APPENDIX 3

TENDER NO.KP1/9A.2/OT/043/SS/24-25 FOR PROPOSED SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF CCTV IN MAJOR STORES AND KEY OFFICES

SECTION VI – SPECIFICATIONS & BILLS OF QUANTITIES SECTION VI (A) – SCHEDULE OF REQUREMENT

	SUMMARY OF LOTS							
LOT	STATION/DESCRIPTION							
LOT 1	Installation of CCTV Major Stores & Offices Lot 1: Nairobi Region							
LOT 2	Installation of CCTV Major Stores & Offices Lot 2: Western Kenya Region							
LOT 3	Installation of CCTV Major Stores & Offices Lot 3: Central And North Rift Region							
LOT 4	Installation of CCTV Major Stores & Offices Lot 4: Mt. Kenya And North Eastern Region							
LOT 5	Installation of CCTV Major Stores & Offices Lot 5: Coast Region							
LOT 6	Installation of IP-CCTV & Biometric Access Control System & Accessories for IESR and Live-line							

	LOT 1: INSTALLATION OF CCTV MAJOR STORES & OFFICES								
	LOT 1: NAIROBI REGION								
NO	Station/Description Systems Location								
1	Ngong road substation (NRB)	IP-CCTV & Access control	Nairobi						
2	Roysambu Depot	IP-CCTV & Access control	Nairobi						
3	Limuru Depot	IP-CCTV & Access control	Limuru						
4	Kenyatta University Substation	IP-CCTV & Access control	Juja						
5	Rironi Substation	IP-CCTV & Access control	Rironi						
6	Machakos Office	IP-CCTV & Access control	Machakos						

	LOT 2: INSTALLATION OF CCTV MAJOR STORES & OFFICES								
	LOT 2: WESTERN KENYA REGION								
NO	Station/Description	Systems	Location						
1	Migori Stores	IP-CCTV & Access control	Migori						
2	Nyamira Substation	IP-CCTV & Access control	Nyamira						
3	Kakamega Substation	IP-CCTV & Access control	Kakamega						
4	Karume Transport Workshop	IP-CCTV & Access control	Karume						
5	Bomet Stores	IP-CCTV & Access control	Bomet						

	LOT 3: INSTALLATION OF CCTV MAJOR STORES & OFFICES							
	LOT 3: CENTRAL AND NORTH RIFT REGION							
NO	Station/Description Systems Location							
1	Soilo Substation	IP-CCTV & Access control	Soilo					
2	Maralal Stores	IP-CCTV & Access control	Maralal					
3	Naivasha Office	IP-CCTV & Access control	Naivasha					
4	Eldoret Depot	IP-CCTV & Access control	Eldoret					

	LOT 4: INSTALLATION OF CCTV MAJOR STORES & OFFICES								
	LOT 4: MT. KENYA & NORTHEASTERN REGION								
NO	Station/Description	Systems	Location						
1	Kinoru Stores/ Substation	IP-CCTV & Access control	Kinoru						
2	Makuyu Stores	IP-CCTV & Access control	Makuyu						
3	Murang'a Stores	IP-CCTV & Access control	Murang'a						
4	Thika Office/ Depot	IP-CCTV & Access control	Thika						
5	Marsabit office and stores	IP-CCTV & Access control	Murang'a						
6	Moyale office and stores	IP-CCTV & Access control	Moyale						
7	White sisters stores (Thika)	IP-CCTV & Access control	Thika						

	LOT 5: INSTALLATION OF CCTV MAJOR STORES & OFFICES								
	LOT 5: COAST REGION								
NO	OStation/DescriptionSystemsLocation								
1	Kipevu Substation	IP-CCTV & Access control	Mombasa						
2	Likoni Substation	IP-CCTV & Access control	Mombasa						
3	Voi Stores/ Depot	IP-CCTV & Access control	Voi						
4	Malindi Depot	IP-CCTV & Access control	Malindi						
5	Wundanyi office and store	IP-CCTV & Access control	Wundanyi						
6	Horohoro	IP-CCTV & Access control	Horohoro						

LOT 6: INSTALLATION OF IP-CCTV & BIOMETRIC ACCESS CONTROL SYSTEM & ACCESSORIES FOR IESR AND LIVELINE

No.	Coverage area	180 Degrees Cameras	PTZ	Dome	Bullet	ACS Doors	Poles	Full Height Speed gates	Full height Turnstile
1	External Cameras	4	3	2	7	0	5	0	1
2.	Security Office	0	0	1	2	1	0	0	0
3.	Classes	0	0	0	2	0	0	0	0
4.	Admin Block	0	0	3	0	0	0	0	0
5.	Kitchen	0	0	0	3	1	0	0	0
6.	Dispensary	0	0	0	0	0	0	0	0
7.	Registry	0	0	1	0	1	0	0	0
8.	Library Building	0	0	6	2	1	0	1	0
9.	Assembly Hall	0	0	1	0	0	0	0	0
10.	Mechanical Workshop	0	0	2	2	0	0	0	0
11.	Classes c1, c2, c3, c4	0	0	2	0	0	0	0	0
12.	Transmission offices	0	0	1	2	0	0	0	0
13.	Live line Building	0	0	2	4	0	0	0	0

14.	Fiber lab/Server room	0	0	2	0	2	0	0	0
	Total	4	3	23	24	6	5	1	1

PRICE SCHEDULE / BILLS OF QUANTITIES

(Unit Price in all Categories/Lots shall include 12 Months Warranty service and maintenance during the defect Liability period as described in the SLA as well as the manufacturer's equipment warranty as described in the tender)

LOT 1: INSTALLATION OF CCTV MAJOR STORES & OFFICES BILL OF QUANTITIES

NAIROBI REGION

NGONG ROAD SUBSTATION IP CTV & ACCESS CONTROL

No	Item Description	Unit	QTY	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
А.	8 MP Dome Camera	No.	8				
B.	180° Panoramic Network Camera	No.	2				
C.	16-ch IntelligentNVR upto 16TB	No.	1				
D.	Genetec or Hikcentral Video License (per Camera).	No.	10				
E.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	1				
	Total Carried to collection	Ngong	g Road	Substation	Page 1		

	Bill of Quantities Ngong Road Substation Page 2									
No	Item Description	Unit	Qt y	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers			
А.	Allow for cabling, ducting, brackets, poles and necessary accessories fabrications	LO T	1							
В.	Network Devices accessories & cabinets - 1 switch	LOT	1							
C.	3 KVA true online UPS	NO	1							
D.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	LOT	1							
E.	Client Workstation	LOT	1							
F.	Installation, Testing and Commissioning to client satisfaction	LOT	1							
G.	Biometric Access Control cards	No.	100							
	Total Carried to c	ollectio	on Ngo	ong Road S	ubstation Page 2					

	SUMMARY PAGE NGONG ROAD SUBSTATION IP- CCTV & ACCESS CONTROL BILL OF QUANTITIES						
A.	Total Carried to collection Ngong Road Substation Page 1						
В.	Total Carried to collection Ngong Road Substation Page 2						
	SUB-TOTAL- NGONG ROAD SUBSTATION IP- CCTV &ACCESS CONTROL						

ROYSAMBU DEPOT IP- CCTV & ACCESS CONTROL

B. 2 C. 1 D. 6 E. 7 6 F. 1 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	8 MP Dome Camera 4MP Network PTZ 180° Panoramic Network Camera 64-ch IntelligentNVR	No. No. No.	85 3			
C. 1 D. 6 E. 7 C. 1 F. 1 C. 1	180° Panoramic Network Camera		3			
C. 1 D. 6 E. 7 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Network Camera	No.				
E. () E. () () () () () () () () () () () () () (64-ch IntelligentNVR		5			
E. 7000000000000000000000000000000000000	<u>8</u>	No.	2			
F.	Genetec or Hikcentral Video License (per Camera).	No.	93			
	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	4			
G. 1	40 Inch 1080P LED Monitor C/W mount accessories	No.	1			
H. C	Gig Ethernet to Gigrack-mountFiberopticMediaConverter30kmRange industrial type		2	nbu depot		

			Bil	l of Quanti	ties Page 2		
No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
A.	Allow for cabling, ducting, brackets, poles and necessary accessories fabrications	LOT	1				
B.	NetworkDevicesaccessories&cabinets-3Edgeswitches,1coreswitch	LOT	1				
C.	6 KVA true online UPS	NO	2				
D.	3 KVA true online UPS	NO	2				
E.	1.5 KVA true online UPS	NO	1				
F.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	LOT	1				
G.	Client Workstation	LOT	1				
H.	Installation, Testing and Commissioning to client satisfaction	LOT	1				
I.	Biometric Access Control cards	No.	100				
	Total Carried	to Coll	ection	Roysambu	depot page 2		

	SUMMARY PAGE ROYSAMBU DEPOT IP- CCTV & ACCES QUANTITIES									
А.	Total Carried to Collection Roysambu depot page 1									
В.	Total Carried to Collection Roysambu depot page 2									
	SUB-TOTAL- ROYSAMBU DEPOT IP- CCTV &ACCESS CONTROL									

LIMURU DEPOT IP CTV &ACCESS CONTROL

C.	Item Description8 MP Dome Camera4MP Network PTZ4MP Network PTZ180° Panoramic Network Camera64-ch IntelligentNVRGenetec or Hikcentral Video License (per Camera).	Unit No. No. No.	Qty 33 1 1	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
B. C. D.	Camera 4MP Network PTZ 180° Panoramic Network Camera 64-ch IntelligentNVR Genetec or Hikcentral Video License (per Camera).	No. No. No.	1				
C. D.	180° Panoramic Network Camera 64-ch IntelligentNVR Genetec or Hikcentral Video License (per Camera).	No. No.	1				
D.	Network Camera 64-ch IntelligentNVR Genetec or Hikcentral Video License (per Camera).	No.					
D.	IntelligentNVR Genetec or Hikcentral Video License (per Camera).		1				
E.	Hikcentral Video License (per Camera).						
		No.	35				
F.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	1				
G.	40 Inch 1080P LED Monitor C/W mount accessories	No.	1				
H.	Gig Ethernet to Gig rack-mount Fiber optic Media Converter 30km Range industrial type Total Carried to co	No.	2				

			Bill of	Quantities	Limuru depot Page 2	2				
No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers			
A	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1							
B.	Network Devicesaccessories&cabinets2switches	Lot	1							
C.	6 KVA true online UPS	No	1							
D	3 KVA true online UPS	No	2							
E.	1.5 KVA true online UPS	No	1							
F.	Allowforintegration of thesystemtoexistingGENETECORHIKCENTRALserver	Lot	1							
G	Client Work	Lot	1							
Н	Installation, Testing and Commissioning to client satisfaction	Lot	1							
I	Biometric Access Control cards	No.	100							
	Total Carried to collection Limuru depot Page 2									

	SUMMARY PAGE LIMURU DEPOT IP- CCTV & ACCESS C QUANTITIES	ONTROL B	BILL OF
А.	Total Carried to collection Limuru depot Page 1		
В.	Total Carried to collection Limuru depot Page 2		
	SUB-TOTAL- LIMURU DEPOT IP- CCTV &ACCESS CONTROL		

KENYATTA UNIVERSITY SUBSTATION IP- CCTV & ACCESS CONTROL

No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers	
A.	8 MP Dome Camera	No.	22					
B.	180° Panoramic Network Camera	No.	2					
C.	32-ch IntelligentNVR upto 16 TB	No.	1					
D.	Genetec or Hikcentral Video License (per Camera).	No.	24					
E.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	2					
F.	32 Inch 1080P LED Monitor C/W mount accessories	No.	0					
	Total Carried to collection Kenyatta University Substation Page 1							

	Bill	of Quan	tities K	enyatta U	niversity Substation	n Page 2	
No	Item Description	Unit	Qty	Countr y of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbe rs
А.	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1				
B.	Network Devices accessories & cabinets - 1 switch	Lot	1				
C.	6 KVA true online UPS	No	1				
D.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1				
E.	Client Workstation	Lot	0				
F.	Installation, Testing and Commissioning to client satisfaction	Lot	1				
G.	Biometric Access Control Cards	No.	100				
	Total Ca						

	SUMMARY PAGE KENYATTA UNIVERSITY SUBSTATI &ACCESS CONTROL BILL OF QUANTITIES	ON IP- CCT	۲V
А.	Total Carried to collection Kenyatta University Substation Page 1		
B.	Total Carried to collection Kenyatta University Substation Page 2		
	SUB-TOTAL- KENYATTA UNIVERSITY SUBSTATION IP- CCTV &ACCESS CONTROL		

RIRONI SUBSTATION IP- CCTV &ACCESS CONTROL

No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers			
A.	8 MP Dome Camera	No.	15							
В.	180° Panoramic Network Camera	No.	1							
C.	32-ch IntelligentNVR upto 16 TB	No.	1							
D.	Genetec or Hikcentral Video License (per Camera).	No.	16							
E.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	1							
F.	Gig Ethernet to Gig rack-mount Fiber optic Media Converter 30km Range industrial type	No.	2							
	type Total Carried to collection Rironi Substation Page 1									

		Bill o	of Quan	tities Riro	oni Substation Page	2	
No	Item Description	Unit	Qty	Countr y of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Number s
A	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1				
В	Network Devices accessories & cabinets - 1 switch	Lot	1				
C	3 KVA true online UPS	No	1				
D	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1				
Е	Client Workstation	Lot	1				
F.	Installation, Testing and Commissioning to client satisfaction	Lot	1				
G	Biometric Access Control Cards	No.	100				
	Total Carr						

	SUMMARY PAGE RIRONI SUBSTATION IP- CCTV &ACC OF QUANTITIES	ESS CONT	ROL BILL
А.	Total Carried to collection Rironi Substation Page 1		
В.	Total Carried to collection Rironi Substation Page 2		
	SUB-TOTAL-RIRONI SUBSTATION IP- CCTV &ACCESS CONTROL		

MACHAKOS OFFICE IP- CCTV & ACCESS CONTROL

MACHAKOS OFFICE IP- CCTV & ACCESS CONTROL Country Unit Price Total Price (PPCBL							
No	Item Description	Unit	Qty	of origin	(PPCBL Incl.) & VAT Excl. (Kes)	Incl.) & VAT Excl. (Kes)	Part Numbers
A.	8 MP Dome Camera	No.	14				
B.	4MP Network PTZ	No.	0				
C.	180° Panoramic Network Camera	No.	1				
D.	32-ch IntelligentNVR upto 16 TB	No.	1				
E.	Genetec or Hikcentral Video License (per Camera).	No.	15				
F.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	2				
G.	32 Inch 1080P LED Monitor C/W mount accessories	No.	1				
	Total Carried to co	ollection	n Mac	hakos Offi	ce Page 1		

	Bill of Quantities Machakos Office Page 2										
No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers				
А.	Allow for cabling, ducting, brackets, poles and necessary accessories fabrications	Lot	1								
B.	Network Devices accessories & cabinets -1 switch	Lot	1								
C.	3 KVA true online UPS	No	1								
D.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1								
E.	Installation, Testing and Commissioning to client satisfaction	Lot	1								
F.	Biometric Access Control cards	No.	100								
	Total Carried to collection Machakos Office Page 2										

	SUMMARY PAGE MACHAKOS OFFICE IP- CCTV & ACC OF QUANTITIES	ESS CONT	ROL BILL
A.	Total Carried to Collection Machakos Office page 1		
В.	Total Carried to Collection Machakos Office page 2		
	SUB-TOTAL- MACHAKOS OFFICE IP- CCTV &ACCESS CONTROL		

	Bill of Quantities Technical Training & Project Management										
N o	Item Description	Unit	Q ty	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)						
Α	Manufacturers Training: Factor costs as follows	:									
i)	Factory Assessment and pre-installation Training for 4no persons	Pc	1	2,300,000.00	2,300,000.00						
ii)	Manufacturers Training at the manufacturers for 3no technical persons (Factor only the cost of training i.e venue ,trainers, transport to and from the training venue and certification)	Lot	1								
ii)	Travelling and accommodation for 3no technical persons	Lot	1	3,500,000.00	3,500,000.00						
В	Provisional Sum for Project Management	Pc	1	2,000,000.00	2,000,000.00						
С	Provisional Sum for Contingencies	Pc	1	1,500,000.00	1,500,000.00						
	TOTAL PPCBL Incl. & VAT Excl		•								
	ADD 16% VAT										
	GRAND-TOTAL PPCBL Incl. & VAT Incl.										
	Total Carried to collection Bill of Quantiti Project Manageme										

TECHNICAL TRAINING & PROJECT MANAGEMENT

SUMMARY PAGE BILL OF QUANTITIES LOT 1

	Summary Page Bill of Quantities Lot 1: Installation of CCTV Major Quantities: Nairobi Region	Stores & Offices Bill of
a)	Total carried to collection sub-total- Ngong road substation (NRB) IP- CCTV &Access Control	
b)	Total carried to collection sub-total- Roysambu Depot IP- CCTV &Access Control	
c)	Total carried to collection sub-total- Limuru Depot IP- CCTV & Access Control	
d)	Total carried to collection sub-total- Kenyatta University Substation IP- CCTV &Access Control	
e)	Total carried to collection sub-total- Rironi Substation IP- CCTV &Access Control	
f)	Total carried to collection sub-total- Machakos Office IP- CCTV &Access Control	
g)	Total carried to collection sub-total- FAT, Technical Training & Project Management Page	
	Total PPCBL Incl. & VAT Excl.	
	ADD 16% VAT	
	Grand-Total PPCBL Incl. & VAT Incl. (To Form of Tender)	

SCHEDULE OF MAINTENANCE LOT 1: INSTALLATION OF CCTV MAJOR STORES & OFFICES

No.	Description	Unit	Qty	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)
1	Allow maintenance for a period of 1 (one) year done quarterly as per KPLC SLA.	No	4		
	Total PPCBL Incl. & VAT Excl				
	ADD 16% VAT				
	Grand-Total PPCBL Incl. & VAT	Incl.	Lot		
	1:				

LOT 1-RECOMMENDED SCHEDULE OF SPARE PARTS

NB: The cost of spare parts shall be budgeted for and consumed in subsequent repair & Maintenance budget after the warranty period on as-and- when needed-basis.

	<u>RECOMMENDED SCHEDULE OF SPARE PARTS</u>								
		_		Unit Price	Total Price	Total Price			
	_			(PPCBL Incl.) &	(PPCBL Incl.) &	(PPCBL Incl.) &			
NO.	Item	UOM	Qty	VAT Excl. (Kes)	VAT Excl. (Kes)	VAT Incl. (Kes)			
	CCTV REQUIREMENT								
1.	NVR 16 Channel	No	1						
2.	NVR 32 Channel	No	1						
3.	NVR 64 Channel	No	1						
	16 MP One Omni	No	1						
4.	Directional								
	4 MP Bullet	No	1						
5.	indoor/outdoor IP camera								
	8 MP Bullet	No	1						
6.	indoor/outdoor IP camera								
	8 MP Dome	No	1						
7.	indoor/outdoor IP camera								
	2 MP PTZ	No	1						
8.	indoor/outdoor IP camera								
	4 MP 180°	No	1						
	indoor/outdoor								
9.	Panoramic IP	N.T.							
10	8 MP 360°	No	1						
10.	indoor/outdoor IP camera	NT-	1						
	16 MP One Omni Directional	No	1						
11	Indoor/Outdoor Dome IP								
11.	Cameras (B type) Video monitor 32''	No	1						
12.	Video monitor 32	No	1						
13.	1TB Hard Disk								
14.	2TB Hard Disk	No	1						
15.	3TB Hard Disk	No No	1						
16.	4TB Hard Disk	No	1						
17.	8TB Hard Disk	No	1						
18.	10 TB Hard Disk	No							
19.	12 TB Hard Disk	No	1						
20.									
	GENETEC OR	No	1						
21.	HIKCENTRAL CCTV Archiver								
	Client workstation	No	1						
22.	LICENSES, SMA		1						
	AND TRAINING	No							

		NT	1		
	SMA for 2 years for	No	1		
	KPLC Genetec or				
23.	Hikcentral System				
	SMA for 3 years for	No	1		
	KPLC Genetec or				
24.	Hikcentral System				
	SMA for 5 years for	No	1		
	KPLC Genetec or				
25.	Hikcentral System				
	SMA For 2 Years	No	1		
	Advancis Security	110	1		
26.	Management Software				
20.	SMA For 3 Years	No	1		
		INO	1		
	Advancis Security				
27.	Management Software				
	SMA For 2 years AEOS	No	1		
	NEPAD Access Control				
28.	System				
	SMA For 3 years AEOS	No	1		
	NEPAD Access Control				
29.	System				
	SMA for UVEYE UVSS	No	1		
30.	system				
	Genetec or Hikcentral	No	1		
	CCTV Camera license				
31.	per camera				
	Genetec or Hikcentral	No	1		
	Access Control License				
32.	per door				
	Genetec or Hikcentral	No	1		
	SDK License for Access	110	1		
22	control System				
55.	NEPAD Access control	No	1		
24		INU	1		
34.		NT -	1		
25	Advancis 500 data points	No	1		
35.	license	ЪТ	1		
	Advancis 1000 data	No	1		
36.	points license				
1	Advancis User license	No	1		
37.	per user				
1	Integration of a site to	No	1		
1	Advancis including any				
38.	required CAD Drawing				
1	Establishment of	No	1		
1	interface between				
	Genetec or Hikcentral				
1	and Advancis for a site of				
39.	50 Cameras				
40.	Establishment of	No	1		
10.	1		I	1	1

			1			
	interface between					
	Genetec or Hikcentral					
	Access control and SAP					
	Database					
	Technical training for	No	1			
	Genetec or Hikcentral					
	Access Control for one					
41.	persons					
	Technical training for	No	1			
	Genetec or Hikcentral					
	Video Management					
42.	systems for one persons					
	Technical training for	No	1			
	Advancis SMS for one					
43.	persons					
	NETWORKING REQUI	REME	NT	۱ <u>ــــــــــــــــــــــــــــــــــــ</u>	1	L
	Core Network Switch-	No	1			
44.	24port					
	Main Network switch 24	No	1			
15	Port	INO	1			
45.	Local switch 24 Port	No	1			
46.						
47.	Switch PoE 8 Port	No	1			
	24 Port Patch Panel with	No	1			
48.	I-O Ports					
	Patch Cord Cable 1-	No	1			
49.	Meter Cat-6					
	Patch Cord Cable 3-	No	1			
50.	Meter Cat-6					
	Single Mode Fiber Patch	No	1			
	Cord LC- LC/ SC-SC/					
51.	SC-LC, 1 or 3M, Duplex					
	Multi-Mode Fiber Patch	No	1			
	Cord LC-LC/SC-SC/					
52.	SC-LC, 1 or 3M, Duplex					
	Multiprotocol Network	No	1			
53.	Tester (Set)					
	Coaxial Cable (1000ft)	Met	1			
54.		er				
	UTP Cat 6 Cable	Met	1			
55.	(1000ft)	er				
	Shielded UTP Cat6	Met	1			
	Outdoor Direct Burial	er	*			
	23AWG Pure Copper					
56.	(1000ft)					
50.	RJ45 Connectors (100	Pkt	1			
57.	Pack)					
	RJ45 Coupler, 2 Port,	No	1			
58.	UTP					
38.	011		L		l	l

59.	PoE Extender	No	1		
	PoE Injector for IP	NT	1		
60.	cameras	No.	1		
	Armored outdoor direct	Roll	1		
	burial 4-6 core fiber optic				
61.	cable (1000ft)				
	Network Media	No.	1		
	Converter and associated				
62.	network accessories				
	SFP Transceiver Module	No.	1		
	(SMF, 1550nm, 20/50/1001-m, LC, DOM)				
	20/50/100km, LC, DOM) Cisco, Max Data Rate:				
	>1000Mbps and				
	associated fiber network				
63.	accessories				
64.	White Conduits 25mm	No	1		
65.	White Conduits 32mm	No	1		
66.	White Bends 25/32mm	No	1		
	White Connectors	No	1		
67.	25/32mm				
68.	Saddle clips (100 pack)	Pkt	1		
	Screws (100-count box	Pkt	1		
69.	of 1¾-inch- long screws)				
	Galvanized Metallic	No	1		
	Trunking 100mm X				
70.	50mm (3m)				
	PVC Cable Trunk 16 X	No	1		
71.	25 mm White duct (3m) Camera Stainless Steel	No.	1		
72.	Pole	INO.	1		
12.	ACCESS CONTROL				
	Door Access Controller	No	1		
	Compatible with Genetec	INU	1		
73.	Or Hikcentral				
, , , ,	Access Controller Door	No.	1		
74.	Interface				
75.	Access Controller Door	No.	1		
76.	Access Control Cards	No.	1		
	Biometric/Card Reader	No.	1		
77.	Finger Print				
	Biometric/Card Reader	No.	1		
78.	Facial				
	Smart Card Reader-	No.	1		
79.	Proximity Assess Control	NT	1		
	Access Control	No.	1		
80.	Management/Application Software				
ðU.	Soltware			l	

	Access control staff card	No	1			
81.	Printer	110	-			
	Control Room System	No	1			
82.	Printer					
	Genetec or Hikcentral	No.	1			
	Synergies Master					
83.	Controller (SMC)					
84.	Single Door Maglock	No.	1			
85.	Double Door Maglock	No.	1			
	Emergency Release	No.	1			
86.	Button	NT	1			
87.	Key Switch	No.	1			
	LICENSING REQUIRE	1		1		
	Genetec or Hikcentral	No	1			
00	Federation License					
88.	(general)	No.	1			
89.	Advancis License per workstation	110.	1			
07.	Genetec or Hikcentral	No.	1			
	license per operator/user	1.0.	-			
90.	workstation					
	Video analytic per	No.	1			
91.	channel					
	Genetec or Hikcentral	No.	1			
92.	mission control license					
0.2	Genetec or Hikcentral	No.	1			
93.	Industrial IOT License	No	1			
94.	Genetec or Hikcentral Logbook License	No.	1			
94.	1no Door License	No.	1			
	(general price, including	110.	1			
95.	integration)					
	1no IP Camera License	No	1			
	(general price, including					
96.	integration)					
	1no Control ID SDK	No	1			
6-	License (general price,					
97.	including integration) 1no Control ID Interface	No	1			
	License (general price,	No	1			
98.	including integration)					
70.	WORKSHOP DIAGNOS	SIS & R	EPA	IR	1	
99.	Repair network switch	No.	1			
99. 100.		No.	1			
	Power supply unit	No.	1			
101.	Processor and heat sink	No.	1			
102.						
103.	System board (Mother	No.	1			

	Board)				
104	Fan	No.	1		
	Drive backplane	No.	1		
		No.	1		
	Memory module (RAM)				
107.	NIC Card	No.	1		
108.	Access control staff card Printer Ribbon	No	1		
109	Control Room System Printer Cartridge/Tonner	No	1		
	Control Room System	No	1		
110.	Printer ink 200ml	C	1		
	Renovation/repair of	Sq	1		
	raised floor per 600mm X 600mm with	mm (600			
	associated accessories	(600 X60			
111.	associated accessories	0)			
111.	Falls Seiling	Sq	1		
	renovation/replacement	mm	1		
	per 600mm X 600mm	(600			
	with associated	X60			
112.	accessories	0)			
	Aluminum frame	Sq	1		
	gypsum partition pers	mete			
113.	square meter	r			
114.	Door Hingers	No.	1		
	Aluminum Door with	No.	1		
115.	accessories				
	Aluminum Double Door	No.	1		
116.	with accessories				
	CONTROL ROOM FUN				
		No.	1		
118.	Control Room table	No.	1		
	AIR CONDITIONER (A	C)			
	Complete set of Air	No.	1		
119.	Conditioner AC				
120.	AC Condenser Unit	No.	1		
121.	AC Condenser Split Unit	No.	1		
122.	AC Drainage Pump	No.	1		
123.	AC Remote Control	No.	1		
	Refilling of AC gas per	No.	1		
124.	refill per AC		-		
	EMERGENCY RESPON	ISE			-
	Emergency repair for a	No.	1		
	call/ticket per				
	technician per day				
	(installation and				
125.	configurations of key				

	components)				
	Support service for a	No.	1		
	call/ticket per	1.00	-		
	casual laborer per day				
	(installation of key				
126.	components)				
	Emergency	No.	1		
	repair/meeting for a		_		
127.					
	Integration of one third	No.	1		
	party system as need				
	arises into existing server				
	applications for a				
	call/ticket per one				
128.	technician per day				
	Unscheduled service per	No.	1		
	site as per the description				
	in schedule of				
	requirement under				
129.	preventive maintenance.				
	TOOLS AND POWER A	CCES	SORI	ES	
	Software Maintenance	No.	1		
130.	laptop				
	Full HD business	No.	1		
131.	projector 5,000 lumens				
132.	Maintenance tool kit	No.	1		
	Cordless Rotary Hammer	No	1		
	Drill (Includes 20-Volt				
	Li-ion Rechargeable				
	Battery, Fast Charger,				
	SDS Plus Hammer Drill,				
	Set of drill bits, Heavy				
100	Duty Brushless				
	Demolition Hammer)	Na	1		
134.	Blower	No.	1		
135.	Leather Hand gloves	No.	1		
10.5	Aluminum Multi-	No.	1		
136.	Purpose Ladder (16ft)),	1		
107	Aluminum Telescopic	No.	1		
137.	Ladder (3.8m)	NT.	1		
	Windows antivirus	No.	1		
120	complete with license				
138.	(for 1No. PC)	No.	1		
120	Multiprotocol Network	NO.	1		
139.	tester (Pair)	No	1		
140	Surge and Voltage protector	INO	1		
	4 core Alarm cable	Roll	1		
141.		NUII	1		

	(100m/Roll)				
	Speaker 1.5mm sq.	М	1		
142.	(70/0.15) cable				
	2.5mm sq Stranded Twin	Roll	1		
	with Earth cable				
143.	(100m/Roll)				
	2.5mm sq PVC CU	Μ	1		
144.	Cable 3 Core				
	2.5mm sq PVC CU	Roll	1		
145.	Cable S/C (100m/Roll)				
	4.0mm sq PVC CU	Roll	1		
146.	Cable S/C (100m/Roll)				
	6.0mm sq PVC CU	Roll	1		
147.	Cable S/C (100m/Roll)		1		
	4.0mm sq PVC CU	Roll	1		
140	Armoured Cable 2 Core (100m/Roll)				
148.	13A Socket 2-gang DP	No	1		
	Switched Plug Socket	INU	1		
149	Metal-Clad				
	PVC Insulating Tape	No	1		
150.	Amalgamating Tape	No	1		
151.	(Rubber splicing tape)	110	-		
152.	Conta glue	No	1		
153.	UPS 1.5KVA	No	1		
154.	UPS 3KVA	No	1		
155.	UPS 6KVA	No	1		
156.	UPS 10KVA	No	1		
	7AH 12V battery	No	1		
	8A,12V Power supplies	No	1		
	12-15 A ,12V Power	No	1		
159.	supplies				
	Power supply	No	1		
160.	transformer 12v				
	Supply and installation of	No.	1		
	8m				
	Camera/light Stainless				
161.	Steel Pole	Nc	1		
	LED Flood lights 50W	No.	1		
162	(with brackets)				
102.	LED Flood lights 100W	No.	1		
	(with	110.	1		
163.	brackets)				
	$12U \times \text{Depth } 1000 \text{mm}$	No.	1		
	Wall Mount Cabinet				
164.	(mounting brackets)				

	Outdoor Box	NO	1		
	(Measurement	NO	1		
	500x500x250 mm				
	minimum, 1.2mm				
	Galvanized Steel,				
	Powder Coating,				
	Corrosion Resistance,				
	sealed and dustproof;				
	IP54, Built in Converter				
	Fixed Slots, Air Switch				
	Rail and Fixed Socket				
	Position, clear acrylic				
165.	inspection window)				
	SECURITY LIGHTS	No.	1		
	1000 watts Security	No.	1		
166.	lights with solar				
	1000 watts Security	No.	1		
167.	lights				
	300 watts Security lights	No.	1		
168.	with solar				
169.	300 watts Security lights	No.	1		
	200 watts Security lights	No.	1		
170.	with solar				
171.	200 watts Security lights	No.	1		
172.	Photocell Switch	No.	1		
	Security light 6 Meter	No.	1		
	Pole				
	600X600 ceiling lights	No.	1		
175.	Lights Dimmer Switch	No.	1		
	ELECTRIC FENCE				
176.	3 Joule Fence Energizer	NO	1		
177.	5 Joule Fence Energizer	NO	1		
178.	8 Joule Fence Energizer	NO	1		
179.	12 Joule Fence Energizer	NO	1		
180.	Energizer Key Switch	NO	1		
181.	Energizer ON/OFF Key	NO	1		
182.	D.C. siren	NO	1		
183.	D.C. strobe light	NO	1		
184.	GSM/IP Module	NO	1		
185.	Timed fence light	NO	1		
186.	12V, 7AH Batteries.	NO	1		
187.	AVS 30 Voltage protector	NO	1		
	1.6/2.0mm Solid				
100	galvanized HT wire	D 11	1		
188.	(1000m) 1.6/2.0mm Solid stainless	Roll	1		
180	steel HT wire (1000m)	Roll	1		
109.		1.011	1		

<u>г</u>	Strain posts Standard				
100	Strain posts - Standard (refer to specification)	NO	1		
170.	INSULATORS & EARTHI		1	1	1
191	Flat/round bar insulator	NO	1		
191.		NO	1		
	Pop through hole insulator	NO	1		
	Self-tapper hook	NO	1		
	Earth Rod	NO	1		
175.	INTRUDER ALARMS	110	1		
196	Control Panel	NO	1		
	Zone Expander	NO	1		
	PIR Detector	NO	1		
170.	Ceiling Mount PIR	110	1		
199.	Detector	NO	1		
200.	Siren	NO	1		
201.	GSM Module	NO	1		
	UVSS SPARE PART				
202.	Under Vehicle Scanning	No	1		
202.	system (UVSS) system				
	Under Vehicle Scanning system (UVSS) with	No	1		
203.	similar features to Uveye				
	system				
204.	Synchronizers (Master and	No	1		
	slave)				
205.	88	No	1		
	O-ring rubber	No	1		
207.		No	1		
	Loop sensor cable	No	1		
	Workstation computer	No	1		
	PC quad port NIC card	No	1		
	24V 10A power supply	No	1		
	Loop detector	No	1		
213.	Flir thermal Camera	No	1		
214.	3KVA online double conversion UPS	No	1		
215.	Cat6A keystone connectors	No	1		
	Patch cord 1 meter	No	1		
	Graphics card 16GB	No	1		
	High beam LED light bar	No	1		
	Relays	No	1		
	Cat 7 cable	No	1		
221.	UVSS Multicore	No	1		
221.	communication cable				
	PIDS SPARE PART				
	PIDS Detector Line 3M	No	1		
222.	Long				

223.	Lantronix	No	1		
	PIDS Motherboad Qc 2019	No	1		
	Power Supply 12V 15A	No	1		
	PIDS Connectors	No	1		
	AUTOMATIC BOLLARDS	5			I
227.		No	1		
	Up limit switches	No	1		
	New K4 LED strips	No	1		
	Old K4 LED strips	No	1		
	Spiral LED Cables	No	1		
	Side screws M8	No	1		
233.	Top screws m10	No	1		
234.	DIN 7991-M8X20	No	1		
235.	O-rings	No	1		
236.	Solenoids valves	No	1		
237.	One way valves	No	1		
238.	Pressure valves	No	1		
239.	Bollard relays 24vdc	No	1		
240.	Loop detectors	No	1		
241.	24 VDC 10A power supply	No	1		
242.	12VDC 6.3A power supply	No	1		
243.	12VDC 4A power supply	No	1		
244.	Bollard magnetic solenoid	No	1		
245.	Bollard led lens	No	1		
246.	Bollard cup	No	1		
247.	Bollard backup batteries	No	1		
248.	Rubber rings	No	1		
2.40	Solenoid power	No	1		
	cable(Orange)	No	1		
	Piston	No	$\frac{1}{1}$		
251.	Traffic light bulbs	No	1		
	Arm barrier limit switches	No	1		
	Arm barrier arm(SQUARE) Bollard shrink tubes	No	1		
		No	1		
	Bollard control panel	No	1		
	Bollard push button Remote	No	1		
	Receiver	No	1		
	centurion d10 motor	No	1		
	centurion d20 motor	No	1		
260.		No	1		
261.		No	1		
	Batteries 12v 7.2ah IR beam detectors	No No	1		

	X-RAY BAGGAGE SCANNER							
265.	X-Ray Baggage Scanner system HI Scan 7551i	No	1					
266.	X-Ray Baggage system with same functionality as Scanner HI Scan 7551i or equivalent	No	1					
267.	X-ray Generator HIScan 7551i	No	1					
268.	Monitor for HI Scan 7551i	No	1					
269.	Control Panel for Hi-Scan 7551i	No	1					
270.	Power Supplies for HI Scan 7551i	No	1					
271.	Management PC complete with Hi scan software	No	1					
272.	Conveyor Belt system for HI Scan 7551i	No	1					
273.	proximity sensors	No	1					
274.	High-voltage cables	No	1					
	X-ray tube	No	1					
276.	circuit breakers	No	1					

Name of Tenderer______Signature & Official Stamp

LOT 2: INSTALLATION OF CCTV MAJOR STORES & OFFICES BILL OF QUANTITIES -WESTERN KENYA REGION

WESTERN KENYA REGIONMIGORI STORES IP- CCTV & ACCESS CONTROL

No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
A.	8 MP Dome Camera	No.	14				
В.	4MP Network PTZ	No.	1				
C.	180° Panoramic Network Camera	No.	1				
D.	32-ch Intelligent NVR upto 16 TB	No.	1				
E.	Genetec or Hikcentral Video License (per Camera).	No.	16				
F.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	1				
G.	Gig Ethernet to Gig rack-mount Fiber optic Media Converter 30km Range industrial type	No.	2				
	Total Carried to colle						

	Bill of Quantities Migori Stores Page 2									
N o	Item Description	Unit	Qty	Coun try of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbe rs			
А.	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1							
В.	Network Devices accessories & cabinets - 1 switch	Lot	1							
C.	3 KVA true online UPS	No	1							
D.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1							
E.	Client Workstation	Lot	1							
F.	Installation, Testing and Commissioning to client satisfaction	Lot	1							
G.	Biometric Access Control Cards	No.	100							
	Total Carrie	Stores Page 2								

	SUMMARY PAGE KINORU STORES/ SUBSTATION IP- CO CONTROL BILL OF QUANTITIES	CTV &ACC	ESS
А.	Total Carried to collection Migori Stores Page 1		
В.	Total Carried to collection Migori Stores Page 2		
	SUB-TOTAL- MIGORI STORES IP- CCTV &ACCESS CONTROL		

NYAMIRA SUBTSTATION IP- CCTV & ACCESS CONTROL

No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbe rs
A.	8 MP Dome Camera	No.	14				
В.	4MP Network PTZ	No.	1				
C.	180° Panoramic Network Camera	No.	1				
D.	32-ch IntelligentNVR upto 16 TB	No.	1				
E.	Genetec or Hikcentral Video License (per Camera).	No.	16				
F.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	1				
G.	Gig Ethernet to Gigrack-mountFiberopticMediaConverter30kmRange industrial type	No.	2				
	Total Carried to colle						

		Bill o	f Quan	tities Ny	amira substation Pa	age 2	
No	Item Description	Unit	Qty	Coun try of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
А.	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1				
B.	Network Devices accessories & cabinets - 1 switch	Lot	1				
C.	3 KVA true online UPS	No	1				
D.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1				
E.	Client Workstation	Lot	1				
F.	Installation, Testing and Commissioning to client satisfaction	Lot	1				
G.	Biometric Access Control Cards	No.	100				
	Total Ca						

	SUMMARY PAGE NYAMIRA SUBSTATION IP- CCTV & A BILL OF QUANTITIES	SUMMARY PAGE NYAMIRA SUBSTATION IP- CCTV & ACCESS CONTROL BILL OF QUANTITIES								
А.	Total Carried to collection Nyamira substation Page 1									
В.	Total Carried to collection Nyamira substation Page 2									
	SUB-TOTAL- NYAMIRA SUBSTATION IP- CCTV &ACCESS CONTROL									

KAKAMEGA SUBSTATION IP- CCTV & ACCESS CONTROL

No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers			
A.	8 MP Dome Camera	No.	14							
В.	4MP Network PTZ	No.	1							
C.	32-ch IntelligentNVR upto 16 TB	No.	1							
D.	Genetec or Hikcentral Video License (per Camera).	No.	15							
E.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	1							
F.	32 Inch 1080P LED Monitor C/W mount accessories	No.	1							
G.	Gig Ethernet to Gig rack-mount Fiber optic Media Converter 30km Range industrial type	No.	2							
	Total Carried to collection Kakamega Substation Page 1									

	В	Sill of Q	uantitie	s Kakameg	a substation Page 2	2	
No	Item Description	Unit	Qty	Countr y of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
А.	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1				
B.	Network Devices accessories & cabinets - 1 switch	Lot	1				
C.	3 KVA true online UPS	No	1				
D.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1				
E.	Client Workstation	Lot	1				
F.	Installation, Testing and Commissioning to client satisfaction	Lot	1				
G.	Biometric Access Control Cards	No.	100				
	Total Carried						

	SUMMARY PAGE KAKAMEGA SUSTATION IP- CCTV &ACCESS CONTROL BILL OF QUANTITIES								
А.	Total Carried to collection Kakamega								
	Substation Page 1								
В.	Total Carried to collection Kakamega								
	Substation Page 2								
	SUB-TOTAL- KAKAMEGA								
	SUBSTATION IP- CCTV & ACCESS								
	CONTROL								

KAKARUME TRANSPORT WORKSHOP CCTV & ACCESS CONTROL

No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers		
А.	8 MP Dome Camera	No.	14						
В.	4MP Network PTZ	No.	1						
C.	32-ch IntelligentNVR upto 16 TB	No.	1						
D.	Genetec or Hikcentral Video License (per Camera).	No.	15						
E.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	1						
F.	32 Inch 1080P LED Monitor C/W mount accessories	No.	1						
G.	Gig Ethernet to Gig rack-mount Fiber optic Media Converter 30km Range industrial type	No.	2						
	Total Carried to collection Karume Transport Workshop Page 1								

	Bill	of Qua	ntities	Karume 7	Transport Worksho	p Page 2				
No	Item Description	Unit	Qty	Countr y of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers			
А.	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1							
B.	NetworkDevicesaccessories&cabinets - 1switch	Lot	1							
C.	3 KVA true online UPS	No	1							
D.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1							
E.	Client Workstation	Lot	1							
F.	Installation, Testing and Commissioning to client satisfaction	Lot	1							
G.	Biometric Access Control Cards	No.	100							
	Total Carried to collection Karume Transport Workshop Page 2									

	SUMMARY PAGE KARUME TRANSPORT WORKSHOP IF CONTROL BILL OF QUANTITIES	- CCTV &	ACCESS
A.	Total Carried to collection Karume		
	Transport Workshop Page 1		
B.	Total Carried to collection Karume		
	Transport Workshop Page 2		
	SUB-TOTAL- KARUME TRANSPORT		
	WORKSHOP IP- CCTV &ACCESS		
	CONTROL		

BOMET STORES- CCTV

No	Item Description	Unit	Qty	Countr y of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numb ers
А.	8 MP Dome Camera	No.	9				
В.	4MP Network PTZ	No.	0				
C.	180° Panoramic Network Camera	No.	0				
D.	16-ch IntelligentNVR upto 16TB	No.	1				
E.	Genetec or Hikcentral Video License (per Camera).	No.	9				
F.	40 Inch 1080PLEDMonitorC/Wmountaccessories	No.	1				
G.	32 Inch 1080P LED Monitor C/W mount accessories	No.	0				
H.	Gig Ethernet to Gig rack-mount Fiber optic Media Converter 30km Range industrial type	No.	1				
	Total Carried to Collect		1				

No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers			
A.	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1							
B.	Network Devices accessories &cabinets-1 Edge switch	Lot	1							
C.		No								
D.	3 KVA true online UPS	No	2							
E.	1.5 KVA true online UPS	No	1							
F.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1							
G.	Client Workstation	Lot	1							
H.	Installation, Testing and Commissioning to client satisfaction	Lot	1							
I.	Biometric Access Control cards	No.	100							
	Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Control cards Image: Co									

	SUMMARY PAGE BOMET STORES IP- CCTV BILL	OF QUANTITIES
A.	Total Carried to collection Bomet Stores Page 1	
B.	Total Carried to collection Bomet Stores Page 2	
	SUB-TOTAL- BOMET STORES IP- CCTV	

	Bill of Quantities Technical Training & Project Management									
No	Item Description	Unit	Qt y	Countr y of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)				
А	Manufacturers Training:	Factor	costs a	s follows:						
i)	Factory Assessment and pre-installation Training for 4no persons	Pc	1		2,300,000.00	2,300,000.00				
ii)	Manufacturers Training at the manufacturers for 3no technical persons (Factor only the cost of training i.e venue ,trainers, transport to and from the training venue and certification)	Lot	1							
ii)	Travellingandaccommodationfor3notechnical persons	Lot	1		3,500,000.00	3,500,000.00				
В	Provisional Sum for Project Management	Pc	1		2,000,000.00	2,000,000.00				
	Provisional Sum for Contingencies	Pc	1		1,500,000.00	1,500,000.00				
	Total PPCBL Incl. & VA	T Exc	l.							
	ADD 16% VAT									
	Grand-Total PPCBL Inc Incl.	1. & V.	AT							
	Total Carried to collection & Pro		-	antities - ' ment Lot '	0					

SUMMARY PAGE BILL OF QUANTITIES LOT 2

	SUMMARY PAGE BILL OF QUANTITIES LOT 2: INST STORES & OFFICES BILL OF QUANTITIES: WESTERN KI	
a)	Total carried to collection sub-total- Migori Stores IP- CCTV &Access Control	
b)	Total carried to collection sub-total- Nyamira Substation IP- CCTV &Access Control	
c)	Total carried to collection sub-total- Kakamega Substation IP- CCTV &Access Control	
d)	Total carried to collection sub-total- Karume Depot IP- CCTV &Access Control	
e)	Total carried to collection sub-total- Bomet Stores IP- CCTV &Access Control	
f)	Total carried to collection sub-total- Technical Training & Project Management Page	
	Total PPCBL Incl. & VAT Excl.	
	ADD 16% VAT	
	Grand-Total PPCBL Incl. & VAT Incl. (To Form of Tender)	

SCHEDULE OF MAINTENANCE LOT 2: INSTALLATION OF CCTV MAJOR STORES & OFFICES

Item	Description	Unit	Qty	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)
1	Allow maintenance for a period of 1 (one) year done quarterly as per KPLC SLA.	No	4		
	Total PPCBL Incl. & VAT Excl		-		
	ADD 16% VAT				
	Grand-Total PPCBL Incl. & VA	Γ Incl.	Lot 2:		

LOT 2-RECOMMENDED SCHEDULE OF SPARE PARTS

NB: The cost of spare parts shall be budgeted for and consumed in subsequent repair & Maintenance budget after the warranty period on as-and- when needed-basis.

Maintenance budget after the warranty period on as-and- when needed-basis. RECOMMENDED SCHEDULE OF SPARE PARTS								
NO.	ITEM	UOM	Qty	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Incl. (Kes)		
	CCTV REQUIREMENT							
1.	NVR 16 Channel	No	1					
2.	NVR 32 Channel	No	1					
3.	NVR 64 Channel	No	1					
4.	16 MPOne Omni Directional	No	1					
5.	4 MP Bullet indoor/outdoor IP camera	No	1					
6.	8 MP Bullet indoor/outdoor IP camera	No	1					
7.	8 MP Dome indoor/outdoor IP camera	No	1					
8.	2 MP PTZ indoor/outdoor IP camera	No	1					
9.	4 MP 180° indoor/outdoor Panoramic IP	No	1					
10.	8 MP 360° indoor/outdoor IP camera	No	1					
11.	16 MPOne Omni Directional Indoor/Outdoor Dome IP Cameras (B type)	No	1					
11.	Video monitor 32"	No	1					
12.	Video monitor 32 Video monitor 42"	No	1					
13.	1TB Hard Disk	No	1					
14.	2TB Hard Disk	No	1					
15.	3TB Hard Disk	No	1					
10.	4TB Hard Disk	No	1					
17.	8TB Hard Disk	No	1					
10.	10 TB Hard Disk	No	1					
20.	12 TB Hard Disk	No	1					
20.	GENETEC OR HIKCENTRAL CCTV Archiver	No	1					
22.	Client workstation	No	1					
	LICENSES , SMA AND TRAINING	No	1					

	SMA for 2 years for KPLC	No	1		
	Genetec or Hikcentral				
23.	System				
	SMA for 3 years for KPLC	No	1		
	Genetec or Hikcentral				
24.	System				
<u> </u>	SMA for 5 years for KPLC	No	1		
	Genetec or Hikcentral	110	1		
25					
25.	System				
	SMA For 2 Years Advancis	No	1		
	Security Management				
26.	Software				
	SMA For 3 Years Advancis	No	1		
	Security Management				
27.	Software				
	SMA For 2 years AEOS	No	1		
	NEPAD Access Control				
28.					
20.	SMA For 3 years AEOS	No	1		
	NEPAD Access Control	110	1		
29.					
29.	System SMA for UVEYE UVSS	No	1		
20		No	1		
30.	system				
	Genetec or Hikcentral	No	1		
	CCTV Camera license per				
31.	camera				
	Genetec or Hikcentral	No	1		
	Access Control License per				
32.	door				
	Genetec or Hikcentral SDK	No	1		
	License for Access control				
33.					
	NEPAD Access control	No	1		
34.	License per door	110	1		
54.	Advancis 500 data points	No	1		
25		INU	1		
35.	license	ЪT	1		
2.6	Advancis 1000 data points	No	1		
36.	license				
	Advancis User license per	No	1		
37.	user				
	Integration of a site to	No	1		
	Advancis including any				
38.	required CAD Drawing			 	
	Establishment of interface	No	1		
	between Genetec or				
	Hikcentral and Advancis for				
39.	a site of 50 Cameras				
57.	Establishment of interface	No	1		
40.	between Genetec or	110			
40.	Detween Deneter Of				<u> </u>

	Hikcentral Access control					
	and SAP Database					
		No	1			
	Technical training for Genetec or Hikcentral	NO	1			
	Access Control for one					
4.1						
41.	persons Technical training for	NT-	1			
	Technical training for	No	1			
	Genetec or Hikcentral Video					
10	Management systems for					
42.	one persons	NT-	1			
	Technical training for	No	1			
42	Advancis SMS for one					
43.	persons					
	NETWORKING REQUIRE			I	1	
	Core Network Switch-	No	1			
44.	24port					
	Main Network switch 24	No	1			
45.	Port					
46.	Local switch 24 Port	No	1			
47.	Switch PoE 8 Port	No	1			
	24 Port Patch Panel with I-O	No	1			
48.	Ports					
	Patch Cord Cable 1- Meter	No	1			
49.	Cat-6					
	Patch Cord Cable 3- Meter	No	1			
50.	Cat-6					
	Single Mode Fiber Patch	No	1			
	Cord LC- LC/ SC-SC/ SC-					
51.	LC, 1 or 3M, Duplex					
	Multi-Mode Fiber Patch	No	1			
	Cord LC-LC/SC-SC/SC-					
52.	LC, 1 or 3M, Duplex					
	Multiprotocol Network	No	1			
53.	Tester (Set)					
54.	Coaxial Cable (1000ft)	Μ	1			
-	UTP Cat 6 Cable (1000ft)	M	1			
55.	Shielded UTP Cat6 Outdoor	M	1			
	Direct Burial 23AWG Pure	TAT	1			
56.	Copper (1000ft)					
57.	RJ45 Connectors (100 Pack)	Pkt	1			
		No	1			
58.	RJ45 Coupler, 2 Port, UTP					
59.	PoE Extender	No	1			
60.	PoE Injector for IP cameras	No.	1			
	Armored outdoor direct	Roll	1			
	burial 4-6 core fiber optic					
61.	cable (1000ft)					
	Network Media Converter	No.	1			
62.	and associated network					

	accessories				
	SFP Transceiver Module	No.	1		
	(SMF, 1550nm,				
	20/50/100km, LC, DOM)				
	Cisco, Max Data Rate: >1000Mbps and associated				
63.	fiber network accessories				
64.	White Conduits 25mm	No	1		
65.	White Conduits 32mm	No	1		
66.	White Bends 25/32mm	No	1		
67.	White Connectors 25/32mm	No	1		
68.	Saddle clips (100 pack)	Pkt	1		
	Screws (100-count box of	Pkt	1		
69.	1 ³ / ₄ -inch- long screws)	N T	1		
	Galvanized Metallic	No	1		
70.	Trunking 100mm X 50mm (3m)				
	PVC Cable Trunk 16 X 25	No	1		
71.	mm White duct (3m)				
72.	Camera Stainless Steel Pole	No.	1		
	ACCESS CONTROL				
	Door Access Controller	No	1		
73.	Compatible with GENETEC Or Hikcentral				
73.	Access Controller Door	No.	1		
74.	Interface				
75.	Access Controller Door	No.	1		
76.	Access Control Cards	No.	1		
	Biometric/Card Reader	No.	1		
77.	Finger Print	No	1		
78.	Biometric/Card Reader Facial	No.	1		
70.	Smart Card Reader-	No.	1		
79.	Proximity				
	Access Control	No.	1		
80	Management/Application Software				
80.	Access control staff card	No	1		
81.	Printer	110	1		
	Control Room System	No	1		
82.	Printer				
	Genetec or Hikcentral	No.	1		
83.	Synergies Master Controller (SMC)				
84.	Single Door Maglock	No.	1		
85.	Double Door Maglock	No.	1		
86.	Emergency Release Button	No.	1		

87.	Key Switch	No.	1		
	LICENSING REQUIREME	ENT		I	L
	Genetec or Hikcentral	No	1		
88.	Federation License (general)	110	-		
	Advancis License per	No.	1		
89.	workstation				
	Genetec or Hikcentral	No.	1		
	license per operator/user				
90.	workstation				
91.	Video analytic per channel	No.	1		
	Genetec or Hikcentral	No.	1		
92.	mission control license				
	Genetec or Hikcentral	No.	1		
93.	Industrial IOT License				
	Genetec or Hikcentral	No.	1		
94.	0				
	1no Door License (general	No.	1		
95.	price, including integration)				
	1no IP Camera License	No	1		
0.5	(general price, including				
96.	integration)	NT	1		
	1no Control ID SDK	No	1		
07	License (general price,				
97.	including integration) 1no Control ID Interface	No	1		
	License (general price,	INO	1		
98.	including integration)				
70.	WORKSHOP DIAGNOSIS	& REI	PAIR		
99.	Repair network switch	No.	1		
		No.	1		
100	Power supply unit	No.	1		
	D				
102.		No.	1		
102	System board (Mother	No.	1		
	Board)	N.	1		
104.		No.	1		
105.	Drive backplane	No.	1		
106.		No.	1		
107.		No.	1		
	Access control staff card	No	1		
108.	Printer Ribbon				
	Control Room System	No	1		
109.	Printer Cartridge/Tonner				
	Control Room System	No	1		
110.	Printer ink 200ml	~			
	Renovation/repair of raised	Sq	1		
	floor per 600mm X 600mm	mm			
111.	with associated accessories	(600			

		, , , , , , , , , , , , , , , , , , , 			
		X60 0)			
	Falls Seiling	Sq	1		
	renovation/replacement per	mm	1		
	600mm X 600mm with	(600			
	associated accessories	X60			
112.		0)			
112.	Aluminum frame gypsum	Sq	1		
	partition pers square meter	mete	1		
113.	putition pers square meter	r			
113.	Door Hingers	No.	1		
	Aluminum Door with	No.	1		
115.	accessories				
	Aluminum Double Door	No.	1		
116.	with accessories				
	CONTROL ROOM FUNIT	URE			
117.	Control Room Chair	No.	1		
118.	Control Room table	No.	1		
	AIR CONDITIONER (AC)				
	Complete set of Air	No.	1		
119.	Conditioner AC				
120.	AC Condenser Unit	No.	1		
121.	AC Condenser Split Unit	No.	1		
122.	AC Drainage Pump	No.	1		
123.	AC Remote Control	No.	1		
124.	Refilling of AC gas per refill per AC	No.	1		
	EMERGENCY RESPONSE	5			
	Emergency repair for a	No.	1		
	call/ticket per				
	technician per day				
	(installation and				
	configurations of key				
125.	components)				
	Support service for a	No.	1		
	call/ticket per				
	casual laborer per day				
	(installation of key				
126.	components)				
	Emergency repair/meeting	No.	1		
	for a call/ticket per				
127.					
	Integration of one third	No.	1		
	party system as need arises				
	into existing server				
	applications for a call/ticket				
128.	per one				

	technician per day				
	Unscheduled service per site	No.	1		
	as per the description in				
	schedule of requirement				
	under preventive				
129.	maintenance.				
	TOOLS AND POWER ACC	CESSO	RIES		
	Software Maintenance	No.	1		
130.	laptop				
	Full HD business projector	No.	1		
	5,000 lumens				
132.	Maintenance tool kit	No.	1		
	Cordless Rotary Hammer	No	1		
	Drill (Includes 20-Volt Li-				
	ion Rechargeable Battery,				
	Fast Charger, SDS Plus Hammer Drill, Set of drill				
	bits, Heavy Duty Brushless				
133	Demolition Hammer)				
	Blower	No.	1		
	Leather Hand gloves	No.	1		
135.	Aluminum Multi-Purpose	No.	1		
136.	Ladder (16ft)	1.01			
	Aluminum Telescopic	No.	1		
137.	Ladder (3.8m)				
	Windows antivirus complete	No.	1		
138.	with license (for 1No. PC)				
100	Multiprotocol Network	No.	1		
	tester (Pair)	No	1		
140.	Surge and Voltage protector	No	1		
1.4.1	4 core Alarm cable (100m/Roll)	Roll	1		
141.	Speaker 1.5mm sq.	М	1		
142	(70/0.15) cable	111	1		
1.2	2.5mm sq Stranded Twin	Roll	1		
	with Earth cable				
143.	(100m/Roll)				
	2.5mm sq PVC CU Cable 3	М	1		
144.	Core				
	2.5mm sq PVC CU Cable	Roll	1		
145.	S/C (100m/Roll)	D 11	-		
1 4 -	4.0mm sq PVC CU Cable	Roll	1		
146.	S/C (100m/Roll)	Roll	1		
147	6.0mm sq PVC CU Cable S/C (100m/Roll)	ROII	1		
14/.	4.0mm sq PVC CU	Roll	1		
	Armoured Cable 2 Core	1.011	1		
148.	(100m/Roll)				

140	13A Socket 2-gang DP Switched Plug Socket Metal-Clad	No	1		
	PVC Insulating Tape	No	1		
150.	Amalgamating Tape	No	1		
151	(Rubber splicing tape)	110	1		
151.	~ .	No	1		
	UPS 1.5KVA	No	1		
155.	UPS 3KVA	No	1		
155.	UPS 6KVA	No	1		
	UPS 10KVA	No	1		
	7AH 12V battery	No	1		
157.		No	1		
130.	12-15 A ,12V Power	No	1		
159.	supplies	110	1		
	Power supply transformer	No	1		
160.	12v				
	Supply and installation of	No.	1		
	8m				
161	Camera/light Stainless Steel Pole				
101.	LED Flood lights 50W	No.	1		
	(with	110.	1		
162.	brackets)				
	LED Flood lights 100W	No.	1		
	(with				
163.	brackets)	NT	1		
	12U × Depth 1000mm Wall	No.	1		
164	Mount Cabinet (mounting brackets)				
104.	Outdoor Box (Measurement	NO	1		
	500x500x250 mm	110	-		
	minimum, 1.2mm				
	Galvanized Steel, Powder				
	Coating, Corrosion				
	Resistance, sealed and				
	dustproof; IP54 , Built in Converter Fixed Slots, Air				
	Switch Rail and Fixed				
	Socket Position, clear				
	acrylic				
165.	inspection window)				
	SECURITY LIGHTS	No.	1		
	1000 watts Security lights	No.	1		
	with solar	NT -	1		
	1000 watts Security lights	No.	1		
168.	300 watts Security lights	No.	1		

	with solar					
169.	300 watts Security lights	No.	1			
10).	200 watts Security lights	No.	1			
170.	with solar					
171.	200 watts Security lights	No.	1			
172.	Photocell Switch	No.	1			
173.	Security light 6 Meter Pole	No.	1			
174.	600X600 ceiling lights	No.	1			
	Lights Dimmer Switch	No.	1			
	ELECTRIC FENCE					
176.	3 Joule Fence Energizer	NO	1			
	5 Joule Fence Energizer	NO	1			
	8 Joule Fence Energizer	NO	1			
179.	12 Joule Fence Energizer	NO	1			
	Energizer Key Switch	NO	1			
181.	Energizer ON/OFF Key	NO	1			
182.	D.C. siren	NO	1			
183.	D.C. strobe light	NO	1			
184.	GSM/IP Module	NO	1			
185.	Timed fence light	NO	1			
186.	12V, 7AH Batteries.	NO	1			
187.	AVS 30 Voltage protector	NO	1			
100	1.6/2.0mm Solid galvanized	D 11				
188.	HT wire (1000m) 1.6/2.0mm Solid stainless steel	Roll	1			
189.	HT wire (1000m)	Roll	1			
	Strain posts - Standard (refer					
190.	to specification)	NO	1			
	INSULATORS & EARTHING		1	Ι	Γ	
	Flat/round bar insulator	NO	1			
	Shield insulator	NO	1			
	Pop through hole insulator	NO	1			
	Self-tapper hook	NO	1			
195.	Earth Rod	NO	1			
	INTRUDER ALARMS					
	Control Panel	NO	1			
	Zone Expander	NO	1			
-	PIR Detector	NO	1			
	Ceiling Mount PIR Detector	NO	1			
	Siren	NO	1			
201.	GSM Module	NO	1			
	UVSS SPARE PART Under Vehicle Scanning	No	1			
202.	system (UVSS) system	No	1			
203.	Under Vehicle Scanning	No	1			
203.	system (UVSS) with similar					

	features to Uveye system				
	Synchronizers (Master and	No	1		
204.	slave)	110	-		
205.	Scanning glass	No	1		
206.	O-ring rubber	No	1		
207.	Bolt and nut (number 17)	No	1		
208.	Loop sensor cable	No	1		
209.	Workstation computer	No	1		
210.	PC quad port NIC card	No	1		
211.	24V 10A power supply	No	1		
212.	Loop detector	No	1		
213.	Flir thermal Camera	No	1		
214.	3KVA online double conversion UPS	No	1		
215.	Cat6A keystone connectors	No	1		
216.	Patch cord 1 meter	No	1		
217.	Graphics card 16GB	No	1		
218.	High beam LED light bar	No	1		
219.	Relays	No	1		
220.	Cat 7 cable	No	1		
221.	UVSS Multicore	No	1		
	communication cable				
	PIDS SPARE PART	NT	1		
	PIDS Detector Line 3M Long	No	1		
	Lantronix	No	1		
	PIDS Motherboad Qc 2019	No	1		
	Power Supply 12V 15A	No	1		
226.	PIDS Connectors	No	1		
	AUTOMATIC BOLLARDS	NT	1		
	Down limit switch	No	1		
	Up limit switches	No	1		
	New K4 LED strips	No	1		
	Old K4 LED strips	No	1		
	Spiral LED Cables	No	1		
	Side screws M8	No	1		
	Top screws m10	No	1		
	DIN 7991-M8X20	No	1		
	O-rings	No	1		
	Solenoids valves	No	1		
	One way valves	No	1		
	Pressure valves	No	1		
	Bollard relays 24vdc	No	1		
	Loop detectors	No	1		
	24 VDC 10A power supply	No	1		
242.	12VDC 6.3A power supply	No	1		

2/13	12VDC 4A power supply	No	1		
	Bollard magnetic solenoid	No	1		
	Bollard led lens	No	1		
	Bollard cup	No	1		
	Bollard backup batteries	No	1		
	•	No	1		
	Rubber rings	No	1		
	Solenoid power cable(Orange)	No	1		
	Piston	No	1		
	Traffic light bulbs	No	1		
	Arm barrier limit switches	No	1		
	Arm barrier arm(SQUARE)		1		
	Bollard shrink tubes	No			
	Bollard control panel	No	1		
	Bollard push button	No	1		
	Remote	No	1		
	Receiver	No	1		
259.	centurion d10 motor	No	1		
260.	centurion d20 motor	No	1		
261.	gate rolling wheels	No	1		
262.	centurion vantage arms	No	1		
263.	Batteries 12v 7.2ah	No	1		
264.]	IR beam detectors	No	1		
	X-RAY BAGGAGE SCANNE	R			
	X-Ray Baggage Scanner system HI Scan 7551i	No	1		
1	X-Ray Baggage system with same functionality as Scanner HI Scan 7551i or equivalent	No	1		
267. 2	X-ray Generator HIScan 7551i	No	1		
268.	Monitor for HI Scan 7551i	No	1		
(Control Panel for Hi-Scan	No	1		
269.					
	Power Supplies for HI Scan 7551i	No	1		
	Management PC complete	No	1		
271.	with Hi scan software				
	Conveyor Belt system for HI Scan 7551i	No	1		
273.	proximity sensors	No	1		
274.]	High-voltage cables	No	1		
275. 2	X-ray tube	No	1		
276.	circuit breakers	No	1		

LOT 3: INSTALLATION OF CCTV MAJOR STORES & OFFICES BILL OF QUANTITIES: CENTRAL AND NORTH RIFT REGION

SOILO SUBSTATION- CCTV

No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
A.	8 MP Dome Camera	No.	17				
В.	4MP Network PTZ	No.	1				
C.	180° Panoramic Network Camera	No.	2				
D.	32-ch IntelligentNVR upto 16 TB	No.	1				
E.	Genetec or Hikcentral Video License (per Camera).	No.	20				
F.	40 Inch 1080P LED Monitor C/W mount accessories	No.	0				
G.	32 Inch 1080P LED Monitor C/W mount accessories	No.	0				
H.	Gig Ethernet to Gig rack-mount Fiber optic Media Converter 30km Range industrial type	No.	1				
	Total Carried to Co	ollection	n Soila	substatior	n page 1		

			J	Bill of Qua	ntities Page 2		
No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
	Allow for cabling, ducting, poles/brackets and necessary accessories	LOT	1				
В.	Network Devices accessories &cabinets-1 Edge switch	LOT	1				
C	6 KVA true online UPS	NO	1				
D	3 KVA true online UPS	NO	2				
E.	1.5 KVA true online UPS	NO	0				
F.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	LOT	1				
G	Client Work station	LOT	1				
Н	Installation, Testing and Commissioning to client satisfaction	LOT	1				
I.	Biometric Access Control cards	No.	100				
	Total Carried	to Colle	ection	Soilo Subs	tation page 2		

	SUMMARY PAGE SOILO SUBSTATION IP- CCTV BILL	OF QUANTITI	ES
A.	Total Carried to collection Soilo Substation Page 1		
В.	Total Carried to collection Soilo Substation Page 2		
	SUB-TOTAL- SOILO SUBSTATION IP- CCTV		

MARALAL STORES - CCTV

No	Item Description	Unit	Qty	Coun try of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
A.	8 MP Dome Camera	No.	6				
B.	4MP Network PTZ	No.	2				
C.	180° Panoramic Network Camera	No.	2				
D.	16-ch IntelligentNVR upto 16TB	No.	1				
E.	Genetec or Hikcentral Video License (per Camera).	No.	10				
F.	40 Inch 1080P LED Monitor C/W mount accessories	No.	1				
G.	32 Inch 1080P LED Monitor C/W mount accessories	No.					
H.	Gig Ethernet to Gig rack-mount Fiber optic Media Converter 30km Range industrial type	No.	1				
	Total Carried to Colle	ction N	faralal	Stores p	age 1		1

				Bill of Qua	antities Page 2		
No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
А.	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1				
B.	Network Devices accessories &cabinets- 1 Edge switch	Lot	1				
C.	6 KVA true online UPS	No	0				
D.	3 KVA true online UPS	No	1				
E.	1.5 KVA true online UPS	No	1				
F.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1				
G.	Client Work station	Lot	1				
H.	Installation, Testing and Commissioning to client satisfaction	Lot	1				
I.	Biometric Access Control cards	No.	100				
	Total Carrie	ed to Co	ollectio	n Maralal (Stores page 2		

	SUMMARY PAGE MARALAL STORES IP- CCTV BI	LL OF QUANTITIES
А.	Total Carried to collection Maralal Stores Page 1	
B.	Total Carried to collection Maralal Stores Page 2	
	SUB-TOTAL- MARALAL STORES - CCTV	

NAIVASHA OFFICE- CCTV

No	Item Description	Unit	Qty	Coun try of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
А.	8 MP Dome Camera	No.	18				
B.	4MP Network PTZ	No.	0				
C.	180° Panoramic Network Camera	No.	0				
D.	32-ch IntelligentNVR upto 16 TB	No.	1				
E.	Genetec or Hikcentral Video License (per Camera).	No.	18				
F.	40Inch1080PLEDMonitorC/Wmountaccessories	No.	1				
G.	32Inch1080PLEDMonitorC/Wmountaccessories	No.	0				
H.	Gig Ethernet to Gig rack-mount Fiber optic Media Converter 30km Range industrial type	No.	1				
	Total Carried to Co	ollection	Naivas	sha Office	e page 1		

			Bi	ll of Quant	ities Page 2		
No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
A	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1				
E	Network Devices accessories &cabinets- 1 Edge switch	Lot	1				
C	6 KVA true online UPS	No	1				
Γ	3 KVA true online UPS	No	1				
E	1.5 KVA true online UPS	No	0				
F	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1				
C	Client Workstation	Lot	1				
H	Installation, Testing and Commissioning to client satisfaction	Lot	1				
Ι	Biometric Access Control cards	No.	100				
	Total Carried	to Colle	ection	Naivasha (Office page 2		

	SUMMARY PAGE NAIVASHA OFFICE IP- CCTV BIL	L OF QUANTITIES
А.	Total Carried to collection Naivasha Office Page 1	
B.	Total Carried to collection Naivasha Office Page 2	
	SUB-TOTAL- NAIVASHA OFFICE IP- CCTV	

ELDORET DEPOT - CCTV

No	Item Description	Unit	Qty	Countr y of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
A.	8 MP Dome Camera	No.	81				
B.	4MP Network PTZ	No.	2				
C.	180° Panoramic Network Camera	No.	2				
D.	64-ch IntelligentNVR	No.	2				
E.	Genetec or Hikcentral Video License (per Camera).	No.	85				
F.	40 Inch 1080P LED Monitor C/W mount accessories	No.	1				
G.	32 Inch 1080P LED Monitor C/W mount accessories	No.	0				
H.	Gig Ethernet to Gig rack-mount Fiber optic Media Converter 30km Range industrial type	No.	2				
	Total Carried to Collection Eldoret Depot page 1						

No	Item Description	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers			
А.	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1			
В.	Network Devices accessories & cabinets- 4 Edge switches & 1core Switch	Lot	1			
C.	6 KVA true online UPS	No	2			
D.	3 KVA true online UPS	No	2			
E.	1.5 KVA true online UPS	No	1			
F.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1			
G.	Client Workstation	Lot	1			
Н.	Installation, Testing and Commissioning to client satisfaction	Lot	1			
I.	Biometric Access Control cards	No.	100			
	Total Carried					

	SUMMARY PAGE ELDORET DEPOT IP- CCTV BILL OF	QUANTITIES	
А.	Total Carried to collection Eldoret Depot Page 1		
В.	Total Carried to collection Eldoret Depot Page 2		
	SUB-TOTAL- ELDORET DEPOT IP- CCTV		

Bill of Quantities Technical Training & Project Management								
No	Item Description	Unit	Qty	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)			
	Manufacturers Training: Factor costs as follows:							
i)	Factory Assessment and pre- installation Training for 4no persons	Pc	1	2,300,000.00	2,300,000.00			
	Manufacturers Training at the manufacturers for 3no technical persons							
ii)	(Factor only the cost of training i.e venue ,trainers, transport to and from the training venue and certification)	Lot	1					
ii)	Travelling and accommodation for 3no technical persons	Lot	1	3,500,000.00	3,500,000.00			
В	Provisional Sum for Project Management	Pc	1	2,000,000.00	2,000,000.00			
	Provisional Sum for Contingencies	Pc	1	1,500,000.00	1,500,000.00			
	Total PPCBL Incl. & VAT Exc	l						
	ADD 16% VAT							
	Grand-Total PPCBL Incl. & Va Lot 2:							
	Total Carried to collection Bill Management	- Technical Training & F	Project					

TECHNICAL TRAINING & PROJECT MANAGEMENT LOT-3

SUMMARY PAGE BILL OF QUANTITIES LOT 3

	SUMMARY PAGE BILL OF QUANTITIES LOT 3: IN MAJOR STORES & OFFICES BILL OF QUANTITIES: CE REGION	
a)	Total carried to collection sub-total- Soilo Substation IP- CCTV &Access Control	
b)	Total carried to collection sub-total- Maralal Stores IP- CCTV &Access Control	
c)	Total carried to collection sub-total- Naivasha Office IP- CCTV &Access Control	
d)	Total carried to collection sub-total- Eldoret Depot IP- CCTV &Access Control	
e)	Total carried to collection sub-total- Technical Training & Project Management Page	
	TotaL PPCBL Incl. & VAT Excl	
	ADD 16% VAT	
	Grand-Total PPCBL Incl. & VAT Incl. Lot 3	

SCHEDULE OF MAINTENANCE LOT 3: INSTALLATION OF CCTV MAJOR STORES & OFFICES

No	Description	Unit	Qty	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)
1	Allow maintenance for a period of 1 (one) year done quarterly as per KPLC SLA.	No	4		
	Total PPCBL Incl. & VAT Excl				
	ADD 16% VAT				
	Grand-Total PPCBL Incl. & VAT Incl. I	Lot 3:			

NB:

To be done after one year warranty of servicing during period

LOT 3-RECOMMENDED SCHEDULE OF SPARE PARTS

NB: The cost of spare parts shall be budgeted for and consumed in subsequent repair & Maintenance budget after the warranty period on as-and- when needed-basis.

	RECOMMENDED SCHEDULE OF SPARE PARTS								
NO.	JTEM	UoM	Qty	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Incl. (Kes)			
	CCTV REQUIREMENT								
1.	NVR 16 Channel	No	1						
2.	NVR 32 Channel	No	1						
3.	NVR 64 Channel	No	1						
4.	16 MPOne Omni Directional	No	1						
5.	4 MP Bullet indoor/outdoor IP camera	No	1						
6.	8 MP Bullet indoor/outdoor IP camera	No	1						
7.	8 MP Dome indoor/outdoor IP camera	No	1						
8.	2 MP PTZ indoor/outdoor IP camera	No	1						
9.	4 MP 180° indoor/outdoor Panoramic IP	No	1						
10.	8 MP 360° indoor/outdoor IP camera	No	1						
	16 MPOne Omni Directional Indoor/Outdoor Dome IP	No	1						
11.) T	1						
12.	Video monitor 32''	No	1						
13.	Video monitor 42''	No	1						
14.		No	1						
15.	2TB Hard Disk	No	1						
16.	3TB Hard Disk	No	1						
17.	4TB Hard Disk	No	1						
18.	8TB Hard Disk	No	1						
19.	10 TB Hard Disk	No	1						
20.	12 TB Hard Disk	No	1						
~ 1	GENETEC OR HIKCENTRAL CCTV	No	1						
21.	Archiver Client workstation	No	1						
22.	LICENSES , SMA AND	No							
	LICENSES, SIMA AIND		1						

SMA for 2 years for KPLC Genetee or Hikeentral No 1 23. System SMA for 3 years for KPLC Genetee or Hikeentral No 1 24. System SMA for 5 years for KPLC Genetee or Hikeentral No 1 25. System SMA for 5 years for KPLC Genetee or Hikeentral No 1 25. System SMA for 2 Years Advancis Security Management No 1 26. Software SMA for 3 Years Advancis Security Management No 1 27. Software SMA for 3 years AEOS NEPAD Access Control No 1 28. System System SMA for 3 years AEOS No 1 29. System System SNA for 1 UVEYE UVSS No 1 29. System Genetee or Hikeentral CCTV Camera license per No 1 1 30. system Genete or Hikeentral Access Control No 1 1 1 31. camera Genetee or Hikeentral Advancis 500 data points No 1 1 1 33. System No 1 1 1 1 1 1 33. System No 1 1 1 1		TRAINING				
Genetec or Hikcentral	23.	Genetec or Hikcentral	No	1		
SMA for 5 years for KPLC No 1 Genetec or Hikcentral No 1 25. System No 1 SMA For 2 Years Advancis No 1 Security Management No 1 26. Software No 1 SMA For 3 Years Advancis No 1 Security Management No 1 27. Software No 1 SMA For 3 Years AEOS No 1 NEPAD Access Control No 1 28. System No 1 SMA for UVEYE UVSS No 1 Genetec or Hikcentral No 1 CCTV Camera license per No 1 30. system No 1 Genetec or Hikcentral SDK No 1 Access Control License per No 1 33. System No 1 MEPAD Access control No 1 Advancis 500 data points No 1 Advancis 1000 data points No 1 34. License No 1 </td <td>24</td> <td>Genetec or Hikcentral</td> <td>No</td> <td>1</td> <td></td> <td></td>	24	Genetec or Hikcentral	No	1		
SMA For 2 Years Advancis Security Management No 1 26. Software No 1 SMA For 3 Years Advancis Security Management No 1 27. Software No 1 SMA For 2 years AEOS NEPAD Access Control No 1 28. System 1 SMA For 3 years AEOS NEPAD Access Control No 1 29. System 1 SMA for UVEYE UVSS No 1 30. system 1 Genetec or Hikcentral CCTV Camera license per No 1 Genetec or Hikcentral Access Control License per No 1 32. door 1 1 Genetec or Hikcentral SDK License for Access control No 1 33. System 1 1 34. License per door 1 1 Advancis 1000 data points No 1 1 35. license No 1 1 35. license No 1 1 36. license No 1		SMA for 5 years for KPLC Genetec or Hikcentral	No	1		
SMA For 3 Years Advancis Security Management No 1 27. Software No 1 SMA For 2 years AEOS NEPAD Access Control No 1 28. System 1 SMA For 3 years AEOS NEPAD Access Control No 1 29. System 1 Genetec or Hikcentral CCTV Camera license per No 1 Genetec or Hikcentral Access Control License per No 1 31. camera No 1 Genetec or Hikcentral Access Control License per No 1 32. door 1 1 MEPAD Access control No 1 Access Control License per 3 1 33. System 1 Access Control No 1 1 Jicense for Access control Advancis 500 data points No 1 34. License per door 1 1 Advancis 1000 data points No 1 1 36. license No 1 1 36. license per No 1 1		SMA For 2 Years Advancis Security Management	No	1		
SMA For 2 years AEOS NEPAD Access Control No 1 28. System SMA For 3 years AEOS NEPAD Access Control No 1 29. System SMA for UVEYE UVSS No 1 30. system SMA for UVEYE UVSS No 1 Genetec or Hikcentral CCTV Camera license per No 1 1 Genetec or Hikcentral CCTV Camera license per No 1 1 Genetec or Hikcentral Access Control License per No 1 1 32. door 1 1 1 Genetec or Hikcentral Access control No 1 1 1 J. camera 1 1 1 1 J. camera 1 1 1 1 J. camera 1 1 1 1 1 J. door 1 1 1 1 1 1 J. camera 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		SMA For 3 Years Advancis Security Management	No	1		
SMA For 3 years AEOS NEPAD Access Control No 1 29. System		SMA For 2 years AEOS NEPAD Access Control	No	1		
SMA for UVEYE UVSSNo130. systemGenetec or Hikcentral CCTV Camera license perNo1CCTV Camera license perNo131. cameraGenetec or Hikcentral Access Control License perNo132. doorGenetec or Hikcentral SDK License for Access controlNo133. SystemNo1Advancis 500 data points LicenseNo135. licenseNo1Advancis 1000 data points License perNo136. licenseNo137. userNo1		SMA For 3 years AEOS NEPAD Access Control	No	1		
CCTV Camera license per cameraNo1Genetec or Hikcentral Access Control License per 32.No1Genetec or Hikcentral SDK License for Access controlNo133.SystemNo1NEPAD Access control Advancis 500 data points 1icenseNo135.licenseNo1Advancis 1000 data points 36.No1Advancis User license per 37.No1		SMA for UVEYE UVSS	No	1		
Genetec or Hikcentral Access Control License per doorNo132.door1Genetec or Hikcentral SDK License for Access controlNo133.System1NEPAD Access control 34.No1Advancis 500 data points Advancis 1000 data points Advancis User license perNo136.license1Advancis User license perNo137.user1	31.	CCTV Camera license per	No	1		
Genetec or Hikcentral SDK License for Access controlNo133.System1NEPAD Access control 34.No1Advancis 500 data points 15.No135.licenseNo1Advancis 1000 data points 36.No137.userNo1	32	Access Control License per	No	1		
NEPAD Access controlNo134.License per door1Advancis 500 data pointsNo135.license1Advancis 1000 data pointsNo136.license1Advancis User license perNo137.user1		Genetec or Hikcentral SDK License for Access control	No	1		
35. license Image: state stat		NEPAD Access control License per door	No	1		
36. license Advancis User license per No 37. user	35.	license				
37. user	36.	license				
	37.	user				
Advancis including any 38. required CAD Drawing	38.	required CAD Drawing		1		
Establishment of interface No 1 between Genetec or Hikcentral and Advancis for	20	between Genetec or Hikcentral and Advancis for	No	1		
39. a site of 50 Cameras 40. Establishment of interface No 1			No	1		

					[
	between Genetec or				
	Hikcentral Access control				
	and SAP Database				
	Technical training for	No	1		
	Genetec or Hikcentral				
	Access Control for one				
41.	persons				
	Technical training for	No	1		
	Genetec or Hikcentral Video				
	Management systems for				
42.	one persons				
	Technical training for	No	1		
	Advancis SMS for one	110			
43.	persons				
ч	NETWORKING REQUIRE	MENT	Г Г		
	Core Network Switch-		1		
		No	1		
44.	24port	NT	1		
	Main Network switch 24	No	1		
45.	Port				
46.	Local switch 24 Port	No	1		
47.	Switch PoE 8 Port	No	1		
	24 Port Patch Panel with I-O	No	1		
48.	Ports				
	Patch Cord Cable 1- Meter	No	1		
49.	Cat-6				
	Patch Cord Cable 3- Meter	No	1		
50.	Cat-6				
	Single Mode Fiber Patch	No	1		
	Cord LC- LC/ SC-SC/ SC-				
51.	LC, 1 or 3M, Duplex				
	Multi-Mode Fiber Patch	No	1		
	Cord LC- LC/ SC-SC/ SC-	110	-		
52.	LC, 1 or 3M, Duplex				
52.	Multiprotocol Network	No	1		
53.	Tester (Set)	110			
	Coaxial Cable (1000ft)	М	1		
54.					
55.	UTP Cat 6 Cable (1000ft)	M	1		
	Shielded UTP Cat6 Outdoor	Μ	1		
	Direct Burial 23AWG Pure				
56.	Copper (1000ft)	D	1		
57.	RJ45 Connectors (100 Pack)	Pkt	1		
58.	RJ45 Coupler, 2 Port, UTP	No	1		
59.	PoE Extender	No	1		
60.	PoE Injector for IP cameras	No.	1		
	Armored outdoor direct	Roll	1		
	burial 4-6 core fiber optic				
61.	cable (1000ft)				
01.		l	L	1	

	Network Media Converter	No.	1		
	and associated network				
62.	accessories				
	SFP Transceiver Module	No.	1		
	(SMF, 1550nm,				
	20/50/100km, LC, DOM)				
	Cisco, Max Data Rate:				
62	>1000Mbps and associated fiber network accessories				
63.	White Conduits 25mm	No	1		
64.	White Conduits 25mm	No	1		
65.					
66.	White Bends 25/32mm	No	1		
67.	White Connectors 25/32mm	No	1		
68.	Saddle clips (100 pack)	Pkt	1		
	Screws (100-count box of	Pkt	1		
69.	1 ³ / ₄ -inch- long screws)				
	Galvanized Metallic	No	1		
	Trunking 100mm X 50mm				
70.		NT	1		
71	PVC Cable Trunk 16 X 25	No	1		
71.	mm White duct (3m) Camera Stainless Steel Pole	No.	1		
72.		INO.	1		
	ACCESS CONTROL	N	1		
	Door Access Controller	No	1		
73.	Compatible with GENETEC Or Hikcentral				
75.	Access Controller Door	No.	1		
74.	Interface	110.	1		
75.	Access Controller Door	No.	1		
76.	Access Control Cards	No.	1		
70.	Biometric/Card Reader	No.	1		
77.	Finger Print	1101	-		
	Biometric/Card Reader	No.	1		
78.	Facial				
	Smart Card Reader-	No.	1		
79.	Proximity				
	Access Control	No.	1		
	Management/Application				
80.	Software	 			
~ 1	Access control staff card	No	1		
81.	Printer	NT	1		
00	Control Room System Printer	No	1		
82.	Genetec or Hikcentral	No.	1		
	Synergies Master Controller	110.			
83.	(SMC)				
83.	Single Door Maglock	No.	1		
04.	Bio 2 oor triugioon	1,0,	-	1	

85.	Double Door Maglock	No.	1	
86.	Emergency Release Button	No.	1	
87.	Key Switch	No.	1	
07.	LICENSING REQUIREME		-	
	Genetec or Hikcentral	No	1	
88.	Federation License (general)	110	1	
00.	Advancis License per	No.	1	
89.	workstation	110.	1	
	Genetec or Hikcentral	No.	1	
	license per operator/user			
90.	workstation			
91.	Video analytic per channel	No.	1	
	Genetec or Hikcentral	No.	1	
92.	mission control license			
	Genetec or Hikcentral	No.	1	
93.	Industrial IOT License			
	Genetec or Hikcentral	No.	1	
94.	Logbook License			
	1no Door License (general	No.	1	
95.	price, including integration)	N	1	
	1no IP Camera License	No	1	
06	(general price, including			
96.	integration) 1no Control ID SDK	No	1	
	License (general price,	INU	1	
97.	including integration)			
<i>)1</i> .	1no Control ID Interface	No	1	
	License (general price,	110	-	
98.	including integration)			
	WORKSHOP DIAGNOSIS	& RE	PAIR	
99.	Repair network switch	No.	1	
100	Optical drive (HDD)	No.	1	
101.	N 1 1	No.	1	
102.	N 11 11	No.	1	
	System board (Mother	No.	1	
103.	Board)			
104.	Fan	No.	1	
105.		No.	1	
	Memory module (RAM)	No.	1	
	NIC Card	No.	1	
107.	Access control staff card	No	1	
108	Printer Ribbon			
	Control Room System	No	1	
109.	Printer Cartridge/Tonner			
	Control Room System	No	1	
110.	Printer ink 200ml			

		L		1		1 1
	Renovation/repair of raised	Sq	1			
	floor per 600mm X 600mm	mm				
	with associated accessories	(600				
		X60				
111.		0)				
	Falls Seiling	Sq	1			
	renovation/replacement per	mm				
	600mm X 600mm with	(600				
	associated accessories	X60				
112.		0)	1			
112	Aluminum frame gypsum	Sq	1			
	partition pers square meter	m No	1			
114.	Door Hingers	No.	1			
	Aluminum Door with	No.	1			
115.	accessories	NT	1			
110	Aluminum Double Door	No.	1			
116.	with accessories CONTROL ROOM FUNIT					
					I	
117.	Control Room Chair	No.	1			
118.	Control Room table	No.	1			
	AIR CONDITIONER (AC)					
	Complete set of Air	No.	1			
119.	Conditioner AC					
120.	AC Condenser Unit	No.	1			
121.	AC Condenser Split Unit	No.	1			
122.	AC Drainage Pump	No.	1			
123.	AC Remote Control	No.	1			
123.	Refilling of AC gas per	No.	1			
124.	refill per AC		_			
	EMERGENCY RESPONSE	C				·
	Emergency repair for a	No.	1			
	call/ticket per					
	technician per day					
	(installation and					
	configurations of key					
125.	components)					
	Support service for a	No.	1			
	call/ticket per					
	casual laborer per day					
	(installation of key					
126.	components)					
	Emergency repair/meeting	No.	1			
	for a call/ticket per					
127.	supervisor					
	Integration of one third	No.	1			
	party system as need arises					
	into existing server					
128.	applications for a call/ticket					

	per one					
	technician per day					
	Unscheduled service per site	No.	1			
	as per the description in					
	schedule of requirement					
	under preventive					
129.	maintenance.					
	TOOLS AND POWER ACC	CESSO	RIES		1	
	Software Maintenance	No.	1			
130.	laptop					
	Full HD business projector	No.	1			
	5,000 lumens					
132.	Maintenance tool kit	No.	1			
	Cordless Rotary Hammer	No	1			
	Drill (Includes 20-Volt Li-					
	ion Rechargeable Battery,					
	Fast Charger, SDS Plus					
	Hammer Drill, Set of drill					
	bits, Heavy Duty Brushless					
	Demolition Hammer)					
	Blower	No.	1			
135.	Leather Hand gloves	No.	1			
	Aluminum Multi-Purpose	No.	1			
136.	Ladder (16ft)					
	Aluminum Telescopic	No.	1			
137.	Ladder (3.8m)					
	Windows antivirus complete	No.	1			
138.	with license (for 1No. PC)					
	Multiprotocol Network	No.	1			
	tester (Pair)					
140.	Surge and Voltage protector	No	1			
	4 core Alarm cable	Roll	1			
141.	(100m/Roll)					
	Speaker 1.5mm sq.	Μ	1			
142.	(70/0.15) cable	D 11	1			
	2.5mm sq Stranded Twin	Roll	1			
1.40	with Earth cable $(100 \text{m/B} \text{ all})$					
143.	(100m/Roll)	М	1			
1 4 4	2.5mm sq PVC CU Cable 3	М	1			
144.	Core 2.5mm sq PVC CU Cable	Roll	1			
145	S/C (100m/Roll)	NUII				
143.	4.0mm sq PVC CU Cable	Roll	1			
146	S/C (100m/Roll)	IX011				
140.	6.0mm sq PVC CU Cable	Roll	1			
147	S/C (100m/Roll)	IX011				
14/.	4.0mm sq PVC CU	Roll	1			
148	Armoured Cable 2 Core	1.011				
140.			I	I		

	(100m/Roll)					
	13A Socket 2-gang DP	No	1			
	Switched Plug Socket					
149.	Metal-Clad					
150.	PVC Insulating Tape	No	1			
	Amalgamating Tape	No	1			
	(Rubber splicing tape)					
152.	Conta glue	No	1			
153.	UPS 1.5KVA	No	1			
154.	UPS 3KVA	No	1			
155.	UPS 6KVA	No	1			
156.	UPS 10KVA	No	1			
	7AH 12V battery	No	1			
	8A,12V Power supplies	No	1			
100.	12-15 A ,12V Power	No	1			
159.	supplies					
	Power supply transformer	No	1			
160.	12v					
	Supply and installation of	No.	1			
	8m					
1.61	Camera/light Stainless Steel					
161.	Pole LED Flood lights 50W	No.	1			
	(with	INU.	1			
162	brackets)					
102	LED Flood lights 100W	No.	1			
	(with					
163.	brackets)					
	$12U \times Depth 1000mm Wall$	No.	1			
	Mount Cabinet (mounting					
164.	brackets)	NO	1			
	Outdoor Box (Measurement 500x500x250 mm	NO	1			
	minimum, 1.2mm					
	Galvanized Steel, Powder					
	Coating, Corrosion					
	Resistance, sealed and					
	dustproof; IP54, Built in					
	Converter Fixed Slots, Air					
	Switch Rail and Fixed					
	Socket Position, clear					
1.65	acrylic					
165.	inspection window) SECURITY LIGHTS	No.	1			
		No.	1			
166	1000 watts Security lights with solar	110.	1			
167.	1000 0 1 11 1	No.	1			
107.	1000 mails Security inghts	1,0,	-	L	1	L

200	NI-	1			
	INO.	1			
	No	1			
	INO.	1			
	No	1			
	No.	1			
Lights Dimmer Switch	No.	1			
ELECTRIC FENCE					
3 Joule Fence Energizer	NO	1			
5 Joule Fence Energizer	NO	1			
	NO	1			
Ŭ		1			
* *					
•					
	NO	I			
	Roll	1			
	Ron	-			
HT wire (1000m)	Roll	1			
Strain posts - Standard (refer					
		1			
INSULATORS & EARTHING	r T				
Flat/round bar insulator	NO	1			
Shield insulator	NO	1			
Pop through hole insulator	NO	1			
Self-tapper hook	NO	1			
Earth Rod	NO	1			
INTRUDER ALARMS					
Control Panel	NO	1			
Zone Expander	NO	1			
PIR Detector	NO	1			
Siren		1			
		1			
		-			
	No	1			
system (UVSS) system					
Under Vehicle Scanning	No	1			
	3 Joule Fence Energizer 5 Joule Fence Energizer 8 Joule Fence Energizer 12 Joule Fence Energizer Energizer Key Switch Energizer ON/OFF Key D.C. siren D.C. strobe light GSM/IP Module Timed fence light 12V, 7AH Batteries. AVS 30 Voltage protector 1.6/2.0mm Solid galvanized HT wire (1000m) 1.6/2.0mm Solid stainless steel HT wire (1000m) Strain posts - Standard (refer to specification) INSULATORS & EARTHING Flat/round bar insulator Shield insulator Pop through hole insulator Self-tapper hook Earth Rod INTRUDER ALARMS Control Panel Zone Expander PIR Detector Ceiling Mount PIR Detector Siren GSM Module UVSS SPARE PART Under Vehicle Scanning system (UVSS) system	with solarNo.300 watts Security lightsNo.200 watts Security lightsNo.with solarNo.200 watts Security lightsNo.Photocell SwitchNo.Security light 6 Meter PoleNo.600X600 ceiling lightsNo.Lights Dimmer SwitchNo.ELECTRIC FENCEImage: State St	with solarImage: second system300 watts Security lightsNo.1200 watts Security lightsNo.1with solarNo.1200 watts Security lightsNo.1Photocell SwitchNo.1Security light 6 Meter PoleNo.1600X600 ceiling lightsNo.1Lights Dimmer SwitchNo.1ELECTRIC FENCEImage: second systemNO3 Joule Fence EnergizerNO15 Joule Fence EnergizerNO18 Joule Fence EnergizerNO1Energizer Key SwitchNO1D.C. sirenNO1D.C. sirenNO1IDC. strobe lightNO1Timed fence lightNO11.6/2.0mm Solid galvanizedImage: second systemHT wire (1000m)Roll1Strain posts - Standard (refer to specification)NO1Shield insulatorNO1Shield insulatorNO1Shield insulatorNO1Strain posts - Standard (refer to specification)NO1Shield insulatorNO1Shield insulatorNO1Strain posts - Standard (refer to specification)NO1Shield insulatorNO1Shield insulatorNO1Shield insulatorNO1Pirtupper hookNO1Control PanelNO1Zone Expa	with solarImage: solar	with solar Image: Constraint of the second sec

	system (UVSS) with similar				
	features to Uveye system				
204.	Synchronizers (Master and slave)	No	1		
205.	Scanning glass	No	1		
	O-ring rubber	No	1		
207.	Bolt and nut (number 17)	No	1		
208.	Loop sensor cable	No	1		
	Workstation computer	No	1		
210.	PC quad port NIC card	No	1		
211.	24V 10A power supply	No	1		
212.	Loop detector	No	1		
213.	Flir thermal Camera	No	1		
214.	3KVA online double conversion UPS	No	1		
215.	Cat6A keystone connectors	No	1		
	Patch cord 1 meter	No	1		
217.	Graphics card 16GB	No	1		
218.	High beam LED light bar	No	1		
219.	Relays	No	1		
220.	Cat 7 cable	No	1		
221.	UVSS Multicore communication cable	No	1		
	PIDS SPARE PART				
222.	PIDS Detector Line 3M Long	No	1		
223.	Lantronix	No	1		
224.	PIDS Motherboad Qc 2019	No	1		
225.	Power Supply 12V 15A	No	1		
226.	PIDS Connectors	No	1		
	AUTOMATIC BOLLARDS				
227.	Down limit switch	No	1		
228.	Up limit switches	No	1		
229.	New K4 LED strips	No	1		
230.	Old K4 LED strips	No	1		
231.	Spiral LED Cables	No	1		
232.	Side screws M8	No	1		
233.	Top screws m10	No	1		
234.	DIN 7991-M8X20	No	1		
235.	O-rings	No	1		
236.	Solenoids valves	No	1		
237.	One way valves	No	1		
238.	Pressure valves	No	1		
239.	Bollard relays 24vdc	No	1		
240.	Loop detectors	No	1		
	24 VDC 10A power supply	No	1		

242.	12VDC 6.3A power supply	No	1	
243.	12VDC 4A power supply	No	1	
244.	Bollard magnetic solenoid	No	1	
245.	Bollard led lens	No	1	
246.	Bollard cup	No	1	
247.	Bollard backup batteries	No	1	
248.	Rubber rings	No	1	
249.	Solenoid power cable(Orange)	No	1	
250.	Piston	No	1	
251.	Traffic light bulbs	No	1	
252.	Arm barrier limit switches	No	1	
253.	Arm barrier arm(SQUARE)	No	1	
254.	Bollard shrink tubes	No	1	
255.	Bollard control panel	No	1	
256.	Bollard push button	No	1	
257.	Remote	No	1	
258.	Receiver	No	1	
259.	centurion d10 motor	No	1	
260.	centurion d20 motor	No	1	
261.	gate rolling wheels	No	1	
262.	centurion vantage arms	No	1	
263.	Batteries 12v 7.2ah	No	1	
264.	IR beam detectors	No	1	
	X-RAY BAGGAGE SCANNE	R		
265.	X-Ray Baggage Scanner system HI Scan 7551i	No	1	
266.	X-Ray Baggage system with same functionality as Scanner HI Scan 7551i or equivalent	No	1	
267.	X-ray Generator HIScan 7551i	No	1	
268.	Monitor for HI Scan 7551i	No	1	
269.	Control Panel for Hi-Scan 7551i	No	1	
270.	Power Supplies for HI Scan 7551i	No	1	
	Management PC complete with Hi scan software	No	1	
271.	Conveyor Belt system for HI Scan 7551i	No	1	
		No	1	
	proximity sensors	No	1	
	High-voltage cables	No	1	
	X-ray tube	No	1	
276.	circuit breakers	110	1	

Name of Tenderer______Signature & Official Stamp

LOT 4: INSTALLATION OF CCTV MAJOR STORES & OFFICES BILL OF QUANTITIES- MT. KENYA AND NORTH EASTERN REGION

MT. KENYA AND NORTH EASTERN REGION

KINORU STORES/ SUBSTATION IP- CCTV & ACCESS CONTROL

No	KINORU STORES/ SUB	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers			
А.	8 MP Dome Camera	No.	14							
В.	4MP Network PTZ	No.	1							
C.	180° Panoramic Network Camera	No.	1							
D.	32-ch IntelligentNVR upto 16 TB	No.	1							
E.	Genetec or Hikcentral Video License (per Camera).	No.	16							
F.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	1							
G.	Gig Ethernet to Gigrack-mountFiberopticMediaConverter30kmRange industrial type	No.	2							
	Range industrial type Total Carried to collection Kinoru Stores/Substation Page 1									

	Bill	of Qu	antitie	s Kinoru	Stores/Substation	Page 2			
No	Item Description	Un it	Qty	Coun try of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers		
А.	Allow for cabling, ducting, poles/brackets and necessary accessories	Lo t	1						
В.	Network Devices accessories & cabinets - 1 switch	Lot	1						
C.	3 KVA true online UPS	No	1						
D.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1						
E.	Client Workstation	Lot	1						
F.	Installation, Testing and Commissioning to client satisfaction	Lot	1						
G.	Biometric Access Control Cards	No	100						
	Total Carried to collection Kinoru Stores/Substation Page 2								

	SUMMARY PAGE KINORU STORES/ SUBSTATION IP- CCTV &ACCESS CONTROL BILL OF QUANTITIES								
A.	Total Carried to collection Kinoru Stores/Substation Page 1								
В.	Total Carried to collection Kinoru Stores/Substation Page 2								
	SUB-TOTAL- KINORU STORES/ SUBSTATION IP- CCTV &ACCESS CONTROL								

MAKUYU STORES IP- CCTV & ACCESS CONTROL

No	Item Description	Unit	Qty	Countr y of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
A.	8 MP Dome Camera	No.	14				
B.	4MP Network PTZ	No.	0				
C.	180° Panoramic Network Camera	No.	2				
D.	32-ch IntelligentNVR upto 16 TB	No.	1				
E.	Genetec or Hikcentral Video License (per Camera).	No.	16				
F.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	1				
G.	32 Inch 1080P LED Monitor C/W mount accessories	No.	1				
H.	Gig Ethernet to Gig rack-mount Fiber optic Media Converter 30km Range industrial type	No.	2	Ct.			
	Total Carried to Colle	ction M	lakuyu	Stores pa	ge 1		

			Bil	l of Quanti	ties Page 2		
No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
А.	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1				
B.	Network Devices accessories & cabinets - 1 switch	Lot	1				
C.	3 KVA true online UPS	No	1				
D.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1				
E.	Client Workstation	Lot	1				
F.	Installation, Testing and Commissioning to client satisfaction	Lot	1				
G.	Biometric Access Control cards	No.	100				
	Total Carried						

	SUMMARY PAGE MAKUYU STORES IP- CCTV &ACCESS CONTROL BILL OF QUANTITIES									
А.	Total Carried to Collection Makuyu Stores page 1									
В.	Total Carried to Collection Makuyu Stores page 2									
	SUB-TOTAL- MAKUYU STORES IP- CCTV &ACCESS CONTROL									

MURANG'A STORES IP- CCTV & ACCESS CONTROL

No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
А.	8 MP Dome Camera	No.	14				
B.	180° Panoramic Network Camera	No.	1				
C.	32-ch IntelligentNVR upto 16 TB	No.	1				
D.	Genetec or Hikcentral Video License (per Camera).	No.	15				
E.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	1				
F.	32 Inch 1080P LED Monitor C/W mount accessories	No.	1				
G.	Gig Ethernet to Gigrack-mountFiberopticMediaConverter30kmRange industrial type	No.	2				
	Total Carried to coll	ection I	Muran	ıg'a Stores	Page 1		

		Bill o	f Quan	tities Mur	ang'a Stores Page	2	
No	Item Description	Unit	Qty	Countr y of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
А.	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1				
B.	Network Devices accessories & cabinets - 1 switch	Lot	1				
C.	3 KVA true online UPS	No	1				
D.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1				
E.	Client Workstation	Lot	1				
F.	Installation, Testing and Commissioning to client satisfaction	Lot	1				
G.	Biometric Access Control Cards	No.	100				
	Total Carri						

	SUMMARY PAGE MURANG'A STORES IP- CCTV & OF QUANTITIES	ACCESS CONTROL BILL
А.	Total Carried to collection Murang'a Stores Page 1	
В.	Total Carried to collection Murang'a Stores Page 2	
	SUB-TOTAL- MURANG'A STORES IP- CCTV &ACCESS CONTROL	

THIKA OFFICE/ DEPOT IP- CCTV &ACCESS CONTROL

No	Item Description	Unit	Qty	Countr y of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbe rs
A.	8 MP Dome Camera	No.	35				
B.	4MP Network PTZ	No.	1				
C.	180° Panoramic Network Camera	No.	2				
D.	64-ch IntelligentNVR	No.	1				
E.	Genetec or Hikcentral Video License (per Camera).	No.	38				
F.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	2				
G.	40 Inch 1080P LED Monitor C/W mount accessories	No.	1				
H.	32 Inch 1080P LED Monitor C/W mount accessories	No.	1				
I.	Gig Ethernet to Gig rack- mount Fiber optic Media Converter 30km Range industrial type	No.	2				
	Total Carried to Collection	on Thik	ka offic	e/depot pa	ige 1		

	Bill of Quantities Page 2										
No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Number s				
A	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1								
B.	NetworkDevicesaccessories&cabinets-2Edgeswitches,1coreswitch-	Lot	1								
C	6 KVA true online UPS	No	1								
D	3 KVA true online UPS	No	2								
E.	1.5 KVA true online UPS	No	1								
F.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1								
G	Client Work station	Lot	1								
Н	Installation, Testing and Commissioning to client satisfaction	Lot	1								
J.	Biometric Access Control cards	No.	100								
	Total Carried t	o Collec	tion T	hika office	/depot page 2						

	SUMMARY PAGE THIKA OFFICE/DEPOT IP- CCTV & ACCI OF QUANTITIES	ESS CONT	ROL BILL
A	Total Carried to Collection Thika office/depot page 1		
В	Total Carried to Collection Thika office/depot page 2		
	SUB-TOTAL- THIKA OFFICE/DEPOT IP- CCTV &ACCESS CONTROL		

MARSABIT OFFICE AND STORES IP- CCTV & ACCESS CONTROL

No	Item Description	Unit	Qty	Countr y of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
А.	8 MP Dome Camera	No.	12				
B.	4MP Network PTZ	No.	1				
C.	180° Panoramic Network Camera	No.	1				
D.	64-ch IntelligentNVR	No.	1				
E.	Genetec or Hikcentral Video License (per Camera).	No.	15				
F.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	3				
G.	40 Inch 1080P LED Monitor C/W mount accessories	No.	1				
H.	32 Inch 1080P LED Monitor C/W mount accessories	No.	1				
I.	Gig Ethernet to Gig rack-mount Fiber optic Media Converter 30km Range industrial type		2				
	Total Carried to Colle	ction M	Iarsabi	t Office ar	nd Stores Page 1		

			B	ill of Quan	tities Page 2		
No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Number s
A	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1				
B.	NetworkDevicesaccessories&cabinets-2Edgeswitches,1coreswitch	Lot	1				
C	6 KVA true online UPS	No	1				
D	3 KVA true online UPS	No	2				
E.	1.5 KVA true online UPS	No	1				
F.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1				
G	Client Workstation	Lot	1				
Н	Installation, Testing and Commissioning to client satisfaction	Lot	1				
Q.	Biometric Access Control cards	No.	200				
	Total Carried to Co	llection	Mars	abit Office	and Stores page 2		

	SUMMARY PAGE MARSABIT OFFICE IP- CCTV &ACCESS QUANTITIES	CONTROL BILL OF
A.	Total Carried to Collection Marsabit Office and Stores page 1	
В.	Total Carried to Collection Marsabit Office and Stores page 2	
	SUB-TOTAL- MARSABIT OFFICE AND STORES IP- CCTV &ACCESS CONTROL	

MOYALE OFFICE AND STORES IP- CCTV & ACCESS CONTROL

No	Item Description	Unit	Qty	Countr y of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Number s
А.	8 MP Dome Camera	No.	14				
В.	4MP Network PTZ	No.	1				
C.	180° Panoramic Network Camera	No.	1				
D.	64-ch IntelligentNVR	No.	1				
E.	Genetec or Hikcentral Video License (per Camera).	No.	16				
F.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	3				
G.	40 Inch 1080P LED	No.	1				
Н.	32 Inch 1080P LED Monitor C/W mount accessories	No.	1				
I.	Gig Ethernet to Gig rack-mount Fiber optic Media Converter 30km Range industrial type	No.	2				
	Total Carried to Collect	ion Mo	yale O	ffice and S	Stores Page 1		

			Bill	of Quantiti	es Page 2					
No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numb ers			
A.	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1							
B.	NetworkDevicesaccessories & cabinets -2 Edge switches, 1 coreswitch	Lot	1							
C	6 KVA true online UPS	No	1							
D	3 KVA true online UPS	No	2							
E.	1.5 KVA true online UPS	No	1							
F.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1							
G	Client Workstation	Lot	1							
Н	Installation, Testing and Commissioning to client satisfaction	Lot	1							
J.	Biometric Access Control cards	No.	200							
	Total Carried to Collection Moyale Office and Stores page 2									

	SUMMARY PAGE MOYALE OFFICE AND STORES IP- CCT BILL OF QUANTITIES	V &ACCESS CONTROL
A	Total Carried to Collection Moyale Office and Stores page 1	
В	Total Carried to Collection Moyale Office and Stores page 2	
	SUB-TOTAL- MOYALE OFFICE AND STORES IP- CCTV &ACCESS CONTROL	

WHITE SISTERS STORES (THIKA) IP- CCTV & ACCESS CONTROL

No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
А.	8 MP Dome Camera	No.	14				
В.	4MP Network PTZ	No.	1				
C.	180° Panoramic Network Camera	No.	1				
D.	64-ch IntelligentNVR	No.	1				
E.	Genetec or Hikcentral Video License (per Camera).	No.	16				
F.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	3				
G.	40 Inch 1080P LED Monitor C/W mount accessories	No.	1				
H.	32 Inch 1080P LED Monitor C/W mount accessories	No.	1				
I.	Gig Ethernet to Gig rack-mount Fiber optic Media Converter 30km Range industrial type	No.	2				
	Total Carried to Colle	ction V	v hite s	Sisters Stor	es (Thika) Page 1		

			Bi	ll of Quant	ities Page 2		
No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
А.	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1				
В.	Network Devices accessories & cabinets - 2 Edge switches, 1 core switch	Lot	1				
C.	6 KVA true online UPS	No	1				
D.	3 KVA true online UPS	No	2				
E.	1.5 KVA true online UPS	No	1				
F.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1				
G.	Client Workstation	Lot	1				
Н.	Installation, Testing and Commissioning to client satisfaction	Lot	1				
Q.	Biometric Access Control cards	No.	200				
	Total Carried to	o Collec	tion W	/hite Sister	s Stores page 2		

	SUMMARY PAGE WHITE SISTERS STORES IP- CCTV &ACCESS CONTROL BILL OF QUANTITIES		
A.	Total Carried to Collection White Sisters Stores page 1		
В.	Total Carried to Collection White Sisters Stores page 2		
	SUB-TOTAL- WHITE SISTERS STORES IP- CCTV &ACCESS CONTROL		

	Bill of Quantities T	echnica	al Train	ing & Project Manage	ment
No	Item Description	Unit	Qty	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)
А	Manufacturers Training: Factor cos	sts as fo	llows		
i)	Factory Assessment and pre- installation Training for 4no persons	Pc	1	2,300,000.00	2,300,000.00
ii)	Manufacturers Training at the manufacturers for 3no technical persons (Factor only the cost of training i.e venue ,trainers, transport to and from the training venue and certification)	Lot	1		
ii)	Travelling and accommodation for 3no technical persons	Lot	1	3,500,000.00	3,500,000.00
В	Provisional Sum for Project Management	Pc	1	2,000,000.00	2,000,000.00
	Provisional Sum for Contingencies	Pc	1	1,500,000.00	1,500,000.00
	Total PPCBL Incl. & VAT Excl				
	ADD 16% VAT				
	Grand-Total PPCBL Incl. & VA				
	Total Carried to collection Bill of Project Management	Quant	ities - T	Cechnical Training &	

TECHNICAL TRAINING & PROJECT MANAGEMENT LOT-4

SUMMARY PAGE BILL OF QUANTITIES LOT 4

	SUMMARY PAGE BILL OF QUANTITIES LOT 4 : INSTAL STORES & OFFICES BILL OF QUANTITIES: MT. KENYA ANI	
a)	Total carried to collection sub-total- Kinoru Store/Substation IP- CCTV &Access Control	
b)	Total carried to collection sub-total- Makuyu Stores IP- CCTV &Access Control	
c)	Total carried to collection sub-total- Murang'a Stores IP- CCTV &Access Control	
d)	Total carried to collection sub-total- Thika Office/Depot IP- CCTV &Access Control	
e)	Total carried to collection sub-total- Marsabit office and stores IP- CCTV &Access Control	
f)	Total carried to collection sub-total- Moyale office and stores IP- CCTV &Access Control	
g)	Total carried to collection sub-total- White sisters stores (Thika) IP- CCTV &Access Control	
h)	Total carried to collection sub-total- Technical Training & Project Management Page	
	Total PPCBL Incl. & VAT Excl	
	ADD 16% VAT	
	Grand-Total PPCBL Incl. & VAT Incl. Lot 4:	

SCHEDULE OF MAINTENANCE LOT 4: INSTALLATION OF CCTV MAJOR STORES & OFFICES

No	Description	Unit	Qty	Unit Price VAT Exclusive (Ksh)	Total Price VAT Exclusive (Ksh)
1	Allow maintenance for a period of 1 (one) year done quarterly as per KPLC SLA.	No	4		
	Total PPCBL Incl. & VAT Excl.				
	ADD 16% VAT				
	Grand-Total PPCBL Incl. & VAT Incl	Lot 4:			

NB:

To be done after one year warranty of servicing during period

LOT 4-RECOMMENDED SCHEDULE OF SPARE PARTS

	Maintenance budget after the warranty period on as-and- when needed-basis.								
	RECO	MMEN	DED	SCHEDULE OF SPA					
NO.	ĴTEM	UOM	Qty	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Incl. (Kes)			
	CCTV REQUIREMENT								
1.	NVR 16 Channel	No	1						
2.	NVR 32 Channel	No	1						
3.	NVR 64 Channel	No	1						
4.	16 MPOne Omni Directional	No	1						
5.	4 MP Bullet indoor/outdoor IP camera	No	1						
6.	8 MP Bullet indoor/outdoor IP camera	No	1						
7.	8 MP Dome indoor/outdoor IP camera	No	1						
8.	2 MP PTZ indoor/outdoor IP camera	No	1						
9.	4 MP 180° indoor/outdoor Panoramic IP	No	1						
10.	8 MP 360° indoor/outdoor IP camera	No	1						
11.	16 MPOne Omni Directional Indoor/Outdoor Dome IP Cameras (B type)	No	1						
12.	Video monitor 32''	No	1						
13.	Video monitor 42''	No	1						
14.	1TB Hard Disk	No	1						
15.	2TB Hard Disk	No	1						
16.	3TB Hard Disk	No	1						
17.	4TB Hard Disk	No	1						
18.	8TB Hard Disk	No	1						
19.	10 TB Hard Disk	No	1						
20.	12 TB Hard Disk	No	1						
20.	GENETEC OR HIKCENTRAL CCTV Archiver	No	1						
21.	Client workstation	No	1						
	LICENSES , SMA AND TRAINING	No	1						
23.	SMA for 2 years for KPLC Genetec or Hikcentral	No	1						

NB: The cost of spare parts shall be budgeted for and consumed in subsequent repair & Maintenance budget after the warranty period on as-and- when needed-basis.

	System				
24.	SMA for 3 years for KPLC Genetec or Hikcentral System	No	1		
25.	SMA for 5 years for KPLC Genetec or Hikcentral System	No	1		
	SMA For 2 Years Advancis Security	No	1		
26.	Management Software SMA For 3 Years Advancis Security	No	1		
27.	Management Software SMA For 2 years AEOS NEPAD Access Control	No	1		
28.	System SMA For 3 years AEOS NEPAD Access Control	No	1		
<u> </u>	System SMA for UVEYE UVSS system	No	1		
31.	Genetec or Hikcentral CCTV Camera license per camera	No	1		
32.	Genetec or Hikcentral Access Control License per door	No	1		
33.	Genetec or Hikcentral SDK License for Access control System	No	1		
34.	NEPAD Access control	No	1		
35.	Advancis 500 data points license	No	1		
36.	Advancis 1000 data points license	No	1		
37.	Advancis User license per user	No	1		
38.	Integration of a site to Advancis including any required CAD Drawing	No	1		
39.	Establishment of interface between Genetec or Hikcentral and Advancis for a site of 50 Cameras	No	1		
~~~	Establishment of interface between Genetec or Hikcentral Access control	No	1		
40.	and SAP Database				

		<b>N</b> T	~	1		Г I
	Technical training for	No	1			
	Genetec or Hikcentral					
	Access Control for one					
41.	persons					
	Technical training for	No	1			
	Genetec or Hikcentral					
	Video Management					
42.	systems for one persons					
42.	Technical training for	No	1			
	Advancis SMS for one	INO	1			
10						
43.	persons					
	NETWORKING					
	REQUIREMENT					
	Core Network Switch-	No	1			
44.	24port					
	Main Network switch 24	No	1			
45.	Port					
46.	Local switch 24 Port	No	1			
47.	Switch PoE 8 Port	No	1			
	24 Port Patch Panel with I-	No	1			
48.	O Ports					
10.	Patch Cord Cable 1- Meter	No	1			
49.	Cat-6	110	1			
49.	Patch Cord Cable 3- Meter	No	1			
50	Cat-6	NO	1			
50.		NT-	1			
	Single Mode Fiber Patch	No	1			
	Cord LC- LC/ SC-SC/ SC-					
51.	LC, 1 or 3M, Duplex					
	Multi-Mode Fiber Patch	No	1			
	Cord LC-LC/SC-SC/					
52.	SC-LC, 1 or 3M, Duplex					
	Multiprotocol Network	No	1			
53.	Tester (Set)					
	Coaxial Cable (1000ft)	Met	1			
54.		er				
	UTP Cat 6 Cable (1000ft)	Met	1			
55.		er	T			
55.	Shielded UTP Cat6	Met	1			
	Outdoor Direct Burial		1			
		er				
	23AWG Pure Copper					
56.	(1000ft)	DL	4			
	RJ45 Connectors (100	Pkt	1			
57.	Pack)	NT	4			
58.	RJ45 Coupler, 2 Port, UTP	No	1			
59.	PoE Extender	No	1			
	PoE Injector for IP	No.	1			
60.	cameras		1			
61.	Armored outdoor direct	Roll	1			
01.				1	1	I

	burial 4-6 core fiber optic					
	cable (1000ft)					
	Network Media Converter	No.	1			
	and associated network		_			
62.	accessories					
	SFP Transceiver Module	No.	1			
	(SMF, 1550nm,					
	20/50/100km, LC, DOM)					
	Cisco, Max Data Rate:					
	>1000Mbps and associated					
63.	fiber network accessories					
64.	White Conduits 25mm	No	1			
65.	White Conduits 32mm	No	1			
66.	White Bends 25/32mm	No	1			
	White Connectors	No	1			
67.	25/32mm	110	-			
68.	Saddle clips (100 pack)	Pkt	1			
	Screws (100-count box of	Pkt	1			
69.	1 ³ / ₄ -inch- long screws)					
	Galvanized Metallic	No	1			
	Trunking 100mm X 50mm					
70.	(3m)					
	PVC Cable Trunk 16 X 25	No	1			
71.	mm White duct (3m)					
	Camera Stainless Steel	No.	1			
72.	Pole					
	ACCESS CONTROL					
	Door Access Controller	No	1			
	Compatible with Genetec					
73.	Or Hikcentral					
	Access Controller Door	No.	1			
74.	Interface					
75.	Access Controller Door	No.	1			
76.	Access Control Cards	No.	1			
	Biometric/Card Reader	No.	1			
77.	Finger Print					
	Biometric/Card Reader	No.	1			
78.	Facial					
	Smart Card Reader-	No.	1			
79.	Proximity	NT	1			
	Access Control	No.	1			
00	Management/Application					
80.	Software	Na	1			
81.	Access control staff card Printer	No	1			
δ1.	Control Room System	No	1			
82.	Printer	TAO	1			
82.	Genetec or Hikcentral	No.	1			
03.	Senerce of Threehuld	110.	1	1	l	

	Synergies Master				
0.4	Controller (SMC)	No.	1		
84.	Single Door Maglock				
85.	Double Door Maglock	No.	1		
86.	Emergency Release Button	No.	1		
87.	Key Switch	No.	1		
	LICENSING				
	REQUIREMENT				
	Genetec or Hikcentral	No	1		
00	Federation License				
88.	(general)	NT	1		
20	Advancis License per workstation	No.	1		
89.	Genetec or Hikcentral	No.	1		
	license per operator/user	INO.	1		
90.	workstation				
91.	Video analytic per channel	No.	1		
91.	Genetec or Hikcentral	No.	1		
92.	mission control license	110.	1		
, , , , , , , , , , , , , , , , , , , ,	Genetec or Hikcentral	No.	1		
93.	Industrial IOT License		_		
	Genetec or Hikcentral	No.	1		
94.	Logbook License				
	1no Door License (general	No.	1		
	price, including				
95.	integration)				
	1no IP Camera License	No	1		
	(general price, including				
96.	integration)	NT	1		
	1no Control ID SDK	No	1		
07	License (general price,				
97.	including integration) 1no Control ID Interface	No	1		
	License (general price,	INO	1		
98.	including integration)				
70.	WORKSHOP DIAGNOSI	S & RF	EPAII	R	
99.	Repair network switch	No.	1		
	Optical drive (HDD)	No.	1		
		No.	1		
	Power supply unit Processor and heat sink		_		
102.		No.	1		
102	System board (Mother	No.	1		
	Board)	No.	1		
	Fan				
	Drive backplane	No.	1		
	Memory module (RAM)	No.	1		
107.	NIC Card	No.	1		

<u>г</u>					
108.	Access control staff card Printer Ribbon	No	1		
109	Control Room System Printer Cartridge/Tonner	No	1		
107.	Control Room System	No	1		
110.	Printer ink 200ml				
	Renovation/repair of	Sq	1		
	raised floor per 600mm X	mm			
	600mm with associated	(600			
	accessories	X60			
111.		0)	1		
	Falls Seiling	Sq	1		
	renovation/replacement	mm			
	per 600mm X 600mm with associated accessories	(600 X60			
112.	associated accessories	A00 0)			
112.	Aluminum frame gypsum	Sq	1		
	partition pers square meter	mete	1		
113.	puttion pers square meter	r			
113.	Door Hingers	No.	1		
	Aluminum Door with	No.	1		
115.	accessories		_		
	Aluminum Double Door	No.	1		
116.	with accessories				
	CONTROL ROOM				
	FUNITURE				
117.	Control Room Chair	No.	1		
118.	Control Room table	No.	1		
	AIR CONDITIONER				
	(AC)				
	Complete set of Air	No.	1		
119.	Conditioner AC				
120.	AC Condenser Unit	No.	1		
121.	AC Condenser Split Unit	No.	1		
122.	AC Drainage Pump	No.	1		
123.	AC Remote Control	No.	1		
	Refilling of AC gas per	No.	1		
124.	refill per AC				
	EMERGENCY				
	RESPONSE				
	Emergency repair for a	No.	1		
	call/ticket per				
	technician per day				
	(installation and				
	configurations of key				
125.	components)				
10-	Support service for a	No.	1		
126.	call/ticket per				

	casual laborer per day					
	(installation of key					
	components)					
	Emergency repair/meeting	No.	1			
	for a call/ticket per	1.01	-			
127	supervisor					
127.	Integration of one third	No.	1			
	-	INO.	1			
	party system as need arises					
	into existing server					
	applications for a					
	call/ticket per one					
128.	technician per day					
	Unscheduled service per	No.	1			
	site as per the description					
	in schedule of requirement					
	under preventive					
129.	maintenance.					
	TOOLS AND POWER AC	CESS	ORIE	ES		
	Software Maintenance	No.	1			
130.	laptop					
	Full HD business projector	No.	1			
131	5,000 lumens	1.01	-			
131.		No.	1			
132.	Cordless Rotary Hammer	No	1			
	Drill (Includes 20-Volt Li-	110	1			
	ion Rechargeable Battery,					
	Fast Charger, SDS Plus Hammer Drill, Set of drill					
	,					
	bits, Heavy Duty					
	Brushless					
	Demolition Hammer)					
134.	Blower	No.	1			
135.	Leather Hand gloves	No.	1			
	Aluminum Multi-Purpose	No.	1			
136.	Ladder (16ft)					
	Aluminum Telescopic	No.	1			
137.	Ladder (3.8m)					
	Windows antivirus	No.	1			
	complete with license (for					
138.	1No. PC)					
	Multiprotocol Network	No.	1			
139	tester (Pair)					
	Surge and Voltage	No	1			
140	protector	110	-			
110.	4 core Alarm cable	Roll	1			
1/1	(100m/Roll)	1.011	1			
171.	Speaker 1.5mm sq.	М	1			
142	(70/0.15) cable	141	1			
142.	(10/0.13) Cable				l	

				I	r	
	2.5mm sq Stranded Twin with Earth cable	Roll	1			
143.	(100m/Roll)					
144.	2.5mm sq PVC CU Cable 3 Core	М	1			
	2.5mm sq PVC CU Cable	Roll	1			
145.	S/C (100m/Roll)					
146.	4.0mm sq PVC CU Cable S/C (100m/Roll)	Roll	1			
	6.0mm sq PVC CU Cable	Roll	1			
147.	S/C (100m/Roll)					
	4.0mm sq PVC CU	Roll	1			
	Armoured Cable 2 Core					
148.	(100m/Roll)					
	13A Socket 2-gang DP	No	1			
	Switched Plug Socket					
	Metal-Clad	-				
150.	PVC Insulating Tape	No	1			
	Amalgamating Tape	No	1			
	(Rubber splicing tape)					
152.	Conta glue	No	1			
153.	UPS 1.5KVA	No	1			
154.	UPS 3KVA	No	1			
155.	UPS 6KVA	No	1			
156.	UPS 10KVA	No	1			
157.	7AH 12V battery	No	1			
158.	8A,12V Power supplies	No	1			
	12-15 A ,12V Power	No	1			
159.	supplies					
	Power supply transformer	No	1			
160.	12v					
	Supply and installation of	No.	1			
	8m					
	Camera/light Stainless					
161.	Steel Pole					
	LED Flood lights 50W	No.	1			
1.00	(with					
162.		NT	1			
	LED Flood lights 100W	No.	1			
162	(with brackets)					
105.	$12U \times \text{Depth } 1000\text{mm}$	No.	1			
	Wall Mount Cabinet	110.	1			
164	(mounting brackets)					
101.	Outdoor Box	NO	1			
	(Measurement		_			
	500x500x250 mm					
165.	minimum, 1.2mm					

	<u></u>				
	Galvanized Steel, Powder				
	Coating, Corrosion				
	Resistance, sealed and				
	dustproof; IP54, Built in				
	Converter Fixed Slots, Air				
	Switch Rail and Fixed				
	Socket Position, clear				
	acrylic				
	inspection window ) SECURITY LIGHTS	No.	1		
1.00	1000 watts Security lights	No.	1		
	with solar	N	1		
167.		No.	1		
	300 watts Security lights	No.	1		
	with solar				
169.		No.	1		
	200 watts Security lights	No.	1		
170.	with solar				
171.	200 watts Security lights	No.	1		
172.	Photocell Switch	No.	1		
173.	Security light 6 Meter Pole	No.	1		
174.	600X600 ceiling lights	No.	1		
	Lights Dimmer Switch	No.	1		
	ELECTRIC FENCE				
176.	3 Joule Fence Energizer	NO	1		
		NO	1		
	8 Joule Fence Energizer	NO	1		
	12 Joule Fence Energizer	NO	1		
	Energizer Key Switch	NO	1		
	Energizer ON/OFF Key	NO	1		
	D.C. siren	NO	1		
	D.C. strobe light	NO	1		
	GSM/IP Module	NO	1		
	Timed fence light	NO	1		
	12V, 7AH Batteries.	NO	1		
187.	AVS 30 Voltage protector 1.6/2.0mm Solid galvanized	NO	1		
188	HT wire (1000m)	Roll	1		
100.	1.6/2.0mm Solid stainless	1.011			
189.	steel HT wire (1000m)	Roll	1		
	Strain posts - Standard (refer				
190.	to specification)	NO	1		
	INSULATORS &				
101	EARTHING	NG			
-	Flat/round bar insulator	NO	1		
	Shield insulator	NO	1		
193.	Pop through hole insulator	NO	1		

194	Self-tapper hook	NO	1		
	Earth Rod	NO	1		
195.	INTRUDER ALARMS	NO	1		
106	Control Panel	NO	1		
			1		
	Zone Expander	NO			
	PIR Detector	NO	1		
	Ceiling Mount PIR Detector	NO	1		
	Siren	NO	1		
201.	GSM Module	NO	1		
	UVSS SPARE PART	NT	1		
202.	Under Vehicle Scanning system (UVSS) system	No	1		
203.	Under Vehicle Scanning system (UVSS) with similar features to Uveye system	No	1		
204.	Synchronizers (Master and slave)	No	1		
	Scanning glass	No	1		
	O-ring rubber	No	1		
207.	Bolt and nut (number 17)	No	1		
	Loop sensor cable	No	1		
209.	Workstation computer	No	1		
210.	PC quad port NIC card	No	1		
211.	24V 10A power supply	No	1		
212.	Loop detector	No	1		
213.	Flir thermal Camera	No	1		
214.	3KVA online double conversion UPS	No	1		
215.	Cat6A keystone connectors	No	1		
216.	Patch cord 1 meter	No	1		
217.	Graphics card 16GB	No	1		
218.	High beam LED light bar	No	1		
219.	Relays	No	1		
220.	Cat 7 cable	No	1		
221.	UVSS Multicore communication cable	No	1		
	PIDS SPARE PART				
222.	PIDS Detector Line 3M Long	No	1		
	Lantronix	No	1		
224.	PIDS Motherboad Qc 2019	No	1		
	Power Supply 12V 15A	No	1		
	PIDS Connectors	No	1		
	AUTOMATIC BOLLARDS				
227.	Down limit switch	No	1		
	Up limit switches	No	1		

220		NT-	1		
	New K4 LED strips	No	1		
	Old K4 LED strips	No	1		
	Spiral LED Cables	No	1		
232.	Side screws M8	No	1		
233.	Top screws m10	No	1		
234.	DIN 7991-M8X20	No	1		
235.	O-rings	No	1		
236.	Solenoids valves	No	1		
237.	One way valves	No	1		
238.	Pressure valves	No	1		
239.	Bollard relays 24vdc	No	1		
240.	Loop detectors	No	1		
241.	24 VDC 10A power supply	No	1		
242.	12VDC 6.3A power supply	No	1		
243.	12VDC 4A power supply	No	1		
244.	Bollard magnetic solenoid	No	1		
245.	Bollard led lens	No	1		
246.	Bollard cup	No	1		
247.	Bollard backup batteries	No	1		
248.	Rubber rings	No	1		
	Solenoid power	No	1		
	cable(Orange)	N	1		
	Piston	No	1		
	Traffic light bulbs	No	1		
-	Arm barrier limit switches	No	1		
	Arm barrier arm(SQUARE)	No	1		
	Bollard shrink tubes	No	1		
	Bollard control panel	No	1		
256.	Bollard push button	No	1		
257.	Remote	No	1		
258.	Receiver	No	1		
	centurion d10 motor	No	1		
260.	centurion d20 motor	No	1		
261.	gate rolling wheels	No	1		
262.	centurion vantage arms	No	1		
263.	Batteries 12v 7.2ah	No	1		
264.	IR beam detectors	No	1		
	X-RAY BAGGAGE				
	SCANNER V Pay Paggaga Scannor	No	1	<u> </u>	
265	X-Ray Baggage Scanner system HI Scan 7551i	No	1		
203.	X-Ray Baggage system with	No	1		
	same functionality as		-		
	Scanner HI Scan 7551i or				
	equivalent	NT -	1		
267.	X-ray Generator HIScan	No	1		

	7551i				
268.	Monitor for HI Scan 7551i	No	1		
269.	Control Panel for Hi-Scan 7551i	No	1		
270.	Power Supplies for HI Scan 7551i	No	1		
271.	Management PC complete with Hi scan software	No	1		
272.	Conveyor Belt system for HI Scan 7551i	No	1		
273.	proximity sensors	No	1		
274.	High-voltage cables	No	1		
275.	X-ray tube	No	1		
276.	circuit breakers	No	1		

Name of Tenderer______Signature & Official Stamp

# LOT 5: INSTALLATION OF CCTV MAJOR STORES & OFFICES BILL OF QUANTITIES-COAST REGION

#### KIPEVU SUBSTATION IP- CCTV & ACCESS CONTROL

No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
А.	8 MP Dome Camera	No.	24				
В.	4MP Network PTZ	No.	1				
C.	180° Panoramic Network Camera	No.	1				
D.	32-ch IntelligentNVR upto 16 TB	No.	1				
E.	Genetec or Hikcentral Video License (per Camera).	No.	26				
F.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licences, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	4				
G.	40 Inch 1080P LED Monitor C/W mount accessories	No.	0				
H.	Gig Ethernet To Gig rack-mount Fiber optic Media Converter 30km Range industrial type	No.	2				

	1	Bill of (	Juanti	ties Kipevu	Substation Page 2		
No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Num bers
А.	Allow for cabling, ducting, brackets, poles and necessary accessories fabrications	Lot	1				
В.	Network Devices accessories&cabinets- 3 Edge switches	Lot	1				
C.	3 KVA true online UPS	No	2				
D.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1				
E.	Client Workstation	Lot	1				
F.	Installation, Testing and Commissioning to client satisfaction	Lot	1				
I.	Biometric Access Control cards	No.	100				
	Total Carrie						

	SUMMARY PAGE KIPEVU SUBSTATION IP- CCTV &ACCESS CONTROL BILL OF QUANTITIES								
А.	Total Carried to collection Kipevu Substation Page 1								
В.	Total Carried to collection Kipevu Substation Page 2								
	SUB-TOTAL- KIPEVU SUBSTATION IP- CCTV &ACCESS CONTROL								

#### LIKONI SUBSTATION IP- CCTV & ACCESS CONTROL

Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
8 MP Dome Camera	No.	13				
4MP Network PTZ	No.	1				
32-ch IntelligentNVR upto 16 TB	No.	1				
Genetec or Hikcentral Video License (per Camera).	No.	14				
IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licences, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	2				
32 Inch 1080P LED Monitor C/W mount accessories	No.	0				
Gig Ethernet To Gig rack-mount Fiber optic Media Converter 30km Range industrial	No.	2				
	8 MP Dome Camera 4MP Network PTZ 32-ch IntelligentNVR upto 16 TB Genetec or Hikcentral Video License (per Camera). IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licences, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door) 32 Inch 1080P LED Monitor C/W mount accessories	8 MP Dome CameraNo.8 MP Dome CameraNo.4MP Network PTZNo.32-chNo.IntelligentNVRNo.upto 16 TBNo.Genetec orNo.Hikcentral VideoNo.License (per Camera).No.IP Access ControlNo.System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licences, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)No.32 Inch 1080P LED Monitor C/W mount accessoriesNo.Gig Ethernet To Gig rack-mount Fiber optic MediaNo.	8 MP Dome CameraNo.134MP Network PTZNo.132-chNo.1IntelligentNVR upto 16 TBNo.1Genetec orNo.1Hikcentral Video License (per Camera).No.14IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licences, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)232 Inch 1080P LED Monitor C/W mount accessoriesNo.032 Inch 1080P LED Monitor C/W mount accessoriesNo.0	Item DescriptionUnitQtyof origin8 MP Dome CameraNo.13	Item DescriptionUnitQtyof origin(PPCBL Incl.) & VAT Excl. (Kes)8 MP Dome CameraNo.134MP Network PTZNo.132-chIntelligentNVR upto 16 TBNo.1Genetec or Hikcentral Video License (per Camera).No.14IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licences, IP readers with inbuil controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)No.232 Inch 1080P LED Monitor C/W mount accessoriesNo.032 Inch 1080P LED Gig rack-mount Fiber optic MediaNo.2	Item DescriptionUnitUnitQtyCountry of originUnit Price (PPCBL Incl.) & VAT Excl. (Kes)(PPCBL Incl.) & & VAT Excl. (Kes)8 MP Dome CameraNo.13

	Bill of Quantities Likoni Substation Page 2								
No	Item Description	Unit	Qty	Countr y of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers		
A.	Allow for cabling, ducting, brackets, poles and necessary accessories fabrications	Lot	1						
B.	NetworkDevicesaccessories&cabinets-3Edgeswitches ,1 core switch	Lot	1						
C.	3 KVA true online UPS	No	1						
D.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1						
E.	Client Work station	Lot	0						
F.	Installation, Testing and Commissioning to client satisfaction	Lot	1						
G.	Biometric Access Control Cards	No.	100						
	Total Carried								

	SUMMARY PAGE LIKONI SUBSTATION IP- CCTV &ACCESS CONTROL BILL OF QUANTITIES								
A.	Total Carried to collection Likoni Substation Page 1								
В.	Total Carried to collection Likoni Substation Page 2								
	SUB-TOTAL-LIKONI SUBSTATION IP- CCTV &ACCESS CONTROL								

## VOI STORES/ DEPOT IP- CCTV &ACCESS CONTROL

No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numb ers
Α	8 MP Dome Camera	No.	32				
В	4MP Network PTZ	No.	2				
C	180° Panoramic Network Camera	No.	2				
D	64-ch Intelligent NVR	No.	1				
E	Genetec or Hikcentral Video License (per Camera).	No.	36				
F	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licenses, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	6				
G	40 Inch 1080P LED Monitor C/W mount accessories	No.	1				
Н	32 Inch 1080P LED Monitor C/W mount accessories	No.	1				
I.	Gig Ethernet To Gig rack-mount Fiber optic Media Converter 30km Range industrial type	No.	2				
	Total Carried to Colle						

			В	ill of Quan	tities Page 2		
No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
A	Allow for cabling, ducting, poles/brackets and necessary accessories	Lot	1				
E	NetworkDevicesaccessories&cabinets-3 Edge switches ,1 coreswitch	Lot	1				
C	6 KVA true online UPS	No	1				
Ε	3 KVA true online UPS	No	2				
Е	1.5 KVA true online UPS	No	1				
F	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1				
C	Client Work station	Lot	1				
H	Installation, Testing and Commissioning to client satisfaction	Lot	1				
I.	Biometric Access Control cards	No.	200				
	Total Carried to						

	SUMMARY PAGE VOI STORE/DEPOT IP- CCTV &ACCESS CONTROL BILL OF QUANTITIES								
А.	Total Carried to Collection Voi stores/depot page 1								
В.	Total Carried to Collection Voi stores/depot page 2								
	SUB-TOTAL- VOI STORE/DEPOT IP- CCTV &ACCESS CONTROL								

## MALINDI DEPOT IP- CCTV & ACCESS CONTROL

No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers			
А.	8 MP Dome Camera	No.	30							
В.	4MP Network PTZ	No.	2							
C.	180° Panoramic Network Camera	No.	1							
D.	64-ch Intelligent NVR	No.	1							
E.	Genetec or Hikcentral Video License (per Camera).	No.	34							
F.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licences, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	NO.	6							
G.	40 Inch 1080P LED Monitor C/W mount accessories		1							
H.	Gig Ethernet To Gig rack-mount Fiber optic Media Converter 30km Range industrial type	No.	2							
	Total Carried to collection Malindi depot Page 1									

		Bill	of Qu	antities Ma	alindi depot Page 2		
No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
А.	Allow for cabling, ducting, brackets, poles and necessary accessories fabrications	Lot	1				
B.	Network Devices accessories&cabinets- 3 Edge switches	Lot	1				
C.	3 KVA true online UPS	No	2				
D.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1				
E.	Client Workstation	Lot	1				
F.	Installation, Testing and Commissioning to client satisfaction	Lot	1				
G.	Biometric Access Control cards	No.	200				
	Total Carı	ried to o	collect	ion Malind	li depot Page 2		

	SUMMARY PAGE MALINDI DEPOT IP- CCTV &ACCESS QUANTITIES	CONTROL	BILL OF
A.	Total Carried to collection Malindi depot Page 1		
В.	Total Carried to collection Malindi depot Page 2		
	SUB-TOTAL- MALINDI DEPOT IP- CCTV &ACCESS CONTROL		

## WUNDANYI OFFICE AND STORE IP- CCTV & ACCESS CONTROL

No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
A.	8 MP Dome Camera	No.	16				
B.	4MP Network PTZ	No.	2				
C.	180° Panoramic Network Camera	No.	1				
D.	64-ch IntelligentNVR	No.	1				
E.	Genetec or Hikcentral Video License (per Camera).	No.	19				
F.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licences, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	6				
G.	40 Inch 1080P LED Monitor C/W mount accessories	No.	1				
H.	Gig Ethernet To Gig rack-mount Fiber optic Media Converter 30km Range industrial type	No.	2				

		Bill of	Quanti	ties Wund	lanyi Office Page 2		
No	Item Description	Unit	Qty	Countr y of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numb ers
А.	Allow for cabling, ducting, brackets, poles and necessary accessories fabrications	Lot	1				
В.	Network Devices accessories&cabine ts-3 Edge switches	Lot	1				
C.	3 KVA true online UPS	No	2				
D.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1				
E.	Client Work station	Lot	1				
F.	Installation, Testing and Commissioning to client satisfaction	Lot	1				
G.	Biometric Access Control cards	No.	200				
	Total Car						

	SUMMARY PAGE MALINDI DEPOT IP- CCTV & ACCESS QUANTITIES	CONTROL BILL OF
A.	Total Carried to collection Wundanyi Office and Store Page 1	
В.	Total Carried to collection Wundanyi Office and Store Page 2	
	SUB-TOTAL- WUNDANYI OFFICE AND STORE IP- CCTV &ACCESS CONTROL	

#### HOROHORO IP- CCTV &ACCESS CONTROL

No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
А.	8 MP Dome Camera	No.	16				
В.	4MP Network PTZ	No.	2				
C.	180° Panoramic Network Camera	No.	1				
D.	64-ch IntelligentNVR	No.	1				
E.	Genetec or Hikcentral Video License (per Camera).	No.	19				
F.	IP Access Control System at Entry (Proximity Reader) and Exit (Proximity Reader) complete with Licences, IP readers with inbuilt controller module, Door Maglock, Door Closure and all necessary accessories to complete their installation and which must be compatible and shall be linked to existing GENETEC OR HIKCENTRAL network (Per Door)	No.	6				
G.	40 Inch 1080P LED Monitor C/W mount accessories	No.	1				
H.	Gig Ethernet To Gig rack-mount Fiber optic Media Converter 30km Range industrial type	No.	2				
	Total Carried to col	lection	Horo	horo Page (	1		

			Bill o	of Quantitie	es Horohoro Page 2		
No	Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
А.	Allow for cabling, ducting, brackets, poles and necessary accessories fabrications	Lot	1				
B.	Network Devices accessories &cabinets-3 Edge switches	Lot	1				
C.	3 KVA true online UPS	No	2				
D.	Allow for integration of the system to existing GENETEC OR HIKCENTRAL server	Lot	1				
E.	Client Workstation	Lot	1				
F.	Installation, Testing and Commissioning to client satisfaction	Lot	1				
G.	Biometric Access Control cards	No.	200				
	Total	Carrie	ed to co	ollection Ho	orohoro Page 2		

	SUMMARY PAGE HOROHORO IP- CCTV & ACCESS CON	TROL BIL	L OF
	QUANTITIES		
Α.	Total Carried to collection Horohoro		
	Page 1		
В.	Total Carried to collection Horohoro		
	Page 2		
	SUB-TOTAL - HOROHORO IP- CCTV		
	&ACCESS CONTROL		
	WACCEDD CONTROL		

# TECHNICAL TRAINING & PROJECT MANAGEMENT LOT-5

	Bill of Quantities Tech	nical T	rainin	g & Project Mana	gement
No	Item Description	Unit	Qty	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)
А	Manufacturers Training:Factor cost	t as foll	ows		
i)	Factory Assessment and pre- installation Training for 4no persons	Pc	1	2,300,000.00	2,300,000.00
ii)	Manufacturers Training at the manufacturers for 3no technical persons (Factor only the cost of training i.e venue ,trainers, transport to and from the training venue and certification)	Lot	1		
ii)	Travelling and accommodation for 3no technical persons	Lot	1	3,500,000.00	3,500,000.00
В	Provisional Sum for Project Management	Pc	1	2,000,000.00	2,000,000.00
	Provisional Sum for Contingencies	Pc	1	1,500,000.00	1,500,000.00
	Total PPCBL Incl. & VAT Excl.				
	ADD 16% VAT				
	Grand-Total PPCBL Incl. & VAT 5	[Incl.]	Lot :		
	Total Carried to collection Bill of Management	Quant	ities - 🛛	Fechnical Training	g & Project

	SUMMARY PAGE BILL OF QUANTITIES LOT 5: INS STORES & OFFICES BILL OF QUANTITIES: COAST REG	
a	Total carried to collection sub-total- Kipevu Substation IP- CCTV &Access Control	
b	Total carried to collection sub-total- Likoni Substation IP- CCTV &Access Control	
c	Total carried to collection sub-total- Voi Stores/ Depot IP- CCTV &Access Control	
d	Total carried to collection sub-total- Malindi Depot IP- CCTV &Access Control	
e	Total carried to collection sub-total- Wundanyi office and Store IP- CCTV & Access Control	
f	Total carried to collection sub-total- Horohoro IP- CCTV &Access Control	
g	Total carried to collection sub-total- Technical Training & Project Management Page	
	Total PPCBL Incl. & VAT Excl	
	ADD 16% VAT	
	Grand-Total PPCBL Incl. & VAT Incl. LOT 5:	

#### SCHEDULE OF MAINTENANCE LOT 5: INSTALLATION OF CCTV MAJOR STORES & OFFICES

Item	Description	Unit	Qty	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)
1	Allow maintenance for a period of 1 (one) year done quarterly as per KPLC SLA.	No	4		
	Total PPCBL Incl. & VAT Excl				
	ADD 16% VAT				
	Grand-Total PPCBL Incl. & VAT	Incl. I	Lot :5		

NB:

To be done after one year warranty of servicing during period

## LOT 5-RECOMMENDED SCHEDULE OF SPARE PARTS

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NB: The cost of spare parts shall be budgeted for and consumed in subsequent repair & Maintenance budget after the warranty period on as-and- when needed-basis. RECOMMENDED SCHEDULE OF SPARE PARTS

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NO.	JTEM	UoM	Q ty	CHEDULE OF SPARI Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Incl. (Kes)
	<b>CCTV REQUIREMENT</b>					
1.	NVR 16 Channel	No	1			
2.	NVR 32 Channel	No	1			
3.	NVR 64 Channel	No	1			
4.	16 MPOne Omni Directional	No	1			
5.	4 MP Bullet indoor/outdoor IP camera	No	1			
6.	8 MP Bullet indoor/outdoor IP camera	No	1			
7.	8 MP Dome indoor/outdoor IP camera	No	1			
8.	2 MP PTZ indoor/outdoor IP camera	No	1			
9.	4 MP 180° indoor/outdoor Panoramic IP	No	1			
10.	8 MP 360° indoor/outdoor IP camera	No	1			
11.	16 MPOne Omni Directional Indoor/Outdoor Dome IP Cameras (B type)	No	1			
12.	Video monitor 32"	No	1			
13.	Video monitor 42"	No	1			
14.	1TB Hard Disk	No	1			
15.	2TB Hard Disk	No	1			
16.	3TB Hard Disk	No	1			
17.	4TB Hard Disk	No	1			
18.	8TB Hard Disk	No	1			
19.	10 TB Hard Disk	No	1			
20.	12 TB Hard Disk	No	1			
	GENETEC or HIKCENTRAL CCTV	No	1			
21.	Archiver Client workstation	No	1			
22.	LICENSES , SMA AND TRAINING	No	1			
23.	SMA for 2 years for KPLC	No	1			

	System				
	SMA for 3 years for KPLC Genetec or Hikcentral	No	1		
24.	System				
	SMA for 5 years for KPLC	No	1		
	Genetec or Hikcentral				
25.	System				
	SMA For 2 Years Advancis	No	1		
	Security Management				
26.	Software				
	SMA For 3 Years Advancis	No	1		
	Security Management				
27.	Software				
	SMA For 2 years AEOS	No	1		
	NEPAD Access Control				
28.					
	SMA For 3 years AEOS	No	1		
20	NEPAD Access Control				
29.	System	NT	1		
20	SMA for UVEYE UVSS	No	1		
30.	system Genetec or Hikcentral	No	1		
		INO	1		
31.	CCTV Camera license per camera				
51.	Genetec or Hikcentral	No	1		
	Access Control License per	140	1		
32.	door				
	Genetec or Hikcentral SDK	No	1		
	License for Access control				
33.					
-	NEPAD Access control	No	1		
34.	License per door				
	Advancis 500 data points	No	1		
35.	license				
	Advancis 1000 data points	No	1		
36.	license				
	Advancis User license per	No	1		
37.	user				
	Integration of a site to	No	1		
	Advancis including any				
38.	· · · · · · · · · · · · · · · · · · ·	N			
	Establishment of interface	No	1		
	between Genetec or				
20	Hikcentral and Advancis for				
39.	a site of 50 Cameras	No	1		
	Establishment of interface between Genetec or	No	1		
	Hikcentral Access control				
40.	and SAP Database				
40.	and shi Database				l

		NT	1			
	Technical training for	No	1			
	Genetec or Hikcentral					
	Access Control for one					
41.	persons					
	Technical training for	No	1			
	Genetec or Hikcentral Video					
	Management systems for					
42.	one persons					
	Technical training for	No	1			
	Advancis SMS for one					
43.	persons	-				
	NETWORKING					
	REQUIREMENT	NT	1			
1.4	Core Network Switch-	No	1			
44.	24port	NT	1			
4.5	Main Network switch 24	No	1			
45.	Port	NT-	1			
46.	Local switch 24 Port	No	1			
47.	Switch PoE 8 Port	No	1			
	24 Port Patch Panel with I-O	No	1			
48.	Ports					
	Patch Cord Cable 1- Meter	No	1			
49.	Cat-6					
	Patch Cord Cable 3- Meter	No	1			
50.	Cat-6					
	Single Mode Fiber Patch	No	1			
	Cord LC- LC/ SC-SC/ SC-					
51.	LC, 1 or 3M, Duplex					
	Multi-Mode Fiber Patch	No	1			
	Cord LC- LC/ SC-SC/ SC-					
52.	LC, 1 or 3M, Duplex					
	Multiprotocol Network	No	1			
53.	Tester (Set)					
54.	Coaxial Cable (1000ft)	Meter	1			
55.	UTP Cat 6 Cable (1000ft)	Meter	1			
	Shielded UTP Cat6 Outdoor	Meter	1			
	Direct Burial 23AWG Pure					
56.	Copper (1000ft)					
57.	RJ45 Connectors (100 Pack)	Pkt	1			
58.	RJ45 Coupler, 2 Port, UTP	No	1			
59.	PoE Extender	No	1			
60.	PoE Injector for IP cameras	No.	1			
	Armored outdoor direct	Roll	1			
	burial 4-6 core fiber optic		-			
61.	cable (1000ft)					
	Network Media Converter	No.	1			
	and associated network					
62.	accessories					
		•		1	•	

	LICENSING REQUIREMENT							
	Genetec or Hikcentral	No	1					
88.	Federation License (general)		_					
	Advancis License per	No.	1					
89.	workstation		_					
	Genetec or Hikcentral	No.	1					
	license per operator/user	1.00	-					
90.	workstation							
91.	Video analytic per channel	No.	1					
	Genetec or Hikcentral	No.	1					
92.	mission control license							
	Genetec or Hikcentral	No.	1					
93.	Industrial IOT License							
	Genetec or Hikcentral	No.	1					
94.	Logbook License							
	1no Door License (general	No.	1					
95.	price, including integration)							
	1no IP Camera License	No	1					
	(general price, including							
96.	integration)							
	1no Control ID SDK	No	1					
	License (general price,							
97.	including integration)							
	1no Control ID Interface	No	1					
	License (general price,							
98.	including integration)							
	WORKSHOP DIAGNOSIS		r					
99.	Repair network switch	No.	1					
	Optical drive (HDD)	No.	1					
	Power supply unit	No.	1					
102.	Processor and heat sink	No.	1					
	System board (Mother	No.	1					
	Board)							
104.	Fan	No.	1					
105.		No.	1					
106.	Memory module (RAM)	No.	1					
107.	NIC Card	No.	1					
	Access control staff card	No	1					
108.	Printer Ribbon							
	Control Room System	No	1					
109.	Printer Cartridge/Tonner							
	Control Room System	No	1					
110.	Printer ink 200ml	~						
	Renovation/repair of raised	Sq	1					
	floor per 600mm X 600mm	mm						
	with associated accessories	(600X						
111.		600)						

		C.c.	1		]
	Falls Seiling	Sq	1		
	renovation/replacement per 600mm X 600mm with	mm			
112	associated accessories	(600X 600)			
112.	Aluminum frame gypsum	Sq	1		
113	partition pers square meter	meter	1		
	Door Hingers	No.	1		
114.	Aluminum Door with	No.	1		
115.	accessories	110.	-		
	Aluminum Double Door	No.	1		
116.	with accessories				
	<b>CONTROL ROOM FUNIT</b>	URE			
117.	Control Room Chair	No.	1		
118.	Control Room table	No.	1		
	AIR CONDITIONER				
	(AC)				
	Complete set of Air	No.	1		
	Conditioner AC		4		
120.		No.	1		
121.	AC Condenser Split Unit	No.	1		
122.		No.	1		
123.	AC Remote Control	No.	1		
	Refilling of AC gas per	No.	1		
124.	refill per AC				
	EMERGENCY RESPONSE	1		Γ	
	Emergency repair for a	No.	1		
	call/ticket per technician per day				
	(installation and				
	configurations of key				
125.	components)				
	Support service for a	No.	1		
	call/ticket per				
	casual laborer per day				
	(installation of key				
126.	components)	NT	1		
	Emergency repair/meeting	No.	1		
127.	for a call/ticket per supervisor				
127.	Integration of one third	No.	1		
	party system as need arises	110.	-		
	into existing server				
	applications for a call/ticket				
	per one				
128.	technician per day				
	Unscheduled service per site	No.	1		
100	as per the description in				
129.	schedule of requirement				

	under preventive				
	maintenance.				
	TOOLS AND POWER ACC	CESSOR	IES		<u> </u>
	Software Maintenance	No.	1		
130.	laptop				
	Full HD business projector	No.	1		
131.	5,000 lumens				
132.	Maintenance tool kit	No.	1		
	Cordless Rotary Hammer	No	1		
	Drill (Includes 20-Volt Li-				
	ion Rechargeable Battery,				
	Fast Charger, SDS Plus Hammer Drill, Set of drill				
	bits, Heavy Duty Brushless				
133	Demolition Hammer)				
	Blower	No.	1		
	Leather Hand gloves	No.	1		
155.	Aluminum Multi-Purpose	No.	1		
136.	Ladder (16ft)				
	Aluminum Telescopic	No.	1		
137.	Ladder (3.8m)				
	Windows antivirus complete	No.	1		
138.	with license (for 1No. PC)	NT	1		
120	Multiprotocol Network tester (Pair)	No.	1		
139.	Surge and Voltage protector	No	1		
140.	4 core Alarm cable	Roll	1		
141.	(100m/Roll)	Roll	1		
	Speaker 1.5mm sq.	Μ	1		
142.	(70/0.15) cable	<b>D</b> 11			
	2.5mm sq Stranded Twin	Roll	1		
1/3	with Earth cable (100m/Roll)				
145.	2.5mm sq PVC CU Cable 3	М	1		
144.	Core	111	-		
	2.5mm sq PVC CU Cable	Roll	1		
145.	S/C (100m/Roll)				
	4.0mm sq PVC CU Cable	Roll	1		
146.	S/C (100m/Roll)	D - 11	1		
1 47	6.0mm sq PVC CU Cable S/C (100m/Roll)	Roll	1		
147.	4.0mm sq PVC CU	Roll	1		
	Armoured Cable 2 Core	1011	1		
148.	(100m/Roll)				
	13A Socket 2-gang DP	No	1		
	Switched Plug Socket				
	Metal-Clad				
150.	PVC Insulating Tape	No	1		

Amalgamating TapeNo1151(Rubber splicing tape)-152Conta glueNo1	
152 Conta glue No I	
153 UPS 1.5KVA No 1	
154. UPS 3KVA No 1	
155. UPS 6KVA No 1	
156. UPS 10KVA No 1	
157. 7AH 12V battery No 1	
158. 8A ,12V Power supplies No 1	
12-15 A ,12V Power No 1 159 supplies	
Power supply transformer No 1 160, 12v	
Supply and installation of     No.     1	
8m	
Camera/light Stainless Steel	
161. Pole	
LED Flood lights 50W No. 1	
(with	
162. brackets)	
LED Flood lights 100W No. 1	
(with	
163. brackets)12U $\times$ Depth 1000mm WallNo.1	
Mount Cabinet (mounting	
164. brackets)	
Outdoor Box (Measurement NO 1	
500x500x250 mm	
minimum, 1.2mm	
Galvanized Steel, Powder	
Coating, Corrosion	
Resistance, sealed and	
dustproof; IP54, Built in	
Converter Fixed Slots, Air Switch Rail and Fixed	
Socket Position, clear	
acrylic	
165, inspection window )	
SECURITY LIGHTS No. 1	
1000 watts Security lights     No.     1	
166, with solar	
167, 1000 watts Security lights No. 1	
300 watts Security lights No. 1	
168. with solar	
169.300 watts Security lightsNo.1	
200 watts Security lightsNo.1	
170 with solar	

· · · · · ·	••••				
171.	200 watts Security lights	No.	1		
172.	Photocell Switch	No.	1		
173.	Security light 6 Meter Pole	No.	1		
174.	600X600 ceiling lights	No.	1		
175.	Lights Dimmer Switch	No.	1		
	ELECTRIC FENCE				
176.	3 Joule Fence Energizer	NO	1		
	5 Joule Fence Energizer	NO	1		
178.	8 Joule Fence Energizer	NO	1		
179.	12 Joule Fence Energizer	NO	1		
	Energizer Key Switch	NO	1		
	Energizer ON/OFF Key	NO	1		
	D.C. siren	NO	1		
183.	D.C. strobe light	NO	1		
	GSM/IP Module	NO	1		
185.	Timed fence light	NO	1		
	12V, 7AH Batteries.	NO	1		
187.	AVS 30 Voltage protector	NO	1		
	1.6/2.0mm Solid galvanized				
188.	HT wire (1000m)	Roll	1		
190	1.6/2.0mm Solid stainless steel HT wire (1000m)	Roll	1		
169.	Strain posts - Standard (refer	KOII	1		
190.	to specification)	NO	1		
	INSULATORS & EARTHING	ſ			
191.	Flat/round bar insulator	NO	1		
192.	Shield insulator	NO	1		
193.	Pop through hole insulator	NO	1		
194.	Self-tapper hook	NO	1		
195.	Earth Rod	NO	1		
	INTRUDER ALARMS				
196.	Control Panel	NO	1		
197.	Zone Expander	NO	1		
198.	PIR Detector	NO	1		
199.	Ceiling Mount PIR Detector	NO	1		
200.	Siren	NO	1		
201.	GSM Module	NO	1		
	UVSS SPARE PART				
202.	Under Vehicle Scanning	No	1		
	system (UVSS) system	NT-	1		
203	Under Vehicle Scanning system (UVSS) with similar	No	1		
203.	features to Uveye system				
204.	Synchronizers (Master and slave)	No	1		
205	Scanning glass	No	1		
205.	Southing glass	1.0	-		

		1	1		
206.	O-ring rubber	No	1		
207.	Bolt and nut (number 17)	No	1		
208.	Loop sensor cable	No	1		
	Workstation computer	No	1		
	PC quad port NIC card	No	1		
	24V 10A power supply	No	1		
	Loop detector	No	1		
	Flir thermal Camera	No	1		
214.	3KVA online double	No	1		
۷14.	conversion UPS				
215.	Cat6A keystone connectors	No	1		
216.	Patch cord 1 meter	No	1		
217.	Graphics card 16GB	No	1		
218.	High beam LED light bar	No	1		
219.	Relays	No	1		
220.	Cat 7 cable	No	1	 	
221.	UVSS Multicore	No	1		
	communication cable				
	PIDS SPARE PART		1		
	PIDS Detector Line 3M Long	No	1		
	Lantronix	No	1		
	PIDS Motherboad Qc 2019	No	1		
	Power Supply 12V 15A	No	1		
226.	PIDS Connectors	No	1		
	AUTOMATIC BOLLARDS				
	Down limit switch	No	1		
228.	Up limit switches	No	1		
229.	New K4 LED strips	No	1		
230.	Old K4 LED strips	No	1		
231.	Spiral LED Cables	No	1		
232.	Side screws M8	No	1		
233.	Top screws m10	No	1		
234.	DIN 7991-M8X20	No	1		
235.	O-rings	No	1		
236.	Solenoids valves	No	1		
237.	One way valves	No	1		
238.	Pressure valves	No	1		
239.	Bollard relays 24vdc	No	1		
240.	Loop detectors	No	1		
241.	24 VDC 10A power supply	No	1		
242.	12VDC 6.3A power supply	No	1		
243.	12VDC 4A power supply	No	1		
244.	Bollard magnetic solenoid	No	1		
245.	Bollard led lens	No	1		
246.	Bollard cup	No	1		
1		•			•

		NT			
247.	Bollard backup batteries	No	1		
248.	Rubber rings	No	1		
249.	Solenoid power cable(Orange)	No	1		
250.	Piston	No	1		
251.	Traffic light bulbs	No	1		
252.	Arm barrier limit switches	No	1		
253.	Arm barrier arm(SQUARE)	No	1		
254.	Bollard shrink tubes	No	1		
255.	Bollard control panel	No	1		
256.	Bollard push button	No	1		
257.	Remote	No	1		
258.	Receiver	No	1		
259.	centurion d10 motor	No	1		
260.	centurion d20 motor	No	1		
261.	gate rolling wheels	No	1		
262.	centurion vantage arms	No	1		
263.	Batteries 12v 7.2ah	No	1		
264.	IR beam detectors	No	1		
	X-RAY BAGGAGE SCANNE	R			
	X-Ray Baggage Scanner	No	1		
265.	system HI Scan 7551i				
	X-Ray Baggage system with	No	1		
266	same functionality as Scanner HI Scan 7551i or equivalent				
	X-ray Generator HIScan 7551i	No	1		
	Monitor for HI Scan 7551i	No	1		
200.	Control Panel for Hi-Scan	No	1		
269.	7551i	110			
	19911				
	Power Supplies for HI Scan	No	1		
270.	Power Supplies for HI Scan 7551i				
	Power Supplies for HI Scan 7551i Management PC complete	No No	1 1		
	Power Supplies for HI Scan 7551i Management PC complete with Hi scan software	No	1		
	Power Supplies for HI Scan 7551i Management PC complete with Hi scan software Conveyor Belt system for HI				
271. 272.	Power Supplies for HI Scan 7551i Management PC complete with Hi scan software Conveyor Belt system for HI Scan 7551i	No	1		
271. 272. 273.	Power Supplies for HI Scan 7551i Management PC complete with Hi scan software Conveyor Belt system for HI	No No	1 1		
271. 272. 273. 274.	Power Supplies for HI Scan 7551i Management PC complete with Hi scan software Conveyor Belt system for HI Scan 7551i proximity sensors	No No	1 1 1 1		
271. 272. 273. 274. 275.	Power Supplies for HI Scan 7551i Management PC complete with Hi scan software Conveyor Belt system for HI Scan 7551i proximity sensors High-voltage cables	No No No	1 1 1 1 1		

Name of Tenderer______Signature & Official Stamp

## LOT 6: INSTALLATION OF IP-CCTV & BIOMETRIC ACCESS CONTROL SYSTEM & ACCESSORIES FOR IESR AND LIVELINE

No	AND LIVELINE Item Description	Unit	Qty	Country of origin	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price (PPCBL Incl.) & VAT Excl. (Kes)	Part Numbers
a	180° Panoramic Network Camera	No.	4				
b	PTZ Camera	No.	3				
с	8 MP Dome Camera	No.	14				
d	8 MP Bullet Camera	No.	20				
e	Camera Poles	No.	5				
f	64-Channel NVR and storage Server up to 40TB	No.	1				
g	NVR-Management Station/Client Work Station	No.	1				
h	NVR Viewing Station	No.	1				
i	Access control door controller	No.	4				
j	Access control reader Type A	No.	4				
k	Door closer	No.	4				
1	Maintenance Laptops	No.	1				
m	Core Network Switches (backbone Switch)	No.	1				
n	Edge Network Local Switches	No.	5				
0	3 KVA UPS	No.	5				
р	6 KVA UPS	No.	1				
q	Fiber Optic cable (FOC)	Lot	1				
r	Interface (SMS- NVR)	Lot	1				
s	Installation Testing and Commissioning	Lot	1				
t	1Year Maintenance SLA	Lot	1				
u	Training for Eight Administrative staff and Four local staff	Lot	1				

v	GENETEC of Hikcentral Video License (per Camera).	No.	41				
w	Other material necessary to fully meet specifications/scope of the project (Itemize)	Lot	1				
x	Project Management Provisional Sum (PSUM)	Lot	1	2,000,000.00	2,000,000.00		
	Total PPCBL Incl. &	& VAT	Excl.				
	Add 16% VAT						
	<b>Grand-Total PPCB</b>	L Incl	Grand-Total PPCBL Incl. & VAT Incl. Lot 6				

	LOT 6 RECOMMENDED SCHEDULE OF SPARE PARTS					
NO.	JTEM	UOM	QTY	Unit Price (PPCBL Incl.) & VAT Excl. (Kes)	Total Price(PPCBLIncl.) &VAT Excl.(Kes)	Total Price (PPCBL Incl.) & VAT Incl. (Kes)
	CCTV REQUIREMENT					
1.	NVR 16 Channel	No	1			
2.	NVR 32 Channel	No	1			
3.	NVR 50 Channel	No	1			
	20 MP H.264 One Omni	No	1			
4.	Directional					
	4 MP Bullet indoor/outdoor IP	No	1			
5.	camera					
C	4 MP Bullet indoor/outdoor IP	No	1			
6.	(Color Night Vision camera 4 MP Dome indoor/outdoor IP	No	1			
7.	camera	INU	1			
	4 MP PTZ indoor/outdoor IP	No	1			
8.	camera					
	12 MP 180° indoor/outdoor	No	1			
9.	Panoramic IP					
	8 MP 360° indoor/outdoor IP	No	1			
10.	camera	NT-	1			
	20 MP H.264 One Omni Directional	No	1			
	Indoor/Outdoor Dome IP Cameras					
11.	(B type)					
12.	Video monitor 32"	No	1			
13.	Video monitor 42"	No	1			
14.	1TB Hard Disk	No	1			
15.	2TB Hard Disk	No	1			
16.	3TB Hard Disk	No	1			
17.	4TB Hard Disk	No	1			
18.	8TB Hard Disk	No	1			
19.	12 TB Hard Disk	No	1			
20.	GENTEC CCTV server	No	1			
21.	Client workstation	No	1			
	NETWORKING					
	REQUIREMENT					
22.	Core Network Switch-24port	No	1			
23.	Network switch 24 Port	No	1			
24.	Network switch 48 Port	No	1			
25.	Switch PoE 4 Port	No	1			
26.	24 Port Patch Panel with I-O Ports	No	1			
27.	Patch Cord Cable 1- Meter Cat-6	No	1			

28.	Patch Cord Cable 3- Meter Cat-6	No	1		
	Single Mode Fiber Patch Cord LC-	No	1		
	LC/SC-SC/SC-LC, 1 or 3M,				
29.	Duplex				
	Multi-Mode Fiber Patch Cord LC-	No	1		
30.	LC/ SC-SC/ SC-LC, 1 or 3M, Duplex				
31.	Coaxial Cable (1000ft)	Meter	1		
32.	UTP Cat 6 Cable (1000ft)	Meter	1		
52.	Shielded UTP Cat6 Outdoor Direct	Meter	1		
	Burial 23AWG Pure Copper	meter	1		
33.	(1000ft)				
34.	RJ45 Connectors (100 Pack)	Pkt	1		
35.	RJ45 Coupler, 2 Port, UTP	No	1		
36.	PoE Extender	No	1		
37.	PoE Injector for IP cameras	No.			
	Armored outdoor direct burial 4-6	Roll	1		
38.	core fiber optic cable (1000ft)				
	Network Media Converter and	No.	1		
39.	associated network accessories SFP Transceiver Module (SMF,	No.	1		
	1550nm, 20/50/100km, LC, DOM)	INO.	1		
	Cisco, Max Data Rate: >1000Mbps				
	and associated fiber network				
40.	accessories				
41.	White Conduits 25mm	No	1		
42.	White Conduits 32mm	No	1		
43.	White Bends 25/32mm	No	1		
44.	White Connectors 25/32mm	No	1		
45.	Saddle clips (100 pack)	Pkt	1		
	Screws (100-count box of 1 ³ / ₄ -	Pkt	1		
46.	inch-long screws)	Na	1		
47.	Galvanized Metallic Trunking 100mm X 50mm (3m)	No	1		
+7.	PVC Cable Trunk 16 X 25 mm	No	1		+
48.	White duct (3m)	1.0			
	ACCESS CONTROL				
	Door Access Controller	No	1		
	Compatible with GENETEC of				
49.	Hikcentral	N		 	
50.	Access Controller Door Interface	No.	1		
51.	Access Controller Door	No.	1	 	
52.	Access Control Cards	No.	1	 	
53.	Biometric/Card Reader	No.	1	 	
54.	Smart Card Reader	No.	1		
55.	Access Control	No.	1		

	Management/Application Software				
56.	Synergies Master Controller	No.	1		
57.	Single Door Maglock	No.	1		
58.	Double Door Maglock	No.	1		
59.	Emergency Release Button	No.	1		
	LICENSING REQUIREMENT				
	GENETEC of Hikcentral	No	1		
60.	Federation License (general)				
	GENETEC of Hikcentral license	No.	1		
61.	per operator/user workstation				
62.	Video analytics per channel	No.	1		
	GENETEC of Hikcentral mission	No.	1		
63.	control license	NT	1		
64.	1no IP Camera License (general price, including integration)	No	1		
65.	Repair network switch	No.	1		
66.	Optical drive (HDD)	No.	1		
	Power supply unit	No.	1		
67.	Processor and heat sink	No.	1		
68.		No.	1		
69.	System board (Mother Board)				
70.	Fan	No.	1		
71.	Drive backplane	No.	1		
72.	Memory module (RAM)	No.	1		
73.	NIC Card	No.	1		
	EMERGENCY RESPONSE				
	Emergency repair for a call/ticket	No.	1		
	per technician per day (installation and configurations of key				
74.	components)				
,	Support service for a call/ticket per	No.	1		
	casual laborer per day (installation				
75.	of key components)				
	Emergency repair/meeting for a	No.	1		
76.	call/ticket per supervisor				
	Integration of one third party	No.	1		
	system as need arises into existing				
	server applications for a call/ticket per one				
77.	technician per day				
	Unscheduled service per site as per	No.	1	1	
	the description in schedule of				
	requirement under preventive				
78.	maintenance.				 
79.	Software Maintenance laptop	No.	1		
	Full HD business projector 5,000	No.	1		
80.	lumens				

81.	Maintenance tool kit	No.	1		
82.	Blower	No.	1		
83.	Leather Hand gloves	No.	1		
	Aluminum Multi-Purpose Ladder	No.	1		
84.	(16ft)				
	Aluminum Telescopic Ladder	No.	1		
85.	(3.8m)				
0.0	Windows antiviruses complete	No.	1		
86.	with license (for 1No. PC) Multiprotocol Network tester	No.	1		
87.	(Pair)	110.	1		
88.	Surge and Voltage protector	No	1		
89.	4 core Alarm cable (100m/Roll)	Roll	1		
90.	Speaker 1.5mm sq. (70/0.15) cable	М	1		
50.	2.5mm sq Stranded Twin with	Roll	1		
91.	Earth cable (100m/Roll)	non	1		
92.	2.5mm sq PVC CU Cable 3 Core	М	1		
	2.5mm sq PVC CU Cable S/C	Roll	1		
93.	(100m/Roll)				
	4.0mm sq PVC CU Cable S/C	Roll	1		
94.	(100m/Roll)	D 11	1		
95.	6.0mm sq PVC CU Cable S/C (100m/Roll)	Roll	1		
95.	4.0mm sq PVC CU Armoured	Roll	1		
96.	Cable 2 Core (100m/Roll)	Ron	1		
	13A Socket 2-gang DP Switched	No	1		
97.	Plug Socket Metal-Clad				
98.	PVC Insulating Tape	No	1		
	Amalgamating Tape (Rubber	No	1		
99.	splicing tape)				
100.	Conta glue	No	1		
101.	UPS 1.5KVA	No	1		
102.	UPS 3KVA	No	1		
103.	UPS 6KVA	No	1		
104.	UPS 10KVA	No	1		
105.	7AH 12V battery	No	1		
106.	8A,12V Power supplies	No	1		
107.	12-15 A ,12V Power supplies	No	1		
108.	Power supply transformer 12v	No	1		
	Supply and installation of 8m	No.	1		
109.	Camera/light Stainless Steel Pole				
	$12U \times \text{Depth } 1000\text{mm Wall Mount}$	No.	1		
110.	Cabinet (mounting brackets)	No	1		
	LIBRARY MANAGEMENT SYSTEM	No.	1		
111.	The system should include anti-				
·	system should merade und	1			1

	theft library management software, as well as the necessary hardware, such as barcode scanners, detectors and Management stations for a single entrance.				
112.	Full height speed gates complete with licenses and access to reader installation and integration into GENETEC of Hikcentral Access control systems	NO	1		
113.	Full height turnstile gates complete with licenses and access reader installation and integration to GENETEC of Hikcentral Access control systems	NO	1		

## SECTION VI (b) – TECHNICAL SPECIFICATIONS

## **CCTV SYSTEMS**

Feature	Technical Specification	Bidder's Response (Yes/No)
Camera		
Image Sensor	1/1.8" Progressive Scan CMOS	
Max. Resolution	3840 × 2160	
Min. Illumination	Color: 0.0005 Lux @ (F1.2, AGC ON),B/W: 0.0001 Lux @ (F1.2, AGC ON),B/W: 0 Lux with IR	
Shutter Time	1 s to 1/100,000 s	
Day & Night	IR cut filter,Blue glass module (less ghost phenomenon)	
Angle Adjustment	Pan: $0^{\circ}$ to 355°, tilt: $0^{\circ}$ to 75°, rotate: $0^{\circ}$ to 355°	
Lens		
Lens Type	Varifocal lens, motorized lens, 2.8 to 12 mm and 8 to 32 mm optional	
	2.8 to 12 mm:	
	horizontal FOV 112.3° to 41.2°, vertical FOV 58.1° to 23.1°, diagonal FOV 137.4° to 47.3°	
Focal Length & FOV	8 to 32 mm:	
	horizontal FOV 41.8° to 15°, vertical FOV 22.9° to 8.5°, diagonal FOV 48.7° to 17.1°	
Focus	Auto,Semi-auto,Manual	
Iris Type	P-iris	
Aperture	2.8 to 12 mm: F1.38 to F2.53, 8 to 32 mm: F1.7 to F1.73	
DORI		
DORI	2.8 to 12 mm:	

	D (Detect): 220.0 m, O (Observe): 87.3 m, R (Recognize): 44.0	
	m, I (Identify): 22.0 m	
	8 to 32 mm:	
	D (Detect): 580.0 m, O (Observe): 2302 m, R (Recognize): 116.0 m, I (Identify): 58.0 m	
	The DORI values are calculated using pixel densities for different use cases as recommended by the EN 62676-4 standard.	
Illuminator	standard.	
Supplement Light Type	IR	
Supplement Light Range	2.8 to 12 mm: Monitoring: 40 m; 8 to 32 mm: Monitoring: 60 m	
Smart Supplement Light	Yes	
IR Wavelength	850 nm	
AI Open Platform	1	
-	Up to 4 models,	
Model Specification	Model type: detection model, classification model, mixed model (detection model and classification model)	
Video		
	Monitoring mode:	
	50 Hz: up to 50 fps (3840 × 2160, 3072 × 1728, 2688 × 1520, 1280 × 720), up to 100 fps (1920 × 1080)	
	60 Hz: up to 60 fps (3840 × 2160, 3072 × 1728, 2688 × 1520, 1280 × 720), up to 120 fps (1920 × 1080)	
Main Stream	*High frame rate is supported under monitoring mode only.	
	smart mode:	
	50 Hz: 25 fps (3840 × 2160, 3072 × 1728, 2688 × 1520, 1920 × 1080, 1280 × 720)	
	60 Hz: 30 fps (3840 × 2160, 3072 × 1728, 2688 × 1520, 1920 × 1080, 1280 × 720)	
0.1.0	50 Hz: 25 fps (1280 × 720, 704 × 576, 640 × 480)	
Sub-Stream	60 Hz: 30 fps (1280 × 720, 704 × 480, 640 × 480)	
Third Stream	50 Hz: 25 fps (1920 × 1080, 1280 × 720, 704 × 576, 640 × 480)	
	60 Hz: 30 fps (1920 × 1080, 1280 × 720, 704 × 480, 640 × 480)	
Fourth Stream	50 Hz: 25 fps (704 × 576, 640 × 480)	
	60 Hz: 30 fps (704 × 480, 640 × 480)	
Fifth Stream	50 Hz: 25 fps (704 × 576, 640 × 480)	
Thu Sucan	60 Hz: 30 fps (704 × 480, 640 × 480)	
	Main stream: H.265+/H.265/H.264+/H.264,	
Video Compression	Sub-stream: H.265/H.264/MJPEG,	
	Third stream: H.265/H.264,	
	Fourth stream: H.265/H.264/MJPEG,	
	Fifth stream: H.265/H.264/MJPEG	
Video Bit Rate	32 Kbps to 16 Mbps	
Н.264 Туре	Baseline Profile, Main Profile, High Profile	
Н.265 Туре	Main Profile	

Bit Rate Control	CBR,VBR	
Scalable Video Coding (SVC)	H.264 and H.265 encoding	
Region of Interest (ROI)	4 fixed regions for each stream	
Target Cropping	Yes	
e-PTZ	Support Patrol and Auto Tracking settings	
Audio		
Audio Type	Mono sound	
Audio Compression	G.711/G.722.1/G.726/MP2L2/PCM/MP3/AAC-LC	
Audio Bit Rate	64 Kbps (G.711ulaw/G.711alaw)/16 Kbps (G.722.1)/16 Kbps (G.726)/32 to 192 Kbps (MP2L2)/8 to 320 Kbps (MP3)/16 to 64 Kbps (AAC-LC)	
Audio Sampling Rate	8 kHz/16 kHz/32 kHz/48 kHz	
Environment Noise Filtering	Yes	
Network		
Protocols	TCP/IP, ICMP, HTTP, HTTPS, FTP, SFTP, SRTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP,UPnP, SMTP, SNMP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP, Bonjour, SSL/TLS, WebSocket, WebSockets	
Simultaneous Live View	Up to 20 channels	
API	ISAPI,SDK,ISUP,OTAP,ONVIF (Profile S, Profile G, Profile T, Profile M)	
Lleen/Lleet	Up to 32 users	
User/Host	3 user levels: administrator, operator, and user	
Security	Password protection, complicated password, HTTPS encryption, 802.1X authentication (EAP-TLS, EAP-LEAP, EAP-MD5), watermark, IP address filter, basic and digest authentication for HTTP/HTTPS, WSSE and digest authentication for Open Network Video Interface, RTP/RTSP OVER HTTPS, Control Timeout Settings, Security Audit Log, TLS 1.2, TLS 1.3, TPM 2.0 (FIPS 140-2 level 2), AES128/256	
	Plug-in required live view: IE 10, IE 11,	
Web Browser	Plug-in free live view: Chrome 57.0+, Firefox 52.0+, Edge 89+, Safari 11+,	
	Local service: Chrome 57.0+, Firefox 52.0+, Edge 89+	
Network Storage	NAS (NFS, SMB/CIFS), Auto Network Replenishment (ANR),	
Image		
Image Parameters Switch	Yes	
Image Settings	Rotate mode, saturation, brightness, contrast, sharpness, white balance, AGC, adjustable by client software or web browser	
Day/Night Switch	Day,Night,Auto,Schedule,Alarm Trigger	
Wide Dynamic Range (WDR)	140 dB	
Image Enhancement	BLC,HLC,3D DNR,Distortion Correction,Defog	
SNR	$\geq$ 52 dB	

Privacy Mask	8 programmable polygon privacy masks	
Picture Overlay	LOGO picture can be overlaid on video with $128 \times 128$ 24 bit bmp format.	
Image Stabilization	EIS	
Interface		
Video Output	1 Vp-p Composite Output (75 Ω/CVBS) (Only for debugging)	
Ethernet Interface	1 RJ45 10 M/100 M/1000 M self-adaptive Ethernet port	
On-Board Storage	Built-in memory card slot, support microSD/microSDHC/microSDXC card, up to 1 TB	
Built-in Microphone	Yes, 2 built-in microphones	
Built-in Speaker	Max. power consumption: 1.5 W, max. sound pressure level: 98 dB, speaker range: 10 m	
A . 1.	1 input (line in), 3.5 mm connector, three-contact, max. input amplitude: 3.3 Vpp, input impedance: 4.7 K $\Omega$ , interface type: non-equilibrium,	
Audio	1 output (line out), 3.5 mm connector, three-contact, max. output amplitude: 3.3 Vpp, output impedance: 100 $\Omega$ , interface type: non-equilibrium, mono sound	
Alarm	2 inputs, 2 outputs (max. 24 VDC/24 VAC, 1 A)	
Reset Key	Yes	
Power Output	12 VDC, max. 100 mA	
Event		
Basic Event	Motion detection (support alarm triggering by specified target types (human and vehicle)),video tampering alarm,video quality diagnosis,exception (network disconnected, IP address conflict, illegal login, abnormal restart, HDD full, HDD error),vibration detection	
Smart Event	scene change detection, audio exception detection, defocus detection	
Linkage	Upload to FTP/NAS/memory card,notify surveillance center,send email,trigger alarm output,trigger recording,trigger capture,audible warning	
Deep Learning Funct	ion	
	Supports simultaneous detection and capture of human body, face, and vehicle,	
	Gets 7 face features,	
Multi-target-type	Gets 13 human body features,	
Detection	Gets 2 vehicle features,	
	Supports counting the number of line crossing targets by type, including human body, non-motor vehicle, motor vehicle,	
	Supports dynamic mosaic mask	
	Detects up to 120 faces simultaneously, captures up to 40 face pictures per frame simultaneously and uploads up to 10 face pictures per second,	
Face Capture	Supports swing left and right from $-60^{\circ}$ to $60^{\circ}$ , tilt up and down from $-30^{\circ}$ to $30^{\circ}$ ,	
	Uploads face with background and closed-up face pictures,	

	Supports best shot and quick shot for capture mode,	
	Supports dynamic mosaic mask,	
	Gets 7 face features	
Face Comparison	Up to 10 face libraries. 30,000 faces for each library. 150,000 faces in total,	
<u>I</u>	Supports face library encryption	
	Line crossing, intrusion, region entrance, region exiting	
Perimeter Protection	Support alarm triggering by specified target types (human and vehicle)	
	Support combined event alarm triggering	
	Supports Multi-Dimension People Counting,	
	Supports counting, displaying and exporting the people flow data of entering, exiting and passing by (The data is stored in the flash.),	
	Supports real-time uploading and uploading by statistic cycle,	
People Counting	Supports generating daily, weekly, monthly or annually reports,	
	Supports dynamic deduplication based on face picture comparison, and can filter out the target with the same custom face pictures, same attributes, or filter out repeated invalid targets within the set time interval,	
	Supports face feature deduplication,	
	Supports people flow data replenishment	
	Supports up to 8 detection regions, and independent arming schedule and linkage method	
	Supports 2 detection modes: regional people queuing-up, waiting time detection	
	Generates reports to compare the efficiency of different queuing-ups and display the changing status of one queue	
Quava Managamant	Supports raw data export for further analysis	
Queue Management	Supports real-time data uploading and scheduled data uploading	
	Regional people queuing-up: supports 4 alarm trigger conditions, including greater than threshold, less than threshold, equal to threshold, not equal to threshold	
	Waiting time detection: supports 1 alarm trigger condition, including greater than threshold	
	A graphic description of visits (by calculating amount of people or amount of dwell time) in a configured area.,	
Heat Map	Two report types are available, space heat map and time heat map line chart.	
	Detects up to 30 human targets simultaneously	
Hard Hat Detection	Supports up to 4 shield regions	
Metadata	Intrusion detection,line crossing detection,region entrance detection,region exiting detection,face capture,multi-target-type detection	
Regional People Counting	Supports up to 8 detection regions, and independent arming schedule and linkage method	

	Supports 3 detection modes: people density detection, number of people exception detection, waiting time exception detection	
	Supports parameter settings: alarm times per exception, alarm interval, first alarm delay	
	Supports searching real-time number of people	
	People density detection: supports scheduled uploading, number of people change uploading, congestion level uploading	
	Number of people exception detection: supports 6 alarm trigger conditions, including greater than threshold A, less than threshold A, equal to threshold A, not equal to threshold A, greater than threshold A and less than threshold B, less than threshold A or greater than threshold B (threshold A should be less than threshold B)	
	Waiting time exception detection: supports 3 alarm trigger conditions, including greater than threshold A, less than threshold A, greater than threshold A and less than threshold B (threshold A should be less than threshold B)	
	Supports up to 8 detection regions, and independent arming schedule and linkage method	
On/Off Duty Detection	Supports 2 detection modes: absence detection, on/off duty detection	
	Supports parameter settings: person on duty, absence duration	

8MP DeepinView Moto Varifocal Bullet Camera		
Feature	Technical Specification	Bidder's Response (Yes/No)
Camera		
Image Sensor	1/1.8" Progressive Scan CMOS	
Max. Resolution	3840 × 2160	
Min. Illumination	Color: 0.0005 Lux @ (F1.2, AGC ON),B/W: 0.0001 Lux @ (F1.2, AGC ON),B/W: 0 Lux with IR	
Shutter Time	1 s to 1/100,000 s	
Day & Night	IR cut filter,	
	Blue glass module (less ghost phenomenon)	
Lens		
Focal Length & FOV	2.8 to 12 mm, horizontal FOV 104° to 41.2°, vertical FOV 54.2° to 23.1°, diagonal FOV 126.5° to 47.3°	
	8 to 32 mm, horizontal FOV 41.8° to 15°, vertical FOV 22.9° to 8.5°, diagonal FOV 48.7° to 17.1°	
Focus	Auto,Semi-auto,Manual	
Iris Type	P-iris	
Aperture	2.8 to 12 mm: F1.38 to F2.53, 8 to 32 mm: F1.7 to F1.73	
DORI		
DORI	Wide:	
	2.8 to 12 mm: D (Detect): 87 m, O (Observe): 34.5 m, R (Recognize): 17.4 m, I (Identify): 8.7 m	

	8 to 32 mm: D (Detect): 218 m, O (Observe): 86.5 m, R (Recognize): 43.6 m, I (Identify): 21.8 m	
	Tele:	
	2.8 to 12 mm: D (Detect): 216 m, O (Observe): 85.7 m, R	
	(Recognize): 43.2 m, I (Identify): 21.6 m	
	8 to 32 mm: D (Detect): 580 m, O (Observe): 230.2 m, R (Recognize): 116 m, I (Identify): 58 m	
	The DORI values are calculated using pixel densities for different	
	use cases as recommended by the EN 62676-4 standard.	
Illuminator		
Supplement Light	IR	
Туре		
Supplement Light Range	2.8 to 12 mm: Monitoring: 60 m; 8 to 32 mm: Monitoring: 100 m	
Smart Supplement Light	Yes	
IR Wavelength	850 nm	
AI Open Platform	l	
Model	Up to 4 models,	
Specification	Model type: detection model, classification model, mixed model (detection model and classification model)	
Video		
Main Stream	Monitoring mode:	
	50 Hz: up to 50 fps (3840 × 2160, 3072 × 1728, 2688 × 1520, 1280 × 720), up to 100 fps (1920 × 1080)	
	60 Hz: up to 60 fps (3840 × 2160, 3072 × 1728, 2688 × 1520, 1280 × 720), up to 120 fps (1920 × 1080)	
	*High frame rate is supported under monitoring mode only.	
	smart mode:	
	50 Hz: 25 fps (3840 × 2160, 3072 × 1728, 2688 × 1520, 1920 × 1080, 1280 × 720)	
	60 Hz: 30 fps (3840 × 2160, 3072 × 1728, 2688 × 1520, 1920 × 1080, 1280 × 720)	
Sub-Stream	50 Hz: 25 fps (1280 × 720, 704 × 576, 640 × 480)	
	60 Hz: 30 fps (1280 × 720, 704 × 480, 640 × 480)	
Third Stream	50 Hz: 25 fps (1920 × 1080, 1280 × 720, 704 × 576, 640 × 480)	
	60 Hz: 30 fps (1920 × 1080, 1280 × 720, 704 × 480, 640 × 480)	
Fourth Stream	50 Hz: 25 fps (704 × 576, 640 × 480)	
	60 Hz: 30 fps (704 × 480, 640 × 480)	
Fifth Stream	50 Hz: 25 fps (704 × 576, 640 × 480)	
	60 Hz: 30 fps (704 × 480, 640 × 480)	
Video	Main stream: H.265+/H.265/H.264+/H.264,	
Compression	Sub-stream: H.265/H.264/MJPEG,	
	Third stream: H.265/H.264,	
	Fourth stream: H.265/H.264/MJPEG,	
	Fifth stream: H.265/H.264/MJPEG	
		1

Video Bit Rate	32 Kbps to 16 Mbps	
Н.264 Туре	Baseline Profile, Main Profile, High Profile	
Н.265 Туре	Main Profile	
Bit Rate Control	CBR,VBR	
Scalable Video Coding (SVC)	H.264 and H.265 encoding	
Region of Interest (ROI)	4 fixed regions for each stream	
Target Cropping	Yes	
e-PTZ	Support Patrol and Auto Tracking settings	
Audio		
Audio Type	Mono sound	
Audio Compression	G.711/G.722.1/G.726/MP2L2/PCM/MP3/AAC-LC	
Audio Bit Rate	64 Kbps (G.711ulaw/G.711alaw)/16 Kbps (G.722.1)/16 Kbps (G.726)/32 to 192 Kbps (MP2L2)/8 to 320 Kbps (MP3)/16 to 64 Kbps (AAC-LC)	
Audio Sampling Rate	8 kHz/16 kHz/32 kHz/48 kHz	
Environment Noise Filtering	Yes	
Network		
Protocols	TCP/IP, ICMP, HTTP, HTTPS, FTP, SFTP, DHCP, DNS, DDNS, SRTP, RTP, RTSP, RTCP, PPPoE, NTP, UPnP, SMTP, SNMP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP, Bonjour, SSL/TLS, ARP, WebSocket, WebSockets	
Simultaneous Live View	Up to 20 channels	
API	ISAPI,SDK,ISUP,OTAP,ONVIF (Profile S, Profile G, Profile T, Profile M)	
User/Host	Up to 32 users	
	3 user levels: administrator, operator, and user	
Security	Password protection, complicated password, HTTPS encryption, 802.1X authentication (EAP-TLS, EAP-LEAP, EAP-MD5), watermark, IP address filter, basic and digest authentication for HTTP/HTTPS, WSSE and digest authentication for Open Network Video Interface, RTP/RTSP OVER HTTPS, Control Timeout Settings, Security Audit Log, TLS 1.2, TLS 1.3, TPM 2.0 (FIPS 140-2 level 2), AES128/256	
Network Storage	NAS (NFS, SMB/CIFS), Auto Network Replenishment (ANR),	
Web Browser	Plug-in required live view: IE 10, IE 11,	
	Plug-in free live view: Chrome 57.0+, Firefox 52.0+, Edge 89+, Safari 11+,	
	Local service: Chrome 57.0+, Firefox 52.0+, Edge 89+	
Mobile Communi	cation	
Standard	-5G: 5G NR/LTE-FDD/LTE-TDD	

Frequency	-5G:	
	5G NR: n41/n77/n78/n79	
	LTE-FDD: B1/B3/B5/B8	
	LTE-TDD: B38/39/B40/B41	
SIM Card Type	-5G: Micro SIM	
Image		
Image Parameters Switch	Yes	
Image Settings	Rotate mode,saturation,brightness,contrast,sharpness,white balance,AGC,adjustable by client software or web browser	
Day/Night Switch	Day,Night,Auto,Schedule,Alarm Trigger	
Wide Dynamic Range (WDR)	140 dB	
Image Enhancement	BLC,HLC,3D DNR,Distortion Correction,Defog	
SNR	$\geq$ 52 dB	
Privacy Mask	8 programmable polygon privacy masks	
Picture Overlay	LOGO picture can be overlaid on video with $128 \times 128$ 24 bit bmp format.	
Image Stabilization	EIS	
Interface		
Video Output	1 Vp-p Composite Output (75 $\Omega$ /CVBS) (Only for debugging)	
Ethernet Interface	1 RJ45 10 M/100 M/1000 M self-adaptive Ethernet port	
On-Board Storage	Built-in memory card slot, support microSD/microSDHC/microSDXC card, up to 1 TB	
Alarm	2 inputs, 2 outputs (max. 24 VDC/24 VAC, 1 A)	
Audio	1 input (line in), 3.5 mm connector, three-contact, max. input amplitude: 3.3 Vpp, input impedance: 4.7 K $\Omega$ , interface type: non-equilibrium,	
	1 output (line out), 3.5 mm connector, three-contact, max. output amplitude: 3.3 Vpp, output impedance: $100 \Omega$ , interface type: non-equilibrium, mono sound	
Reset Key	Yes	
Power Output	-Y: 12 VDC, max. 100 mA	
Event		
Basic Event	Motion detection (support alarm triggering by specified target types (human and vehicle)),video tampering alarm,video quality diagnosis,exception (network disconnected, IP address conflict, illegal login, abnormal restart, HDD full, HDD error),vibration detection	
Smart Event	scene change detection, audio exception detection, defocus detection	
Linkage	Upload to FTP/NAS/memory card,notify surveillance center,send email,trigger alarm output,trigger recording,trigger capture,audible warning	

Deep Learning Fu	inction	
Multi-target-type Detection	Supports simultaneous detection and capture of human body, face, and vehicle,	
	Gets 7 face features,	
	Gets 13 human body features,	
	Gets 2 vehicle features,	
	Supports counting the number of line crossing targets by type, including human body, non-motor vehicle, motor vehicle,	
	Supports dynamic mosaic mask	
Face Capture	Detects up to 120 faces simultaneously, captures up to 40 face pictures per frame simultaneously and uploads up to 10 face pictures per second,	
	Supports swing left and right from $-60^{\circ}$ to $60^{\circ}$ , tilt up and down from $-30^{\circ}$ to $30^{\circ}$ ,	
	Uploads face with background and closed-up face pictures,	
	Supports best shot and quick shot for capture mode,	
	Supports dynamic mosaic mask,	
	Gets 7 face features	
Face Comparison	Up to 10 face libraries. 30,000 faces for each library. 150,000 faces in total,	
	Supports face library encryption	
People Counting	Supports Multi-Dimension People Counting,	
	Supports counting, displaying and exporting the people flow data of entering, exiting and passing by (The data is stored in the flash.),	
	Supports real-time uploading and uploading by statistic cycle,	
	Supports generating daily, weekly, monthly or annually reports,	
	Supports dynamic deduplication based on face picture comparison, and can filter out the target with the same custom face pictures, same attributes, or filter out repeated invalid targets within the set time interval,	
	Supports face feature deduplication,	
	Supports people flow data replenishment	
Queue Management	Supports up to 8 detection regions, and independent arming schedule and linkage method	
	Supports 2 detection modes: regional people queuing-up, waiting time detection	
	Generates reports to compare the efficiency of different queuing- ups and display the changing status of one queue	
	Supports raw data export for further analysis	
	Supports real-time data uploading and scheduled data uploading	
	Regional people queuing-up: supports 4 alarm trigger conditions, including greater than threshold, less than threshold, equal to threshold, not equal to threshold	
	Waiting time detection: supports 1 alarm trigger condition, including greater than threshold	
Heat Map	A graphic description of visits (by calculating amount of people or amount of dwell time) in a configured area.,	

	Two report types are available, space heat map and time heat map line chart.	
Perimeter	Line crossing, intrusion, region entrance, region exiting	
Protection	Support alarm triggering by specified target types (human and vehicle)	
	Support combined event alarm triggering	
Hard Hat	Detects up to 30 human targets simultaneously	
Detection	Supports up to 4 shield regions	
Metadata	Intrusion detection,line crossing detection,region entrance detection,region exiting detection,face capture,multi-target-type detection	
Regional People Counting	Supports up to 8 detection regions, and independent arming schedule and linkage method	
	Supports 3 detection modes: people density detection, number of people exception detection, waiting time exception detection	
	Supports parameter settings: alarm times per exception, alarm interval, first alarm delay	
	Supports searching real-time number of people	
	People density detection: supports scheduled uploading, number of people change uploading, congestion level uploading	
	Number of people exception detection: supports 6 alarm trigger conditions, including greater than threshold A, less than threshold A, equal to threshold A, not equal to threshold A, greater than threshold A and less than threshold B, less than threshold A or greater than threshold B (threshold A should be less than threshold B)	
	Waiting time exception detection: supports 3 alarm trigger conditions, including greater than threshold A, less than threshold A, greater than threshold A and less than threshold B (threshold A should be less than threshold B)	
On/Off Duty Detection	Supports up to 8 detection regions, and independent arming schedule and linkage method	
	Supports 2 detection modes: absence detection, on/off duty detection	
	Supports parameter settings: person on duty, absence duration	

8MP DeepinView Moto Varifocal Bullet Camera		
Feature	Technical Specification	Bidder's Response (Y/N)
Camera		
Image Sensor	1/1.8" Progressive Scan CMOS	
Max. Resolution	3840×2160	
Min. Illumination	Color: 0.0005 Lux @ (F1.2, AGC ON),B/W: 0.0001 Lux @ (F1.2, AGC ON),B/W: 0 Lux with IR	
Shutter Time	1 s to 1/100,000 s	
Day & Night	IR cut filter,	
	Blue glass module (less ghost phenomenon)	

Lens		
Focal Length & FOV	2.8 to 12 mm, horizontal FOV 104° to 41.2°, vertical FOV	
0	54.2° to 23.1°, diagonal FOV 126.5° to 47.3°	
	8 to 32 mm, horizontal FOV 41.8° to 15°, vertical FOV	
	$22.9^{\circ}$ to $8.5^{\circ}$ , diagonal FOV $48.7^{\circ}$ to $17.1^{\circ}$	
Focus	Auto,Semi-auto,Manual	
Iris Type	P-iris	
Aperture	2.8 to 12 mm: F1.38 to F2.53, 8 to 32 mm: F1.7 to F1.73	
DORI		
DORI	Wide:	
DORI		
	2.8 to 12 mm: D (Detect): 87 m, O (Observe): 34.5 m, R	
	(Recognize): 17.4 m, I (Identify): 8.7 m	
	8 to 32 mm: D (Detect): 218 m, O (Observe): 86.5 m, R	
	(Recognize): 43.6 m, I (Identify): 21.8 m	
	Tele:	
	2.8 to 12 mm: D (Detect): 216 m, O (Observe): 85.7 m, R	
	(Recognize): 43.2 m, I (Identify): 21.6 m	
	8 to 32 mm: D (Detect): 580 m, O (Observe): 230.2 m, R	
	(Recognize): 116 m, I (Identify): 58 m	
	The DORI values are calculated using pixel densities for	
	different use cases as recommended by the EN 62676-4	
	standard.	
Illuminator		
Supplement Light	IR	
Туре		
Supplement Light	2.8 to 12 mm: Monitoring: 60 m; 8 to 32 mm: Monitoring:	
Range	100 m	
Smart Supplement	Yes	
Light		
IR Wavelength	850 nm	
AI Open Platform		
Model Specification	Up to 4 models,	
	Model type: detection model, classification model, mixed	
	model (detection model and classification model)	
Video		
Main Stream	Monitoring mode:	
	50 Hz: up to 50 fps (3840 × 2160, 3072 × 1728, 2688 ×	
	$1520, 1280 \times 720)$ , up to 100 fps (1920 × 1080)	
	60 Hz: up to 60 fps (3840 × 2160, 3072 × 1728, 2688 ×	
	1520, $1280 \times 720$ ), up to 120 fps (1920 × 1080)	
	*High frame rate is supported under monitoring mode only.	
	smart mode:	
	50 Hz: 25 fps (3840 × 2160, 3072 × 1728, 2688 × 1520,	
	1920 × 1080, 1280 × 720)	
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60 Hz: 30 fps $(3840 \times 2160, 3072 \times 1728, 2688 \times 1520,$	
1920 × 1080, 1280 × 720)	
50 Hz: 25 fps (1280 × 720, 704 × 576, 640 × 480)	
60 Hz: 30 fps (1280 × 720, 704 × 480, 640 × 480)	
50 Hz: 25 fps (1920 × 1080, 1280 × 720, 704 × 576, 640 × 480)	
60 Hz: 30 fps (1920 × 1080, 1280 × 720, 704 × 480, 640 × 480)	
50 Hz: 25 fps (704 × 576, 640 × 480)	
60 Hz: 30 fps (704 × 480, 640 × 480)	
50 Hz: 25 fps (704 × 576, 640 × 480)	
60 Hz: 30 fps (704 × 480, 640 × 480)	
Main stream: H.265+/H.265/H.264+/H.264,	
Sub-stream: H.265/H.264/MJPEG,	
Third stream: H.265/H.264,	
Fourth stream: H.265/H.264/MJPEG,	
Fifth stream: H.265/H.264/MJPEG	
32 Kbps to 16 Mbps	
Baseline Profile, Main Profile, High Profile	
Main Profile	
CBR,VBR	
H.264 and H.265 encoding	
4 fixed regions for each stream	
Yes	
Support Patrol and Auto Tracking settings	
Mono sound	
G.711/G.722.1/G.726/MP2L2/PCM/MP3/AAC-LC	
64 Kbps (G.711ulaw/G.711alaw)/16 Kbps (G.722.1)/16 Kbps (G.726)/32 to 192 Kbps (MP2L2)/8 to 320 Kbps (MP2)/16 to 64 Kbps (AAC LC)	
8 kHz/16 kHz/32 kHz/48 kHz	
Yes	
TCP/IP, ICMP, HTTP, HTTPS, FTP, SFTP, DHCP, DNS, DDNS, SRTP, RTP, RTSP, RTCP, PPPoE, NTP, UPnP, SMTP, SNMP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP, Bonjour, SSL/TLS, ARP, WebSocket, WebSockets	
Up to 20 channels	
ISAPI,SDK,ISUP,OTAP,ONVIF (Profile S, Profile G, Profile T, Profile M)	
	50 Hz: 25 fps (1280 × 720, 704 × 576, 640 × 480) 60 Hz: 30 fps (1280 × 720, 704 × 480, 640 × 480) 50 Hz: 25 fps (1920 × 1080, 1280 × 720, 704 × 576, 640 × 480) 60 Hz: 30 fps (1920 × 1080, 1280 × 720, 704 × 480, 640 × 480) 50 Hz: 25 fps (704 × 576, 640 × 480) 60 Hz: 30 fps (704 × 480, 640 × 480) 50 Hz: 25 fps (704 × 576, 640 × 480) 60 Hz: 30 fps (704 × 480, 640 × 480) 60 Hz: 30 fps (704 × 480, 640 × 480) 60 Hz: 30 fps (704 × 480, 640 × 480) Main stream: H.265/H.264/MJPEG, Third stream: H.265/H.264/MJPEG 32 Kbps to 16 Mbps Baseline Profile,Main Profile,High Profile Main Profile CBR,VBR H.264 and H.265 encoding 4 fixed regions for each stream Yes Support Patrol and Auto Tracking settings Mono sound G.711/G.722.1/G.726/MP2L2/PCM/MP3/AAC-LC 64 Kbps (G.711ulaw/G.711alaw)/16 Kbps (G.722.1)/16 Kbps (G.726)/32 to 192 Kbps (MP2L2)/8 to 320 Kbps (MP3)/16 to 64 Kbps (AAC-LC) 8 kHz/16 kHz/32 kHz/48 kHz Yes TCP/IP, ICMP, HTTP, HTTPS, FTP, SFTP, DHCP, DNS, DDNS, SRTP, RTP, RTSP, RTCP, PPPOE, NTP, UPnP, SMTP, SNMP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP, Bonjour, SSL/TLS, ARP, WebSocket, WebSockets Up to 20 channels ISAPI,SDK,ISUP,OTAP,ONVIF (Profile S, Profile G,

User/Host	Up to 32 users	
	3 user levels: administrator, operator, and user	
Security	Password protection, complicated password, HTTPS encryption, 802.1X authentication (EAP-TLS, EAP-LEAP, EAP-MD5), watermark, IP address filter, basic and digest authentication for HTTP/HTTPS, WSSE and digest authentication for Open Network Video Interface, RTP/RTSP OVER HTTPS, Control Timeout Settings, Security Audit Log, TLS 1.2, TLS 1.3, TPM 2.0 (FIPS 140- 2 level 2), AES128/256	
Network Storage	NAS (NFS, SMB/CIFS),Auto Network Replenishment (ANR),	
Web Browser	Plug-in required live view: IE 10, IE 11,Plug-in free live view: Chrome 57.0+, Firefox 52.0+, Edge89+, Safari 11+,Local service: Chrome 57.0+, Firefox 52.0+, Edge 89+	
Mobile Communicati	ion	
Standard	-5G: 5G NR/LTE-FDD/LTE-TDD	
Frequency	-5G: 5G NR: n41/n77/n78/n79	
	LTE-FDD: B1/B3/B5/B8 LTE-TDD: B38/39/B40/B41	
SIM Card Type	-5G: Micro SIM	
Image		
Image Parameters Switch	Yes	
Image Settings	Rotate mode,saturation,brightness,contrast,sharpness,white balance,AGC,adjustable by client software or web browser	
Day/Night Switch	Day,Night,Auto,Schedule,Alarm Trigger	
Wide Dynamic Range (WDR)	140 dB	
Image Enhancement	BLC,HLC,3D DNR,Distortion Correction,Defog	
SNR	$\geq$ 52 dB	
Privacy Mask	8 programmable polygon privacy masks	
Picture Overlay	LOGO picture can be overlaid on video with $128 \times 12824$ bit bmp format.	
Image Stabilization	EIS	
Interface		
Video Output	1 Vp-p Composite Output (75 Ω/CVBS) (Only for debugging)	
Ethernet Interface	1 RJ45 10 M/100 M/1000 M self-adaptive Ethernet port	
On-Board Storage	Built-in memory card slot, support	
	microSD/microSDHC/microSDXC card, up to 1 TB 2 inputs, 2 outputs (max. 24 VDC/24 VAC, 1 A)	

Audio	1 input (line in), 3.5 mm connector, three-contact, max.	
	input amplitude: 3.3 Vpp, input impedance: 4.7 KΩ,	
	interface type: non-equilibrium,	
	1 output (line out), 3.5 mm connector, three-contact, max. output amplitude: 3.3 Vpp, output impedance: 100 $\Omega$ ,	
	interface type: non-equilibrium, mono sound	
Reset Key	Yes	
Power Output	-Y: 12 VDC, max. 100 mA	
Event		
Basic Event	Motion detection (support alarm triggering by specified	
	target types (human and vehicle)),video tampering alarm,video quality diagnosis,exception (network	
	disconnected, IP address conflict, illegal login, abnormal	
	restart, HDD full, HDD error), vibration detection	
Smart Event	scene change detection, audio exception detection, defocus	
	detection	
Linkage	Upload to FTP/NAS/memory card, notify surveillance	
	center, send email, trigger alarm output, trigger recording, trigger capture, audible warning	
<b>Deep Learning Func</b>		
Multi-target-type	Supports simultaneous detection and capture of human	
Detection	body, face, and vehicle,	
	Gets 7 face features,	
	Gets 13 human body features,	
	Gets 2 vehicle features,	
	Supports counting the number of line crossing targets by	
	type, including human body, non-motor vehicle, motor vehicle,	
	Supports dynamic mosaic mask	
Face Capture	Detects up to 120 faces simultaneously, captures up to 40	
	face pictures per frame simultaneously, explained up to 10 face pictures per second,	
	Supports swing left and right from $-60^{\circ}$ to $60^{\circ}$ , tilt up and down from $-30^{\circ}$ to $30^{\circ}$ ,	
	Uploads face with background and closed-up face pictures,	
	Supports best shot and quick shot for capture mode,	
	Supports dynamic mosaic mask,	
	Gets 7 face features	
Face Comparison	Up to 10 face libraries. 30,000 faces for each library. 150,000 faces in total,	
	Supports face library encryption	
People Counting	Supports Multi-Dimension People Counting,	
	Supports counting, displaying and exporting the people flow data of entering, exiting and passing by (The data is stored in the flash.),	
	Supports real-time uploading and uploading by statistic cycle,	
	Supports generating daily, weekly, monthly or annually reports,	

	Supports dynamic deduplication based on face picture comparison, and can filter out the target with the same custom face pictures, same attributes, or filter out repeated invalid targets within the set time interval, Supports face feature deduplication, Supports people flow data replenishment	
Queue Management	Supports up to 8 detection regions, and independent arming schedule and linkage method	
	Supports 2 detection modes: regional people queuing-up, waiting time detection	
	Generates reports to compare the efficiency of different queuing-ups and display the changing status of one queue	
	Supports raw data export for further analysis	
	Supports real-time data uploading and scheduled data uploading	
	Regional people queuing-up: supports 4 alarm trigger conditions, including greater than threshold, less than threshold, equal to threshold, not equal to threshold Waiting time detection: supports 1 alarm trigger condition,	
	including greater than threshold	
Heat Map	A graphic description of visits (by calculating amount of people or amount of dwell time) in a configured area.,	
	Two report types are available, space heat map and time heat map line chart.	
Perimeter Protection	Line crossing, intrusion, region entrance, region exiting	
	Support alarm triggering by specified target types (human and vehicle)	
	Support combined event alarm triggering	
Hard Hat Detection	Detects up to 30 human targets simultaneously	
	Supports up to 4 shield regions	
Metadata	Intrusion detection,line crossing detection,region entrance detection,region exiting detection,face capture,multi-target- type detection	
Regional People Counting	Supports up to 8 detection regions, and independent arming schedule and linkage method	
	Supports 3 detection modes: people density detection, number of people exception detection, waiting time exception detection Supports parameter settings: alarm times per exception,	
	alarm interval, first alarm delay	
	Supports searching real-time number of people	
	People density detection: supports scheduled uploading, number of people change uploading, congestion level uploading	
	Number of people exception detection: supports 6 alarm trigger conditions, including greater than threshold A, less than threshold A, equal to threshold A, not equal to threshold A, greater than threshold A and less than threshold	

	B, less than threshold A or greater than threshold B (threshold A should be less than threshold B)	
	Waiting time exception detection: supports 3 alarm trigger conditions, including greater than threshold A, less than threshold A, greater than threshold A and less than threshold B (threshold A should be less than threshold B)	
On/Off Duty Detection	Supports up to 8 detection regions, and independent arming schedule and linkage method	
	Supports 2 detection modes: absence detection, on/off duty detection	
	Supports parameter settings: person on duty, absence duration	

25 MP 5-Directional Multisensor Network Dome Camera			
Feature	Technical Specification	<b>Bidder's Response</b>	
Camera			
Image Sensor	Varifocal: 1/2.4" Progressive Scan CMOS; Fixed: 1/2.5" Progressive Scan CMOS		
Max. Resolution	2560 × 1920		
Min. Illumination	Color: 0.005 Lux @ (F1.2, AGC ON),B/W: 0.002 Lux @ (F1.2, AGC ON),B/W: 0 Lux with IR		
Shutter Time	1 s to 1/100,000 s		
Day & Night	IR cut filter		
Angle Adjustment	Pan: 0° to 350°, tilt: 0° to 90°, rotate: -90° to 90°		
Lens			
Attributes	4 adjustable lenses in one camera cover up to 360° field of view, ensuring no blind area monitoring and the monitoring tilt angle can be adjusted. One more fixed lens to cover the area beneath the camera		
Lens Type	Varifocal lens, motorized lens, 2.8 to 8 mm, Fixed focal lens, 2 mm		
Focal Length & FOV	Varifocal :2.8 to 8 mm, horizontal FOV 96.5° to 48.9°, vertical FOV 69.9° to 36.5°, diagonal FOV 129° to 61.3°		
	Fixed:2mm, horizontal FOV 71.68°, vertical FOV 71.68°, diagonal FOV 99.16°		
Lens Mount	Ø14		
Focus	Varifocal: Semi-auto, Manual		
Aperture	Varifocal: F1.9; Fixed: F2.25		
Illuminator			
Supplement Light Type	IR		
Supplement Light Range	Up to 30 m		
IR Wavelength	850 nm		
Video			
	Channel 1,2,3,4:		
Main Stream	50 Hz: 25 fps (2560×1920, 2048×1536, 1920×1080, 1280×720)		
	60 Hz: 30 fps (2560×1920, 2048×1536, 1920×1080, 1280×720)		

	Channel 5:	
	50 Hz: 25 fps (1440× 1440)	
	60 Hz: 30 fps (1440× 1440)	
	Channel 1,2,3,4:	
Sub-Stream	50 Hz: 25 fps (704 × 576, 640 × 480)	
	60 Hz: 30 fps (704 × 480, 640 × 480)	
	Channel 5:	
	50 Hz: 25 fps (576× 576, 480× 480)	
	60 Hz: 30 fps (576× 576, 480× 480)	
	Channel 1,2,3,4:	
Third Stream	50 Hz: 25 fps (1920 × 1080, 1280 × 720, 704 × 576, 640 × 480)	
	60 Hz: 30 fps (1920 × 1080, 1280 × 720, 704 × 576, 640 × 480)	
	Main stream: H.265+/H.265/H.264+/H.264,	
Video Compression	Sub-stream: H.265/H.264/MJPEG,	
Ĩ	Third stream: H.265/H.264	
Video Bit Rate	32 Kbps to 8 Mbps	
Н.264 Туре	Baseline Profile, Main Profile, High Profile	
Н.265 Туре	Main Profile	
Scalable Video Coding (SVC)	H.264 and H.265 encoding	
Region of Interest (ROI)	4 fixed regions for each stream	
Target Cropping	Yes	
Audio		
Audio Compression	G.711/G.722.1/G.726/MP2L2/PCM/MP3/AAC-LC	
Audio Bit Rate	64 Kbps (G.711ulaw/G.711alaw)/16 Kbps (G.722.1)/16 Kbps (G.726)/32 to 192 Kbps (MP2L2)/8 to 320 Kbps (MP3)/16 to 64 Kbps (AAC-LC)	
Audio Sampling Rate	8 kHz/16 kHz/32 kHz/48 kHz	
Environment Noise Filtering	Yes	
Network		
Protocols	TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnP, SMTP, SNMP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP, Bonjour, WebSocket, WebSockets, SSL/TLS	
Simultaneous Live View	Up to 20 channels	
API	Open Network Video Interface (Profile S, Profile G, Profile T),ISAPI,SDK,ISUP	
User/Uset	Up to 32 users	
User/Host	3 user levels: administrator, operator, and user	
Security	Password protection, complicated password, HTTPS encryption, 802.1X authentication (EAP-MD5), watermark, IP address filter, basic and digest authentication for HTTP/HTTPS, WSSE and digest authentication for Open Network Video Interface	
Network Storage	NAS (NFS, SMB/CIFS), Auto Network Replenishment (ANR),	

	Plug-in free live view: Chrome 57.0+, Firefox 52.0+, Edge 89+, Safari 11+,	
	Local service: Chrome 57.0+, Firefox 52.0+, Edge 89+	
Image		
Image Settings	Rotate mode,saturation,brightness,contrast,sharpness,AGC,white balance,adjustable by client software or web browser	
Day/Night Switch	Day,Night,Auto,Schedule,Alarm Trigger	
Wide Dynamic Range (WDR)	120 dB	
SNR	$\geq$ 52 dB	
Image Stabilization	EIS	
Image Enhancement	BLC,HLC,3D DNR,Defog	
Privacy Mask	8 programmable polygon privacy masks	
Picture Overlay	LOGO picture can be overlaid on video with $128 \times 128$ 24 bit bmp format.	
Interface		
Ethernet Interface	1 RJ45 10 M/100 M/1000 M self-adaptive Ethernet port	
On-Board Storage	Built-in memory card slot, support microSD/microSDHC/microSDXC card, up to 1 TB	
A 11-	1 input (line in), 3.5 mm connector, max. input amplitude: 3.3 Vpp, input impedance: 4.7 K $\Omega$ , interface type: non-equilibrium,	
Audio	1 output (line out), 3.5 mm connector, max. output amplitude: 3.3 Vpp, output impedance: $100 \Omega$ , interface type: non-equilibrium	
Alarm	2 inputs, 2 outputs (max. 24 VDC, 1 A)	
Reset Key	Yes	
Event	•	
Basic Event	Motion detection, video tampering alarm, network disconnected, IP address conflict, illegal login, HDD full, HDD error	
Smart Event	Line crossing detection, intrusion detection, region entrance detection, region exiting detection (support alarm triggered by specified target types (human and vehicle)),scene change detection, unattended baggage detection,object removal detection	
Linkage	Upload to FTP/NAS/memory card,notify surveillance center,send email,trigger alarm output,trigger recording,trigger capture	
<b>Deep Learning Function</b>		
	Line crossing, intrusion, region entrance, region exiting	
Perimeter Protection	Support alarm triggering by specified target types (human and vehicle)	

4MP Network PTZ			
Feature	Technical Specification	Bidder's Response	
Camera			
Image Sensor	1/1.8" progressive scan CMOS		
Min. Illumination	Color: 0.0003 Lux @ (F1.2, AGC ON), B/W: 0.0001 Lux @ (F1.2, AGC ON), 0 Lux with IR		
Shutter Speed	1/1 s to 1/30,000 s		

Slow Shutter	Yes	
Day & Night	IR cut filter	
Zoom	42x optical, 16x digital	
Max. Resolution	2688 × 1520	
Lens		
Focus	Auto, semi-auto, manual, rapid focus	
Focal Length	6.0 mm to 252 mm, 42× Optical	
Zoom Speed	Approx. 4.5 s (optical, wide-tele)	
	Horizontal field of view: 56.6° to 1.7°(wide-tele),	
FOV	vertical field of view: 33.7° to 0.9°(wide-tele),	
	diagonal field of view: 63.4° to 1.9°(wide-tele)	
Aperture	Max. F1.2	
Illuminator		
Supplement Light Type	IR	
Supplement Light Range	IR Distance: up to 400 m	
Smart Supplement Light	Yes	
PTZ		
Movement Range (Pan)	360°, Smart Pan-Tilt Correction	
Movement Range (Tilt)	-20° to 90° (auto flip), Smart Pan-Tilt Correction	
Pan Speed	Pan speed: configurable from 0.1° to 160°/s; preset speed: 240°/s	
Tilt Speed	Tilt speed: configurable from $0.1^{\circ}$ to $120^{\circ}/s$ , preset speed $200^{\circ}/s$	
Proportional Pan	Yes	
Presets	300	
Patrol Scan	8 patrols, up to 32 presets for each patrol	
Pattern Scan	4 pattern scans, record time over 10 minutes for each scan	
Power-off Memory	Yes	
Park Action	Preset, pattern scan, patrol scan, auto scan, tilt scan, random scan, frame scan, panorama scan	
3D Positioning	Yes	
PTZ Status Display	Yes	
Preset Freezing	Yes	
Scheduled Task	Preset, pattern scan, patrol scan, auto scan, tilt scan, random scan, frame scan, panorama scan, dome reboot, dome adjust, aux output	
Video		
Main Stream	50 Hz: 50 fps (2688 × 1520, 2560 × 1440), 100 fps (1920 × 1080, 1280 × 960, 1280 × 720);	
Main Stream	60 Hz: 60 fps (2688 × 1520, 2560 × 1440), 120 fps (1920 × 1080, 1280 × 960, 1280 × 720)	

	*High frame rate is supported under monitoring mode only.	
Sub-Stream	50 Hz: 25 fps (704 × 576, 640 × 480, 352 × 288)	
Sub-Sueani	60 Hz: 30 fps (704 × 480, 640 × 480, 352 × 240)	
Third Stream	50 Hz: 25 fps (1920 × 1080, 1280 × 960, 1280 × 720, 704 × 576, 640 × 480, 352 × 288)	
Third Stream	60 Hz: 30 fps (1920 × 1080, 1280 × 960, 1280 × 720, 704 × 480, 640 × 480, 352 × 240)	
· · · ·	Main stream: H.265+/H.265/H.264+/H.264	
Video Compression	Sub-stream: H.265/H.264/MJPEG	
compression	Third stream: H.265/H.264/MJPEG	
Video Bit Rate	32 Kbps to 16384 Kbps	
Н.264 Туре	Baseline Profile/Main Profile/High Profile	
Н.265 Туре	Main Profile	
Scalable Video Coding (SVC)	H.264 and H.265 encoding	
Region of Interest (ROI)	8 fixed regions for each stream	
Target Cropping	No	
Audio		
Audio Compression	G.711alaw, G.711ulaw, G.722.1, G.726, MP2L2, PCM	
Audio Bit Rate	64 Kbps (G.711)/16 Kbps (G.722.1)/16 Kbps (G.726)/32 to 192 Kbps (MP2L2)	
Audio Sampling Rate	MP2L2: 16kHz, 32kHz, 48kHzAAC-LC: 16kHz, 32kHz, 48kHzPCM: 8kHz, 16kHz, 32kHz, 48kHzMP3: 8kHz, 16KHz, 32KHz, 48KHz	
Environment Noise Filtering	Yes	
Network	·	
Smooth Streaming	Yes	
Security	Password protection, complicated password, HTTPS encryption, 802.1X authentication (EAP-TLS, EAP-LEAP, EAP- MD5), watermark, IP address filter, basic and digest authentication for HTTP/HTTPS, WSSE and digest authentication for Open Network Video Interface, RTP/RTSP over HTTPS, control timeout settings, security audit log, TLS 1.3, host authentication (MAC address), TPM 2.0 (FIPS 140-2 level 2)	
Network Storage	NAS (NFS, SMB/ CIFS), ANR	
Protocols	IPv4/IPv6, HTTP, HTTPS, 802.1x, Qos, FTP, SMTP, UPnP, SNMP, DNS, DDNS, NTP, RTSP, RTCP, RTP, TCP/IP, DHCP, PPPoE, UDP, IGMP, ICMP, Bonjour	
API	ISUP, ISAPI, Open Network Video Interface (Profile S, Profile G, Profile T, Profile M), OTAP	
Simultaneous Live View	Up to 20 channels	
User/Host	Up to 32 users. 3 levels: Administrator, Operator and User	
Web Browser	IE11, Chrome 57.0+, Firefox 52.0+, Safari 11+	

Image			
Image Parameters Switch	Yes		
Image Settings	Saturation, brightness, contrast, sharpness, gain, and white balance adjustable by client software or web browser		
Day/Night Switch	Day, night, auto, scheduled-switch		
Image Enhancement	BLC, HLC, 3D DNR		
Wide Dynamic Range (WDR)	150 dB WDR		
Defog	Optical defog		
Image Stabilization	Yes. Built-in gyroscope to improve EIS performance.		
Regional Exposure	Yes		
Regional Focus	Yes		
Privacy Mask	Up to 24 masks, polygon region, mosaic mask, mask color configurable		
SNR	$\geq$ 52 dB		
Supplement Detect	tion		
Gyroscope	Yes		
Satellite Positioning	No		
Compass	No		
Interface			
Reset	Yes		
Ethernet Interface	1 RJ45 10M/100M self-adaptive Ethernet port		
On-board Storage	Built-in memory card slot, support MicroSD/MicroSDHC/MicroSDXC, up to 1 TB		
Alarm	7 inputs, 2 outputs		
Audio	1 input (line in), max. input amplitude: 2-2.4 vpp, input impedance: 1 K $\Omega \pm 10\%$ ; 1 output (line out), line level, output impedance: 600 $\Omega$		
Video Output	1.0V[p-p]/75Ω, PAL, NTSC, BNC connector		
Event			
Basic Event	Motion detection, video tampering alarm, exception (network disconnected, IP address conflict, illegal login, HDD full, HDD error), alarm input and output, vandal-proof alam, audio exception detection, unattended baggage detection, object removal detection		
Linkage	Upload to FTP/NAS/memory card, notify surveillance center, send email, trigger recording, and PTZ actions (such as preset, patrol scan, pattern scan)		
Deep Learning Function			
Perimeter Protection	Line crossing detection, region entrance detection, intrusion detection, region exiting detection		
Multi-Target- Type Detection	Supports simultaneous detection and capture of human body, face and vehicle,		

Gets 7 face features, 14 human body features and 8 vehicle features	
Detects up to 30 faces simultaneously,	
Uploads face with background and closed-up face pictures, Supports detecting, tracking, capturing, grading, selecting of face in motion, and outputs the best face picture	
Up to 10 face libraries. 30000 faces for each library. 150000 faces in total,	
Recognizes face identity via face modeling, grading and comparing to those in face library,	
Supports face library encryption	
Smart Function:	
Support license plate recognition of vehicles and motorcycles (only in checkpoint scenario)	
Support vehicle attribute detection, including vehicle type, color, brand, driving direction, etc.	
Support vehicle and non-vehicle counting	
Blocklist and allowlist: up to 10,000 records	
LPR Countries/Regions:	
4 areas (Europe, Middle East, Asia-Pacific, Africa) and more than 124 countries/regions	
Accuracy (Under recommended installation and lighting conditions):	
License plate recognition rate $\ge 98\%$	
Capture rate ≥99%	
Driving direction accuracy rate ≥98%	
Vehicle Capture Speed:	
Front installation in checkpoint scenario: up to 120 km/h	
Side installation: up to 80 km/h	
Capture Mode: License Plate and Vehicle Mode, Vehicle Priority Mode	
sing	
Manual tracking, auto-tracking 3.0	
Support person arming. When the device detects the armed face or human body in the monitoring scene, it triggers alarms, and tracks and captures the target. During the tracking, the target location and other related information are uploaded.Support vehicle arming. When the device detects the armed vehicles in the monitoring scene, it triggers alarms, and tracks and captures the target. During the tracking, the target location and other related information are uploaded.	
	Detects up to 30 faces simultaneously,         Uploads face with background and closed-up face pictures, Supports detecting, tracking, capturing, grading, selecting of face in motion, and outputs the best face picture         Up to 10 face libraries. 30000 faces for each library. 150000 faces in total,         Recognizes face identity via face modeling, grading and comparing to those in face library,         Supports face library encryption         Smart Function:         Support license plate recognition of vehicles and motorcycles (only in checkpoint scenario)         Support vehicle attribute detection, including vehicle type, color, brand, driving direction, etc.         Support vehicle and non-vehicle counting         Blocklist and allowlist: up to 10,000 records         LPR Countries/Regions:         4 areas (Europe, Middle East, Asia-Pacific, Africa) and more than 124 countries/regions         Accuracy (Under recommended installation and lighting conditions):         License plate recognition rate ≥98%         Capture rate ≥99%         Driving direction accuracy rate ≥98%         Vehicle Capture Speed:         Front installation in checkpoint scenario: up to 120 km/h         Side installation: up to 80 km/h         Capture Mode: License Plate and Vehicle Mode, Vehicle Priority Mode         sing         Manual tracking, auto-tracking 3.0         Support person arming. When the device detects the armed face or hum

Workstation		
Feature	Technical Specification	Bidder's Response
Hardware Specifications		110500120
CPU	i7-12700, 2.10 GHz, 25 MB Cache, 12 Cores, 20 Threads	
Memory	Standard Config : $2 \times 8$ GB UDIMM, 3200MT/s Scalability : $4 \times 32$ GB UDIMM	
Hard Disks	Standard Config : 1 × 1TB M.2 SSD Scalability : 1 × 4TB 3.5inch SATA HDD	
Supported Operating Systems	Win10 multilingual version pre-installed	
	Standard Config: UHD Graphics 770 (intergrated in CPU)	
Graphic Card	Scalability : $1 \times$ Semi-high Independent graphics card (Please contact technical support for more info.)	
PCIe Slots	1*PCIe 4.0 x16 Slot 1*PCIe 4.0 x4 Slot	
Ports		
Type-C	1	
USB 3.0	1 (Front) +3 (Rear)	
USB 2.0	2 (Front) +2 (Rear)	
Universal Audio Port	1	
Ethernet Port	1 x LAN 10/100/1000	
VGA	/ (HDMI port can be used as VGA port)	
HDMI	1	
DP	3 (DP port can be used as HDMI port)	

LCD MONITORS 32/40/42 INCHES			
Feature	Technical Specification	Bidder's Response	
Resolution	Minimum 1920 x 1080p full HD native resolution.		
LED Backlight Technology	Must use energy saving LED backlighting rather than cold cathode fluorescent lights (CCFL)		
Energy Star certified	Must be energy Star certified, ensuring reliability in a 24/7 security installation environment		
Design	Must be constructed of a lightweight aluminum frame composition for desktop or wall-mount installations.		

NETWORK MEDIA CONVERTORS		
Feature	Technical Specification	Bidder's Response

General	• Industrial Gigabit and Supports 1000Base-SX/LX with SC connector, or SFP slot	
	· Link Fault Pass-through (LFP)	
	-40 to 75°C operating temperature range (T models)	
	• Supports Energy Efficient Ethernet (IEEE 802.3az)	
Interface	RJ45 Ports: 10/100/1000BaseT(X)	
	Fiber Ports: 100/1000Base-SX/LX or 100/1000BaseSFP slot	
Power Requirement	Input Voltage: 12 to 48 VDC, redundant inputs Input Current: 285 mA @ 48 VDC max. Connection: Removable terminal block	
	Overload Current Protection: 1.5 A	
	Reverse Polarity Protection: Present	
LED Indicators	PWR1, PWR2, G1 (copper port 10M/100M/1000M), G2 (fiber port 100M/1000M)	
DIP Switches	Fiber speed 100M/1000M, Link Fault Pass-through, Energy Efficient Ethernet	
Optical Fiber	Multi-mode Transmission Distance: 1000BaseSX: 0 to 500 m, 850 nm (50/125 μm, 400 MHz*km)	
	Single-mode Transmission Distance: 1000BaseLX: 0 to 10 km, 1310 nm (9/125 μm, 3.5 PS/(nm*km))	

16-ch DeepinMind NVR			
Feature	Technical Specification	Bidder's Response	
Intelligent Analytics			
AI by NVR	Facial recognition, perimeter protection, video structuralization, AcuSearch		
AI by Camera	Facial recognition, perimeter protection, video structuralization, AcuSearch, motion detection2.0, ANPR, people counting, VCA		
Engine	2, each engine can run an intelligent algorithm, engine mode is adjustable		
Facial Recognition			
Facial Detection and Analytics	Face picture comparison, human face capture, face picture search		
Face Picture Library	Up to 32 face picture libraries, up to 100,000 face pictures in list library, up to 10,000 face pictures in stranger library, up to 10,000,000 face pictures in face capture (each picture $\leq$ 4 MB, total capacity $\leq$ 20 GB)		
Face Picture Comparison	16-ch (24-ch for each engine);		
(Captured from Camera)	Comparison speed: 48 pictures per second		
Facial Detection and Analytics Performance	16-ch 2 MP (8-ch for each engine), up to 8 MP		
AcuSearch			

By NVR	up to 8-ch,up to 691,200 targets/day	
	All channels ,up to 691,200 targets/day	
By Camera	The camera should enable AcuSearch function	
Perimeter Protection		
D NX/D	perimeter protection powered by LargeModel : 12-ch 2 MP or 8- ch 4MP or 4-ch 8MP	
By NVR	perimeter protection without LargeModel : 24-ch 2 MP or 16ch-4MP or 8-ch 8MP	
By Camera	perimeter protection powered by LargeModel with AcuSense cameras: All channels	
Video Structuralization		
Structured Analysis	12-ch 2 MP (6-ch for each engine), up to 8 MP	
Face Picture Library	Up to 32 face picture libraries, up to 100,000 face pictures in list library, up to 10,000 face pictures in stranger library, up to 10,000,000 face pictures in face capture (each picture $\leq$ 4 MB, total capacity $\leq$ 20 GB)	
	16-ch;	
Face Picture Comparison	Comparison speed: 32 pictures per second	
ANPR		
By Camera	All channels	
Vehicle Attributes	Vehicle brand, vehicle color, vehicle type	
Plate Attributes	Plate number, license plate color, license plate type	
Video and Audio		
IP Video Input	16-ch	
n video input	Up to 32 MP resolution	
Incoming Bandwidth	320 Mbps	
Outgoing Bandwidth	400 Mbps	
HDMI 1 Output	8K (7680 × 4320)/30Hz, 4K (3840 × 2160)/60Hz, 4K (3840 × 2160)/30Hz, 2K (2560 × 1440)/60Hz, 1920 × 1080/60Hz	
Incoming Bandwidth (RAID Mode)	320 Mbps	
HDMI 2 Output	4K (3840 × 2160)/60Hz, 4K (3840 × 2160)/30Hz, 2K (2560 × 1440)/60Hz, 1920 × 1080/60Hz	
HDMI 2 Output	*: When HDMI 1 output resolution is 8K, the maximum HDMI 2 output resolution is 1080p.	
Outgoing Bandwidth (RAID mode)	400 Mbps	
VGA 1 Output	1920 × 1080/60Hz	
VGA 2 Output	1920 × 1080/60Hz	
Video Output Mode	HDMI1/VGA1 simultaneous output, HDMI2/VGA2 simultaneous output	
CVBS Output	1-ch, BNC (1.0 Vp-p, 75 $\Omega$ ), resolution: PAL: 704 × 576, NTSC: 704 × 480	

Audio Output	2-ch, RCA (Linear, 1 KΩ)	
Two-Way Audio	1-ch, RCA (2.0 Vp-p, 1 k Ω)	
Decoding		
Decoding Format	H.265/H.265+/H.264/H.264+	
Decoding Capability	2-ch@32 MP (30 fps)/2-ch@24 MP (30fps)/4-ch@16 MP (30fps)/8-ch@8 MP (30fps)/16-ch@4 MP (30fps)/32-ch@2 MP (30fps)	
Synchronous Playback	16-ch	
Recording Resolution	32 MP/24 MP/12 MP/8 MP/6 MP/5 MP/4 MP/3 MP/1080p/UXGA/720p/VGA /4CIF/DCIF/ 2CIF/CIF/QCIF	
Network		
Remote Connection	128	
Network Protocol	TCP/IP, DHCP, IPv4, IPv6, DNS, DDNS, NTP, RTSP, SADP, SMTP, SNMP, NFS, iSCSI, ISUP, UPnP [™] , HTTP, HTTPS, ONVIF(Version 2.2), OTAP	
API	ONVIF (profile S/G); SDK; ISAPI	
Compatible Browser	IE11, Chrome V57, Firefox V52, Safari V12, Edge V89, or above version	
Network Interface	2, RJ-45 10/100/1000 Mbps self-adaptive Ethernet interface	
Camera Access Protocol	ONVIF(Version 2.5), RTSP	
RAID		
RAID Type	RAID0, RAID1, RAID5, RAID6, RAID10	
Auxiliary Interface		
Ctrl 12V	Controllable 12 VDC, 1 A power output for external alarm device; The power will be turned on when the alarm output is triggered.	
	*: The Ctrl 12V power is controlled by alarm output 9.	
DC 12V	12 VDC, 1 A power output	
SATA	8 SATA interfaces; 3.5-inch HDD	
eSATA	1 eSATA interface	
Capacity	Up to 16 TB capacity for each HDD	
Serial Interface	1 RS-232, 1 RS-485 (full-duplex)	
USB Interface	Front panel: $2 \times USB 2.0$ ; Rear panel: $1 \times USB 3.0$	
Alarm In/Out	16 input & 9 output	

32-ch Intelligent NVR		
Feature	Technical Specification	Bidder's Response
Intelligent Analytics		

	Pre-installed AI Algorithm Package	
	Human ( 3 Algorithm models )	
	1. Facial recognition:	
	2. People counting: regional people counting, people counting	
	statistics	
	3. PPE: safety helmets and reflective vests detection	
	Vehicle (2 Algorithm models)	
	1. Vehicle attributes: vehicle brand, vehicle color, vehicle type	
	2. Non-motorized vehicle detection: motorcycle, bicycles	
	Dangerous Event( 2 Algorithm models )	
	1. Fire and smoke detection	
	2. Occupation of fire escape	
AI by NVR	Behaviour ( 4 Algorithm models )	
AI by IVVK		
	1. Street level behaviour : falling down detection, people gathering detection, fast	
	moving detection, physical conflict detection	
	2. Indoor: playing mobile phone, number of people exception,	
	overstaying detection	
	3. Perimeter: intrusion detection, line crossing detection, region	
	entrance detection,	
	region exiting detection	
	4. Smoke detection, call detection	
	AIOP (Up to 16 models)	
	Model type: detection model, classification model, mixed model (detection model and	
	classification model)	
AI Open Platform Perfo	ormance	
Live Video Analysis	2 engines in total, up to 4-ch for each engine (4-ch@4 MP, 2- ch@6 MP, 1-ch @8 MP)	
Auto-Switch Video Analysis	2 engines in total, up to 8-ch for each engine (switching time should between 10 to 3600 sec)	
Scheduled Capture	2 engines in total, up to 8-ch for each engine, (switch time should between 3 to 3600 seconds)	
Analysis		
Video and Audio		
IP Video Input	32-ch	
Incoming Bandwidth Outgoing Bandwidth	320 Mbps 400 Mbps	
	HDMI1 : 8K (7680 × 4320)/30 Hz, 4K (3840 × 2160)/60 Hz,	
	4K $(3840 \times 2160)/30$ Hz, 2K $(2560 \times 1440)/60$ Hz, 1080P	
HDMI 1 Output	$(1920 \times 1080)/60 \text{ Hz}$	
	*: When HDMI 1 output resolution is 8K, the maximum HDMI	
	2 output resolution is 1080p.	
HDMI 2 Output	HDMI2 : 4K (3840 × 2160)/60Hz, 4K (3840 × 2160)/30Hz, 2K (2560 × 1440)/60Hz, 1920 × 1080/60Hz	
-	(2560 × 1440)/60Hz, 1920 × 1080/60Hz 1080P (1920 × 1080)/60 Hz	
VGA 1 Output	$1080P (1920 \times 1080)/60 Hz$ $1080P (1920 \times 1080)/60 Hz$	
VGA 2 Output	1000T (1720 × 1000)/00 HZ	

	HDMI1/VGA1 simultaneous output, HDMI2/VGA2	
Video Output Mode	simultaneous output	
Audio Output	1-ch, RCA (Linear, 1 KΩ)	
Two-Way Audio	1-ch, RCA (2.0 Vp-p, 1 k Ω)	
Decoding		
Decoding Format	H.265/H.265+/H.264/H.264+	
Decoding Capability	Up to 2-ch@32 MP/2-ch@24 MP/4-ch@12 MP/8-ch@8 MP/16-ch@4 MP/32-ch@1080P	
Synchronous Playback	16-ch	
Recording Resolution	32 MP/24 MP/12 MP/8 MP/6 MP/5 MP/4 MP/3 MP/1080p/UXGA/720p/VGA /4CIF/DCIF/ 2CIF/CIF/QCIF *: After ultra HD resolution mode is enabled, the NVR supports up to 8-ch 32 MP/24 MP IP video inputs.	
Network		
Remote Connection	128	
Network Protocol	TCP/IP, DHCP, IPv4, IPv6, DNS, DDNS, NTP, RTSP, SADP, SMTP, SNMP, NFS, iSCSI, ISUP, UPnP [™] , HTTP, HTTPS	
API	ONVIF (profile S/G); SDK; ISAPI	
Compatible Browser	IE11, Chrome V57, Firefox V52, Safari V12, Edge V89, or above version	
Network Interface	2, RJ-45 10/100/1000 Mbps self-adaptive Ethernet interface	
RAID		
RAID Type	RAID0, RAID1, RAID5, RAID6, RAID10	
Auxiliary Interface		
Ctrl 12V	Controllable 12 VDC, 1 A power output for external alarm device; The power will be turned on when the alarm output is triggered.	
	*: The Ctrl 12V power is controlled by alarm output 9.	
DC 12V	12 VDC, 1 A power output	
SATA	8 SATA interfaces; 3.5-inch HDD	
eSATA	1 eSATA interface	
Capacity	Up to 16 TB capacity for each HDD	
Serial Interface	1 RS-232, 1 RS-485 (full-duplex)	
USB Interface	Front panel: $2 \times USB 2.0$ ; Rear panel: $2 \times USB 3.0$	
Alarm In/Out	16 input & 9 output	

32-ch DeepinMind NVR		
Feature	Technical Specification	Bidder's Response
Intelligent Analytics		
	Pre-installed AI Algorithm Package	
	Human ( 3 Algorithm models )	
AI by NVR	1. Facial recognition:	
	2. People counting: regional people counting, people counting statistics	
	3. PPE: safety helmets and reflective vests detection	

	Vehicle (2 Algorithm models)	
	1. Vehicle attributes: vehicle brand, vehicle color, vehicle type	
	2. Non-motorized vehicle detection: motorcycle, bicycles	
	Dangerous Event( 2 Algorithm models )	
	1. Fire and smoke detection	
	2. Occupation of fire escape	
	Behaviour ( 4 Algorithm models )	
	1. Street level behaviour : falling down detection, people gathering detection, fast	
	moving detection, physical conflict detection	
	2. Indoor: playing mobile phone, number of people exception, overstaying detection	
	3. Perimeter: intrusion detection, line crossing detection, region entrance detection,	
	region exiting detection	
	4. Smoke detection, call detection	
	AIOP (Up to 16 models)	
	Model type: detection model, classification model, mixed model (detection model and	
	classification model)	
AI Open Platform Performan	ce	
Live Video Analysis	2 engines in total, up to 4-ch for each engine (4-ch@4 MP, 2-ch@6 MP, 1-ch @8 MP)	
Auto-Switch Video Analysis	2 engines in total, up to 8-ch for each engine (switching time should between 10 to 3600 sec)	
Scheduled Capture Analysis	2 engines in total, up to 8-ch for each engine, (switch time should between 3 to 3600 seconds)	
Video and Audio		
IP Video Input	32-ch	
Incoming Bandwidth	320 Mbps	
Outgoing Bandwidth	400 Mbps	
HDMI 1 Output	HDMI1 : 8K (7680 × 4320)/30 Hz, 4K (3840 × 2160)/60 Hz, 4K (3840 × 2160)/30 Hz, 2K (2560 × 1440)/60 Hz, 1080P (1920 × 1080)/60 Hz	
	*: When HDMI 1 output resolution is 8K, the maximum HDMI 2 output resolution is 1080p.	
HDMI 2 Output	HDMI2 : 4K (3840 × 2160)/60Hz, 4K (3840 × 2160)/30Hz, 2K (2560 × 1440)/60Hz, 1920 × 1080/60Hz	
VGA 1 Output	1080P (1920 × 1080)/60 Hz	
VGA 2 Output	1080P (1920 × 1080)/60 Hz	
Video Output Mode	HDMI1/VGA1 simultaneous output, HDMI2/VGA2 simultaneous output	
Audio Output	1-ch, RCA (Linear, 1 KΩ)	
Two-Way Audio	1-ch, RCA (2.0 Vp-p, 1 k Ω)	
Decoding		
Decoding Format	H.265/H.265+/H.264/H.264+	

Decoding Capability	Up to 2-ch@32 MP/2-ch@24 MP/4-ch@12 MP/8- ch@8 MP/16-ch@4 MP/32-ch@1080P	
Synchronous Playback	16-ch	
Recording Resolution	32 MP/24 MP/12 MP/8 MP/6 MP/5 MP/4 MP/3 MP/1080p/UXGA/720p/VGA /4CIF/DCIF/ 2CIF/CIF/QCIF	
	*: After ultra HD resolution mode is enabled, the NVR supports up to 8-ch 32 MP/24 MP IP video inputs.	
Network		
Remote Connection	128	
Network Protocol	TCP/IP, DHCP, IPv4, IPv6, DNS, DDNS, NTP, RTSP, SADP, SMTP, SNMP, NFS, iSCSI, ISUP, UPnP [™] , HTTP, HTTPS	
API	ONVIF (profile S/G); SDK; ISAPI	
Compatible Browser	IE11, Chrome V57, Firefox V52, Safari V12, Edge V89, or above version	
Network Interface	2, RJ-45 10/100/1000 Mbps self-adaptive Ethernet interface	
RAID		
RAID Type	RAID0, RAID1, RAID5, RAID6, RAID10	
Auxiliary Interface		
Ctrl 12V	Controllable 12 VDC, 1 A power output for external alarm device; The power will be turned on when the alarm output is triggered.	
	*: The Ctrl 12V power is controlled by alarm output 9.	
DC 12V	12 VDC, 1 A power output	
SATA	8 SATA interfaces; 3.5-inch HDD	
eSATA	1 eSATA interface	
Capacity	Up to 16 TB capacity for each HDD	
Serial Interface	1 RS-232, 1 RS-485 (full-duplex)	
USB Interface	Front panel: $2 \times \text{USB} 2.0$ ; Rear panel: $2 \times \text{USB} 3.0$	
Alarm In/Out	16 input & 9 output	

64-ch Intelligent NVR		
Feature	Technical Specification	Bidder's Response
Intelligent Analytics		
AI by NVR	Facial recognition, perimeter protection, video structuralization	
AI by Camera	Facial recognition, perimeter protection, video structuralization, AcuSearch, motion detection2.0, ANPR, people counting, VCA	
Facial Recognition		
Facial Detection and Analytics	Face picture comparison, human face capture, face picture search	
Face Picture Library	Up to 64 face picture libraries, up to 300,000 face pictures in list library (each picture $\leq$ 4 MB, total capacity $\leq$ 10 GB)	
Face Picture Comparison	16-ch	
(Captured from Camera)	Comparison speed: 24 pictures per second	

Facial Detection and	Simultaneous mode: 8-ch, up to 2 MP	
Analytics Performance	independent mode: 4-ch, up to 2 MP.	
AcuSearch		
By NVR	Up to 32-ch	
D. Comme	All channels, up to 345,600 targets per day	
By Camera	Note: The camera should enable AcuSearch function.	
Perimeter Protection		
	Simultaneous mode: 8-ch, up to 2 MP	
By NVR	independent mode: 4-ch, up to 2 MP.	
By Camera	All channels	
Video Structuralization		
	Simultaneous mode: 8-ch, up to 2 MP	
Structured Analysis	independent mode: 4-ch, up to 2 MP.	
Face Picture Library	Up to 64 face picture libraries, up to 300,000 face pictures in list library (each picture $\leq$ 4 MB, total capacity $\leq$ 10 GB)	
Ease Distance Communication	16-ch;	
Face Picture Comparison	Comparison speed: 24 pictures per second	
Video and Audio		
ID Video In mut	64-ch	
IP Video Input	Up to 32 MP resolution	
Incoming Bandwidth	1024 Mbps	
Outgoing Bandwidth	800 Mbps	
Incoming Bandwidth (RAID Mode)	512 Mbps	
Outgoing Bandwidth (RAID mode)	400 Mbps	
HDMI 1 Output	4K (4096 × 2160)/30 Hz, 4K (3840 × 2160)/60 Hz, 4K (3840 × 2160)/30 Hz, 2K (2560 × 1440)/60 Hz, 1080P (1920 × 1080)/60 Hz	
HDMI 2 Output	4K (4096 × 2160)/30 Hz, 4K (3840 × 2160)/60 Hz, 4K (3840 × 2160)/30 Hz, 2K (2560 × 1440)/60 Hz, 1080P (1920 × 1080)/60 Hz	
HDMI 3 Output	8K (7680 × 4320)/30 Hz, 4K (4096 × 2160)/30 Hz, 4K (3840 × 2160)/60 Hz, 4K (3840 × 2160)/30 Hz, 2K (2560 × 1440)/60 Hz, 1080P (1920 × 1080)/60 Hz	
HDMI 4 Output	1080P (1920 × 1080)/60 Hz	
VGA 1 Output	1080P (1920 × 1080)/60 Hz	
VGA 2 Output	1080P (1920 × 1080)/60 Hz	
	Mode 1 (default output mode): simultaneous output with 1080p resolution;	
Video Output Mode	Mode 2 (simultaneous output): HDMI 1, VGA 1, HDMI 2, VGA 2, HDMI 3, and HDMI 4 provide simultaneous output, the maximum resolution for VGA 1/VGA 2/HDMI 4 is 1080p, the maximum resolution for HDMI 1/HDMI 2/HDMI 3 is 4K;	

	Mode 3 (independent output and 8K HDMI 3 output resolution): HDMI 1/VGA 1/HDMI 2/VGA 2, HDMI 3, and HDMI 4 provide independent output respectively. The maximum resolution is 8K + 4K + 1080p;	
	Mode 4 (independent output and HDMI 3 output resolution $\leq 4$ K): HDMI 1/VGA 1, HDMI 2/VGA 2, HDMI 3, and HDMI 4 provide independent output respectively. The maximum resolution is 8K × 4K + 1080p.	
HDMI Input	1-ch	
HDMI Loopback	1-ch (matching the HDMI input)	
Audio Output	2-ch, RCA (Linear, 1 KΩ)	
Two-Way Audio	1-ch, RCA (2.0 Vp-p, 1 k Ω)	
Decoding		
Decoding Format	H.265/H.265+/H.264/H.264+	
Decoding Capability	2-ch@32 MP (30 fps)/2-ch@24 MP (30fps)/4-ch@16 MP (30fps)/8-ch@8 MP (30fps)/16-ch@4 MP (30fps)/32-ch@2 MP (30fps)	
Synchronous Playback	16-ch	
Recording Resolution	32 MP/24 MP/12 MP/8 MP/6 MP/5 MP/4 MP/3 MP/1080p/UXGA/720p/VGA /4CIF/DCIF/ 2CIF/CIF/QCIF	
Network		
Remote Connection	128	
Network Protocol	TCP/IP, DHCP, IPv4, IPv6, DNS, DDNS, NTP, RTSP, SADP, SMTP, SNMP, NFS, iSCSI, ISUP, UPnP [™] , HTTP, HTTPS, ONVIF (version 2.2), OTAP	
API	ONVIF (profile S/G); SDK; ISAPI	
Compatible Browser	IE11, Chrome V57, Firefox V52, Safari V12, Edge V89, or above version	
Network Interface	4, RJ-45 10/100/1000/2500 Mbps self-adaptive Ethernet interface	
Camera Access Protocol	ONVIF (version 2.5), RTSP	
RAID		
RAID Type	RAID 0, RAID 1, RAID 5, RAID 6, RAID 10	
Auxiliary Interface		
SATA	8 SATA interfaces; 3.5-inch HDD	
eSATA	1 eSATA interface	
Capacity	Up to 20 TB capacity for each HDD	
Serial Interface	1 RS-232, 2 RS-485 (half-duplex)	
USB Interface	Front panel: $2 \times \text{USB} 2.0$ ; Rear panel: $4 \times \text{USB} 3.0$	
Alarm In/Out	16 input & 8 output	

64-ch DeepinMind NVR			
Feature	Technical Specification	Bidder's Response	
Intelligent Analytics			

AI by NVR	Facial recognition, perimeter protection, video structuralization	
AI by Camera	Facial recognition, perimeter protection, video structuralization, AcuSearch, motion detection2.0, ANPR, people counting, VCA	
Facial Recognition		
Facial Detection and Analytics	Face picture comparison, human face capture, face picture search	
Face Picture Library	Up to 64 face picture libraries, up to 300,000 face pictures in list library (each picture $\leq$ 4 MB, total capacity $\leq$ 10 GB)	
Face Picture Comparison	16-ch	
(Captured from Camera)	Comparison speed: 24 pictures per second	
Facial Detection and Analytics	Simultaneous mode: 8-ch, up to 2 MP	
Performance	independent mode: 4-ch, up to 2 MP.	
AcuSearch		
By NVR	Up to 32-ch	
D. C.	All channels, up to 345,600 targets per day	
By Camera	Note: The camera should enable AcuSearch function.	
Perimeter Protection		
	Simultaneous mode: 8-ch, up to 2 MP	
By NVR	independent mode: 4-ch, up to 2 MP.	
By Camera	All channels	
Video Structuralization		
	Simultaneous mode: 8-ch, up to 2 MP	
Structured Analysis	independent mode: 4-ch, up to 2 MP.	
Face Picture Library	Up to 64 face picture libraries, up to 300,000 face pictures in list library (each picture $\leq$ 4 MB, total capacity $\leq$ 10 GB)	
	16-ch;	
Face Picture Comparison	Comparison speed: 24 pictures per second	
Video and Audio		
	64-ch	
IP Video Input	Up to 32 MP resolution	
Incoming Bandwidth	1024 Mbps	
Outgoing Bandwidth	800 Mbps	
Incoming Bandwidth (RAID Mode)	512 Mbps	
Outgoing Bandwidth (RAID mode)	400 Mbps	
HDMI 1 Output	4K (4096 $\times$ 2160)/30 Hz, 4K (3840 $\times$ 2160)/60 Hz, 4K (3840 $\times$ 2160)/30 Hz, 2K (2560 $\times$ 1440)/60 Hz, 1080P (1920 $\times$ 1080)/60 Hz	
HDMI 2 Output	4K (4096 × 2160)/30 Hz, 4K (3840 × 2160)/60 Hz, 4K (3840 × 2160)/30 Hz, 2K (2560 × 1440)/60 Hz, 1080P (1920 × 1080)/60 Hz	

HDMI 3 Output	8K (7680 × 4320)/30 Hz, 4K (4096 × 2160)/30 Hz, 4K (3840 × 2160)/60 Hz, 4K (3840 × 2160)/30 Hz, 2K	
	$(2560 \times 1440)/60$ Hz, 1080P $(1920 \times 1080)/60$ Hz	
HDMI 4 Output	1080P (1920 × 1080)/60 Hz	
VGA 1 Output	1080P (1920 × 1080)/60 Hz	
VGA 2 Output	1080P (1920 × 1080)/60 Hz	
	Mode 1 (default output mode): simultaneous output with 1080p resolution;	
	Mode 2 (simultaneous output): HDMI 1, VGA 1, HDMI 2, VGA 2, HDMI 3, and HDMI 4 provide simultaneous output, the maximum resolution for VGA 1/VGA 2/HDMI 4 is 1080p, the maximum resolution for HDMI 1/HDMI 2/HDMI 3 is 4K;	
Video Output Mode	Mode 3 (independent output and 8K HDMI 3 output resolution): HDMI 1/VGA 1/HDMI 2/VGA 2, HDMI 3, and HDMI 4 provide independent output respectively. The maximum resolution is 8K + 4K + 1080p;	
	Mode 4 (independent output and HDMI 3 output resolution $\leq$ 4K): HDMI 1/VGA 1, HDMI 2/VGA 2, HDMI 3, and HDMI 4 provide independent output respectively. The maximum resolution is 8K × 4K + 1080p.	
HDMI Input	1-ch	
HDMI Loopback	1-ch (matching the HDMI input)	
Audio Output	2-ch, RCA (Linear, 1 KΩ)	
Two-Way Audio	1-ch, RCA (2.0 Vp-p, 1 k Ω)	
Decoding		
Decoding Format	H.265/H.265+/H.264/H.264+	
Decoding Capability	2-ch@32 MP (30 fps)/2-ch@24 MP (30fps)/4-ch@16 MP (30fps)/8-ch@8 MP (30fps)/16-ch@4 MP (30fps)/32-ch@2 MP (30fps)	
Synchronous Playback	16-ch	
Recording Resolution	32 MP/24 MP/12 MP/8 MP/6 MP/5 MP/4 MP/3 MP/1080p/UXGA/720p/VGA /4CIF/DCIF/ 2CIF/CIF/QCIF	
Network		
Remote Connection	128	
Network Protocol	TCP/IP, DHCP, IPv4, IPv6, DNS, DDNS, NTP, RTSP, SADP, SMTP, SNMP, NFS, iSCSI, ISUP, UPnP [™] , HTTP, HTTPS, ONVIF (version 2.2), OTAP	
API	ONVIF (profile S/G); SDK; ISAPI	
Compatible Browser	IE11, Chrome V57, Firefox V52, Safari V12, Edge V89, or above version	
Network Interface	4, RJ-45 10/100/1000/2500 Mbps self-adaptive Ethernet interface	
Camera Access Protocol	ONVIF (version 2.5), RTSP	
RAID		
RAID Type	RAID 0, RAID 1, RAID 5, RAID 6, RAID 10	
Auxiliary Interface		

SATA	8 SATA interfaces; 3.5-inch HDD	
eSATA	1 eSATA interface	
Capacity	Up to 20 TB capacity for each HDD	
Serial Interface	1 RS-232, 2 RS-485 (half-duplex)	
USB Interface	Front panel: $2 \times \text{USB} 2.0$ ; Rear panel: $4 \times \text{USB} 3.0$	
Alarm In/Out	16 input & 8 output	

Software Server			
Feature	Technical Specification	Bidder's Response	
Hardware Specifications			
СРИ	4410T x 1, 2.7G Hz, 26.25MB Cache, 10 Cores, 20 Threads		
	Standard Config: 1 x 32GB RDIMM, 4800MT/s;		
Memory	Slots : Single CPU with 8 slots available, dual CPUs with 16 slots available		
Hard Disks	Standard Config: 960GB SSD×2(RAID_1) + 2TB 7.2K SATA HDD ×2(RAID_1)		
	Slots : 8 3.5-inch slots in total		
Storage Controller	Standard Config: PERC H355 adaptor LP (support RAID 0/1/10)		
Supported Operating Systems	WinSvr2022 multilingual version pre-installed		
PCIe Slots	Slots : Single CPU with 4 PCIe slots, dual CPUs with 6 PCIe slots		
Management			
Remote Manage	iDrac9 Enterprise		
OpenManage [™] Software	Support OpenManage Enterprise and Plugins (PowerManager, SupportAssist, and Update Manager)		
Internetions and Commutisms	Integrations: Microsoft® System Center, VMware® vCenter [™] , BMC Truesight (available from BMC), Red Hat Ansible;		
Integrations and Connections	Connections: Nagios Core & Nagios XI, Micro Focus Operations Manager i (OMi), IBM Tivoli Netcool / OMNIbus		
Security	Support Cryptographically signed firmware; Secure Boot; Secure Erase; Silicon Root of Trust; System Lockdown (requires iDRAC9 Enterprise or Datacenter);		
Ports			
USB 3.0	0 (Front) +1 (Rear)		
USB 2.0	1 (Front) +1 (Rear)		
Ethernet Port	6 x 1GbE		
VGA	2		
iDRAC Direct (Micro-AB USB) Port	1		
iDRAC Ethernet Port	1		

24-slot Single Controller Storage			
Feature	Technical Specification	Bidder's Response	
Network			
Protocol	iSCSI, RTSP, ONVIF, PSIA		
External interface			
USB	2*USB3.0, 1*USB2.0		
VGA	Supported		
Data network interface	4, 1000M Ethernet interface( $4 \times GbE$ or $2 \times 10GbE$ is extendable)		
MiniSAS interface	1		
COM	1		
Management network interface	1, 1000M Ethernet interface		
Storage			
HDD slot	24		
Interface/capacity	SATA/1 TB, 2 TB, 3 TB, 4 TB, 6 TB, 8 TB, 10 TB, 12 TB, 14 TB, 16 TB		
Hot-swapping	Supported		
HDD support	RAID(Enterprise Hard Disk)		
RAID	RAID 0, 1, 3, 5, 6, 10, 50, JBOD, Hot-Spare		
Performance			
Direct Streaming Mode: video (2	_ 512-ch		
Mbps) + picture			
Hardware			
Structure	Controller Structure		
Processor	64-bit multi-core processor		
Cache	4 GB (extendable to 64GB)		
Storage Management			
Disk management	Disk inspection, alarm and repair		
Logical volume management	iSCSI volume, video volume management		
Recording Management			
Recording mode	Timing recording, manual recording, alarm recording		
Video protection	Lock key video, N+1 service protection, ANR, video loss detection and alarm		
Searching mode	Search by time and event		
Downloading mode	Quick download, batch download, download by segment, download by merging		
Device Maintenance			
Management mode	Web-based GUI, serial port CLI, centralized management of multiple devices		
Alarm mode	Sound, light, email, message, web page		
Log downloading	Download on web page		

# ACCESS CONTROL SYSTEMS

Access Control Terminal			
Feature	Technical Specification	Bidder's Response	
System			
Operating system	Linux		
Audio	·		
Audio output	1 built-in buzzer		
Network			
Bluetooth	Support		
Wired network	10/100 Mbps self-adaptive		
Wi-Fi	2.4 GHz, IEEE802.11b, 802.11g, 802.11n, 802.11d, 802.11e, 802.11h, 802.11i		
Interface			
RS-485	1, supports OSDP		
Network interface	1		
Wiegand	Wiegand 26/34		
Lock control	1		
Exit button	1		
Door contact input	1		
Alarm input	2		
Alarm output	1		
TAMPER	1		
Capacity			
Card capacity	10,000		
Fingerprint capacity	3000		
Event capacity	100,000		
Authentication			
Card type	M1 card		
Card reading distance	0 to 4 cm		
Card reading duration	< 1 s		
Fingerprint module	Optical fingerprint module		
Fingerprint comparing mode	1:1 and 1:N		
Fingerprint recognition duration	< 1 s		
Function	·		
Configuration via Web Browser	Support PC web configuration and mobile web operation		

# TYPE A ACCESS CONTROL

Feature	Technical Specification	Bidder's Response
Display		
Screen size	7 inch	
Operation method	Capacitive touch screen	
Туре	IPS	
Face		
Recognition distance	0.3 to 3 m	
Face recognition duration	n < 0.2 s/User	
Face recognition accuracy rate	≥ 99%	
Capacity	10,000 face capacity, 10,000 fingerprint capacity (With fingerprint module), 50,000 card capacity, and 150,000 event capacity	
Mode	Supports single person and multiple people (Up to 5 people) recognition	
Video		
Lens	2	
Resolution	2 MP	
FOV	HFOV = 75.5°; VFOV = 41.5°; DFOV = 87°	
Audio		
Audio quality	Built-in omnidirectional microphone	
Network		
Wired network	Support	
Wi-Fi	Support, 2.4 G, 802.11b/g/n	
Interface		
Network interface	1 RJ-45, 10/100/1000 M self-adaptive	
Lock control	1	
Exit button	1	
Door contact input	1	
Alarm input	2	
Alarm output	1	
TAMPER	1	
RS-485	1 RS-485 (Half duplex)	
Wiegand	1 Wiegand	
USB	1 (For Module)	
Audio output interface	1 (3.5 mm)	
Authentication		
Card type	M1 card, DESfire card, Felica card	
Function		
Face anti-spoofing	Support	

### NETWORK SWITCHES

Feature	Technical Specification	Bidder's Response
Port Number	24 Gigabit electrical ports and 6 10 Gigabit SFP+ optical port	
Forwarding Mode	Store-and-forward switching	
MAC Address Table	32 K	
Switching Consoity	Whole-Device Performance:168 Gbps	
Switching Capacity	Port Performance:168 Gbps	
De chet Fermandin e Dete	Whole-Device Performance:124.99 Mpps	
Packet Forwarding Rate	Port Performance:124.99 Mpps	
	Support Console, Telnet, SSH	
	Support web, http, https	
Device Maintenance	Support FTP, TFTP, Xmodem, SFTP	
Device Maintenance	Support SNMP V1/V2c/V3	
	Support RMON	
	Support NTP	
	Support STP/RSTP/MSTP	
	Support EAPS/MEAPS	
	Support MRD-Ring	
Reliability	Support ERPS	
	Support VRRP	
	Support BFD for OSPF	
	Support BFD for BGP	
	Support IEEE 802.1Q (VLAN), 4096 VLAN IDs	
	Support GVRP	
	Support QinQ	
VLAN	Support VLAN based on MAC/ protocol /IP subnet / policy / port	
	Support Private VLAN	
	Support 1:1 and N:1 VLAN Mapping functions	
	Support local and remote port mirroring	
David Minnanin a	Support N:4 port mirroring	
Port Mirroring	Support flow mirroring	
	Support MAC mirroring	
	Support Static routing, RIP, OSPF,BGP,MPLS	
	Support IPv4/IPv6 ECMP	
Routing	Support VRRP, VRRP v3	
Ŭ	Support IPv4/IPv6 Policy-based routing	
	Support IPv4/IPv6 Routing policy	
	Support IPv4/IPv6 dual stack	

	Support IPv6 static routing, RIPng, OSPFv3	
	Support Diff-Serv QoS	
	Support 802.1p/DSCP priority mapping	
	Support Queue scheduling including SP, WRR, WFQ, SP+WRR, SP+WFQ	
	Support Priority marking and remarking	
QoS	Support Traffic shaping	
	Support Congestion avoidance, Tail-Drop and WRED	
	Support 802.1p, TOS, DSCP, and EXP priority mapping	
	Support Port/Flow- based Rate Limiting	
	Support IGMP v1/v2/v3 Snooping	
Multicast	Support IGMP V1/V2/V3	
WithCust	Support MLD Snooping v1/v2	
	Support MLD v1/v2	
	Support IP-based ACL/MAC-based ACL	
ACL	Support based on MAC Address, IP Address, Ethertype, Protocol Type, VLAN ID, DSCP, 802.1p Priority	
	Support up to 256 ACLs	
Link Aggregation	Support IEEE 802.3ad LACP/static link aggregation	
	Support AAA,TACACS+ Radius Authentication	
	Support 802.1X authentication, MAC authentication, MAC bypass authentication	
Security	Support to prevent DOS, ARP attack function, ICMP anti attack	
Security	Support binding of IP, MAC, port and VLAN	
	Support MAC authentication	
	Support MAC address filtering	
	Support Broadcast/Multicast/Unknown- unicast Storm Control	
Shell	Iron shell, Fan cooling design	
weight	3.4 kg (7.50 lb)	
Dimension $(W \times H \times D)$	$440 \text{ mm} \times 44 \text{ mm} \times 280 \text{ mm}$	
Operating Temperature		
Storage Temperature	-20°C to 70°C (-4°F to 158°F)	
Operating Humidity	10% to 90% (no condensation)	
Relative Humidity	5% to 95% (no condensation)	
Dowor Sumple	AC: 100V-240V, 50/60Hz	
Power Supply	Hot plug dual power supply optional	
Power Consumption in Idle	75 W	

Edge Switch		
Feature	Technical Specification	Bidder's Response
Service ports	24×10/100/1000BASE-T ports (POE+), 4×1000Base-X SFP ports.	
Switching capacity	Whole-Device Performance:56 Gbps	
Switching capacity	Port Performance:56 Gbps	
Packet forwarding rate	Whole-Device Performance:41.66 Mpps	
	Port Performance:41.66 Mpps	
Management port	1 Console port	
Electrical port attribute	Half-duplex, full-duplex, and auto-negotiation	
Electrical port attribute	MDI/MDI-X	
POE	POE+ with the maximum 30w output power per port	
	LLDP	
	Static MAC configuration	
	Limit of number of MAC addresses to be learned (up to 8K)	
Ethernet functions	Port mirroring and traffic mirroring	
Emernet functions	Port aggregation (up to 24 groups and 8 ports for each group)	
	Port isolation	
	STP/RSTP/MSTP	
	IEEE 802.3ad (dynamic link aggregation) and static port aggregation	
	802.1Q (up to 4K VLAN)	
	Protocol-based VLAN	
	MAC-based VLAN	
VLAN	GUEST VLAN	
	VLAN mapping	
	MVRP	
IP routing	Static routing	
6	DHCP Relay	
DHCP	DHCP Client	
biler	DHCP Snooping	
	IGMP V1/V2/V3 snooping	
	PIM Snooping	
Multicast	Multicast VLAN	
	IPv6 multicast setting	
	SP/WRR/SP+WRR queue scheduling	
QoS	802.1p and DSCP priority mapping	
	Port speed limit	
	ACL on Layer 2, Layer 3 and Layer 4	
ACL	IPv4 and IPv6 ACLs	
	VLAN ACL	
	IPv6 static routing and dual-stack	
	DHCPv6 Client and DHCPv6 Snooping	
IPv6	ND and PMTU	
	IPv6 Ping, IPv6 Telnet, IPv6 SSHv2, and IPv6 domain name resolution	

	Ethernet OAM
	DLDP
Reliability	Smart Link
	Monitor Link
	Hierarchical user management and password protection
	SSH for a secure encrypted channel for user login
	Specific IP address based FTP logging and password mechanism
	Prevent attacks from ARP, unknown multicast packet, broadcast packet, unknown unicast packet, TTL=1 packet, and protocol packet
	MAC address limit
Security	IP+MAC+PORT binding
	IEEE 802.1x
	Radius and AAA
	SNMPv3
	Broadcast suppression
	Command line configuration via console/AUX Modem/Telnet/SSH
	Uploading and downloading of FTP, TFTP, and Xmodem, and SFTP files
	SNMP V1/V2c/V3
System management	sFlow
	NQA
	NTP clock
	System operating logs

Edge Switch		
Feature	Technical Specification	Bidder's Response
Service ports	24×10/100/1000BASE-T ports (POE+), 4×1000Base-X SFP ports.	
Switching capacity	Whole-Device Performance:56 Gbps Port Performance:56 Gbps	
Packet forwarding rate	Whole-Device Performance:41.66 Mpps Port Performance:41.66 Mpps	
Management port	1 Console port	
	Half-duplex, full-duplex, and auto-negotiation	
Electrical port attribute	MDI/MDI-X	
POE	POE+ with the maximum 30w output power per port	
	LLDP	
	Static MAC configuration	
	Limit of number of MAC addresses to be learned (up to 8K)	
	Port mirroring and traffic mirroring	
Ethernet functions	Port aggregation (up to 24 groups and 8 ports for each group)	
	Port isolation	
	STP/RSTP/MSTP	
	IEEE 802.3ad (dynamic link aggregation) and static port aggregation	
VLAN	802.1Q (up to 4K VLAN)	

	Protocol-based VLAN	
	MAC-based VLAN	
	GUEST VLAN	
	VLAN mapping	
	MVRP	
IP routing	Static routing	
	DHCP Relay	
DHCP	DHCP Client	
	DHCP Snooping	
	IGMP V1/V2/V3 snooping	
	PIM Snooping	
Multicast	Multicast VLAN	
	IPv6 multicast setting	
	SP/WRR/SP+WRR queue scheduling	
QoS	802.1p and DSCP priority mapping	
	Port speed limit	
	ACL on Layer 2, Layer 3 and Layer 4	
ACL	IPv4 and IPv6 ACLs	
	VLAN ACL	
	IPv6 static routing and dual-stack	
	DHCPv6 Client and DHCPv6 Snooping	
IPv6	ND and PMTU	
	IPv6 Ping, IPv6 Telnet, IPv6 SSHv2, and IPv6 domain name resolution	
	Ethernet OAM	
<b>D U U</b>	DLDP	
Reliability	Smart Link	
	Monitor Link	
	Hierarchical user management and password protection	
	SSH for a secure encrypted channel for user login	
	Specific IP address based FTP logging and password mechanism	
	Prevent attacks from ARP, unknown multicast packet, broadcast packet, unknown unicast packet, TTL=1 packet, and protocol packet	
Security	MAC address limit	
	IP+MAC+PORT binding	
	IEEE 802.1x	
	Radius and AAA	
	SNMPv3	
	Broadcast suppression	
	Command line configuration via console/AUX Modem/Telnet/SSH	
System management	Uploading and downloading of FTP, TFTP, and Xmodem, and SFTP files	
	SNMP V1/V2c/V3	
	sFlow	

NQA	
NTP clock	
System operating logs	

## UNINTERRUPTED POWER SUPPLY SYSTEMS

# **1.5KVA,3KVA, 6KVA, 10KVA, DOUBLE CONVERSATION UPS SPECIFICATIONS** Note that for

1.5KVA,3KVA, 6KVA, 10KVA, DOUBLE CONVERSATION

No.	Parameter	Requirement	<b>Bidders Compliance</b>
1.	Nominal capacity	10kVA	
	(kVA) / Power (kW)	6 kVA	
	per module	3 kVA	
1.1	UPS type	On-line double conversion UPS	
1.2	Parallel operations	Parallel redundant configuration	
	-	maximizing the availability	
1.3	Design	Rack/Tower convertible design	
2.	Input		
2.1	Nominal voltage	230VAC 1-phase	
2.2	Voltage range	160 to 280 Vac	
2.3	Frequency and range	50 Hz, 45 to 65 Hz	
2.4	Input Power Factor	>0.99	
2.5	Current THD	< 5% (at 100% non-linear load)	
3.	Output		
3.1	Nominal voltage	230VAC $\pm 2\%$ with pure sine	
	_	wave	
3.2	Frequency	50Hz	
3.3	Harmonic distortion	< 2% (linear load) / < 5% (non-	
		linear load)	
3.4	Crest factor	3:1	
3.5	Efficiency	ECO-mode $\geq 98\%$ / Normal mode	
		≥90%	
3.6	Mode of operation	On-line double conversion	
4.	Battery		
4.1	Autonomy time internal	50% load (> 15mins)	
	battery (min.)	100% load (> 5mins)	
4.2	Additional backup time	Allow for external battery cabinet	
4.3	Charging Parameters	Built in super smart charger, shorten	
		50% of charging time	
5.	Protection		
5.1	Input / Output	Overload, Overheating, Short	
		Circuit, Battery Low, Noise and	
		Spike Suppression	
5.2	Overload AC-Mode	104% continuous, 150% for 160	
		seconds, >150% transfer to	
		bypass	
5.3	Overload Battery Mode	$\leq 110\%$ - 30sec / $\leq 125\%$ - 1sec /	

		≤150% - 200msec	
5.4	Overload Bypass Mode	Input Breaker 60A	
6.	Alarms - Indication		
6.1	Audible alarm	Beeping sound for Line Failure, Battery Low, Bypass - Overload Status, Fault Status	
6.2	LED-Alarm	Line - Backup - Eco Mode, Bypass, Battery Low/Bad/Disconnect, Overload, Fault	
6.3	LCD-Display	Big touchscreen display 5"	
7.	Bypass		
7.1	Туре	Internal static (automatic) and manual bypass / External bypass optional	
7.2	Bypass voltage range	Max. Voltage: +15 % (optional +5/10/25%) / Min. voltage: -45% (optional -20/30%) Frequency protection range: $\pm 10\%$	
8.	Standards		
8.1	Quality assurance, environment, health and safety	Quality assurance, environment, health and safety	
8.2	Safety	IEC/EN 62040-1	
8.3	EMC	IEC/EN 62040-2	
8.4	Marking	СЕ	
8.5	Protection class	IP20	
9.	Environment		
9.1	Temperature	Working temperature: 0 - 40°C / Storage temperature: -25 - 55°C	
9.2	Humidity / Altitude	0-95% non-condensing / < 2000m	
9.3	Audible noise at 1m	<50dB /1m according to EN62040-2	
10.	Interface		
10.1	In the cabinet	RS232 / RS485 / 2 free slots / dry contacts / EPO - software included	
10.2	In the module	RS232, USB, Ethernet	
10.3	Networking	SNMP-Adapter	
10.4	Battery capacity	UPS system shall provide BackUP power for four (4) hours	

ADDITIONAL INFORMATION CCTV

**1. Inspection, testing and commissioning** On completion of installation, all the equipment and installations shall be inspected jointly by the

Employer and the Contractor for their correctness and completeness at the site of installation during acceptance tests.

Any other tests, as Employer may deem fit so as to confirm the performance or to establish the compliance to technical specifications of either individual hardware items or integrated operation of Access Control system shall be conducted by the Contractor at site. Should the results of these tests show any deficiency/deviation to specifications, the contractor shall do the modification/replacement/addition necessary to make the system compliant to specifications at own cost.

All Hardware and software comprising the Biometric Time and Attendance system installed at each of the stations within the scope of the tender shall be put on reliability test for 30 days before the Employer issues the certificate of successful commissioning.

#### **Taking Over**

The system shall be taken over by the Employer from the contractor after the successful completion of site test and commissioning as per the tests mentioned above. A completion certificate will then be issued.

#### SCOPE OF WORKS

Scope of work under this section covers:

- i. The provision of labour, tools, material and performance of work necessary for the design, manufacture, quality assurance, quality control, assembly, testing, delivery at site, site storage and preservation,
- ii. Installation & commissioning,
- iii. Performance & acceptance testing both at the Factory and at site ,
- iv. Training of Employer's personnel both local and overseas,
- v. handing over to Employer and guarantee of the complete system, as per specification hereunder, each complete with all accessories,
- vi. Supply of spare parts and warranting trouble free safe operation of the installations,
- vii. Providing maintenance support (Including supply/replacement of spares) during the warranty period and, if desired by the Employer also during post warranty period.
- viii. Installation and commissioning of the local area network (Hardware, software and cabling) on which the system will run.
- ix. The contractor shall provide all the required equipment and services, whether explicitly mentioned in these specifications or not to fulfill the intent of the specification and to ensure

the completeness, operation and maintainability of the system at no extra cost to the Employer.

- x. The Tenderer is required to submit with their offer the detailed specifications, drawings, catalogues, brochures etc. for the equipment they intend to supply.
- xi. It shall be in the scope of the tenderer to acquire any requisite authorizations or licensing from local authorities where applicable, that may be required in the course of the project
- xii. The Tenderer shall be required to present information along with their offers as follows:
  - Shortest possible delivery period of the product.
  - Information on proper representative and/or equipped local workshop for back-up service/repair and certified personnel including their names and addresses.
  - i. Installation of the Server Workstations inclusive of the attendant operating software, management software and necessary peripherals such as the mouse, keyboard and connection to a power socket outlet
  - ii. Installation of Client Workstations inclusive of the attendant operating software, client management software and necessary peripherals such as the mouse, keyboard and connection to a power socket outlet
  - iii. Installation of Access control systems at the specified doors of the control center's which are suitable to withstand the required environment. The Access controllers will be PoE or 12VDC and be single door controllers, any loss in connection to the central database will allow each controller to act as a "stand-alone" unit.
  - iv. Installation, mounting and configuration of external storage equipment
  - v. Installation and termination of PoE switches inclusive of all attendant Category 6a Ethernet cables, all required media converters and ftp cables
- vi. Conduct FATs at manufacturers premises witnessed by KPLC Engineers
- vii. Conduct Site Acceptance Tests as witnessed by KPLC Engineers
- viii. Conduct comprehensive training of KPLC Engineers and Staff
- ix. Providing maintenance spares
- x. Providing maintenance tools.
- xi. Providing at least 3 Year warranty on CCTV(cameras,NVRS etc and Access control equipment and 1year warranty on all other devices and equipment.
- xii. The contractor shall ensure that before the completion of the project, at least four copies of the relevant manuals and documentation, including as built drawings are availed to KPLC in hard copy and soft copy forms.

#### 2. PRE-BID SURVEY

Prior to submitting the bids, bidders shall visit each of the stations accompanied by KPLC staff to ascertain for themselves the requirements for each station at own cost. During this survey, a sketch for the installations shall be carried out and the transmission requirements

determined. This sketch shall indicate the location of the various components and the required mounting structures and cabling. The bidder must conduct the mandatory site survey and submit the project plan and detailed design together with the bid that should include:

- (i) Site survey report and connectivity diagrams.
- (ii) Design Documents (Network servers, storage servers, IP readers and their locations as well as power supply cabling)
- (iii) A detailed Work Breakdown Structure and project plan that outlines all tasks, milestones, durations, and resources needs.

## 3. Site Acceptance Tests

- 1.1. Satisfactory performance of the whole system, simulating all inputs, outputs and foreign device communications must be demonstrated to the satisfaction of KPLC.
- 1.2. The systems TCP/IP communication shall form a mandatory part of these tests upon which their failure shall make the whole project be revoked at the contractor's cost.

## **IMPORTANT!**

The Contractor shall provide complete test procedure for approval and acceptance by KPLC.

The system shall be fully operable and fully tested to the satisfaction of KPLC.

The tests to be carried out by the Contractor shall include a total system test, as detailed below, verifying all inputs and outputs for correct operation, the operation of external alarms and external communications interface.

The system tests shall be carried out on the complete system.

The following headings are recommended as minimum requirement and shall be developed in detail during implementation of the test procedures.

- i. Inspection of equipment
- ii. Power Supply Variations
- iii. Functional Tests including:
  - Operating Software Control functions.
  - Failure and interaction between systems.
  - Systems Diagnostic Tests, including self-test facilities.
  - System functional and fault alarms.
  - Offline and online operation without system fail

#### **Pre-Commissioning & Commissioning**

i. **Pre-commissioning** 

It shall be the responsibility of the Contractor to carry out tests / inspections necessary to prepare the installations for commissioning and site acceptance tests. Such tests and inspections shall be carried out on individual equipment and in groups where possible. KPLC reserves the right to attend such tests.

#### ii. Commissioning

- It shall be the Contractor's responsibility to prepare a commissioning Specification for approval by KPLC prior to the equipment being shipped.
- The Contractor may be required to have engineers on site during the commissioning of the plant. These engineers shall be authorised to carry out any modifications or repairs as may become necessary, and shall be competent to do so.
- On completion of commissioning, the entire system will be subject to final site acceptance tests that are a repeat of the factory acceptance tests and any other tests as proposed by the purchaser that could not have been achieved during the FAT.
- The Contractor shall be responsible for updating all As-Built documentation and drawings.

## Documentation

The following documentation must be supplied before installation

- i. Electrical drawing of each System in a station Approved PLAN
- ii. Cable Layout drawings for the stations Approved PLAN
- iii. Equipment modules manuals
- iv. Functional Design Specification- Approved PLAN

The following documentation must be supplied after installation and commissioning

- i. Functional Design Specification- Approved AS-BUILT
- ii. Electrical drawing of each System in a station- AS-BUILT
- iii. Cable Layout drawings for the stations AS-BUILT

## TRAINING SPECIFICATIONS

The bidder shall factor the following:

- (i) Submission of detailed training schedule and course outline in respective category/Lot biding for ,outlining the objective, training grade, qualifications or experience attained in various modules, pre-training registration requirement, and post training follow up courses.
- (ii) Training shall include Pre-installation, on-installation and Post-installation phases.
- (iii)Local Pre-installation training shall prepare the client on necessary preparation for the environment under which the systems will operate, outlining all necessary requirement for client's preparation
- (iv)Oversee training shall include all necessary cost of hiring the facility, trainers, movement to and from training ground, meals and refreshment during the training period
- (v) Provision of all necessary training materials including manuals/notes both hardcopy and softcopy on Flash-disk, files, writing materials etc.
- (vi)Training certifications
- (vii) Any necessary registration and access to manufacturer portals
- (viii) The cost for travelling and accommodation shall be processed upon guidance and approval by Kplc as per approved rates by the company.
- (ix)A training report shall be submitted at the end of every training.
- (x) The bidder shall take care of transport logistic to and from the place of accommodation and training venue.

#### **Additional information on Training**

- i. The training shall be offered to selected staff from Engineering and Security Department.
- ii. The selected staff shall possess minimum technical qualifications / knowledge to understand systems.
- iii. The methodology of the training shall be developed on the vendor's experience in the design, construction, operation and maintenance of Surveillance systems
- iv. The methodology of training shall include the following as a minimum:
  - Two week classroom training with slide presentation and written materials
  - Field training at site
  - Furnishing the final report with comments to be followed up for the improvement of staff skills.
  - Provision of certificates to participants who attend the full training.
- **1.** The basic structure of the training shall include, as a minimum:
  - Operation and maintenance of the complete CCTV and Access control system
  - The Vendor shall provide a concise training programme with the quote for approval by KPLC.
  - The Vendor shall include the training duration in the training programme.
  - Training shall be conducted in English

## Site Acceptance Tests

- 1.3. Satisfactory performance of the whole system, simulating all inputs, outputs and foreign device communications must be demonstrated to the satisfaction of KPLC.
- 1.4. The systems TCP/IP communication shall form a mandatory part of these tests upon which their failure shall make the whole project be revoked at the contractor's cost.

## **IMPORTANT!**

The Contractor shall provide complete test procedure for approval and acceptance by KPLC. The system shall be fully operable and fully tested to the satisfaction of KPLC.

The tests to be carried out by the Contractor shall include a total system test, as detailed below, verifying all inputs and outputs for correct operation, the operation of external alarms and external communications interface.

The system tests shall be carried out on the complete system.

The following headings are recommended as minimum requirement and shall be developed in detail during implementation of the test procedures.

- iv. Inspection of equipment
- v. Power Supply Variations
- vi. Functional Tests including:

Operating Software Control functions. Failure and interaction between systems. Systems Diagnostic Tests, including self-test facilities. System functional and fault alarms. Offline and online operation without system fail