

	Expression of Interest (EOI)	Document Identifier	240-72663051	Rev	1
		Effective Date	October 2022		
		Review Date	October 2027		
		EOI Number	E1780DXN		

PART A REQUEST FOR AN EXPRESSION OF INTREST (EOI)			
Description of the goods	Submission of smart meters sample for the purpose of listing on the Eskom Technically Evaluated and Accepted Product (TEAP) database		
Deadline for submission	03 October 2025	At (South African Standard Time)	10:00 am
Tender Office address	The smart meters samples and associated manuals, certificates and test reports should be submitted directly to the Eskom Research, Test and Development center in Rosherville . It is compulsory to make arrangements with the contact person before sample are delivered.		


Eskom Holdings SOC Ltd ("Eskom") invites you to submit an:

- **Expression of interest (EOI)** to indicate your interest with the required technical information specified in the Eskom standard, 240-126910106 – *Particular requirements for Eskom smart metering system* as well as the *manufacturer's ISO 9001:2015 certificate*.
- The expression is required for the products stated in Annexure B
- The information provided in the Expression of Interest (EOI) will be used to perform technical evaluations of the products against the technical evaluation criteria documented in Annex B (3)
- Products that meet the above requirements will be listed on Eskom Distribution's Technically Evaluated and Accepted Products (TEAP) Database (DB).
- The TEAP DB will be used to support procurement transactions, and for Distribution network projects as explained in the TEAP Standard, 240-170001064, *Governance Rules and Processes for Managing the Technically Evaluated and Accepted Products (TEAP) Database (DB) in Eskom Distribution*.
- This EOI is a stand-alone information-gathering and market-testing exercise, intended only to perform technical evaluation and list accepted products on the TEAP DB.

Eskom has delegated the responsibility for this **EOI** 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
Salebona Kutumela	Procurement Manager		29/08/2025
Telephone number	+27 11 516 7860	Fax and/or e-mail address	kutumesc@eskom.co.za

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Date: 29 August 2025

Name: Thuso Malatjie
Enquiries: 014 762 6455
malatjtu@edskom.co.za

EXPRESSION OF INTEREST (EOI) FOR SMART METERS.

Eskom Holdings SOC Limited ("Eskom") invites you to submit an expression of interest for smart meters.

Please note that this EOI is not a formal enquiry but an information gathering exercise and may not lead to a competitive process.

The information from this EOI will be used to perform technical evaluations of the products. Products that meet the requirements will be listed on Eskom Distribution's Technically Evaluated and Accepted Products (TEAP) Database.

Non-participation in this EOI process does not preclude further participation in subsequent procurement processes and engagements with Eskom.

Suppliers are required to submitting smart meters sample to Mr. Shawn Papi at Eskom Research, Testing and Development centre (Rocheville) as and when they are ready to submit samples provided prior arrangements are made with Mr. Shawn Papi when the samples are ready and the samples are submitted before the cut-off date **(03 October 2025 at 10:00 am)**

If you intend on participating in this EOI process, you are requested to complete the attached Acknowledgement Form and submit to <https://etendering.eskom.co.za> by 03 October 2025 at 10:00. Any queries pertaining to this EOI should be submitted to Thuso Malatjie at the contact details mentioned above.

We are looking forward to receipt of your response

Yours faithfully



Procurement Manager

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ANNEXURE A - ACKNOWLEDGEMENT FORM

PART B RESPONSE SHEET IN TERMS OF A REQUEST FOR AN EXPRESSION OF INTEREST /REQUEST FOR INFORMATION To be completed by the supplier			
To	Eskom Holdings SOC Ltd	Date	29 August 2025
Attention	Thuso Malatjie		
Tel no	014 762 6455	Fax no and /or e-mail address	Malatjitu@eskom.co.za
Sender (Contact Person)		e-mail address	
Address			
From (the registered full legal name of the company)			
Description of the works/goods/services	Submission of smart meters sample for the purpose of listing on the Eskom Technically Evaluated and Accepted Product (TEAP) database		
Brief description of previous experience and Description of the solution that you can offer			

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**EXPRESSION OF INTEREST:
REQUEST FOR AN EXPRESSION OF INTEREST (EOI) REGARDING SMART METERS**

We are in receipt of Eskom Holdings SOC Limited's Expression of interest (EOI) dated 29 August 2025.

Please find attached our response to the information requested.

We confirm the following (please mark the appropriate response):

No	Statement	Yes	No	Comments
1	We are interested in submitting a response in terms of Eskom's EOI process requirements.			
2	We have noted the deadline (cut-off date) for the submission of smart meters samples.			
3	We intend to submit the information in the name of the organisation stated above.			
4	We would like to receive all further information and correspondence at our e-mail address as above.			
5	We have read and understood all the "important notes" above, particularly with regard to non-confidentiality of information submitted as part of a response to this EOI.			

We accept the terms and conditions which govern this process.

Yours faithfully

For the Respondent

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ANNEXURE B: INFORMATION SUBMISSION SCHEDULE

	MATERIAL DESCRIPTION	INFORMATION SUBMITTED (Yes/No)	SAMPLE SUBMITTED (Yes/No)
1.	Single Phase DIN Rail PLC Split Smart Meter with CIU		
2.	Single Phase BS Rail PLC Split Smart Meter with CIU		
3.	Single Phase BS Split Smart Meter with CIU + Internal/Plug-in GSM Modem		
4.	Three Phase BS PLC Split Smart Meter with CIU		
5.	Three Phase BS Split Smart Meter with CIU + Internal/Plug-in GSM Modem		
6.	Gateway/Data Concentrators (DCU) + Internal/Plug-in GSM Modem		
7.	Customer Interface Unit		

NB: One sample per smart meter option offered must be submitted for evaluation and testing. All samples not meeting the set criteria will be returned on request (arrangements to be made at the time). Samples that met the set criteria will be retained for reference purposes for the period the meter will be considered acceptable.

1. Requirements

- 1) The supplier shall provide the samples as per the above table:
- 2) Details regarding the make, model number and firmware version of all items offered shall be provided
- 3) Data sheets, brochures and detailed product manuals for all offered devices.
- 4) All submitted test samples shall be configured with the following LLS password (Table 1 below).

Table 1: DLMS configuration

Security parameter	Value	DLMS Client
LLS password	12345678	1 (Management)

- 5) The STS application layer implemented for all submitted test samples shall be configured as stated below to enable the use of test tokens:
 - A Meter Interface connected to a meter loaded with the DITK 1 as specified in Table1 below. The meter's entire TID stack shall, with the exception of the tokens used to fill up the meter with credit, be preloaded with the TID 5A45A116; this TID corresponds to the token issue date and time of **2025-04-01 09:05**.

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- If the payment meter stores its manufacturing date in non-volatile RAM and uses this to determine the validity of a token, then the meters submitted must have this date set to **1st January 2014 00h00.**
- The meters to be supplied are listed in Table 2 below.

Table 2: STS parameters

DUK1	ABABABABABABABAB
Algorithm Type	EA07
Tariff Index (TI)	01
Key Revision no.	1
Meter no.	Defined by smart meter manufacturer.
Current Limit	20 A or 60 A (for single phase meters) 80 A (for polyphase meters)

- 6) All samples NOT configured according to Table 1 and 2 above shall be disqualified from further testing.
- 7) HDLC optical port is used for PHASE II testing. This port is mandatory for all smart meter samples, IEC 1107 (Mode E) shall not be accepted for PHASE II testing
- 8) Where a data concentrator/gateway sample is submitted, the following information shall be declared:
 - 3-PLC PSK or BBPLC authentication / encryption keys
 - G3-PLC/BBPLC MAC address (could be IP address for BBPLC)
 - G3-PLC frequency (FCC)
 - Data concentrator/gateway web interface log in credentials (at least with administrator account)

2. Security keys for testing for DLMS Security Suite 0

Security parameter	Default value (hex)
LLS default password	12345678
Global Authentication key	0xD0 D1 D2 D3 D4 D5 D6 D7 D8 D9 DA DB DC DD DE DF
Global Broadcast key	0x0F 0E 0D 0C 0B 0A 09 08 07 06 05 04 03 02 01 00
Global Encryption key	0x00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F
Master key	0X00 11 22 33 44 55 66 77 88 99 AA BB CC DD EE FF

3. Testing approach

Each smart meter sample's communication interface is connected to a common DLMS Client (i.e., a software application that simulates a Head End System or Central Acquisition System or Data Concentrator).

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The simulated system then generates a sequence of DLMS messages that invoke the smart meter's functionality that supports Eskom test cases specified in Table 3 below.

This enables the evaluation team to determine the smart meter's compliance to the Eskom's smart meter specification at use case level and, at communication protocol level.

The DNV GV Test Facility is used as the common DLMS Client (or simulated Head End System), informative reference [1].

Primarily, the HDLC optical port is used for PHASE II testing. This port is mandatory for all smart meter samples, IEC 1107 (Mode E) will not be accepted for PHASE II testing.

The Management Client association is used over the HDLC optical port to ensure access to the entirety of the object model implemented in the smart meter under test.

For test case number TC01, a G3-PLC/BBPLC sniffer is used to monitor and capture G3-PLC/BBPLC traffic between the smart meter under test and its data concentrator. The evaluation team uses the captured G3-PLC traffic to determine compliance with security requirements defined in the G3-PLC/BBPLC specification.

The tests defined for below shall be conducted by the Eskom technical team and not the tenderers.

Table 3: DLMS Test Cases for functional evaluation.

Test Case No.	Test case name	Description	References
TC01	Meter registration	Test that meter implements all COSEM objects and functionality that supports automatic meter registration. Check that <i>System Title</i> and <i>COSEM Logical Device Name</i> formats are according to IDIS 2. Check that DLMS security is implemented in meter firmware is at least <i>Suite 0</i> . For Items 1, 2 and/or 4 only - Check that smart meter and Data Concentrator comply with G3-PLC specification join process.	Eskom 240-126910106 clause 3.3.2 and 3.3.3
TC02	Remote tariff programming	Load Eskom approved tariff (e.g., Homeflex) into meter, and set energy rate (Rand/kWh) in prepayment charge tables according to tariff.	Eskom 240-126910106 clause 3.3.2 and 3.3.3
TC03	Meter reading (On demand)	Read import and export total energy registers and rate registers. NOTE 1: At its discretion, the Eskom technical team may inject import and export energy into smart meter to verify four quadrant measurement capability.	Eskom 240-126910106 clause 3.3.2 and 3.3.3 DLMS UA 1000-1 Part 2 clause 4.6.6

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Test Case No.	Test case name	Description	References
		<p>Read available credit.</p> <p>Read STS data elements (i.e., DRN, TI, KRN, KT and SGC) from IEC 62055-41 attributes IC.</p> <p>Read Load Profile 1 and Load Profile 2, default profile entries, capture objects and capture period.</p> <p>Set LP1 and LP2 integration period to 5, 10-, 15-, 30- and 60-minutes capture period.</p>	
TC4	Meter reading (For billing)	Read Billing Profile, default profile entries, capture objects and capture period.	Eskom 240-126910106 clause 3.3.2 and 3.3.3
TC5	Disconnection and reconnection	<p>Disconnect meter and re-connect it. NOTE 2: Disconnect Arbitrator or IDIS 2 disconnector objects may be implemented.</p> <p>Set smart meter power limit and verify that it disconnects when limit is exceeded.</p>	Eskom 240-126910106 clause 3.3.2 and 3.3.3
TC6	Clock synchronisation	Synchronize meter's clock to a preselected date and time.	Eskom 240-126910106 clause 3.3.2 and 3.3.3
TC7	Quality of supply reporting	Test that meter implements all objects and functionality that supports quality of supply reporting.	Eskom 240-126910106 clause 3.3.2 and 3.3.3
TC9	Firmware update	Test that meter implements all objects and functionality that supports firmware upgrade.	Eskom 240-126910106 clause 3.3.2 and 3.3.3
TC10	Meter supervision	Test that meter implements all objects and functionality that supports event / alarm detection and reporting.	Eskom 240-126910106 clause 3.3.2 and 3.3.3

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Test Case No.	Test case name	Description	References
TC11	Consumer information	Check that CIU provides relevant information during all test cases.	Eskom 240-126910106 clause 3.3.2 and 3.3.3
TC21	Prepayment	Change meter to post-payment (credit) mode. Change meter to prepayment mode (monetary currency and energy). Insert STS credit token via communication interface (monetary and energy credit). Set period and amount for standing charge collection.	Eskom 240-126910106 clause 3.3.2 and 3.3.3 Annex B and C herein
TC100	Object list	Read meter's object list using <i>Management Client</i> and check that all objects specified in Eskom 240-126910106 clause are implemented in the meter firmware.	Eskom 240-126910106 clause 3.3.3
TC200	Data concentrator administration	Log into data concentrator web interface using admin password via local interface (e.g., LAN port). View list of meters connected to data concentrator.	

4. Samples delivery Address

Mr. Shawn Papi

Eskom Research, Testing & Development
Lower Germiston Rd,
Rosherville
Johannesburg, 2095.

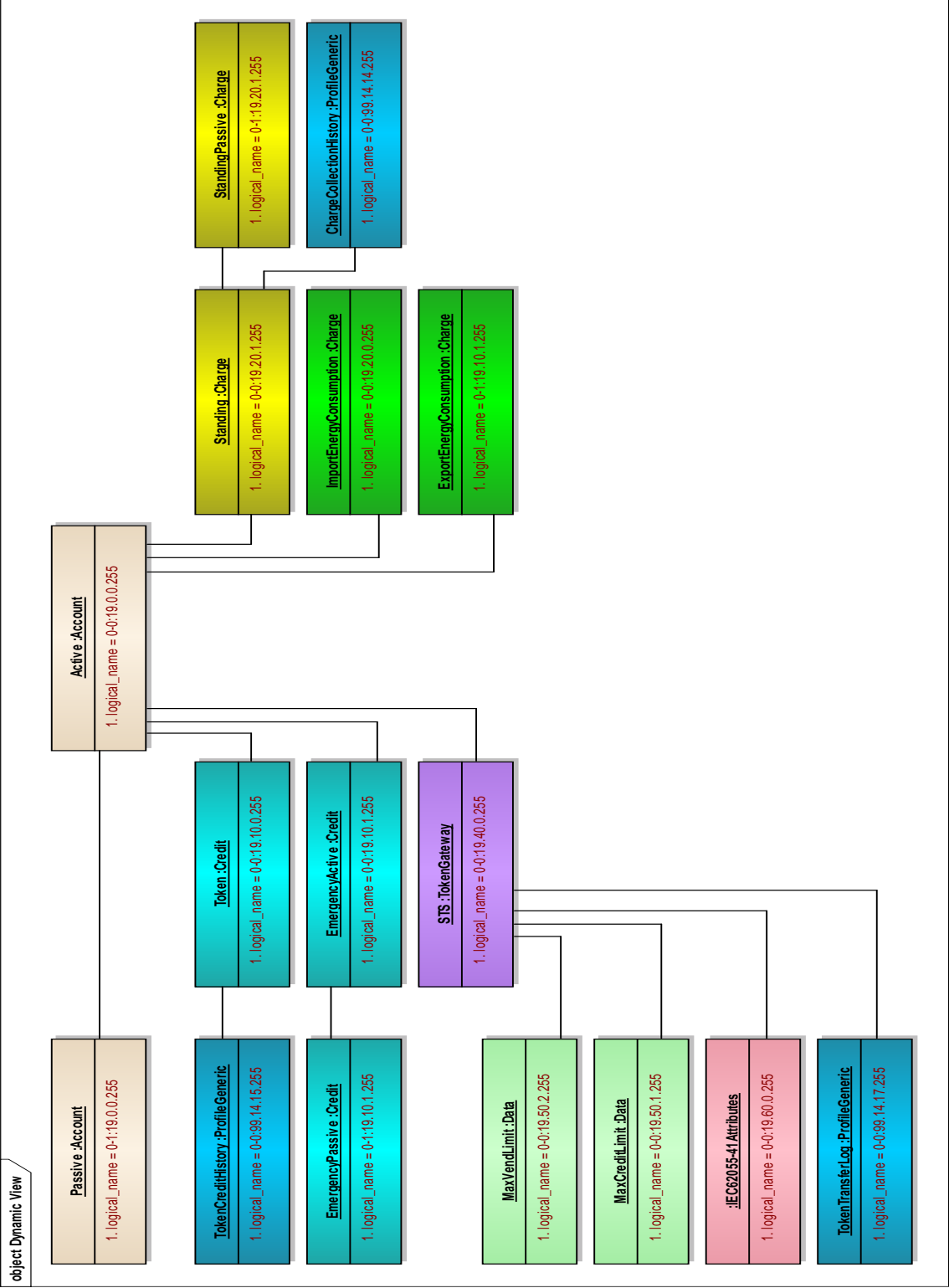
E-mail address: papiks@eskom.co.za

SAMPLES MAY BE DELIVRED NO LATER THAN 03 OCTOBER 2025 at 10:00AM

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Annex C – Payment metering object model (Eskom 240-126910106)



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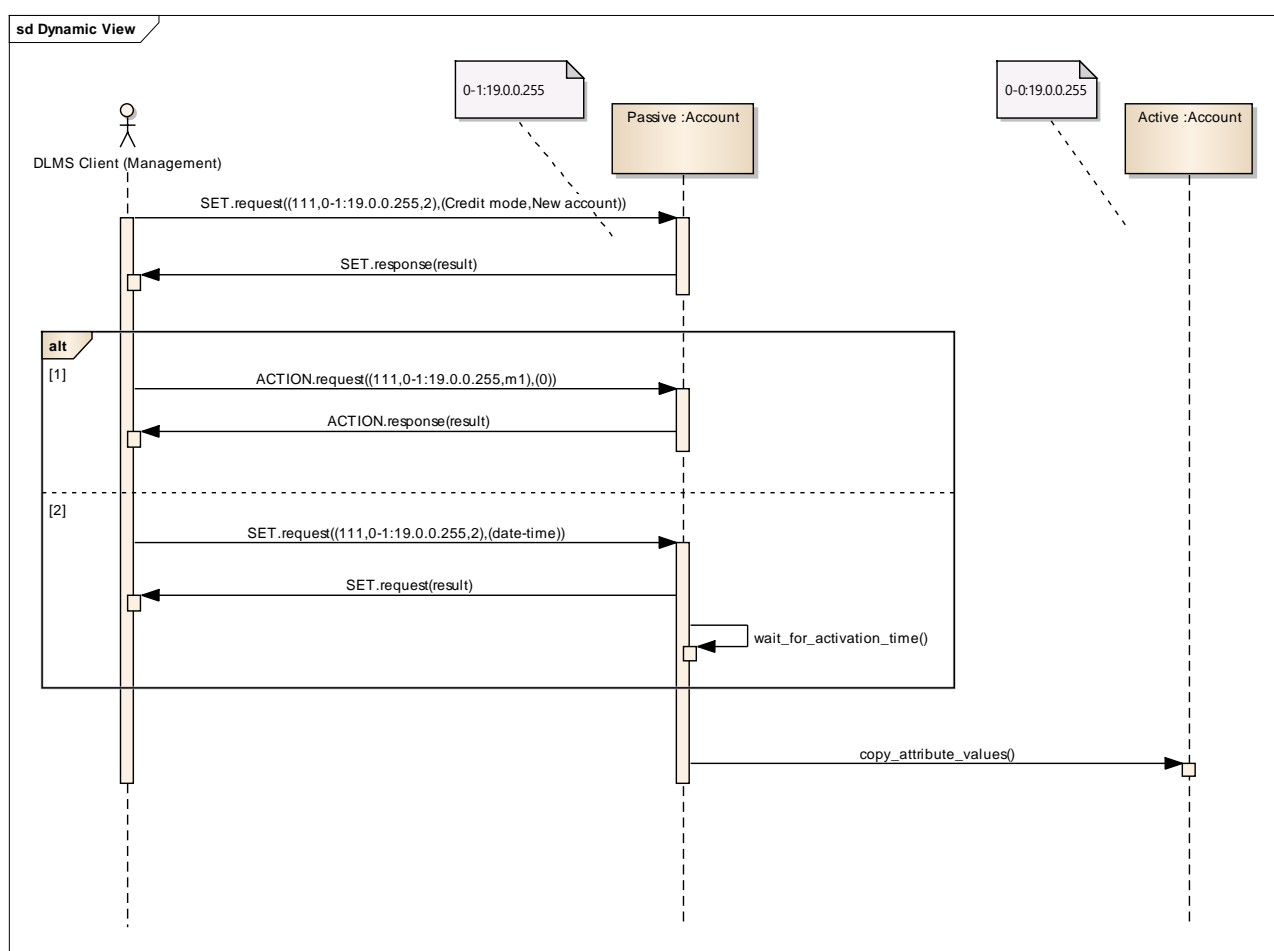
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Annex D – Payment mode change

When either (1) a DLMS command successfully sets the 'passive' Account object's `account_activation_time` (attribute ID 13, OBIS code 0-1:19.0.0.255) to 0x000000000000000008000FF or (2) the ESME's clock reaches the value in that attribute or (3) the `activate_account` method is invoked, the smart meter shall not activate *Account passive* object, as detailed in the Blue Book, but shall set the attributes in the *Account* object (OBIS code 0-0:19.0.0.255) as follows:

- set the `payment_mode` part of the `account_mode_and_status` attribute (attribute ID 2) to the `payment_mode` value in the *Account passive* object; and
- set each of the other static attributes (as defined in the Blue Book) to the corresponding value in the *Account passive* object.



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Annex D – Certificates & Reports required for listing of products on TEAP database.

DLMS UA certificate (for Eskom approved firmware version)
G3-PLC or BBPLC certificate (for meters with G3-PLC/BBPLC modems only)
STS certificate for currency and energy (for Eskom approved firmware version)
IDIS 2 certificate or object model listing (for Eskom approved firmware version)
Type test reports (SANS/IEC62055-31 or SANS1524-1 and SANS/IEC 62053-23 or SANS/IEC62053-24)
ICASA Radio Equipment Type Approval Certificate (for Cellular Network modem)

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