

1. SCOPE OF WORKS

The selected vendor shall provide end-to-end supply, installation, configuration, testing and commissioning of the network infrastructure, CCTV and access control works for the Kulhudhuffushi Facility Building in accordance with the Bill of Material & Requirements in Annex 1.

1. Fiber Cable Installation Works
2. Supply, lay, dress and secure 6-fiber single mode outdoor fiber optic cable between the CS Building and Facility Building along the approved route.
 - Install fully loaded 06-core fiber optic ODF management units in the CS Office switch rack and Facility Building switch rack.
 - Terminate fiber optic cables at both ends using appropriate pigtails and adaptors; fusion splice all fiber cores and protect the splices.
 - Install LC-LC fiber optic adaptors and neatly manage patch cords within racks and ODFs, maintaining minimum bend radius and proper strain relief.
 - Install outdoor fiber runs within existing MWSC trenches. Internal building fiber runs shall be protected using minimum 20 mm conduit and properly fixed and labeled.
 - Ensure all fiber routes, termination points and ODF ports are clearly labeled.
3. Testing, Documentation & Acceptance
 - Perform continuity and optical loss testing on all fiber cores and carry out Tier-1 fiber optic testing and certification, with maximum splice loss not exceeding 0.02 dB per splice.
 - Submit all test results and a brief installation report confirming cable lengths used, routing paths, termination details and ODF port details.
 - Fiber works will be accepted only after all fibers pass testing within specified limits, proper labeling and cable management are verified, and required documentation is approved by MWSC.
 - Camera and Access Control Installation Works
4. Supply and install CAT6 cabling for 49 camera locations (future-ready), with an estimated total cable length of approximately 3,500 meters, subject to site survey.
 - Supply, install and commission 24 CCTV cameras at locations designated by MWSC.
 - Fabricate, supply and install ten (10) GI poles for perimeter cameras, painted with non-corrosive paint.
 - Install camera mounts and accessories, align camera views as instructed by MWSC, and configure installed cameras as required.
 - Supply and install Hikvision access control terminals for four (4) doors, including Ethernet and required power/control cabling, door locks (ElectroMagnetic/Dead Bolt), and emergency exit buttons.

5. Terminate, label and route all cables neatly to the designated switch racks.

- Containment, Testing & Acceptance
- Protect all internal cable runs using minimum 20 mm conduit; use PVC casing where required. Outdoor underground cables shall use MWSC trenches where available, otherwise PVC pipe protection shall be provided.
- Perform continuity and functional testing for all installed cameras and access control devices.
- Works shall be considered complete after successful testing, proper labeling and submission of basic installation details.

6. Warranty and Technical Support

- Provide AXIS hardware with three (3) years 24 x 7 hardware replacement and support services, including an eight-hour response time to site after implementation and sign-off.
- Provide fiber cable with one (1) year 24 x 7 hardware replacement service. Replace defective equipment at the bidder's own cost, including transport, and provide everyday toolkit and test equipment needed to maintain the hardware.
- Delivery and Installation
- Deliver the goods within sixty (60) days upon signing of the contract and complete installation within thirty (30) days upon site readiness.

2. BILL OF MATERIAL & REQUIREMENTS

#	Description	Qty
Supply, Installation of Network Infra and CCTV for Kulhudhufushi Facility Building Bundle solution includes:		
2.1	AXIS P3288-LV Dome Camera	14 Nos
2.2	AXIS P1485-LE Bullet Camera	10 Nos
2.3	Hikvision DS-K1T344MBFWX-E1 Face Recognition Terminal	08 Nos
2.4	Fully Loaded Rack Mountable Fiber Optic Enclosure Parameter Minimum Requirement Features 06 LC Duplex, Single Mode fully loaded with Fiber optic adapters Splice holder and Splice sleeve should be included sliding type; Max. 12 cores, duplex LC(SC type)panel; Mounting Standard 19-inch network enclosure mountable Material SPCC (commercial grade cold rolled steel) Pigtail 01 nos x 1M 06 Fibers LC SM Color-Coded Fiber Optic Pigtail Patch Cable 06 nos x 1M LC/LC Duplex SM Bend Intensive Fiber Patch Cable	2 Nos
2.5	6-Fiber Single Mode Outdoor Fiber Optic Cable Parameter Minimum Requirement Type Stranded loose tube light-armored cable (GYTA53) GYTA53 outdoor cable, stranded loose tube Fiber Count 6 Fibers Central Strength Steel Wire Member Filling Water-resistant filling compound Fiber Type Single Mode G.652D Armor and Jacket single PSP armor, single APL armor and double PE jacket Attenuation ≤0.35 @1310nm, ≤0.21 @1550nm (dB/km) Cable Diameter 9.4 (mm) Tensile Strength 1500 short term, 600 long term (N) Crush Resistance 1000 short term, 300 long term (N) Length Approx. 170m	1 Nos
2.6	Professional Service: <u>Fiber Cable Installation Works:</u> Supply, lay, dress, and secure fiber optic cable between the CS Building and Facility Building along the approved route. Install fully loaded 06-core Fiber Optic ODF management units in:	1 Lot

#	Description	Qty
	2.1. CS Office switch rack 2.2. Facility Building switch rack Terminate fiber optic cables at both ends using appropriate fiber optic pigtails and adaptors. Fusion splice all fiber cores and properly secure and protect splices. Install fiber optic adaptors (LC-LC) within the ODFs to facilitate patching. Install and neatly manage fiber optic patch cords within racks and ODFs, ensuring minimum bend radius and proper strain relief. All outdoor fiber runs shall be installed within existing MWSC trenches. All internal building fiber runs shall be protected using minimum 20 mm conduit, properly fixed and labeled. Ensure all fiber routes, termination points, and ODF ports are clearly labeled. A site survey will be made available after the information session. <u>Testing, Documentation & Acceptance</u> Continuity and optical loss testing shall be performed on all fiber cores. Tier-1 fiber optic testing and certification shall be carried out, with maximum splice loss not exceeding 0.02 dB per splice. All test results shall be submitted as part of the completion documentation. The contractor shall submit a brief installation report confirming: 2.3. Cable lengths used 2.4. Routing paths 2.5. Termination and ODF port details Works shall be considered complete and accepted only after: 2.6. All fibers pass testing within specified limits 2.7. Proper labeling and cable management are verified 2.8. Required documentation is submitted and approved by the Client <u>Camera and Access Control Installation Works:</u> Supply and install CAT6 cabling for 49 camera locations (future-ready). Estimated total cable length: approximately 3,500 meters (final quantity subject to site survey). Supply, install, and commission 24 CCTV cameras at locations designated by MWSC. Fabricate, supply, and install GI poles (10 nos.) for perimeter cameras, painted with non-corrosive paint. Install camera mounts and accessories and align camera views as instructed by MWSC. Configure installed cameras as per MWSC requirements. Supply and install Hikvision access control terminals for 4 doors, including: 2.9. Ethernet and required power/control cabling 2.10. Door locks (ElectroMagnetic/Dead Bolt) and emergency exit buttons Terminate, label, and route all cables neatly to the designated switch racks.	

#	Description	Qty
	<u>Containment, Testing & Acceptance:</u> All internal cable runs shall be protected using minimum 20 mm conduit; PVC casing shall be used where required. Outdoor underground cables shall be laid within MWSC trenches where available; otherwise, cables shall be protected using PVC pipes. Perform continuity and functional testing for all installed cameras and access control devices. Works shall be considered complete and accepted after successful testing, proper labeling, and submission of basic installation details.	
2.7	<u>Warranty and Technical Support</u> The successful bidder must provide a hardware replacement warranty, and technical support for the hardware and software etc supplied under the contract will comply strictly with this project, shall be genuine in every case and shall be free from defects. The successful bidder further warrants to MWSC that all materials, equipment, and supplies furnished by the bidder will be new, merchantable of the most suitable grade and fit for their intended purposes. AXIS Hardware: Three (3) Years 24 x 7 Hardware Replacement and Support Services. (Within 8-hour response time to the site) of maintenance and technical support after the implementation and Sign-off. • The bidder should offer a warranty for the hardware against defects arising out of faulty design, materials, and workmanship for a period of - three (3) years from the date of Acceptance. • Defective equipment shall be replaced by the bidder at its own cost, including the cost of transport, if any. • The bidder shall provide all everyday toolkit and test equipment needed to maintain the hardware. • Additionally, the successful bidder further warrants that all materials and equipment furnished are supplied from authorized channels. MWSC reserves the right to reject the goods if identified as grey market products or counterfeit equipment. Fiber Cable: One (1) Years 24 x 7 Hardware Replacement Services.	
2.8	<u>Delivery of Hardware and Installation:</u> The maximum delivery period allowed under this bid is 60 Calendar Days. Any proposal with a delivery period that exceeds the above will be disqualified. MWSC reserves the right to disqualify any bid with a Delivery Period that is either unrealistically low or illogical compared to MWSC's estimates and industry norms. • The successful bidder shall deliver the goods within 60 Day(s) upon signing of the contract. • The successful bidder shall complete the installation within 30 Day(s) upon site readiness.	01 Lot