PART A REQUEST FOR INFORMATION (RFI)			
Description of the works/goods/services	Request for Information is required to determine available technologies for Supply, Delivery, Design, Installation, Commissioning, Support and Training on Environmental Racks with Built-in Air Conditioning, Noise Reduction Solutions, Heat Management Systems and Security Access Control for Substation Environments, on an as and when required basis.		
Deadline for submission	10 March 2026	**At (South African Standard Time)**	10h00am
Tender Office address	Tenders are uploaded via NTCSA Tender bulletin site on the Eskom E- tendering page.		
RFI are to be submitted electronically via Eskom E- tendering site by the stipulated closing date and time.	Please note it is the responsibility of the supplier to ensure that RFI submission is submitted before the closing date and time.		
Electronic Submission of RFI	The tenderer must upload the tender via NTCSA Tender bulletin site on the Eskom E- tendering page. All documents need to be submitted in a PDF and Excel format (The limit is 50MB per file and total submission of 900MB per submissions). No Zip/condense files can be uploaded No hard copy will be accepted If for some reason you resubmit your RFI, then the latest version of the RFI submitted will only be accepted and all previous submission/s will be null and void. Please ensure that the submission status is indicated as complete. Supplier Help Manual guide and video can be found on Eskom E-Tendering page		
E-tendering Help Manual for supplier	Attached in the advert		

National Transmission Company South Africa SOC Ltd ("NTCSA") invites you to submit an:

- **Request for information (RFI)** to submit information for the works/goods/services as stated in the table. This RFI is a stand-alone information-gathering and market-testing exercise, intended only to inform and assist NTCSA's further deliberation and development of a strategy for the Supply, Delivery, Design, Installation, Commissioning, Support and Training on Environmental Racks with Built-in Air Conditioning, Noise Reduction Solutions, Heat Management Systems and Security Access Control for Substation Environments, on an as and when required basis.

- NTCSA also request indicative prices for items appearing on the attached Pricing Schedule.

NTCSA has delegated the responsibility for this **RFI** to the signatory of this document, whose details can be found below.

We look forward to receipt of your response.

Yours faithfully

Name	Designation	Signature	Date
Godfrey Radzelani	Officer Procurement	GR Radzelani	26.01.2026
Telephone number	011 871 3165	**Fax and/or e-mail address**	RadzelGR@ntcsa.co.za

1. Background

NTCSA Telecommunications operates critical network infrastructure within challenging substation environments characterized by dust and electromagnetic interference. The new generation of Information and Communications Technology (ICT) infrastructure poses new challenges, an introduction of excessive noise levels and heat which creates operational and maintenance challenges.

To address these operational challenges, NTCSA is seeking information on specialized environmental racks/cabinets with built-in air-cooling capability and secure access control. These solutions must be capable of housing critical Optical Transport Network (OTN) equipment, Internet Protocol/Multiprotocol Label Switching (IP/MPLS) routers, call manager servers and any future telecommunications technologies. The racks must provide protection against the harsh substation environment. With calculations, the supplier must demonstrate that the proposed solution facilities will provide availability of 99.999%.

NTCSA intends to use the information received through this RFI to gain a comprehensive understanding of the available solutions in the open market that can reliably support the deployment of telecommunications equipment in harsh substation environments. This includes evaluating solutions aligned with next-generation ICT infrastructure which is essential for realisation of future NTCSA digitisation strategy.

This RFI will assist in evaluating the benefits, limitations, risks, and costs associated with the use of these cabinet solutions in comparison to conventional infrastructure — such as upgrading centralized air-conditioning systems that serve entire equipment rooms, and any other requirements. This analysis will ensure that future deployments are both technically robust and cost-effective.

As part of its broader modernization efforts, NTCSA is refurbishing its Telecommunications network with equipment that supports mission-critical services and increased bandwidth requirements. Any solution that does not meet the strict performance, reliability, and availability demands of such services will not be considered viable, as these services are central to NTCSA's core operational requirements.

2. NTCSA User Requirements

Respondents must provide details addressing the following core areas:

1) Dimensions and general requirements:

a) For OTN and MPLS equipment, 47U (H) × 600mm (W) × 600mm (D) is preferred.
b) Specify the type of cabinet e.g fixed frame, swing frame, etc.
c) Alternative proposals can be made with the dimensions: 47U (H) × 600mm (W) × 600 ≤1.2m (D)
d) For servers: 47U (H) × 600mm (W) x 800 mm (D) is preferred.
e) Alternative proposals can be made for servers with the dimensions: 47U (H) × 600mm (W) × 800≤1.2m (D)
f) The racks must provide for adequate airflow with acceptable clearance for cables between the chassis and the front and back of the rack or cabinet.
g) For OTN and IP/MPLS core routers, the racks must be designed to ensure 60% perforation while also taking into consideration equipment induced noise, substation Electro Magnetic Interference (EMI), and dust.
h) For less perforated cabinets, means to extract hot air out of the cabinet and the equipment room must be proposed.
i) For 60% perforated cabinets, means to extract hot air out of the equipment room must be proposed.
j) All cabinets must support mounting on the solid and computer raised flooring.
k) Suppliers to indicate if the racks are modular, thereby supporting expansion.
l) Associated DC (48V) and AC (230V) distribution panels with circuits breakers must be provided for each cabinet.
m) Circuit breakers must make a provision for chassis start-up currents of 5,10,15,20,30 amps per chassis for 48 V DC supply.
n) All supplied equipment shall operate from a -48V Direct Current (DC) positive earth power source, which will be provided by NTCSA Telecommunications.
o) The management system computers and workstations shall operate from standard 230 V (±10%) 50 Hz (±2,5%) mains power; NTCSA Telecommunications will provide UPS power.
p) NTCSA Telecommunications' standard battery chargers have a rated range of 48 V +20% -15%, positive earth. The equipment shall operate to specification within these voltage limits. The supplier shall specify the voltages outside these limits within which the equipment will still operate correctly and without damage.
q) Suppliers must provide equipment weights and transportation requirements.
r) Glass doors shall not be proposed.
s) Suppliers to ensure that the integrated cooling systems cannot leak on equipment.

2) Environmental and capacity

a) Where applicable, supplier to indicate the Ingress Protection rating (IP) rating and any substation EMI standards that the rack is compliant with.
b) If non-compliant, provide hardening details with performance evidence if any.

c) Suppliers to provide alternatives for 6KW, 12KW and 20KW total cabinet power consumptions with pricing comparisons
d) Equipment noise suppression to ≤ 70 decibels (dB) is preferred, provided the means to extract heat is not compromised.
e) Provide equipment noise level and then their design to acceptable value. Similarly for heat, specify equipment heat value and their design to acceptable value and methods used.
f) Cabinets must be rodent-resistant, with sealed entry points to prevent pest ingress.
g) Cabinets must provide for power cables, load cables and communications cables glands termination plates with pre-manufactured knockouts.
h) The provision for name plates on the front and rear of the cabinets to be able to identify specific panels.
i) The enclosure for the cabinets to allow for easy access for the termination of cables and ease of maintenance.
j) Not more than two cables core can be connected to a single terminal stud.
k) The cables entries must be both bottom and top entry.
l) The gland plates shall be supported to prevent movement of the cables.
m) Cabinets must include fans or ventilation to effectively extract internal heat.

3) Management System:

The cabinet must include an intelligent management system that enables:

a) User access control, including biometric locking and unlocking or keypad.
b) Environmental monitoring (temperature, humidity)
c) Integrated camera control, with PTZ functionality.
d) Critical alarm reporting (temperature, humidity, fire, smoke)
e) Power monitoring at both chassis and rack level.
f) Means to safely override the biometric lock by authorised personnel.

4) Other requirements

a) The rack must be available in single/double/triple/quad configurations
b) The rack must support dual power feeds and UPS integration
c) The cabinet provision for multiple power cables for each equipment.
d) Ensure that the stud terminals are wired via loom from the PDU MCB rack to a cable termination rack.
e) Ensure cables sizes range from 2.5 sqmm to 16 sqmm for use up to 2 cores per polarity.
f) Training requirements and maintenance costs must be provided
g) Integration requirements for critical alarms via the NTCSA Telecoms network and GSM network must be provided.

PART B RESPONSE SHEET IN TERMS OF A REQUEST FOR INFORMATION To be completed by the supplier			
To	NTCSA SOC Ltd	**Date**	
Attention	Godfrey Radzelani		
Tel no		**Fax no and /or e-mail address**	
From		**Address**	
Address			
Sender			
Description of the works/goods/services	Request for Information is required to determine available technologies for Supply, Delivery, Design, Installation, Commissioning, Support and Training on Environmental Racks with Built-in Air Conditioning, Noise Reduction Solutions, Heat Management Systems and Security Access Control for Substation Environments, on an as and when required basis.		

Please find below our response to NTCSA's questions:

No.	Question	Please indicate your response in this column
1.	Contact Information and Company Details • Your contact's name and contact details • Company registration number	
2.	Brief description of previous experience with substation environment solutions	
3.	Specify the type of cabinet e.g. fixed frame, swing frame, etc.	
4.	For OTN and MPLS equipment, 47U (H) × 600mm (W) × 600mm (D) is preferred.	
5.	Alternative proposals can be made with the dimensions: 47U (H) × 600mm (W) × 600 ≤1.2m (D)	
6.	For servers: 47U (H) × 600mm (W) x 800 mm (D) is preferred	
7.	Alternative proposals can be made for servers with the dimensions: 47U (H) × 600mm (W) × 800≤1.2m (D)	

8.	The racks must provide for adequate airflow with acceptable clearance for cables between the chassis and the front and back of the rack or cabinet.	
9.	For OTN and IP/MPLS core routers, the racks must be designed to ensure 60% perforation while also taking into consideration equipment induced noise, substation EMI and dust.	
10.	All cabinets must support mounting on the solid and computer raised flooring.	
11.	Suppliers to indicate if the racks are modular, thereby supporting expansion.	
12.	Associated DC and AC distribution panels with circuits breakers must be provided for each cabinet.	
13.	Associated DC (48V) and AC (230V) distribution panels with circuits breakers must be provided for each cabinet.	
14.	Circuit breakers must make a provision for chassis start-up currents of up to 50 amps.	
15.	All supplied equipment shall operate from a -48V Direct Current (DC) positive earth power source, which will be provided by NTCSA Telecommunications.	
16.	The management system servers and workstations shall operate from standard 230 V (±10%) 50 Hz (±2,5%) mains power; NTCSA Telecommunications will provide UPS power.	
17.	NTCSA Telecommunications' standard battery chargers have a rated range of 48 V +20% -15%, positive earth. The equipment shall operate to specification within these voltage limits.	
18.	What are the voltages outside these limits within which the equipment will still operate correctly and without damage?	
19.	a) Suppliers must provide equipment weights and transportation requirements. b) Glass doors must not be proposed.	
20.	Suppliers to ensure that the integrated cooling systems cannot leak on equipment.	
21.	How does your solution comply with IEC 61850-3, IEEE-1613, and IP65 standards? If non-compliant, detail your hardening methodology with performance evidence.	
22.	Describe your management system architecture: • How is hot standby configuration implemented? • What biometric technologies are supported?	

	• How are critical alarms propagated via NTCSA Telecoms network or GSM network to the NTCSA network management centre?	
23.	Provide details of your management system: support for hot standby, biometric access, environmental monitoring, PTZ camera integration, alarm propagation (temperature, humidity, fire, smoke), and power monitoring.	
24.	Submit design options and system specifications for supporting 6kW, 12kW, and 20kW load levels. Include availability calculations demonstrating 99.999% uptime.	
25.	Compare costs with upgrading existing equipment room air-conditioning systems.	
26.	Equipment noise suppression to ≤ 70 decibels (dB) is preferred, provided the means to extract heat is not compromised.	
27.	Provide equipment noise level and then their design to acceptable value. Similarly for heat, specify equipment heat value and their design to acceptable value and methods used.	
28.	The rack must be available in single/double/triple/quad configurations.	
29.	The rack must support dual power feeds and UPS integration	
30.	The cabinet provision for multiple power cables for each equipment.	
31.	Ensure that the stud terminals are wired via loom from the PDU MCB rack to a cable termination rack.	
32.	Ensure cables sizes range from 2.5 sqmm to 16 sqmm for use up to 2 cores per polarity.	
33.	Training requirements and maintenance costs must be provided	
34.	Integration requirements for critical alarms via the NTCSA Telecoms network and GSM network must be provided.	
35.	Cabinets must be rodent-resistant, with sealed entry points to prevent pest ingress. Please provide details or test evidence.	
36.	Cabinets must provide for power cables, load cables and communications cables glands termination plates with pre-manufactured knockouts.	
37.	The provision for name plates on the front and rear of the cabinets to be able to identify specific panels.	
38.	The enclosure for the cabinets to allow for easy access for the termination of cables and ease of maintenance.	

39.	Not more than two cables core can be connected to a single terminal stud.	
40.	The cables entries must be both bottom and top entry.	
41.	The gland plates shall be supported to prevent movement of the cables.	
42.	Cabinets must include fans or ventilation to effectively extract internal equipment generated heat.	
43.	Describe your solution's suitability for utility environments: • EMC compliance within HV/EHV environments • Type approvals and supported EMC standards • Environmental hardening capabilities	
44.	Describe how your solution integrates with Eskom's IP/MPLS and OTN network strategy, including support for WDM, G.709, ROADM, G.652d fibre, and latency-sensitive services like teleprotection.	
45.	Provide power system specifications including AC/DC dual supply configurations, UPS capacity ranges, standby transfer times, and efficiency ratings under varying load conditions.	
46.	Detail thermal management including heat dissipation calculations (BTU), airflow requirements, and ambient temperature impact analysis for substation environments.	
47.	Provide a 10-year technology roadmap, indicating product release dates, planned upgrades (hardware/software), and end-of-sale timelines.	
48.	Provide comprehensive pricing analysis for all load configurations with Total Cost of Ownership (TCO) calculations including maintenance costs, spares requirements, and training programs for substation environments.	
49.	Provide cost comparison with conventional air-conditioning upgrades	
50.	Provide a detailed support and maintenance proposal support	
51.	Provide a detailed training proposal covering Design, installation, maintenance, and configuration.	
52.	Supplier to present and demonstrate the solutions to NTCSA. An invite will be sent with the dates for presentation. Suppliers shall do physical demonstrations where possible.	

Yours faithfully

Name	Designation	Signature	Date
Telephone number		**Fax and/or e-mail address**	