



Karachi Water & Sewerage Services Improvement Project
Project Implementation Unit

Karachi Water & Sewerage Board
40-G, Street 40, Block 6 PECHS, Karachi. Pakistan

TELEPHONE: +92-21-34374081, +92-21-99330279



ADDENDUM NO. 1

RFB No: PK-KWSB-200927-GO-RFB

Procurement Description: Improvement of the GIS

With reference to RFB Notice dated January 4th, 2024 following amendment have been made in the respective section of the Bidding Documents under this Addendum in accordance with ITB 8.1. The addendum shall be read and construed as an integral part of the Bidding Documents and shall take precedence in case of any conflict / ambiguities in the Bidding Documents and other provisions within. The changes mentioned herein below are applicable for RFB No: PK-KWSB-200927-GO-RFB unless indicated otherwise.

Interested Bidders shall take this addendum # 1 into consideration when preparing and submitting their bids. Also, this addendum should be signed, stamped and be submitted with the bids

Annex-Tech-1

The tables appearing in the RFB-IT at para (3.4) Standard Software Specifications, Section VII – Purchaser’s Requirement and Annex-Tech-1 are substituted with the following table.

Technical Responsiveness Checklist (GIS)

ID	Title	Qty	Item	Compliance (Yes/No)	Reference Document is At Bid Page no. / Annex #
1	Server Machine	(2 GIS Servers) (2 MIS Servers) Total :4	Processor: Up to 18 execution cores per processor Must have at least 2.3 GHz processor frequency Must have at least 2 nd generation Intel Xeon Processor Memory: Up to 32 GB internal with 300 GB storage capacity Backup: 3TB storage along with Raid 5 along with back up on SAN/ NAS as well as on cloud.		



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			<p>Network: Up to Broadcom 5720 Lan controller with 2 USB 2.0 ports and 4 Ethernet Lan ports Compatible Operating Systems: Windows Server 2008 SP2 (32/64-bit) Windows Server 2012 SP2 (32/64-bit) Windows Server 2008/2012 R2 (64-bit) Windows HPC Server 2008 Novell SUSE Linux Enterprise Server Red Hat Enterprise Linux VMware ESX</p>		
2	Symantec Antivirus Server (Licensed)	WITH 30 USERS	15.8 or Latest		
3	Domain Controller (Active Directory)	1	<p>Features: 10.0.19041.746 OR LATEST VERSION Standard Edition Enterprise Edition Datacenter Edition Minimum CPU 133 MHz 133 MHz for 400 MHz for x86-based speed x86-based computers; computers; 733 733 MHz for Itanium-based computers Recommended 55G MHz 733 MHz 733 MHz CPU speed</p>		
4	Database Server (Oracle/ MS Server)	1	12 C Enterprise or latest version		
5	Proxy Server (SOPHOS)	1 (centralized)	UTM 9 or latest version		
6	Ethernet POE Switch (24 Port)		<p>Features: 12 10/100/1000BASE-T PoE ports 12 10/100/1000BASE-T ports 100W PoE power budget Supports IEEE 802.3at PoE Innovative D-Link Green energy saving features Complete web interface for comprehensive switch management E 802.3at PoE Innovative D-Link Green energy saving features Complete web interface for</p>		



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			comprehensive switch management		
7	Cisco Router	2	At least Cisco Catalyst IR1101		
8	Firewall		Proxy Firewall: TCP/IP (Protocols 6 & 4) f UDP (Protocol 17) f PPTP: GRE (Protocol 47 mapped to port 1723) – Microsoft PPTP VPN ONLY f IPSec: ESP & AH (Protocols 50 & 51) Nortel Extranet client ONLY IP filtering must be able to ping after VPN established		
9	Call Manager Cisco	1	Call Recording: Supports remote Cisco jabber and Webex clients. Integrates with Cisco UCCX/UCCE Screen Recording: Record agent screen from the beginning of the call until the end of wrap up time Live Coaching: Listen to the selected call and speak up to the agent without customer hearing Speech Analytics: Transcribe, analyze and store customer interactions		
10	Google Nest Router	4	Power Management: Qualcomm SoC IPQ5018 GHz Dual-core A35 Connectivity: Bluetooth 5.0 Tri-Band (2.4 GHz, 5 GHz, 6 GHz) Memory: 1 GB DDR3L 4 GB eMMC storage Performance and Security: Can handle up to 100 connected devices per router Multiple simultaneous 4K video streams WPA3 Encryption 2 Ethernet ports		
11	NVR Channel)	1	With 30 days backup capacity Features: 32 CCTV Channels 960fps Viewing/Recording with		



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			<p>resolutions up to Full D1 (4CIF) Geovision H.264 and MPEG4 Video Compression with Real-time Viewing/Recording Geovision Surveillance Software with CMS Software, Remote Clients and Web Browser Interfaces including Mobile Viewing Smart Phone and Tablets including IPad, iPhone and Android are all supported Geovision Features Built-in Video Analytics including Event Triggers and notifications Geovision provides Hybrid Recording with integration of IP Cameras and HD-SDI CCTV Security Cameras 32 Audio inputs with integration support such as I/O connections, POS and PTZ Cameras Rackmount CPU includes superior Intel i5 3.4 GHz Processor, 8GB RAM DDR3, Fanless 2GB Video Card and SSD OS Drive. Multiple Windows OS options - Default is Windows 7 Professional DVD-RW Built-in with Blu-Ray option Default 2TB Surveillance Storage Drive and expandable to 24TB+ on- board Hot-Swap Bays including RAID Storage, iSCSI, NAS and other custom options available. Single PSU with redundant Power Supply options. This PC DVR is a Rackmount version while we also offer Tower, Desktop, Mobile and Rugged System options LCD monitors options and other custom builds available</p>		
12	IP Phone	8			
13	CCTV (2)	INTERNAL and external Area of Unit (2)	Two one for backup / alternate with 15 Cams and 8 IP CAMS for wireless independent security system		
14	RFIDs	16	Features: (ZKTeco) one complete system with for 10 person and upgradeable option to increase visitors		



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			<p>SC405 ID card Capacity 30,000 Transaction Capacity 80,000 Communication TCP therefore IP, RS485, USB-Host Access Control Interface for 3rd party electric lock therefore door sensor, exit button, alarm, doorbell Auxiliary Interface 1ea for therefore linkage function Wiegand Signal Output & Input therefore SRB Standard Functions Anti-passback</p>		
15	WIFI Routers	20	<p>Linksys (E1200 N300) Wi-Fi Technology: AXE6600 MU-MIMO Tri-Band Multi- Gigabit, 600+1200+4800 Mbps Key Features: Easy Setup with the Linksys App / Google Nest Device.</p>		
16	PDU's	10	Ten IEC C13/C19		
17	Data Racks	6	<p>Features: Dimensions: 600 x 600 x 635mm Capacity: 12U Material: SPCC cold rolled steel Degree of protection: IP20 Surface finish: Degreasing, phosphoric, powder coated Loading capacity: 60 KGS Standards: ANSI/EIA RS-310-D, DIN41497 part 1, IEC 297-2, DIN41497 part 7, GB/T3047, 2-92</p>		
18	M3 Cat 6A Cable	<p>M3 CAT6 Cable Roll (1000ft) 305 Meter Qty 4 Roll</p>	<p>M3 Size Cat 6A Cable (800 Meter) Conductor: Stranded Bare Copper (7 x 32 AWG) Insulation: HDPE (CMI-75E) Nominal Wall Thickness: 0.178mm Min. Thickness: 0.153mm Color Code: Pair 1: Blue & White/Blue Pair 2: Orange & White/Orange Pair 3: Green & White/Green Pair 4: Brown & White/Brown Jacket (Grey): 75°C LSZH Compound Nominal Wall Thickness: 0.585mm Min. Thickness: 0.458mm</p>		



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19	Air Conditioner	4 ton Inverter	Specifications: Parameters P1030 P1040 P1050(S)*P1050(D)** P2060 Dimensions (W×D×H) (mm) 930 × 995 × 1975 1130 × 995 × 1975 1830 × 995 × 1975 Operational Weight (kg) 360 420 440 470 660 Test Condition : Return air temp at 24°C DB/17°C WB & condensing temperature : 45°C		
20	Temperature Sensor	2	Features: AKCP sensorprobe2,Dimension Size 4.5" x 2.5" x 1.25" Weight : 0.3 Kg Mounting Ou rack-mount, or wall hanging Power External 5.5V 3A Power Adapter Input Voltage and Current ratings : 100V~240V - 0.22A		
21	Internet Connection	2	200 mb With Duration for 1.5 year		
22	Internet Fiber Optic Connection	1	100 mb Duration for 1.5 year		
23	Workstation	15	Features: 13th Generation Up to 16 GB of RAM Graphics card with (8+ GM recommended, 2 GB minimum, dedicated graphics cards are typically better) 1 TB SSD (Solid State Drive) 64 cores		
24	Printer, Copier and Scanner All in One	3	Features: Photo REt III photo quality imaging 2400 x 1200 dpi color printing using photo paper: 600 x 600 dpi on plain paper 600 x 600 dpi black text print resolution 12 ppm black, 10 ppm color 150 page sheet input tray Network printing (with HP Jetdirect print server or using Microsoft Print Sharing) Optional two-sided printing accessory allows printing on both sides		



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			5000 pages-per-month duty cycle 600 x 2400 dpi optical color and black-and-white 36-bit color (trillions of colors) 8-bit grayscale (256 levels of gray) Digital image processing 30 page automatic document feeder (on some models) Up to 99 copies from original (50 for xi models) Up to 12 cpm black, 9.2 cpm color Digital zoom from 25 to 400 percent (50 - 200 percent for xi models) 600 x 3600 dpi, up to 9600 dpi enhanced (600 dpi optical) 24-bit external color (the unit scans in 36-bit color internally then takes the best 24 bits of color for export to the computer)		
25	ArcGIS Basic (4)	4	Licensed		
26	ArcGIS Server	1	ArcGIS Server Advanced		
27	ArcGIS with All extension	1	ArcGIS		
28	Software Erdase Imagine / ER Mapper		Licensed		
29	GPS	10	Five color displays and five black and white displays Features: Dimension: 6.1 x 16.0 x 3.6 cm Weight: 230g Display: Transflective Memory: 4 GB Battery: 16 Hours Sensors: GPS, GPS Compass		
30	Office Furniture		As per design		
31	Google Earth (1)	1	Licensed Version		



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32	Touch Screen GPS Handheld	4	Features: Lens Material: Chemically Strengthened Glass Waterproof: IP-X7 Dimension: 9.19 x 18.30 x 3.27 cm Weight: 410g Touchscreen: Yes Display: Transflective, Dual Orientation Battery: 18 Hours Memory: 16 GB Maps: Preloaded Maps and ability to add maps Sensors: GPS, GPS Compass		
33	72 inch Screen	4	Features: At least LED Must have USB, LAN and Ethernet ports		
34	32 inch Screen (6)	6	Features: At least LED Must have USB, LAN and Ethernet ports		
35	Mapping of Karachi Division for revenue Collection and Dashboard Development	3 dashboard MIS, GIS, DSS	Online GIS Base Atlas		
36	Android and IOS App Development	1	Online / offline GIS Web App / Android and IOS supported App		
37	Monitoring Application and Toolkit for real-time monitoring of KW&SB Assets	1	Real Time dashboard / app water supply management application		
38	Training and Capacity building of field and Technical Staff	As per requirement	As per requirement		
39	Purchase of Latest Stereo Ortho rectified Digital Imagery (Satellite image) of Karachi and outside areas (2)	1 (Area = 1200 sqKm)	5cm OR 1m of resolution with Supporting bands files for further its processing		
40	Dell / CISCO SAS HDD (6)	6	For Server Machine		
41	USB	24	Both 32 and 64 GB		



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42	Drone	1	Specifications: Weight: 1375g Max Ascent Speed: 5-6 m/s Max Descent Speed: 3-4 m/s Max Tilt angle: 25-42 degree Max Altitude: 6000 m Lens: FOV 84 with autofocus Photo Size: Up to 16:9 aspect ratio Video Resolution: HD 1280 x 720 Battery: 6000 mAh Voltage: 15.2 V Mobile App: DJI GO 4 Ambient Temperature: 5-40 degree centigrade All drone accessories and extra kit must be bought		
43	Camera	2	Specifications: Dimensions: 144 x 110.5 x 74.8 mm Water Resistance: Yes Effective Resolution: 26.2 megapixel Cross type AF for all 45 focus points GPS, BT, WIFI enabled Aspect Ratio: 3:2 Optical and Movie Stabilization Focal Length: 1.0 X Speed: 30-1/4000 sec Shooting Modes: Portrait, Night mode, Close up, etc. all the latest modes must be present Frame Rate: 29.97 fps File Type: RAW, JPEG Touch Screen: Yes Battery: Approx 1200 Shots Extra Lens (18mm-320mm) kit with tripod stand must be bought		
44	Plotter 42"	2	42 " 1067 mm Plotter / Printer		
45	Color cartridges of plotter (pair)	10 (set)	CM767A Designjet 4520 42" (A0) (Color)		
46	ArcGIS Pro	1	ArcGIS Software		
47	ArcFM	1	Desktop		
48	ArcFM	1	Mobile		
49	Portable Storage Drives	6	2TBs		
50	UTILITY LOCATING EQUIPMENT	1	50 fifty feet underground utility locator device with DGPS high raise GNSS option for Utilities Assessment and Asset Data collection ground		



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		<p>penetrating radar (GPR) (2) Ground penetrating radar (GPR) can provide. It is used for locating deeper targets up to 100 ft. (30.48m). Radar Controller Computer F110 Operating System: Windows 7 or 10 64-bit Third-generation Intel® Core™ i5vPro™ Processor Durability: MIL-STD-810G, 4-foot drop and all-weather IP65 dust and water resistant design Display: 11.6 inch, HD daylight-readable, ten-point multi touch + digitizer I/O Interface: Ethernet Port, DC Power Port, 1 USB 3.0 Port, HDMI Port, WiFi and Bluetooth Expansion Options: MicroSD or second USB 2.0 port, RJ45 Ethernet, Dedicated GPS Communications: Wi-Fi, Bluetooth® and optional 4G LTE or 3G Gobi™ Software Microsoft Windows US Radar Control Software Including: System Configuration A Scan Display (Oscilloscope Mode) B Scan Display (Cross Sectional View) C Scan Display (3D) (Optional) Real Time Signal Processing Data Storage and Playback System Scan Modes Maximum typical logging scan rate of 390 traces per second Trigger Modes: Free run, timed interval, shaft encoder, GPS, manual Nominal Sampling Rate: 550,000,000 samples per second Maximum Resolution: 100 Gigasamples per second Hardware Time Varying Gain: 45dB Software Time Varying Gain: 60dB Software Flat Gain: 60dB System Environmental Specifications Temperature: -11 deg. To 50 deg. C</p>	
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			Moisture and dust resistance: IP 65 Radar Hardware Specifications Sampling Interval: 10 ps-6.4 ns Pulse Repetition Frequency: 0.1-4 MHz-adjustable Samples per Trace: 2-8192, Adjustable Effective Bandwidth (typ.): >3 GHz Stacking: Automatic Transmitter: Broadband, 100 MHz Center Frequency Receiver: Direct RF Sampling		
51	UPS	1	UPS 800VA UPS+ Stabilizer with 1 hour backup		
52	Generator	1	For continues power backup 5KV		
53	Digital Screen	1	75" interactive LED touch panel in Pakistan which allows 10 or 20 users to simultaneously collaborate & interact with each other on the interactive screen. Extremely easy plug & play setup coupled with wide range of presentation facilities like wireless screen sharing, writing software, annotation functionality, configurable OPS (computer) input coupled with most latest android 8.0 platform ensures state of the art presentation facility in your conference room & class room.		
54	Operating System	12	Window licensed / Ubuntu 24.04		
55	Cabling & Network		As per Design /Area		