

Responses to bidders clarification are highlighted in yellow.

**5E-34611 PROCUREMENT OF GRID OPERATION SOLUTION FOR ENERGY MANAGEMENT
DIRECTORATE FOR A PERIOD OF TWENTY-FOUR MONTHS**

Bidder 1

Please receive our response to your questions.

1. "Is there an existing SCADA system that will be responsible to communicate with the field devices, and OMS shall integrate with it? If not, Does this mean the project requires SCADA/OMS solution?

The project requires a full SCADA system to be provided by the bidder as per clause 3.5.2 of the technical specification and refer to the Annexure

If yes, What is the system version, vendor, status, the equipment covered by this SCADA, and Does it support ICCP?" **N/A – refer to response above**

2. What are the protocols used for establishing the communication to the RTUs?

Please refer to the technical specification clause 3.5.2

3. How many customers "End points" in the network ?

Please refer to Table 1: EE Transmission and Distribution Assets. Typical point count for a modern MV DSS (ICAP substation) with 10 panels inclusive of the bus section and battery charger is 265 status points, 32 analogues, 11 double point control (one control point is a spare),

4. How many MV feeders in the network?

Please refer to Table 1: EMD Transmission and Distribution Assets. The typical MV DSS ranges from 3 to 12 feeders

5. "How many existing SCADA points currently?

Total Number of HV SS is 169 and Total MV SS 839 and refer to response in point 3 above to calculate the total points.

What is the expansion rate for the SCADA points? Is the plan to integrate 100% of the points in case ICCP is used ?" ?

The project requires a full SCADA system to be provided by the bidder and wrt ICCP refer to clause 3.4 of the technical specification.

6. What is the current version of GIS systems? Is the modelling follow SE standards and recommendations?

We currently utilise the Esri ArcGIS Pro Utility Network version 3.5

7. In the Key minimum requirement, It is stated the system shall have distributed energy resources. What are the use cases required for this. Is it going to be a future extension on the top of OMS but it should be a function activated on the same platform ?

It is an added feature to be included for future renewable energy expansion to accommodate the IPP.

8. What is the quality and readiness of the data on the LV side ? **60 to 70 % of customer data represented on the GIS.**

9. Is the plan to start modelling 100% of the network model, or to do it in phases ?

The objective is 100% rolled out in phases

10. Is it required to have a management zone which is responsible for managing the HW infrastructure and backups, or internal IT system could connect to the OMS system and do this job?

The OMS shall reside on the OT Network and managed independently of IT systems.

11. Is it required to include web users **? Yes** If yes, Are 20 concurrent users sufficient ?

We have in-station and out-station resources that will utilise the system at different time intervals but will require continuous access. In-station approximately 15 control officers, 15 technicians and 6 engineers.

Approximately 15 Out-station resources inclusive of switching officers, faults men and superintendents

12. How many field crews available and require the field client application ?

as per response in 11 above

13. Is there any use case for Integrating the OMS system with any corporate or IT system in eThekwin network?

Please refer to section 2: Scope of supply and services in the technical specification. Customer facing interfaces for example Oracle CX, and planning for real-time data, ERP

14. WebCC is the tool that allows customers to report interruptions, and call takers to pass the data into OMS, How many call takers is required to work concurrently? **10 to 15**

Bidder 2

Please receive our response to your questions.

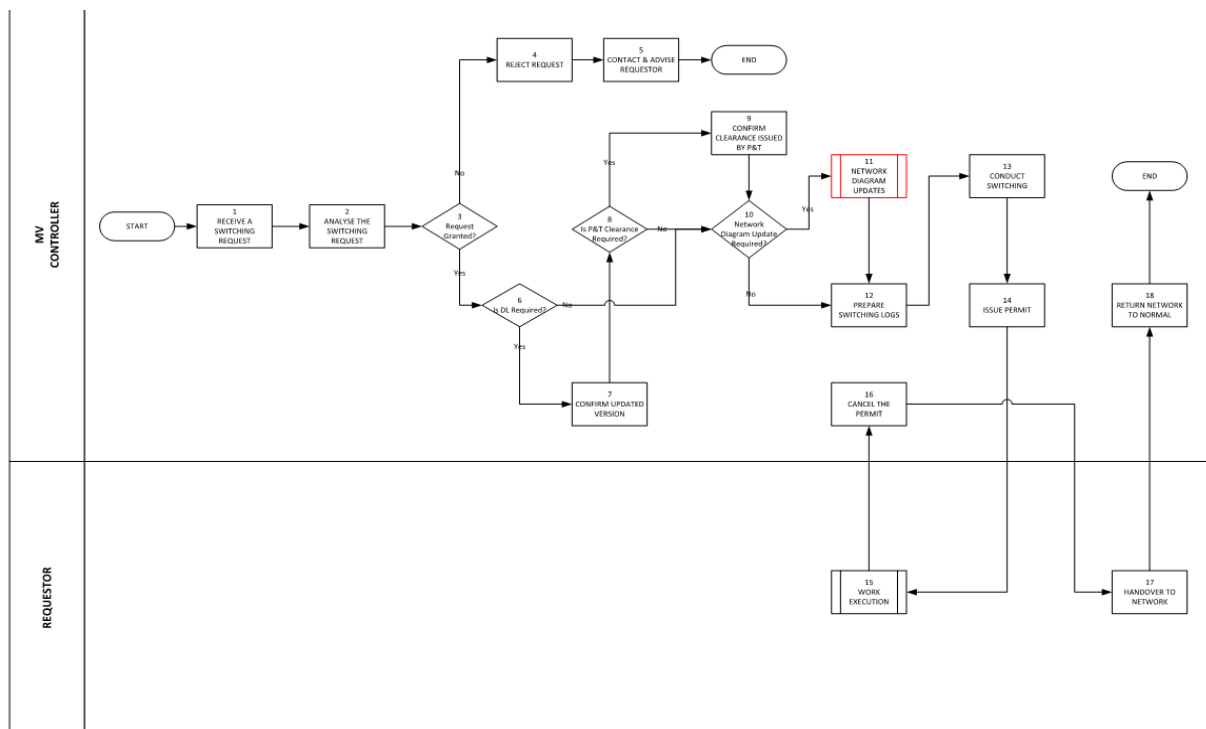
1. Existing Grid Operation Environment

1.1 Can eThekwini confirm the current OMS, SCADA and DMS platform vendors, versions, and year of implementation currently supporting Grid Operations?

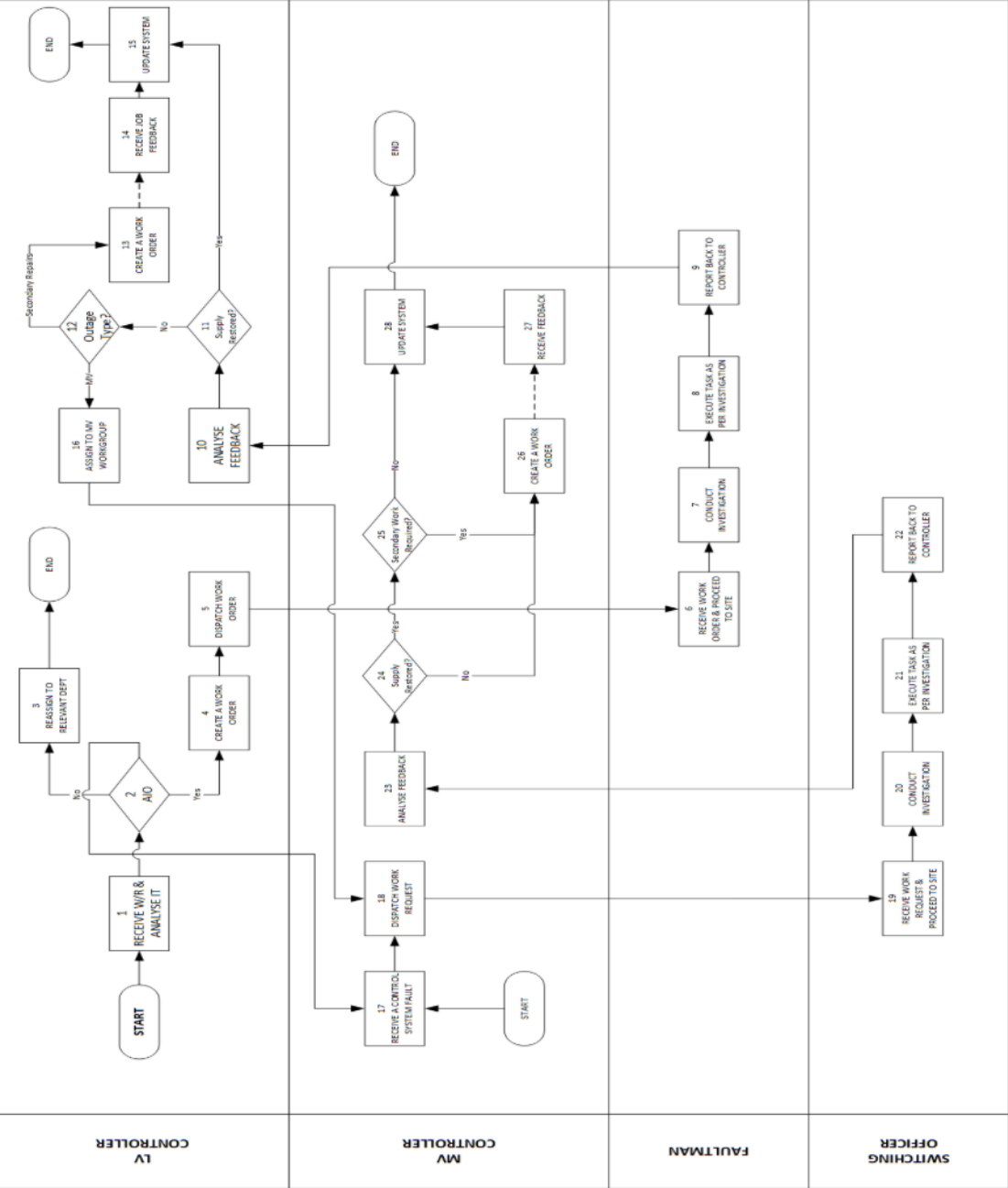
Advanced Control Systems SCADA System (ACS Prism)

1.2 Please provide a high-level overview of the current outage management process, including the primary sources used for outage detection (SCADA alarms, AMI last-gasp notifications, customer calls, field reports, or other methods). **Primary sources used for outage detection include: Customer calls, SCADA Alarms, input from customer facing interfaces such as; WhatsApp, eThekwini website and Mobile application**

Planned Outage process:



Fault Restoration Process



2. GIS, Network Model and Data Readiness

2.1 Can eThekweni confirm the current completeness of the GIS network model, specifically the approximate percentage of the MV and LV network that is modelled with connectivity, asset attributes and feeder associations fully maintained? **MV approximately 95% and LV 80%**

2.2 Can eThekweni confirm whether customer-to-meter-to-transformer connectivity information is currently available and identify the system(s) of record where this information is maintained?

The GIS contains this information.

2.3 Can eThekweni confirm the GIS platform(s), version(s), and associated network management applications currently in use (e.g., Esri ArcGIS Utility Network, ArcFM XI, ArcFM, GE Smallworld, Intergraph G/Technology, or other)? **Esri ArcGIS Pro Utility Network version 3.5**

Please also indicate whether any GIS upgrades or migrations are planned during the implementation period. **No upgrades planned during this period**

3. AMI and Smart Meter Integration

3.1 Can eThekweni confirm the AMI / Smart Meter platform vendor and version currently deployed? **Landis+Gyr**

3.2 Approximately how many of the 900,000 customer meters are AMI-enabled and capable of transmitting Power Down / Power Up events for outage detection purposes? **TBC**

4. SCADA and Field Device Environment

4.1 Please confirm the approximate number of substations, feeders, reclosers and field devices that are currently SCADA-enabled and actively monitored or controlled from the control centre.

Total Number of HV - 169 substations

Total MV – 839 substations

MSS – 300 SCADA Ready (require commissioning)

RMU – 300 SCADA Ready (require commissioning)

Brick built substations – 400 to be refurbished

4.2 Can eThekweni identify any field devices or systems that utilize protocols other than DNP3, IEC 60870-5-104 or IEC 61850 and will require integration with the proposed solution? **The de-facto protocol is DNP3/IP**

4.3 Please identify any external organizations or control centres that require IEC 61850 or other real-time operational data exchange interfaces. **We do not have any external organizations or control centres that require IEC 61850.**

4.4 Can eThekweni confirm whether the successful vendor is expected to replace the existing SCADA platform as part of the Grid Operation Solution implementation, or whether the proposed solution should integrate with and leverage an existing SCADA environment?

The bidder is expected to replace the existing SCADA platform as part of the Grid Operation Solution implementation

5. DER and Advanced ADMS Functions

5.1 The tender references Distributed Energy Resources, including solar PV, battery storage, embedded generation and microgrids. Can eThekwini provide current and forecast quantities of DER assets expected to be monitored or managed through the solution?

Current estimate is approximately 2000 installations, forecast is customer dependent and difficult to estimate at this stage.

5.2 Can eThekwini confirm which advanced capabilities are expected to be operational at initial go-live versus enabled through subsequent rollout phases?:

Please note, the functions are not listed in the order of precedence. The phases will be agreed upon during the SLA between the successful bidder and EMD.

- FLISR – **Go Live**
- Volt/VAR Optimization (VVO) - **Phases**
- Conservation Voltage Reduction (CVR) - **Phases**
- Predictive Outage Analytics – **Go-Live**
- DER Management - **Phases**
- Predictive Maintenance Analytics – **Go Live**
- OMS – **Go Live**

6. Historical Data Migration

6.1 Please confirm the historical data expected to be migrated into the new solution, including:

- Historical outage records - **no migration required**
- Switching history – **Currently manually captured and no migration required**
- Customer interruption history - **no migration required**
- SCADA historical data and Event and alarm history – **SCADA Data migration to be determined at SLA**

7. System Sizing and Operations

7.1 Please provide the expected number of concurrent users for the following user groups:

- SCADA Operators – **20 users per shift**
- OMS Operators – **20 users per shift**
- Dispatchers – **20 per shift**
- Call Centre Agents – **20 per shift**
- Engineering Users – **20 users**
- Read-Only Users – **20 users**
- Training Simulator Users – **30 users**

7.2 Please provide the approximate annual volume of:

- Outage incidents – **Approximate outage incidents; MV: 2200 incidents over 6 months, LV: 40 000 over 6 months**
- Switching orders - **60 to 80 per week**
- Planned outages – **60 per week**
- Emergency switching activities – **5 per year**

7.3 Can eThekwini provide examples of major outage events experienced during the past three years, including peak affected customer counts and peak outage call volumes?

Major Outages are due to equipment failures and can affect large number of customers

Outages are not necessarily logged on call volumes but additional customer input interfaces such as the EMD WhatsApp, mobile app and website for fault logging

8. Cybersecurity and Compliance

8.1 Beyond the standards referenced within the tender specification, are there any municipality-specific cybersecurity, penetration testing, vulnerability management or OT security requirements that must be incorporated into the solution?

Additional information shall be supplied to the successful bidder and the Grid Operation System shall be designed in accordance with the relevant standards specified in the technical specification.

9. Project Delivery and Acceptance

9.1 Can eThekwini confirm the minimum functional capabilities expected for initial operational go-live, and whether advanced capabilities such as DER Management, VVO/CVR and Predictive Analytics may be enabled through a phased rollout after core OMS/SCADA/DMS go-live?

Roll out shall be in a phased approach as per question 5.2 above.

9.2 Can eThekwini confirm whether a dedicated municipal project team, including business representatives, GIS resources, SCADA resources and operational subject matter experts, will be assigned to support project execution, testing and user acceptance activities?

Yes, A dedicated team will be assigned to this project.

10. Can eThekwini confirm whether the requirement for a Microsoft-centric platform refers to the municipality's preferred infrastructure standards and operational environment, or whether specific Microsoft technology components are mandated as part of the proposed solution architecture? **Please refer to the technical specification, clause 1.2, clause 3.5.2 Application Services , clause 3.5.2.4 Historical Services, clause 3.5.3.1 Architecture principles and references made to the Microsoft platform throughout the technical specification document.**

11. Can eThekwini confirm whether solutions deployed on Linux-based server infrastructure while integrating with Microsoft Active Directory and enterprise services would be considered compliant with the Microsoft-centric platform requirement? **Linux Deployed ADMS will not be accepted, Please refer to the technical specification.**

Bidder 3

Please receive our response to your questions.

- 1.) Would eThekwini consider a Linux deployed ADMS solution integrated to Microsoft Active Directories? Would this be acceptable?

Linux Deployed ADMS will not be accepted, Please refer to the technical specification

- 2.) Would a 2 week extension be considered?

Unfortunately, due to project constraints we are unable to grant an extension on the bid closure.

Bidder 4

Please receive our response to your questions.

- What SCADA System is currently in use and what version. Is this the latest release of the software? **ACS Prism- Advanced Control Systems**
- What functions are available in the SCADA system? **N/A please see response below.**
- Will a new SCADA be required, or only integration with the existing?

The project requires a full SCADA system to be provided by the bidder as per clause 3.5.2 of the technical specification and refer to the Annexure.

How many Fieldworkers will require access to a Mobile Fieldworker Application?

Total of 130 users

The following is an approximation: 20 switching officers, faults men 60 per shift and 50 staff at depots.

- Please confirm that you we do not have to supply the following:
 - Mobile devices – **Not required by the bidder**
 - Internet Service Provider Contracts **Not required by the bidder**