Annexure E – Work package specifications

For

**IT Facilities Power; Cooling; Fire suppression & Cabling Infrastructure
(IT Physical) Services**

Description:

Specifications for the Work Packages related to the Supply, Installation, Commissioning, Support and Maintenance of IT Facilities Power; Cooling; Fire suppression & Cabling Infrastructure (IT Physical) Services for a maximum period of 60 Months to Airports Company South Africa

Contents

1.0 Network Point Installation – During Office hours.

Supply and physically install Complete UTP Cat 7 Data Point flush mount with twin insert, blank cover, 5m fly lead, 1m patch lead, labelling and testing – 90 metre10 run.

- Compliance with TIA/EIA-568, ISO/IEC 11801, or equivalent cabling standards for Cat 7
- Cat 7 performance requirements bandwidth up to 600 MHz
- Test certification with Fluke DSX (or equivalent) to Cat 7 standards, with electronic test results provided in PDF format per point.
- Cabling must use approved containment routes and adhere to ACSA's cable management standards (avoiding power interference, separation, bend radius, etc.).
- LSZH (Low Smoke Zero Halogen) sheath requirement for safety compliance.
- As-built drawings/records, showing the location of each data point and patch panel termination to be provided.
- Must be OEM-certified and covered by a manufacturer's warranty.
- Pricing is for any airport.
  Patching information per point installed.
- Labelling – to ACSA standard, every 10m, entry and exit

2.0 Network Point Installation – After Office hours.

Supply and physically install Complete UTP Cat 7 Data Point flush mount with twin insert, blank cover, 5m fly lead, 1m patch lead, labelling and testing – 90 metre 10 run.

- Compliance with TIA/EIA-568, ISO/IEC 11801, or equivalent cabling standards for Cat 7
- Cat 7 performance requirements bandwidth up to 600 MHz
- Test certification with Fluke DSX (or equivalent) to Cat 7 standards, with electronic test results provided in PDF format per point.
- Cabling must use approved containment routes and adhere to ACSA's cable management standards (avoiding power interference, separation, bend radius, etc.).
- LSZH (Low Smoke Zero Halogen) sheath requirement for safety compliance.
- As-built drawings/records, showing the location of each data point and patch panel termination to be provided.
- Must be end-to-end structured cabling system OEM certification and warranty.
- Pricing is for any airport.
  Patching information per point installed.
- Labelling – to ACSA standard, every 10m, entry and exit

3.0 12-core Singlemode Fibre Installation – During Office hours

Supply and install complete 12-core Singlemode Fibre Optic link including termination, patch panels, enclosures, pigtails, patch leads, labelling, testing, and certification.

- Compliance with TIA/EIA-568, ISO/IEC 11801, and IEC 60794 fibre optic cabling standards
- Cable to meet or exceed OS2 Singlemode specifications.
- Factory-terminated or fusion splicing with <0.3 dB loss per splice and <0.5 dB per connector
- Test certification with OTDR and Light Source & Power Meter (LSPM) to international standards, with electronic test results provided in PDF format per core.
- All fibre routed in approved containment and installed to ACSA standards (bend radius, separation from power, etc.)
- LSZH (Low Smoke Zero Halogen) sheath requirement for safety compliance
- As-built drawings/records showing routes, splice enclosures, patch panels, and terminations to be provided.
- Installation must be OEM-certified and covered by a manufacturer's warranty.
- Pricing applicable across all airport locations
- Patching schedules and information to be provided for each installed fibre link.
- Labelling to ACSA standards, every 10m, at entry/exit points, and at patch panels
- All deliverables (test results, patching schedules, labelling records, and as-built drawings) must be submitted in both electronic and hard copy format upon completion.

4.0 12-core Singlemode Fibre Installation – After hours

Supply and install complete 12-core Singlemode Fibre Optic link including termination, patch panels, enclosures, pigtails, patch leads, labelling, testing, and certification.

- Compliance with TIA/EIA-568, ISO/IEC 11801, and IEC 60794 fibre optic cabling standards
- Cable to meet or exceed OS2 Singlemode specifications.

- Factory-terminated or fusion splicing with <0.3 dB loss per splice and <0.5 dB per connector
- Test certification with OTDR and Light Source & Power Meter (LSPM) to international standards, with electronic test results provided in PDF format per core.
- All fibre routed in approved containment and installed to ACSA standards (bend radius, separation from power, etc.)
- LSZH (Low Smoke Zero Halogen) sheath requirement for safety compliance
- As-built drawings/records showing routes, splice enclosures, patch panels, and terminations to be provided.
- Installation must be OEM-certified and covered by a manufacturer's warranty.
- Pricing applicable across all airport locations
- Patching schedules and information to be provided for each installed fibre link.
- Labelling to ACSA standards, every 10m, at entry/exit points, and at patch panels
- All deliverables (test results, patching schedules, labelling records, and as-built drawings) must be submitted in both electronic and hard copy format upon completion.

5.0   24-core Singlemode Fibre Installation – During Office hours

Supply and install complete 24-core Singlemode Fibre Optic link including termination, patch panels, enclosures, pigtails, patch leads, labelling, testing, and certification.

- Compliance with TIA/EIA-568, ISO/IEC 11801, and IEC 60794 fibre optic cabling standards
- Cable to meet or exceed OS2 Singlemode specifications.
- Factory-terminated or fusion splicing with <0.3 dB loss per splice and <0.5 dB per connector
- Test certification with OTDR and Light Source & Power Meter (LSPM) to international standards, with electronic test results provided in PDF format per core.
- All fibre routed in approved containment and installed to ACSA standards (bend radius, separation from power, etc.)
- LSZH (Low Smoke Zero Halogen) sheath requirement for safety compliance
- As-built drawings/records showing routes, splice enclosures, patch panels, and terminations to be provided.
- Installation must be OEM-certified and covered by a manufacturer's warranty.
- Pricing applicable across all airport locations
- Patching schedules and information to be provided for each installed fibre link.
- Labelling to ACSA standards, every 10m, at entry/exit points, and at patch panels
- All deliverables (test results, patching schedules, labelling records, and as-built drawings) must be submitted in both electronic and hard copy format upon completion.

6.0   24-core Singlemode Fibre Installation – After hours

Supply and install complete 24-core Singlemode Fibre Optic link including termination, patch panels, enclosures, pigtails, patch leads, labelling, testing, and certification.

- Compliance with TIA/EIA-568, ISO/IEC 11801, and IEC 60794 fibre optic cabling standards
- Cable to meet or exceed OS2 Singlemode specifications.
- Factory-terminated or fusion splicing with <0.3 dB loss per splice and <0.5 dB per connector
- Test certification with OTDR and Light Source & Power Meter (LSPM) to international standards, with electronic test results provided in PDF format per core.
- All fibre routed in approved containment and installed to ACSA standards (bend radius, separation from power, etc.)
- LSZH (Low Smoke Zero Halogen) sheath requirement for safety compliance
- As-built drawings/records showing routes, splice enclosures, patch panels, and terminations to be provided.
- Installation must be OEM-certified and covered by a manufacturer's warranty.
- Pricing applicable across all airport locations
- Patching schedules and information to be provided for each installed fibre link.
- Labelling to ACSA standards, every 10m, at entry/exit points, and at patch panels
- All deliverables (test results, patching schedules, labelling records, and as-built drawings) must be submitted in both electronic and hard copy format upon completion.

7.0   48-core Singlemode Fibre Installation – During Office hours

Supply and install complete 48-core Singlemode Fibre Optic link including termination, patch panels, enclosures, pigtails, patch leads, labelling, testing, and certification.

- Compliance with TIA/EIA-568, ISO/IEC 11801, and IEC 60794 fibre optic cabling standards
- Cable to meet or exceed OS2 Singlemode specifications.
- Factory-terminated or fusion splicing with <0.3 dB loss per splice and <0.5 dB per connector
- Test certification with OTDR and Light Source & Power Meter (LSPM) to international standards, with electronic test results provided in PDF format per core.
- All fibre routed in approved containment and installed to ACSA standards (bend radius, separation from power, etc.)
- LSZH (Low Smoke Zero Halogen) sheath requirement for safety compliance

- As-built drawings/records showing routes, splice enclosures, patch panels, and terminations to be provided.
- Installation must be OEM-certified and covered by a manufacturer's warranty.
- Pricing applicable across all airport locations
- Patching schedules and information to be provided for each installed fibre link.
- Labelling to ACSA standards, every 10m, at entry/exit points, and at patch panels
- All deliverables (test results, patching schedules, labelling records, and as-built drawings) must be submitted in both electronic and hard copy format upon completion.

8.0   48-core Singlemode Fibre Installation – After hours

Supply and install complete 48-core Singlemode Fibre Optic link including termination, patch panels, enclosures, pigtails, patch leads, labelling, testing, and certification.

- Compliance with TIA/EIA-568, ISO/IEC 11801, and IEC 60794 fibre optic cabling standards
- Cable to meet or exceed OS2 Singlemode specifications.
- Factory-terminated or fusion splicing with <0.3 dB loss per splice and <0.5 dB per connector
- Test certification with OTDR and Light Source & Power Meter (LSPM) to international standards, with electronic test results provided in PDF format per core.
- All fibre routed in approved containment and installed to ACSA standards (bend radius, separation from power, etc.)
- LSZH (Low Smoke Zero Halogen) sheath requirement for safety compliance
- As-built drawings/records showing routes, splice enclosures, patch panels, and terminations to be provided.
- Installation must be OEM-certified and covered by a manufacturer's warranty.
- Pricing applicable across all airport locations
- Patching schedules and information to be provided for each installed fibre link.
- Labelling to ACSA standards, every 10m, at entry/exit points, and at patch panels
- All deliverables (test results, patching schedules, labelling records, and as-built drawings) must be submitted in both electronic and hard copy format upon completion.

9.0   96-core Singlemode Fibre Installation – During Office hours

Supply and install complete 96-core Singlemode Fibre Optic link including termination, patch panels, enclosures, pigtails, patch leads, labelling, testing, and certification.

- Compliance with TIA/EIA-568, ISO/IEC 11801, and IEC 60794 fibre optic cabling standards
- Cable to meet or exceed OS2 Singlemode specifications.
- Factory-terminated or fusion splicing with <0.3 dB loss per splice and <0.5 dB per connector
- Test certification with OTDR and Light Source & Power Meter (LSPM) to international standards, with electronic test results provided in PDF format per core.
- All fibre routed in approved containment and installed to ACSA standards (bend radius, separation from power, etc.)
- LSZH (Low Smoke Zero Halogen) sheath requirement for safety compliance
- As-built drawings/records showing routes, splice enclosures, patch panels, and terminations to be provided.
- Installation must be OEM-certified and covered by a manufacturer's warranty.
- Pricing applicable across all airport locations
- Patching schedules and information to be provided for each installed fibre link.
- Labelling to ACSA standards, every 10m, at entry/exit points, and at patch panels
- All deliverables (test results, patching schedules, labelling records, and as-built drawings) must be submitted in both electronic and hard copy format upon completion.

10.0   96-core Singlemode Fibre Installation – After hours

Supply and install complete 96-core Singlemode Fibre Optic link including termination, patch panels, enclosures, pigtails, patch leads, labelling, testing, and certification.

- Compliance with TIA/EIA-568, ISO/IEC 11801, and IEC 60794 fibre optic cabling standards
- Cable to meet or exceed OS2 Singlemode specifications.
- Factory-terminated or fusion splicing with <0.3 dB loss per splice and <0.5 dB per connector
- Test certification with OTDR and Light Source & Power Meter (LSPM) to international standards, with electronic test results provided in PDF format per core.
- All fibre routed in approved containment and installed to ACSA standards (bend radius, separation from power, etc.)
- LSZH (Low Smoke Zero Halogen) sheath requirement for safety compliance
- As-built drawings/records showing routes, splice enclosures, patch panels, and terminations to be provided.
- Installation must be OEM-certified and covered by a manufacturer's warranty.
- Pricing applicable across all airport locations
- Patching schedules and information to be provided for each installed fibre link.

- Labelling to ACSA standards, every 10m, at entry/exit points, and at patch panels
- All deliverables (test results, patching schedules, labelling records, and as-built drawings) must be submitted in both electronic and hard copy format upon completion.
-

11.0   96-core Singlemode Fibre Installation with hard rock trenching– After hours

Supply and install complete 96-core Singlemode Fibre Optic link including termination, patch panels, enclosures, pigtails, patch leads, labelling, testing, and certification, including hard rock trenching and backfill.

- Compliance with TIA/EIA-568, ISO/IEC 11801, and IEC 60794 fibre optic cabling standards
- Cable to meet or exceed OS2 Singlemode specifications.
- Factory-terminated or fusion splicing with <0.3 dB loss per splice and <0.5 dB per connector
- Test certification with OTDR and Light Source & Power Meter (LSPM) to international standards, with electronic test results provided in PDF format per core.
- All fibre routed in approved containment and installed to ACSA standards (bend radius, separation from power, etc.)
- LSZH (Low Smoke Zero Halogen) sheath requirement for safety compliance
- As-built drawings/records showing routes, splice enclosures, patch panels, and terminations to be provided.
- Installation must be OEM-certified and covered by a manufacturer's warranty.
- Pricing applicable across all airport locations
- Patching schedules and information to be provided for each installed fibre link.
- Labelling to ACSA standards, every 10m, at entry/exit points, and at patch panels
- All deliverables (test results, patching schedules, labelling records, and as-built drawings) must be submitted in both electronic and hard copy format upon completion.

12.0   96-core Singlemode Fibre Installation with soft rock trenching– After hours

Supply and install complete 96-core Singlemode Fibre Optic link including termination, patch panels, enclosures, pigtails, patch leads, labelling, testing, and certification, including soft rock trenching and backfill.

- Compliance with TIA/EIA-568, ISO/IEC 11801, and IEC 60794 fibre optic cabling standards
- Cable to meet or exceed OS2 Singlemode specifications.
- Factory-terminated or fusion splicing with <0.3 dB loss per splice and <0.5 dB per connector
- Test certification with OTDR and Light Source & Power Meter (LSPM) to international standards, with electronic test results provided in PDF format per core.
- All fibre routed in approved containment and installed to ACSA standards (bend radius, separation from power, etc.)
- LSZH (Low Smoke Zero Halogen) sheath requirement for safety compliance
- As-built drawings/records showing routes, splice enclosures, patch panels, and terminations to be provided.
- Installation must be OEM-certified and covered by a manufacturer's warranty.
- Pricing applicable across all airport locations
- Patching schedules and information to be provided for each installed fibre link.
- Labelling to ACSA standards, every 10m, at entry/exit points, and at patch panels
- All deliverables (test results, patching schedules, labelling records, and as-built drawings) must be submitted in both electronic and hard copy format upon completion.

13.0   Commercial Midwall Split Unit – 48,000 BTU/h

Supply, install, and fully commission a commercial-grade 48,000 BTU/h midwall split unit, cooling only.

Unit Requirements:

- DC inverter compressor.
- Auto restart functionality.
- High-efficiency cooling unit achieving 35% to 50% cooling efficiency in accordance with ASHRAE standards.
- Valve protection covers and high-efficiency coil with internal grooved copper tubes.
- Variable speed condenser unit.
- Wireless remote control with clear LCD/LED temperature and status display.
- Blue fin protection for both indoor and outdoor units.
- Washable filter and fresh air intake.
- High-efficiency compressor designed for 24x7x365 operation.
- Maximum pipe runs up to 20 m.
- R-410A refrigerant gas.

- Network management card for monitoring.
- Inclusive of all electrical reticulation and piping for outdoor units.
- Supply and install outdoor condenser units.
- Asset tagging of new indoor and outdoor units.
- Decommissioning of old units, including completion of asset removal and disposal documentation with Green Disposal certificate.
- Commission unit to manufacturer specifications for optimal performance.
- Supply of Electrical Certificate of Compliance (COC) upon completion.
- All work to be conducted after hours or in coordination with operations to avoid disruption.

14.0   Commercial Cassette Unit – 36,000 BTU/h

Supply, install, and fully commission a commercial-grade 36,000 BTU/h cassette unit, cooling only.

Unit Requirements:

- DC inverter compressor.
- Auto restart functionality.
- High-efficiency cooling unit achieving 35% to 50% cooling efficiency in accordance with ASHRAE standards.
- Valve protection covers and high-efficiency coil with internal grooved copper tubes.
- Variable speed condenser unit.
- Wireless remote control with clear LCD/LED temperature and status display.
- Blue fin protection for both indoor and outdoor units.
- Washable filter and fresh air intake.
- High-efficiency compressor designed for 24x7x365 operation.
- Maximum pipe runs up to 20 m.
- R-410A refrigerant gas.
- Network management card for monitoring.
- Inclusive of all electrical reticulation and piping for outdoor units.
- Supply and install outdoor condenser units.
- Asset tagging of new indoor and outdoor units.
- Decommissioning of old units, including completion of asset removal and disposal documentation with Green Disposal Certificate.
- Commission unit to manufacturer specifications for optimal performance.
- Supply of Electrical Certificate of Compliance (COC) upon completion.
- Work to be carried out after hours or in coordination with operations.

15.0   Commercial CRAC HVAC Down Blower Unit – 55 kW

Supply, install, and fully commission a commercial-grade CRAC down blower unit with 55 kW cooling capacity.

Unit Requirements:

- DC inverter compressor.
- Auto restart functionality.
- High-efficiency cooling unit achieving 35% to 50% cooling efficiency in accordance with ASHRAE standards.
- Valve protection covers and high-efficiency coil with internal grooved copper tubes.
- Variable speed condenser unit.
- Wireless remote control with clear LCD/LED temperature and status display.
- Blue fin protection for both indoor and outdoor units.
- Washable filter and fresh air intake.
- High-efficiency compressor designed for 24x7x365 operation.
- Maximum pipe runs up to 20 m.
- R-410A refrigerant gas.
- Network management card for monitoring.
- Inclusive of all electrical reticulation and piping for outdoor units.
- Supply and install outdoor condenser units.
- Asset tagging of new indoor and outdoor units.
- Decommissioning of old units, including completion of asset removal and disposal documentation with Green Disposal Certificate.

- Commission unit to manufacturer specifications for optimal performance.
- Supply of Electrical Certificate of Compliance (COC) upon completion.

16.0 Portable Air-conditioning

Supply and deliver a portable, tankless, self-evaporating, cooling-only air-conditioning unit.

- Minimum cooling capacity of 12,000 BTU.
- The unit must include an exhaust hose of at least 3 metres in length.
- be mounted on castors for easy mobility between rooms.
- Feature automatic restart functionality to resume operation after a power interruption.
- The unit must be energy-efficient, designed for continuous operation, and suitable for use in standard office or equipment-room environments.
- Include delivery to any ACSA airport.
- To be priced per day.

17.0 Very Early Smoke Detection Apparatus Fire Detection System

Supply, install, and commission a very early smoke detection apparatus fire detection system complete with all required components, accessories, and certification.

Each system must include the following:

- Ssmoke detection unit capable of continuous air sampling and early fire detection through laser-based analysis.
- Detection network with sampling pipes and capillary points installed in accordance with manufacturer specifications and SANS 369-1.
- Integrated fire suppression system using Novec 1230 or equivalent clean agent, including cylinders, discharge nozzles, and control valves.
- Control panel with system status indicators, fault and alarm outputs, and manual release station.
- Integration with existing building fire detection and alarm systems for automatic triggering and remote monitoring.
- Audible and visual alarms for fault and discharge status.
- Power supply with battery backup for a minimum of 24-hour standby and 30-minute alarm operation.
- All components to be UL/FM approved or equivalent.
- Supply of commissioning report and full system certification in accordance with SANS and manufacturer requirements.
- Include all cabling, terminations, testing, and configuration to ensure full operational readiness.
- Supply of Electrical Certificate of Compliance (COC) upon completion.
- All work to be conducted after hours or in coordination with operations to avoid disruption in live environments.

18.0 TC3001 Fire Panel

Supply, install, and commission a TC3001 addressable fire detection control panel complete with all required accessories, interfaces, and certification.

Each fire panel installation must include the following:

- TC3001 main control panel with LCD display, programmable zones, and event logging capability.
- Compatible addressable smoke, heat, and manual call point detectors as per system design.
- Integration with existing VESDA and fire suppression systems for alarm and discharge control.
- Configurable alarm, fault, and supervisory outputs for connection to the building management system (BMS) or central fire monitoring station.
- Power supply with battery backup to support at least 24 hours standby and 30 minutes alarm operation.
- All cabling, terminations, and labelling in accordance with SANS 10139 and manufacturer specifications.
- Supply of commissioning report and system certification confirming full operational functionality.
- Supply of Electrical Certificate of Compliance (COC) upon completion.
- All installation and commissioning work to be carried out after hours or in coordination with operations to avoid disruption in live environments.

19.0 Novec 1230 Gas Cylinders 29l 25mm valve

Supply and deliver fully charged Novec 1230 fire suppression gas cylinders.

- Cylinders must be filled with 3M™ Novec™ 1230 Fire Protection Fluid and certified for use in clean agent fire suppression systems.
- Cylinders to comply with SANS 14520 or equivalent international standards.
- Each cylinder must be supplied complete with valve assembly, pressure gauge, and safety relief device.
- Clearly labelled with agent type, fill weight, and pressure rating.
- Suitable for use in data centres, control rooms, and other critical equipment environments.
- Include delivery to any ACSA airport.
- To be priced per unit.

20.0 Novec 1230 Gas Cylinders 62l 40mm valve

Supply and deliver fully charged Novec 1230 fire suppression gas cylinders.

- Cylinders must be filled with 3M™ Novec™ 1230 Fire Protection Fluid and certified for use in clean agent fire suppression systems.
- Cylinders to comply with SANS 14520 or equivalent international standards.
- Each cylinder must be supplied complete with valve assembly, pressure gauge, and safety relief device.
- Clearly labelled with agent type, fill weight, and pressure rating.
- Suitable for use in data centres, control rooms, and other critical equipment environments.
- Include delivery to any ACSA airport.
- To be priced per unit.

21.0 Novec 1230 Gas Cylinders 103l 40mm valve

Supply and deliver fully charged Novec 1230 fire suppression gas cylinders.

- Cylinders must be filled with 3M™ Novec™ 1230 Fire Protection Fluid and certified for use in clean agent fire suppression systems.
- Cylinders to comply with SANS 14520 or equivalent international standards.
- Each cylinder must be supplied complete with valve assembly, pressure gauge, and safety relief device.
- Clearly labelled with agent type, fill weight, and pressure rating.
- Suitable for use in data centres, control rooms, and other critical equipment environments.
- Include delivery to any ACSA airport.
- To be priced per unit.

22.0 Novec 1230 Gas Cylinders 153l 65mm valve

Supply and deliver fully charged Novec 1230 fire suppression gas cylinders.

- Cylinders must be filled with 3M™ Novec™ 1230 Fire Protection Fluid and certified for use in clean agent fire suppression systems.
- Cylinders to comply with SANS 14520 or equivalent international standards.
- Each cylinder must be supplied complete with valve assembly, pressure gauge, and safety relief device.
- Clearly labelled with agent type, fill weight, and pressure rating.
- Suitable for use in data centres, control rooms, and other critical equipment environments.
- Include delivery to any ACSA airport.
- To be priced per unit.

23.0   Novec 1230 Gas Cylinders 227l 65mm valve

Supply and deliver fully charged Novec 1230 fire suppression gas cylinders.

- Cylinders must be filled with 3M™ Novec™ 1230 Fire Protection Fluid and certified for use in clean agent fire suppression systems.
- Cylinders to comply with SANS 14520 or equivalent international standards.
- Each cylinder must be supplied complete with valve assembly, pressure gauge, and safety relief device.
- Clearly labelled with agent type, fill weight, and pressure rating.
- Suitable for use in data centres, control rooms, and other critical equipment environments.
- Include delivery to any ACSA airport.
- To be priced per unit.

24.0   Novec 1230 Gas Cylinders 368l 65mm valve

Supply and deliver fully charged Novec 1230 fire suppression gas cylinders.

- Cylinders must be filled with 3M™ Novec™ 1230 Fire Protection Fluid and certified for use in clean agent fire suppression systems.
- Cylinders to comply with SANS 14520 or equivalent international standards.
- Each cylinder must be supplied complete with valve assembly, pressure gauge, and safety relief device.
- Clearly labelled with agent type, fill weight, and pressure rating.
- Suitable for use in data centres, control rooms, and other critical equipment environments.
- Include delivery to any ACSA airport.
- To be priced per unit.

25.0 CO_2 Handheld 5Kg Bottles

Supply and deliver handheld CO_2 fire extinguishers with a minimum capacity of 5 kg.

- Cylinders must be manufactured, tested, and certified in accordance with SANS 1567 or equivalent standards.
- Fitted with a high-pressure discharge horn and squeeze-grip control valve for accurate operation.
- Suitable for use on electrical and flammable liquid fires.
- Cylinders must be supplied fully charged and ready for immediate use.
- Include wall-mounting brackets where applicable.
- Include delivery to any ACSA airport.
- To be priced per unit.

26.0   Wall-Mounted Network Cabinet (12U, Indoor Use)

Supply, install, and commission indoor wall-mounted network enclosures/cabinets complete with all required accessories and fittings.

Each cabinet must meet the following requirements:

- Size range 12U, 19" standard rack width, suitable for networking and communication equipment.
- Steel body construction with lockable tempered glass front door and removable side panels for secure yet easy access.
- Integrated cooling fans or fan tray for temperature control in enclosed environments.
- Cable entry points (top and bottom) with protective grommets or brush panels.
- Power Distribution Unit (PDU) with overload protection and surge suppression.
- Cable management bars and vertical organizers for neat routing.
- Earth continuity bar and proper grounding provisions.
- Load capacity minimum 80 kg.
- Ventilation slots to ensure proper airflow and heat dissipation.
- Wall-mounting bracket and anchor bolts included for installation.
- Labelling and asset tagging for identification and inventory control.
- Electrical Certificate of Compliance (COC) to be provided upon completion.
- Installation to be carried out after hours or during planned maintenance windows to avoid disruption to operational systems.

27.0   Indoor Enclosure/Cabinet (48U, IP55 Certified)

Supply, install, and commission 48U IP55 certified indoor network enclosures/cabinets complete with all required accessories and fittings.

Each indoor enclosure must be equipped with the following:

- Minimum 48U 19" rack frame construction, steel body with lockable front and rear doors.
- Ventilated side panels with dust filters for efficient airflow and protection.
- Cooling fans or fan tray for internal heat dissipation.
- Cable management system with vertical and horizontal organizers.
- Power Distribution Unit (PDU) with circuit breaker protection and surge suppression.
- Earth continuity bar and grounding provision.
- Load capacity minimum 1000 kg static.
- Tempered glass or perforated metal front door with key lock for secure access.
- Removable side panels for ease of maintenance and installation.
- Levelling feet for stability.
- Labelling and asset tagging of all installed equipment.
- Supply of Electrical Certificate of Compliance (COC) upon completion.
- Relocation of existing equipment from old cabinet into new cabinet, where required.
- Decommissioning and off-site removal of old cabinet.
- All installation work to be carried out after hours or in coordination with operations to avoid disruption in live environments.

28.0   Outdoor Enclosure/Cabinet (25U, IP65 Certified)

Supply, install, and commission 25U IP65-certified outdoor enclosure/cabinets complete with all required accessories and systems.

Each outdoor enclosure must be equipped with the following:

- Earth-protected plinth, minimum 200 mm depth.
- Separate operator door and service door with three-point locking mechanism.
- Cable duct on each side wall.
- External socket accessible from below the cabinet.
- Cooling capacity of 2400 watts, equipped with an IP65-rated cooling unit.
- Compliance with environmental limits: $\Delta T < 50K$ and relative humidity < 85% for up to 10 minutes.
- Minimum 19" rack frame inside enclosure.
- Fire protection rating F90.
- Burglary protection class WK2.
- Protection against dust and water ingress to IP57 rating.
- Enclosure to be IP66 certified.
- Complete environmental monitoring system including leakage detection, temperature measurement
- Supply of Electrical Certificate of Compliance (COC) upon completion.
- Relocation of existing equipment from old cabinet into new cabinet, where required.
- Labelling and asset tagging of equipment installed.
- Decommissioning and off-site removal of old cabinet.
- All work to be conducted after hours to avoid disruption in live operational environments.
- All installation work to be carried out after hours or in coordination with operations to avoid disruption.

29.0   Outdoor Enclosure/Cabinet (25U, IP65 Certified Stainless Steel)

Supply, install, and commission 25U IP65-certified Stainless Steel outdoor enclosure/cabinets complete with all required accessories and systems.

Each outdoor enclosure must be equipped with the following:

- Earth-protected plinth, minimum 200 mm depth.
- Separate operator door and service door with three-point locking mechanism.
- Cable duct on each side wall.
- External socket accessible from below the cabinet.
- Cooling capacity of 2400 watts, equipped with an IP65-rated cooling unit.
- Compliance with environmental limits: ΔT < 50K and relative humidity < 85% for up to 10 minutes.
- Minimum 19" rack frame inside enclosure.
- Fire protection rating F90.
- Burglary protection class WK2.
- Protection against dust and water ingress to IP57 rating.
- Enclosure to be IP66 certified.
- Complete environmental monitoring system including leakage detection, temperature measurement
- Supply of Electrical Certificate of Compliance (COC) upon completion.
- Relocation of existing equipment from old cabinet into new cabinet, where required.
- Labelling and asset tagging of equipment installed.
- Decommissioning and off-site removal of old cabinet.
- All work to be conducted after hours to avoid disruption in live operational environments.
- All installation work to be carried out after hours or in coordination with operations to avoid disruption.

30.0   Modular Containerised Data Centre – (15 × 48U Cabinets)

Supply, install, and commission a modular containerised data centre, capable of housing 15 × 48U 19" cabinets for critical IT infrastructure.

General Requirements:

- Modular design for structural integrity, durability, and transportability.
- Fully insulated walls, ceiling, and floor for thermal efficiency, acoustic damping, and condensation prevention.
- Weatherproof, dustproof, and secure, with a minimum IP56 external rating.
- Internal layout to accommodate 15 × 48U cabinets that must be supplied and installed in hot aisle/cold aisle configuration for optimal airflow and cooling efficiency.
- Modular expansion capability for additional racks.
- Structural design to support full rack loads, including equipment, cabling, and ancillary systems.
- Remote monitoring and alerting for critical systems.

Internal Systems & Infrastructure:

- Raised flooring or integrated cable management channels for power and data cabling.
- Precision cooling units or CRAC/Down Blower systems integrated for redundancy (2N), including ducting for airflow optimization.
- Electrical distribution including PDUs, UPS integration, and proper grounding/earthing per standards.
- Environmental monitoring system to track temperature, humidity, airflow, and leakage.
- Fire detection and suppression system (VESDA or equivalent) integrated with clean agent extinguishing (Novec 1230).
- Optional network management card or SNMP monitoring for power, cooling, and environmental systems.

Doors, Security & Access:

- Lockable front and rear doors with three-point locking.
- Access control, CCTV surveillance, and intrusion detection provisions.
- Service and operator doors with secure access for maintenance.
- Cooling & Environmental Controls:
- Redundant precision cooling designed for 24x7x365 operation.
- Hot aisle/cold aisle containment.
- Sensors and monitoring for temperature, humidity, and air quality.
- Fresh air intake, filtration, and dehumidification as required.

Installation & Commissioning:

- Full installation on prepared site, including levelling, anchoring, and connections to power, network, and cooling infrastructure.
- Commissioning and testing of all systems (cooling, power, monitoring, fire suppression).
- Supply of documentation: as-built drawings, operational manuals, electrical compliance, and fire certification.
- Training for operational staff on maintenance, monitoring, and emergency procedures.
- Asset tagging of cabinets and equipment installed.

31.0   Environmental Monitoring Devices

Supply, install, and commission Environmental Room Monitoring and security devices for data centre and critical infrastructure environments.

Device Requirements:

- Devices must be Rack-mounted or standalone, compatible with existing IT and network infrastructure.
- It must either integrate into the existing Data Centre Expert (DCE) Infrastructure Monitoring software or an equivalent monitoring platform must be provided that provide the same capabilities.
- Monitor environmental parameters including temperature, humidity, airflow, water/leak detection, smoke detection, and door contact.
- Include door access and intrusion sensors to detect unauthorized access.
- Support for SNMP, Modbus, or equivalent network monitoring protocols for integration with central management systems.
- Web-based interface for real-time monitoring, alerts, and reporting.
- Ability to send automated alerts via email, SMS, or network management platforms.
- Power supply via PoE or standard AC, with battery backup where applicable.
- Devices to be configured for threshold alarms, logging, and historical trend analysis.
- Installation includes cabling, mounting, network connection, and configuration.
- Asset tagging and labelling of all installed devices.
- Commissioning includes full functional testing of sensors, alarms, and integration with monitoring platform.
- Supply of operational manuals, configuration documentation, upon completion.
- All work to be conducted after hours or in coordination with operations to avoid disruption in live environments.

32.0   Supply of Cabling Spares

Supply of day to day equipment and spares to address break fixes

The list includes all possible equipment items. Procurement of specific items is not guaranteed and will be executed solely on an as-needed basis.

Product Description	Quantity
FO Cable	
EFC single mode 2F Outdoor 12AWG fibre cable	500
4 CORE HDD 09/125 ORANGE	2000
Single mode 24 core fiber optic cable armoured	2000
FO Panels & Frames	
24 Port 1u Single Mode LC Fiber Optic Patch Panel - modular panel system	50
24-Port LC Duplex Fibre Patch Panel	50
FO Leads	
Fiber Patch Leads - LC-LC - 10m single mode	50
Fiber Patch Leads - LC-LC - 15m single mode	50
Fiber Patch Leads - LC-LC - 1m single mode	100
Fiber Patch Leads - LC-LC - 25m single mode	50
Fiber Patch Leads - LC-LC - 2m single mode	100
Fiber Patch Leads - LC-LC - 3m single mode	100
Fiber Patch Leads - LC-LC - 5m single mode	50
Fiber Patch Leads - SC-LC - 10m single mode	20

Fiber Patch Leads - SC-LC - 15m single mode	20
Fiber Patch Leads - SC-LC - 1m single mode	50
Fiber Patch Leads - SC-LC - 20m single mode	20
Fiber Patch Leads - SC-LC - 25m single mode	20
Fiber Patch Leads - SC-LC - 3m single mode	50
Fiber Patch Leads - SC-LC - 5m single mode	20
Fiber Patch Leads - SC-SC - 10m single mode	20
Fiber Patch Leads - SC-SC - 15m single mode	20
Fiber Patch Leads - SC-SC - 1m single mode	40
Fiber Patch Leads - SC-SC - 20m single mode	20
Fiber Patch Leads - SC-SC - 25m single mode	20
Fiber Patch Leads - SC-SC - 2m single mode	30
Fiber Patch Leads - SC-SC - 3m single mode	30
Fiber Patch Leads - SC-SC - 5m single mode	20
Fiber Patch Leads - ST-LC - 1 m single mode	15
Fiber Patch Leads - ST-LC - 10 m single mode	15
Fiber Patch Leads - ST-LC - 15 m single mode	10
Fiber Patch Leads - ST-LC - 25 m single mode	10
Fiber Patch Leads - ST-LC - 3 m single mode	15
Fiber Patch Leads - ST-LC - 5 m single mode	15
Fiber Patch Leads - APC LC-SC leads- 1m single mode	30
Fiber Patch Leads - APC LC-SC leads- 2m single mode	30
Fiber Patch Leads - APC LC-SC leads - 3m single mode	30
LC (9/125) Unjacketed Pigtail 1M	1000
LC-LC Fibre Lead OM4 MM - 10m (acquire blue)	5
LC-LC Fibre Lead OM4 MM - 10m (Purple)	5
LC-LC Fibre Lead OM4 MM - 15m (acquire blue)	5
LC-LC Fibre Lead OM4 MM - 15m (Purple)	5
LC-LC Fibre Lead OM4 MM - 1m (acquire blue)	15
LC-LC Fibre Lead OM4 MM - 1m (Purple)	15
LC-LC Fibre Lead OM4 MM - 2m (acquire blue)	15
LC-LC Fibre Lead OM4 MM - 2m (Purple)	15
LC-LC Fibre Lead OM4 MM - 5m (acquire blue)	10
LC-LC Fibre Lead OM4 MM - 5m (Purple)	10
FO Ducts	
Install 4 way 12/10 micro-duct in 110mm	1000
FO Equipment	
Single port POE extender with wall mounted bracket	10
Outreach Max XT POE Extender	10
Supply and install fibre media convertors SM LC 10/100/1000 at each camera	25
Two port POE extender with wall mounted bracket	10
FO Accessories	

13MM-19MM Grey Entry Gland with Lock Nut	1000
60MM Heat Shrink Splice Protector XS003826558	500
LC-LC Midcoupler Singlemode Simplex(SC FP)	300
Splice Cassette PVC	300
FO Services	
Float 1 x 4 core microfibre	500
Float 2 x 48 core microfibre into the 7-way micro duct	500
Label - Fiber Horizontal Cable	500
Label - Fiber Patch Lead	500
OTDR Fibre Test Results	500
Splicing	1000
Per Point Price	
Complete UTP Cat 7 Data Point flush mount with twin insert, blank cover, 5m flylead, 1m patch lead, labelling and testing – 90 metre10 run	10
Connecters & Outlets	
MFP8 CAT6A Field term RJ45 Male connector	40
cat 6a keystone	1000
cat 6a termination box Flush mount or Surface Mount	1000
cat 6a recessed dual termination floor box	1000
Cable	
Cat7 SFTP LSZH <6.9mmØ orange outer sheeting data cabling	10000
Patch & Fly Leads	
Copper Patch Leads – Cat6a sftp lszh - 1m	100
Copper Patch Leads - Cat6a sftp lszh - 2m	300
Copper Patch Leads - Cat6a sftp lszh - 3m	400
Copper Patch Leads - Cat6a sftp lszh - 5m	100
Copper Patch Leads - Cat6a sftp lszh - 10m	100
Copper Patch Leads - Cat6a sftp lszh - 15m	50
Copper Patch Leads - Cat6a sftp lszh - 20m	50
Patch Panels	
24 Port 1u Cat 6a Patch Panel with 24 x Cat 6a keystones - modular panel system	50
Brush Panels	
1U BRUSH PANEL	200
1U BLANK PANEL	200
Copper Services	
Fire Systems	
2hr Fire Rated Paint (p/sqm)	200
Fire Rated Foam	20
Civils Pipe	
HDPE Bends 45 / 90 Degree 110mm - Dolomite sites	100
HDPE pipe 110mm including 7mm nylon draw rope - Dolomite sites	300
Slotted sub soil drainage pipe 110MM per meter	25
110mm HDPE pipe (ripped)	500

110mm PVC Pipe per meter	500
50mm HDPE pipe (ripped)	500
Flexi Pipe 110mm including 7mm nylon draw rope	100
Supply HDPE coupler 40mm	100
Cable Tray & Raceways	
Cable ladder 300 X 1.6 X 3	100
Cable ladder 400 X 1.6 X 5.8	100
Data Cable tray 100mm wide per meter	100
Data Cable tray 200mm wide per mete	200
Data Cable tray 300mm wide per meter	200
Data Cable tray 400mm wide per meter	150
Data Cable tray 600mm wide	50
IP66 Rated J2 box	100
DC Infrastructure	
Raised floor tile - 600mm X 600mm	5
Suspended Ceiling	5
Velcro Cable Ties	100
Anti-static mats per m2	50
Data Centre shoes/Socks Per Box (100)	20
Floor tile lifter	1
aluminium vented floor grid for air flow 600x600	10
Bosal Pipe	
50mm Bosal Pipe per meter	100
Bosal Pipe (Incl. Hospital Saddles, coupling and 1 anchor) pm	100
Bosal pipe slow bends	100
Core Drilling	
Core drilling 110mm	10
Core drilling 200mm	3
Core drilling 25mm	10
Core drilling 50mm	10
OSP Services	
Clean open and repair existing sleeves	5
Clean all existing manholes, seal them and foam all entries and exits	5
Break into existing manhole	10
Building Entry Double Pipe	10
Building Entry Single Pipe	10
Butt Welding E Dolomite sites	5
Construct concrete slab for outdoor container - 2.4m X 3.0m	1
Reinforcing for casting of manhole 800mm x 800mm and Trenching for heavy vehicle movement	10
Reinstatement of Surfaces: Cement	100
Reinstatement of Surfaces: Gravel or paving or grass	100
Removal of surfaces road, tar & cement - Cutting	1000

33.0 Supply and installation of Electrical Spares

Supply and installation of day to day electrical equipment and spares to address break fixes

The list includes all possible equipment items. Procurement of specific items is not guaranteed and will be executed solely on an as-needed basis.

Product Description	Quantity
Circuit Breakers	
32A circuit breaker	50
60 A circuit breaker	10
32A D-Curve circuit breaker	50
60 A D-Curve circuit breaker	10
Plugs & Outlets	
32A single phase hubble plug – male	50
32A 3phase hubble plug – male	10
Supply IEC309 3phase wall plugs (male and female) for input and output of UPS power	50
Power Cords	
Supply C13 to C14 lockable power cables Black and Red (made to specific lengths under 1m as per closest PDU socket)	20
Supply C19 to C20 lockable power cables Black and Red (made to specific lengths under 1m as per closest PDU socket)	20
1.5mt C13 – C14 Lockable power cord Black	20
1.5mt C13 – C14 Lockable power cord Red	20
1.5mt C19 – C20 Lockable power cord Black	20
1.5mt C19 – C20 Lockable power cord Red	20
Power Points	
Supply IEC309 single phase 32A floor plugs with isolators and electrical wiring to UPS Distribution Board. Assume 10 meter distances.	20
Supply 32A IEC309 IP44 floor plugs with isolators (2 per cabinet) Assume 10-meter distances.	20
Distribution Boards	
Supply electrical Distribution Board with capacity for minimum 32x 32A breakers with all electrical wiring to the UPS	10
Electrical Services	
Electrical Compliance Certificate (COC)	5

34.0 Supply and installation of HVAC Airedale Spares

Supply and installation of day to day HVAC equipment and spares to address break fixes for Airedale DF65AD-AT

The list includes all possible equipment items. Procurement of specific items is not guaranteed and will be executed solely on an as-needed basis.

Filter	24
Condenser Fan	4

V-Belt	12
Compressor	2
R22 13,6Kg refrigerant	12
R410A 10Kg refrigerant	12

35.0   Supply and installation of HVAC Uniflair Spares

Supply and installation of day to day HVAC equipment and spares to address break fixes for UNIFIAIR- TDAR2222A - Downblow 33,14KW

The list includes all possible equipment items. Procurement of specific items is not guaranteed and will be executed solely on an as-needed basis.

Filter	24
Condenser Fan	4
V-Belt	12
Compressor	2
R22 13,6Kg refrigerant	12
R410A 10Kg refrigerant	12

36.0   Cable Clean-ups

Clean up ACSA Wire Centre Cabling according to ACSA standards, including the below material and labour.

- 85 X Network Cabling   Cat7 FTP 3M patchlead (Orange)
- 24 X Old cable removal   Old CAT5 cables
- 24 X Fibre Optic   Fiber Patch Leads - LC-LC - 3m single mode
- 24 X Fibre Optic   LC-LC Midcoupler Singlemode Simplex(SC FP)
- 5 X Network Cabling   1U BRUSH PANEL
- 10 X Network Cabling   1U BLANK PANEL
- 2 X Network Cabling   2U BLANK PANEL
- 2 X Infrastructure   4m 300MM WIRE MESH BASKET
- 24 hrs total   After hours work for 3 man team to reroute cables according to ACSA standards
- 8 hrs total   After hours work for 2 man team to install/replace fibre according to ACSA standards

37.0   Supply and Installation of manholes

Supply and install a UV-stabilised HDPE or PP plastic manhole suitable for underground installation, with internal dimensions of 600 × 600 × 600 mm, supplied either as a modular precast section or a complete moulded unit. The manhole must have ribbed or corrugated walls with SANS-compliant thickness and be resistant to moisture, chemicals, soil corrosion, and general environmental degradation.

It must include an integrated sealed base or moulded sump to prevent water ingress. A **lockable,** anti-corrosive, non-conductive HDPE or composite lid and frame is required, rated for the appropriate load class (pedestrian or light-traffic).

Installation must include proper excavation, a compacted bedding layer, level positioning, and backfilling in compacted layers according to SANS, with all duct entries and penetrations fully sealed.

All materials and installation must comply with relevant SANS or equivalent standards. After installation, the surrounding surface must be reinstated, and the manhole must be flush and accessible for future maintenance.