



Ministry of Economic Development, Transport and Trade
Male', Republic of Maldives

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**SHOPPING FOR SUPPLY, INSTALLATION, CONFIGURATION,
AND COMMISSIONING OF CRITICAL POWER UPGRADE,
DISTRIBUTION NETWORK UPGRADE, BACKUP
INFRASTRUCTURE AND BUSINESS CONTINUITY UPGRADE,
AND NOC MONITORING SYSTEM, INCLUDING LOCAL
TECHNICAL SUPPORT AND ON-THE-JOB TRAINING**

for

Ministry of Economic Development, Transport and Trade.

**ANNEX1-REQUEST FOR QUOTATION
(RFQ)**

Source of Funding: ADB Loan 3794 – MLD and ADB Grant 0646 – MLD

RFQ Ref: RFQ/2026/008



South Asia Subregional Economic Cooperation National Single Window Project

SECTION A – CLIENT REQUIREMENTS

SUPPLY, INSTALLATION, CONFIGURATION, AND COMMISSIONING OF CRITICAL POWER UPGRADE, DISTRIBUTION NETWORK UPGRADE, BACKUP INFRASTRUCTURE AND BUSINESS CONTINUITY UPGRADE, AND NOC MONITORING SYSTEM, INCLUDING LOCAL TECHNICAL SUPPORT AND ON-THE-JOB TRAINING

1. Background

The Ministry of Economic Development, Transport & Trade (MoEDTT) operates two server room facilities: a Primary Data Centre located at Velaanaage and a Secondary Data Centre located at the Umar Zaahir Building. Together these facilities host the Ministry's core information and communications technology (ICT) systems, including enterprise applications, network services, and data protection infrastructure. The facilities' critical power, network distribution, backup systems and NOC monitoring system have reached a state in which capacity, resilience, and manageability no longer meet the Ministry's operational requirements and growth projections.

To safeguard service continuity, improve energy efficiency, and strengthen data protection, the Ministry intends to procure, as a single lot, the SUPPLY, INSTALLATION, CONFIGURATION, AND COMMISSIONING OF CRITICAL POWER UPGRADE, DISTRIBUTION NETWORK UPGRADE, BACKUP INFRASTRUCTURE AND BUSINESS CONTINUITY UPGRADE, AND NOC MONITORING SYSTEM, INCLUDING LOCAL TECHNICAL SUPPORT AND ON-THE-JOB TRAINING. The works span both facilities.

2. Purpose of this Document

This document constitutes the Technical Specification and detailed Scope of Work (SoW) for the procurement described above. It defines the minimum technical requirements, quantities, site allocations, installation and commissioning obligations, support and training requirements, warranty terms, documentation deliverables, and bidder qualification criteria. All



requirements stated herein are minimum requirements unless expressly indicated otherwise. Bidders may offer equipment or solutions exceeding the stated requirements, provided full compliance with every mandatory requirement is demonstrated in the format prescribed.

3. Project Sites and Existing Environment

The work shall be executed at the following two facilities. Bidders shall note the existing platforms at each site: all supplied systems should integrate and interoperate with this installed base, and the Contractor's project team is required to hold the corresponding OEM competencies.

Parameter	Requirement
Primary Data Centre	Location: Velaanaage. Existing environment: HPE servers; Huawei storage systems; Cisco Nexus top-of-rack (TOR) switches; Fortinet distribution network; Fortinet FortiGate firewall (HA pair); Huawei DCS Virtualization platform; FortiAnalyzer; FortiManager; Veeam Backup (Veeam Backup & Replication).
Secondary Data Centre	Location: Umar Zaahir Building. Existing environment: Huawei FusionCube hyper-converged nodes; Huawei DCS Virtualization platform; Huawei OceanProtect Backup Storage; Huawei top-of-rack (TOR) switches. Fortinet FortiGate firewall (HA pair); F5 BIG-IP / WAF; 3-phase 15 kVA / 13.5 kW on-line UPS with 40 × 12 V / 9 Ah batteries.
Site allocation of works	Modular 20 kVA UPS - Primary Datacentre. Fire Suppression System - Primary Datacentre. Data-Centre Environment monitoring system - both sites. Distribution network upgrade — Secondary Datacentre. Backup infrastructure Veeam Data Platform licenses and new OceanProtect X3000) - Primary Datacentre Business continuity / high-availability software - both sites NOC monitoring system - Primary Datacentre.



4. Scope of Work — Overview

The procurement is a single lot comprising as summarized below, delivered across the two project sites. Bidders shall quote for the complete lot; partial bids shall be rejected.

#	Description	Qty
1	SUPPLY, INSTALLATION, CONFIGURATION, AND COMMISSIONING OF CRITICAL POWER UPGRADE, DISTRIBUTION NETWORK UPGRADE, BACKUP INFRASTRUCTURE AND BUSINESS CONTINUITY UPGRADE, AND NOC MONITORING SYSTEM, INCLUDING LOCAL TECHNICAL SUPPORT AND ON-THE-JOB TRAINING	1 LOT
1.1	Critical Power Upgrade	1 Bundle
1.2	Distribution Network Upgrade	1 Bundle
1.3	Backup Infra Upgrade	1 Bundle
1.4	Network Operations Monitoring System	1 Bundle
1.5	Professional Services: Installation, Configuration, and Commissioning of Critical Power Upgrade	1 Service
1.6	Professional Services: Installation, Configuration, and Commissioning of Distribution Network	1 Service
1.7	Professional Services: Installation, Configuration, and Commissioning of Backup Infra Upgrade	1 Service
1.8	Professional Services: Installation, and Configuration of Network Monitoring System	1 Service
1.9	Local Technical Support and On-the-job Training	1 Service

5. Bill of Quantities

The Bill of Quantities (BoQ) below defines the minimum quantities to be supplied, grouped by site allocation, and the associated services. Quantities shall be confirmed against the approved site survey; any shortfall identified for a complete and operational system shall be highlighted in the bid and priced accordingly.



5.1 Item 1.1 — Critical Power Upgrade (1 Bundle)

#	Description	Qty	Unit
Primary Data Centre — Velaanaage			
1.1.1	20 kVA modular data-centre UPS system (frame/cabinet with static switch, monitoring, and distribution).	1	Nos
1.1.2	20 kVA power module for modular UPS system.	2	Nos
1.1.3	SNMP card for modular UPS system.	1	Nos
1.1.4	Rack-mount battery package, VRLA type, 40 × 12 V / 9 Ah batteries, 6U height.	2	Nos
1.1.5	Standalone fire-fighting system, room-mount 70 L cylinder/bottle with valve, pressure switch, and accessories.	1	Nos
1.1.6	Room-type fire control panel with controller, fire sensors/detectors, fire alarm, and accessories.	1	Nos
1.1.7	Fire extinguishing gas FM200	70	Kg
1.1.8	Fire gas piping network system, including pipework, nozzles, and fittings.	50	m
Both Sites — Data-Centre Environment Monitoring System			
1.1.9	Enterprise Environment Monitoring System, AC power (base monitoring unit; one per site).	2	Nos
1.1.10	Temperature/Humidity/Dew Point Sensor (–20 to 85 °C).	8	Nos
1.1.11	Smoke Detection Sensor	2	Nos
1.1.12	Ceiling-mount infrared motion sensor.	2	Nos
1.1.13	USB 4G modem — 4G LTE (for SMS alerting).	2	Nos
1.1.14	AC voltage detector with relay, IEC C14 socket.	4	Nos

5.3 Item 1.2 - Distribution Network Upgrade (1 Bundle) - Secondary Data Centre, Umar Zaahir Building

#	Description	Qty	Unit
1.2.1	FortiSwitch 148F-FPOE switch.	4	Nos
1.2.2	FortiSwitch-148F-FPOE 1 Year FortiCare Premium Support	4	Nos
1.2.3	FortiSwitch 124F-FPOE Switch	3	Nos
1.2.4	FortiSwitch-124F-FPOE 1 Year FortiCare Premium Support	3	Nos
1.2.5	10 GE SFP+ transceiver module, SR, Duplex LC connector, MM.	10	Nos



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1.2.6	Fibre patch cable, 2 fibres, LC UPC duplex to LC UPC duplex, OM3, OFNR, 0.3 m.	10	Nos
1.2.7	Cat6a 24 AWG snagless unshielded (U/UTP) LSZH Ethernet patch cable, 0.15 m.	160	Nos
1.2.8	Cat6a 24 AWG snagless unshielded (U/UTP) LSZH Ethernet patch cable, 3 m.	20	Nos
1.2.9	Cat6a 24 AWG snagless unshielded (U/UTP) LSZH Ethernet patch cable, 5 m.	20	Nos
1.2.10	Horizontal 1U cable management panel, standard EIA 19-inch rack/cabinet mount.	12	Nos

5.4 Item 1.3 — Backup Infrastructure Upgrade (1 Bundle)

#	Description	Qty	Unit
1.3.1	Veeam Data Platform Essentials Universal Subscription- 1 Year Subscription, 40 Instance	1	Nos
1.3.2	Business Continuity / High Availability Software (Both Sites) - 1 Year	6	Node
Dedicated Backup Replication Storage – Primary Datacentre			
1.3.3	Huawei OceanProtect X3000 (2U, Dual Controllers, SAS, AC\240V, 256GB Cache, 8*1Gb ETH,4*10Gb ETH, 12*3.5 Inch)	1	Nos
1.3.4	1.92TB SSD SAS Disk Unit (3.5")	4	Nos
1.3.5	8TB 7.2K RPM NL-SAS Disk Unit (3.5")	8	Nos
1.3.6	Fiber Patch Cable, 2 Fibers, LC UPC DX, Multimode (OM3), 3m	4	Nos
1.3.7	Backup Storage Essential Capacity License Enhanced Edition (including 40 TB capacity license)	1	Nos
1.3.8	Backup Storage Capacity License Enhanced Edition (Per TB)	24	Nos
1.3.9	Hi-Care Application Software Upgrade Support Service - Dedicated Backup Storage Software Essential License (including 40 TB capacity license) 36Month(s)	1	Nos
1.3.10	Hi-Care Standard OceanProtect X3000 Engine(Dual Ctrl) 36Month(s)	1	Nos
1.3.11	Hi-Care Standard OceanProtect 1.92TB SSD 36Month(s)	4	Nos
1.3.12	Hi-Care Application Software Upgrade Support Service - Dedicated Backup Storage Software Capacity License(Per TB) 36Month(s)	24	Nos



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5.5 Item 1.4 Network Operations Monitoring System

#	Description	Qty	Unit
1.4.1	4K 65" Ultra HD Google TV - Preferred Brands: Sharp, HiSense, TCL, Skyworth - Narrow Bezel - Ultra Clarity Display - Slim Bezel - Dolby VISION / ATMOS - Wall mounting bracket should be included - One year warranty	6	Nos
1.4.2	Hikvision 8-Channel 4K Decoder	1	Svc

5.6 Items 1.5–1.8 — Professional Services (1 Service Each)

#	Description	Qty	Unit
1.5	Professional Services: installation, configuration, and commissioning of Critical Power Upgrade.	1	Svc
1.6	Professional Services: installation, configuration, and commissioning of Distribution Network Upgrade.	1	Svc
1.7	Professional Services: installation, configuration, and commissioning of Backup Infrastructure Upgrade.	1	Svc
1.8	Professional Services: Installation, and Configuration of Network Monitoring System	1	Svc

6. Technical Specifications

This section defines the minimum technical requirements for every line item in the BoQ. Bidders shall complete the Technical Compliance Matrix at Appendix A against each requirement, supported by OEM datasheets.



6.1 Critical Power Upgrade

6.1.1 Modular Data-Centre UPS System, 20 kVA — Primary Site

Parameter	Requirement
Architecture	Modular, hot-swappable power-module design in a dedicated UPS frame/cabinet; true on-line double conversion
Rated capacity	System frame rated for 60 kVA class output, configured with two (2) × 20 kVA power modules providing N+1 module-level redundancy within the frame.
Input	3-phase, 3-wire/4-wire + PE Nominal input voltage: 380/400/415 VAC Input power factor: ≥ 0.99
Output	Output: 3-phase Output Voltage: 380/400/415 VAC Output power factor: 1.0 Frequency: 50/60 Hz Output waveform: Pure sine wave Online transfer: 0 ms interruption Bypass transfer: 0 ms interruption under synchronized conditions Output THD, linear load: $\leq 1\%$ preferred
Power module	20 kVA hot-swappable power module; two (2) modules supplied; modules replaceable without load interruption.
Static switch	Integrated static bypass module with automatic and manual bypass.
Monitoring	SNMP communication card providing web-based and SNMPv3 monitoring, event notification (e-mail/SNMP trap).
Display	LCD/LED system panel presenting module status, load levels, battery status, and alarm history.
Battery	Valve Regulated Lead Acid (VRLA) batteries. Nominal battery voltage: 480 VDC per battery package. Battery capacity: 40 × 12 V / 9 Ah per package. Battery package quantity: 2. Rack-mounted construction. Integrated battery enclosure/tray and appropriate protection. Battery isolation/protection device. Battery interconnection cables and connectors.



Mounting	Standard 19-inch rack installation. Include rack mounting rails/brackets. Include all required mounting hardware.
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6.1.2 Fire Suppression System — Primary Site

Parameter	Requirement
System type	Standalone, room-mount total-flooding clean-agent fire suppression system protecting the Primary Data Centre server room at Velaanaage.
Storage cylinder	70 L cylinder/bottle, room-mounted, complete with discharge valve, pressure switch/gauge, mounting hardware, and all accessories; cylinder manufactured and tested.
Extinguishing agent	FM200 (HFC-227ea) clean agent, quantity 70 kg including filling
Fire control panel	Room-type fire detection and releasing control panel with controller, cross-zoned smoke/heat detectors (fire sensors), audible and visual fire alarm devices (sounders, strobes), manual release and abort stations, warning signage, and all accessories;
Piping network	Fire gas piping network system, 50 m of distribution pipework with discharge nozzles, brackets, and fittings; pipe material.

6.1.3 Data-Centre Environment Monitoring System — Both Sites

Parameter	Requirement
Base unit	Enterprise environment monitoring system, AC powered, one (1) per site; sufficient sensor ports/expansion for the deployed sensor set; embedded web interface, SNMPv3, data logging with minimum 90-day history, and export capability.
Standard sensors	Temperature/humidity/dew point sensor, range -4 to 185 °F (-20 to 85 °C); eight (8) units distributed across both sites
Smoke detection	Smoke detection sensor; two (2) units (one per site), interfaced to the monitoring base unit for alarm generation.
Motion detection	Ceiling-mount infrared motion sensor; two (2) units (one per site) for after-hours intrusion/activity alerting.



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SMS alerting	USB 4G modem supporting 4G LTE bands; two (2) units (one per site) enabling SMS alarm notification independent of the data network; SIM card will be provided by the MoEDT.
Power monitoring	AC voltage detector with relay output, IEC C14 socket; four (4) units deployed on critical feeds at both sites.
Alerting	Configurable thresholds per sensor with alarm notification via e-mail, SMS (via the 4G modem), SNMP trap, and local audible/visual indication.

6.2 Distribution Network Upgrade — Secondary Site

6.2.1 FortiSwitch 148F-FPOE Switch and FortiCare Support

Parameter	Requirement
Platform	Fortinet FortiSwitch 148F-FPOE, or OEM-successor model of equal or greater capability, four (4) units, installed at the Secondary Data Centre, Umar Zaahir Building.
Access ports	48 × 10/100/1000BASE-T RJ45 ports with full PoE/PoE+ (IEEE 802.3af/at) capability across ports.
Uplink ports	4 × 10 GE SFP+ uplink ports (compatible with Item 1.2.3 transceivers).
PoE budget	Total PoE power budget adequate for simultaneous PoE+ on all ports as per the 148F-FPOE specification;
Layer 2 features	VLAN (802.1Q), STP/RSTP/MSTP, link aggregation (802.3ad LACP), IGMP snooping, LLDP/LLDP-MED, storm control, port mirroring.
Layer 3 features	Static routing and inter-VLAN routing capability.
Management	Centralised management via FortiGate FortiLink and/or standalone web GUI/CLI; SNMPv3, syslog, RADIUS/TACACS+; configuration backup/restore.
Hardware	1U rack-mount with mounting kit; redundant/fan-cooled power design as per model.
Support	One (1) year FortiCare Premium (24×7) support per switch, registered to the Ministry, including firmware updates,



	hardware replacement, and TAC access; activation evidence to be provided at handover.
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6.2.2 FortiSwitch 124F-FPOE Switch and FortiCare Support

Parameter	Requirement
Platform	Fortinet FortiSwitch 124F-FPOE, or OEM-successor model of equal or greater capability, three (3) units, installed at the Secondary Data Centre, Umar Zaahir Building.
Access ports	24 × 10/100/1000BASE-T RJ45 ports with PoE/PoE+ (IEEE 802.3af/at) capability.
Uplink ports	4 × 10 GE SFP+ uplink ports (compatible with Item 1.2.5 transceivers).
PoE budget	Total PoE power budget adequate for simultaneous PoE+ on all ports as per the 124F-FPOE specification;
Layer 2 features	VLAN (802.1Q), STP/RSTP/MSTP, link aggregation (802.3ad LACP), IGMP snooping, LLDP/LLDP-MED, storm control, port mirroring.
Layer 3 features	Static routing and inter-VLAN routing capability.
Management	Centralised management via FortiGate FortiLink and/or standalone web GUI/CLI; SNMPv3, syslog, RADIUS/TACACS+; configuration backup/restore.
Hardware	1U rack-mount with mounting kit; redundant/fan-cooled power design as per model;
Support	One (1) year FortiCare Premium (24×7) support per switch, registered to the Ministry, including firmware updates, hardware replacement, and TAC access; activation evidence to be provided at handover.

6.2.3 10 GE SFP+ Short-Range Transceivers

Parameter	Requirement
Type	10GBASE-SR SFP+ optical transceiver, 850 nm, duplex LC connector.
Reach / media	Minimum 300 m over OM3 multimode fibre.



6.2.4 Fibre and Copper Patch Cords

Parameter	Requirement
Fibre patch cords	Duplex (2-fibre) LC UPC to LC UPC, multimode OM3 (50/125 μm), OFNR jacket, 0.3 m length;
Copper patch cords	Cat6a, 24 AWG stranded, unshielded (U/UTP), snagless boot, LSZH jacket

6.2.5 Horizontal Cable Management

Parameter	Requirement
Type	Horizontal cable management panel, 1U, EIA 19-inch rack/cabinet mount.
Construction	Steel/ABS construction with cover, fingers/rings for front cable routing, and rear pass-through; black finish matching rack infrastructure.

6.3 Backup Infrastructure Upgrade

6.3.1 Veeam Data Platform Essentials Universal Subscription (Item 1.3.1)

Parameter	Requirement
License	Veeam Data Platform Essentials, Universal Subscription, one (1) year term, forty (40) instances, registered to the Ministry; license keys and portal access delivered at handover.
Capability	Veeam Backup & Replication with backup, replication, restore, and monitoring/analytics capability for virtual (via guest agents on Huawei DCS-hosted VMs), physical, NAS/file, and application workloads; workload count across both sites shall be covered within the 40-instance entitlement.
Deployment	Veeam backup server at the Primary Site managing both sites, with backup proxies/repositories as required at each site to keep backup traffic local; WAN-efficient communication between sites.

Storage integration	Operation with the Huawei OceanProtect X3000 appliances at each site as backup storage targets
Security	Encryption in transit and at rest; role-based access; MFA on consoles; immutable/hardened repository option where supported by the target storage.
Monitoring	Job, capacity, and RPO-compliance reporting; alert notification via e-mail; integration with the Ministry's PRTG/NOC monitoring where supported.

6.3.2 Dedicated Backup Replication Storage - Huawei OceanProtect X3000 - Primary Site

Parameter	Requirement
Appliance	Huawei OceanProtect X3000: 2U, dual controllers, SAS architecture, AC 240 V, 256 GB cache, 8 × 1 Gb ETH + 4 × 10 Gb ETH onboard, 12 × 3.5-inch drive bays.
Disk configuration	4 × 1.92 TB SSD SAS (3.5-inch) 8 × 8 TB 7.2K RPM NL-SAS (3.5-inch) Configured per OEM best practice
Connectivity	4 × OM3 duplex LC-LC fibre patch cords (3 m) for 10 GbE connectivity
Capacity licensing	Backup Storage Essential Capacity License, Enhanced Edition (including 40 TB) plus 24 × per-TB capacity licenses
Data services	Inline deduplication and compression; replication-ready architecture; ransomware-protection features (WORM/immutability, secure snapshots)
Support	Hi-Care 36-month coverage: application software upgrade support for the essential (40 TB) and per-TB (24 TB) capacity licences, plus Hi-Care Standard for the X3000 engine and the four SSDs.
Integration	Deployed as the Primary Site backup target for Veeam Data Platform and interoperable with the Huawei DCS environment.

6.3.3 Business Continuity / High Availability Software - Both Sites

Parameter	Requirement
Platform	Enterprise host-based business continuity / high-availability software, licensed for up to six (6) nodes covering both sites, one (1) year subscription including software maintenance and updates.
Architecture	Byte-level real-time data replication via lightweight agents installed in the guest OS of protected workloads; no shared-storage dependency; source and target remain independent servers/VMs; host/node-based licensing covering the virtualization nodes at both sites.
Topology	Bidirectional active-passive: Primary Site workloads protected to standby resources at the Secondary Site, and Secondary Site workloads protected to standby resources at the Primary Site; support for one-to-one, one-to-many, and many-to-one failover pools.
Huawei DCS integration	Integration with Huawei DCS virtualization at both sites including VM discovery/inventory integration, protection of DCS-hosted VMs at guest level, and coordinated failover of DCS virtual machines.
Recovery objectives	Near-zero RPO via continuous replication of every data change; RTO ≤ 15 minutes for protected services via automated failover.
Failover	Automatic failover on heartbeat/health detection with configurable policies; one-click manual switchover for planned maintenance; fast failback with reverse synchronization after the original production node is restored.
Platform support	Windows and Linux guest operating systems; virtual and physical workloads.
Application awareness	Protection of common databases and enterprise applications (Oracle, MS SQL Server, MySQL, PostgreSQL, file services, AD/DNS) with application-consistent checkpoints.
Data efficiency & security	Compression, bandwidth throttling/scheduling suitable for the inter-site links, encryption of replicated data in transit, and snapshot support.



Management	Centralized web console with topology view, replication status, alerting (e-mail/SNMP), and role-based access; one management node per site with mutual visibility.
DR testing	Non-disruptive DR drill capability (failover to an isolated test network) with drill reports.

6.4 NOC Monitoring System - Primary Site

6.4.1 65-inch 4K UHD Displays

Parameter	Requirement
Display	65-inch 4K Ultra HD (3840 × 2160) Google TV; preferred brands: Sharp, Hisense, TCL, Skyworth; narrow/slim bezel suitable for adjacent multi-display video-wall mounting; ultra-clarity display.
Audio	Dolby Vision / Dolby Atmos support.
Mounting	Wall-mounting brackets included for all six displays, suitable for a 2 × 3 or 3 × 2 video-wall arrangement.
Connectivity	Minimum 2 × HDMI inputs, Ethernet and Wi-Fi, USB; supplied with remote control and all required cables.
Warranty	One (1) year warranty.

6.4.2 8-Channel 4K Decoder

Parameter	Requirement
Platform	Hikvision 8-channel 4K decoder
Outputs	Eight (8) × HDMI outputs supporting 4K decoding, driving the six NOC displays with headroom; multi-screen splicing and windowing across the display wall.
Scenes	Multi-scene layout management: configurable display layouts (scenes) combining dashboards and video sources, with scene saving, recall, and scheduled/manual switching.
Sources	Decode/display of network video streams (H.265/H.264) and HDMI/PC sources hosting the Ministry's PRTG and FortiAnalyzer dashboards; operation with the Ministry's existing operator workstations.



Management	Web-based management, configuration backup/restore, and integration into the Ministry's management VLAN; SNMP/syslog support preferred.
Hardware	Rack-mountable chassis with mounting kit.

7. Detailed Scope of Work — Installation, Configuration and Commissioning

The Contractor shall deliver turnkey works for each bundle under Items 1.5, 1.6, 1.7 and 1.8 at the sites indicated. The activities below are mandatory and non-exhaustive; the Contractor's implementation plan shall cover every activity required for a complete, tested, and accepted solution at both facilities.

7.1 Critical Power Upgrade Works

Primary Data Centre (Velaanaage):

- Verify electrical supply, earthing, breaker coordination, and distribution-board capacity; report any upstream electrical remedial works required.
- Install the 20 kVA modular UPS frame and both 20 kVA power modules; terminate input/output cabling; install and configure the SNMP card with SNMPv3 credentials, NTP, and alert.
- Install the two modular-UPS battery packages; verify string voltages, and perform battery discharge/autonomy testing.
- Conduct UPS functional tests: normal mode, battery mode, static bypass transfer and retransfer, maintenance bypass, alarm simulation, and module hot-swap verification.
- Install the fire suppression system: mount the 70 L cylinder and valve assembly; install the fire control panel, cross-zoned detectors, manual release and abort stations, and signage; run and support the 50 m piping network and nozzles per the approved design.
- Fill, weigh, the 70 kg FM200 charge; perform pipework.
- Interface fire-panel auxiliary contacts for alarm signalling to any existing monitoring facilities.

Both sites — environment monitoring:

- Install the environment monitoring unit at each site with its full sensor set (standard temperature/humidity/dew-point sensors, smoke, motion, and AC voltage detectors) per the approved placement design; install and provision the USB 4G modems for SMS alerting.
- Configure thresholds, notification recipients, SNMPv3.



7.2 Distribution Network Upgrade Works - Secondary Site

- Install and rack-mount the FortiSwitch switches and twelve 1U cable management panels in the designated racks at the Secondary Data Centre, Umar Zaahir Building.
- Install the ten SFP+ transceivers and ten OM3 fibre patch cords to establish 10 GE uplinks per the approved network design, including uplinks/interconnection to the existing Huawei TOR switches.
- Deploy Cat6a patch cords for switch-to-switch, switch-to-server, and switch-to-panel connections per the approved patching schedule; dress all cabling through the horizontal managers with service loops and velcro management.
- Configure switch hostnames, management IP addressing, VLANs, trunk/access port profiles, LACP uplinks, STP parameters, PoE allocations, NTP, DNS, SNMPv3, and administrative accounts with role-based access in coordination with the Ministry's network team.
- Validate standards-based interworking (802.1Q VLANs, 802.3ad LACP, RSTP/MSTP) between the new FortiSwitch layer and the existing Huawei TOR switches, including loop-free topology verification and failover testing.
- Integrate the switches with the Ministry's FortiGate/FortiLink management fabric, or configure standalone management as directed; register all four FortiCare Premium contracts.
- Apply the latest stable firmware recommended by the OEM; harden management access.
- Verify end-to-end connectivity, throughput, PoE delivery to connected devices, VLAN segmentation, and uplink redundancy.
- Label all patch cords consistent with the Ministry's labelling convention; update the cabling/patching documentation.
- Decommission and hand over any replaced legacy switching hardware to the Ministry's asset registry as directed.

7.3 Backup Infrastructure Upgrade Works (Backup Component)

- Install and rack the new OceanProtect X3000 at the Primary Data Centre; connect via 10 GbE to the Primary Site switching using the supplied OM3 patch cords; initialize the system, configure RAID/dedup tiers with the supplied SSD and NL-SAS disks, and apply the capacity license.
- Deploy/upgrade the Veeam Data Platform under the 40-instance Essentials Universal Subscription: backup server at the Primary Site, backup proxy at the Secondary Site, and repositories on the OceanProtect appliance at each site so that backup traffic remains local to each site.

- Configure backup jobs for the workloads designated by the Ministry at both sites (including VMs hosted on Huawei DCS at both clusters, protected via Veeam guest agents; configure retention, encryption, and immutable/hardened repository options where supported).
- Execute test backups and test restores at each site.
- Configure monitoring, alerting, and reporting for backup jobs, and repository capacity; integrate notifications with the Ministry's e-mail system and PRTG/NOC dashboards where supported.
- Document the complete backup architecture, job configurations, retention policies, and restore procedures.

7.4 Business Continuity / High Availability Works

- Conduct a protection-planning workshop with the Ministry to designate the workloads (VMs/services) at each site for bidirectional active-passive protection, and agree RPO/RTO targets, failover priorities, and IP/DNS re-mapping procedures.
- Deploy the BC/HA software management/control nodes at each site and configure mutual visibility; activate relevant license and registered to the Ministry.
- Integrate the platform with the Huawei DCS virtualization at both sites, including VM discovery/inventory and coordination of VM protection with DCS.
- Install and configure replication agents on the designated workloads/nodes; establish bidirectional protection pairs across the inter-site links with compression, encryption, and bandwidth throttling policies with minimal impact production traffic.
- Configure failover policies: heartbeat/health detection, automated failover rules, one-click manual switchover procedures, application start-order, and IP address / DNS re-mapping at the surviving site.
- Test failover and failback in each direction for test workloads.
- Deliver a business-continuity runbook covering failover declaration, switchover, failback, and escalation procedures.

7.5 NOC Monitoring System Works - Primary Site

- Survey the NOC room wall structure at the Primary Site; propose the video-wall arrangement (2 × 3 or 3 × 2), mounting positions, viewing distances, and power/cable routing.
- Wall-mount the six displays with the supplied brackets, including all fixings, power, and HDMI cabling dressed and concealed to a professional standard.

- Install and rack/desk-mount the Hikvision 8-channel 4K decoder; connect it to the displays and to the Ministry's management network; configure output channels, video-wall splicing, and windowing.
- Configure multi-scene layouts on the decoder for NOC operations, including at minimum: (a) PRTG network monitoring dashboards (device/link status, alerts, maps); (b) FortiAnalyzer central security monitoring dashboards; (c) data-centre environment monitoring and UPS status views. Configure scene recall and scheduled/manual switching.
- Integrate the display sources: configure dedicated dashboard views in the existing PRTG and FortiAnalyzer platforms (in coordination with the Ministry's administrators), hosted on existing operator workstations or onboard browser capability.
- Label all cabling and document the NOC configuration (decoder settings, scene definitions, source inventory)

8. Project Management, Team and Implementation Schedule

8.1 Project Management

- The complete scope — delivery, installation, configuration, commissioning, testing, training, and handover at both sites — shall be completed within fifty-five (55) calendar days from contract effectiveness, unless otherwise agreed in writing.
- Within ten (10) working days of contract effectiveness, the Contractor shall submit: a project execution plan; resource plan with named key personnel; delivery schedule.
- Progress meetings shall be held monthly (or as directed).

8.2 Mandatory Project Team

Given the multi-vendor installed base at both sites (Section 1.4), the Contractor shall propose and deploy a project team comprising, at minimum, the following roles. All team members shall be directly employed by the bidder (employment evidence required) and shall be available for the duration of the delivery of professional services.

Role	Requirement
Project Manager (1)	Dedicated project manager as single point of contact; minimum five (5) years managing comparable ICT infrastructure projects; Project management certification.
HPE-certified engineer	OEM-certified on HPE server/storage

Huawei Storage-certified engineer	OEM-certified on Huawei storage
Huawei Datacom-certified engineer	OEM-certified on Huawei data communications
Huawei DCS-certified engineer	OEM-certified on the Huawei DCS virtualization platform
Fortinet NSE4-certified engineer	Fortinet Network Security Expert (NSE 4) or higher/FCP equivalent
Veeam VMCE-certified engineer	Veeam Certified Engineer (VMCE),
Employment & availability	All proposed team members shall be employees of the bidder; employment confirmation letters, CVs, and certificates shall be submitted with the bid.

9. Local Technical Support Requirements

The Contractor shall provide local technical support for all supplied systems at both sites for a minimum of twelve (12) months from final acceptance. Support shall be delivered by locally based, OEM certified engineers.

Parameter	Requirement
Support window	8 × 5 business hours (08:00–14:00, working days)
Severity 1 - Critical (system down / safety risk)	Response within 1 hour by phone/remote; on-site attendance at the affected site within 4 hours; work around within 8 hours;
Severity 2 - Major (degraded service, no workaround)	Response within 2 hours; on-site within 8 business hours; resolution target 2 business days.
Severity 3 – Minor (limited impact, workaround exists)	Response within 2 business days; resolution target 5 business days.
Escalation	Named escalation matrix (L1 → L2 → OEM) with contact details.
Preventive maintenance	Quarterly preventive maintenance visits to both sites covering UPS and battery health checks, fire-system inspection, Environment-monitoring verification, and firmware review, each closed with a signed report.



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10. On-the-Job Training Requirements

The Contractor shall deliver on-the-job training to up to four (4) nominated Ministry ICT personnel, combining hands-on operation of the installed systems. Training shall be conducted at the Ministry's premises during or immediately after commissioning, in English. The training shall cover management, operation, support and troubleshooting guides.

11. Warranty and After-Sales Obligations

- Equipment warranty: minimum twelve (12) months comprehensive on-site warranty on all supplied hardware, covering parts and labour at both sites.
- Workmanship warranty: twelve (12) months on all installation works, including cabling, piping, and mounting at both sites.

12. Documentation and Deliverables

All documentation shall be in English, delivered in editable electronic format (PDF). As-built documentation shall reflect the final installed state at each site.

Parameter	Requirement
Installation records	Equipment delivery and inventory records; installation checklists; cable and port labelling schedules;
Operations documentation	System administration guides; configuration backups (UPS, switches, Veeam, EMS); standard operating and emergency procedures; escalation and support contact matrix.

13. Compliance and Response Format

- Bidders shall respond to every numbered requirement using the Technical Compliance Matrix at Appendix A; any requirement left blank shall be treated as "Does Not Comply" and may render the bid non-responsive.
- The bid shall include completed compliance matrix; itemized pricing against the summarized BOQ (Section 4); implementation plan and schedule; project team documentation (Section 8); reference projects; Manufacturer Authorization Letter(s).



Appendix A — Technical Compliance Matrix (Template)

Bidders shall reproduce and complete the following matrix for every requirement of this specification.

Spec. Ref.	Requirement (summary)	Comply (Yes / No)	Offered Specification

14. PRE-QUALIFICATION

Parties interested in delivering the scope of work must meet the pre-qualification requirement below:

a) Experience.

Proof of supply of similar items to other organizations within the last 5 years. (Bidders should submit letters from organizations mentioning successful delivery and implementation.)

b) Mandatory Documents:

- Company Registration Certificate
- SME Certificate
- GST Registration Certificate
- Tax Clearance Certificate (last 30 days from the date of bid submission)
- Last 2 Year Financial Statements
- All the other relevant documents required/mentioned to submit in this bid document.

c) Manufacture Authorization / Accreditation:

A firm that does not manufacture or produce the goods it offers to supply shall submit the Manufacturer's Authorization Letter to demonstrate that it has been duly authorized by the manufacturer or producer of the goods to supply and install the goods and service in the Republic of Maldives.

d) Delivery and Installation Duration:

Delivery and installation should be completed within fifty-five (55) days of receiving the purchase order.

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