

INVITATION

NTCSA cordially invites all **Suppliers of PTM&C technology** to present at the **PTM&C Supplier Technology Engagement (STE) Forum**

For the years 2025-2026



■ Topics:

- Protection
- Telecommunications
- Metering
- Control and Automation
- Physical Security
- DC & Auxiliary
- Additional PTM&C Technology Topics

■ RSVP:

STEFORUM@ntcsa.co.za (For PTM&C technology only)

- Power system protection refers to the arrangements for the detection of faults and other abnormal conditions in a power system, for enabling fault clearance, for terminating abnormal conditions, and for initiating signals or indications. A fuse is the simplest example of a protective device.
- In the context of a substation, protection functions are undertaken using replicated current and/or voltage signals provided by instrument transformers, or by mechanical indicators on the plant (e.g., temperature or flow rate sensors). Processing of the data is undertaken by protective relays, also termed Intelligent Electronic Devices (IEDs), which respond in a pre-determined manner and issue automatic controls to circuit-breakers and other mechanical devices.
- Each type of primary equipment bay (e.g. a feeder or transformer) will be protected by a range of functions, each tailored to optimally detect a specific type of fault scenario. Protection functions may also be duplicated for redundancy purposes. The collection of protection functions and the relays performing them that are associated with each bay are referred to as a “protection scheme”. The protection scheme normally also displays measured values and provides manual controls for certain functions.

The telecommunications platforms and systems consist of the following:

Power-Telecoms: Teleprotection and power line carrier equipment including frequency management and implementation.

Fibre Networks and Infrastructure: All optical fibre installation for both Teleprotection and Operational Technology services including Telecommunications.

Transport Network: Aggregated data traffic speeds >2 Megabits with future Optical networks capable of up to 2.5 Gigabit/s in certain parts of the country.

Voice and Data Network: Voice, video and low speed data services aggregated over the transport network.

Last Mile Networks: Connectivity technologies to the data networks that range from ADSL, Fibre, Microwave Point-to-Point Radio links and Field Area Networks (FANs) such as GSM, GPRS, VHF and UHF DMR.

Operational Support Systems and Cyber Security: Management systems associated with the above platforms are used to monitor and maintain the performance and cyber security related to telecommunications services.

Regulatory and Frequency Management: Functions including processing of frequency applications for all radio-based communication technology, liaison with the Independent Communication Authority of South Africa, and critical review of Telecommunication infrastructure cyber security needs by OT Telecommunications security.

Metering covers technology management and life cycle management of the following equipment:

- Power Meters
- Modems
- Meter kiosk & S/S panels
- Transducers
- Power Quality instruments
- Communication interfaces and mediums
- CT's, VT's and CT/VT combination units (indirectly)
- DAS

Control and Automation covers the field traditionally referred to as Telecontrol and SCADA (Supervisory Control and Data Acquisition) which refers to the control of operational equipment at a distance using a combination of telemetry (acquisition and transmission of signals from a remote location) and telecommand (the transmission of signals to initiate, modify or terminate functions of distant equipment).

Substation Automation enables peer-to-peer communication of data between Intelligent Electronic Devices (IEDs) in the substation, to enable the operation of the IEDs communication of data between IEDs and local users in the substation, e.g. operational and engineering HMIs dissemination of substation data to enterprise users to perform the protection, control and monitoring of plant, as well as engineering, event and plant condition analysis.

The major components of Substation Automation are:

- The Substation Gateway,
- The Substation HMI,
- Substation Networking Devices,
- GPS Time Synchronization devices,
- Engineering Server, Data Server and
- Data Concentrator within the Substation Automation area

Secondary plant Physical Security deal with the integrated electron security measure used for site access and security incident management. It includes the following technologies:

- Integrated access control,
- Alarm Systems,
- CCTV systems
- Public announcement system,
- Intrusion detection, not limited to non-lethal fences, vibration sensors etc.
- Physical Security Information Management Systems.

The DC & Auxiliary include the technology management of the following:

- Energy storage technologies – small, medium, and large-scale energy storage systems for the provision of backup power supplies at all Eskom sites.
- Power electronic converters, e.g., rectifiers (switched mode and phase-controlled), DC-DC converters, DC-AC converters, and Uninterruptible Power Supplies (UPSs).
- Renewable energy systems for telecommunications sites.
- AC and DC Distribution Boards.
- Standby generators used for extended backup power supplies.

Industry leaders and SMEs are encouraged to educate the technical audience at the forum on various technological advances in PTM&C engineering that could benefit power utilities such as Eskom or the Southern African electrical supply industry.

For example, but not limited to:

- Satellite, 5G, undersea and terrestrial fibre optic telecommunications technologies.
- Smart Grid and power system Digital Transformation: latest research and developments.