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No. I&P/NOC/26-27
Government of Pakistan
Ministry of **Defence**
PAKISTAN METEOROLOGICAL DEPARTMENT
(Indent and Purchase Section)
Sector H-8/2, Post Box No. 1214,**Islamabad,Pakistan**
URL: http://www.pmd.gov.pk/

REQUEST FOR PROPOSALS (RFP)

Pakistan Meteorological Department (PMD) invites Technical Proposals from pre-qualified bidders for **"PMD National Operation Center"**.

Terms & Conditions:

1. Bid Security 03 million, in shape of Bank Draft, Pay Order, in favor of D.G. PMD must be submitted.
2. Incomplete or late received offer will not be considered, closing date and time of Bid is 30th November, 2026 at 1030PST and opening date and time is 30th November, 2026 at 1100PST.
3. The relevant documents may be obtained from the websites i.e. https://weather.gov.pk, PPRA EPADS https://pa.epads.gov.pk as well as https://epms.ppra.gov.pk.
4. Competent Authority reserves the right to reject or accept any or all the tenders without assigning any reason under PPRA Rule.
5. The successful bidders will furnish performance guarantee in the shape of CDR/Pay Order/Bank Draft/ Bank Guarantee @ 10% of his work order in favour of D.G. PMD during the warranty period.

***Note:** All Firms are directed to quote their Bids online through PPRA E-PADS 2.0 as well as original Bids must be submitted in hard forms to I&P Section, PMD Headquarters office, Islamabad*

(Muhammad Hussam khan)
Deputy Chief Administrative Officer
Pakistan Meteorological Department
H-8/2, Islamabad
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REQUEST FOR PROPOSAL

For the establishment of

PMD National Operation Center

Pakistan Meteorological Department

Sector H-8/2,

Islamabad

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1. Introduction

Pakistan Meteorological Department (PMD) is looking to establish a PMD's National Operation Center (PMDNOC) at its main office in Islamabad to provide a centralized, resilient and highly visual operational environment for monitoring meteorological, hydrological, geophysical data and information, supporting early warning, situational awareness, decision support, incident management and coordination. This turnkey solution is intended to bring together data from distributed applications and systems, and present it through a common operating picture.

It includes centralized control room with real-time monitoring, incident/ticket management, customized dashboards, trainings, support, and sourcing of weather stations, radars, lightning, seismic, gauging, satellite/NWP, floods, GLOF, cyclones and other information as core elements to be visualized on three sided visual walls. This document consolidates those recurring requirements while making the specification vendor-neutral and suitable for competitive evaluation.

1.1 General Requirements

- The qualification shall focus on technical capability, relevant experience, proposed architecture, integration approach, and deployment of right team for the implementation of whole project.
- No manufacturer, brand, software platform or technology stack is mandatory unless explicitly stated as a minimum requirement.
- Proposed solutions shall be modular, open, scalable, secure, maintainable and capable of integrating with existing PMD systems and future systems.
- Software licenses (if any) must be perpetual.
- All specifications are minimum requirements. Only the equipment of equivalent or higher performance will be considered.
- Item numbers follow the Bill of Quantities.
- All equipment shall be new, current production, and supplied with the manufacturer's authorization for this project.
- All equipment shall carry the relevant safety and EMC certification (CE / FCC or equivalent) and be RoHS compliant.
- Spare parts shall remain available for at least 7 years from handover.
- The bidder shall provide installation, configuration, testing, commissioning, drawings, operator and technical training, and as-built documentation.
- Quantities and sizes are based on the current layout and can be increased and decreased as required. Evaluation will be purely on the bases of required quantities in this document.
- Provide all the specifications of each component/module as required and also submit a compliance sheet in Annex-I.
- All warranties should be for at least two years, unless or until explicitly described.
- Project is required to be finished in four (04) months from the award of the contract.

2. Scope of Work and deliverables

PMD expects a turnkey solution with following deliverables

- Indoor fine-pitch video walls. It must include cabinets/modules, frames, controllers, processors, cabling, power distribution, management software and spares.
- Visualization/control workstations and operator PCs with professional graphics capability. Role based access control.
- Customized dashboards for the defined use cases.

- Operation center interior fit-out including operator consoles and meeting/briefing furniture.
- Detailed design and enhancement of corridors/lobbies of three floors of the office as described in requirements.
- Video conferencing and collaboration facilities. Must include AI cameras, microphones, speakers, DSP/echo cancellation, displays and content sharing.
- Power Generator, ATS, UPS with battery backups.
- Cooling solution for the Operations Centre and associated technical areas
- Monitoring of UPS, PDU, STS/ATS where required, environmental monitoring
- Fire safety solution including fire detection/suppression and access control for Operation center.
- CCTV Surveillance.
- Incident management, ticketing and reporting.
- Implementation, integration testing, FAT/SAT, commissioning, trainings, documentation, warranty and after-sales support.
- Comprehensive trainings to the PMDs officials on each of the component/module of the projects. Training scope and contents will be approved by the PMD.
- A short high quality customized panoramic video documentary about PMDNOC functions.
- Two Support (resident) engineers for the period of one year after the final handover.
- Vendors are required to submit the clear time lines along with deliverables.

3. Visual Walls and paraphernalia

3.1 Video Walls

3.1.1 COB LED display modules (A1 to A4)

Parameter	**Minimum requirement**
Technology	Indoor COB (chip-on-board) LED, 1R1G1B full colour
Pixel pitch	≤ 1.25 mm
Pixel density	≥ 640,000 pixels/m²
Module	Front-serviceable, magnetic mounting; module size to allow the screen sizes below without partial modules
Front screen	7.20 m x 2.36 m (±1%), resolution ≥ 5760 x 1890 pixels
Left and right wing screens	Each 3.00 m x 2.36 m (±1%), resolution ≥ 2400 x 1890 pixels
Total display area	≥ 31.2 m²
Brightness	≥ 600 cd/m² after calibration, adjustable 0 to 100% in at least 256 steps
Refresh rate	**≥ 3840 Hz, maintained at 20% brightness**
Frame rate	50 / 60 Hz
Grey scale	≥ 16-bit
Contrast ratio	≥ 10,000:1
Viewing angle	≥ 160° horizontal and vertical
Colour temperature	Adjustable, 3000 K to 9300 K
Colour uniformity	Within ±0.003 Cx, Cy
Brightness uniformity	≥ 97% after point-by-point calibration
Flatness and seams	Module-to-module gap and step ≤ 0.1 mm
Power consumption	Maximum ≤ 560 W/m², average ≤ 260 W/m²
Input voltage	100 to 240 V AC, 50/60 Hz
MTBF / lifetime	MTBF ≥ 10,000 h; lifetime ≥ 100,000 h to half brightness
Operating environment	-10°C to 45°C, 10% to 90% RH non-condensing
Spares	≥ 5% spare modules from the same production batch

3.1.2 Receiving cards (A5)

Parameter	Minimum requirement
Function	Receiving cards with matching HUB boards, fully compatible with the LED video wall processor and sending cards in A6 and A7
Performance	**Support ≥ 3840 Hz refresh (with the module driver IC), 22bit+ grey-level enhancement, 16-bit precise grayscale calibration, HDR10 (SMPTE ST 2084 / 2086), low-grey compensation and pixel-level brightness and chroma calibration**
Monitoring	Report temperature, voltage and link status to the controller software
Spares	≥ 4% spare cards

3.1.3 LED video wall processor (A6)

Solution must fulfil the minimum requirements or higher. HIK Vision, Tricolor, DataPath, NovaStar or Digi Bird are only acceptable if the minimum specs mentioned are are met with full compliance from 3.1.3 to 3.2.7

Parameter	Minimum requirement
Type	Modular, rack-mount video wall splicing processor with integrated LED sending, 19-inch rack; hot-swappable input and output cards
Card slots	Not less than 15 input card slots and not less than 5 LED sending card slots
Input capacity	Not less than 60 input channels when fully populated
Loading capacity	Not less than 52 million pixels with Gigabit Ethernet sending cards
Inputs supplied	Not less than 4 x HDMI 2.0 inputs, each 3840 x 2160 at 60 Hz, HDCP 2.2, embedded audio
Input card options	HDMI 1.3 / 1.4, dual-link DVI, DP 1.2, 12G-SDI and 3G-SDI, HDBaseT and fibre input cards; IP stream decoding (H.264 / H.265, RTSP / ONVIF) available as an option
Layers	Per card not less than 16 x 2K, 8 x dual-link or 4 x 4K layers; not less than 80 layers per system; background images without use of layer resources
Screens and mosaic	Several independent screens on one processor; frame-synchronised output mosaic and irregular rectangle mosaic, so that the front and both wing screens operate as one canvas
Processing	10-bit video processing, HDR10 and HLG, input cropping, colour adjustment, scrolling text and logo overlay
Latency	Not more than 1 frame from input to the LED receiving card
Presets	Not less than 2,000 presets with fade and seamless switching, switching time less than 60 ms
Synchronization	Genlock input, bi-level and tri-level, with loop-out
Control	Browser-based control over Gigabit Ethernet with multi-user access; RS-232 for central control systems; LED configuration software and visual control application; firmware upgrade over the network
Monitoring	Network and local HDMI preview of inputs and outputs available as an option
Reliability	Self-test; automatic monitoring and alarms for fan speed, temperature, voltage and card status
Backup	Hot backup between two processors; Ethernet and fibre backup between sending cards
Power	Redundant dual power supplies, 100-240 V AC, 50/60 Hz; consumption not more than 450 W fully loaded
Environment	Operating 0 to 45 °C, 0 to 80% RH; storage -10 to 60 °C, 0 to 95% RH, non-condensing; noise not more than 45 dB(A)
Compliance and warranty	CE, FCC, UL / CB; manufacturer warranty not less than 2 year

3.1.4 Sending cards for A6 (A7)

Parameter	Minimum requirement
Type	LED sending card for the processor in A6, hot-swappable
Ports	Not less than 16 Gigabit Ethernet ports plus 2 fibre ports per card

Parameter	Minimum requirement
Load	Not less than 10.4 million pixels per card; not less than 650,000 pixels per port at 8-bit and 320,000 pixels per port at 10-bit
Maximum canvas	Not less than 10,240 pixels width or height per card
Fibre	Single-mode and multi-mode
Backup	Ethernet port backup; fibre ports copy the Ethernet outputs
Frame rate	Up to 144 Hz
Compatibility	Fully compatible with the receiving cards and HUB boards in A5 (7680 Hz), including pixel mapping and brightness and colour calibration
Power	Not more than 35 W per card
Uniform model	All sending cards of the same model, so the front and both wing screens can be configured and loaded as a single screen

3.1.5 LED power supplies (A8)

Parameter	Minimum requirement
Type	5 V switch-mode power supplies matched to the offered modules and cabinets
Protection	Over-voltage, over-current, short-circuit and over-temperature protection; power factor correction
Spares	≥ 4% spare units

3.1.6 COB LED cabinets (A9)

Parameter	Minimum requirement
Material	Die-cast aluminium cabinets; modules with no plastic housing
Screen build	Cabinets form the front screen (7.20 x 2.36 m) and each wing (3.00 x 2.36 m) with whole cabinets only, no cut or partial cabinets
Maintenance	Full front access; modules, receiving card, HUB board and power supply replaceable from the front without dismantling neighbouring cabinets
Assembly	Alignment pins and quick locks; seam ≤ 0.1 mm and flatness ≤ 0.1 mm between cabinets
Integration	Mounting inside each cabinet for its receiving card, HUB board and power supply, with power and data connectors for daisy-chaining
Cooling	Fanless, passive cooling through the aluminum body
Warranty	Not less than 2 year

3.1.7 Structure, cabling and commissioning (A10 to A12)

Parameter	Minimum requirement
Front frame	Wall-fixed steel frame, screen bottom edge 1 ft (305 mm) above finished floor
Wing frames	Two steel frames, each angled about 42.8° to the front plane so the wing faces the centre of the executive seating
Corner joints	Angled joint frames with no visible gap between front and wing screens
Cabling	Power and data cabling, HUB boards and distribution to the screen UPS outputs
Commissioning	On-site point-by-point calibration of brightness and colour across all three screens

3.2 Video wall controller and management software

3.2.1 Video wall controller (B1)

Parameter	Minimum requirement
Purpose	Dedicated video wall controller for 24/7 mission-critical control room use, capturing, processing and displaying multiple sources on the video wall
Chassis	19-inch rack-mount industrial chassis, 4U maximum (≤ 180 mm high, ≤ 510 mm deep), with rack ears and front-accessible drive bays
Backplane	PCIe Gen 3 switched fabric with ≥ 11 x8 slots (8 GB/s uplink and downlink per slot); output, capture and IP-decode cards can be mixed in any slot
Expansion	≥ 2 free slots after the project configuration, with the option to add an expansion chassis

Parameter	Minimum requirement
Processor	64-bit x86, ≥ 12 cores, ≥ 4.9 GHz maximum turbo frequency, ≥ 25 MB cache
Memory	≥ 32 GB DDR5, expandable to ≥ 64 GB
Storage	Two hot-swappable SSDs, each ≥ 480 GB, in RAID 1 (mirrored)
Power supply	Redundant, hot-swappable, ≥ 800 W, 100 to 240 V AC, 50/60 Hz, high efficiency (80 PLUS Platinum or equivalent)
Cooling	Hot-swappable fans, replaceable without shutdown; airflow optimized for continuous operation
Network	Dual Gigabit Ethernet (10/100/1000Base-T)
USB and local ports	≥ 4 x USB 3.0, ≥ 2 x USB 2.0, 1 x USB-C; on-board DisplayPort and HDMI for the admin console; 3.5 mm audio jack
Operating system	64-bit long-term-servicing edition, pre-installed and licensed, with vendor security support until at least 2032; home editions not acceptable
Diagnostics	Built-in real-time monitoring of temperatures, fan speeds, power supplies, cards and system performance, with alerts to administrators
Reliability and MTBF	System MTBF ≥ 40,000 hours in the supplied configuration (excluding fans and mechanical parts). Minimum component MTBF: redundant power supply ≥ 100,000 h at 40°C; single-board computer ≥ 100,000 h at 40°C; backplane ≥ 750,000 h; SSDs ≥ 2,000,000 h each; CPU and RAM ≥ 1,000,000 h; chassis cooling fans rated life ≥ 70,000 h at 40°C, hot-swappable. Industrial PC components rated for 24/7 control room use, with spare parts available for at least 7 years
Environment	Operating 0°C to 35°C; storage -20°C to 70°C; 10% to 95% RH
Acoustic noise	≤ 80 dB(A) at full load
Compliance	CE, FCC Part 15, IEC 62368-1 product safety
Project configuration	Supplied with output cards giving ≥ 4 outputs at 3840 x 2160 / 60 Hz, capture cards giving ≥ 12 inputs, and IP stream decoding support (cards specified under their own items)
Warranty	Not less than 3 years.

3.2.2 Video wall output (graphics) card (B2)

Parameter	Minimum requirement
Card interface	PCI Express Gen 3, x16 mechanical, not less than x8 electrical; full compatibility with the video wall controller (item B1)
Outputs per card	4 x HDMI 2.0
Output resolution	Each output up to 3840 x 2160 at 60 Hz, 4:4:4, not less than 594 Mpixels/s per output, on all four outputs simultaneously
Lower and custom resolutions	Each output supports HD and custom resolutions and timings to match the LED video wall processor inputs
Colour depth	Not less than 8 bits per component
Graphics memory	Not less than 8 GB per card
Capture-to-output transfer	Direct transfer path from the capture cards (item B3), not less than 5.5 GB/s sustained
Content protection	HDCP 2.2 supported from source to screen when used with the controller's capture cards
End-to-end 4K	Full 4K60 4:4:4 from capture input to the wall when used with 4K-capable capture cards
Scalability	Not less than 6 cards (24 x 4K outputs) in one controller, operating as one desktop
Unified desktop	Display driver unifies all outputs and cards into a single desktop canvas, with hundreds of output windows and full support for picture-in-picture and overlaps
Wall configuration tool	Graphical setup wizard for output resolution, rotation (90 / 180 / 270°), position, bezel compensation and LED wall layouts
Graphics performance	Hardware-accelerated 2D and 3D graphics
Software and operating system	Compatible with the wall management software (item B4); drivers for 64-bit Windows 10 / 11 and Windows Server 2019 or later
Diagnostics	Manufacturer's diagnostic and display configuration utilities supplied
Power	Not more than 50 W per card, slot powered (+3.3 V not more than 0.6 A, +12 V not more than 4.0 A)
Environment	Operating 0 to 35 °C; storage -20 to 70 °C; 5 to 90% RH non-condensing
Reliability	MTBF over 80,000 hours
Compliance and warranty	FCC Part 15 Class A and CE; manufacturer warranty not less than 1 year

Parameter	Minimum requirement
Note: additional output card (recommended)	Supply 2 output cards (8 outputs in total), with 2 outputs to each of the three screens (6 in use) and 2 outputs spare for expansion or replacement

3.2.3 Video capture cards (B3)

Parameter	Minimum requirement
Card interface	PCI Express Gen 3 x8, full compatibility with the video wall controller (item B1)
Inputs per card	4 x HDMI inputs per card
4K-capable inputs	At least 2 inputs per card capturing up to 3840 x 2160 and 4096 x 2160 at not less than 30 Hz
HD inputs	Remaining inputs capturing up to 1920 x 1080 (and 1920 x 1200) at 60 Hz
Project configuration	3 cards, not less than 12 inputs in total, of which not less than 6 are 4K-capable
Signal standards	HDMI 1.4a; DVI sources accepted through passive adapters; HDCP 1.4 compliant
Pixel clock	Not less than 297 MHz on 4K-capable inputs and not less than 165 MHz on HD inputs
On-board frame buffer	Not less than 768 MB per card
Pixel formats	RGB 4:4:4 8-bit (24 and 32 bit), RGB 5-5-5 and 5-6-5, YUV 4:2:2 and 4:2:0, 8-bit monochrome
Audio	Capture of embedded HDMI audio on all inputs
Latency	Low-latency capture with direct transfer to the graphics output memory, without passing through system memory
Hardware processing	On-card hardware scaling, cropping and text / image overlay
Streams	Not less than 16 independent capture streams per card, each with its own size, crop and format
Synchronization	Frame synchronization and hardware timestamping across all inputs and across multiple cards
EDID and signal detection	Programmable EDID per input; automatic detection of signal presence, resolution and timing
Multiple cards	Several cards operating in one chassis with a fixed, configurable card order
Software support	64-bit drivers for Windows 10 / 11 and Windows Server 2019 / 2022; Linux (Video4Linux); DirectShow / WDM; SDK / API for third-party integration
Firmware	Field-upgradable firmware, upgradable on site
Power and environment	Not more than 20 W per card; operating 0 to 35 °C, storage -20 to 70 °C, 5 to 90% RH non-condensing
Compliance and warranty	CE and FCC Part 15 Class A; manufacturer warranty not less than 1 year

3.2.4 Video wall management software (B4)

Parameter	Minimum requirement
Function	Central software to manage and control all content on the video wall from the controller (B1) and from networked operator positions
Any source anywhere	Any source placed anywhere on the wall by drag and drop, including across screen boundaries, or several sources within one screen; precise window positioning by mouse and keyboard
Source types	Capture inputs (B3), IP streams, VNC / remote desktop sources, local video and image files, and browser windows opened directly on the wall
Layouts	Save and recall complete wall layouts quickly; layouts also recallable from the web interface
Templates	Templates dividing the wall into areas, with dropped content filling the area automatically; templates also applicable to a group of windows so they move and resize together
Cropping	Cropping of capture and IP sources by selecting the area of interest on a snapshot; saved crops reusable in layouts
On-screen labels	Text over windows with variables such as time and date, frame rate and source resolution; adjustable font, size and color
Borders and frames	Colored borders and frames around windows to show priority or group sources
Banners	Scrolling or static text banners, typed in or fed automatically from an RSS feed, with selectable or transparent background

Parameter	Minimum requirement
Asset management	Banners and fully configured windows (crops, labels, borders, carousels) saved as reusable assets across layouts and walls
Carousels	Windows cycling through several sources automatically, with start / stop control
Web page control	Web pages shown on the wall with auto-refresh, horizontal and vertical scrolling, and zoom
KVM	Operators control remote source PCs shown on the wall with their local keyboard and mouse, over IP
IP decoding	H.264 (MPEG-4 Part 10 AVC), MPEG-4 Part 2 and MJPEG over HTTP, RTSP and MPEG2-TS, multicast and unicast, IPv4 and IPv6, with de-interlacing; decoding on the controller CPU or on dedicated decode cards; number of streams limited only by the hardware
Source streaming	Captured sources streamed over the network as RTSP for remote monitoring or recording
Multiple walls	Several independent walls from one controller, each with its own sources, set up with a wizard
User rights	Roles per user and per wall linked to Windows log-in; each user or role limited to particular sources, layouts and templates; desktop capture can be disabled
Web control	Control from any desktop, tablet or phone browser (Chrome, Edge, Safari) without client software: open layouts, templates and individual sources; resize, position, maximize, bring to front, mute and close content; live snapshot of the wall; per wall 'full control', 'layouts only' or web access disabled
Automation	Command line interface for integration with third-party control systems
Operating system	Windows 10 / 11 for client PCs; Windows Server 2019 or later on the controller
Language	English user interface
Licensing	Perpetual licence covering the full feature set above (multi-wall, user rights and unlimited IP decoding level), with free software updates for not less than 1 year

3.2.5 IP stream encode / decode card (B5)

Parameter	Minimum requirement
Type	Plug-in card for the video wall controller (B1) with its own on-board processor, so encoding and decoding put no load on the host CPU; several cards usable in one controller
Interface	PCI Express Gen 2 x4 or better
Network	2 x Gigabit Ethernet (RJ45), able to connect to two separate networks; DHCP or static addressing; IPv4 and IPv6
Decode capacity per card	Not less than 1 x 3840 x 2160 at 60 fps, or 3 x 4K at 30 fps, or 6 x 1080p60, or 12 x 1080p30, or 10 x 1080i / 50 x D1
Encode capacity per card	Not less than 2 x 4K at 30 fps, or 4 x 1080p60, or 8 x 1080p30
Codecs	Decode H.264 (Baseline, Main and High profiles, levels 3 to 5.2), H.265 Main, MPEG-2, VC-1 and MJPEG; encode H.264 and H.265
Streaming	HTTP, RTSP, RTP and UDP, unicast; containers MPEG-4 Part 1, MPEG2-TS, WMV and MOV
Stream authentication	Basic and Digest
Processing	Hardware downscaling and de-interlacing; not less than 4 GB on-board memory; direct memory transfer not less than 1.3 GB/s
Carousels	IP window carousels with hardware pre-buffering for smooth switching
Integration	Fully controlled from the wall management software (B4); IP sources placed on the wall alongside capture sources; captured sources encodable for viewing elsewhere on the network
Operating system	64-bit Windows 10 and Windows Server 2019 or later
Power	Not more than 15 W per card
Environment	Operating 0 to 35 °C; storage -20 to 70 °C; 5 to 90% RH non-condensing
Warranty	Manufacturer warranty not less than 1 year

3.2.6 AV-over-IP link to the Executive Block Briefing Hall (B6)

Parameter	Minimum requirement
System	4K AV-over-IP transmitter and receiver, visually lossless, latency under 1 ms over a 10G network; point-to-point direct fibre mode, detected automatically, also supported
Transmitter inputs	Not less than 1 x HDMI 2.0 (3840 x 2160 and 4096 x 2160 at 60 Hz) plus 3 x HDMI 1.4, used as one 4K source or four HD sources; loop-through output for local monitoring
HDCP	Version 2.2 on the 4K input, 1.4 on the HD inputs
Pixel clock	Not less than 600 MHz on 4K and 150 MHz on HD
Video formats	RGB 8-bit and YCbCr 4:4:4 8-bit minimum; progressive scan
Codec	Visually lossless intra-frame codec on the 10G link; each input also sent simultaneously as an H.264 / H.265 stream for endpoints on a 1G network
Receiver outputs	1 x HDMI 2.0 (4K60) plus 3 x HDMI 1.4, showing one 4K stream or four independent HD streams
Audio	Embedded HDMI audio, up to 4 stereo pairs PCM at 96 kHz; analogue line-level output on the receiver
KVM	Keyboard and mouse on the receiver (2 x USB) control the source PCs through USB ports on the transmitter
Network interfaces	10G SFP+ fibre for video plus 1G RJ45 management port; multicast with IGMPv2
Security	AES 128-bit encryption on all streams
Signal quality	Streams genlocked to the source; built-in resilience against bit errors, jitter and lost packets; HD version of a 4K stream sent automatically to endpoints that cannot show 4K
Management	Software tool to discover, configure and update firmware on all transmitters and receivers
Mounting	Receiver VESA-mountable behind a screen or desk-mounted; transmitter rack-mountable
Power	Transmitter not more than 20 W; receiver not more than 15 W
Environment	Operating 0 to 40 °C; 5 to 90% RH non-condensing
Fibre link	About 100 m OM3 / OM4 multi-mode fibre with matching 850 nm 10G SFP+ modules, terminated and tested
Network switches	Managed 10 GbE switch at each end (NOC AV room and Briefing Hall) with SFP+ ports and IGMP snooping, with spare ports for additional AV-over-IP endpoints
Warranty	Manufacturer warranty not less than 3 years

3.2.7 Cabling (B7)

Parameter	Minimum requirement
Scope	All signal cabling for the video wall system: operator desks to the AV room, within the AV rack, and AV room to the LED screens (LED power cabling is covered in A11). All concealed.
Desk to AV room video	One 4K-capable feed from each of the 8 workstations and from the conferencing PC to the capture cards (B3); active optical HDMI cables (AOC) for any run longer than 10 m
In-rack HDMI	Premium Certified HDMI (18 Gbps) from the output card (B2) to the processor inputs (A6), not longer than 3 m; connector shell width less than 20.5 mm so cables fit side by side on the card
AV-over-IP receiver end	Premium Certified HDMI, not longer than 3 m, from the receiver (B6) to the Briefing Hall display
LED data	Cat6 or better shielded (S/FTP) cable from the sending cards (A7) to the receiving cards, not longer than 100 m per run; main and backup runs routed separately where port backup is used
LED data fibre	OM3 / OM4 multi-mode fibre with matching SFP modules for any run longer than 100 m
Network	Cat6 (Corning, Molex, schnieder or equivalent) or better for management, control, IP streams (B5) and KVM agents; fibre runs between racks or rooms in OM3 / OM4 multi-mode with LC connectors
USB / KVM	USB extension over Cat6 or fibre where required for remote keyboard and mouse
Containment	Dedicated trays, raised-floor or ceiling routes; signal and power separated by at least 300 mm or a metal divider

Parameter	Minimum requirement
Fire safety	LSZH (low smoke, zero halogen) jackets on all cables inside the NOC
Labelling	Both ends of every cable labelled to match the as-built drawings
Testing	Every copper run certified to Cat6 and every fibre run loss-tested; test reports handed over
Spare capacity	At least 20% spare capacity in trays and conduits; at least 2 spare Cat6 runs from each desk to the AV room
Warranty	Not less than 2 years on materials and workmanship

3.2.8 AV rack (B8)

Parameter	Minimum requirement
Type	19-inch floor-standing server / AV rack, not less than 42U, 800 mm wide x 1000 mm deep, static load not less than 1,000 kg
Doors and panels	Front and rear perforated doors (not less than 70% open area), lockable; lockable removable side panels
Cooling	Roof fan unit with thermostat; blanking panels on all unused U spaces
Power distribution	Rack power through the power sequencer (E7, details in E7); no separate PDUs
Cable management	Vertical cable managers on both sides, horizontal managers, top and bottom cable entry with brush strips
Accessories	Adjustable mounting rails, fixed shelves, space for a 1U KVM / console drawer, full set of cage nuts and screws
Earthing	Earth bar bonded to the building earth, with every device and panel bonded
Mobility	Levelling feet and castors
Finish	Powder-coated steel, black
Warranty	Not less than 3 years

3.2.9 Wireless media presenter (B9)

Parameter	Minimum requirement
Purpose	Wireless casting of media and presentations from the supervisor PC and visitor laptops, tablets and phones to the video wall, with audio to the room sound system (C6)
Casting protocols	Support native wireless mirroring protocols like Airplay, Miracast, Chromecast. casting app for Windows as an option; plug-and-play HDMI and USB-C transmitter dongles
Dongles supplied	Not less than 2 transmitter dongles (1 HDMI, 1 USB-C)
Video	Wireless input up to 1920 x 1080 at 60 fps; latency not more than 100 ms; HDMI 2.0 output to a spare capture input (B3)
Split-screen	Up to 4 sources shown at the same time
Audio	Analogue line audio output to the mixer of the room sound system (C6)
Network security	Dual network, keeping guest casting physically separate from the NOC LAN; AES and RSA encryption; dynamic Wi-Fi password; moderator mode to approve each device before it is shown
Wired ports	Not less than 1 x Gigabit LAN, USB-A (2.0 and 3.0), USB-C
Power	PoE (IEEE 802.3at) from the network switch, or a local power supply
Control	OSD with preview, web UI, RS-232 for the automation system and third-party control
Collaboration	Whiteboard and annotation; wireless touch-back; remote view
Management	Central management platform with batch configuration, batch firmware upgrade and user management
Optional	Wireless sharing of room USB camera, mic and speakers for laptop-based conferencing
Warranty	Not less than 2 year

3.2.10 Network Access Switch (B10)

Parameter	Minimum requirement
1. Network access switch POE	2x1G SFP, 24-Port Gigabit Ethernet POE Switch (to be installed in AV Rack) to provide network connectivity to workstations and WAP through the existing core switch over fiber. All connector, patch cables, mounting accessories included
2. Network access switch Ethernet	2x1G SFP, 24-Port Gigabit Ethernet POE Switch (to be installed in AV Rack) to replace the existing switch in the hall. All connectors, patch cables, mounting accessories included
3. Wireless Access point	Wireless access points (Enterprise grade), POE, each of Minimum 50 users capacity
4. Installation and Configuration	Installation, configuration and seamless connectivity with existing network
5. Warranty	3 Years Warranty of each appliance

3.2.10 Incident Management and Ticketing System (B11)

Parameter	Minimum requirement
Incident Management and Ticketing system	A complete is all aspects Incident management and ticketing system. Register, categorize, assign and track incidents with unique IDs. Hosted on PMD local servers, accessible over intranet and secure remote/cloud access. Configurable resolution timelines and automatic escalation to senior management. Live dashboard to display open, pending, in-progress, resolved and escalated tickets with status and priority. Email to the concerned users, on assignment/escalation/resolution of every ticket. Role-based access, notifications, audit trail and performance reports.
Installation and Configuration	Installation, configuration, testing and make operational with feed on the video wall.

3.2.11 Video Documentary (B12)

A short high quality (2-3 Minutes) customized panoramic video documentary about PMDNOC functions as approved by PMD.

3.3 Video conferencing

3.1.1 PTZ conferencing camera (C1, C2)

Parameter	Minimum requirement
Resolution	≥ 3840 x 2160 at 30 fps
Zoom	≥ 20x optical
Field of view	≥ 70° horizontal at wide end
Outputs	USB 3.0, HDMI and IP streaming (RTSP / H.264 / H.265)
Control	≥ 128 presets, auto-framing, RS-232 / IP control
Mounting	Wall or ceiling bracket centred above or below the front screen

3.3.2 Executive speakerphones (C3)

Parameter	Minimum requirement
Pickup	360° microphone pickup, ≥ 3 m radius per unit
Linking	≥ 3 units linkable as one audio zone
Processing	Full-duplex, acoustic echo cancellation, noise suppression
Connectivity	USB and Bluetooth; compatible with the conferencing software in C5

3.3.3 Conferencing PC (C4)

Parameter	Minimum requirement
Specification	As D1, with output to the video wall capture input

3.3.4 Conference microphones (C5)

Parameter	Minimum requirement
Microphones	5 cardioid conference microphones for the executive seating arc (gooseneck or boundary type), XLR output, phantom-powered, with mute switch
Cabling	Shielded balanced cabling to the mixer of the room sound system (C6)
Warranty	Not less than 1 year

3.3.5 Room sound system (media and VC) (C6)

Parameter	Minimum requirement
Purpose	Playback of media files and multimedia documentaries, and video conferencing audio in the hall
Configuration	2 active 2-way column array systems (left and right), each with a subwoofer base; one with an integrated digital mixer, the second fed from it
Performance	Frequency response not narrower than 40 Hz to 20 kHz; maximum SPL not less than 125 dB at 1 m; dispersion not less than 120° horizontal x 30° vertical
Amplifier	Not less than 1400 W peak / 700 W RMS per system, Class D, with limiter and thermal / RMS protection
Mixer	Not less than 8 channels with 32-bit DSP; not less than 4 microphone inputs with +48 V phantom power and 2 stereo line inputs; 3-band EQ per channel, 7-band graphic EQ on main and aux, compressors; main and aux outputs; Bluetooth audio, USB playback and app remote control
Sources	Supervisor PC, wireless media presenter (B9), conferencing PC (C4) and the conference microphones (C5)
Stereo	True left / right stereo for media playback preferred;
Power	A dedicated socket at each unit from the IT UPS
Placement	Floor or pole mounted beside each wing screen, clear of the walkway and the screen frames; protective covers included
Warranty	Not less than 1 year

3.3.6 VC audio interface and cabling (C7)

Parameter	Minimum requirement
Audio interface	Balanced USB audio interface, not less than 2 inputs / 2 outputs, between the mixer (C6) and the conferencing PC (C4), used by the conferencing software echo cancellation; an AEC DSP may be offered instead
Cabling	Shielded balanced audio cabling from all sources to the mixer and from the mixer to the second speaker system, with DI boxes where needed
Warranty	Not less than 2 year

3.4 Operator and supervisor workstations

3.4.1 Workstation PC (D1)

Parameter	Minimum requirement
Form factor	Preferably the Small form factor desktop subject to Graphics Card support.
Processor	**64-bit x86, ≥ 12 cores, ≥ 5.0 GHz maximum turbo frequency, Intel ultra 7 or equivalent**
Memory	≥ 32 GB DDR5
Storage	≥ 1 TB NVMe SSD
Network	Gigabit Ethernet
Security	TPM 2.0
Operating system	64-bit professional edition, licensed

3.4.2 Graphics card (D2)

Parameter	Minimum requirement
Type	Low-profile professional workstation graphics card
Memory	≥ 8 GB GDDR6
Outputs	≥ 4 DisplayPort 1.4 outputs, each up to 3840 x 2160 at 60 Hz

3.4.3 Desk monitors (D3)

Parameter	Minimum requirement
Size and panel	**27" or higher, IPS, LED backlit**
Resolution	1920 x 1080
Brightness	≥ 250 cd/m²
Viewing angle	178° / 178°
Eye care	Flicker-free, low blue light
Inputs	HDMI and DisplayPort
Mounting	VESA 100 x 100

3.4.4 Monitor arms and peripherals (D4, D5)

Parameter	Minimum requirement
Monitor arms	Dual-arm, desk-clamp, gas-spring height adjustment, VESA 75/100, for D3
Keyboard and mouse	Full-size keyboard and optical mouse, wired or wireless

3.5 Power and UPS

3.5.1 UPS (E1 to E3)

Parameter	Minimum requirement
Ratings	**30kVA for IT equipment, central wall , IT and mandatory lights.**
Output power factor	≥ 0.9
Backup time	**≥ 10 to 15 minutes at full load**
Bypass	Automatic static bypass and manual maintenance bypass
Monitoring	SNMP and Modbus interface to the automation system; LCD panel
Batteries	Lithium batteries to support the backup time

3.5.2 Distribution boards and riser (E4)

Parameter	Minimum requirement
Scope	New main distribution board (ground floor, R&D Wing), riser feeder, sub-main board and distribution boards for UPS, IT, HVAC and lighting / power in the NOC; sized to the available space and requirement
Standard	IEC 61439-1 / -2 type-tested assemblies; MDB form 3b, other boards form 2b
Construction	Sheet steel not less than 1.5 mm, powder-coated, wall-mounted or floor-standing to suit the space, IP42, lockable doors
Busbars	Tinned copper, TPN + earth, rated not less than the incoming breaker
Fault level	MDB 36 kA; other boards 25 kA
Protection	**MCCBs with adjustable trips; MCBs per circuit; 30 mA RCD on socket circuits; SPD Type 1+2 at the MDB and Type 2 at the SMDB; phase failure relays,**
Riser feeder	4-core 95 mm² copper, XLPE / SWA / PVC, 0.6/1 kV to IEC 60502-1, on cable tray, from the MDB to the SMDB
Metering	Multifunction meters (E6) on the MDB and SMDB incoming
Monitoring	Breaker status and meter data to the automation system over Modbus
Spare capacity	Not less than 20% spare ways on each board
Labelling	Engraved circuit labels and a single-line diagram inside each door
Testing	Routine tests to IEC 61439; insulation and functional tests at site
Warranty	Not less than 2 year
Fire protection	Fire suppression devices inside boards. 1 for each board.

3.5.2 Standby generator with ATS (E5)

Parameter	Minimum requirement
Rating	65 kVA prime, 400 V, 3-phase, 50 Hz, sized for future expansion
Enclosure	Sound-attenuated canopy, ≤ 75 dB(A) at 7 m
Control	Automatic mains failure panel with automatic transfer switch and stepped load connection
Fuel	Base tank for ≥ 15 hours at full load

3.5.3 Power meters (E6)

Parameter	Minimum requirement
Type	Multifunction meter, accuracy class 1 or better, Modbus RTU / TCP

3.5.4 Power sequencers (AV rack) (E7)

Parameter	Minimum requirement
Application	Sequenced power for the AV rack equipment (controller, LED processor, network and recording equipment); 3 units: 2 cascaded as one sequence, one for the A feed and one for the B feed of dual-PSU equipment, plus 1 full backup unit; not for LED screen power
Channels	8 switched outlets per unit, not less than 4 rated 16 A and the rest not less than 10 A
Capacity	Not less than 8 kW total per unit, 220-240 V single-phase, 50/60 Hz
Power quality	Built-in RFI / EMI filter
Sequencing	Programmable on / off delay per channel, 1 to 999 s; ordered start-up and reverse-order shut-down
Control	RS-232, RS-485 and TCP/IP (LAN) for the automation system, plus front-panel buttons
Cascading	Several units linked to run as one sequence without an extra controller
Scheduling	Timed on / off programmable for not less than 12 months
Emergency	Hardware switch to cut selected channels immediately
Display and security	Front-panel LCD showing ID, time, IP address and channel status; password lock
IR control	Infrared learning and output to control external devices
Processor	32-bit microcontroller for accurate timing
Construction	1U 19-inch rack-mount; earthing resistance not more than 100 ohm; safety-shuttered sockets
Warranty	Not less than 2 year

3.5.5 LED power distribution panels (E8)

Parameter	Minimum requirement
Quantity and duty	**3 panels, one each for the front screen, left wing and right wing, each fed from that screen's UPS, or direct whatever is applicable(E1 / E2)**
Standard	Low-voltage switchboard built and type-tested to IEC 61439-1 / -2; wall-mounted steel enclosure, not less than IP42, lockable door
Incoming supply	Lockable isolator and incoming breaker sized for the screen's maximum load with not less than 25% margin; front panel 3-phase 400 V, wing panels single-phase or 3-phase
Outgoing circuits	One breaker per circuit, not more than 6 module power supplies per circuit; load balanced across phases
Inrush protection	Outgoing breakers with C or D trip curves, selected so the start-up surge of the switch-mode supplies does not cause nuisance tripping
Sequenced switching	Outgoing circuits grouped on contactors (AC-1 rating not less than 25% above group load) switched on one group at a time; delay between groups adjustable 1 to 10 s; shut-down in reverse order
Control modes	Manual / Off / Auto selector; in Auto, on / off commanded remotely; status lamps for supply present, each group on, and trip
Remote control and monitoring	On / off command and status / trip feedback to the automation system (H1) over Modbus RTU / TCP or volt-free contacts

Parameter	Minimum requirement
Surge protection	Type 2 surge protective device on the incoming supply, with fault indication contact
Earth leakage	Type A residual current protection per group, rated to avoid nuisance tripping from the normal leakage of switch-mode supplies
Metering	Multifunction meter on the incoming feed (V, A, kW, kWh), linked to the power metering in E6
Emergency stop	Front-mounted mushroom-head emergency stop dropping all contactors
Wiring and spare capacity	Copper busbars or distribution blocks; not less than 20% spare ways and 20% spare busbar capacity
Cooling	Natural ventilation or filtered fan, so the panel interior stays within component ratings at the IEC 61439 standard ambient (35 °C, 24-hour average)
Labelling and drawings	Circuit chart inside the door, all cables labelled, as-built single-line diagrams handed over
Testing	Factory acceptance test; on-site insulation, continuity and functional tests including sequence timing, with test certificates
Warranty	Not less than 1 year on materials and workmanship

3.5.6 Main incoming power cable (E9)

Parameter	Minimum requirement
Route	From the IESCO transformer LT side to the NOC primary distribution panels (ground floor, R&D Wing), about 160 m; route to be verified by the bidder at site survey
Cable	4-core, 95 mm² stranded copper (IEC 60228 Class 2), XLPE insulated, galvanised steel wire armoured, PVC outer sheath, 0.6/1 kV, to IEC 60502-1
Rating	For 100 kVA at 400 V three-phase after derating for ground temperature, depth and grouping
Voltage drop	Not more than 3% at full load over the full route
Length	One continuous length without intermediate joints; about 170 m including terminations and slack
Protection	160 A four-pole MCCB with adjustable thermal and magnetic trips at the source end, breaking capacity not less than 36 kA, in a lockable weatherproof enclosure (IP54 or better)
Installation	Buried not less than 0.8 m deep on a 75 mm sand bed with 75 mm sand cover, brick or concrete tile protection and warning tape; HDPE or GI duct at road crossings and building entries; route markers about every 30 m and at bends
Terminations	Compression glands and crimped copper lugs, phase colour marking, cable tags at both ends
Earthing	Earthing is provided separately under E10
Testing	Insulation resistance test (1 kV) before and after laying, continuity and phase-sequence checks; results in the handover file
Approvals	Coordination with IESCO for connection at the transformer
Warranty	Not less than 2 year on materials and workmanship

3.5.7 Earthing system, NOC (E10)

Parameter	Minimum requirement
Earth pits	2 new dedicated earth pits, at least 3 m apart, interconnected through a removable test link; the successful vendor shall consult with the PMD team to select the most suitable location
Electrodes	Copper-bonded steel earth rod in each pit, not less than 17 mm diameter x 3 m (extended as needed to reach the required resistance), with earth-enhancing compound
Resistance	Not more than 1 Ω combined, measured by the fall-of-potential method
Inspection chambers	Concrete or heavy-duty polymer chamber with removable cover on each pit, labelled 'Safety Earth – Do Not Disconnect'
Earth conductor	1-core 50 mm² stranded copper, PVC insulated (green/yellow), from the pits to the main earth bar in the NOC primary distribution panels, laid separately from the power cable (E9); length as per the selected pit location
Distribution	25 mm² copper from the main earth bar to the AV room earth bar, bonding the AV rack, UPS units and LED power distribution panels (E8)

Parameter	Minimum requirement
Connections	Exothermic welding or compression connectors at the electrodes; tinned copper earth bars with disconnecting links
Standards	IEC 60364-5-54; IEEE 80 / BS 7430 practice
Testing	Earth resistance and continuity tests at handover, with a test report
Warranty	Not less than 2 year

3.6 HVAC and fresh air

3.6.1 Air-conditioning units (F1)

Parameter	Minimum requirement
Type	Ceiling-mounted split units (cassette), inverter, horizontal air discharge
Capacity	2 TR (24,000 BTU/hr) each; 6 units, 4 duty and 2 standby
Refrigerant	Low-GWP refrigerant (R32 or equivalent)
Control	Modbus or BACnet interface for lead/standby rotation and alarms; auto-restart after power failure

3.6.2 Fresh-air unit (F2)

Parameter	Minimum requirement
Airflow	≥ 250 cfm fresh air, with matching exhaust
Filtration	Pre-filter (≥ 50%), bag filter (≥ 80%), HEPA H13 (≥ 99.95%)
Disinfection	UV-C stage, switchable
Heat recovery	Heat exchanger with ≥ 60% recovery efficiency
Humidity	Dehumidifier / humidifier controlling the supply air to 45% to 55% RH
Fans and control	EC fans; BACnet / Modbus interface to the automation system

3.6.3 Ducting and installation (F3)

Parameter	Minimum requirement
Scope	Insulated ducting, condensate drains, dampers and installation, all concealed

3.7 Fire detection and suppression

3.7.1 Clean-agent suppression, IT-AV room (G1)

Parameter	Minimum requirement
Agent	HFC-227ea clean agent
Standard	Designed and installed to NFPA 2001 or ISO 14520
Design	7% design concentration for the 12 x 10 x 11 ft AV room; discharge within 10 seconds
Components	Listed / approved cylinder, valve, nozzle and pipework

3.7.2 Detection and control (G2 to G4)

Parameter	Minimum requirement
Detection	Cross-zoned smoke detectors in the AV room; smoke detectors in the hall
Control panel	Addressable fire alarm and releasing panel to EN 54 or UL 864, linked to the automation system
Release controls	Abort switch, manual release, hooter / strobe and 'gas discharged' sign
Interlocks	Stop AC and fresh-air fans, close dampers and release access-controlled doors on alarm

3.7.3 Room integrity (G5)

Parameter	Minimum requirement
Requirement	Glass, Sealed AV room with self-closing door and sealed penetrations; room integrity (door fan) test at commissioning

3.7.4 Hall protection (G6, G7)

Parameter	Minimum requirement
Detectors	Smoke detectors, detection only
Extinguishers	5 kg CO_2 portable extinguishers

3.8 Automation, access control and CCTV

3.8.1 Building automation platform (H1)

Parameter	Minimum requirement
Protocols	BACnet/IP, Modbus TCP/RTU and SNMP
Integration	AC units, fresh-air unit, power meters, UPS units, generator and ATS, phase failure relays, sensors, fire panel and access control events
Interface	Web-based dashboard with alarms, trends and event log kept ≥ 1 year
Notification	Alarm notification by email and SMS
Automation	Load sequencing after mains failure, AC lead/standby rotation, fire and leak responses

3.8.2 Sensors (H2, H3)

Parameter	Minimum requirement
Temperature and humidity	Accuracy ±0.3°C and ±2% RH
Water leak	Spot or rope leak sensors with location reporting

3.8.2 Access control (H4 to H7)

Parameter	Minimum requirement
Main door reader	Biometric reader with fingerprint, face and RFID card
Other readers	13.56 MHz RFID card readers
Door hardware	Fail-safe electromagnetic locks (≥ 600 lb), exit buttons, break-glass units and door contacts
Controller	Networked controller with event log, door-forced and door-held alarms, release on fire alarm

3.8.3 CCTV (H8 to H10)

Parameter	Minimum requirement
Cameras	IP fixed dome, ≥ 4 MP, H.265, WDR ≥ 120 dB, IR ≥ 30 m, PoE
Recorder	8-channel network video recorder, ≥ 30 days recording of all cameras at 4 MP, 15 fps
Network	8-port managed PoE switch on a separate security network

3.9 Dashboards and development team

3.9.1 Dashboards (I1)

The successful firm will depute a team of AI engineers to develop the following interactive dashboards as additional component for the PMD National Operations Centre. Team will start working from the date of the award of the contract until the completion of the project as per the quoted timelines. These dashboards will provide common picture from the relevant data sources, interfaces,

images, graphs/charts and Geospatial maps. Most of the data, interfaces, maps, images, charts are already available over FTP, network share or via APIs. Primary objective is to sourcing and making available on single dashboards to ease out the control operations for the users. It is further clarified that establishing centralized repository or Date Warehouse is not in this scope. However, below mentioned requirements are primary and tentative, details will be shared during project implementation phase by the relevant custodian unit of the PMD. **All source codes, diagrams, architectures or any other development during the implementations of the project will be property of PMD.**

No.	Dashboard	Requirements
1	Weather Situational Awareness / Common Operating Picture	National weather overview; live radar RADAR products; satellite imagery and loops ; Weather data, Pakistan Map with weather data ; lightning detection; current weather conditions; NWP model outputs; rainfall, temperature, wind, cloud-cover and pressure maps; multi-hazard situation overview. Any other information/products provided by NWFC.
2	Drought Monitoring Dashboard	SPI, SPEI, VHI and other drought indices; rainfall deficiency and anomalies; soil moisture; vegetation health (NDVI); drought severity; historical analysis; district-wise assessment and maps. Any other information/products provided by Drought Monitoring center.
3	Agriculture and Agrometeorological Dashboard	Crop-weather conditions; crop calendars; rainfall and temperature; soil moisture; evapotranspiration; crop stress; agricultural risk maps; weather-based advisories; Impact Based Forecast. Any other information/products provided by NAMC.
4	Weather Forecast and Early Warning	NWP outputs; rainfall, temperature, wind, humidity and cloud forecasts; hourly and extended-range forecasts; model comparison; forecast animations if any; official warnings and bulletins; district forecasts. Any other information/products provided by NWFC.
5	Flood Updates and Hydrometeorological Dashboard	River levels and discharge; gauging information; rainfall over catchments; flood forecasts; inundation maps; Flash Flood Guidance System (FFGS); GLOF early warning; Lai Nullah interface; vulnerable areas; historical flood information. Any other information/interfaces provided by Flood Forecasting division.
6	Drought and Heatwaves Dashboard	Heatwave monitoring; maximum and minimum temperatures; temperature anomalies; heatwave indices, duration and forecasts; drought and heat stress; affected-area maps; warnings; historical trends. Any other information/products provided by Drought Monitoring center.
7	Cyclones and Marine Forecast Dashboard	Cyclone tracking, intensity and movement; satellite imagery; marine forecasts; sea conditions and wave heights; wind conditions; coastal warnings; storm-surge information; vulnerable coastal areas. Any other information/products provided by relevant units/wings.
8	Earthquake and Tsunami Dashboard	Earthquake location, fault lines, magnitude and depth; seismic maps and station status; event monitoring; tsunami monitoring and warnings; coastal vulnerability; historical events. Any other information/products provided by Seismic Monitoring center.
9	Climate Services and Updates Dashboard	Climate normals; temperature and rainfall trends; anomalies; seasonal outlooks; climate indices; climate-change indicators; historical analysis; sectoral climate services; climate reports . as provide by CDPC

3.9.2 Development Team (I2)

No.	Dashboard	Requirements
1	**AI Engineer (On premises)**	Source data, develop and deploy the dashboards. Bachelor or Masters in CS/Engineering with at least 3 years of development experience of which at least 2 years in AI dev, Python. Expert in full stack development and DevOps. Posses strong problem solving and communication skills.

2	**System Engineer (on Premises)**	Responsible to resolve network access and data sourcing issues. Provide solutions for accessing data from private networks. Create development and production environment on the available compute. Bachelor or Masters in CS/Engineering with at least 3 years of Handling large networks including firewalls, access switches and security matters. Well versed in data sharing and sourcing.
3	**Technical Associate (On Premises)**	Bachelor in CS/IT/ Information systems or equivalent. Responsible to assist AI and system Engineer.

4. Interior fit-out (J)

4.1 Scope of Interior work

Supply, installation, testing and handover of all works listed in the (Annex I), in five Lots:

Each rate shall cover supply, labour, tools, scaffolding, transport, wastage, fixing materials (adhesive, grout, spacers, edge profiles, fasteners), taxes and duties. No item shall be left unpriced.

	Area	**Main works**
Lot 1	Control Room Hall	About 1,300 sft wood-texture tiling, gypsum ceiling, electrical and data points, WPC, wall cushioning, décor, aluminium and glass work, furniture, Glass entrance doors (outer and inner)
Lot 2	National Agromet Centre, lobby and corridor	Includes flooring, stair marble and railing, electrical and data, ceiling, WPC and vinyl, paint, furniture
Lot 3	Museum, lobby and corridor	Includes flooring, stair marble and railing, electrical and data, ceiling, WPC and vinyl, paint, showcases
Lot 4	Research and Development Wing, lobby and corridor	Includes flooring, stair marble and railing, electrical and data, ceiling, WPC and vinyl, paint
Lot 5	Washroom (adjacent to Control Room Hall, 3 restrooms)	One washroom next to the Control Room Hall (NOC) with three restrooms: demolition, masonry, waterproofing, wall and floor tiling, new doors, sanitary fixtures, PVC ceiling, lighting

4.2. Materials and workmanship

- All materials shall be new, of first quality and suited to the purpose. Bidders shall state the make and origin of each material offered.
- Samples of tiles, marble, WPC panels, vinyl, ceiling boards, light fittings, sanitary ware, furniture finishes and paint shades shall be submitted to PMD for approval before procurement. Approved samples will be retained for comparison.
- Work shall follow good practice and the manufacturers' instructions. Tiling shall be true to line and level with uniform joints.
- Electrical works shall follow the applicable Pakistan building and electrical codes. All circuits shall be tested and earthed, and distribution boards labelled.
- Furniture, décor and showcases shall follow layouts and shop drawings approved by PMD before manufacture.
- Protect existing finishes, equipment and furniture, and make good any damage at no cost;
- Control dust and noise, and work only in hours agreed with PMD;
- Remove debris daily to an approved disposal site;
- Follow site safety rules

5. Solution Submission and evaluation criteria

5.1 Minimum Eligibility and Qualification Requirements

Only the vendors fulfilling following conditions will be eligible for being evaluated under quantifiable bid evaluation criteria.

1. Valid registration/incorporation in Pakistan, preferably with entities like SECP
2. Valid NTN and applicable sales tax/professional tax registration; no material unresolved tax default.
3. Authorization letters from manufacturers for the quoted technologies.
4. Provide all the specifications of each component/module as required and also submit a compliance sheet in Annex-I.

No	Requirement	Minimum evidence / condition	Marks Distribution
1	Similar projects	Completed projects, Control room, operation centers, Visualization walls and dashboards of similar nature. Documented proof is required. >=3 projects >=2 >=1 <1	 15 10 5 0
2	Video Walls solution, Controller and Management software	Full compliance Partial compliance Non compliance	15 5 0
3	Video Conferencing	Compliance Non-compliance	5 0
4	Supervisor and user workstations	Compliance Non-compliance	5 0
5	Power, UPS, battery bank and ATS	Compliance Non-compliance	5 0
6	HVAC	Compliance Non-compliance	5 0
7	Fire detection and suppression	Compliance Non-compliance	5 0
8	Automation, access control and CCTV	Compliance Non-compliance	5 0
9	Dashboards and development team	Compliance Non-compliance	10 0
10	Interior fit-out	Compliance Partial Compliance Non-compliance	10 5 0
11	Project Implementation team	Team explicitly mentioning the role of each resource, CVs of all the team members. Compliance Non-compliance	 5 0
12	Deliverables, SAT, UAT, documentations and timelines.	Compliance Non-compliance	5 0
13	Customers feedback	Positive Neutral Negative	10 5 0
		Passing Marks 70/100	

5.2 Required Submissions

- Letter of Application / Bidder Information (Mandatory)
- Similar Project Experience, including control center, power, cooling, fire safety solutions. Only the relevant projects will be considered for marking. Client's feedback will be required. (Mandatory)
- Project implementation team and CVs Summary (Mandatory)
- Dashboards Dev Team and CV Summary (Mandatory)
- Compliance of the Annex-I, Explicitly state Yes/No against each item (Mandatory and most important)
- Tentative Dashboards Layouts (Optional)
- Implementation Schedule, deliverables with complete timelines and Gantt chart (Mandatory)
- Warranty, SLA and Support Commitment (Mandatory)
- Manufacturer / Technology Authorizations. (Mandatory)
- Valid documents in case of joint venture or consortium. (Mandatory)

Compliance Sheet

A. COB LED video wall

No.	Item	Specification	Unit	Qty	Remarks
A1	**COB LED screen, front**	**P1.25 COB 1R1G1B, 600 nits, >=3840 Hz, 10,000:1, 170°/160°, front maintenance**	m²	17.01	7.20 x 2.36 m (23.62 x 7.75 ft), 5760 x 1890 px
A2	COB LED screen, left wing	As A1	m²	7.09	3.00 x 2.36 m (9.84 x 7.75 ft), 2400 x 1890 px
A3	COB LED screen, right wing	As A1	m²	7.09	As A2
A4	Spare modules	As A1, same production batch	Lot	1	Not less than 5% of installed modules
A5	Receiving cards with HUB boards	Matched to the offered cabinets and the LED processor (A6)	Lot	1	As needed for the three screens, plus not less than 4% spare
A6	LED video wall processor (all three screens)	Modular LED video wall processor, not less than 15 input and 5 output card slots, not less than 52 MP loading, dual power supplies; with 4 x HDMI 2.0 (4K60) input cards	No.	1	One canvas for the front and both wings (19.96 MP); 4 inputs from the output card (B2); 11 input and 2 output slots free for expansion
A7	Sending cards for A6	16 x Gigabit Ethernet + 2 fibre ports per card, up to 10.4 MP per card, Ethernet port backup	No.	3	All 3 of the same model, so the front and both wings run as one screen; about 31 of 48 ports used (front 17, each wing 7), spare ports for backup and expansion
A8	LED power supplies	5 V module power supplies matched to the offered cabinets	Lot	1	As needed for the three screens, plus not less than 4% spare
A9	COB LED cabinets	Die-cast aluminium, front maintenance, whole cabinets only (no cut or partial cabinets)	Lot	1	For the front screen and both wings
A10	Cabinet frames and mounting structure	Steel frame for the front screen and two wing frames, with corner joint frames	Set	3	Front 1 ft above floor; wings at about 42.8° facing the executive seating
A11	Power, data and hub cabling	Module cables, hub boards, distribution to the screen UPS units	Lot	1	
A12	Installation, calibration and commissioning	Including colour and brightness calibration across all three screens	Lot	1	

B. Video wall control

No.	Item	Specification	Unit	Qty	Remarks

B1	Video wall controller	Modular 4U industrial chassis, PCIe Gen 3 switched backplane, not less than 11 card slots, redundant power supplies	No.	1	
B2	Output card	4 x HDMI 2.0 (4K60) outputs per card	No.	1	4 outputs to the LED processor (A6): 2 for the front screen, 1 per wing; a second card is recommended for 2 spare outputs
B3	Capture cards	4 HDMI inputs per card	No.	3	12 inputs: 8 workstations, 1 conferencing PC, 1 wireless media presenter (B9), 2 spare
B4	Wall management software	Video wall management software, professional level: multi-wall, user rights, unlimited IP decoding, with web-browser control, all configurations and layouts preparation as per the required use cases.	Licence and job	1	Layout presets for the 30 dashboards/interfaces
B5	IP stream encode / decode card	H.264 / H.265 encode and decode, 2 x Gigabit Ethernet, fitted in the controller (B1)	No.	1	IP streams from web and outside sources onto the wall; encoding of wall sources
B6	AV-over-IP link to the Executive Block Conference room	4K AV-over-IP transmitter and receiver over 10G fibre, about 100 m OM3/OM4 multi-mode fibre with 850 nm 10G SFP+ modules, managed 10 GbE switch at each end	Set	1	Transmitter in the NOC AV room, receiver at the Briefing Hall display; switches allow more endpoints later
B7	Signal cabling	Desk-to-AV room 4K video (AOC HDMI for runs over 10 m), Premium Certified HDMI in the rack, shielded Cat6 LED data, Cat6 network, OM3/OM4 fibre where needed; LSZH, labelled and tested	Lot	1	Includes containment, test reports and 2 spare Cat6 runs per desk
B8	AV rack	42U 19-inch floor-standing rack, 800 mm wide x 1000 mm deep, perforated doors, fans, cable management, earthing; power through the power sequencer (E7)	No.	1	Glass AV room; about 27U equipment plus air gaps around the controller and LED processor, about 11U free for expansion
B9	Wireless media presenter	Native AirPlay / Miracast / Chromecast mirroring, HDMI and USB-C dongles (2 supplied), 1080p60 input, HDMI 2.0 output, 4-way split screen, line audio out, dual network, AES / RSA, moderator mode, Gigabit LAN, PoE, RS-232	No.	1	Supervisor PC and visitor devices to the video wall (via B3) and the room sound system (via C6)
B10.1	Network Switch (POE)	2x1G SFP, 24 Ports POE access switch,	NO	1	All workstations will have access to the Local Intranet and cloud using this gateway. Users will have Wifi access through WAP.
B10.2	Network Switch Ethernet	2x1G SFP, 24 Ports Gigabit Ethernet access switch,	NO	1	
B10.3	WAP	Wireless Access point, POE, 50 Users	NO	2	Users will have Wifi access through WAP
B10.4	Installation, configuration of Access switches and WAP		Lot	1	

B11	Incident Management and Ticketing system	Installation configuration, testing and making its dashboard live feed on video wall.	lot	1	All incidents will be reported through this system for timely resolution.
B12	Documentary	A short high quality customized panoramic video documentary about PMDNOC functions	no	1	

C. Video conferencing (executive seating)

No.	Item	Specification	Unit	Qty	Remarks
C1	PTZ conferencing camera	4K, 20x optical zoom, USB 3.0 / HDMI / IP output, presets, compatible with the conferencing software	No.	1	Centred above or below the front screen, facing the executive seating
C2	Camera bracket and cabling	Wall or ceiling bracket, USB extender or IP run to the conferencing PC	Set	1	
C3	Executive speakerphones	USB / Bluetooth conference speakerphone, 360° pickup, daisy-chain linkable, compatible with the conferencing software	No.	3	One per 3 executive chairs, linked as one audio zone
C4	Conferencing PC	Runs the video conferencing client; output to the video wall	No.	1	
C5	Conference microphones	Cardioid gooseneck or boundary microphones, XLR, phantom-powered, mute switch, with cabling to the mixer (C6)	No.	Min 4	Minimum 4 or higher, as per actual based on solution. Executive seating arc
C6	Room sound system (media and VC)	Active 2-way column array systems with subwoofer base, ≥ 40 Hz-20 kHz, ≥ 125 dB max SPL, ≥ 700 W RMS; one unit with integrated ≥ 8-channel digital mixer (4 mic with phantom, 2 stereo line, Bluetooth, USB), second unit fed from it; with covers	Pair	1	Left and right, beside the wing screens; media playback and VC audio
C7	VC audio interface and cabling	Balanced USB audio interface (≥ 2 in / 2 out) between the mixer (C6) and the conferencing PC (C4) for echo cancellation, or AEC DSP; shielded balanced audio cabling, DI boxes, dedicated UPS sockets	Set	1	Sources: supervisor PC, wireless presenter (B9), conferencing PC and microphones

D. Operator and supervisor workstations

No.	Item	Specification	Unit	Qty	Remarks
D1	**Workstation PC**	**Small form factor, current-generation, intel ultra, 12-core (or more) desktop processor, boost >= 5 GHz, 32 GB RAM, 1 TB NVMe SSD, Windows 11 Pro, Gigabit LAN**	**No.**	**10**	**4 desks x 2 seats, 2 spares**
D2	Graphics card	Low-profile professional GPU, not less than 8 GB memory, 4 x DisplayPort outputs	No.	10	2 desk monitors, 1 video wall feed, 1 spare

D3	**Desk monitors**	**27” in LED, 1920 x 1080, IPS, VESA mount, HDMI / DP**	**No.**	**16**	**2 per seat**
D4	Dual monitor arms	Desk-clamp, VESA 75/100	No.	8	
D5	Keyboard and mouse sets	Wired or wireless	Set	8	

E. Power and UPS

No.	Item	Specification	Unit	Qty	Remarks
E1	**UPS**	**30 kVA, with 10-15 minutes backup, supply to IT, center screen and lights etc.**	**No.**	**2**	**Front screen, IT and lights, one is backup**
E4.1	Main distribution board, MDB-NOC (ground floor, R&D Wing)	160 A 4P incoming from E9 and from the generator ATS (E5), Type 1+2 SPD, phase failure relay, multifunction meter, 160 A 4P riser outgoing plus 2 spare ways	No.	1	Vendor shall supply new panels sized to the available space and requirement, after site survey with the PMD Electrical team
E4.2	Riser feeder, MDB to SMDB	4-core 95 mm² copper, XLPE / SWA / PVC, 0.6/1 kV (IEC 60502-1), on cable tray, with glands and lugs	m	20	Ground floor to the NOC on the first floor; length to be verified at site survey
E4.3	Sub-main distribution board, SMDB-NOC (glass AV room)	160 A 4P incoming, Type 2 SPD, multifunction meter, outgoing feeders to E4.4 to E4.7 plus spare ways	No.	1	
E4.4	Distribution board, DB-UPS	Input breakers for the front screen, and IT UPS units, lights (E1 to E3)	No.	1	UPS outputs feed the LED power distribution panels (E8) and DB-IT
E4.5	Distribution board, DB-IT (UPS-backed)	**16 A MCB circuits for workstations, AV rack (E7), network and CCTV, room sound system (C6) and wireless presenter (B9)**	No.	1	Fed from the IT UPS (E1)
E4.6	Distribution board, DB-HVAC	Circuits for 6 AC units and the fresh-air unit (F1, F2)	No.	1	
E4.7	Distribution board, DB-Lighting / Power	**Lighting and general socket circuits, MCB with 30 mA RCD as per E4**	No.	1	Near the hall entrance
E5	Standby generator with automatic transfer switch	Diesel, 65 kVA prime, with stepped load connection	No.	1	Sized for future expansion
E6	Power meters	Multifunction meters on screen, IT, HVAC and lighting feeders, Modbus	No.	6	Linked to the automation system
E7	Power sequencers, AV rack	8-channel, 1U rack-mount, programmable on/off delay per channel, RS-232 / RS-485 / TCP-IP control, cascadable	No.	3	AV rack: 2 cascaded as one sequence (A and B feeds for dual-PSU equipment), 1 full backup; covers conferencing and wireless media equipment and expansion; fed from the IT UPS
E8	**LED power distribution panels**	**IEC 61439 wall-mounted panel, IP42: incoming isolator and breaker, per-circuit MCBs (max 6 module PSUs per circuit), contactors switched in sequence by timer relays, Type 2 SPD, Type A RCD**	**No.**	**3**	**One per screen (front, left wing, right wing), fed from the matching screen UPS; handles PSU inrush**

		per group, meter, emergency stop, remote on/off and status to the automation system (Modbus or volt-free contacts)			
E9	Main incoming power cable	4-core 95 mm² copper, XLPE / SWA / PVC, 0.6/1 kV (IEC 60502-1), 160 A MCCB at the source end, glands, lugs and terminations; buried on sand bed with brick cover and warning tape, HDPE / GI duct at road crossings and building entries	m	170	IESCO transformer to the NOC primary distribution panels (ground floor, R&D Wing): 160 m measured route + allowance; one continuous length; voltage drop not more than 3%
E10	Earthing system, NOC	New dedicated earth pits (2, interconnected through a test link), copper-bonded steel earth rods with earth-enhancing compound, inspection chambers; earth resistance not more than 1 Ω; 1-core 50 mm² copper PVC-insulated earth conductor from the pits to the main earth bar in the NOC primary distribution panels, and on to the AV room earth bar	Lot	1	Separate from the incoming power cable (E9). The successful vendor shall survey the building surroundings with the PMD Electrical team to select the most suitable pit location; earth conductor length follows from it

F. HVAC and fresh air

No.	Item	Specification	Unit	Qty	Remarks
F1	Ceiling-mounted AC units	2-ton, horizontal discharge, inverter, controller interface to the automation system	No.	6	4 duty + 2 standby; covers COB screens, people, IT, UPS and the south wall
F2	Fresh-air unit	Pre-filter, bag filter, optional UV-C, HEPA, AHU, heat-recovery exchanger, humidity control	No.	1	
F3	Ducting, drains and installation		Lot	1	

G. Fire detection and suppression

A clean-agent (HFC-227ea) system protects the glass AV room. The rest of the hall has detection and portable extinguishers.

No.	Item	Specification	Unit	Qty	Remarks
G1	Clean-agent (HFC-227ea) system, glass AV room	Cylinder, agent, nozzle and pipework, to NFPA 2001 / ISO 14520	Set	1	Room 12 x 10 x 11 ft; about 21 kg agent at 7% design concentration
G2	Smoke detectors, AV room	Cross-zoned for release	No.	2	
G3	Release controls	Abort switch, manual release, hooter and strobe, discharge sign	Set	1	
G4	Fire alarm control panel	Linked to the automation system	No.	1	
G5	Room integrity works	Sealed glass room, self-closing door, sealed cable entries, pressure relief vent if required	Lot	1	

G6	Smoke detectors, hall	Detection only	No.	4	
G7	Portable CO_2 extinguishers	5 kg, for electrical fires	No.	2	Hall

H. Automation, access control and CCTV

No.	Item	Specification	Unit	Qty	Remarks
H1	Building automation platform	Open-protocol building management system (BACnet, Modbus, SNMP) with dashboard	Lot	1	AC units, fresh air, power meters, UPS, generator and ATS, sensors, fire panel, access events
H2	Temperature and humidity sensors	Hall and AV room	No.	5	4 hall, 1 AV room
H3	Water-leak sensors	Spot or rope sensors	No.	7	Under AC units and in the AV room
H4	Biometric reader	Fingerprint / face with RFID	No.	1	NOC main door
H5	RFID readers		No.	2	AV room door and other entries
H6	Door hardware	Electromagnetic locks, exit buttons, break-glass units, door contacts	Set	2	Doors release on fire alarm
H7	Access controller and software	Networked, events to the automation system	No.	1	
H8	IP cameras	Fixed dome, 4 MP	No.	6	4 hall corners, 1 main door, 1 AV room
H9	Network video recorder	8-channel, 30 days storage	No.	1	Separate security network
H10	PoE switch	8-port, security network	No.	1	

I. Dashboards, Development Team and resident Engineers

No.	Item	Specification	Unit	Qty	Remarks
I1	Dashboards	Sourcing data and development of dashboards	Lot	1	
I2	Development Team	SRS, build, ETL, backend, front end, AI etc. Deployments	Lot	1	
I3	Support Engineers	Two Support (resident) engineers for the period of one year after the completion of project.	Lot	1	

J. Trainings

No.	Item	Specification	Unit	Qty	Remarks
I1	Comprehensive trainings	Comprehensive trainings on each component/module of the project.	Lot	1	

K. Interior Fit-out

LOT 1. Operation Center Hall

S.#	Description	Qty		Unit
1	**Dismantling and demolition works**			
1.1	Dismantling cement tiled floor, dado or skirting in First floor including base mortar and stacking salvaged material (serviceable) and disposing of surplus stuff as directed within three chains (91.5 m)....	280	Sft	%Sft
1.2	Removal of existing electrical fixtures	LS		
1.3	Collection, lodaing and disposal of debris to an approved disposal site.	LS		
2	**Civil and masonry works**			
2.1	Providing and laying floors of 2 inches (51 mm) thick 1:2:4 cement concrete using graded screened bajri 3/4 inch (19 mm) and down gauge in First floor laid in panels including form work, consolidation, finishing, and curing etc. complete.	280	Sft	%Sft
2.2	Wall hasing and grooves for MEP services / electrical conduits, including making good.	LS		
3	**Electrical and data Works**			

3.1	Electrical Conduits installation, concealed with boxes and all accessories	LS		
3.2	Copper electrical wire 7/.044 (approx 6 mm2), PVC insulated	3	Coil(90m)	Each
3.3	Copper electrical wire 7/.029 (approx 2.5 mm2), PVC insulated	6	Coil(90m)	Each
3.4	Copper electrical wire 7/.029 (approx 1.5 mm2), PVC insulated	8	Coil(90m)	Each
3.5	Switch boxes installation	12	Nos	Each
3.6	Switchboards(2+6) supply and installation	12	Nos	Each
3.7	Light points complete.	12	Nos	Each
3.8	Power socket points, complete.	12	Nos	Each
3.9	AC power points, complete.	6	Nos	Each
3.10	Data (internet points, Cat6, complete with face plate and keystone.	8	Nos	Each
3.11	Cat6 data cable, laid in conduit.	200	Rft	Rft
3.12	LED strip lighting in Aluminium profile with driver	400	Rft	Rft
3.13	Testing and commissioning of electrical works, with test report.	LS		
4	**Floor, wall tiles and marble works**			

4.1	Providing and laying floor / dado & skirting of rubber backing naylon fiber carpet tiles (6.5 mm to 8.5 mm total thickness, 100% solution dyed naylon/loop pile (PP)/ textured loop, high density rubber baking, preferably with: Wear Rating class33 or above, Acoustically Absorbant, Fire & Static Control: Bfl-s1 EN 13501-1, CRI Green Label Plus or Floor Score certified for low VOC emissions)24" X 24" (610 mm X 610 mm) of approved make and shade in ground floor including fixing with approved adhesive, nails / screws where required laid in quarter turn or ashlar layout over existing tile floors with necessary filling / repairing where required complete including the cost of mortar.	1420	Sft	P.Sft
5	**Ceiling works**			
5.1	Providing & Fixing Gypsum board 12 mm thick, fixing with GI hanging approved framed suspension system, dry wall screws and joinry, joint taping & necessary designe where required etc. complete in all respect of approved brand (Elephant /DFB/Loadia Gypsum Industries (PVT) Ltd. Or equivalent complete as per direction of Engineer incharge	1350	Sft	P.Sft
6	**Wall finishes and decorative works**			
6.1	Providing & Fixing WPC Sheet wall Panelling or lining on walls, Jambs, skirting etc as required and as per direction of Engineer incharge.	675	Sft	P.Sft
6.2	Providing and Fixing Wall décor art, with border light adapter etc complete as per designe and as per direction of Engineer incharge.	170	Sft	P.Sft

6.3	Providing and fixing wall cushioning (Fabric upholstered panels) with all fitting and fixtures etc complete as per direction of Engineer incharge.	320	Sft	P.Sft
7	**Carpentry, and furniture**			
7.1	Providing and fixing fully glazed Champagne anodized aluminium Sliding windows as per British standard manufactured by Lucky, Alcop, Krudson, Pakistan Cables, A.C.P or equivalent. Prime model box section 101mm x 30mm and 2mm thick including the cost of aluminium netting ,fittings, with all accessories cutting hole etc. and making good damages to walls etc. complete as required in any floor as per direction of engineer-in-charge, including the cost of glass pans.	120	Sft	P.Sft
7.2	Custom conference table (curved), movable: warm wood veneer; matte black / charcoal base, matte finish.	Seating of 10-12	Nos	Each
7.3	Executive conference chair: textured fabric upholstery with black base	12	Nos	Each
7.4	Operator workstation desks: light warm wood / off-white worktop with matte finish. Each desk for seating of two.	4, seating for two on each	Nos	Each
7.5	Operator task chair: black / charcoal mesh or fabric	9	Nos	Each
8	**Glass cubical and Entrance doors**			
8.1	Glass cubical in corner for IT rack and 1 seating.	1	Lot	Each

8.2	Workstation for 1 seating as per 7.4	1	No	Each
8.3	P/F 12mm thick tempered glass , upak made as per approved manufacturers, D- Lock, all accessories, cutting holes etc, Includes dismantling of existing entrance door.	2	NO	NO
9	**Final cleaning and handover**			
9.1	Final cleaning of renovated area, inspection and handover	LS		

LOT 2. National Agromet Center

S.#	Description	Qty		Unit
1	**Floor works and dismantling**			
1.1	Rubbing/Grinding and polishing old marbal floor, dado and skirting in any floors.	1080	Sft	P.Sft
1.2	Dismantling cement tiled/marble floor, dado or skirting in First floor including base mortar and stacking salvaged material (serviceable) and disposing of surplus stuff as directed within three chains (91.5 m)....	255	Sft	%Sft
1.3	Dismantlling and removing of existing electrical fixtures carefully where required and disposal from site as required and directed by engineer incharge.	L/S		

1.4	Collection, lodaing and disposal of debris to an approved disposal site.	L/S		
2	**Civil and masonry works**			
2.1	1/2" thick cement plaster 1:6 using sand on wall and columns etc. in first floor including making edges, corner and curring etc. complete.	120	Sft	%Sft
2.2	Providing and laying first class solid burnt brick masonry set in cement mortar 1:6 in straight or curved walls 9 to 13-1/2 inches (229 mm to 343 mm) thick including scaffolding, raking, out joints and curing etc. complete in ground floor superstructure .	54	Cft	%Cft
2.3	Providing and laying floors of 2 inches (51 mm) thick 1:2:4 cement concrete using graded screened bajri 3/4 inch (19 mm) and down gauge in First floor laid in panels including form work, consolidation, finishing, and curing etc. complete.	120	Sft	%Sft
3	**Eelectrical and data works**			
3.1	Electrical Conduits installation, concealed with boxes and all accessories	LS		
3.2	Providing & Fixing Copper electrical wire 7/.029 (approx 2.5 mm2), PVC insulated	3	Coil(90m)	Each
3.3	Providing & Fixing Copper electrical wire 7/.029 (approx 1.5 mm2), PVC insulated	6	Coil(90m)	Each

3.4	Switch boxes installation	8	Nos	Each
3.5	Switchboards(2+6) supply and installation	8	Nos	Each
3.6	Light points complete.	6	Nos	Each
3.7	Providing & Fixing Power socket points.	3	Nos	Each
3.8	Providing & Fixing AC power points complete	1	No	Each
3.9	Data (internet points, Cat6, complete with face plate and keystone.	1	No	Each
3.10	Cat6 data cable, laid in conduit.	80	Rft	Rft
3.11	SMD LED downlights, 7 W	40	Nos	Each
3.12	Installation of LED spotlights.	6	Nos	Each
3.13	Installation of LED strip lighting in aluminium profile with driver Complete as per Site Requirement.	200	Rft	Rft
3.14	Providing & Installation of Bracket fan with all necessary fittings complete as required.	4	Nos	Each
3.15	Providing & fixing of Circuit breakers with all necessary fitting complete.	6	Nos	Each
3.16	Installation and fixing of Main MCCB, 100A complete as required.	1	No	Each

3.17	Testing and commissioning of electrical works, with test report.	LS		
4	**Floor, wall tiles and marble works**			
4.1	Providing and laying floor of 1 inch (25 mm) thick Granite stone Pakistani Original more than 5 sq. ft. upto 7 Sq. ft. (0.46 Sq.m. upto 0.65 sq.m.) size fine dressed on the surface without winding in ground floor over 1 inch (25 mm) Cement mortar 1:2 (one cement, two sand) setting the marble tiles with grey cement slurry including curing rubbing and polishing etc. complete, including the cost of mortar.	150	Sft	P.Sft
4.2	Providing and fixing 3/8 inch (9.5 mm) thick white marble tiles above 144 Sq. inches (928 Sq.cm) size fine dressed on the surface without windings in dado and skirting and facing etc. in ground floor over 1/2 inch (13 mm) thick base of cement mortar 1:3 setting of tiles in slurry of grey cement over mortar base including filling the joints and washing the tiles with white cement slurry curing, finishing, cleaning and polishing etc. in internal work complete..	120	Sft	P.Sft
4.3	Dismantlling and disposing of existing Stair Railing and provision & fixing New 2" dia stainles steel pipe (18 guage) railing alongwith 4 Nos 3/4" dia parallel pipe having S/S pipe vertical post 2" dia at 3 ft c/c average spacing and 4" diavertical post at start turning and end point including cost of labour, welding charges fitting & fixing in marble floor and wall etc complete as per direction of the Engineer Incharge.	34	Rft	P.Rft

5	**Ceiling works**			
5.1	Providing & Fixing Gypsum board 12 mm thick, fixing with GI hanging approved framed suspension system, dry wall screws and joinry, joint taping & necessary designe where required etc. complete in all respect of approved brand (Elephant /DFB/Loadia Gypsum Industries (PVT) Ltd. Or equivalent complete as per direction of Engineer incharge	1080	Sft	P.Sft
6	**Wall finishes and decorative works**			
6.1	Providing & Fixing WPC Sheet wall Panelling or lining on walls, Jambs, skirting etc as required and as per direction of Engineer incharge.	120	Sft	P.Sft
6.2	Providing and Fixing Vinyle stickers complete as per approved designe and as per direction of Engineer incharge.	170	Sft	P.Sft
6.3	Providing and fixing Backlit glass panels,with customized maps,charts text etc.	100	Sft	P.Sft
7	**Paints and polishing works**			
7.1	Distempering two renewal coats with vinyle distemper (Paintex ICI Dulux, Burger, Nippon or Equivelent Quality) of approved make and shade to walls and ceiling etc., including scraping cleaning the old surface in any floor.	2440	Sft	P.Sft

7.2	Repainting two coats with enamel paint of approved make and shade to wood work including scraping and sand papering the surface as directed by Engineer-in-Charge in any floor.	343	Sft	P.Sft
8	**Carpentry, joinery and furniture**			
8.1	Sofa set with table	1	No.	Set
8.2	Artificial planters	13	Nos	Each
9	**Digital Standees**			
9.1	Indoor, commercial LCD, 55", 4k, 350-500 nits, 4/32 GB, Wifi/LAN/USB. 24/7. Controllable through the operation enter workstation, configurations by the vendor. All concealed, One standee for each floor.	3	Nos	Each
10	**Acrylic Wording**			
10.1	Supply and installation of decorative 3D acrylic wording (10 words), fabricated from minimum 5 mm thick high-quality cast acrylic sheets, laser-cut to approved front, size and design, with polished edges, suitable colour/finish, concealed mounting arrangement, spacers, adhesives and all necessary accessories. Letters shall be accurately aligned and installed on the designated wall surface. Inclusive of LED modules, power supply, wiring and concealed electrical connections. PMD will approve the words.	LS		
11	**Final cleaning and handover**			

11.1	Final cleaning of renovated area, inspection and handover	LS

LOT 3. Executive block floor, Museum

S.#	Description	Qty		Unit
1	**Floor works and dismantling**			
1.1	Rubbing/Grinding and polishing old marble floor, dado and skirting in any floors.	1080	Sft	P.Sft
1.2	Dismantling cement tiled/marble floor, dado or skirting in First floor including base mortar and stacking salvaged material (serviceable) and disposing of surplus stuff as directed within three chains (91.5 m)....	255	Sft	%Sft
1.3	Dismantling and removing of existing electrical fixtures carefully where required and disposal from site as required and directed by engineer in charge.	L/S		
1.4	Collection, loading and disposal of debris to an approved disposal site.	L/S		
2	**Civil and masonry works**			
2.1	1/2" thick cement plaster 1:6 using sand on wall and columns etc. in first floor including making edges, corner and curing etc. complete.	120	Sft	%Sft

2.2	Providing and laying first class solid burnt brick masonry set in cement mortar 1:6 in straight or curved walls 9 to 13-1/2 inches (229 mm to 343 mm) thick including scaffolding, raking, out joints and curing etc. complete in ground floor superstructure .	54	Cft	%Cft
2.3	Providing and laying floors of 2 inches (51 mm) thick 1:2:4 cement concrete using graded screened bajri 3/4 inch (19 mm) and down gauge in First floor laid in panels including form work, consolidation, finishing, and curing etc. complete.	150	Sft	%Sft
3	**Electrical and data works**			
3.1	Electrical Conduits installation, concealed with boxes and all accessories	LS		
3.2	Providing & Fixing Copper electrical wire 7/.029 (approx 2.5 mm2), PVC insulated	4	Coil(90m)	Each
3.3	Providing & Fixing Copper electrical wire 7/.029 (approx 1.5 mm2), PVC insulated	8	Coil(90m)	Each
3.4	Switch boxes installation	12	Nos	Each
3.5	Switchboards(2+6) supply and installation	8	Nos	Each
3.6	Light points complete.	8	Nos	Each

3.7	Providing & Fixing Power socket points.	6	Nos	Each
3.8	Providing & Fixing AC power points complete	2	No	Each
3.9	Data (internet points, Cat6, complete with face plate and keystone.	2	No	Each
3.1	Cat6 data cable, laid in conduit.	120	Rft	Rft
3.11	SMD LED downlights, 7 W	60	Nos	Each
3.12	Installation of LED spotlights.	6	Nos	Each
3.13	Installation of LED strip lighting in aluminum profile with driver Complete as per Site Requirement.	250	Rft	Rft
3.14	Providing & Installation of Bracket fan with all necessary fittings complete as required.	4	Nos	Each
3.15	Providing & fixing of Circuit breakers with all necessary fitting complete.	6	Nos	Each
3.16	Installation and fixing of Main MCCB, 100A complete as required.	1	No	Each
3.17	Testing and commissioning of electrical works, with test report.	LS		
4	**Floor, wall tiles and marble works**			

4.1	Providing and laying floor of 1 inch (25 mm) thick Granite stone Pakistani Original more than 5 sq. ft. upto 7 Sq. ft. (0.46 Sq.m. upto 0.65 sq.m.) size fine dressed on the surface without winding in ground floor over 1 inch (25 mm) Cement mortar 1:2 (one cement, two sand) setting the marble tiles with grey cement slurry including curing rubbing and polishing etc. complete, including the cost of mortar.	150	Sft	P.Sft
4.2	Providing and fixing 3/8 inch (9.5 mm) thick white marble tiles above 144 Sq. inches (928 Sq.cm) size fine dressed on the surface without windings in dado and skirting and facing etc. in ground floor over 1/2 inch (13 mm) thick base of cement mortar 1:3 setting of tiles in slurry of grey cement over mortar base including filling the joints and washing the tiles with white cement slurry curing, finishing, cleaning and polishing etc. in internal work complete..	120	Sft	P.Sft
4.3	Dismantling and disposing of existing Stair Railing and provision & fixing New 2" dia stainles steel pipe (18 guage) railing alongwith 4 Nos 3/4" dia parallel pipe having S/S pipe vertical post 2" dia at 3 ft c/c average spacing and 4" diavertical post at start turning and end point including cost of labour, welding charges fitting & fixing in marble floor and wall etc. complete as per direction of the Engineer Incharge.	34	Rft	P.Rft
5	**Ceiling works**			

5.1	Providing & Fixing Gypsum board 12 mm thick, fixing with GI hanging approved framed suspension system, dry wall screws and joinery, joint taping & necessary designe where required etc. complete in all respect of approved brand (Elephant /DFB/Loadia Gypsum Industries (PVT) Ltd. Or equivalent complete as per direction of Engineer incharge	1080	Sft	P.Sft
6	**Wall finishes and decorative works**			
6.1	Providing & Fixing WPC Sheet wall Paneling or lining on walls, Jambs, skirting etc. as required and as per direction of Engineer incharge.	120	Sft	P.Sft
6.2	Providing and Fixing Vinyl stickers complete as per approved designe and as per direction of Engineer in charge.	400	Sft	P.Sft
6.3	Providing and fixing Backlit glass panels, with customized maps, charts text etc.	100	Sft	P.Sft
7	**Paints and polishing works**			
7.1	Distempering two renewal coats with vinyl distemper (Paintex ICI Dulux, Burger, Nippon or Equivalent Quality) of approved make and shade to walls and ceiling etc., including scraping cleaning the old surface in any floor.	2440	Sft	P.Sft
7.2	Repainting two coats with enamel paint of approved make and shade to wood work including scraping and sand papering the surface as directed by Engineer-in-Charge in any floor.	343	Sft	P.Sft

8	**Carpentry, joinery, furniture and self-service Kiosk**			
8.1	Display showcases for the artifacts, manufacture and installation. Dismantling of existing showcases and provide/install new ones as per the approved design.	4	Nos	Each
8.2	Artificial planters	13	Nos	Each
8.3	Interactive Touchscreen Information Kiosk for self-service access to detailed information, historical records, images, and educational content about meteorological and geophysical artifacts. PMD will provide the detailed information. Vendor needs to customize the Kiosk for self-service system.	1	No	Each
9	**Final cleaning and handover**			
9.1	Final cleaning of renovated area, inspection and handover	LS		

LOT 4. R&D Wing floor

S.#	Description	Qty		Unit
1	**Dismantling and demolition works**			
1.1	Dismantling cement tiled/marble floor, dado or skirting in First floor including base mortar and stacking salvaged material (serviceable) and disposing of surplus stuff as directed within three chains (91.5 m)....	240	Sft	%Sft

1.2	Taking out door and window frames with or without hold fasts in ground floor including cutting walls, stacking salvaged material (serviceable) and disposing of unserviceable material as directed within three chains (91.5 m).	3	Nos	Each
1.3	Taking out carefully shutters of doors and windows in any floor and stacking as directed within three chains (91.5 m).	3	Nos	Each
1.4	Dismantling lime or cement concrete in foundation or under floor basement, plinth and at any floor and disposing of surplus material as directed within three chains (91.5 m)..	120	Cft	%Cft
1.5	Dismantling burnt brick masonry in lime or cement mortar foundation, basement, plinth and ground floor including stacking salvaged material (serviceable) and disposing of surplus material as directed within three chains (91.5 m)..	93	Cft	%Cft
1.6	Dismantling and removing of existing electrical fixtures carefully where required and disposal from site as required and directed by engineer incharge.	L/S		
1.7	Collection, loading and disposal of debris to an approved disposal site.	L/S		
2	**Civil and masonry works**			
2.1	Providing and laying first class solid burnt brick masonry set in cement mortar 1:6 in straight or curved walls 9 to 13-1/2 inches (229 mm to 343 mm) thick including scaffolding, raking, out joints and curing etc. complete in ground floor superstructure .	93	Cft	%Cft
2.2	1/2" thick cement plaster 1:6 using sand on wall and columns etc. in first floor including making edges, corner and curing etc. complete.	250	Sft	%Sft

2.3	Providing and laying 1:4:8 cement concrete bed under floors using graded stone ballast 2 inches (51 mm) and down gauge with levelling and ramming, watering and curing etc. complete.	113	Cft	%Cft
2.4	Water proofing of bathroom floor and walls with membrance sheet.	200	Sft	P.Sft
2.5	Providing and fixing M.S. molded steel door frames of approved 4"x2-1/2" (102 mm x 64 mm) manufactured from mild steel of 18 gauge (1.41 mm) conforming to B.S.S 1245 having a single rebate size 1-1/2" x 1/2" (38 having a single rebate size 1-1/2" (38mm x 13 mm) provision of 3 Nos. M.S. plate, section 1-1/2" x 1/4" (38mm x 6 mm) 2 Nos. 6 inch long welded with frame at not less than 10 points and 1 Nos. 12 inch long welded with frame at not less than 20 points), with holes and threads for fixing steel hinges, fitted with one locking box of same sheet (point welded inside the frame), 6 Nos. 6 inches long flat iron fixing lugs of 1-1/4" x 3/16" section treated with special red oxide primer coat all around including cutting holes and filling the cavity with cement concrete 1:2:4 etc. in any floor at any height complete as directed by the Engineer-in-Charge.	48	Rft	P.Rft
2.6	Wall chasing and grooves for MEP services/electrical conduits, including making good.	L.S		
2.7	P/F 1-1/2 Inch(38 mm) thick best quality PVC/UPVC door shutter paneled (approved design), approved iron hinges and tower bolt, etc. as required.	42	Sft	P.Sft
3	**Electrical and data works**			

3.1	Electrical Conduits installation, concealed with boxes and all accessories	LS		
3.2	Providing & Fixing Copper electrical wire 7/.029 (approx 2.5 mm2), PVC insulated	1	Coil	Each
3.3	Providing & Fixing Copper electrical wire 7/.029 (approx 1.5 mm2), PVC insulated	2	Coil	Each
3.4	Switchboards(2+6) supply and installation	2	Nos	Each
3.5	SMD LED downlights, 7 W	14	Nos	Each
3.6	Installation of LED strip lighting in aluminum profile with driver Complete as per Site Requirement.	60	Rft	Rft
3.7	Providing & Installation of Exhaust fan with all necessary fittings complete as required.	1	Nos	Each
3.8	Providing & fixing of Circuit breakers with all necessary fitting complete.	1	Nos	Each
3.9	Testing and commissioning of electrical works, with test report.	LS		
4	**Plumbing and Sanitary work**			

4.1	Providing and fixing best quality squatting type white glazed earthenware W.C Pan, Pakistani (of not less than 18 Inches clear opening as measured between flushing rims) complete with and including the cost of 13.6 liter best quality low level plastic flushing cistern with internal fittings complete, P.V.C. flushing pipe suitable for squatting type with extra bends and length with fittings, C.I. trap 4 inches (100mm) dia and making requisite number of holes in walls, plinth & floor for pipe connection and making good in cement concrete 1:2:4..	2	No	Each
4.2	Providing and fixing Pakistani best quality European style white glazed earthenware W.,C pan complete with and including the cost of plastic seat and buffers, 13.6 liters best quality low level plastic flushing cistern with internal fittings complete, P.V.C flushing pipe with fittings and making requisite number of holes in walls, plinth and floor for pipe connections and making good in cement concrete 1:2:4..	1	No	Each
4.3	Providing and fixing CP Mixer 1/2 inches (15 mm) (Faisal/Master or equivalent) lever type Pakistani complete in all respect.	3	No	Each
4.4	P/F chromium plated Muslim bib cock with Muslim shower of approved quality.	3	No	Each

4.5	Providing and fixing UPVC multi floor trap of sizes with gratings including cutting and making the requisite number of holes in walls , plinth and floors and making good in 1:2:4 C.C.	4	No	Each
4.6	Providing and fixing PPRC pipe PN-20 with specials and clamps etc. including cutting and fitting complete with and including the cost of breaking through walls and roof and making good etc. after cleaning the piep and cartage within 10 miles 25 mm dia	40	Rft	P.Rft
	32mm dia	60	Rft	P.Rft
	40mm dia	70	Rft	P.Rft
4.7	Providing and fixing un platisized polyvinyl chloride pipe (P.V.C) "D" class and specials etc. including cutting and fitting complete with and including the cost of cutting trench upto 1-1/2 feet deep refilling, watering, ramming, and disposal of surplus earth within one chain and after cleaning the pipe and cartage within 10 miles (16.09 km.) (working pressure 12 kg/cm^2) 1-1/4 inches (32 mm) dia.			
	4 inch (100 mm) dia pipe	35	Rft	P.Rft
	3inch (75 mm) dia pipe	35	Rft	P.Rft
4.8	Providing and fixing Royel bath room accessories of set of 6 pieces consist of one shelf, one towel rod with bracket, one towel ring, one soap dish, one tooth Brush holder with glass, one tissue paper holder one double hook etc complete of approved quality as per direction of Engineer in-charge.	1	No	Each

4.9	Providing and installation of Instant electric Geyser, supply and installation.	1	No	Each
4.10	Automatic hand dryer, supply and installation	3	No	Each
4.11	Providing and fixing 24 inches x 18 inches (610 mm x 457 mm) looking mirror of Imported glass 5 mm thick fixing with CP clamps and screws	4	No	Each
5	**Floor, Wall Tiles and marble works**			
5.1	Providing and fixing 1/4 inches or 6.4 mm (approx.) thick approved Pakistani make white glazed tiles upto 1.50sq feet to 3. sq. ft size in dado and skirting in ground floor, over 1/2 inch (13 mm) thick base of cement mortar 1:3 setting of tiles in slurry of grey cement over mortar base including filling the joints and washing the tile with white cement slurry curing and cleaning etc. complete . **1st Floor**	820	Sft	P.Sft
5.2	Providing and laying floor of 6mm (approx: 1/4") thick coloured glazed tiles More than 1 sq.ft upto 2 sq.ft. of master make (Pakistani) first grade in ground floor laid over 1" (25mm) thick cement mortar 1:2 (1 cement and 2 sand) including jointing and washing the tiles with white cement slurry a matching colour (by using pigment in white cement) and curing etc. complete. **1st Floor**	300	Sft	P.Sft

5.3	Providing and laying floor of 1 inch (25 mm) thick Granite stone Pakistani Original more than 5 sq. ft. upto 7 Sq. ft. (0.46 Sq.m. upto 0.65 sq.m.) size fine dressed on the surface without winding in ground floor over 1 inch (25 mm) cement mortar 1:2 (one cement, two sand) setting the marble tiles with grey cement slurry including curing rubbing and polishing etc. complete, including the cost of mortar.	40	Sft	P.Sft
6	**Wall finishes and decorative works**			
6.1	Providing & Fixing WPC Sheet wall Paneling or lining on walls, Jambs, skirting etc as required and as per direction of Engineer incharge.	120	Sft	P.Sft
6.2	Providing and Fixing Vinyl stickers complete as per approved designe and as per direction of Engineer incharge.	400	Sft	P.Sft
6.3	Providing and fixing Backlit glass panels, with customized maps, charts text etc.	100	Sft	P.Sft
7	**Ceiling works**			
7.1	Providing & Fixing Gypsum board 12 mm thick, fixing with GI hanging approved framed suspension system, dry wall screws and joinry, joint taping & necessary designe where required etc. complete in all respect of approved brand (Elephant /DFB/Loadia Gypsum Industries (PVT) Ltd. Or equivalent complete as per direction of Engineer incharge	250	Sft	P.Sft
8	**Paints and polishing works**			

8.1	Repainting two coats with enamel paint of approved make and shade to wood work including scraping and sand papering the surface as directed by Engineer-in-Charge in any floor.	60	Sft	P.Sft
9	**Carpentry, joinery, furniture**			
9.1	Providing and fixing with brass screws Alpha knob set lock of approved design No. 6600 with door handle cutting wood etc., to required shape and size with two operating keys as per direction of the Engineer-in-Charge	1	No	Set
9.2	Providing and fixing with brass screws or specially supplied screws hydraulic door closer of approved design, cutting wood etc., to required shape and size as per direction of the engineer-in-charge	1	No	Set
10	**Final cleaning and handover**			
10.1	Final cleaning of renovated area, inspection and handover	LS		

LOT 5. Washroom

S.#	Description	Qty		Unit
1	**Dismantling and demolition works**			
1.1	Dismantling cement tiled/marble floor, dado or skirting in First floor including base mortar and stacking salvaged material (serviceable) and disposing of surplus stuff as directed within three chains (91.5 m)....	240	Sft	%Sft

1.2	Taking out door and window frames with or without hold fasts in ground floor including cutting walls, stacking salvaged material (serviceable) and disposing of unserviceable material as directed within three chains (91.5 m).	3	Nos	Each
1.3	Taking out carefully shutters of doors and windows in any floor and stacking as directed within three chains (91.5 m).	3	Nos	Each
1.4	Dismantling lime or cement concrete in foundation or under floor basement, plinth and at any floor and disposing of surplus material as directed within three chains (91.5 m)..	120	Cft	%Cft
1.5	Dismantling burnt brick masonry in lime or cement mortar foundation, basement, plinth and ground floor including stacking salvaged material (serviceable) and disposing of surplus material as directed within three chains (91.5 m).	93	Cft	%Cft
1.6	Dismantling and removing of existing electrical fixtures carefully where required and disposal from site as required and directed by engineer incharge.	L/S		
1.7	Collection, lodaing and disposal of debris to an approved disposal site.	L/S		
2	**Civil and masonry works**			
2.1	Providing and laying first class solid burnt brick masonry set in cement mortar 1:6 in straight or curved walls 9 to 13-1/2 inches (229 mm to 343 mm) thick including scaffolding, raking, out joints and curing etc. complete in ground floor superstructure .	93	Cft	%Cft
2.2	1/2" thick cement plaster 1:6 using sand on wall and columns etc. in first floor including making edges, corner and curing etc. complete.	250	Sft	%Sft

2.3	Providing and laying 1:4:8 cement concrete bed under floors using graded stone ballast 2 inches (51 mm) and down gauge with levelling and ramming, watering and curing etc. complete.	113	Cft	%Cft
2.4	Water proofing of bathroom floor and walls with membrance sheet.	200	Sft	P.Sft
2.5	Providing and fixing M.S. molded steel door frames of approved 4"x2-1/2" (102 mm x 64 mm) manufactured from mild steel of 18 gauge (1.41 mm) conforming to B.S.S 1245 having a single rebate size 1-1/2" x 1/2" (38 having a single rebate size 1-1/2" (38mm x 13 mm) provision of 3 Nos. M.S. plate, section 1-1/2" x 1/4" (38mm x 6 mm) 2 Nos. 6 inch long welded with frame at not less than 10 points and 1 Nos. 12 inch long welded with frame at not less than 20 points), with holes and threads for fixing steel hinges, fitted with one locking box of same sheet (point welded inside the frame), 6 Nos. 6 inches long flat iron fixing lugs of 1-1/4" x 3/16" section treated with special red oxide primer coat all around including cutting holes and filling the cavity with cement concrete 1:2:4 etc. in any floor at any height complete as directed by the Engineer-in-Charge.	48	Rft	P.Rft
2.6	Wall chasing and grooves for MEP services/electrical conduits, including making good.	L.S		
2.7	P/F 1-1/2 Inch(38 mm) thick best quality PVC/UPVC door shutter paneled (approved design), approved iron hinges and tower bolt, etc. as required.	42	Sft	P.Sft
3	**Electrical and data works**			

3.1	Electrical Conduits installation, concealed with boxes and all accessories	LS		
3.2	Providing & Fixing Copper electrical wire 7/.029 (approx 2.5 mm2), PVC insulated	1	Coil	Each
3.3	Providing & Fixing Copper electrical wire 7/.029 (approx 1.5 mm2), PVC insulated	2	Coil	Each
3.4	Switchboards(2+6) supply and installation	2	Nos	Each
3.5	SMD LED downlights, 7 W	14	Nos	Each
3.6	Installation of LED strip lighting in aluminum profile with driver Complete as per Site Requirement.	60	Rft	Rft
3.7	Providing & Installation of Exhaust fan with all necessary fittings complete as required.	1	Nos	Each
3.8	Providing & fixing of Circuit breakers with all necessary fitting complete.	1	Nos	Each
3.9	Testing and commissioning of electrical works, with test report.	LS		
4	**Plumbing and Sanitary work**			

4.1	Providing and fixing best quality squatting type white glazed earthenware W.C Pan, Pakistani (of not less than 18 Inches clear opening as measured between flushing rims) complete with and including the cost of 13.6 liter best quality low level plastic flushing cistern with internal fittings complete, P.V.C. flushing pipe suitable for squatting type with extra bends and length with fittings, C.I. trap 4 inches (100mm) dia and making requisite number of holes in walls, plinth & floor for pipe connection and making good in cement concrete 1:2:4..	2	No	Each
4.2	Providing and fixing Pakistani best quality European style white glazed earthenware W.,C pan complete with and including the cost of plastic seat and buffers, 13.6 liters best quality low level plastic flushing cistern with internal fittings complete, P.V.C flushing pipe with fittings and making requisite number of holes in walls, plinth and floor for pipe connections and making good in cement concrete 1:2:4..	1	No	Each
4.3	Providing and fixing CP Mixer 1/2 inches (15 mm) (Faisal/Master or equivalent) lever type Pakistani complete in all respect.	3	No	Each
4.4	P/F chromium plated Muslim bib cock with Muslim shower of approved quality.	3	No	Each

4.5	Providing and fixing UPVC multi floor trap of sizes with gratings including cutting and making the requisite number of holes in walls , plinth and floors and making good in 1:2:4 C.C.	4	No	Each
4.6	Providing and fixing PPRC pipe PN-20 with specials and clamps etc. including cutting and fitting complete with and including the cost of breaking through walls and roof and making good etc. after cleaning the piep and cartage within 10 miles 25 mm dia	40	Rft	P.Rft
	32mm dia	60	Rft	P.Rft
	40mm dia	70	Rft	P.Rft
4.7	Providing and fixing un platisized polyvinyl chloride pipe (P.V.C) "D" class and specials etc. including cutting and fitting complete with and including the cost of cutting trench upto 1-1/2 feet deep refilling, watering, ramming, and disposal of surplus earth within one chain and after cleaning the pipe and cartage within 10 miles (16.09 km.) (working pressure 12 kg/cm^2) 1-1/4 inches (32 mm) dia.			
	4 inch (100 mm) dia pipe	35	Rft	P.Rft
	3inch (75 mm) dia pipe	35	Rft	P.Rft
4.8	Providing and fixing Royal bath room accessories of set of 6 pieces consist of one shelf, one towel rod with bracket, one towel ring, one soap dish, one tooth Brush holder with glass, one tissue paper holder one double hook etc complete of approved quality as per direction of Engineer in-charge.	1	No	Each

4.9	Providing and installation of Instant electric Geyser, supply and installation.	1	No	Each
4.10	Automatic hand dryer, supply and installation	3	No	Each
4.11	Providing and fixing 24 inches x 18 inches (610 mm x 457 mm) looking mirror of Imported glass 5 mm thick fixing with CP clamps and screws	4	No	Each
5	**Floor, Wall Tiles and marble works**			
5.1	Providing and fixing 1/4 inches or 6.4 mm (approx.) thick approved Pakistani make white glazed tiles upto 1.50sq feet to 3. sq. ft size in dado and skirting in ground floor, over 1/2 inch (13 mm) thick base of cement mortar 1:3 setting of tiles in slurry of grey cement over mortar base including filling the joints and washing the tile with white cement slurry curing and cleaning etc. complete . **1st Floor**	820	Sft	P.Sft
5.2	Providing and laying floor of 6mm (approx: 1/4") thick coloured glazed tiles More than 1 sq.ft upto 2 sq.ft. of master make (Pakistani) first grade in ground floor laid over 1" (25mm) thick cement mortar 1:2 (1 cement and 2 sand) including jointing and washing the tiles with white cement slurry a matching colour (by using pigment in white cement) and curing etc. complete. **1st Floor**	300	Sft	P.Sft

5.3	Providing and laying floor of 1 inch (25 mm) thick Granite stone Pakistani Original more than 5 sq. ft. upto 7 Sq. ft. (0.46 Sq.m. upto 0.65 sq.m.) size fine dressed on the surface without winding in ground floor over 1 inch (25 mm) cement mortar 1:2 (one cement, two sand) setting the marble tiles with grey cement slurry including curing rubbing and polishing etc. complete, including the cost of mortar.	40	Sft	P.Sft
6	**Wall finishes and decorative works**			
6.1	Providing & Fixing WPC Sheet wall Paneling or lining on walls, Jambs, skirting etc as required and as per direction of Engineer incharge.	120	Sft	P.Sft
6.2	Providing and Fixing Vinyl stickers complete as per approved designe and as per direction of Engineer incharge.	400	Sft	P.Sft
6.3	Providing and fixing Backlit glass panels, with customized maps, charts text etc.	100	Sft	P.Sft
7	**Ceiling works**			
7.1	Providing & Fixing Gypsum board 12 mm thick, fixing with GI hanging approved framed suspension system, dry wall screws and joinry, joint taping & necessary designe where required etc. complete in all respect of approved brand (Elephant /DFB/Loadia Gypsum Industries (PVT) Ltd. Or equivalent complete as per direction of Engineer incharge	250	Sft	P.Sft
8	**Paints and polishing works**			

8.1	Repainting two coats with enamel paint of approved make and shade to wood work including scraping and sand papering the surface as directed by Engineer-in-Charge in any floor.	60	Sft	P.Sft
9	**Carpentry, joinery, furniture and self-service Kiosk**			
9.1	Providing and fixing with brass screws Alpha knob set lock of approved design No. 6600 with door handle cutting wood etc., to required shape and size with two operating keys as per direction of the Engineer-in-Charge	1	No	Set
9.2	Providing and fixing with brass screws or specially supplied screws hydraulic door closer of approved design, cutting wood etc., to required shape and size as per direction of the engineer-in-charge	1	No	Set
10	**Final cleaning and handover**			
10.1	Final cleaning of renovated area, inspection and handover	LS		

Terms & Conditions:

1. **Earnest money/ Bid Security** Three (03) million rupees in the shape of Bank Draft/Pay order in favour of D.G PMD must be submitted with the offer.
2. Bidders must submit copies of their registration of Sales Tax and Income Tax and authorized dealership certificate.
3. Eligibility Criteria: Participating firm must be, fully experienced and registered with Govt. Authorities (FBR etc.).
4. **BID VALIDITY**: Bids shall remain valid for a period of at least **120 days** after the date of opening of financial proposals.
   In exceptional circumstances, prior to expiry of the original bid validity period, the Buyer may request that the bidders extend the period of validity for a specified additional period. The request and the responses there to shall be made in writing or by electronic mode. A bidder will not be required or permitted to modify its bid, but will be required to extend the validity of its bid security for the period of the extension.
5. All bidders are advised to comply strictly with the document specifications/ terms & conditions and no deviation shall be allowed.
6. **Prices must be quoted in Pak Rupees only including all applicable Govt. of Pakistan taxes & GST**.
7. The last date for the submission of tender is 30th November, 2026 at 10.30 Hours and will be opened on the same day at 1100 hours.
8. The quantity of the items can be increased/ decreased.
9. The Procuring Agency reserves the right to cancel the bidding process at any stage without assigning any reason.
10. Taxes will be deducted as per Government rules.
11. Any bid found in deviation / violation / without earnest money would liable to be rejected.

1. Bidding documents having detailed specifications are available free of cost at the website https://weather.gov.pk, PPRA EPADS https://pa.epads.gov.pk as well as https://epms.ppra.gov.pk.