SNP-6321H	150EA
2	Pole Mount Samsung Techwin, Model #SBP-300PM	150EA
3	PTZ Dome Camera Mount Bracket Samsung Techwin, Model #SBP-300WM1	150EA

48
 49 **DELIVERY AND PACKAGING REQUIREMENTS:**

- 50
 51 A. The bidder shall deliver all equipment and related components within 30 days of receipt
 52 of a purchase order.
 53
 54 B. The equipment and related components shall be boxed and delivered to:
 55
 56 SFMTA Traffic Signal Shop
 57 2650 Bayshore Boulevard
 58 Daly City, CA 94014
 59
 60 C. Deliveries *will* only be accepted between 8:00 a.m. and 2:00 p.m., Mondays through
 61 Fridays.
 62
 63 D. Each box shall be numbered and tagged to identify the project name and bidder.
 64



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- E. A complete inventory listing all boxes and their individual contents shall be provided upon delivery to facilitate inspection by SFMTA Traffic Signal Shop staff.
- F. The bidder shall be responsible for unloading and placement of the boxes as directed by the SFMTA Traffic Signal Shop supervisor.
- G. The City reserves the right to reject an entire shipment of equipment if ten percent or more of the total number (sample included) prove to be defective within a thirty (30) day period after installation, or fail any performance test.

WARRANTY:

The equipment, including the Network PTZ Dome Camera, Pole Mount, PTZ Dome Camera Mount Bracket, and related hardware shall be guaranteed against defective materials or workmanship for a 60-month period. The Successful Bidder shall be responsible for reimbursing City forces for any time and material utilized to make necessary field trouble calls due to defective equipment and/or related hardware peripherals during the warranty period. Units that are identified as being defective before the warranty has expired shall be replaced within 14 calendar days, from date of notice. The Successful Bidder shall be responsible for all costs, including shipping, incurred by SFMTA for all units that are installed at an intersection and fail as a result of warranty covered failure within the warranty period.

TRAINING AND SUPPORT:

The Successful Bidder shall provide technical support at no additional cost during warranty period. The technical support shall be provided by qualified personnel with extensive knowledge of the software and hardware characteristics of the equipment provided. All systems and components shall be provided with the availability of a toll-free number , and 24-hour technical assistance program (TAP) from the manufacturer. The TAP shall allow for immediate technical assistance for either the dealer/installer or the end user at no charge for as long as the product is installed. The Successful Bidder shall be an authorized silver or gold STEP (Samsung Team of Empowered Partners) partner. Documentation as evidence that the Successful Bidder is an authorized silver or gold STEP partner shall be submitted to the purchaser within five (5) working days from date of notice. The authorized silver or gold STEP partner shall have a physical business office within 100 miles of San Francisco.

BIDDER'S COMPLIANCE AND EXCEPTIONS

All exceptions shall be stated no matter how seemingly minor. Bidders shall indicate compliance with each section and line item specifications as required, in the line spaces provided by marking with a "Y" for yes. If the bidder is offering an alternate of



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106 equal or superior status to the line item specification, bidder will indicate by marking
107 with an "E" for exception on each line item. The bidder must then reference each item
108 exception and explain the exception taken and the proposed alternate on the Bid
109 Exception Sheets.

110
111 **Bids which do not include confirmation of each section and line item as required, will
112 be deemed to take exception to such bid requirements, which may result in the bid
113 being deemed non-responsive. If exceptions are taken, Bid Exception Sheets must be
114 returned with the submitted bids.

115
116 IMPORTANT: If a single vendor is submitting multiple bids, the vendor shall submit a
117 completed set of specs for each individual bid. Multiple bids that are submitted as one
118 bid package will not be acceptable.

119
120
121 **SECTION 2 – CLOSED-CIRCUIT TELEVISION (CCTV) CAMERA SYSTEM**

122
123 The closed-circuit television camera system shall provide high resolution video images as
124 needed to support traffic and transit management. The system must comply with the
125 standard specifications for the model offered including additional options as contained herein.

126
127 **CCTV CAMERA SYSTEM OVERVIEW:**

128
129 ___ The Closed-Circuit Television Camera System shall consist of the following:

- 130 ___ a. Network pan-tilt-zoom camera
- 131 ___ b. Pole mount for installing the camera and housing mount
- 132 ___ c. Housing mount for the camera to be installed on

133
134 ___ Video data shall be capable of being relayed from each camera to a central software
135 system or central server over standard IP (Internet Protocol) networks

136
137 **CCTV CAMERA SYSTEM FUNCTIONAL CAPABILITIES:**

138
139 ___ Each camera shall support multi-streaming technologies, transferring real-time high
140 resolution images at 60 fps with video compression in H.264 and MJPEG codec.

141
142 ___ Each camera shall provide 4.44~142.6mm (32x) optical zoom with 16x digital zoom. It



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143 shall support PoE plus, SD memory, and bi-directional audio.

144
145 _____ All operation and configuration menus shall be provided English, French, German,
146 Spanish, Italian, Chinese, Korean, Russian, Japanese, Swedish, Danish, Portuguese,
147 Turkish, Polish, Czech, Rumanian, Serbian, Dutch, Croatian, Hungarian, Greek,
148 Finnish, Norwegian

149
150 **NETWORK PAN-TILT-ZOOM (PTZ) CAMERA (BID ITEM #1)**

151
152 _____ Each camera shall be capable of displaying a total resolution of 1,952 (H) x 1,116
153 (V), or 2.18M pixels

154 _____ Each camera shall be capable of displaying an effective resolution of 1,944 (H) x
155 1,104 (V), or 2.14M pixels

156 _____ Each camera shall be capable of progressive scan.

157 _____ Each camera shall have a minimum illumination for the following:

158 _____ a. Color: 0.3 Lux (1/30 sec, F1.6, 50IRE, AGC high), 0.005 Lux (2 sec, F1.6,
159 50IRE, AGC high)

160 _____ b. B/W: 0.03 Lux (1/30 sec, F1.6, 50IRE, AGC high), 0.005 Lux (2 sec, F1.6,
161 50IRE, AGC high)

162 _____ c. Color: 0.15 Lux (1/30 sec, F1.6, 30IRE), 0.0025 Lux (2 sec, F1.6, 30IRE)

163 _____ d. B/W: 0.15 Lux (1/30 sec, F1.6, 30IRE), 0.0025 Lux (2 sec, F1.6, 30IRE)

164
165 _____ Each camera shall be rated with an S/N ratio of 50 dB

166 _____ Each camera shall have the following video outputs:

167 _____ a. NTSC (704x480, for installation)

168 _____ b. PAL (704x576, for installation)

169
170 _____ Each camera shall have a pan range of 360 degrees (endless) and a tilt range of 210
171 degrees (between -15 degrees and 195 degrees)

172 _____ Each camera shall have a pan/tilt speed preset for 700 degrees per second and
173 manual between 0.024 degrees/second and 120 degrees per second



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- 174 ___ Each camera shall have the ability to set azimuth directions (E/W/S/N/NE/NW/SE/SW)
- 175 ___ Each camera shall provide an angular field of view for the following:
 - 176 ___ a. 62.8°(Wide) ~ 2.23°(Tele)
 - 177 ___ b. 36.8°(Wide) ~ 1.26°(Tele)
- 178
- 179 ___ Each camera shall have a zoom ratio of 32x with focal length between 4.44 and 142.6
- 180 mm
- 181 ___ Each camera shall have a maximum aperture ratio of F1.6 (wide) / F4.4 (tele)
- 182 ___ Each camera shall be able to capture images with a minimum object distance of:
 - 183 ___ a. Wide: 1.4m (4.59 ft)
 - 184 ___ b. Tele: 1.9m (6.23 ft)
- 185
- 186 ___ Each camera shall have the ability to control focus through auto, manual or one
- 187 push mode.
- 188 ___ Each camera shall have a DC auto-iris lens.
- 189 ___ Each camera shall have the ability to compensate for backlight by enhancing
- 190 automatic exposure control.
- 191 ___ Each camera shall be able to function in day and night conditions through the use
- 192 of IR cut filter (ICR) and dual imager (color and B&W).
- 193 ___ Each camera shall have a wide dynamic range of 120 dB.
- 194 ___ Each camera shall have the ability for contrast enhancement.
- 195 ___ Each camera shall have the ability for digital noise reduction.
- 196 ___ Each camera shall have the ability for digital image stabilization.
- 197 ___ Each camera shall have the ability to defog through auto or manual modes.
- 198 ___ Each camera shall be able to provide motion detection.
- 199 ___ Each camera shall be able to provide privacy masking with up to 32 zones of
- 200 rectangle zone and zoom threshold mosaic option.
- 201 ___ Each camera shall have available settings for gain control (low, medium, high, off)



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- 202 ___ Each camera shall have available settings for white balance (ATW, AWC, manual,
203 indoor, outdoor, mercury)
- 204 ___ Each camera shall have available settings for electronic shutter speed (minimum,
205 maximum, anti-flicker between 2 and 1/12,000 sec)
- 206 ___ Each camera shall have the ability to perform digital zoom of up to 16x
- 207 ___ Each camera shall have the ability to perform intelligent video analytics with the
208 following features:
 - 209 ___ a. Tampering
 - 210 ___ b. Virtual line
 - 211 ___ c. Enter/exit
 - 212 ___ d. Appear/disappear
 - 213 ___ e. Audio detection
 - 214 ___ f. Face detection
- 215 ___ Each camera shall have alarm I/O with 4 inputs and 2 outputs
- 216 ___ Each camera shall come with an RS-485 remote control interface
- 217 ___ The RS-485 interface shall have the following protocols:
 - 218 ___ a. Samsung-T/E
 - 219 ___ b. Pelco-P/D
 - 220 ___ c. Panasonic
 - 221 ___ d. Honeywell
 - 222 ___ e. AD
 - 223 ___ f. Vicon
 - 224 ___ g. Bosch
 - 225 ___ h. GE
 - 226
- 227 ___ Each camera shall have the following alarm trigger features:
 - 228 ___ a. Motion detection



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- 229 ___ b. Tampering
- 230 ___ c. Audio detection
- 231 ___ d. Face detection
- 232 ___ e. Video analytics
- 233 ___ f. Alarm input
- 234 ___ g. Network disconnection
- 235
- 236 ___ Each camera shall have the following alarm event features:
- 237 ___ a. File upload via FTP and E-mail
- 238 ___ b. Notification via E-mail, TCP and HTTP
- 239 ___ c. Local storage (SD/SDHC/SDXC) recording at network disconnected &
- 240 event (alarm triggers)
- 241 ___ d. External output
- 242
- 243 ___ Each camera shall come with an RJ-45 10/100Base-T Ethernet interface
- 244 ___ Each camera shall have the H.264 (MPEG-4 part 10/AVC) and MJPEG video
- 245 compression codecs
- 246 ___ Each camera shall have the ability to transmit video at the following resolutions:
- 247 1920 x 1080p(Full HD), 1280 x 1024, 1280 x 960, 1280 x 720P (HD), 1024 x 768, 800
- 248 x 600, 800 x 450, 640 x 480, 640 x 360, 320 x 240, 320 x 180
- 249
- 250 ___ Each camera shall have the following frame rates:
- 251 ___ a. H.264 : Max. 60fps at all resolutions
- 252 ___ b. MJPEG : 1920 x 1080, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768 :
- 253 Max. 15fps
- 254 ___ c. 800 x 600, 800 x 450, 640 x 480, 640 x 360, 320 x 240, 320 x 180 : Max.
- 255 30fps



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257 ____ Each camera shall have the following video quality adjustments:

258 ____ a. H.264 : Compression level, target bit rate level control

259 ____ b. MJPEG : Quality level control

260

261 ____ Each camera shall have the following bitrate control method:

262 ____ a. H.264 : VBR or CBR

263 ____ b. MJPEG : VBR

264 ____ Each camera shall be capable of multiple streaming technologies, supporting up to
265 10 profiles

266 ____ Each camera shall have a selectable audio input with mic in/line in, with a supply
267 voltage of 2.5V DC and input impedance of approximately 2K Ohm

268 ____ Each camera shall have an audio line out output, with a 3.5 mm mono jack and
269 max output level of 1 Vrms

270 ____ Each camera shall have the following audio compression formats:

271 ____ a. G.711 u-law/G.726 selectable

272 ____ b. G.726 (ADPCM) 8KHz

273 ____ c. G.711 8KHz,

274 ____ d. G.726: 16Kbps, 24Kbps, 32Kbps, 40Kbps

275

276 ____ Each camera shall have bi-directional audio communication

277 ____ Each camera shall have the IPv4 and IPv6 Internet Protocol

278 ____ Each camera shall have the following communications protocols: TCP/IP, UDP/IP,
279 RTP(UDP), RTP(TCP), RTSP, NTP, HTTP, HTTPS, SSL, DHCP, PPPoE, FTP,
280 SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM,
281 UPnP, Bonjour



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- 282 ___ Each camera shall have the following security protocols: HTTPS(SSL) login
- 283 authentication, Digest login authentication, IP address filtering, User access log,
- 284 802.1x authentication
- 285 ___ Each camera shall have Unicast and Multicast streaming method capabilities
- 286 ___ Each camera shall have the ability to support up to 10 users at Unicast
- 287 ___ Each camera shall have a SD/SDHC/SDXC slot for supporting memory card with the
- 288 ability for motion images recorded in the SD/SDHC/SDXC memory to be
- 289 downloadable to NAS (Network Attached Storage).
- 290 ___ Each camera shall have the following application programming interface (API):
- 291 ONVIF profile S, SUNAPI 2.0, SVNP 1.2, Samsung Techwin, Open Platform
- 292 ___ Each camera shall be able to support the following webpage languages: English,
- 293 French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Swedish,
- 294 Danish, Portuguese, Turkish, Polish, Czech, Rumanian, Serbian, Dutch, Croatian,
- 295 Hungarian, Greek, Finnish, Norwegian
- 296 ___ Each camera shall have support for the following operating systems and web
- 297 browsers:
- 298 ___ a. Operating System: Windows XP / VISTA / 7 / 8, MAC OS X 10.7
- 299 ___ b. Web Browser: Microsoft Internet Explorer (Ver. 8 ~ 11), Mozilla Firefox (Ver.
- 300 9 ~ 19), Google Chrome (Ver. 15 ~ 25), Apple Safari (Ver. 6.0.2 (Mac OS X
- 301 10.8, 10.7 only), 5.1.7) * Mac OS X only
- 302
- 303 ___ Each camera shall be able to communicate the Smart View or SSM central
- 304 management software
- 305 ___ Each camera shall operate at temperatures between -10°C/-14°F to +55°C/+131°F
- 306 ___ Each camera shall have the ability to be stored at temperatures between -30°C/-
- 307 22°F to +60°C/+140°F
- 308 ___ Each camera shall meet the PoE+ technology standard
- 309 ___ Each camera shall be rated for IK10 vandal resistance
- 310 ___ Each camera shall be no larger than Ø152.0 x 218.0mm (Ø5.98" X 8.58")



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311 ____ Each camera shall weigh no more than 1.8kg (3.97 lb)

312

313 **POLE MOUNT (BID ITEM #2)**

314

315 ____ The housing bracket shall be installable for indoor/outdoor use.

316 ____ The housing bracket shall be made of steel (SECC).

317 **HOUSING BRACKET (BID ITEM #3)**

318

319 ____ The housing bracket shall be made of aluminum and steel (SECC).

320



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BID EXCEPTION SHEETS
Return with Bid if any exceptions are taken

Please Note: All exceptions to the City’s bid requirements must be listed on the sheets provided. Only those exceptions that are listed on the sheets provided will be evaluated. Any material exceptions may result in the rejection of the bid and the bidder will not receive further consideration.

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