

Ref:	NR/L3/ELP/27406/MOD D
Issue:	1
Date:	3 December 2011
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Engineering Deliverable Requirements for Electrical Power Asset Design

Module D: SCADA

1 Typical SCADA Requirements

Only the appropriate items described in clauses 2 to 4 should be specific in the PRS along with the requirements identified in Module A. Additional requirements may be specified in the PRS for unusual or complex schemes.

2 SCADA Form A

The required items may be incorporated into the associated GRIP 3 option selection report instead of providing standalone deliverables. The level of detail for each item should only be sufficient to satisfy the approval in principle of single option selection.

a) SCADA System Conceptual Design.

Design principles, including details of hardware, software, operating system, communication system protocol and human machine interface requirements.

Masterstation

- Outline architectural diagram
- Database principles (I/O naming/commoning)
- Graphics/mimics (typical/novel principles)
- Interfaces
 - o Data communications (equipment/protocol and polling method)
 - o Physical interfaces
 - o Electrical interfaces
 - o Training and ancillary system updates
- Changes from current SCADA system operational principles
- Changes from current system maintenance principles
- System or new equipment driving changes

Outstation

- Outstation requirements, expandability and environmental conditions
- Input/Output list including commoning principles
- List and define function of controlled equipment.
- Interfaces
 - o Data communications (equipment/protocol)
 - o IEDs (equipment/protocol)
 - o Ancillary equipment

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- o Point to point equipment
- o Controllable devices
- o Transducers (for analogues)
- o Power

Where it is proposed to extend an existing SCADA system, a detailed survey of the system including a condition/capacity report should be provided, together with confirmation that the project requirement is within the existing systems capability.

Data and Voice Outline Design Requirements

The design should include details of the proposed data and voice cable networks, operating node and line driver equipment. Evidence that the network meets the requirements given in the SCADA system conceptual design for the communications system should also be provided. Where it is proposed to extend an existing SCADA system communications network, a detailed survey of the existing installation including a condition report should be provided, together with justification for the decision to extend it.

The acceptance of the data and voice circuits should be accepted by a Telecoms PE in accordance with NR/L2/TEL/30022 Engineering Assurance Arrangements for Communications Engineering Schemes and Services.

3 SCADA Form B

- a) Terminal Marshalling Diagrams (Distribution equipment).

To be provided as part of the AC Networks or DC Networks Form B.

- b) Serial Data Schedules.

To be provided as part of the AC Networks or DC Networks Form B.

- c) SCADA System Detailed Design.

Masterstation

- SCADA hardware (new or updated)
- Functionality (new or updated) – functions of the system that are new or novel (i.e. not configuration)
- Identification of network management system (NMS) updates/reconfiguration/data changes (existing systems – where applicable)
- Identification of distribution management system (DMS) updates/reconfiguration/data changes (Note DMS is to be implemented on new SCADA systems)
- Architectural drawings