

NOTICE INVITING BUDGETORY OFFERS

Name of Work	NAME OF WORK : “Supply, Installation, Testing & Commissioning of Additional CCTV Surveillance system at DEEPAVIHAR Primary, Secondary and Higher secondary Schools at Headland Sada”
Date of submission of budgetary quotation	On or Before 09.01.2023 at 11:00 Hrs.
Address for communication:	Executive Engineer (E-HL), Mechanical Engineering Department, Mormugao Port Authority, Electrical Section, 1st Floor, Admin. Building, Headland sada Vasco-de-Gama Goa - 403804
Contact Details	Phone : (0832) 2594241, 2594244 Email : xene.mgpt@gmail.com
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**EXECUTIVE ENGINEER (E-HL)
MORMUGAO PORT AUTHORITY**

MORMUGAO PORT AUTHORITY
ENGINEERING MECHANICAL DEPARTMENT

CME/XEN(E-HL)/M-22/

.2022

Sub: Supply, Installation, Testing & Commissioning of Additional CCTV Surveillance system at DEEPVIHAR Primary, Secondary and Higher secondary Schools at Headland Sada

Ref: Budgetary Quotation No. CME/XEN(E-HL)/

Mormugao Port Authority intends to carry out the work of "Supply, Installation, Testing & Commissioning of Additional CCTV Surveillance system at DEEPVIHAR Primary, Secondary and Higher secondary Schools at Headland Sada ". As such, kindly furnish the budgetary quotation for the same (Scope of work enclosed as Schedule - 'A' and Price Schedule enclosed as Schedule - 'A1'.

Your budgetary quotation should reach to this office on or before 09.01.2023.

Thanking you,

Yours sincerely,

EXECUTIVE ENGINEER (E-HL)

Technical specification

1.0. General :

Mormugao Port Authority intends to take up the work of installing new additional CCTV surveillance system in Deepvihar Primary, Secondary & Higher Secondary Schools which are coming under administrative control of Mormugao Port Authority, Goa. The work involves supply, installation, testing and commissioning of complete CCTV surveillance system. The entire system will be under guarantee period for a period of 01 years after handing over the system to Port.

2.0 SCOPE OF WORK:

Supply, Installation, testing & commissioning of additional IP cameras complete with housing and mounting kit and all other accessories Including NETWORK VIDEO RECORDER, LED DISPLAY MONITOR, POE switches, Junction Boxes, Supply and laying of CAT6, Power cable, and PVC casing capping, HDPE Pipe(shall be supplied by Port) etc at Deepvihar Primary, Secondary & Higher Secondary Schools.

- i) Supply, Installation testing, commissioning and handing over of 66 numbers IP cameras(Indoor & outdoor) 2MP complete with Camera housing and all other accessories including Camera Mounting structures if required
- ii) Supply, Installation, testing, commissioning and handing over 3 nos. Network Video Recorder of 32 Channel alongwith 12TB(6TBx2) Hard disk for recording and storage complete with all accessories.
- iii) Supply, Installation, testing, commissioning and handing over 3 nos. 32 inches LED Monitor complete with all accessories
- iv) Supply, Installation, testing, commissioning and handing over of 10 nos. 8 port 100 mbps POE network switch.
- v) Supply, Installation, testing, commissioning and handing over of 3 nos. of 6U network rack and 5 Nos. of 2U network rack
- vi) Supply, Installation, testing, commissioning and handing over of 3 Nos. 1KVA online UPS and 5 Nos. of 650 VA online UPS
- vii) Supply and laying CAT 6 indoor Network Cable, 3 core 1.5 Sqmm PVC power cable, through PVC casing capping and HDPE pipes(HDPE pipe shall be supplied by Port)

- viii) Excavation and refilling of road with excavated soil and cementing the surface.
- ix) Configuration of all equipment's in each schools for monitoring and retrieving of the CCTV footage including supervision, and 1 year on site support.

2.2 STANDARDS and CODES

The Fixed Cameras and Network Video Recorders shall comply with ONVIF standards and shall be UL/CE and FCC Certified. Each Camera shall be supplied along with accessories like Camera mounting GI Fixture with suitable base for Grouting.

2.3 Detailed Technical Specifications:-

2.3.1 (a) IP fixed Dome Cameras for Indoor duty

Port proposes to install IP Based 2MP indoor Type Camera, complete with all accessories at schools as per the technical specification given below.

Total sensor pixels	2 Megapixel
Sensor Type	1/2.7" (+/- 10%), Progressive Scan CMOS,
Lens	Fixed
Frame Rate	25/30fps (1920x1080)
Minimum Illumination(Color/Monochrome)	0.08Lux@F2.0@1/25s
Video functions	Digital zoom
	3DNR(Dynamic Noise Reduction)
	HLC and Backlight Compensation
	ICR (Auto Day night)
IR distance	20 meter
Input Voltage	Dc 12V and PoE with IEEE standard
Ingress Protection	IP66 by default without any adaptation
Video compression	H.264/MJPEG
Streaming Capacity	Two-Stream
Memory	64GB slot
ONVIF	ONVIF compliant
Certifications	UL/CE and FCC

(b) IP fixed Bullet Cameras for Outdoor Duty

Total sensor pixels	2 Megapixel
Sensor Type	1/2.7" (+/- 10%), Progressive Scan CMOS,
Lens	Fixed
Frame Rate	25/30fps (1920x1080)
Minimum Illumination(Color/Monochrome)	0.08Lux@F2.0@1/25s
Video functions	Digital zoom

	3DNR(Dynamic Noise Reduction)
	HLC and Backlight Compensation
	ICR (Auto Day night)
IR distance	20 meter
Input Voltage	Dc 12V and PoE with IEEE standard
Ingress Protection	IP66 by default without any adaptation
Video compression	H.264/MJPEG
Streaming Capacity	Two-Stream
Memory	Card of 64GB
ONVIF	ONVIF compliant
Certifications	UL/CE and FCC

Note: Cameras shall be supplied with suitable Power supply and its mounting arrangements as per site conditions i.e. wall, pole mount any with all required accessories & fitments. Each Cameras shall be provided with necessary additional circuits with Ethernet Surge Protectors to protect the units from High Voltages.

2.3.2 Network Video Recorder 32 Channel

The proposed system shall be supplied with 32 channel NVR with 12 TB Hard disk to view the camera image and shall be ONVIF compliant and shall have following specifications.

No of Channels supported	32 channels
Power Input	12DC, 5A
Storage	Enterprise class Hard disk, 4 HDD slots and loaded 12 TB(6TBX2) HDD (Multiples of 6TB)
Support Image Format	H.264/MJPEG
Max number of cameras	32
Supported browser	OS windows 7/8/10
ALARM	Input- 32, Output - 4
External storage	USB port
Output	2 HDMI port
Network Interface	2 number of 10M/100M/1000M
ONVIF	ONVIF compliant
Certifications	UL/CE and FCC

NVR Shall be supplied with suitable video management software for parallel monitoring on PC, recorded images if required shall be downloaded in PC also. NVR shall support external storage device also for future expansion of storage systems. The system shall be supplied with power cord, Audio/Video cables, necessary software etc.

2.3.3 Display Monitor 32" LED

The supply of 32 inches Colour LED Monitor includes all materials required for the installation and commissioning of the monitors at schools for viewing the camera live feed. The display unit shall comply with following specifications.

Resolution	1,920 x 1,080 (16:9)
Type	60 Hz LED BLU :1920x1080(16:9)
Pixel Pitch(mm/in)	0.15x0.46
Active display(mm/in)	885.6x498.1
RGB	FHD, DVI-D
Video	CVBS, Component, HDMI*2
Audio	Stereo mini jack
Input supply	230V, AC

The system shall be designed for higher endurance life and it shall be designed for 24x7 operation. The Scope of work includes all necessary Connectors, Wall Mounting Kit, suitable TV Tuner unit for each system, AC power adapter etc. If any civil work has to be carried out of the installation the same has to be executed along with the materials by the tenderer.

2.3.4. Supply and installation of 8 Port POE network switch

Supply and Installation of 8- port GbE Fast and Smart Managed PoE Switch with 100 Mbps Ethernet PoE Ports, 2 combo (RJ-45/SFP), PoE ports 130 watt or better, Switching 20 Gbs or better, Operating Temperature- 0 degree centigrade to 50 degree centigrade or better.

2.3.5. Supply and installation of 6U/2U surface mounting network rack

Supply and installation of 6U&2U surface mounting network rack, complete with power strip, one fan, front glass door & rear perforated MS body with lock and key arrangement.

2.3.6. (A)Supply of 1 KVA Online UPS

The supply of 1KVA online UPS includes all materials required for the installation and commissioning at schools to provide stable power supply. The display unit shall comply with following specifications.

CAPACITY	1KVA/800W
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DC VOLTAGE SYSTEM	24 VDC
INPUT	
INPUT VOLTAGE RANGE	110VAC+5% - 300VAC+5%
FREQUENCY RANGE	40Hz - 70Hz
PHASE	SINGLE PHASE WITH GROUND
POWER FACTOR	≥0.99 @ FULL LOAD
OUTPUT	
OUTPUT VOLTAGE	200/ 208/ 220/ 230/ 240VAC
AC VOLTAGE REGULATION	±1% (Battery Mode)
FREQUENCY RANGE (Battery Mode)	50Hz+0.25Hz OR 60Hz+0.3Hz
CURRENT CREST RATIO	3:1
HARMONIC DISTORTION	<ul style="list-style-type: none"> • <2% THD (Linear Load) • 4% THD (Non-Linear Load)
OVERLOAD CAPABILITY	<ul style="list-style-type: none"> • 105%-110%: UPS SHUTS DOWN AFTER 10 MINUTES AT BATTERY MODE OR TRANSFER TO BYPASS WHEN THE UTILITY IS NORMAL. • 110%-130%: UPS SHUTS DOWN AFTER 1 MINUTE AT BATTERY MODE OR TRANSFER TO BYPASS WHEN THE UTILITY IS NORMAL. • >130%: UPS SHUTS DOWN AFTER 3 SECONDS AT BATTERY MODE OR TRANSFER TO BYPASS WHEN THE UTILITY IS NORMAL.
TRANSFER TIME	AC MODE TO BATTERY MODE 0/ INVERTER TO BYPASS: <4ms (Typical 2.5ms)
WAVEFORM (Battery Mode)	PURE SINEWAVE
EFFICIENCY	
EFFICIENCY (AC MODE / BATTERY MODE)	88% / 83%
BATTERY & CHARGER	
BATTERY TYPE & NUMBERS	SMF 12V / 9AH X 2 Nos. (In-Built Batteries)
CHARGING CURRENT	1A
PHYSICAL	
DIMENTION (LxWxH)	282x145x220 mm
NET WEIGHT	9.8 KGS.
ENVIRONMENT	
OPERATING HUMIDITY / TEMP.	20-95% RH @ 0-40°C (Non-Condensing)
NOISE LEVEL	LESS THAN 50dBA @ 1 METER (WITH FAN SPEED CONTROL)
STATUS INDICATIONS	
DISPLAY	LCD DISPLAY INDICATIONS

(B) Supply of 650VA online UPS

The supply of 650VA online UPS includes all materials required for the installation and commissioning at schools to provide stable power supply. The display unit shall comply with following specifications.

Capacity	650VA/360W
INPUT	
Input Voltage Range	140 V ~ 300 VAC
Frequency	50 Hz ± 10%
OUTPUT	
Output Voltage	230 VAC Nominal
Transfer Time	Typical 4~8ms
Waveform (Battery Mode)	Modified Sine Wave
BATTERY	
Type	Sealed Maintenance Free
Charging Time	6 Hours recover to 90% capacity
Battery Rating	SMF 12V /7AH x 1 Battery
ENVIRONMENT	
Operating Temperature	0°C-40°C;
Relative Humidity	0 to 90% Non-Condensing
Noise Level	< 40dB

2.3.7. Supply and laying of CAT-6 cable

Supply and Laying of CAT-6 UTP weather proof cable suitable for indoor/outdoor cameras (CCTVs), CAT 6 UTP Cable Transmission frequency of 250 MHz (Minimum).

2.3.8. Supply and laying of Casing capping

Supply and Laying of PVC casing capping of suitable size to be fixed on wall (including with saddle, Gitti at sufficient distance with junction box, bend etc.). Cost is inclusive of the laying cost of CAT-6, Power cable in PVC casing capping and HDPE Pipe(HDPE pipe will be supplied by Port).

2.3.9. Miscellaneous Items

Misc items, like saddles, fitting materials, screws, nuts, fasteners, jointers, sealants, RJ45, accessories, 3 core 1.5 sq.mm PVC flexible wire, 8 nos. 5A switch socket combined etc as required to be provided by the Contractor to commission the system successfully.

2.3.10 System Overview/ General Features:

- System capable to work for Day & Night operations (Automatic)
- System in CCTV Control Room should work on its Power back up mode automatically in case of Power failure.
- All such locations where mounting structures and related accessories are required should be provided by the contractor within the cost quoted. Site survey should be undertaken.
- All equipment's should be heavy duty for 24 Hours operations.

- All required equipment's mentioned/not-mentioned but required for smooth running of system is to be in outdoor weatherproof enclosure.
- **Recording & Viewing features:**
 - Event recording
 - Motion Detection (sequential recording)
 - Scheduled recording
 - Adjust brightness, Contrast, Saturation & hue for a clearer view
 - Support digital zoom in to view specific areas
 - 24hours/day, 7days/week unmonitored surveillance recording
- **Play back and search**
 - Playback 20 video records simultaneously
 - Search video records by camera, date, event types and time segments
 - Remote viewing and control, Non-stop recording
 - Backup video records manually or by schedule and directly backup recording files to CD/DVD/USB.

2.3.10. INSTALLATION & COMMISSIONING

1. The Contractor shall carry the work as per the BOQ.
2. The Contractor shall commence and complete the work within 60 days from date of issue of LOA to the satisfaction of the Chief Mechanical Engineer or his representative. Necessary scaffolding and safety measures for entire erection shall be done by the contractor.
3. The Cameras, NVR and all the other equipments supplied shall be installed, tested, commissioned and handed over. The special tools instruments needed for regular servicing / maintenance working shall be supplied free of cost by the Contractor. All the materials required for the installation and commissioning at site including the materials for civil works required for Installation and commissioning of camera mounting structures shall be supplied by the Contractor. Misc items, like saddles, fitting materials, switch, sockets, screws, nuts, fasteners, jointers, sealants, accessories, etc as required to run the system included in quote.
3. The work should be carried out with utmost safety precaution with minimum possible disruption of existing camera feeds.
4. The installation of the various equipment's shall be carried as per the site condition and as directed by the EIC. The Contractor shall carry out the works in co-ordination with the on-going AMC Contractor.
5. Special care may be taken to prevent any damage to the Port's property during installation and commissioning. The workmanship shall be neat, clean and elegant/

asthetic in appearance and painting of brackets etc. to be done to withstand saline atmosphere prevailing in the area.

6. All the quantities indicated in the price schedule/BoQ are indicative. However, the work shall be carried out as per site conditions. Payment will be released as per actual executed quantities after completion of work.

7. **Technical brochures/ data sheets of Cameras, online UPS and NVR should be submitted with the tender specifically for models the tenderer intends to supply.**

Note: Change in the location of cameras will be at the discretion of the Engineer.

8. Power and water will be provided by the Port on free of cost.

9. **Manuals, Drawings**

On completion of the work the Contractor shall supply 3 sets of operation and maintenance manuals after commissioning. The soft copy of all the As built drawings and manuals should also be provided which shall include General arrangement with principal details, Schematic line diagrams (SLD) of electric, electronic and programmable controller details and any other special features implemented in the system.

2.4. TESTS

Necessary tests certificates as per relevant CE or UL certificate and ONVIF standards of the equipment's etc shall be submitted in technical bid for models quoted for camera, NVR to the satisfaction of the Chief Mechanical Engineer or his representative.

2.5. GUARANTEE

The installation shall be guaranteed for 12 months from the date of acceptance and free maintenance shall be done during the guarantee period.

2.6. MAINTENANCE DURING GUARANTEE PERIOD.

1. The contractor shall provide one-year guarantee for the equipment's installed. The maintenance during guarantee period shall include replacement of all defective components of the system including the cameras.
2. During the one year guarantee period, the Port shall not bear any charges incurred by the contractor for deputing the skilled manpower or material to carry out any form of repairs.
3. The Contractor shall arrange his own tools and tackles including ladder for carrying

out the works during the installation and guarantee period.

4. During warranty period if any of the equipment supplied by the Contractor i.e camera, NVR etc. are found defective /Damaged, same has to be replaced by the Contractor at their cost. Therefore Bidders shall assess the environmental conditions, wind speed etc in respect to the supply of quality of equipment's and workman ship so as to ensure continual stability in running of system successfully. The bidder shall maintain basic inventory of required spares for upkeep of the CCTV Camera Surveillance systems.
5. In case need arises, the technicians should be present after office hours and during holidays without any cost and liability to the Port. The tenderer shall provide contact telephone number/ mobile and E-mail address to also register complaints at his office.

2.7. PENALTY CLAUSE

The fault should be attended within 48hrs from receipt of complaint from Port/school, failing which an amount of Rs. 500/- per day will be deducted from security deposit/ support charges as penalty until the fault is restored & camera/system is recommissioned..

2.8. Other Conditions:

- 1) The Contractor is required to offer rates as per Port's format "Schedule-A1" without fail and indicate taxes and duties if any applicable. Port will not produce Form C or D.
- 2) Technical and Commercial condition shall be clearly furnished in the quotation. The offer shall indicate the make and model of the equipment and shall accompany with the relevant technical leaflet.
- 3) The rate should be quoted as per unit.
- 4) The rate quoted should be maintained till the completion of supply and no upward price revision will be agreed to.
- 5) GATE PASS: Necessary Entry Permits shall be obtained by the Contractor at their own cost with the school Authorities.
- 6) The Contractor must comply with the Safety aspects as governed by the relevant edition of Indian Electricity Rules and Industrial Safety, the contractor shall be responsible for overall safety.

- 7) ADDITION & DELETIONS: CME reserves the right to add or delete the above mentioned quantities of CCTV cameras by around 20% of the quantity during the currency of the contract and his decision is final and binding upon the contractor.
- 8) The Tenderer shall inspect the site and assess the requirement before furnishing their offered.

Schedule - 'A1'.

PRICE SCHEDULE (BILL OF QUANTITIES)

Sr No	Description	HSN/ SAC Code	Unit	Qty	Rate (Rs)	Amount (Rs)
1.	Supply, Installation, testing and commissioning of IP based dome 2MP Indoor type Camera as per technical specification at Schedule - 'A'					
	a) Supply		No.	64		
	b) Installation, testing and commissioning		No.	64		
2.	Supply, Installation, testing and commissioning of IP based bullet 2MP outdoor type Camera as per technical specification at Schedule - 'A'					
	a) Supply		No.	2		
	b) Installation, testing and commissioning		No.	2		
3	Supply, Installation, testing and commissioning of Network Video Recorder of minimum 32 Channel alongwith 12TB(6x2) Hard disk for recording and storage. as per technical specification at Schedule - 'A'					
	a) Supply		Nos.	3		
	b) Installation, testing and commissioning		Nos.	3		
4	Supply, Installation, Testing and commissioning of 32" Display monitor as per					

	technical specification at Schedule-'A'					
	a)Supply		Nos.	3		
	b)Installation, testing and Commissioning		Nos.	3		
5	Supply, installation , Testing & Commissioning of 8 Port 100 Mbps POE Switch as per technical specification at Schedule-'A'					
	a)supply		Nos.	10		
	b)Installation, Testing and Commissioning		Nos.	10		
6	Supply& fixing of 6U Mini rack as per technical specification at Schedule-'A'					
	a)Supply		Nos.	3		
	b)Fixing		Nos.	3		
7.	Supply & fixing of 2U Mini rack as per technical specification at Schedule-'A'					
	a)Supply		Nos	5		
	b)Fixing		Nos	5		
8.	Supply of CAT 6 Indoor Cable as per Technical specification at schedule-A		Mtr	1500		
9	Supply, Installation, Testing & Commissioning of 1 KVA online UPS as per technical specification at Schedule-'A'					
	Supply		Nos.	3		
	b)Installation, Testing & Commissioning		Nos.	3		
10	Supply, Installation, Testing & Commissioning of 650 VA online UPS as per technical specification at Schedule-'A'					
	a)Supply		Nos	5		
	b)Installation, Testing & Commissioning		Nos	5		

11	Supply and Laying of Suitable size casing capping with CAT-6 cable, power cable as per technical specification at Schedule-'A'					
	a) Supply		Mtr	1400		
	b) Laying along the wall/ceiling etc		Mtr	1400		
12	Accessories like screw, clamp, bends, PVC power cable, Switch Socket, RJ45 etc.		LS	1		
13	Laying of HDPE Pipe (shall be supplied by Port)600 mm below ground level by excavation of 300mm wide trench and backfilling with soil 100mm thick cement concrete for road crossing		Mtr	100		
14	Configuration of all equipment, supervision and documentation		LS	1		
	TOTAL AMOUNT(in Fig.) (Exclusive of GST)					

Total (In Words)

Rupees _____ only.

Date:

Signature:

Place:

Name:

Address:

Office Seal of firm

Note: 1.The offered rates shall be exclusive of GST.

