Kenya Airports Authority

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KAA/OT/EIA/0256/2023-2024

6th June, 2024

To: All Tenderers

RE: SUPPLY, INSTALLATION AND COMMISSIONING OF AIRPORT EMERGENCY CRASH ALARM AT ELDORET INTERNATIONAL AIRPORT

TENDER NO. KAA/OT/EIA/0256/2023-2024

ADDENDUM NO. 2

The following are tender clarifications/addendum issued in accordance with clause 10.3 regarding the above tender.

No.	Clause /Clarification	Response
1	1. Section V: Technical Specification 2. Section VI: Schedule of Requirements 3. Section VII: Price Schedule for Goods	Bidders are hereby informed that the original Technical Specification, Schedule of Requirements and Price Schedule for goods has been expunged and replaced in its entirety with Annex document No.1

The closing/opening date remains **13th June, 2024 at 11:00 am**

Kindly ensure your tender is valid for a period of **126 days** and your tender security is valid for a period of 156 days from the NEW closing/opening date of **13th June, 2024 at 11.00. a. m.**

This addendum forms part of the bidding document and is binding on all bidders. All other conditions remain the same.

Vincent Korir
GM (PROCUREMENT AND LOGISTICS)
For: MANAGING DIRECTOR/CEO

SECTION V: TECHNICAL SPECIFICATIONS

5.1 GENERAL

5.1.1 These specifications describe the basic requirements for equipment. Tenderers ærequested to submit with their offers the detailed specifications, drawings, catalogues, etc for the products they intend to supply.

5.1.2 Tenderers must indicate on the specifications sheets whether the equipment comply with each specific requirement.

5.1.3 All the dimensions and capacities of the equipment to be supplied shall not be lessthan those required in these specifications. Deviations from the basic requirements, if any, shall be explained in detail in writing with the offer, with supporting data such as calculation sheets, etc. The procuring entity reserves theright to reject the products, if such deviations shall be found critical to the use and operation of the products.

5.1.4 The tenderers are requested to present information along with their offers asfollows;-

(i) Shortest possible delivery period of each product

(ii) Information on proper representative and/or workshop for back-up service/repair and maintenance including their names and addresses.

5.2 PARTICULARS

5.2.1 Acronyms used in these Technical Requirements

Term	Explanation
KAA	Kenya Airports Authority
EIA	Eldoret International Airport
ARFF	Airport Rescue and Fire Fighting
ATC	Air Traffic Control
ATCT	Air Traffic Control Tower
QoS	Quality of Service
LAN	Local Area Network
SNMP	Simple Network Management Protocol
DHCP	Dynamic Host Configuration Protocol
NTP	Network Time Protocol
RTP	Real-time Transport Protocol
SIP	Session Initiation Protocol
IGMP	Internet Group Management Protocol
FXS	Foreign Exchange Subscriber
FXO	Foreign Exchange Office
VLAN	Virtual Local Area Network
VoIP	Voice over Internet Protocol
PBX	Private Branch Exchange System
TDM	Time Division Multiplexed
AMC	Annual Maintenance Contract
OEM	Original Equipment Manufacturer
FXS	Foreign Exchange Subscriber
FXO	Foreign Exchange Office
AC	Alternating Current
Hz	Hertz (cycles per second)

5.2.2 Summary and Background

A. KAA is currently accepting bids to deploy an Airport Emergency Crash Alert System at Eldoret International Airport (EIA) of the latest technology so as to further improve the emergency response services at EIA.

B. The prompt and efficient response of a modern Aircraft Rescue and Firefighting (ARFF) service depends on the reliability of its communications and alarm systems.

C. The deployment of a new VoIP technology is expected to enhance reliability and add features that are expected to reduce response times for ARFF personnel and relevant first responders.

D. EIA is seeking a provider to utilize the latest technology to create a Crash Alert System that is scalable, easy to maintain, and incorporates user-friendly features.

E. Implementations shall be carried out at Eldoret International Airport where the entry will be restricted and only pass holders shall be allowed to Airport Access. Hence, it will be the responsibility of the contractor to arrange entry passes for its staffs & vehicles including payment for issue of entry pass as applicable for which nothing extra will be paid by KAA.

5.2.3 System Description

A. Airports must have procedures and equipment that, in the event of an actual or potential aircraft accident, alert Airport Rescue and Fire-Fighting (ARFF) personnel must respond to specific staging points within a matter of minutes.
B. Operation of a crash phone system shall be automatic and extremely simple which is important and appropriate for an emergency communications system.
C. Personnel in the ATCT at the airport where the endangered aircraft is beingcontrolled typically shall initiate the emergency crash call.
D. By default, the ATCT controller shall simply pick up the phone handset and the other entire phones shall ring.
E. After a few seconds to allow the parties to answer, the ATCT shall provide information necessary for the response: alert type, location, runways affected, aircraft type, number of passengers and crew on board, fuel levels, airline flightnumber, and estimated time of arrival if the aircraft is still inbound.
F. The ARFF personnel will respond immediately by going to their designated staging position while the airport operations staff typically will repeat the particulars of thealert in a radio dispatch.

5.2.4 Scope of Work

A. The scope of work shall include Design, Supply, Installation, Testing and Commissioning, Handing over of airport emergency crash alarm/phone system at Eldoret International Airport.

B. This project may use existing Airports-provided communication network to all end points. Existing LAN infrastructure, are intended to be used with the new system. However the system should be able to operate independently.

C. The provider shall utilize the latest IP technology to create a Crash Alert Systemthat is scalable, easy to maintain, and incorporates user-friendly features.

5.2.5 Submittals

A. Manufacturer's Product Data: Bidders shall submit manufacturer's data sheets indicating systems and components proposed for use, including instruction manuals.

B. Shop Drawings: Bidders shall Submit complete shop drawings including connectiondiagrams for interfacing equipment, list of connected equipment, and locations for major equipment components.

C. Record Drawings: During construction, Bidders shall maintain record drawings indicating location of equipment and wiring. Electronic version of record drawingsshall be submitted not later than Substantial Completion of the project.

D. Operation and Maintenance Data: Bidders shall submit manufacturer's operation and maintenance data, customized to the system installed, including system and operator manuals.

E. Field Tests: Bidders shall submit results of field-testing of every device includingdate, testing personnel, retesting date if applicable, and confirmation that everydevice passed field-testing.

F. Maintenance Service Agreement: Bidders shall submit a sample copy of the manufacturer's maintenance service agreement, including cost and services for a one-year period for Owner's review. Maintenance shall include, but not be limitedto; labor and materials to repair the system provide test and adjustments, and regular inspections.

5.2.6 Quality Assurance

A. Manufacturer: Minimum Five years' experience in manufacturing and maintainingEmergency Crash Alarm System. Manufacturer shall provide toll-free technical assistance and support available 24/7.

B. Manufacturing Location: Manufacturers shall provide details of location whereequipment were assembled.

C. Installer: Minimum three years' experience installing similar systems

5.2.7 Manufacturer Support

A. Manufacturer shall provide customer service, pre-sales applications assistance, after-sales technical assistance, access to technical online support, and online training using Web conferencing.

B. Manufacturer shall provide 24/7 technical assistance and support via a toll-free telephone number at no extra charge.

5.2.8 Schedule of Compliance

A. Bidders shall provide a schedule of compliance listing every sub clause of the technical requirements, with the words "complied" or "not complied" in line with the capabilities of the quoted system.

B. The use of the word "Noted" is inadequate and will be equated to "not complied". Where a clause is stated to be "not complied", but the Bidder feelsthat the capabilities of the system offered provide for an alternative but equallyeffective functionality, and then the Bidder can mention it. These clauses will be qualified by not complied with, but we offer an alternative. The Bidder shall provide enough documentation to back up their compliance claims. Reference to these documents shall be direct and specific.

C. Bidders shall provide complete information to substantiate compliance of the technical specification listed in the tender.

D. In case of incomplete compliance statement or inadequate information, tendersshall be finalized based on the information available.

E. It shall, therefore, be in the bidders' interest to give complete and comprehensive technical particulars while submitting the bid.

5.2.9 Inspection of Site

A. The bidder shall inspect and examine the site and its surrounding and shall satisfy the quantities and nature of work, materials necessary for completion ofthe work and their availability, means of access to site and in general to obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect his offer.

B. No extra claim consequent on any misunderstanding or otherwise shall beallowed.

C. The firm shall mention the time required for completing the job in their offer.

5.2.10 System Architecture and Design Requirements

A. The airport emergency crash alarm system shall be based on VoIP technologywith voice signals to be transmitted over an Ethernet network.

B. The system architecture shall be highly reliable and serviceable and shall be on its own secure virtual LAN (VLAN).

C. The system shall be an integration of IP Crash Phone and Alarm system in one network configuration.

D. The system shall be built from a crash phone, which conducts a conference between the ATC and responders when an emergency alarm is triggered.

E. The crash alarm shall be activated through a simple push of Alarm button, which then sends alerts to responders. Triggers bells, strobe-lights, horns, audio messages and turn-on lights

F. Technology shall be robust and scalable. The system shall be able to meet all the current and future requirements and shall have an architecture that would be capable of integration with other system. The required solution shall be based on high availability, redundancy and scalability considering 24x7 operation

G. The network's Quality of Service (QoS) settings for the crash phone shall be setat a level above any other traffic in the system.

H. The, switches and phone stations shall all be on protected emergency power.

I. All Ethernet switches and VoIP stations shall be continuously monitored.

J. System shall comply with Service Oriented Architecture that defines integrationof multiple applications in enterprise and point-to-point integration.

K. The VoIP implementation of the crash phone system shall deliver status indication to the participants, improving response time and situational awareness at the ATC tower.

L. The infrastructure shall be designed to avoid a "single point of failure"

M. The system shall be interconnected to the following:

(i) ATC Tower
(ii) Fire Station
(iii) Airport Administration office.
(iv) Ground Flight and safety office

N. At each calling station, there shall be alarm indicator, with audible ring bells and Crash IP phones. The outdoor horns shall have loud sound of over 100dB.

O. The System shall be able to send Recorded Messages and alert tones to all IResponders.

5.2.11 Project Management

A. The winning bidder shall provide a Project Management team that will handlethe planning, design, delivery, installation, configuration testing, training and maintenance of the Airport Emergency Crash Alarm System devices and peripherals will work in parallel with KAA - EIA representatives for the duration of the project.

B. The winning bidder must ensure that the project is completed within theagreed scope, budget and stipulated timeframe.

C. The Project Management team will be composed of a Project Manager/Team Leader, Assistant Team Leader, and team member representatives from the bidder in coordination with the KAA team.

D. The KAA Project Manager or representative will be the overall project leaderthat will oversee the activities of the project.

E. All issues/problems/correspondence will be coursed through the ProjectManager office for proper action.

F. Both parties (bidder and KAA representative) shall agree to the formulatedpolicies before the implementation/rollout proper.

5.2.12 Installation Works

A. The works shall be carried out under the supervision of the KAA, nominatedproject Manager according to the terms and conditions of the contract.

B. The work is to be carried out without hampering the routine works of the airport. The working time will be from 08:00AM to 5:00 PM with lunch breaksor including lunchtime as per works requirements.

C. The work is to be carried out in area of EIA where the entry will be restricted and only pass holders will be allowed to enter. Hence, it will be the responsibilityof the contractor to arrange entry passes for its staffs & vehicles including payment for issue of entry pass as applicable for which nothing extra will be paidby KAA.

D. The submission of applications for Temporary Passes in advance along with Certificate of Police Verification etc. as per the prevailing practice and regulations of KAA Security will be the responsibility of contractor. Any financial

expenditure involved such as fees for the passes, fees for Police Verification willbe borne by the contractor nothing extra will be paid by KAA.

E. The hours of working may also be restricted and the contractor may have totemporarily stop the work as per the operations/ site requirements/ instructionsof Site-in-charge, and other Airport Authorities.

F. All the labors, supervisory and other staff of the contractor shall abide by the instructions of the Airport authorities and Site-in-charge of the work.

G. It is the responsibility of the contractor to see that his staff do not misuse the entry permits. All the rules and regulations of KAA Security concerning the entrypasses shall be binding on the contractor.

H. The contractor shall be responsible for any damage to existing fixtures/cables, property, and will restore, replace or repair any such damage to the complete satisfaction of the Site-in-charge at free of cost. Its responsibility of contractorto remove the surplus materials after completion of work from the site and clean off the site completely.

5.2.13 Site Acceptance Test (SAT)

A. It will be the responsibility of the Bidder to submit the system test procedure for conducting the post installation site acceptance testing.

B. The procedure submitted by the vendor shall be drafted in line with the standard practices followed in the industry and shall in accordance with the test the OEM specify procedures & practices.

C. The acceptance test procedure on approval by KAA shall become the document for acceptance of the equipment after installation at the site. The draft copy of system test procedure shall be made available to KAA for approvalbefore at least seven (7) days of the schedule site acceptance date.

D. The system will be commissioned after successful completion of approved SAT,operational training and all the works under the scope of the tender.

5.2.14 Commissioning, Handover and Documentation

5.2.14.1 General

A. Bidders shall submit the necessary complete sets of documentation indicating type, size, rating, style, catalogue number, manufacturer's names, photographsand/or catalogue data sheets for all items to ensure compliance with Specifications.

B. The documentations shall be subject to the approval by the Project Manager during contract period and no equipment shall be ordered without his/her approval.

5.2.14.2 As-Built Drawings

A. During installation of the system, the Contractor shall put in writing all his remarks, during the progress of work, concerning any suggested alterationsfrom the shop drawings in wiring routes, locations of equipment or devicesthat arise from coordination between the system and other activities. No execution of alterations shall be allowed before receiving written approvalfrom the Engineer.

B. All alterations shall be registered and filed by the Contractors and extra copiesshall be submitted to the involved parties (Engineer, Project Manager, Site, etc.).

C. A complete as-built draft set of drawings and equipment schedules shall be prepared (15) days after completion of work for approval by the Engineer. Thedraft as built shall include all previously approved alterations.

5.2.14.3 Shop Drawings

A. Complete Airport Emergency Crash Alarm System diagram showing allcomponents and the size, type and number including layout interconnectivity.

B. Installation instructions and installation manuals.

C. Complete description of system components

D. Complete sequence of operations and functions of the system

E. Complete system-wiring diagrams for components and interfaces to equipment integrated with it.

F. A listing of the Original Equipment Manufacturers (OEM) manufacturer's authorized, local representative responsible for installation coordination and service.

5.2.14.4 Product Data

Bidders shall submit manufacturer's technical product data, including specifications and installations. Include standard detailed wiring diagrams, operation and maintenance instructions for inclusion in the maintenance manual.

5.2.14.5 Maintenance Data

A. The maintenance manual shall contain detailed sub system specifications, functional description, recommended maintenance schedule, test and adjustment procedures, circuit & layout diagrams of the equipment and other such information which helps in providing un-interrupted operation of the facility and should provide expected guidance to maintenance engineers in case of facility malfunctioning / break down.

B. The language of all manuals, instructions, technical documentation etc. providedunder this contract will be in ***English.***

5.2.15 Training Requirement

A. The training shall be provided by personnel with a working knowledge of the system design and layout, and shall provide troubleshooting methods and techniques.

B. In addition, the training shall cover System administration, Technical maintenance, and repair procedures for all equipment and applications, comprising the system.

C. The tenderer in the technical bid shall submit complete training syllabus along with the specified duration for training programme.

D. Bidders shall conduct on-site system administrator and ARFF /ATC operator training in accordance with the manufacturer's instructions and recommendations. Training shall include, but not be limited to: system administration, provisioning,configuration, operation, and diagnostics.

5.2.16 Guarantee/Warranty

A. The warranty period of all the supplied items shall be of minimum one Year or asper OEM whichever is more. The Warranty starts after successful completion of Site Acceptance Test commissioning and handover of the implementation.

B. All goods or material shall be supplied strictly in accordance with the specifications. No deviation from such specifications of these conditions shall be made without KAA agreement in writing and must be obtained before any work against the orderis commences.

C. The Contractor/Bidder shall replace any parts, including the supplied software found defective during warranty period without any charges whatsoever to KAA.

D. During warranty period, the contractor shall provide free replacement of Faulty items supplied against this work.

E. All materials furnished by the successful bidder pursuant to the Order (irrespectiveof whether engineering/design or other information has been furnished, reviewedor approved by KAA) are required to be guaranteed to the best quality of their respective kinds (unless otherwise specifically authorized in writing by KAA) and shall be free from faulty design to the extent such design is not furnished by KAA.

F. The goods/material used by the successful bidder and its workmanship shall be ofproper quality to fulfill in all respects, the operating conditions and other requirements specified in the order.

G. If any trouble or defect originating from the design, materials, workmanship or operating characteristic of any materials arise at any time prior to 12 Monthswarranty period, and the bidder firm is notified thereof, the bidder firm at his own expense and at no cost to KAA, makes such alterations, repairs and replacementsat the site within 02 working day(s) as may be necessary to permit/facilitate the functioning of the equipment/item in accordance with the specifications in the

tender. The guarantee/warranty period of repaired or replaced goods shall beextended for a period equal to the turnaround time (i.e. out of service period).

5.3 TECHNICAL SPECIFICATIONS & COMPLIANCE STATEMENT

Item	Technical Specifications		Statement of Compliance of the Bidder
5.3.1	**Core System**		
5.3.1.1	The core system infrastructure shall meet specifications mentioned under 5.2.3 system description. 5.2.10 System Architecture and Design Requirements.		
5.3.1.2	It shall be possible to perform system administration through an In built Web Portal for remote access.		
5.3.1.3	The system shall be able to conduct a conference call among responders when the ATC officers initiate a call during emergency.		
5.3.1.4	The system shall have a capability to record a conference in its local hard drive through suitable preinstalled software.		
5.3.1.5	The system shall be supplied with a software reinstallation on a folder, flash disk or a CD.		
5.3.1.6	The system shall be designed with a minimum 8 ports and shall be scalable upward based on demand.		
5.3.2	**Administration Personal Computer**		
5.3.2.1	**General**	The system shall include an administration Laptop component of a reputed brand for running system administration	
5.3.2.2	**Processor**	Intel Core i7 gen 13	
5.3.2.3	**Memory**	16 GB RAM	
5.3.2.4	**HDD**	512 SSD GB	

Item	Technical Specifications		Statement of Compliance of the Bidder
5.3.2.5	**Accessories**	a. Wireless Mouse Optical Mouse with scroll b. Laptop Backpack 15.6".	
5.3.2.6	**Network/Ports**	USB ports	
5.3.2.7	**Media**	HDMI	
5.3.2.8	**OS**	Win 11	
5.3.2.9	**Ports**	USB 3.1 Gen 2 type	
	Display	15.6"	
5.3.3.0	**Warranty**	1 year	
5.3.3.1	**IP Stations**		
5.3.3.2	**Graphics**	800 × 480, 24-bit color, 5-in. WVGA	
5.3.3.3	**Video**	720p HD video	
5.3.3.4	**Handset**	RJ-9 port	
5.3.3.5	**Speakerphone**	Full-duplex	
5.3.3.6	**Headset**	RJ-9 audio port	
5.3.3.7	**ports**	Min. 2 USB / AUX	
5.3.3.8	**Network**	Min. 2 port 10/100/1000BASE-T	
5.3.3.9	**Wireless**	a. Wi-Fi radio and antenna b. Bluetooth	
5.3.3.10	**Keys**	a. Hold/Resume Transfer b. Conference keys c. Messaging, Application and Directory keys d. Line and Soft keys e. Back and release keys f. Four-way navigation and select keys g. Standard keypad, Volume-control and toggle key h. Speaker phone, Headset and Mute keys	
5.3.3.11	**Key expansion**	3 no.	
5.3.3.12	**POE**	IEEE 802.3af, 802.3at	
5.3.4	**Expansion Module**		
5.3.4.1	**Display**	a. Min 3.5 inch color, 320x480 pixel b. Voice message and missed call counts	
5.3.4.2	**Programmable keys**	Min 24	

Item	Technical Specifications		Statement of Compliance of the Bidder
5.3.4.3	**Power Supply**	Power over Ethernet	
5.3.4.4	**Call Logs**	min. 100 call log entries	
5.3.4.5	**Speakerphone**	Full-duplex	
5.3.4.6	**Display**	a. Min 3.5 inch color, 320x480 pixel b. Voice message and missed call	
5.3.6	**Terminals Alert Hardware**		
5.3.6.1	**Strobe Lights**	a. Double flash light burst b. 60 double flashes per minute c. Durable lens construction d. Power Supply: DC/AC e. Approvals: UL Standard 1638	

Item	Technical Specifications		Statement of Compliance of the Bidder
5.3.6.2	**Horn siren**	a. Approvals: UL Standard 464 b. Rugged cast mechanism enclosure c. Low frequency aluminum shells d. Rugged cast vibrating models e. Power supply: VDC/VAC f. High sound output with 10" bell shell	
5.3.6.3	**Push Station**	a. Press to initiate b. Press, rotate & release to cancel c. Color: Yellow d. Polycarbonate faceplate e. Stainless steel back plate f. ADA Compliant g. Mounting: Single gang electrical box h. Reset: "Push" button depress & turn	
5.3.7	**Online UPS**		
5.3.7.1	**General**	a. 20 minutes back up, single Phase AC Input & single Phase AC Output, On Line Rack Mounted. b. Built in protection against over voltage, overload, spikes, transients and battery discharge. c. Alarm for low battery and battery operation. d. UPS power factor at rated load: better than 0.7 lagging.	
5.3.7.2	**Input**	a. Voltage: 180 V to 280 V AC single phase b. Frequency 50 Hz +/- 5% or better.	
5.3.7.3	**Output**	a. Voltage: 230 V AC b. Voltage Regulation: 1% on full load c. Freq. Regulation: 50 Hz ± 0.5 Hz d. Indications: At least Mains On, Load on battery, Alarm condition	
5.3.7.4	**Battery bank**	a. UPS shall be supplied with Separate SMF battery only. b. Trolley for battery bank. c. At least 30 minutes Battery back-up at fullload condition.	
5.3.7.5	**Documentation**	One set of hard and soft copy of operation of UPS.	

Item	Technical Specifications		Statement of Compliance of the Bidder
5.3.7.6	**Interface**	Suitable interface to monitor UPS parameters through PC/Laptop and all related accessories.	
5.3.8	**42U Rack With Accessories**		
5.3.8.1	**Standard**	19' 42U racks	
5.3.8.2	**Security & Security**	a. Provision of front Glass Door with Lock & Key b. Provision of rear steel door with Lock & Key, castor wheels c. Provision of Earthing (where external earthing can be connected)	
5.3.8.3	**Configuration**	a. Shall be housed in a single Equipment rack with appropriate number of shelves. b. User ports to be provided using appropriate cards mounted in universal slots of the shelf.	
5.3.8.4	**Interfaces**	a. Provision of AC power supply strip with at least 10 sockets (preferable in 5 x2 configuration) b. At least 4 fans	
5.3.8.5	**Standards**	EIA 310-D/ DIN 41494/ IEC 60297 read with adjuncts and amendments.	
5.3.10	**Warranty**		
5.3.10.1	**Duration**	The Bidder shall provide 12 months onsite comprehensive warranty support on all equipment, from the date of commissioning	

SECTION VI: SCHEDULE OF REQUIREMENTS

Crash Phone & Crash Alarm System, Accessories, Cabling & Installation Details givenbelow is indicative. Bidders shall inspect the installation site at EIA.

No.	Description	Make/Model	Qty.	Delivery in Weeks
6.1	System Server as specified Configured		1	24
6.2	Administration client PC c/w OS, Requisite software + licenses		2	24
6.3	IP Master Station + Extension Module		1	24
6.4	IP Field Stations		6	24
6.6	Blue Strobe Lights		6	24
6.7	Horn siren with >120 dB		6	24
6.8	Push Station		2	24
6.9	20 min transient Online UPS		Lot	24
6.10	42U Rack With Accessories		1	24
6.11	Assorted Associated cabling		Lot	24
6.12	As built/installed drawings/diagrams & workingDiagrams		2	24
6.13	Technical Training for system administrators		10	24
6.14	Training for Operators		10	24

SECTION VII: PRICE SCHEDULE FOR GOODS

Name of tenderer_____Tender Number_____Page_____of _____

The bidder will be responsible for implementation of the project and shall offer a solution that meets the minimum services described in various sections of this tender document and bidder has to check /Comply Bills of Materials (BOM) accordingly. If the bidder finds that BOM is incomplete in some respect for the implementation of project,he is responsible for identifying the same and accordingly including the cost of the samein his bid

7.1BILLS OF QUANTITIES

Item	Description	Unit	QTY	Rate	Amount
7.1.1	Supply, Installation, configuration, Integration, Testing and Commissioning of Emergency Airport CrashAlarm and Telephone system complete with all its components and all accessories.	No	1		
7.1.2	Supply install configure Administration Laptop Computer comprising of the following: a. Operating System b. Requisite software + licenses	No	2		
7.1.3	Supply, install and configure IP Master Station + Expansion Module	No	1		

7.1.4	Supply install and configure IP Field Stations	No	6			
7.1.6	Supply install and configure Blue Strobe Lights	No	6			
7.1.7	Supply install and configure siren	No	6			
7.1.8	Supply install and configure Push Station	No	2			
7.1.9	Supply and install and Configure 3kVA UPS as APC or approved equivalent..	No	1			
7.1.10	Supply and install 42U Rack Complete with all Accessories	No	1			
7.1.11	Supply and install interconnection cables. Cat6 23AWG double sheath outdoor cable.	Meters	3000			
7.1.12	Supply and install2-core fiber cables complete interconnection components.	Meters	1000			
7.1.13	4.0mm 3 core outdoor power cable	Meters	1000			
7.1.14	Telephone cable, 0.5mm, internal, unscreened, 2 pair.	Meters	2000			
7.1.15	Supply of as built/installed drawings/diagrams &working Diagrams	No	2			
7.1.16	Technical/Administrator training of systemadministrators	No	15			
7.1.17	Training of Operators	No	10			
7.1.18	**SUB-Total**					
7.1.19	**ADD 5% Contingency**					
7.1.20	**SUB-Total**					
7.1.21	**Add 16% VAT**					
7.1.22	**TENDER SUM TO BE TRANSFERED TO THE FORM OF TENDER**					

Authorized Official: _____ _____

Name Signature

_____

Date

Note: In case of discrepancy between unit price and total, the unit price shall prevail.