SCC
BACKBONE-MICROWAVE
PROJECT
2021

1. INTRODUCTION

1.1. Special Communication Commission (SCC) is governmental agency, part of ministry of defense, managed by Jordan Armed Forces which provides communication services to both public (government and army) and private sector.

1.2. SCC is planning to install twenty-eight Microwave links in various parts of Jordan, the planned capacitiesof these links are listed in table (1).

1.3. The microwave links shall handle both SDH and packet Ethernet traffic in different configurations at the same time.

2. GENERAL

2.1. The new equipment shall handle all types of traffic (voice, data packets, management data, …).

2.2. All various equipment of this project shall be controlled and managed by one management system, this system will be installed at control site (site 05).

2.3. The management system shall be scalable to handle the addition of new equipment in future. As an option, the offered equipment management system shall have north-bound interface to be connected to the existing Netboss multivendor umbrella management system.

2.4. The bidder shall provide the detailed documents necessary to demonstrate that the proposed solution meets the requirements of this specifications. The details shall include schematics, mechanical assemblies, drawings … etc.

2.5. The bidder shall propose 10% of the total offer as spare parts and the list of the spare parts shall be priced separately as an optional.

2.6. Technical information related to the sites of this project are provided in this RFP:
- 2.6.1. Site coordinates and towers heights.
- 2.6.2. RF channels bands.

3. TECHNICAL REQUIREMENTS

3.1. The required Links are divided into two groups:
- 3.1.1. Group A: High-Capacity Microwave Links **Long-Haul design**.
- 3.1.2. Group B: Low-Capacity Microwave links.

3.2. All the equipment shall be ready and **licensed** to handle the following scenarios of traffic configurations:
- 3.2.1. SDH traffic mode transport (N+1) HSB or **equivalent traffic protection feature/scenario**.
- 3.2.2. Packet traffic mode transport.
- 3.2.3. Hybrid mixed mode of traffic protected SDH (N+1 or equivalent) and Packet traffic (Number of TRX’s will be dedicated for SDH and the rest for Packet Traffic).

3.3. The number of transceivers in the required links and frequency bands are listed in table (1).

3.4. Each system shall have one and only one back plane and any customisations or cascading to meet our requirements will not be accepted.

3.5. The current frequency bands shall be used for link calculations; the final exact frequencies will be submitted before contract signing.

3.6. The equipment shall be equipped with all the necessary modules and licensees to handle all of scenarios of traffic configurations mentioned above.

3.7. The offered equipment shall operate on 128QAM modulation (at least) with 28MHz channel spacing.

3.8. The offered equipment shall provide high availability and reliability according to ITU recommendations G821, G826 and R530-98 with appropriate fade margin (not less than 25 dB) for all links.

3.9. Bidder shall state all the modulation schemes the offered equipment support.

3.10. Bidder shall state the links availability, maximum TX power, RSSI threshold and Ethernet capacities by the different modulation schemes for the requested sites.

3.11. The Bidder shall provide adequate calculations for all links based on supplied coordinates of the related sites.

3.12. Coordinates and tower heights information of the relevant sites are listed in table (2).

No	MW Link	Required Transceivers	Traffic Type	Frequency Band
Group A: High-Capacity Microwave links				
01	001-002	8 TRX	• Up-to (4) protected SDH traffic And the rest will be used as packet data link.	7 GHz
02	002-028	8 TRX		7 GHz
03	002-005	8 TRX		6 GHz
04	028-029	8 TRX		7 GHz
05	029-030	8 TRX		7 GHz
06	030-034	8 TRX		6 GHz
07	034-035	8 TRX		7 GHz
08	029-081	8 TRX		6 GHz
09	081-051	8 TRX		7 GHz
10	005-051	8 TRX		11 GHz
11	087-117	8 TRX		11 GHz
12	004-117	8 TRX		7 GHz
13	001-122	8 TRX		7 GHz
14	122-127	8 TRX		11 GHz
15	127-003	8 TRX		7 GHz
16	003-004	8 TRX		6 GHz
17	087-292	8 TRX		11 GHz
18	292-088	8 TRX		7 GHz
19	088-089	8 TRX		4 GHz
20	089-090	8 TRX		7 GHz
21	090-091	8 TRX		11 GHz
22	091-092	8 TRX		7 GHz
23	092-093	8 TRX		7 GHz
24	093-094	8 TRX		4 GHz
25	012-112	8 TRX		11 GHz
Group B: Low-Capacity Microwave links				
26	010-090	4 TRX	• Up-to (2) protected SDH traffic and the rest will be used as packet	6 GHz
27	010-119	4 TRX		7 GHZ
28	034-192	4 TRX		7 GHz

Table (1): Required Capacities with Frequency-Bands

Link Site A	Site Code	Site Coordinate		Tower Height (m)
		Latitude	Longitude	
Group A: High-Capacity Microwave links				
001-002	001	32 35 32.58	35 51 30.53	60
	002	32 19 55.78	35 54 30.03	60
002-028	002	32 19 55.78	35 54 30.03	60
	028	32 20 35.16	36 12 44.31	60
002-005	002	32 19 55.78	35 54 30.03	60
	005	32 00 21.21	35 50 34.52	75
028-029	028	32 20 35.16	36 12 44.31	60
	029	32 14 15.02	36 33 15.53	75
029-030	029	32 14 15.02	36 33 15.53	75
	030	32 10 21.56	36 53 53.81	60
030-034	030	32 10 21.56	36 53 53.81	60
	034	32 20 33.23	37 37 13.48	46
034-035	034	32 20 33.23	37 37 13.48	46
	035	32 30 24.83	38 11 34.35	60
029-081	029	32 14 15.02	36 33 15.53	75
	081	32 07 21.00	36 11 53.40	60
081-051	081	32 07 21.00	36 11 53.40	60
	051	31 56 54.85	35 56 58.45	60
005-051	005	32 00 21.21	35 50 34.52	75
	051	31 56 54.85	35 56 58.45	60
087-117	087	31 46 25.20	35 3430.60	60
	117	31 5751.20	35 3307.39	60
004-117	004	32 03 43.73	35 42 11.40	60
	117	31 5751.20	35 3307.39	60
001-122	001	32 35 32.58	35 51 30.53	60
	122	32 35 8.40	35 37 52.00	60
122-127	122	32 35 8.40	35 37 52.00	60
	127	32 38 5.62	35 34 37.10	24
127-003	127	32 38 5.62	35 34 37.10	24
	003	32 20 26.88	35 34 25.34	46
003-004	003	32 20 26.88	35 34 25.34	46
	004	32 03 43.73	35 42 11.40	60
087-292	087	31 46 25.20	35 34 30.60	60
	292	31 37 52.70	35 35 05.00	46
292-088	292	31 37 52.70	35 35 05.00	46
	088	31 15 59.19	35 27 49.11	60
088-089	088	31 15 59.19	35 27 49.11	60
	089	30 53 08.15	35 25 14.47	60
089-090	089	30 53 08.15	35 25 14.47	60
	090	30 29 53.79	35 17 13.84	60
090-091	090	30 29 53.79	35 17 13.84	60
	091	30 16 01.00	35 13 30.00	60
091-092	091	30 16 01.00	35 13 30.00	60
	092	30 02 42.26	35 09 16.99	60
092-093	092	30 02 42.26	35 09 16.99	60
	093	29 43 45.08	35 02 13.68	60
093-094	093	29 43 45.08	35 02 13.68	60
	094	29 34 35.80	34 58 55.20	60

012-112	012	29 30 07.07	35 05 27.3	90
	112	29 23 36.00	34 58 18.00	8 Bracket
Group B: Low-Capacity Microwave links				
010-090	010	30 39 54.85	35 37 22.50	60
	090	30 29 53.79	35 17 13.84	60
010-119	010	30 39 54.85	35 37 22.50	60
	119	30 29 41.51	35 47 41.18	30
034-192	034	32 20 33.23	37 37 13.48	46
	192	32 43 22.7	37 40 18.3	60

Table (2): Site Coordinates with Tower Heights

3.13. All links shall comply with the ITU recommendations regarding channel spacing and duplex spacing, the table below shows the used bands:

RF Channels:	
RF 6	Frequency Band 6 GHz RF channel spacing = 29.65 MHz Tx/Rx duplex spacing = 266MHz ITU-R F.383-9
RF 7	Frequency Band 7 GHz RF channel spacing = 28 MHz Tx/Rx duplex spacing = 168 &196MHz ITU-R F.385-9
RF 8	Frequency Band 8 GHz RF channel spacing = 28 MHz Tx/Rx duplex spacing = 266MHz, 311.32 MHz ITU-R F.386-8
RF 11	Frequency Band 11 GHz RF channel spacing = 28 MHz Tx/Rx duplex spacing = 530MHz ITU-R F.387
RF 13	Frequency Band 13 GHz RF channel spacing = 28 MHz Tx/Rx duplex spacing = 266MHz ITU-R F.497-7
RF 18	Frequency Band 18 GHz RF channel spacing = 27.5 MHz Tx/Rx duplex spacing = 1010 MHz ITU-R F.595-8

3.14. The Links shall be **equipped** with the following traffic interfaces:

3.1. SDH line interface	Optical (S1.1), comply with all relevant ITU-T recommendations depending on number of requested transceivers.	
3.2. Ethernet interfaces	**Group A**	• **Group B**
	• At least 4x100/1000Base-T SFP interface. • 2x100/1000 (Base-LX single mode) SFP. • 1x10G Base LX single mode SFP interface.	• At least 4x100/1000Base-T • 1x100/1000 (Base-LX single mode) SFP interface
3.3. SDH optical connector	LC	
3.4. Tributary Interface	• 32 E1 75Ohm Unbalanced Interfaces.	

3.15. **The equipment in the Group A and B shall be "All Indoor Unit Type" (only antennas will be mounted on towers) and the indoor units shall be modular.**

3.16. For all radio links each indoor unit shall be dedicated for one radio direction, indoor units configured with multiple radio directions (Repeater mode) will not be accepted.

3.17. **SDH Protection**

Equipment shall support the following of SDH transport protection configurations:

3.17.1. **(N+0) and (N+1)** STM-1 Hot-Standby-Protection or any equivalent protection mechanism.

3.17.2. The protection switching shall be configurable (manual and automatic) for both TX side and RX side, The RX switching shall be Hitless.

3.18. **Ethernet Protection**

The Offered Equipment shall support the following of Ethernet transport protection configurations:

3.18.1. Spanning Tree Protocol (STP) including RSTP and MSTP.

3.18.2. Link Aggregation (LAG), which shall handle from 2 up to the maximum number of TRX's for each radio link with all the required licenses.

3.19. **Ethernet VLAN transport**

3.19.1. The Offered equipment shall support transparent transmission of IEEE 802.1Q VLAN tagged frames.

3.20. **Ethernet capability**

3.20.1. The Offered equipment shall support Layer 1/Layer 2 Ethernet transport.

3.20.2. The Offered equipment shall support advanced QoS features including port and Vlan prioritization.

3.21. **MPLS capability:**

3.21.1. The radio links shall support IP/MPLS transport.

3.22. **Synchronization**

3.22.1. All synchronisation functions in the equipment shall comply with ITU recommendations.

3.22.2. Offered equipment shall support the following:

3.22.2.1 Synchronous Ethernet (G8262)

3.22.2.2 IEEE 1588v2

3.22.2.3 DS1 line clock

3.23. **Jitter and Wander**

3.23.1. Jitter & Wander accumulation shall comply with latest relevant ITU recommendations for SDH and Ethernet traffic.

3.24. **Interfaces**

3.24.1. SDH Interfaces (SFP)

3.24.1.1 Equipment shall **support** the following SDH interfaces:

3.24.1.1.1 Electrical interface: (STM-1) electrical according to ITU-T G703.

3.24.1.1.2 Optical interface: STM-1 Short Haul (S-1.1).

3.24.2. Ethernet Interfaces:

3.24.2.1 Equipment shall **support** the following interfaces:

3.24.2.1.1 100/1000 BASE-T/TX.

3.24.2.1.2 100/1000 BASE-SX/FX/LX/LX10/ZX.

3.24.2.1.3 10G Base-SR/LR/LH (for equipment group A).

3.24.3. Management Interface:

3.24.3.1 Equipment shall have separate NMS and LCT ports.

3.24.3.2 NMS interface shall be Ethernet RJ-45 and shall support IPv4.

3.24.3.3 In case of a Local Craft Terminal software is used for local access/configuration to the Radios it shall be executable on a portable laptop PC equipped with Microsoft Windows operating system.

3.24.3.4 five laptops with the needed software for local access (and license if needed) shall be provided by the bidder as the manufacturer recommended specifications for hardware and software.

3.24.3.5 The bidder shall specify and provide the following:

3.24.3.5.1 Type of port for LCT.

3.24.3.5.2 The protocol that support the NMS interface.

3.25. **Operation and Maintenance**

3.25.1. The equipment shall have the capability of creating software loops on traffic ports towards network side and customer side.

3.25.2. It shall be possible to download software to equipment centralized from the Management System and locally from the LCT.

3.25.3. It shall be possible to download and upload data (shelf, alarm and traffic configuration) between the equipment and the Management System or the LCT.

3.26. **AUTOMATIC LASER SHUTDOWN (ALS)**

3.26.1. Offered equipment shall support ALS according to ITU-T G. 958 on all interfaces.

3.26.2. It shall be possible to disable ALS

3.26.3. When disabled ALS it shall be possible to force the Laser on and off

3.26.4. In case of Laser shutdown by the ALS, the device shall periodically check for connection re-establishment condition in a preconfigured period. If the connection re-established, the device shall turn-on the laser automatically.

4. LINK AVAILABILITY AND RELIABILITY

4.1. Availability and reliability calculations according to ITU recommendations.

4.2. The availability of the links shall not be less than 99.999% by 128QAM modulation.

4.3. Bidder shall provide availability and fading margin calculations for the links by different modulation configurations up to 1024QAM.

4.4. All measurements of bit-error ratio (BER) shall be done in accordance with ITU-R recommendations; pseudo-random tests with patterns (2**15-1, 2**21-1) shall be used.

4.5. All types of fading effects shall be considered with appropriate fading margin (not less than 25 dB) for all links.

4.6. The manufacturer shall present m-curves and C/I curves (carrier to interference ratio).

5. PERFORMANCE IMPROVEMENT

5.1. The manufacturer shall provide calculations to estimate the improvement of the service reliability of the system with:

5.1.1. Automatic Transmit Power Control (ATPC).

5.1.2. Adaptive Modulation.

5.1.3. Antenna diversity if needed.

5.1.4. Any additional methods to improve performance and reliability.

5.2. Path performance calculations for microwave links shall be provided.

6. ALARMS, EVENTS AND SYSTEM PARAMETERS

6.1. The equipment shall be provided with the measurements and control devices that are necessary for supervision, adjustment and quick fault location. By means of software using a PC or any kind of device, it shall be possible to measure at least the following operating values:

6.1.1. Transmit output power.

6.1.2. Received signal level.

6.2. Other measurements such as BER, ES, SES and DM at both local and remote sites.

6.3. By means of local alarms it shall be possible to locate the faulty units and at least the following alarms should be identified:

6.3.1. Power supply unit failure.

6.3.2. Low transmitted power.

6.3.3. Low received signal.

6.3.4. BER exceeding pre-set threshold.

6.3.5. Others specified by the manufacturer.

6.4. These alarms should be identified and displayed remotely through the internal digital supervisory system of the proposed digital radio that also should give information about switching status, quality measurements and alarm history.

6.5. The Bidder shall list all functional blocks and all alarms submitted by these in the following areas:

6.5.1. Communication & Routing
6.5.2. Connection & Protection
6.5.3. Equipment and Software
6.5.4. Generic Support Functions
6.5.5. Overhead Access/User Channels
6.5.6. Performance Management
6.5.7. Security
6.5.8. Synchronisation
6.5.9. Test & Diagnostics
6.5.10. Transmission

6.6. The alarms shall have following associated severity levels (ITU-T X.733):
6.6.1. Critical
6.6.2. Major
6.6.3. Minor
6.6.4. Warning
6.6.5. None

6.7. **Event Forwarding Discriminator (EFD)**
6.7.1. Alarms and notifications shall be sent to the associated LCT/EMS via the EFD.
6.7.2. In case of communication problems, the EFD shall be able to buffer up to 63 alarms and notifications or more.
6.7.3. If EFD runs full, a special alarm shall be set indicating that the management system shall resynchronise with the CPL in order to establish the current alarm state.

6.8. **Performance Management**
6.8.1. The equipment shall support end to end performance management functions described in the ITU-T Recommendation.
6.8.2. Performance management information shall be available in accordance with ETSI terminology.

6.9. **Data Collecting**
6.9.1. Equipment shall contain at least 24 hours performance data (static or differential) reported in 15 minutes interval.
6.9.2. Equipment shall contain 3 days performance data that was reported in 24 hour interval.
6.9.3. It shall be possible to investigate the performance data with NMS and LCT.
6.9.4. It shall be possible to reset performance data by the NMS and the LCT.

6.10. **Event Handling**
6.10.1. Equipment shall be able to generate an event.
6.10.2. There shall be an event log that is a cyclic FIFO.
6.10.3. Capable of generating events from the following situations: one of the protection cards is activated, alarm log is full, etc.

7. ANTENNA SPECIFICATIONS

7.1. The antennas to be supplied should meet the performance requirements for the links, based on the length of the hop, path characteristics and Radio Frequency Band used.

7.2. The required antennas shall be **high performance** type and the radiation pattern for each antenna should be supplied.
7.3. The offered antennas for links Group A& B shall be **dual-polarized**.
7.4. All offered Antennas shall be not less than (0.6 m) in diameter.
7.5. Antenna design shall exhibit all high-performance merits with the followings included:
  7.5.1. Minimized spell over.
  7.5.2. Edge illumination taper.
  7.5.3. Absorber material lining for improved pattern performance e.g. Teflon or other specialized coating materials that minimize water or antenna Radom.
  7.5.4. Cross-polarization discrimination (XPD) equal or better than 30dB.
7.6. The mechanical design of antenna feeders shall be such that they can withstand without distortion or damage a wind speed of **150 Km/h.**
7.7. Antenna shall be designed for ease of installation and maintenance. The Bidder shall specify the height of each antenna on the tower, so that performance objectives are met.
7.8. All antennas accessories needed (i.e. grounding kits, mounting kits, transmission lines clips, etc.) shall be provided.

8. MANAGEMENT SYSTEM

8.1. All equipment shall be managed by a unified element management installed and configured by manufacturer at the control centre (site 5).
8.2. All documents, plans and schematics of the system and connections to equipment shall be clearly provided as soft copy and hard copy after installation.
8.3. The manager shall be equipped with redundant power supply and hard disk array (e.g. RAID configuration).
8.4. The system shall be based on the FCAPS standards model (Fault, Configuration, Manager shall provide following capabilities:
  8.4.1. Automatic and manual Backup and restore of manager's hard disk and configurations.
  8.4.2. Remote equipment configuration.
  8.4.3. Configuring software loops on traffic ports on RF, IF and Line on both directions.
  8.4.4. Show alarms and status of equipment.
  8.4.5. Remote equipment software upgrade.
  8.4.6. Remote access to equipment (similar to LCT GUI capabilities).
  8.4.7. Alarms and notifications (active and history).
  8.4.8. Performance data for traffic and equipment on a time period basis.
  8.4.9. Remote equipment's configuration files upload and download.

9. MECHANICAL DESIGN

9.1. The equipment shall be designed for fixed installation and comply with international recognized standards such as those approved by CEPT practices.
9.2. Attention should be paid to ensure dissipation of the heat generated.
9.3. The separate units of the equipment shall be designed to be easily handled.

10. POWER SUPPLY AND POWER CONSUMPTION

11. LIGTHNING PROTECTION

Transmission lines lightning protection devices are required for all radios.

12. TRANSMISSION LINES

12.1. Transmission lines with sufficient lengths (including horizontal run in shelter 30 m min) shall be provided according to suggested antenna height.

12.2. Transmission lines accessories:

12.2.1. Transmission lines connectors.

12.2.2. Wall entry hatches per site; accommodate at least 6 transmission lines.

12.2.3. Plastic caps for the unused entries.

12.2.4. Needed items (clamps, wrap locks, connector reattachment kit …).

13. REQUIRED CIRCUIT BREAKER AND PANELS

13.1. Bidder shall provide distribution panels for each site as recommended from manufacturer.

13.2. The distribution panel shall fit into a 19” EIA Rack.

14. SIZE AND DENSITY

14.1. Offered equipment in Group Bshall be rack mountedon 19" EIA rack, in case of ETSI rack shall be offered.

14.2. The Bidder shall state the dimensions of the offered equipment.

15. EXPECTED LIFETIME

Manufacturer is requested to submit MTBF figures for all offered modules where applicable, and to calculate the expected life time of the offered systems.

16. OFFERED EQUIPMENT

The Bill of material of the offered equipment shall provide both part number and version number in an itemized matter.

17. TRAINING

17.1. **Equipment training**: Intensive training course for Sixteen (18) engineers in three groups for not less than Ten (10) working days, Training shall cover theoretical aspect (SDH traffic transport, Packet traffic transport,MPLS and other recommended topics from manufacturer,…) installation, operation and maintenance of equipment.

17.2. **Management training:** Intensive training course for Sixteen (18) engineers in three groups for not less than Ten (10) working days, Training shall cover theoretical aspect (DCN, management system operation and administration, NE administration, Ethernet and TDM traffic configuration and other recommended topics from manufacturer) operation and maintenance of manager.

17.3. Training shall be prior to shipment of equipment.

17.4. Training shall be held in manufacturer training centre.
17.5. Detailed training schedule shall be provided by manufacturer showing the timetable for each day of the course and the training materials prior to training, and SCC have the right to modify the topics of the training according to actual needs.
17.6. Instructor qualifications:
  17.6.1. A good command of English.
  17.6.2. Qualified and have a good technical experience in the field he is tutoring.
17.7. Training cost shall cover:
  17.7.1. Training fees.
  17.7.2. Training subsistence (respectable accommodation, meals and local transportation).
  17.7.3. Air tickets.
  17.7.4. Visa fees.

18. DOCUMENTATION

18.1. Two sets of documents (hard copy) and one set (software copy) covering in details installation, operation and maintenance of equipment shall be provided.

19. CONFIGURATION SOFTWARE

19.1. All firmware, software and licenses needed for the operation, installation and maintenance of the equipment shall be supplied by the Bidder.
19.2. The LCT software shall be bugs free and bidder shall specify the login duration.

20. WARRANTY

20.1. Warranty period shall be at least 24 months from in country final acceptance.
20.2. Warranty shall cover all equipment including software.
20.3. All software updates during warranty period shall be provided to SCC free of charge.
20.4. During the warranty period, defective units or modules shall immediately and free of charge be replaced by the Contractor through express mail service (i.e. DHL, Aramex) within two weeks of notification.
20.5. The faulty unit or module will be return back to manufacturer by the Contractor.
20.6. The manufacturer is required to provide the Repair and Return (R&R) or Replacement policy after warranty period.
20.7. R&R/Replacement policy shall include both equipment and software bugs.

21. DELIVERY

21.1. All prices shall be CPT QAIA or CIF Aqaba port, bidder shall be responsible for the delivery of the equipment to SCC Warehouses, Amman-Jordan.
21.2. All materials shall be excluded from custom duties, sales tax and any other governmental fees. (Freight cost included).
21.3. SCC shall be responsible for custom clearance and any other expenses shall be under supplier's responsibility.
21.4. Delivery period of the equipment shall be during 120 days after awarding notification.

22. ACCEPTANCE:

22.1. Final acceptance for the management system will be carried out after the installation to ensure that the equipment performance is according to technical specifications.

23. INSTALLATION MATERIALS

23.1. All necessary recommended installation materials from manufacturer needed for the installation shall be provided for each node:

23.1.1. 8x Programming cable for Local Access.

23.1.2. 30m Power cables.

23.1.3. 30m grounding cable.

23.1.4. Recommended Circuit panels and circuit breakers.

23.1.5. Wave-guide Dehydrator if recommended from manufacturer.

24. SPARE PARTS

24.1. The Bidder shall supply all necessary spare parts on modular level covering 10% of equipment prices and must cover all main units of the offered system and this list shall be priced separately as an optional.

24.2. The spares shall be divided into:

24.2.1. Consumable spares shall be stated and provided by the manufacturer.

24.2.2. Other spares and modules recommended by manufacturer.

24.3. The manufacturer must guarantee the supply of spare parts (when required) of the offered equipment for a period of at least 7 years.

24.4. Bidder is required to provide the prices of the recommended spare modules.

25. DEFINITIONS:

25.1. MICROWAVE LINK

Means fully operational link between two sites comprising of:

25.1.1. Radio equipment in both sites.

25.1.2. Antenna system.

25.1.3. Transmission lines.

25.1.4. Accessories.

25.1.5. Dehydrator if recommended from manufacturer.

SPECIAL TERMS AND CONDITIONS

1. The proposed equipment shall be 100% brand new and shall be of the latest up to date product (old product equipment will be disqualified).
2. The bidder shall enclose two Bills of material (one priced with the financial offer and the other unpriced with the technical offer).
3. SCC reserves the right to increase and/or decrease quantities of system items with the same prices according to any updates might require any modification and has the rightto terminate the tender at any time without justifications.
4. The bidder shall prepare the offer in an itemized manner and give a clear list of equipment in each site to meet the requirements.
5. All various manufacturers of equipment proprietor of trade mark (brand name) must be either North American, EU, UK, New Zealand or Japanese origin.
6. All information supplied by Bidder as well as all markings and designations on the equipment, drawings and circuit diagrams shall be in English.
7. The training shall be held at manufacturer premises and provide both theoretical and practical aspects, and cover all sections of this project.
8. All software and hardware of the proposed equipment shall be of proven industrial quality and workmanship according to relevant international standards.
9. The bidder shall guarantee the availability of spare parts for at least 7 years.
10. The bidder is required to fill in and sign a point-by-point compliance list for all sections and points of this document, the bidder shall complete the filling of compliance list and shall indorse it, the final compliance list will be considered as a vital part of projectdocuments and will be used as a reference for all related matters in future.
11. Each bidder is allowed to submit two separate options at most, any other options will be disregarded.
12. SCC shall disregard the offer if any of the followings:
    - 12.1. Ambiguous or Incomplete offers.
    - 12.2. Missing or incomplete compliance sheets.
    - 12.3. Offer not accompanied by original catalogues, technical drawings and calculationsor does not match the related items in the document.
    - 12.4. Offers not accompanied by compliance list.
13. The bidder shall fulfil each of the following requirements:
    - 13.1. Be well established and have efficient, reliable, and technical capabilities for thetechnical support and supervision when needed free of charge during theinstallation and the warranty period.
    - 13.2. Quote for the equipment in an itemized manner for each site separately and SCCreserves the right to determine the final number of sites and equipment subject to budget.

13.3. Provide the necessary documentation (manuals, data sheets and schematicdiagrams of the supplied system in soft & hard copy versions in English) andaccessories needed for the installation.

13.4. Present original catalogues, and software releases by the mother company in English.

13.5. All mandatory “missing in the offer” appliances or cards recommended from the manufacturer for proper operation (as per the requirements) of equipment shall be delivered free of charge.

14. In case where the bidder is not fully compliant with the specifications, bidder shall state the reason and/or why SCC should reconsider his position.
15. The bidder is invited to suggest any change to any required specification which will improve the performance of the required equipment together with the reasoning for this alteration, SCC reserves the right to accept this change (solution) or refuse it.
16. All the connectors and cables shall be of high quality and in compliance with code recommendations and SCC reserves the right to reject any item not in conformance with the international standards.
17. Any abbreviation or symbol used in the schematics, drawings and calculations shall be clearly described.
18. The proposed equipment, materials and services shall be in accordance with these technical specifications. Any comments regarding transmission plan, network management,..etc. shall be included in the technical proposed solution as “Engineering considerations”.