



MAZAGON DOCK SHIPBUILDERS LIMITED

(Formerly known as Mazagon Dock Ltd.)

CIN: U35100MH1934GOI002079

(A Government of India Undertaking)

Shipbuilders to the Nation

Dockyard Road, Mazagon,

Mumbai 400 010.

INDIA

**SECURITY SYSTEM (GADGET/EQUIPMENTS) AT SECURITY COMPLEX
BUILDING, MDL.**

Technical Specifications

Table of Contents		
Clause No.	PARTICULARS	PAGE No.
1.	Technical specifications	02

TECHNICAL SPECIFICATIONS FOR SECURITY SYSTEM (GADEJETS/EQUIPMENTS) FOR SECURITY COMPLEX BUILDING, MDL

1. Automatic Hydraulic Bollard System, Zinc coated (inside out), red light mounted, ST37, Crash tested.

Specification:

- Bollards Type – Retractable
- Mechanism - Hydraulic
- Height - min 1200 mm
- Diameter - min 352 mm
- Thickness - min 20 mm
- Foundation Depth - 2000 mm (including Drainage System)
- Raising/Lowering Time - 4-6 Sec
- Emergency Operation - 3-6 Sec
- Impact Resistance – as per K12 or better.
- Ramming Capacity – K12 Physical Crash Rating (7.5 Ton truck travelling @ 80 km/hr. as per PAS68 Standard).
- Certifications - The bollard quoted for this tender shall be physically crash tested on single bollards and certified by accredited agencies (like TRL, MIRA, KARCO & ENSCO INC etc.) to meet DOS, PAS 68 or IWA14-1 :2013standard. Third party certification & Simulation Certificate is not acceptable; the proof of certification for crash testing and confirmation to the standard shall be submitted along with the technical bid. The proof of certification shall be for the specification bollard quoted for this tender (same make, model no and crash rating). Quoting one model and submitting certification for another model is not accepted & CE (Conformity European) Certificate for Bollards system must be provided along with Technical Bid.
- Steel Grade - ST37
- Power Supply- 440 V AC 3 Phase
- In case of Power Failure - Manual Operation available
- Waterproof and protection - Compliant to IP 66 Standards
- Finishing Treatment - Anti-corrosion treatment passed on 2000 Hr. salt spray test, Certificate must be provided stainless steel cover,
- Operating Temperature - Minus 20 to Plus 60 degrees centigrade
- Operating Cycles per day - Heavy duty work frequency with 10,000 maneuvers per day
- Life Cycle - Tested for life with at least 10 million operations.
- Safety Feature - Photo sensors for human safety & loop detector for Vehicle Safety

- LED Light - Bollard must have red LED light mounted on the Top surface of the Bollards
- Control Panel to Bollard Max Distance - 50 meter.

Metal Case

- Material - ST37
- Treatment - Hot deep galvanization
- Plate thickness - 3 mm
- Complete weight - 56 Kg or better
- Installation Unit - Bollard is to be delivered as a complete installation unit to make sure that there is no additional work on site.
- Civil works: Vendor should provide drainage of water, dust protection system to the bollard and complete installation at the site.
- OEM Experience:

OEM must have more than 10 years of experience in to manufacturing of bollards, crash rated barriers, boom barriers, tyre-killers, road blocker in India, etc. Manufacturing license copy must be provided along with the technical bid.

Demonstration of the product will be conducted during Technical Evaluation if required.

2. Automatic Sliding Gate 12 x 2 met

- 12mtr x 2mtr (Two Panel of 6Met by 2Met) – width and height.
- Gate material: Powder coated, aluminum framing with acrylic glass panel.
- Electromagnetic locks – the electromagnetic locks to be of appropriate holding force.
- Operation Time – 10-15 seconds. Shall auto open after successful authentication by ACS Controller. Shall Auto close after system pre-defined time interval.
- Microcontroller based logic or latest.
- Access Control operation: Barrier shall be operated through a push button switch.
- Sensor to detect presence of obstacles, people, objects etc. on the sliding path and the gate should not close in such a case and should give an audio alarm in such an event.
- The same alarm mentioned above should be reflected in the control software.
- Emergency opening with emergency inputs.
- Manual override button, to be used in case of emergency.
- Fail safe
- Fail Secure
- Thermic motor Protect required.
- Dampening system required for smooth and noise free operation.
- Cabinet to be galvanized, electrostatically powder coated.
- IP54 rating.

3. Boom Barrier, Electro - Mechanical Open/ Close, integration with ACS, anti-crush safety mechanism

Specification:

- Mechanism: Electro – Mechanical Open/ Close option with attached wrench in case of power failure.

The Boom barrier shall open and close smoothly without any vibration.

- Duty cycle and MTBF (Mean Time Between Failure): 100% as per opening/ closing cycle
MTBF: 5 million operations.
- integration with ACS, Provision to integrate with other peripheral devices like ACS, Beam Sensors etc.
- Anti-crush safety mechanism: It shall have anti-crush safety mechanism to suspend the motion of the barrier when met with any obstruction.
- Quick opening and closing of barrier with soft landing.
- Operative Options: It shall be activated by a single push button and with an option to operate wirelessly through remote. In addition, it must have provision to operate on electronic signal from Access Control.
- Speed of barrier shall be programmable while installing as per frequency of traffic.
- Boom Construction: The Booms shall be made of extruded aluminum with octagonal or Round profile (straight / articulated).
- Opening/ Closing time: 3 to 4 seconds for 6 meters
- Power Input and consumption:
Power: 230
Operated with DC 12/24 V
Power Consumption: 120 Watt maximum
- Safety Feature: Safety Device like loop detector or beam sensor shall be provided.
- Approved Make: Godrej, Magnetic, Automatic System, Gunebo.

4. (UVSS) Under Vehicle Scanning System +ANPRS

Specifications:

Under Vehicle Scanning System, to enable inspection of any vehicle's underside through a static composite image of the vehicle, as per the details given below: -

- The quoted OEM's UVSS brand installed directly or through its partner should have at least THIRTY (30) or more UVSS Installation references anywhere within India. A list of such references must be furnished, Companies without such experience will be disqualified. System Make of Chinese origin and Components Make of Chinese origin will not be accepted, failing which the bid is liable to be rejected.
- The OEM should be into manufacturing of UVSS in India for past 7 years and should have its registered service center in India.

- The UVSS should produce multiple angular views (Left View & Right View) of high-resolution COLOR images of the complete underbody of any vehicle passing over it bi-directionally using dual Area-scan camera-based technology.
- The UVSS should be capable of handling vehicles moving at different speeds ranging from Zero (0) to 25 Km/hr., while the morphed composite images so captured by it should be automatically and dynamically adjusted according to the speed of the vehicle using multiple induction loop-based sensors.
- Each of the dual imaging cameras should be of high-resolution Area-scan, GigE type with Minimum resolution of (1920 x 1200) or above.
- The UVSS should be capable of producing clear and undistorted images of the vehicle underside, even when a vehicle completely stops / halts over the scanning unit for approx. 2-3 Seconds, i.e., it must be able to produce seamless and perfect composite images of the underside irrespective of stoppage or non-uniform motion of the vehicle over the scanner.
- The UVSS should not use either a digital Line-Scan camera-based technology or any type of Analog/Video cameras to form composite image without any distortions or Fisheye” effect. Only Area Scan Cameras with output of about 500 FPS (Frames Per Second) to be used.
- The UVSS should enable detection of suspicious objects (False Positives to be considered) by the user that are hard to see via single view scanning systems, including visual access to cavities and niches, areas around suspensions, below the engine areas, side wall of fuel tanks & exhaust pipes etc.
- The UVSS must have a dynamic multi-view feature and it can be dynamically controlled by the user. (the operator should be able to view the underside by hovering the mouse from left to right of the image).
- The UVSS must provide a set of Two images – From Left & Right Angle of the complete underside of any vehicle.
- If found anything suspicious or any suspicious area of the under chassis which is not in sync with the normal Under Chassis image, the UVSS should have a feature to view video from left & right image in order to minimize the threat and give assistance to visually /manually search for any foreign objects by the user.
- The UVSS should have a feature to magnify (zoom) the composite image (left & right) and Images up to 8x in order to facilitate a closer view of any part of the composite image.
- The UVSS should have a feature to play any particular/specific zoom area of video.
 - i. Camera Type - Gigabit Ethernet progressive camera
 - ii. Sensor - CMOS XGA resolution (1920 x 1200) or better
 - iii. Field of View- Minimum - 180 Degrees
 - iv. Format – GiGE
 - v. Composite Image resolution of the underside - 3 megapixels

- vi. Camera certification – CE
 - vii. Camera casing ingress protection rating- IP 68 or better, duly certified by NABL accredited lab for Water and Dust Protection- Temperature rating of enclosure to be -Minus 20 Degrees to Plus 70 Degrees – Duly tested & certified by an NABL accredited Lab in INDIA.
- The UVSS should compare both (left & right) view with the help of license plate/Vehicle type database of underside images.
 - The underside illumination must be adequate and obtained through a dual array of long life, LED lighting modules. Halogen or CFL based array of lighting elements for the purpose of illumination of the underside will not be accepted.
 - The UVSS should also provide a feature to capture the image of the driver of all RHS driven vehicles, captured through a suitable driver view camera.
 - The system should have an Automated Number Plate Reading System (ANPRS) tuned to the RTA Standard Indian license plates, i.e., it should be able to automatically read and record Standard vehicle registration number plates' alpha-numeric characters, written in English. Also, the frontal image/Rear Image view of the vehicle to be provided in the GUI, to facilitate manual viewing of the license plate image.
 - A. Camera Specification
 - i. Effective Range - 4 to 5 meters for Frontal camera & 0.5 to 1 meter for Driver camera
 - ii. Camera Resolution - 25fps @ 2 megapixel or higher
 - iii. Camera gain and shutter - Adjustable 1/100 to 1/10000 sec
 - iv. Lens - 10-40 mm Varifocal
 - v. Power Consumption - <12W
 - vi. Power Supply - 12 V DC
 - vii. Operating Temperature - 0°C to +50°C
 - B. Software Specification
 - i. Supported OS - Windows 10 Professional 64 Bit Licensed to Client
 - ii. Type of Plates - Recognition for English fonts
 - iii. Image Input - Still Image or Live Video Input
 - The UVSS must give output of all the data simultaneously i.e., the composite images, driver photos, vehicle's frontal image and its number display – all should be displayed on the monitor almost instantaneously after the vehicle cross the unit. Also, the system should have a facility to view the composite image, off-line also, for all vehicles.
 - The UVSS applications & operating software should be based on open architecture on Latest Windows 10 Professional 64 Bit OS platform. It must have a user-friendly Graphical User Interface (GUI) with provision for multiple users logging of events and search facility. It should also have the latest version of Microsoft Office Installed with minimum 10-year License Updates.
 - The UVSS system must have a facility to take back-up of all the transactions to storage media.

- The overall UVSS must be CE Certified. A certificate issued by a competent certifying agency, must be attached with the tender.
- The underground cameras & lighting units of the UVSS must be enclosed in a suitable all-weather-proof housing of IP 68 Certified or higher standard. The main camera enclosure should have operating temperature range of -20 Degrees to Plus 70 degrees. A valid certificate in this regard, after requisite testing carried out, issued by a Govt. / NABL accredited laboratory in India, must be attached with the tender, without which the bid is liable to be rejected.
- The overall installed unit should be properly designed, and its structure should be able to withstand a vehicle axle-load up to 40-Tons at any point over the structure, so as not to suffer any accidental physical damage to the unit and the components under the pit cover.
- The UVSS must be aesthetically designed so that it must blend seamlessly with the landscape, forming a natural look with no discomfort for the driver / passengers of the vehicle being scanned.
- The system should have a provision to generate in Current/Daily/Weekly/Monthly reports with a unique ID for each vehicle along with the time and date, License number & related Images. Such data should be exported to a Microsoft Excel Spread Sheet at every instance of request.
- The UVSS application and operating software should compulsorily be designed on Windows 10 Professional 64 Bit based front-end application with Microsoft SQL Server as the BACK-END DATABASE.

5. Electro hydraulically operated Tyre-Killer, steel casing, Appx 2.2 kW, 3phase-400V, 50 Hz

Product Specification:

Electro hydraulically operated Tyre-Killer consisting of an underground casing in full core steel profile and heavy duty steel spikes determined to destroy tires, suspension and axles of a vehicle in case of unauthorized intrusion.

The underground casing should consist of an all-around closed sheet steel casing with concrete anchors. The solid blocking spikes are welded to the solid rotation axis in a distance of approx. 200 mm to each other. The axis should be connected with the hydraulic cylinder via a lever system.

- Blocking width 4 to 5mt
- Installation depth: approx. 700 mm
- Blocking height of spikes above level should be min 475 mm
- Fully raised blocking position of spikes should be at an angle of 60°

The top of the casing is designed to withstand a wheel load of 100 kN, according to DIN 1072.

The blocking spikes element is electro-hydraulically operated with an electric motor and adequate size (Approx. 2.2 kW, 3-phase-400V, 50 Hz).

Operating: 1 no. push-button set „Up-Down “(box type) to be located in the guard house or similar.

Operating time of the equipment: 2-3 sec

Power failure/emergency operation: By integrated hydraulic hand pump

Corrosion protection:

All steel elements hot dip galvanized + Spikes powder painted to red colors (RAL 3000).

Tyre Killer

- **Drive Unit** - Electro-hydraulic compact drive unit in a special lockable steel cabinet with ventilation. Steel cabinet with a fixing frame to be installed to a concrete base which is to be provided by the customer Distance between steel cabinet to tyre-killer should be max 7mtr.

- **Electric Motor Capacity** - Approx. 2.2 kW, 3phase-400V, 50 Hz

- PLC (Programmable Logic Controller) type - Any standard PLC

- Thickness of spikes - 25mm thick steel

- Power off condition -

- hand pump (Manual raising and lowering of block segment in the event of electrical power failure)

- pushbutton (a pushbutton panel is supplied to operate the tyre killer “OPEN/STOP/CLOSE”)

- Hydraulic power unit - HPU 50 bar unit for reliability and blocking strength

- Inductive proximity sensors with IP66 protection class and rated operating distance of 15mm.

- Hydraulic hose strength - 350bar (35 MPa)

- **Protection Class** - IP 55

- **Blocking Spikes Element** –

- Consists of heavy duty special steel spikes, welded to a solid steel rotation axis. Centre to Centre distance of spikes approx. 200 mm.

- The axis is connected with the hydraulic cylinders via a Special lever system.

6. X-ray Baggage Scanner systems, image acquisition, recording, storage and display systems.

X Ray Baggage Scanning system (XBIS) should consist of x ray machine, image acquisition, recording, storage and display systems, fabricated structure of steel frame to house the machine with mobile heavy casters and stable screw jack levelling feet and necessary steel structure to hose image acquisition, recording, storage and display systems.

A. General Description

- XBIS Should Be Indigenous make and factory should be in India.

- XBIS Business: OEM should have experience of maintaining minimum 200 X ray baggage scanners. Declaration with reference list to be provided by OEM.

- Safe for food that is x rayed. Indian Department of Atomic Energy /BARC for food safety certificate to be submitted.

B. Technical Specification:

- Tunnel Opening: 600 mm x 400 mm (+/- 2%)
- Power Requirements: 220VAC:183-253 VAC,50Hz, 6 Amp Max
- Imaging: - 3D- Isometric
- Color Imaging: 3 Colors imaging based on atomic number and 6 colors imaging based on atomic number. Ability to move between 3 color and 6 color during baggage scanning in real time.
- Video Display: 22" high Resolution, Low Radiation, Ergonomic, LCD Color Monitor
- Power Consumption: Should not exceed 0.5 KV on full load

• Image Processing:

- Penetration: In Steel 30 mm Guaranteed
- Wire Resolution: 40 AWG Wire Typical, 38 AWG Guaranteed
- Contrast Sensitivity: 24 Visible Levels, 4096 Gray Levels
- Beam Divergence: - Beam Divergence: 74° diagonal Vertically up-word
- Display Resolution: 1920 x 1280; 24 bit/pixel color
- Material Discrimination: Organic and inorganic material discrimination based on atomic number and density. 1 litre bottle of water should completely come in orange color shades only when put in multiple orientations (horizontal/vertical) in a bag both resolution and penetration should be seen without press of a button

• X-Ray Generator:

- Voltage: 160 KV Rating
- Tube Current: 0.7-1.2 mA
- Cooling: Sealed Oil Bath
- Duty Cycle: 100%
- X-Ray Detector: "L"-Shaped array

• Additional Requirements:

- OEM should have experience of supply of at least 8 Nos. 6040 - 3-D X-Ray Baggage Scanner machines (Windows based only) in last 2 years.
- OEM should be in XBIS business for last 7 years. PO Copy from Govt Organization should be submitted. Also OEM should have Commercial license more than 7 years from the date of tender submission date, for X-Ray production in India from AERB.
- Quoted model should have been supplied to any govt/semi govt/PSU organization only. PO copies along with invoice copy should be submitted along with the bid, End user customer purchase order along with contact details must be also enclosed.
- AERB certificate for 6040 3D X-Ray Baggage Scanner machines along with the bid. AERB certificate of conventional 6040 model will not be accepted.
- XBIS machine should use latest OS Windows Operating System only. LINUX or any other OS platform will not be accepted.
- AERB certificate in the name of OEM should be provided along with bid.

- Purchase Preference for Indigenization (Preference to Make in India), the Applicants have to comply with the Public Procurement Order, 2017 issued by Ministry of Commerce and Industry, Department of Industrial Policy and updated order no. P-45021/2/2017-PP (BE-II), dated 16.09.2020 (attached as Annexure 6 of NIT) or latest, issued by DPIIT. The minimum local content requirement to categorize a supplier as a Class-I Local supplier shall be 50% and margin of purchase preference shall be 20%. Subject tender shall be considered divisible in nature.

7. 9 ZONE DOOR FRAME METAL DETECTOR, Audio Visual alarm with alphanumeric LCD display.

GENERAL SPECIFICATIONS:

- Detectable Metals - Detection capability for both ferrous and non-ferrous metals
- Passage dimensions - Height- 185cm or more
Breadth – 70cm or more
Width – 50cm or more
- Weight - 90kg maximum
- Alarm - Audio Visual alarm with alphanumeric LCD display, height on person bar display (Metal locator), low battery indication.
- Sensitivity - Wide range of sensitivity setting and fine tuning, Adjustable in step to 250 levels. Including a 4 level Base setting.

Zones - 9-Zones minimum in matrix form only.

- Calibration - Manual and automatic by built- in key pad. All functions should be programmable and controlled by a microprocessor.
- Counter - Intelligent traffic counter for calculating the number of people in and out also the alarm number with percentage display.
- Protection –
 - a. Conform to relevant electric safety standard (Supported by Test Certificates from NABL accredited laboratory).
 - b. Magnetic field should be harmless to Pacemakers, magnetic media, and photographic films (Supported by Test Certificates from NABL accredited laboratory)
 - c. Operation of DFMD shall not be affected by infrared, ultraviolet, electromagnetic or RF radiation. Offered equipment shall comply with CE or equivalent safety/immunity standard (Supplier shall submit test certificates from national/international accredited lab)
 - d. DFMD should be harmless to pacemaker and pregnant woman (Supplier shall submit test certificates from national/international accredited lab as per ICNIRP guidelines)
- Temperature - The DFMD should work satisfactory in temperature range of -10 Deg C to +55 Deg C and humidity of 95% non-condensing. (Supported by Test Certificates from NABL accredited laboratory)

HARDWARE SPECIFICATIONS:

- Control Panel:
 - a. A suitable control panel shall be provided to turn unit on, access and adjust setup and programming. The control panel shall be used to turn the DFMD on. The unit should be ready to operate within ten seconds. The manual self-test shall be activated at any time by pressing suitable control menu. The control panel shall be used to turn the

DFMD off, ensuring that all of the information and settings are stored in memory before shut down.

- b. The DFMD Control panel should be tamper proof. All settings should be secured with a key lock. Further security should be accomplished with a cabinet lock to prevent unauthorized access to physical cables, connectors & electronics.
- Display: A visual display should be located in the overhead panel. The display should provide calibration and operational information, including program and sensitivity settings, operator functions. The display should display all self-prompting regulation and control functions as well as traffic count information.
 - Counter: The DFMD shall have a traffic counter that should track the number of people that have passed through the detector, the number of alarms and should calculate the alarm percentage. The counter should be used to obtain an automatic update on the traffic count.
 - Zones: The detector shall have a minimum of 9 zones of metal detection. These zones shall operate as individual detectors and detect the presence of metal in their confined region. Zone display shall be on front panel with human symbol. The zones shall be arranged in the following methodology: Top Left, Top Center and Top Right. Middle Left, Middle Center and Middle Right. Bottom Left, Bottom Center and Bottom Right.

Alarms and Indication:

- a. There should be both visual and audible alarms. It should be possible to adjust volume of the audible alarm. At its loudest setting, the volume should be adequate to overcome ambient noise present nearby.
 - b. Green to Red indication as visual indication of an alarm should appear when the unit detects a targeted amount of metal within the walk-through according to the program and base sensitivity settings. When a target is detected, the alarm light should appear even if the audio volume is off.
 - c. A Bar Graph Display should be provided which can indicate the approximate quantity of metal passing through the detector.
 - d. A mimic display should be present on the control panel which can indicate the locations of zones that have detected the metal.
 - e. There shall be a visual Indication for operation on Battery and on Mains.
- People Counter: The DFMD shall have a traffic & alarm counter inbuilt. The system should also be functional bi-directional. The counter should track the number of people that have passed through the detector, the number of alarms and should calculate the alarm percentage. The counter should be used to obtain an automatic update on the traffic count.
 - Power Supply and Battery Backup: The DFMD shall have a 90-270v operation SMPS Power Supply, should be provided with internal battery back-up for 12 hours' minimum operation in case of power cut. The Battery shall be of lead acid maintenance free type.

OPERATIONAL FEATURES

- Ready Time: The DFMD shall be ready to operate in less than 10 seconds after the detector is switched on. The Detector shall calibrate itself automatically after being switched on. All the settings in memory saved previously shall be applied automatically.

Password Protection:

- a. There shall be two levels of password protection for User and Supervisor level device control. Both Use and Supervisor shall have their own passwords.

- b. The Supervisor shall have the authority to change or reset the password for both User and Supervisor.
 - c. The Passwords shall be saved in memory and shall be retained in case of power loss to the DFMD.
 - Control Level Restriction: The level of access to the settings of the DFMD shall be restricted in two Levels, User and Supervisor. The User shall have access to only the Basic settings, whereas the Supervisor shall have access to all the Settings of the DFMD.
 - Volume Levels: There shall be at least 10 levels of volume control settings. At the lowest level of setting the volume shall be completely off for silent operation in areas where noise is not permitted. When the volume is set to zero the visual indications shall not be affected.
 - Alarm Time: It shall be possible to adjust the time duration of the alarm; this should allow the Supervisor to set the Alarm indication to the desired time period depending on the flow of people.
- Sensitivity: The sensitivity for all the 9 zones shall be programmable individually, or as Top, Middle and Bottom zones in groups of 3. It shall also be possible to set the sensitivity for all zones at once to Low, Medium or High.
- Base Level: There shall be a provision to select the Base level settings between 3 levels. This shall affect the sensitivity of all the zones of the detector. A High Base level shall make the zones more sensitive to the metal.
 - Frequency Control: It shall be possible to adjust the frequency of operation of the detector. This shall enable multiple detectors to work close to each other without interfering with each other. There shall be at least 15 level of frequency control capability. Once the frequency is selected it shall be saved in memory.
 - Traffic Counter:
 - a. The traffic counter shall count the number of people passing through the detector. It shall display the balance of people in one direction.
 - b. The counter shall count the number of alarms and shall also Display the Alarm percentage.
 - c. It shall be possible to set the increment and decrement direction of the Counter.
 - Infrared Sensors: It shall be possible to disable the Infrared sensors from the menu system by the Supervisor if required. The Counter shall continue to operate in this situation.
 - Auto Set and Self-test: There shall be a provision for the DFMD to set itself automatically if required. This feature can be used to setup the DFMD in any environment at optimal levels. There shall be a self-test capability, in case the User or Supervisor wants to check the proper functioning of the detector

800

8. Motorized Tripod Turnstile, Stainless steel, integrated with Biometrics based Access Control System.

Type: Motorized

Tripod should be motorized for pedestrian control on both the direction with safety feature of drop arm in case of power failure. Throughput to be 20-25 person/min, Tripod should comprise with minimum following parts

- Stainless steel 304 cabinet with 1.5 mm Thickness of material for greater strength and sturdiness.
- BLDC motor or servo motor with necessary gear box
- Encoder connected to motor
- Clutch arrangement for locking of rotating arms
- Electronics for controlling the entire operation of tripod
- Drop arm hub with stainless steel arms of 500 mm attached to aluminum hub index attached to the mechanism
using necessary locator or similar arrangement.
- Lane indicator on both the sides with green arrow and red Cross

Specification

- Model - C Type Structure – Long cabinet
- Height - Cabinet: 1020 MM approx. Rotor Arm height from ground: 800 MM and above
- Technology-
 1. Motorized,
 2. 3 X 120-degree indexing
- Rotation/Type- 120 degree stop (Tri-arm)
- Walkway/Passage Clearance- 500 + 50 mm
- Dimension- Cabinet: 1100X250X1020 MM (LXWXH) +/- 5%
- Material of construction-
 1. Body: SS-304 grade material with 1.5 mm thickness, SS 304 certificate to be produced along with the supply
 2. ARMS: 304 SS recessed into the cabinet through rotating hub
- Internals- Corrosion, abrasion and rust free alloy of high strength
- IP Protection- IP 44 – Indoor application
- Power- 230 VAC +/- 10% single phase
- Frequency- 50 Hz.
- Duty Cycle- 100%
- Power Off- Automatic Arm drop down for clear passage.
- ON Power restore- Arms should come back to its normal local position on its own and no manual intervention is required.
- Operation- Bi-directional
- Passage control- Passage to be controlled in one or either direction
- Locking-
 1. Locking with Motorized mechanism and Clutch arrangement.
 2. Motor used should be only Brushless Motor DC motor with MTBF of 1 Million operation
- Mechanism should comprise of BLDC Motor with necessary gear box with Clutch arrangement at the center for locking and un-locking of tripod arms with precise sensor arrangement. Reduction gear should be made from metal material and no plastic gears are allowed
- Drive for Tripod- Drive should comprise of BLDC or Servo Motor with necessary gear box and Encoder for precise movement of arms. Lock should be achieved with clutch arrangement mounted in line with rotating arms. Necessary gear box should be used to drive the motor at desired speed.
- Action lock- Positive action lock which prevents two passages at one time

- Operation- After receipt of valid signal from access control device tripod arm should rotate slightly giving visual indication to user that tripod is ready to use. User should push tripod arms slightly so that it rotates and completes its one rotation of 120 degrees (Push and go). No IR Sensor should be used to rotate the tripod arms.
- Integration (Input) - With any access control device like smart card Reader and / or Fingerprint Reader (biometrics based Access Control System Input required: Potential free contacts OR 5 Volt Pulse X 2
- Output (Rotation Detection Switch) - After rotation of Tripod arms to new position (PFC)
- Emergency- Automatic drop arm feature allowing clear passage
- Temperature range- 5 to 55-degree C
- Humidity- 90% non-condensing
- Lane Indicator- Green and Red on both sides
- Installation- Fixed to Concrete Floor by means of Anchor bolts, supplied with the Turnstile
- Barricade (optional at extra cost) - Wherever required turnstile to have side barricade to prevent side entry for more than one person at a time

9. Biometric System - Face Recognition, Fingerprint, Contactless Card & PIN for providing multi factor authentication.

- Biometric Reader should support authentication like Face Recognition, Fingerprint, Contactless Card & PIN for providing multi factor authentication by reading the Face, Fingerprint & combinations. The proposed device should have ability to support biometric and non-biometric authentication modes like Card & PIN also.
- Biometric Reader device should be intelligent enough to prevent the kind of security breach by determining whether a face in a video stream is “live” or a photograph.
- Device should be able to support the “Walk Through Type” where device can read the user’s face from a distance from 0.5 meter to 3 meters and authentication distance should be configurable in the device menu.
- Device should support the easy Face enrollment method by enrolling from Terminal / capturing the image through smart phone.
- Device should be able to detect the Fake Fingerprints when placed on the sensor. It should not read the fake fingerprints made of any chemical composition such as Rubber, Silicon, Gel, Paper, Thin film etc.
- Device should have 500 DPI Optical Sensor with FBI PIV certification. OEM should have in house Research & Development capabilities of customization in fingerprint algorithms, encryptions etc. Fingerprint Sensor, Fingerprint Algorithm, Software & Biometric Hardware should be from same OEM.
- FRS OEM / India Partner / Distributor / Bidder should have single PO of at-least 500 Nos of proposed make & model or similar Device with Face technology from same OEM in India during last 3 years from the date of publication of the tender.

- Device should be manufactured using the latest and most accurate state of the art Face Recognition Technology like reading Live Face only, biometric technology like Fake Fingerprint Detection, Auto Push and shall support high speed processing.
- Device should support ANDROID Operating System (OS) with min. 1GHz Quad Core Processor or better for fast processing and along with min 16GB Flash ROM and 2 GB RAM or better.
- Display should have min 5" Color LCD with enhanced touch sensitivity and shall be capturing & displaying USER's picture on main screen after authentication for valid / invalid logs both along with other credentials like Name/ User ID, Time etc.
- Device should be able to store up to 20,000 Faces /500,000 card user /5,00,000 Fingers & shall not be dependent on any server for storage of Face/Finger/Card & hence storage capacity shall not be divided between terminal & server.
- Device should be able to store up to 1,00,00,000 transaction logs along with min. 20,000 picture logs.
- Device should be able to upload/transfer punch information of employees on real time basis to the server/controller. There should be no batch process required.
- Device should be able to perform in 1:1 & 1: N authentication modes.
 - Face Authentication: It should support 1:20,000 face authentication in 1:1 & 1: N mode.
 - Fingerprint Authentication: It should support 1:500,000 authentications in 1:1 & 100,000 in 1: N mode.
- Device should support Mask / No Mask detection feature. It should be configurable in the menu with various options like Restricted / Guided / Mandatory etc..
- Device should support Multi-Face detection feature. It should be able to detect min 2 users face at the same time for face recognition, although feature should not be mandatory & configurable in menu. Throughput for Face recognition to be 2-3 second.
- Device should be compatible with Thermal Module / Camera for body temperature scanning & should display the body temperature on screen in F/ °C along with threshold limit.
- Device should have in built controller provision for door control and also provide the Wiegand IN/OUT & RS 485 output and should be compatible with any 3rd party controller to transfer user information for Authentication.
- Device should have min 2MP camera to capture the picture of authorized or unauthorized users & shall be transferring the same to server on real time basis w/o any delay unless network is down. It should support 0 lux to 25000 lux for extreme dark environments to

outdoor lighting conditions. The authentication must be possible in Irregular Lighting Recognition 5 ~ 15,000 Lux.

- Device Should support Anti Pass back feature & shall be configurable user wise.
- Device should support Duress fingerprint and Password option. In case of emergency, system should send Duress finger/PIN Alarm to Server.
- Device Should support Blacklist & Expiry Employee configuration. It should send an alert to software if a blacklist & Expire employee punch.
- The access permission should be less than 1 second & enrollment process shall not take more than 30 seconds for Face.
- 0.0001% FAR / 0.1% FRR in Ideal Conditions.
- Device should communicate with central server using TCP/IP protocol over Ethernet or Internet, 10/100 Mbps auto sensing Ethernet with DHCP, IPv4, GPRS (Optional).
- Device card reader shall be capable of reading the various card technologies like EM / Mifare / HID / Desfire etc. The protocol of data from the reader shall be secured open format and non-proprietary. Throughput for Card recognition to be 1-2 seconds.
- Device should support Multiple card reading format (Standard / Decimal / Hexa-Decimal / Hexa-6 Digit etc.).
- It shall be capable to provide a unique tone and / or tonal sequence for various status conditions such as access granted / denied.
- It should be possible to configure, manage and diagnose multiple geographically dispersed readers from a central desktop application without custom programming.
- Device should have full functionality in off-line mode. It should be able to send all events once connectivity is re-established (employees must be able to punch- in/out for shift or break off line).
- System should give warning alarm in case of tampering with machine.
- Software / Firmware updates should be possible through network/communication Port. To be provided free of cost during operational period.
- In the event of reader communication failure / tempering, it shall be capable of being detected by the server and appropriate alarms shall be generated at workstations / server. Fault of one reader should not affect the operations of other readers in the network.
- Device should be able to display Private message against a verified user that has been defined in the software against the specific user. Should be capable of displaying global

messages for all users and multimedia features like advertising, notices or wishing Birthdays etc.

- Device should have built-in RTC Calendar. Should be able to sync the clock with the server.
- Shall have UL Listed external power supply required for internal operations. Should be able to control & provide power to EM locks & other related accessories also.
- Device Should Support Power Saving Mode.
- The device must be capable of supporting Storage Temperature range from -10 °C~150 °C and operating temperature range from -20 to 60°C.
- The device should support humidity < 90%
- CE / FCC/ BIS/ROHs.

10.Attendance Management System

General features:

- The AMS software system shall have the modules that connect the node controllers on TCP/IP or RS-485, scans all the units defined for any events/ alarms, and downloads any settings configured by the operator.
- The AMS shall be designed and configured in such a way so that single point failure will have no degradation in overall functionality.
- It shall be the responsibility of the installer to ensure that the hardware and software solution using the PC specified meets the standards and performance criteria as set.
- The AMS server application within the AMS architecture should store its data within both a conventional relational database, such as MS SQL Server, a network directory. It should have Client-Server Configuration.

Attendance Management system software shall support the following features:

- Web based Enterprise Attendance software with Leave Management.
- It should be centralized system with 3-tier architecture. Should manage Multiple Units.
- Employee Details should be saved in encrypted form in the Attendance database.
- Login and authority rights to the software shall set for each user.
- Role based access and management.
- Central on-line data storage of historical transactions, expandable as system resource allow.
- History/Audit trail.
- Email integration and Notifications.
- Seamless integration with existing/future ERP, Payroll, HRMS, and legacy systems.
- Company, Location, division / project, department, designation, grade, category wise policy definition.

- Organization Chart.
- Access your own Project team Attendance and Leave details.
- Supports day and overnight shifts, Auto Shifts & Shift Scheduling.
- Out of all available access readers, provision to Select Reader/s for Attendance.
- Closing of Financial year should possible such that at the end of current financial year, leaves current financial is carry forwarded to new financial year.
- Holidays should be configurable. Should be able to create separate Holidays Groups.
- Flexible Holidays, which allows to choose from select holiday group.
- Various attendance rules shall be configurable Companywide, Location wise, department wise, Category wise & employee GroupWise etc. like after three consecutive late entries mark half day absent.
- Automatic Attendance Process
- There should be provision for
 - I. Updating already entered employee group details.
 - II. Bulk updating of any of the field available in Employee Master.
- Attendance Management System software shall dedicate software which should be responsible for actual rules definition, configuration, operations, monitoring and administration of following mention features:
 - I. Login and authority rights to the software for each operator.
 - II. All Approval should have separate Transaction password.
 - III. Overtime calculation.
 - IV. Leave register shall maintain for Casual Leave, Earned Leave, Sick Leave, Business Travel and other leaves.
 - V. Maternity and marriage leave carry forward of previous years' leave.
 - VI. Setup leave encashment facility. Employee Leave card status.
 - VII. Employee wise Leave credit configuration possible. For current financial year, user can select employee/s/all employees wise; credit date, credit type of leave.
 - VIII. Leave system set on calendar or financial year or any month of the year.
 - IX. Various leave type shall definable in the system that includes Paid leaves like EL, CL, Maternity Leave, Business travel etc., and Unpaid.
 - X. Leaves to be applied shall configured status such as full day leave, and half day leave.
 - XI. Provision to enter no. of leaves days with from & to date details.
 - XII. Option to either accept, reject or approved entered leave application as required.
 - XIII. Pro-rata calculation of leaves, Compensatory Off.
 - XIV. Configuration for special travel route related privileges.
 - XV. Employee group definition, assignment, activation deactivation.
 - XVI. Photographs and Signature shall be stored for each employee.
 - XVII. Add two Supervisors to each Employee.

- XVIII. User-defined employee fields
- XIX. Bulk Employee upload
- XX. Bulk Employee Supervisor Change upload
- XXI. Bulk Employee Shifts upload
- XXII. Bulk Employee Leaves Request upload
- XXIII. Bulk Employee Leave Balance upload
- XXIV. Bulk Holidays upload
- XXV. Bulk Attendance Override upload
- XXVI. Bulk Employee Project upload
- XXVII. Bulk Gate Pass upload
- XXVIII. Detailed data entry fields in employee master
- XXIX. Employee master maintained for various locations/branches.
- XXX. Department types, employee types, grades, locations maintained
- XXXI. Grace time for different category types.
- XXXII. Employee group definition
- XXXIII. Multi shifts shall configured with details like min & max working hours, allowable time before shift & allowable time after shift
- XXXIV. Holiday Working.
- XXXV. For companies having rotating shift pattern, Shift Master should be available with the application
- XXXVI. Once employee is configured in shift rotation, user shall not be allowed to alter his any of shift from Assign Shift Master
- XXXVII. Provision to update, delete or modify already applied shift rotation / Shift Assigned/ Weekly Off option
- XXXVIII. Manual Punch with web login
- XXXIX. Web clock punch with Photo and GPS location. Sent for approval. Should be configurable for auto approval.
 - XL. Approval Process for Shift
 - XLI. Approval Process for Leaves
 - XLII. Important facility for
 - I. Adding Employee details bulk entries at a time such as Employee Code, Employee Name and Employee from Template Excel Sheet.
 - II. Updating Managers/Supervisors in bulk from Template Excel Sheet.
 - III. Shift of Employees
 - XLIII. Export facility for
 - I. User with all configured masters in Excel
 - a) Daily Attendance extraction
 - b) Daily 3 Consecutive leaves alert
 - c) Daily Exception extraction
 - XLIV. Email notification for
 - I. Leave Request

- II. Leave Approval/Decline
- III. Leave Cancellation
- IV. If leave not approved in 3 days, then escalate to Manager's Manager
- V. If leave not approved for 6 days, then it is escalated to HR
- VI. If more than 15 days leave, then it should be escalated to Department head
- VII. When new Employee is added.
- VIII. Daily Attendance process result intimation Pass/Fail

Attendance Management Report – Web based MIS reporting

Human Resource

1. Employee Personal Info
2. Employee Details
3. Employee Headcount
4. Employee Attrition Report
5. Card Maintenance
6. New Employee Report
7. Bus Route Report
8. Shift-wise Bus Route Report
9. Employee Skill Process and Reports
10. Feedback Summary
11. Feedback Remarks

Management

12. Team Swipe Report
13. Team Monthly Hour
14. Team Monthly Report
15. Team Early Departure
16. Team Late Arrival
17. Team Leave Report
18. Team Monthly Absent
19. Team Consecutive Leave
20. Anticipated Attendance

Project

21. Project Allocation Report
22. Under Allocation Report
23. Project Attendance
24. Project Team Swipe Report
25. Project Team Attendance

26. Project Monthly
27. Project Monthly Hour
28. Project Early Departure
29. Project Late Arrival
30. Project Leave Report
31. Project Monthly Absence
32. Project Consecutive Leave

Time and Attendance

33. Employee Swipe Enquiry and Report
34. Attendance Enquiry and Report
35. Employee Shift Roster
36. Attendance Summary
37. Attendance Muster Report
38. Attendance Horizontal Report
39. Attendance Report
40. Monthly Report
41. Employee Monthly Hours
42. Attendance Override
43. Exception Report
44. Early Departure
45. Late Arrival
46. Daily Absent Report
47. Daily Present Report
48. Shift-wise Attendance
49. Department wise Absent
50. Department wise Present
51. Department wise Work
52. Designation wise Absent
53. Designation wise Present
54. Over Time Report
55. Under Time Report
56. Work Analysis Report
57. Attendance Analysis
58. Attendance Status
59. Leave Balance Report
60. Leave Report
61. Encashable Leave Report
62. Monthly Absence
63. Consecutive Leave
64. Leave Monthly Consumption

65. Employee Shift Roster

Employee

- 66. Individual Leave Report
- 67. Individual Attendance Report
- 68. Individual Leave Balance
- 69. Individual Monthly Hours
- 70. Individual Shift Roster

11.Remote Monitoring & Management Software for Bollard, UVSS, XBIS, DFMD, BOOM BARRIER & TYRE KILLER. (All to be integrated & Monitored remotely on Single Screen)

12.Em lock for Glass Door requirement

13.Biometric System for Glass Door inside the Security Centre
- Same as item no.1000

14.SERVER in Hot Standby Configuration. Primary Server 1Nos. Secondary Server 1Nos. With all registered licenses of S/w, OS, DB, Backup S/W, Server health Management S/W, Anti-Virus S/W support.

Server Specifications

- Tower Server – 4U Form Factor
- Processor: Intel Xeon E3-1220 Processor or better
- Memory: 16 GB DDR3
- Storage Hard Disk Drive: 8 TB or more
- Hard drive Support: Up to 4 HP SATA/SAS 3.5-inch drives
- Optical Drive: DVD-RW
- Power Supply: Dual Power Supply
- 350 W Non-hot plug, non-redundant power supply
- Raid Controller: On-Board Raid Controller
- Operating System: Window Server 2016 or Later
- Interface: USB, RJ45
- Accessories – 32-inch monitor (1920x1080 Resolution), Keyboard, mouse
- Licenses of operating system & Antivirus would be supplied by vendor.

15.Online UPS 10-KVA, along with battery for 30-min Backup

Output power capacity 9.0kWatts / 10.0kVA

Output Connections (1) Hard wire 3-wire (H N + E) (Battery Backup)

Nominal Output Voltage 230V

Nominal Input Voltage 230V

Input Connections Hard wire 3-wire (1P + N + E), Hard wire 5-wire (3P + N + E)

Max Configurable Power (Watts) 9.0kWatts / 10.0kVA

Efficiency at Full Load 94.4 %

Output Voltage Distortion Less than 2 %

Output Frequency (sync to mains) 47 - 53 Hz for 50 Hz nominal Sync to mains, 50 Hz +/- 0.1 % For 50 Hz nominal Unsynchronised, 50/60 Hz +/- 1 Hz Sync to mains, 50/60 Hz +/- 3 Hz Sync to mains, 60 Hz +/- 0.1 % For 60 Hz nominal Unsynchronised

Other Output Voltages 220 V, 240 V

Load Crest Factor 3: 1

Topology Double conversion online

Waveform type Sine wave

Overload Operation 60 seconds at 125% and 30 seconds at 150%

Output Voltage THD < 2% for 0 to 100% linear load and < 5% for full non-linear load

Output Voltage Tolerance +/- 1% static and +/- 5% at 100% load step

Bypass Built-in static bypass

Input:

Input frequency 40 - 70 Hz Auto-sensing

Input voltage range for main operations 160 - 285V

Efficiency at Full Load 94.4 %

Input Power Factor at Full Load 0.98

Batteries & Runtime:

Battery type External battery system

Typical recharge time 5hour(s)

Communications & Management:

Interface Port(s) RJ-45 Serial, USB

Emergency Power Off (EPO) Yes

Available Smart Slot™ Interface Quantity 1

16.Video Wall - Main Control Room VIDEO WALL WITH ALL ACCESSORIES

Display Panel

Screen Size (Diagonal): 55 Inch

Bezel Width (Bezel to Bezel) .88MM Panel Technology IPS Backlight Type,

DLED Number of Pixels (H x V): 1,920 x 1,080 pixel or better

Brightness -500 cd/m²

Inputs: Video Input 2xHDMI2.0, 2xUSB2.0, USB2.0(Internal), DP 1.2a

Video Output HDMI2.0, DP 1.2a,

External Control RS232(DE-9F), Ethernet (RJ45), Service (RJ12)

AV over IP Encoder / Decoder

Video Resolutions - Up to 4096x2160@60Hz

Audio Formats Primary multichannel (up to 8-channel LPCM or encoded HBR 7.1 surround sound), secondary 2-channel LPCM

Connectors HDMI, USB, RS232, LAN, CAT

Control system with user interface

3 X RS232, 8 X IR, 8 X Relay

SDRAM 512 MB, Flash 4 GB

Memory Card - Supports SD and SDHC cards up to 32 GB

External Storage - Supports USB mass storage devices up to 1 TB

Mount for video wall

Recommended Screen Size: 42" - 70", Max Load: 75kg

VESA® compatibility (as standard): 200 x 100 to 400 x 400

VESA® compatibility (with included adaptors): up to 600 x 400*

Flat to Wall Depth: 101mm* (+/-7mm with micro-adjustment)

Popped Out Depth: 293mm* (+/-7mm with micro-adjustment)

Color: Black

17.IP FIXED BULLET WITH BUILT IN ON BOARD ANALYTICS CAMERA

IP FIXED BULLET WITH BUILT IN ON BOARD ANALYTICS CAMERA # 3 MEGAPIXEL # H.265
COMPRESSION # 30MTR IR LIGHT # DIS - Image Stabilization #WDR Pro

1. Bullet-style network cameras offering Video Content Analysis Support, to be built in on the camera to support alarm to be raised on line crossing detection, field detection and triggering following actions on the existing Vivotek VMS software in Mazagon Dock Shipbuilders Ltd.

2.The camera with the on board, built in VCA to be integrated with all the features on the existing Vivotek ST7501 VMS and TO BE COMPATIBLE / CONFIGURED AND INTEGRATED IN THE EXISTING CISF, CSO, GM SECURITY & ALCOCK YARD SERVER AND SOFTWARE AND TO BE MONITORED ON THE SAME MONITOR WITH EXISTING SYSTEM. NO ADDITIONAL SOFTWARE OR SERVER ALLOWED TO BE USED FOR SAME. THE VIDEO ANALYTIC ALRAM TO BE RAISED ON THE EXISTING SOFTWARE.

2. Key Features

- H.265 Compression Technology
- 1/2.5 to 1/2.9" Progressive CMOS Sensor
- 30 fps @ 2048x1536
- WDR Pro
- Built-in IR Illuminators - 30 Meters or more
- Weather-proof IP66-rated and Vandal-proof IK10-rated Housing
- P-iris Lens
- DIS (Digital Image Stabilization)
- f = 3 ~ 6 mm, Varifocal , P-iris Lens
- Line Crossing Detection, loitering & field detection, inbuilt on Camera Real Time Analytics-VCA (Video Content Analysis) Support.
- Recording and Alarm to be provided on existing MDL Vivotek ST7501 software @ CISF, CSO, DCPE, Alcock Yard Offices.

3.Camera Features

- Maximum Resolution -2048x1536 (3MP) or more
- Lens Type -Vari-focal
- Focal Length -f = 3 ~ 6 mm or better
- Aperture -F1.2 ~ F2.3
- Auto-iris -P-iris
- WDR Technology -WDR Pro
- Minimum Illumination -0.01 Lux @ F1.2 (Color) 0.001 Lux @ F1.2 (B/W)
- Pan/tilt/zoom Functionalities -ePTZ: 48x digital zoom (4x on IE plug-in, 12x built in)
- IR Illuminators -Built-in IR illuminators, effective up to 30 meter

Video

- Compression -H.265
- Maximum Frame Rate -H.265: 30fps@ 2048x1536
- Maximum Streams -3 simultaneous streams
- S/N Ratio - 40 dB
- Dynamic Range - 80 dB
- Image Settings - Video Rotation, Defog, DIS

Audio

- Audio Capability -Two-way audio (full duplex)
- Compression -G.711, G.726
- Interface -External microphone input

Network

- Interface -10 Base-T/100 Base TX Ethernet (RJ-45).
- ONVIF -Supported, specification available at www.onvif.org

Intelligent Video

- Camera Considerations-Line crossing detection: 40° - 80° angle to object direction, field detection, loitering detection
- Integration Camera Integrates with existing MDL camera event management systems and software – No additional software or servers.
- Object Direction-Configurable
- Field Detection & Area Setup-Setting area using maximum 20 points
- Alarm-The camera shall have on-board Video Content Analysis (VCA) and Any line crossing event should trigger an alarm on existing MDL Software's which should be seen at all the Locations as required.
- VCA* -Line crossing detection, field detection, loitering detection

General

Digital input*1

Digital output*1

- Casing -Weather-proof IP66-rated housing Vandal-proof IK10-rated metal housing (Casing Only)
- Safety Certifications - UL

18. CUBE Camera, 3 Megapixel, 30fps @ 2048 x 1536 resolution, ± 15° Tilt, 180° Horizontal Panoramic Lens View

Fixed CUBE Camera, 3 Megapixel CMOS Sensor, 30fps @ 2048 x 1536 resolution, ± 25° Tilt, 180° Horizontal Panoramic Lens View # 3 MEGAPIXEL # 180° Built in 10 Mtr IR LIGHT # 180° Panoramic # ± 15° Lens Tilt

. Network cameras offering Video Content Analysis Support work with the existing Vivotek VMS software in Mazagon Dock Shipbuilders Ltd.

2.The camera with all the features to work on the existing Vivotek VMS and TO BE COMPATIBLE / CONFIGURED AND INTEGRATED IN THE EXISTING CISF, CSO, GM SECURITY & ALCOCK YARD SERVER AND SOFTWARE AND TO BE MONITORED ON THE SAME MONITOR WITH EXISTING SYSTEM. NO ADDITIONAL SOFTWARE OR SERVER ALLOWED TO BE USED FOR SAME. THE VIDEO ANALYTIC ALRAM TO BE RAISED ON THE EXISTING SOFTWARE.

1. Key Features

- 3-Megapixel CMOS Sensor
- 30fps @ 2048x1536
- IR Light - Built-in 180° IR illuminators effective up to 10 meters
- Weather-proof IP66-rated and Vandal-proof IK10-rated Housing
- 180° Horizontal Panoramic View
- ±15° Tilt Lens
- Built-in Microphone
- Real-time H.264 and MJPEG Compression (Dual Codec)
- Built-in IEEE 802.3af Compliant PoE

2. Camera Specifications: -

- Image Sensor-1/2.5 to 1/2.9" Progressive CMOS
- Maximum Resolution-2048 x 1536
- Focal Length-1.8 mm with ± 15° Tilt Lens
- Field of View-180° (horizontal)
120° (vertical)
180° (diagonal)
- WDR Technology
- Minimum Illumination- 0.08 Lux @ F2.0 (Color)
- Illumination - Built-in 180° IR illuminators effective up to 10 meters
- Pan/tilt/zoom Functionalities- °±15° Tilt Lens

Video

- Compression-H.264 & MJPEG
- Maximum Frame Rate-30fps @ 2048x1536
- Maximum Streams-2 simultaneous streams
- Dynamic Range- 80 dB

Audio

- Effective Range-5 meters
- ONVIF-Supported,

- Connectors-RJ-45 for Network/PoE connection
- Casing-IP66, IK10
- Safety Certifications-CE, UL

19. SPEED DOME NETWORK CAMERA, DAY /NIGHT, 2MP CMOS SENSORS, 60 fps @ 1080p Full HD, 150M IR with Smart IR II (Vari-Angle IR), 30x Zoom Lens.

SPEED DOME NETWORK CAMERA, DAY /NIGHT, 2 x 2MP CMOS SENSORS, 1080p 60 fps • 30x Zoom • 150M • Smart IR II • IP66 • IK10 • NEMA 4X • -50°C ~ 55°C • Wiper
 . Network cameras offering Video Content Analysis Support work with the existing Vivotek VMS software in Mazagon Dock Shipbuilders Ltd.

2.The camera with all the features to work on the existing Vivotek VMS and TO BE COMPATIBLE / CONFIGURED AND INTEGRATED IN THE EXISTING CISF, CSO, GM SECURITY & ALCOCK YARD SERVER AND SOFTWARE AND TO BE MONITORED ON THE SAME MONITOR WITH EXISTING SYSTEM. NO ADDITIONAL SOFTWARE OR SERVER ALLOWED TO BE USED FOR SAME. THE VIDEO ANALYTIC ALRAM TO BE RAISED ON THE EXISTING SOFTWARE.

1. The PTZ surveillance camera with IR Illumination to utilize H.265 compression technology. When combined with Smart Stream II technology users can obtain bandwidth savings of up to 80%* compared to traditional H.264.

2. The camera combining 1080p full HD resolution with H.265, IR illuminators, Vari-Angle IR, WDR, and 30x optical zoom, the Camera is able to capture fine details at top-notch quality, 24 hours a day, 7days a week.

3. The camera performance with an IP66- and NEMA 4X-rated housing to protect the camera against rain, dust, and corrosion.

4. The camera has a wide operating temperature range from -50°C to 55°C, ensuring continuous operation under the most extreme weather conditions and hazardous environments.

5. Key Features

- Real-time H.265, H.264 and MJPEG Compression (Triple Codec)
- 60 fps @ 1080p Full HD
- 30x Zoom Lens
- 150M IR with Smart IR II (Vari-Angle IR)
- WDR Pro for Unparalleled Visibility in High Contrast Environments
- Weather-proof IP66, Vandal-proof IK10 and NEMA 4X-rated Housing
- -50°C ~ 55°C Wide Temperature Range for Extreme Weather Conditions (AC 24V/ PoH)
- Smart Stream II to Optimize Bandwidth Efficiency
- EIS
- Easy Cleaning with Built-in Wiper.

6. Camera Features: -

- Image Sensor-1/3" Progressive CMOS
- CMOS SENSORS – 2 MP
- Maximum Resolution-1920x1080
- Lens Type-30x Optical Zoom, Auto Focus
- Focal Length-f = 4.3~129 mm (30x zoom)
- Aperture-F1.6 ~ F4.7
- Field of View-59° ~ 2° (Horizontal), 45° ~ 2° (Vertical), 71° ~ 3° (Diagonal)
- Video Alignment-Video Alignment to Have a Seamless Picture – All 4 pictures to be Stitched together for a seamless Live image.
- WDR Technology - WDR Pro
- Day/Night-Yes
- Minimum Illumination-0.42 lux @ F1.6 (Color), 0.01 lux @ F1.6 (B/W), 0 lux with IR illumination on
- Pan/Tilt/Zoom Functionalities- 128x digital zoom (4x on IE plug-in, 32x built-in), Auto pan mode, Auto patrol mod
- IR Illuminators-Built-in 850nm IR Illuminators up to 150 meters with Smart IR II, IR LED*2
- IR Lights-150M IR with Smart IR II (Vari-Angle IR)

Video-

- Compression-H265, H264, MJPEG
- Maximum Streams-4 simultaneous streams
- Dynamic Range-110 dB

Audio-

- Audio Capability-Two-way audio (Full duplex)
- Interface-External microphone input

External line output

Network-

- Casing-Weather-proof IP66-rated, Vandal-proof IK10-rated
- Safety Certifications-EMC: CE, LVD, FCC Class A, VCCI; Safety: UL; Environment: IK10, IP66, NEMA 4X

20. Video Recording and Analytics Server (storage min 30 TB or above as per design) (Recording Parameters: 25 fps @ 2048x1536(3 Megapixel) x 24 hours for 365 days)

Technical Description

1. Operating system Linux/Windows
2. Processor Intel Xeon E5-2620, 2.00 GHz
3. Memory 8GB
4. OS drive 2 x RAID1 500GB Near line SAS HD
5. Network interface Minimum Two 1Gb NICs, Recommended: Three
6. RAID Controller RAID 5 or better

7. Video Storage 36TB max, usable 30TB usable
8. External storage iSCSI /SAS, USB, eSATA
9. Power supply redundant 450W
10. Max BTU 1908
11. Max Total Cameras 64
12. Digital Interface 1 x VGA
13. Video Recording (write to disc) 400 Mbps
14. Video Playback (to client) 400 Mbps
15. Chassis 2U Rackmount
16. Regulatory CE and UL certified or equivalent

21. Workstation (for CCTV client viewing-5. Nos)

Workstation

Technical Specifications

Processor	Intel® Xeon® W-series
Operating System	<ul style="list-style-type: none"> • Windows® 10 Pro for Workstations
Power Supply	500 W @ 92% efficient
Graphics	<ul style="list-style-type: none"> • Up to 2 x NVIDIA® Quadro® RTX 4000 • Up to 2 x NVIDIA® Quadro® P5000
Memory	4-CH, 4 X DIMM slots, up to 256GB DDR4, 2933MHz, ECC
Storage Capacity	<ul style="list-style-type: none"> • Up to 12 total drives • Up to 4 internal storage bays • Max M.2 = 2 (4 TB) • Max 8.89cms (3.5) HDD = 6 (60 TB) • Max 6.35cms (2.5) SSD = 10 (20 TB)
On-board	2 x PCIe SSD M.2 (up to 2 TB)
RAID Support	<ul style="list-style-type: none"> • RAID 0, 1, 5, 10 • NVMe RAID 0, 1 option (Intel RSTe vROC) via activation key • Front: 2 x USB-C/Thunderbolt 3 (optional) • Front: 2 x USB 3.1 Gen 1 Type A • Front: Microphone • Front: Headphone • Rear: USB-C (optional) • Rear: Thunderbolt 3 (optional) • Rear: 4 x USB 3.1 Gen 1 Type A
Ports	<ul style="list-style-type: none"> • Rear: 2 x USB 2.0 Type A • Rear: 2 x PS/2 • Rear: eSATA (optional) • Rear: Fire wire (optional) • Rear: Gigabit Ethernet • Rea: Audio line-in • Rear: Audio line-out • Rear: Microphone
Physical Security	Cable lock

- | | |
|------------------|---|
| Wi-Fi | <ul style="list-style-type: none"> • Intel® Wireless – N 7260 AC • 802.11 a/c, 2 x 2, 2.4 GHz / 5 GHz + Bluetooth® 4.0 • Intel® Dual Band Wireless 8265 AC |
| PCI / PCIe Slots | <ul style="list-style-type: none"> • 2 x PCIe3 x 16 • PCIe3 x 8 (open ended) • PCIe3 x 4 (open ended) |

Workstation Specs (Access Control System Client View- 3 Nos):

- Intel® Xeon® W processor
- Ubuntu / Windows
- Chipset Intel® C422; Intel® X299 or better
- 192 GB DDR4-2933 SDRAM (6 x 32 GB)
- Memory Slots - 8 DIMM or better
- Hard Drive Description - 2 TB SATA SSD
- External Drive Bays Two 5.25"
- Internal Drive Bays Two 2.5" Or 3.5"
- Expansion Slots 1 PCIe 3 x16; 2 M.2 PCIe 3 x4
- Pointing Device USB optical mouse
- Keyboard USB Slim Business Keyboard
- Wi-Fi: 802.11 a/c, 2 x 2, 2.4 GHz / 5 GHz + Bluetooth® 4.0

22. Video Management & Recording Software Licenses

Recording and Monitoring Software:

The Video Recording and Monitoring System should provide Camera Monitoring Client Licenses and licenses for monitoring/viewing/Analytics of at least 64 cameras for the setup. The software shall be compatible with the existing software at MDL Monitoring Locations and show all the camera features and analytics in the existing software at the 04 locations. The Fixed camera provided, shall be fully integrated so that in case of any analytic alarm at the camera it should trigger the same in the existing software of the above locations. Appropriate software components shall be included for achieving the above.

SOFTWARE SPECIFICATIONS

1. Maximum Number of Cameras -64 Cameras
2. Support OS -Windows 10, 8, 7, Vista, XP
Windows Server 2012, 2008, 2003, 2000

RECORDING & LIVE VIEW

7. Max. Channel -64-Channel
 8. Layout -Multi Layout Display: 1x1, 2x2, 1+5, 3x3, 1+12, 4x4, 5x5, 1+31,
Single Layout Display, Full Screen Display, Sequential Display
 9. Stream Application -Stream Selection & Auto Stream Size
 10. View Application -Drag & Drop
- Remote I/O Control
PiP (Digital Zoom)
Instant Replay

De-interlace

PLAYBACK

12. Max. Channel -12 Channels

14. Playback Mode -Asynchronous & Synchronous

15. Playback Control -Play, Rewind, Pause, Stop, Next / Previous Video Start, next / previous Frame, 1/8X ~ 64X Speed Control, Bookmark

16. Search Mode -Browsing, Date & Time (Fast), Event, Bookmark, Alarm, Log, Timeline, Timeline Scale

VIDEO

17. Video Format -MJPEG, MPEG4, H.264 AVC, H.264 SVC, H.265

18. Video Resolution -Up to 6 Megapixels

19. Video Enhancement -Basic Mode: Brightness, Contrast, Saturation, Hue
Intelligent Mode: Defog, Rain, Snow, Fire / Smoke

Alarm Management

20. Alarm Period (sec.) -Max. 30

21. Alarm Filter -Name, Time, Source, Event Type

22. Alarm Setting -Live View Alarm Notification: Fixed & Popup Alert Sound

23. Schedule Type -Continuous, Schedule, Manual

24. Camera Event -Motion, DI/O, Video Lost/Restore, PIR, Tampering, Temperature, IR, PPTZ, Line Crossing Detection, Loitering Detection, Field Detection

25. Camera Status -Connection Status, Recording Status, Recording Error

27. Storage Status -Storage Connection Status, Storage Capacity Status

28. External Devices Event -DI/O (With I/O Box)

30. Source -Import Picture

31. Marked -Add, Remove, Direction Control, PTZ Control & Indicator

Live View Event Notification -Event Icon Light Flash

PTZ

32. PTZ/ digital PTZ Control -Panel Control & Mouse Click Control

33. PTZ/ digital PTZ Operation -Direction Control, Home, Zoom, Focus, Iris, Preset, Patrol (Group), Pan, Stop, Speed

34. PTZ Operation Mode -Click to Move & Continuous Move Export

35. Snapshot -BMP & JPEG

36. Export file -AVI, 3GP & EXE System

37. User Management -Authentication: Basic Account / Windows AD Account

38. User Level -Administrator, Power User, User, Operator & Guest

39. User Control -Permission, Accessible Cameras & Accessible Substation

40. Network -DDNS, SMTP, UPnP & Proxy

41. Device Integration

43. Camera Integration

44. Basic Setting -User Name, Password & Camera Model

45. Connection Setting -Configuration Protocol: HTTP, HTTPS Streaming Protocol: TCP, UDP, HTTP, HTTPS

46. Video Setting -Video Stream, Compression, Resolution, FPS, Video Quality

- 47. Remote Focus -Manual Focus Adjustment & Full Range Scan
- 48. NTP Setting -IP Address (NTP Server or VAST Server) & Updating Interval
- 49. Panoramic PTZ Feature -Panoramic PTZ

23. Video Analytics Software Licenses - Line Crossing, Loitering, Field Detection, Object Counting

Refer line item no. 11

ANALYTICS

- 1. Camera Placement -Field detection and Line crossing detection:
- 2. 45° - 90° angle to object direction
- 3. Object counting:
- 4. 90° angle to object direction
- 5. Lighting Conditions -Full lighting condition
- 6. Limitations -Shadows caused by light direction change might cause inaccurate counting
- 7. Integration Camera -Integrates with camera event management system
- 8. Licenses -One VCA license only for one camera
- 9. Browser Support -Internet Explorer 8.x, 9.x, 10.x
- 10. Line Crossing
- 11. Line Setup -Tripwire setting
- 12. Object Direction -Configurable
- 13. Field Detection
- 14. Field Area Setup -Setting area using maximum 20 points
- 15. Object Counting
- 16. Object Counting Setup -Tripwire setting
- 17. Database -Network camera can save about 5,000 in/out data

24. Storage for Archiving - Fully Loaded with Enterprise Level HDD (180 TB minimum or above as per design) (Recording Parameters: 25 fps @ 2048x1536 (3 Megapixel) x 24 hours for 365 days).

- Built-in 10GbE
 - 3,500+ MB/s throughput and 390,000+ IOPS
 - Two internal cache ports and up to 4 SSDs for caching
 - Scalable up to 144 drive capacity
- # Virtualization-ready, centralized data storage, backup, sharing and disaster recovery
- IP Filter & Policy-based Automatic IP Blocking
 - Automatic Power on after Power Recovery
 - Wake on LAN*
 - Direct Support for IP Cameras
 - Up to 64 Camera License
 - Intelligent Video Analytics (IVA) for Advanced Video Search
 - Cloud Storage and Sharing

- 1. Rackmount

2. CPU-Intel Xeon E3-1246 v3 3.5GHz Quad Core / Better
3. Operating System-Linux /Unix/ Unix or Linux base kernal Inbuilt
4. ECC Memory installed)-8 GB or More
5. Drive Bays-Minimum 16 Bays
6. Drive Type Supported-SATA / SSD
7. Two mSATA port on board for read caching (256 mSATA port on board for read caching for IOPS enhancement -Optional purchase)-Two mSATA port on board for read caching (256 GB cache)-
8. SSD Caching (4 SSD for caching) -
9. Hot Swappable Drives-
10. HDD Supported by each Bay-4TB/6TB/8TB /10 OR HIGHER
11. Max Raw Capacity-160 TB or More (Installed)
12. Redundant Power Supply. -Yes
13. Gigabit LAN Ports-Minimum 4
14. 2 X 10G Fiber Ports-10G SFP+ port
15. USB 2.0/3.0 Ports-Minimum 2
16. Raid Support-0, 1, 5, 6, 10, Global Spare
17. Hard Disk Specifications-
-10 TB Server HDD
2 M MTBF,256 MB ,6 GBPS ,7200 RPM
Average Seek Time (Read)-<= 10 ms
Average Seek Time (Write)-<= 11 ms
Sustained Transfer rate->= 170 MB/s
18. Data Protection Features-
Backup Utility / Tool/ Software to be provided with Device-Details of the Backup Utility to be Provided
Real-Time Anti-Virus Scanning Facility-Details to be provided
Real-time Remote Replication (RTRR) to another NAS or FTP Server-Details to be Provided
19. -Domain Authentication Integration-Microsoft Active Directory (AD)
LDAP Server
LDAP Client
Domain Users Login via CIFS/SMB, AFP, FTP, and File Station
20. -iSCSI (IP SAN)-iSCSI Target Up to 256 Targets/LUNs Combined
Block-based LUN
Thin-provisioned LUN with Space Reclamation supported
Supports SPC-3 Persistent Reservation
Supports MPIO & MC/S
Max No. of Virtual Disk Drives: 8
21. Virtualization Features-
Should support VMWARE vSphere 5, Citrix xenserver 6,
Citrix XenServer (6.0)
Windows Server 2012 Hyper-V
Supports Microsoft ODX
Windows Server 2012 Failover Clustering
23. -Virtualization Station-Support up to 4 Virtual Machine (WITH 16 GB RAM & 8 VM With 32 GB -) creating to run an operating system such as Windows, Linux, Unix.

VM import from Virtual Appliances

VM export into a virtual appliance in OVF / QVM format

HTML5 based shared remote console

24. Management and Accounting-

Should be able to Save and Restore System Configuration (clone devices)-

Local Event Log/ -

Local Graphical User Interface (GUI)-

User and configuration -Setup using easy browser-based dashboard

Supported-Supported Web Browsers: Internet Explorer® 9, Opera 9.5+, Safari®

2.0+, Google Chrome™ 18+, Mozilla Firefox® 14+ or higher

25. Networking Protocols & File System & Transfer Protocols-

Network Protocols: TCP/IP, IPv4, IPv6, SNMP, VLAN, SSH, NTP;

File System: Liux/Unix (NFS), Microsoft Network (CIFS/SMB 3), External File System

EXT3, EXT4, NTFS;

Transfer Protocols: HTTP, HTTPS, iSCSI, FTP, SFTP, and Details to be provided

Internal File System- Details to be provided

DHCP Client-

25. 1 KVA Online UPS

Main

- Rated power in W - 600 W
- Rated power in VA - 1000 VA
- Nb of power socket outlets - 4 India 3-pin 6A / 2 India 3-pin 6A surge
- Main Output Voltage - 230 V
- Main Input Voltage - 230 V
- Cable length - 1.52 m
- Number of cables – 1

Input

- Network frequency - 50/60 Hz +/- 3 Hz auto-sensing
- Plug standard - India 3-pin 6A
- Input voltage limits - 170...294 V

Output

- Maximum configurable power in W - 600 W
- Output frequency - 50/60 Hz +/- 1 Hz sync to mains
- UPS type -Line interactive
- Wave type - Stepped approximation to a sine wave
- Efficiency - 84 % (full load) & 80 % (half load)
- Maximum configurable power in VA - 1000 VA
- Transfer time - 8 ms typical: 12 ms maximum.

Battery

- Battery type - Lead-acid battery
- Battery recharge time - 7.4 h
- Battery charger power - 29 W rated
- Battery power in VAh - 216 VAh runtime

Communications & Management

- Control panel - Multifunction LCD status and control console

- Alarm - Alarm when on battery: distinctive low battery alarm: overload continuous tone alarm

Surge Protection and Filtering

- Surge energy rate -680 J
- Let through voltage rating - 330 V

Product certifications –BIS

26. 8-port 10/100/1000T manageable switch with internal PSU

1. Sturdy metal Case-Operating temperature 0-50°C
2. Silent operation; fanless-Full-duplex flow control
3. 1,488,000pps for 1000Mbps Ethernet-Cable length detection and power minimization.
4. Default aging time: 200-600 seconds
5. Auto MDI/MDI-X on TX port
6. Packet Buffer: 128Kbytes
7. Jumbo Frames: 9216bytes
8. EAP pass through: Yes
9. BPDU pass through: Yes
10. Half/full-duplex
11. Auto-negotiation
12. Interface connections: 10/100/1000T RJ-45
13. Frequency: 50 - 60Hz
14. Standards and compliance
15. IEEE 802.3 10BASE-T
16. Safety
17. IEEE 802.3u 100BASE-TXIEEE 802.3ab 1000BASE-T-UL60950-1, 2nd Edition
18. IEEE 802.3x Flow Control-CSA C22.2 No.60950-1-07, 2nd Edition
19. IEEE 802.3az Energy-Efficient Ether-IEC60950-1(UL-EU, UL-CB)
20. Electrical/mechanical approvals -Restrictions on Hazardous Substances (RoHS) compliance EAC certification
21. EU RoHS compliant EN55024
22. Features ICES Class A-BPDU/EAP pass-through VCCI Class A-Flow control
23. FCC Class A-Loop guard
24. RCM-Jumbo Frame
25. CE-Eco-friendly
26. EN55022- CISPR 55022

All Cabling & Conduite required to execute EAS/ACS/VMS

All Accessories Required to execute EAS/ACS/VMS and other involved equipment.

Networking accessories and attachments

28. CAT 6 cables (Any color excluding Grey)

1. The horizontal cables should be 4-pair unshielded twisted pair (UTP) specifications.
2. The cable should be of 4 twisted pairs of 23 AWG solid conductors wit
3. Should have Star filler (No bisector tape) cable construction
4. Insulation Material: Polyethylene
5. Electrical Performance -

- Conductor DC resistance @ 20°C(max) 9.38 ohm /100m
- DC resistance Unbalance (max) 5%
- Mutual Capacitance @ 20°C(max) 5.6nF/100m
- Nominal Velocity of Propagation. 70%
- Attenuation at 250MHz 32.8dB
- Return Loss at 250MHz 17.3dB
- ACR at 250MHz 5.5dB
- PSACR at 250MHz 3.5dB
- NEXT at 250MHz 38.3dB
- PSNEXT at 250MHz 36.3dB
- ELFEXT at 250MHz 19.8dB
- PSELFEXT at 250MHz 16.8dB
- Thermal Characteristics Operating temperature -15 to +70°C

29. 6 core Single Mode OFC with HDPE Pipe.

1. 16 CORE SINGLE MODE OUTDOOR ARMoured 9/125 FIBER OPTIC -UNITUBE
2. TYPE: SINGLE MODE, Loose tube construction for Outdoor application, direct burial.
3. Optical Parameters: Max Attenuation@1310nm = 0.36, cutoff wavelength <=1260, dispersion <= 3.5
4. Jacketing Material: HDPE
5. Standards: ISO/IEC 1181, ANSI/TIA 568, IEC 60793

31.8 port PoE Gigabit manageable switch with additional 2 SFP ports (Layer 2)

General Features

The switch should support a minimum of 8 nos. 10/100/1000 PoE+ Ethernet Ports
 The switch should support a minimum of 2 SFP Uplinks. All the SFP ports should be populated with 1Gbps LX transceivers modules.
 The switch should support a total of 10 Ports
 The switch should support flexibility to configure hardware resource allocation for different features.

Performance and Scalability

The switch should support Forwarding bandwidth of 10 Gbps
 The switch should support Full-duplex Switching bandwidth of 10 Gbps or above The switch should support Flash memory of 64 MB or Higher.
 The switch should support DRAM of 256 MB or Higher
 The switch should support 25 VLANsThe switch should support 4000 VLAN IDs
 The switch should support Jumbo frames of 9000 bytes
 The switch should support Maximum transmission unit (MTU) of 9198 bytes

Dimension

The Switch should be 1RU
 The switch should support Operating temperature 0° to 45°C
 The switch should support Operating relative humidity 15% to 90% non-Condensing.

Power Supply

The switch should support an auto-ranging power supply with input voltages between 100 and 240V AC

Standards

The switch should support IEEE 802.1D Spanning Tree Protocol

The switch should support IEEE 802.1p

The switch should support IEEE 802.1Q Trunking

The switch should support IEEE 802.1s Multiple Spanning Tree (MSTP)

The switch should support IEEE 802.1w Rapid Spanning Tree (RSTP)

The switch should support IEEE 802.1x

The switch should support SNMP v1, v2c, and v3

Layer-2 Features

The switch should support Automatic Negotiation of Trunking Protocol, to help minimize the configuration & errors

The switch should support IEEE 802.1Q VLAN encapsulation

The switch should support Centralized VLAN Management.

32. Media Converter - 10/100Mbps to 100Base-Fx Media Converter (Single Mode 20Kms)

- Link Fault Pass-Through support.
- Inter operable with most of Hubs and Switches.
- TP Port Supports Auto Negotiation and Auto-MDI-X.
- Powered by USB*

Technical Specifications

- Fiber Mode Single Mode
- Wave length 1310nm
- Fiber Cable 9/125Micron
- Fiber Cable Distance 20Kms
- Fiber Connector SC type
- Copper UTP Port RJ-45

LED Indicator FX

- Link/ACT
- DUP
- SD
- TP: 100
- PWR
- Power Adapter External DC5V, 1A

Environment Specifications

- Operating Temperature: 0°C~50°C
- Humidity: 5%~90% Non-condensing
- Certifications CE, FCC
- 94 x 70.3 x 26.2 mm

33. 12 port LIU Fully loaded with panels, adapters, patch cords & pigtails and other Connectorisation.

12 port Fiber Optic LIU with Pigtails, Splice Trays & Splice Protectors (Fully Loaded) with connectorisation:

Technical Specifications

- 12 Port Rack Mount Fibre Patch panel should be of Dimensions: 19" (Width) x 1U (Height) x 270mm (Depth)
- Should be able to accept SC Duplex, SC Simplex, LC Duplex and MTRJ Adaptors.
- Should have snap-in sub modules with six single fibre or 3 dual fibre ports.
- Should have a fiber management system moulded in to the unit structure to effectively route fibers from an incoming cable through to the connect or inter face.
- Should have knockouts at the rear to enable termination of loose tube or tight buffered cables as well as blown fiber tubes.
- Should be made up of polycarbonate, PC/ABS.
- Should have the option of accommodating 3 nos. of splice protection sleeve, each can accommodate 4 connectors.

34. Network Rack 12U - 04 Nos

Technical Description

The network rack to be supplied should be 19 inch 12U with 530 mm depth, single section, wall mountable, with one cable manager, AC distribution box with ON/OFF button, Single fan tray with 2 fans, cable entry provision, at the top and bottom, tough tinted glass door with lock and key facility.

35. JUNCTION BOX METALLIC ALL WEATHER SIZE MIN 9"x9"

Technical Specifications

Weather proof Junction Boxes (9X9 inch) - for Outdoor Cameras

36. JUNCTION BOX METALLIC ALL WEATHER SIZE MIN 24"x24"x18". (POWDER COATED)

Technical Specifications

Weather proof Junction Boxes 24"x24"x18" - for all networking equipment.

37. HDPE, PSC Pipe

PVC conduit with accessories on wall / ceiling / workshop for Cat6 and Fiber cables, PVC trunking (PVC casing n -capping) with accessories for wall / ceiling, as and where required

38. 3 core 2.5 sq. mm Power cable Armoured

Technical Specifications:

3 core 2.5sq mm Power cable armoured should be used, as and where required, as per vendor design.

39. Rack for Servers & switching gear for AMS and other biometric requirement.

40. Road cutting – Tar/Concrete Road (Services)

The digging of the tar/concrete should be as per system requirement for laying of cables

41. INSTALLATION AND COMMISSIONING: -

Installation & Commissioning Charges for the entire setup including laying of cables, fixing of cameras and all other activities on single point responsibility (training to MDL employee to be provided).

1. The system shall be designed by selecting high-grade components of proven quality and proper design of system electronics to ensure minimum downtime.

2. The vendor should supply install, configure and commission all the equipment (hardware/software) as per site requirements. The items/equipment's are outlined in the bill of material by MDL shall not be a limiting factor for installation/commissioning of the Security & Surveillance system. It is therefore strongly recommended that the bidding firms should do a site survey before the bidding.

3. All the required cabling, fitting/fixing of the supports/ poles, inter connections wired/ wireless, Fiber/UTP patch cords, LIUs, power cables & switches, digging (soft/hard soil) & resurfacing wherever required and other accessories shall be under the scope of the vendor. All the equipment active / passive should be housed / enclosed in proper protective gears like conduits/enclosures to prevent accidental damage and environmental hazards.

4. Vendor is expected to depute his personnel at site after award of job & prepare detailed site execution drawings indicating camera/ switches locations & cable routes. Cable sizes & network shall be designed by the vendor based on start or loop network as found optimum by the vendor. The same shall be approved by the Security Dept. before commencing the work.

42. Servicing of the System during Defect Liability Period:

Contractor to arrange free of cost Bi weekly servicing of all the entire systems installed during Defect liability period to keep the systems in good and trouble free operating conditions. The servicing agency appointed should be OEM or authorized agency of OEM. It is preferred to appoint the AMC Contractor as a servicing agency/OEM.

43. Summary of UPS & storage capacity.

As per the recording resolutions and time period requirements:

- 5 TB would be required per camera for the 365 days x 24 hours recording.
- If we consider 35 cameras + 5 more cameras (expansion).
- 40 cameras x 5TB = 200 TB

We are considering 30TB in the Server Line item and
180TB in the NAS Box Line item = 210TB (total).

Some space also to be required by the Operating Systems, Software and other applications.

15 units of UPS – 1 KVA

- 4 units with PTZ Cameras – each PTZ requires 1 unit.
- 1 unit with Server and NAS Box.
- 10 units with 10 Clients Servers, Monitors, and their Networking Equipment.

8 units of 10KVA. UPS shall be kept separately in tow wings. This is help reduce cable length. Also by using different UPS for different system, we are reducing Single point failure probability.

10KvA UPS is widely available whereas above 10KVA ups are unique.

- 1 unit for 35 cameras and Networking Equipment (Switches and Media Converter).
- 2 with X ray baggage scanner and Door Frame detectors.
- 1 unit with 90 Biometric Units.
- 1 unit with 45 Tripod Gates and Boom Barriers.
- 1 unit with Glass Door Locks and 40 Biometric Systems and Attendance Management System.
- 1 unit with Under Vehicle Scanner and Tyre Killer System.
- 1 unit with Bollards and Automatic Gates.

Final placement shall be done as per actual site condition and availability of space and Control room.