

**Domain****Instrumentation****Title:****Demonstrate Knowledge of Supervisory Control and Data Acquisition (SCADA)****Level: 3****Credits: 3****Purpose**

This unit standard specifies the competencies required to demonstrate Knowledge of Supervisory Control and Data Acquisition. This unit standard is intended for those who work instrumentation industry.

**Special Notes**

1. Entry information:
  - Prerequisite
    - *Unit I&C21 - Demonstrate knowledge of Industrial communication*
2. Assessment evidence may be collected from a real workplace or an appropriate simulated realistic environment in which Instrument and Control operations are carried out.
3. All inspection, operation and maintenance procedures associated with the use of tools and equipment shall comply with manufacturers' guidelines and instructions
4. Glossary of terms:
  - *Specifications'* refers to any, or all of the following: manufacturers' specifications and recommendations, workplace specific requirements.
5. Regulations and legislation relevant to this unit standard include the following:
  - Labour Act 2007, No. 11, 2007
  - Regulations relating to the health & safety of employees at work under Schedule 1 (2) of the Labour Act No.11 of 2007
  - And all subsequent amendments.
6. Performance of all elements in this unit standard must comply with industry standards.

**Quality Assurance Requirements**

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority and the Namibia Training Authority. All approved unit standards, qualifications and national assessment arrangements are available on the Namibia Training Authority website [www.nta.com.na](http://www.nta.com.na).

## **Elements and Performance Criteria**

### **Element 1: Demonstrate knowledge of SCADA**

#### **Performance criteria**

##### **Range**

SCADA systems includes but are not limited to ring nodes, supervisory computer, distributed controllers, engineering workstation and personal computer.

- 1.1. SCADA components are named and their functions are described.
- 1.2. SCADA functionality is described in terms of operator interface functions.
- 1.3. Limitations of panel mounted discrete controllers are identified. Limitations includes but are not limited to lack of flexibility, wiring and panel space.
- 1.4. Advantages of SCADA is described. Advantages includes but are not limited to flexibility, reduced cabling, multiple operator workstations and reduced hardware.
- 1.5. SCADA system interconnection methods are described and compared. Interconnection includes but are not limited to loop, star, serial, multi-drop, nodes and gateways.
- 1.6. Cable types for connections are described and compared. Cable types includes but are not limited to twin axial, coaxial and fibre optic.
- 1.7. Simple SCADA systems are described with the aid of diagrams.
- 1.8. SCADA is described in terms of maintenance and fault diagnostic functionality.

#### **Registration Data**

<b>Subfield:</b>	Electrical Engineering
<b>Date first registered:</b>	
<b>Date this version registered:</b>	
<b>Anticipated review:</b>	
<b>Body responsible for review:</b>	Namibia Training Authority