

**BANGLADESH UNIVERSITY OF ENGINEERING & TECHNOLOGY (BUET)
DHAKA**

TECHNICAL SPECIFICATION FOR SUPPLY AND INSTALLATION OF IT EQUIPMENTS (VIDEO CAMERAS, SMART PHONES & NETWORKING ACCESSORIES), FOR THE DEPT. OF COMPUTER SCIENCE AND ENGINEERING, BUET UNDER THE HIGHER EDUCATION QUALITY ENHANCEMENT PROJECT (HEQEP) OF UGC.

NO: HEQEP/CP-3137/Procurement/PacakageG3/16-3-2015/003

Sl	Item Name	Description		Qty	Unit Cost (BDT)	Total Cost (BDT)
01	Video camera	Brand Name	To be mentioned by the bidder	8		
		Model	To be mentioned by the bidder			
		Country of origin	To be mentioned by the bidder			
		Physical Specifications				
		Sensor	1/4" CMOS Sensor Board Lens Focal Length: 4 mm F/No: 1.5 Minimum illumination: 0 lux Focus Depth: 20 cm ~ infinity			
		Veiw	Horizontal: 51.8° Vertical: 33.8° Diagonal: 59.6			
		Digital Zoom	4X			
		Audio	Built-in omni-directional microphone Sensitivity: -40 dB +/- 3 dB (5 meters max) Frequency: 100~2 Hz S/N: >60 dB Format: PCM/ADPCM External speaker output (speaker sold separately) Two-way audio			
		Pan & Tilt	Pan: -170° ~ +170° Tilt: up 90° and down 25°			

			Auto-Patrol preset positions: 10		
	Day/Night		Built-in ICR Night vision (IR) supports up to 7.5 meters		
	Hardware				
	Network		EEE 802.3u 10/100 Mbps Auto-MDIX Fast Ethernet		
	LED		Power, Link/Ac		
	WPS Button		Enable WPS connection		
	Reset Button		Reset to factory default		
	Privacy Button		Privacy mode on/off		
	Power Consumption		Max 10.5 Watts		
	Power		Input: 100~240V, 50/60 Hz, 0.5A Output: 12V, 1.25A external power adapter		
	Dimension		113 x 113 x 130 mm (4.5 x 4.5 x 5.1 in)		
	Weight		515 g (1.13 lbs.)		
	Temperature		Operating: 0°C ~ 40°C (32°F ~ 104°F) Storage: -25°C ~ 70°C (-13°F ~ 158°F)		
	Humidity		Max 90% (non-condensing)		
	Requirement				
	Management		Interface Internet Explorer 7.0 or Firefox, Safari, and Chrome		
	To Run software		Windows 7 (32/64-bit), Vista (32/64-bit), XP (32/64-bit) Windows Server 2003, 2008		
	TRENDnetVIEW Pro Software		Channel: supports up to 32 cameras Record/Playback/Motion Detection/Audio		
	Network Protocols		IPv4, ARP, TCP, UDP, ICMP DHCP Client, NTP Client, DNS Client, DDNS Client,		

			SMTP Client, FTP Client HTTP, Samba Client, PPPoE, UPnP, LLTD, RTP (Real Time Protocol) RTCP (Real Time Control Protocol), RTSP (Real Time Streaming Protocol) 3GPP (video only)			
		Wireless Standard	IEEE 802.11b, IEEE 802.11g, and IEEE 802.11n			
		Frequency	2.4 ~ 2.483 GHz ISM band			
		Antenna	1 x detachable 2 dBi dipole antenna (Reverse-SMA connector)			
		Date Rate	802.11b: up to 11 Mbps 802.11g: up to 54 Mbps 802.11n: up to 150 Mbps			
		Security	64/128-bit WEP, WPA/WPA2-PSK			
		Output Power	802.11b: 17 dBm (typical) 802.11g: 15 dBm (typical) 802.11n: 14 dBm (typical)			
		Receiving	Sensitivity-802. 11b: -88 dBm at 11Mbps 802.11g: -74 dBm at 54 Mbps 802.11n: -68 dBm at 150 Mbps			
		Channels	1~11 (FCC), 1~13(ETSI)			
		Management System	Web based administration			
		Access	Up to 20 user accounts			
		Backup/Restore	Save/retrieve configuration files			
		Log	System log up to 500 entries			
		Micro SD	View, download, delete files Format and remove Micro SD card (SDHC, up to 32 GB)			
		Settings				
		Image	Brightness, contrast,			

			saturation, sharpness, white balance, flip, mirror (horizontal/vertical), black & white, day, night, schedule mode			
		Shutter	1/3.25s, 1/7.5s, 1/10s, and 1/15s			
		Video setting				
		Profile 1:H.264/MPEG-4	Resolution: 1280 x 800, 640 x 400, 320 x 192, 160 x 96 Max frame rate: 30fps			
		Profile 2:H.264/MPEG-4	Resolution: 640 x 400, 320 x 192, 160 x 96 Max frame rate: 30fps			
		Profile 3: MJPEG	Resolution: 1280 x 800, 640 x 400, 320 x 192, 160 x 96 Max frame rate: 1280 x 800 @ 5fps, 640 x 400/320 x 192 @ 30fps JPEG quality: Low, Fair, Standard, Good, Excellent			
		Profile 4: H.264/MPEG-4	Resolution: 640 x 400, 320 x 192, 160 x 96 Max frame rate: 30fps RTSP:http://ipcamera_ip/3gpp			
		3GPP	Audio format: AMR Video format: MPEG-4 Protocols: RTSP, RTP, RTCP			
		Recording	Resolution: Define individual resolution for up to 4 profiles Required storage: 32 MB (minimum per profile) Recording type: event based (motion detection), continuous, and scheduled			
		Event Action	Trigger event: motion detection Action: send real-time			

			snapshot or video recording to FTP or email		
		Port Settings	HTTP port: 80 (default) RTSP port: 554 (default)		
		Time	Synchronize with NTP server or set time/date manually		
		Package Contents	TV-IP672WI CD-ROM (Utility & User's Guide) Multi-Language Quick Installation Guide Network cable (1.5 m / 5 ft.) Power adapter (12V DC, 1.25A) Camera mounting kit		
02	iPhone	Brand Name	To be mentioned by the bidder	10	
		Model	To be mentioned by the bidder		
		Country of origin	To be mentioned by the bidder		
		Power Supply	210-230V AC, 50Hz		
		Networks	WiFi, Bluetooth, 2G GSM, 3G, and 4G- network support		
		Display	LED-blacklit IPS LCD, capacitive touchscreen, Multi-Touch, Shatter proof glass, Oleophobic coating		
		Screen Resolution	750 x 1334 pixels, 4.7 inches(~326 ppi pixel density)		
		Camera	Min 8 MP, 3264 x 2448 pixels, phase detection autofocus, dual-LED (dual tone) flash. Support for both still and video pictures		
		Processor	Dual-core 1.4 GHz Cyclone (ARM v8-based)		

		Ram	Min. 1 GB RAM DDR3 Internal Storage: Min. 64 GB			
		Internal Storage	Min. 64 GB			
		Operating System	iOS 8, upgradable to iOS 8.1.1			
		Other Sensors	Accelerometer, gyro, proximity, compass, barometer			
		Battery	Non-removable Li-Po 1810 mAh battery (6.9 Wh)			
		Accessories	Apple earphone, Power/Data cable and charger			
		Warranty	Min.1 year full warranty			
03	Windows Phone	Brand Name	To be mentioned by the bidder	10		
		Model	To be mentioned by the bidder			
		Country of origin	To be mentioned by the bidder			
		Display	Multi-touch AMOLED capacitive touch screen			
		Screen Resolution	1080 x 1920 pixels, 5.0 inches			
		Camera	Min. 20 MP Megapixel, 4992 x 3744 pixels, Carl Zeiss optics, optical image stabilization, autofocus, dual-LED flash, Support for both still and video pictures			
		Processor	Min. Quad-core 2.2 GHz Krait 400			
		Ram	Min. 2 GB			
		Storage	Min. 32 GB			
		Operating System	Microsoft Windows Phone 8, upgradable to v8.1			
		Other Sensors	Accelerometer, gyro, proximity, compass			
		Battery	Standard battery, Li-Ion 2420 mAh battery			
		Accessories	Headphones, Power/Data Cords, and Charger			

		Warranty	Min. one-year full warranty Service: 3 years full service			
04	Android Phone (Type 1)	Brand	To be mentioned by the bidder	10		
		Model	To be mentioned by the bidder			
		Country of origin	To be mentioned by the bidder			
		Power Supply	210-230VAC, 50Hz			
		Networks	WiFi, Bluetooth, 2G GSM, 3G, and 4G network support			
		Display	Super AMOLED capacitive touch screen, 16M colors			
		Screen Resolution	Min. 1080 x 1920 pixels, 5.1 inches			
		Camera	16 MP, 3264 x 2448 pixels, 5312 x 2988 pixels, phase detection autofocus, LED flash. Support for both still and video pictures			
		Processor	Min. Quad-core 2.5 GHz Krait 400			
		Ram	Min. 2 GB			
		Internal Storage	Min. 32 GB			
		Operating System	Android OS, v4.4.2 (KitKat), upgradable to v5.0 (Lollipop)			
		Other Sensors	gyro, proximity, compass, barometer, gesture, heart rate			
		Battery	Standard battery, Li-Ion 2800 mAh			
		Accessories	Headphones, Power/Data Cords, and Charger			
Warranty	Min. one-year full warranty					
Service	3 years full service					
05	Android Phone (Type 2)	Brand	To be mentioned by the bidder	10		
		Model	To be mentioned by the bidder			

		Country of origin	To be mentioned by the bidder		
		Power Supply	210-230VAC, 50Hz		
		Networks	WiFi, Bluetooth, 2G GSM, 3G, and 4G network support		
		Display	True HD IPS+ or Super AMOLED capacitive touch screen, 16M colors		
		Screen Resolution	Min. 1080 x 1920 pixels, 4.95 inches		
		Camera	Min. 8 MP, 3264 x 2448 pixels, autofocus, optical image stabilization, LED flash. Support for both still and video pictures		
		Processor	Min. Quad-core 2.3 GHz Krait 400		
		Ram	Min.2 GB		
		Internal Storage	Min. 32 GB		
		Operating System	Android OS, v4.4 (KitKat), upgradable to v4.4.4 (KitKat) or v5.0 (Lollipop)		
		Other Sensors	gyro, proximity, compass, barometer, gesture, heart rate		
		Battery	Standard battery, Li-Ion 2300 mAh		
		Accessories	Headphones, Power/Data Cords, and Charger		
		Warranty	Min. one-year full warranty		
		Service	3 years full service		
06	Wi-Fi Dual-Band N Router	Brand Name	Internationally reputed brand to be mentioned by the bidder	7	
		Model	To be mentioned by the bidder		
		Country of origin	To be mentioned by the bidder		
		Description	Maximum Performance Dual-Band N Router		
		Number of Antennas	6 total, 3 internal antennas per each 2.4 GHz & 5 GHz radio band		

	Detachable (y/n)	No		
	Switch Port Speed	10/100/1000 Mbps		
	Ports	Internet, Ethernet (1-4), USB, Power		
	Buttons	Reset, Wi-Fi Protected Setup		
	LEDs	Power, Ethernet (1-4)		
	Modulation	802.11b: CCK, QPSK, BPSK , 802.11g: OFDM 802.11a: OFDM, 802.11n: BPSK, QPSK, 16-QAM, 64-QAM		
	Receive Sensitivity	2.4 GHz ,802.11b: -87 dBm @ 11 Mbps (Typical) 802.11g: -77 dBm @ 54 Mbps (Typical) 802.11n (20 MHz): -71 dBm @ MCS15(Typical) ,802.11n (40 MHz): -68 dBm @ MCS15(Typical). 5 GHz 802.11a: -75 dBm @ 54 Mbps (Typical) 802.11n 20 MHz: -70 dBm @ MCS15 (Typical), 802.11n 40 MHz: -67 dBm @ MCS15 (Typical)		
	Antenna Gain	2.4 GHz (Dipole Antennas) Antenna 1 \leq 3 dBi Antenna 2 \leq 4 dBi Antenna 3 \leq 4 dBi 5 GHz (Dipole Antennas) Antenna 1 \leq 4.5 dBi Antenna 2 \leq 4.5 dBi Antenna 3 \leq 4.5 dBi		
	UPnP	Supported		
	Security features	WEP, WPA, WPA2		
	Security key bits	Up to 128-bit encryption		
	Storage File System Support	FAT, and NTFS, and HFS+		
	Dimensions	6.69" x 0.98" x 7.48"(170 x 25 x 190 mm)		
	Unit Weight	7.62 oz (216 g)		
	Power	12V, 2A		
	Certifications	FCC, IC, CE, Wi-Fi		

			A/B/G/N		
		Operating Temp.	32 to 95°F (0 to 35°C)		
		Storage Temp.	-4 to 140°F (-20 to 60°C)		
		Operating Humidity	10 to 80% relative humidity, non-condensing		
		Storage Humidity	5 to 90% non-condensing		
		Warranty	Minimum 1 year full warranty		
07	STANDALONE Access Point With External Antenna A REG	Brand Name	Internationally reputed brand to be mentioned by the bidder	1	
		Manufacturer Website Address	To be mentioned by the bidder		
		Manufacturer Part Number	To be mentioned by the bidder		
		Model	To be mentioned by the bidder		
		Country of origin	To be mentioned by the bidder		
		Product Line	To be mentioned by the bidder		
		Product Series	To be mentioned by the bidder		
		Technical Information:			
		Wireless LAN Standard	IEEE 802.11n		
		ISM Band	Yes		
		UNII Band	Yes		
		ISM Minimum Frequency	2.41 GHz		
		ISM Maximum Frequency	2.46 GHz		
		UNII Minimum Frequency	5.18 GHz		
		UNII Maximum Frequency	5.83 GHz		
		Antenna Gain	4 dBi		
		Wireless Transmission Speed	300 Mbps		
		Wireless Security	<ul style="list-style-type: none"> • IEEE 802.11i • WPA2 • WPA • IEEE 802.1X 		

		<ul style="list-style-type: none"> • AES • TKIP • EAP-TLS • EAP-TTLS • MSCHAPv2 • PEAP • EAP-MSCHAPv2 • EAP-FAST • PEAPv1 • EAP-GTC 		
	Features	MIMO Technology		
	Interfaces/Ports			
	Ethernet Port	Yes		
	Fast Ethernet Port	Yes		
	Gigabit Ethernet Port	Yes		
	10Gigabit Ethernet Port	No		
	Network (RJ-11)	No		
	PoE (RJ-45) Port	No		
	VGA	No		
	HDMI	No		
	Audio Line Out	No		
	Serial Port	No		
	USB	No		
	Powerline Management Port	No		
	Management Port	Yes		
	Power Description			
	Power Source	AC Adapter PoE		
	Physical Characteristics:			
	Form Factor	Ceiling Mountable		
	Height	1.8"		
	Width	8.7"		
	Depth	8.7"		
	Weight (Approximate)	1.90 lb		
	Miscellaneous			
	Certifications & Standards	FCC Bulletin OET-65C RSS-102-1		
	Safety	UL 60950-1 CAN/CSA-C22.2 No. 609501		

			UL 2043, IEC 60950-1 EN 60950		
		Radio Approvals	FCC Part 15.247, 15.407 RSS-210 (Canada) EN 300.328, EN 301.893 (Europe) ARIB-STD 33 (Japan) ARIB-STD 66 (Japan) ARIB-STD T71 (Japan) AS/NZS 4268.2003 (Australia and New Zealand) EMI and susceptibility (Class B) FCC Part 15.107 and 15.109 ICES-003 (Canada) VCCI (Japan) EN 301.489-1 and -17 (Europe) EN 60601-1-2 EMC requirements for the Medical Directive 93/42/EEC		
		IEEE Standard	802.11a, 802.11b, 802.11g, 802.11n, 802.11h, 802.11i, 802.1X, 802.11d,		
		Warranty	Minimum 1 year full		
08	Wireless-N Selectable-Band Access Point with PoE	Brand Name	Internationally reputed brand to be mentioned by the bidder	2	
		Manufacturer Website Address	To be mentioned by the bidder		
		Manufacturer Part Number	To be mentioned by the bidder		
		Model	To be mentioned by the bidder		
		Country of origin	To be mentioned by the bidder		
		Product Line	To be mentioned by the bidder		
		Product Series	To be mentioned by the		

		bidder		
		Technical Information		
	Wireless LAN Standard	IEEE 802.11n		
	ISM Band	Yes		
	UNII Band	No		
	ISM Maximum Frequency	2.40 GHz		
	Antenna Gain	2 dBi		
	Antenna Type	Patch Antenna		
	Wireless Transmission Speed	300 Mbps		
	Wireless Security	Wi-Fi Protected Setup (WPS) Access Control List WPA2-Enterprise WPA-Enterprise IEEE 802.1x IEEE 802.1i RADIUS WEP SSH		
	Features	Quality of Service (QoS)		
	Interfaces/Ports			
	Ethernet Port	Yes		
	Fast Ethernet Port	Yes		
	Gigabit Ethernet Port	Yes		
	10Gigabit Ethernet Port	No		
	Number of Network (RJ-45) Ports	1		
	Network (RJ-11)	No		
	PoE (RJ-45) Port	Yes		
	VGA	No		
	HDMI	No		
	Audio Line Out	No		
	Serial Port	No		
	USB	No		
	Powerline	No		
	Management Port	No		

Management & Protocols				
Management	Web-Based Management			
	Remote Management			
	SNMP v3			
	Syslog			
	DHCP			
	VLAN			
Power Description				
Input Voltage	12 V DC			
Power Source	AC Adapter			
Physical Characteristics				
Form Factor	Desktop			
	Wall Mountable			
	Ceiling Mountable			
Height	1.4"			
Width	6.7"			
Depth	6.7"			
Weight (Approximate)	9.76 oz			
Miscellaneous				
What's in the box	WAP321 Wireless-N Selectable-Band Access Point with Power over Ethernet, Ceiling/Wall Mounting Kit , Ethernet Network Cable , User Guide on CD-ROM			
System Requirements	802.11b, 802.11g, 802.11n wireless adapter with TCP/IP protocol installed per PC Switch/router with PoE support or PoE injector when used with PoE Web-based configuration: Java-enabled web browser Operating System: Linux			
Certifications & Standards	IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11i IEEE 802.11e IEEE 802.1X IEEE 802.1Q IEEE 802.1p			

			IEEE 802.3 IEEE 802.3u IEEE 802.3ab IEEE 802.3af FCC class B CE IC		
		Warranty	Minimum 1 year full warranty		
09	Wireless-N Access Point with PoE	Brand Name	Internationally reputed brand to be mentioned by the bidder	2	
		Manufacturer Website Address	To be mentioned by the bidder		
		Manufacturer Part Number	To be mentioned by the bidder		
		Model	To be mentioned by the bidder		
		Country of origin	To be mentioned by the bidder		
		Product Line	To be mentioned by the bidder		
		Product Series	To be mentioned by the bidder		
		Technical Information			
		Wireless LAN Standard	IEEE 802.11n		
		ISM Band	Yes		
		UNII Band	No		
		ISM Maximum Frequency	2.40 GHz		
		Antenna Gain	2 dBi		
		Antenna Type	PIFA Antenna		
		Wireless Transmission Speed	300 Mbps		
Wireless Security	Wi-Fi Protected Setup (WPS) Access Control List WPA2-Enterprise WPA-Enterprise IEEE 802.1x IEEE 802.1i RADIUS WEP				

		Features	Quality of Service (QoS)		
		Interfaces/Ports			
		Ethernet Port	Yes		
		Fast Ethernet Port	Yes		
		Gigabit Ethernet Port	No		
		10Gigabit Ethernet Port	No		
		Number of Network (RJ-45) Ports	1		
		Network (RJ-11)	No		
		PoE (RJ-45) Port	Yes		
		VGA	No		
		HDMI	No		
		Audio Line Out	No		
		Serial Port	No		
		USB	No		
		Powerline	No		
		Management Port	No		
		Management & Protocols			
		Management	Web-Based Management Remote Management SNMP v3, Syslog, DHCP, VLAN,		
		Power Description			
		Input Voltage	12 V DC		
		Power Source	AC Adapter		
		Physical Characteristics			
		Form Factor	Desktop, Wall Mountable , Ceiling Mountable,		
		Height	1.4"		
		Width	4.9"		
		Depth	4.9"		
		Weight (Approximate)	5.92 oz		
		Miscellaneous			
		What's in the box	WAP121 Wireless-N Access Point with Power over Ethernet, Ceiling/Wall Mounting Kit Ethernet Network Cable 12V, 0.5A Power Supply		

			User Guide on CD-ROM Quick Start Guide			
		System Requirements	802.11b, 802.11g, 802.11n wireless adapter with TCP/IP protocol installed per PC Switch/router with PoE support or PoE injector when used with PoE Web-based configuration: Java-enabled web browser Operating System: Linux			
		Certifications & Standards	IEEE 802.11b IEEE 802.11g IEEE 802.11n IEEE 802.11i IEEE 802.11e IEEE 802.3 IEEE 802.3u IEEE 802.3af IEEE 802.1Q IEEE 802.1p IEEE 802.1D IEEE 802.1X FCC class B CE			
		Warranty	Minimum 1 year full warranty			

Dr. A.K.M. Ashikur Rahman

Professor

Dept. of Computer Science & Engineering, BUET

&

Sub Project Manager, CP- 3137