Australian Government

Assessment Requirements for UEEIC0014 Develop, enter and verify programs in supervisory control and data acquisition systems

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least two separate occasions and include:

- analysing data
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including implementing risk control measures
- configuring user access rights
- correcting programming faults and anomalies
- creating graphic objects and adding to graphic's library
- dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- developing and entering programs using dedicated supervisory control and data acquisition (SCADA) software
- developing human-machine interfaces (HMIs)
- developing SCADA system from design brief and job specifications
- documenting SCADA system programming
- entering tag data types into configured database
- identifying programs for SCADA systems
- monitoring, verifying and documenting programming activities
- producing reports using SCADA
- programming supervisory control functions and data acquisition components.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- SCADA system communications and networking, including:
  - programmable logic controller (PLC) interface requirements
  - networking requirements of the system

    - SCADA system differences from distributed control system (DCS) and process control systems
    - SCADA (HMI software package costing
    - types of networks available with SCADA HMI
    - coordinate and access of networking to factory network
    - the difference between SCADA and process control systems
- mimics and animated graphics, including:
    - graphic designs, balance clarity of layout and navigation
    - assessment of data required to be entered in software package
    - validation of entered data
- trending, including:
    - analysis of process to select data, including sampling of the process
    - viewing data and graphical representation of selected information
    - trend graphs and data matching
    - the difference between real time trends and historic trends
- alarm logging, including:
    - analysing selected data and applying limits to processes
    - corrective actions and notifications of alarm status
    - alarm data availability for third-party software systems
- recipes and scheduling, including:
    - methods of producing libraries for different process parameters required for varied production runs
    - analysis of different production runs, including amounts of materials, pressure, temperature and weights
    - alarm limits/material specifications
    - where and when scheduling is used
    - scheduling, setting limits and evoking program changes
- data collection and databases, including:
    - produce a database of variable tags and range specifications involved in the process
    - conversion export of raw data into appropriate forms for data management and report creation, e.g., Excel and Paradox
    - types and layout of reports
    - aims of customer, management, statistical and account reports
    - analysis of data in reports: design and graphical data representations
    - assessment of data required for the report
- programming language, including:
    - scripting languages in SCADA HMI software
    - automate tasks within the software PLC or SCADA
- complex processing of process data where field equipment i.e. PLC does not have the capability or to minimise control lag

- implementation and applications, including:
  - typical applications in manufacturing and process control, e.g., food processing, packaging, automotive industry, energy management and steel production and mining
- relevant databases
- relevant equipment, software and testing devices
- relevant job safety assessments or risk mitigation processes, including risk control measures
- relevant manufacturer specifications
- relevant WHS/OHS legislated requirements
- relevant workplace documentation and reporting
- relevant workplace policies and procedures
- SCADA system authorised user access and security requirements
- SCADA systems programming
- tag databases and PLCs.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet - - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6