

Federal Democratic Republic of Ethiopia  
OCCUPATIONAL STANDARD



# ELECTRONICS AND COMMUNICATIONS TECHNOLOGY MANAGEMENT



NTQF Level V



*Ministry of Education  
May 2011*

## Introduction

Ethiopia has embarked on a process of reforming its TVET-System. Within the policies and strategies of the Ethiopian Government, technology transformation – by using international standards and international best practices as the basis, and, adopting, adapting and verifying them in the Ethiopian context – is a pivotal element. TVET is given an important role with regard to technology transfer. The new paradigm in the outcome-based TVET system is the orientation at the current and anticipated future demand of the economy and the labor market.

The Ethiopia Occupational Standards (EOS) is the core element of the Ethiopian National TVET-Strategy and an important factor within the context of the National TVET Qualification Framework (NTQF). They are national Ethiopia standards, which define the occupational requirements and expected outcome related to a specific occupation without taking TVET delivery into account.

This document details the mandatory format, sequencing, wording and layout for the Ethiopia Occupational Standard which comprised of Units of Competence.

A Unit of Competence describes a distinct work activity. It is documented in a standard format that comprises:

- Occupational title, NTQF level
- Unit code
- Unit title
- Unit descriptor
- Elements and Performance criteria
- Variables and Range statement
- Evidence guide

Together all the parts of a Unit of Competence guide the assessor in determining whether the candidate is competent.

The ensuing sections of this EOS document comprise a description of the occupation with all the key components of a Unit of Competence:

- chart with an overview of all Units of Competence for the respective level including the Unit Codes and the Unit Titles
- contents of each Unit of Competence (competence standard)
- occupational map providing the technical and vocational education and training (TVET) providers with information and important requirements to consider when designing training programs for this standards and for the individual, a career path

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## UNIT OF COMPETENCE CHART

Occupational Area: Electronics and Communications Technology Management

Occupational code: EEL ECT

### NTQF Level V

[EEL ECT5 01 0511](#)

Plan and Organize Work Activities

[EEL ECT5 02 0511](#)

Provide Advanced Training for Technicians

[EEL ECT5 03 0511](#)

Perform Technical Consultation

[EEL ECT5 04 0511](#)

Manage Budgets and Financial Plan within the Project

[EEL ECT5 05 0511](#)

Manage People and Equipment Performance

[EEL ECT5 06 0511](#)

Compile and Produce an Electro Technology Report

[EEL ECT5 07 0511](#)

Manage Risk in Electro-Technology Activities

[EEL ECT5 08 0511](#)

Facilitate and Capitalize on Change and Innovation

[EEL ECT5 09 0511](#)

Practice Career Professionalism

[EEL ECT5 10 0511](#)

Establish and Conduct Business Relationships

[EEL ECT5 11 1012](#)

Develop and Refine Systems for Continuous Improvement in Operations

<b>Occupational Standard: Electronics &amp; Communications Technology Management</b>	
<b>Unit Title</b>	<b>Plan and Organize Work</b>
<b>Unit Code</b>	<b>EEL ECT5 01 0511</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitude required in planning and organizing work. It may be applied to a small independent operation or to a section of a large organization.

<b>Element</b>	<b>Performance Criteria</b>
1. Set objectives	<p>1.1 <b>Objectives</b> are consistent with and linked to work activities in accordance with organizational aims</p> <p>1.2 Objectives are stated as measurable targets with clear time frames</p> <p>1.3 Support and commitment of team members are reflected in the objectives</p> <p>1.4 Realistic and attainable objectives are identified</p>
2. Plan and schedule work activities	<p>2.1 Tasks/work activities to be completed are identified and prioritized as directed</p> <p>2.2 Tasks/work activities are broken down into steps in accordance with set time frames achievable components in accordance with set time frames</p> <p>2.3 <b>Resources</b> are allocated as per requirements of the activity</p> <p>2.4 <b>Schedule of work activities</b> is coordinated with personnel concerned</p>
3. Implement work plans	<p>3.1 <b>Work methods and practices</b> are identified in consultation with personnel concerned</p> <p>3.2 <b>Work plans</b> are implemented in accordance with set time frames, resources and <b>standards</b></p>
4. Monitor work activities	<p>4.1 Work activities are monitored and compared with set objectives</p> <p>4.2 Work performance is monitored</p> <p>4.3 Deviations from work activities are reported and recommendations are coordinated with appropriate personnel and in accordance with set standards</p> <p>4.4 Reporting requirements are complied with in accordance with recommended format</p> <p>4.5 Observe timeliness of report</p> <p>4.6 Files are established and maintained in accordance with standard operating procedures</p>

<p>5. Review and evaluate work plans and activities</p>	<p>5.1 Work plans, strategies and implementation are reviewed based on accurate, relevant and current information</p> <p>5.2 Review is based on comprehensive consultation with appropriate personnel on outcomes of work plans and reliable feedback</p> <p>5.3 Results of review are provided to concerned parties and formed as the basis for adjustments/simplifications to be made to policies, processes and activities</p> <p>5.4 Performance appraisal is conducted in accordance with organization rules and regulations</p> <p>5.5 Performance appraisal report is prepared and documented regularly as per organization requirements.</p> <p>5.6 Recommendations are prepared and presented to <b>appropriate personnel/authorities</b></p> <p>5.7 <b>Feedback mechanisms</b> are implemented in line with organization policies</p>
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Variable	Range
Objectives	<ul style="list-style-type: none"> <li>• Specific</li> <li>• General</li> </ul>
Resources	<ul style="list-style-type: none"> <li>• Personnel</li> <li>• Equipment and technology</li> <li>• Services</li> <li>• Supplies and materials</li> <li>• Sources for accessing specialist advice</li> <li>• Budget</li> </ul>
Schedule of work activities	<ul style="list-style-type: none"> <li>• Daily</li> <li>• Work-based</li> <li>• Contractual</li> <li>• Regular</li> <li>• Confidential</li> <li>• Disclosure</li> <li>• Non-disclosure</li> </ul>
Work methods and practices	<ul style="list-style-type: none"> <li>• Work methods and practices may include but not limited to:</li> <li>• Legislated regulations and codes of practice</li> <li>• Industry regulations and codes of practice</li> <li>• Occupational health and safety practices</li> </ul>
Work plans	<ul style="list-style-type: none"> <li>• Daily work plans</li> <li>• Project plans</li> <li>• Program plans</li> <li>• Organization strategic and restructuring plans</li> <li>• Resource plans</li> <li>• Skills development plans</li> <li>• Management strategies and objectives</li> </ul>
Standards	<ul style="list-style-type: none"> <li>• Performance targets</li> <li>• Performance management and appraisal systems</li> <li>• National competency standards</li> <li>• Employment contracts</li> <li>• Client contracts</li> </ul>

	<ul style="list-style-type: none"> <li>• Discipline procedures</li> <li>• Workplace assessment guidelines</li> <li>• Internal quality assurance</li> <li>• Internal and external accountability and auditing requirements</li> <li>• Training Regulation Standards</li> <li>• Safety Standards</li> </ul>
Appropriate personnel/ authorities	<ul style="list-style-type: none"> <li>• Appropriate personnel include:</li> <li>• Management</li> <li>• Line Staff</li> </ul>
Feedback mechanisms	<ul style="list-style-type: none"> <li>• Feedback mechanisms include:</li> <li>• Verbal feedback</li> <li>• Informal feedback</li> <li>• Formal feedback</li> <li>• Questionnaire</li> <li>• Survey</li> <li>• Group discussion</li> </ul>

<b>Evidence Guide</b>	
Critical Aspects of Competence	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>• set objectives</li> <li>• planned and scheduled work activities</li> <li>• implemented work plans</li> <li>• monitored work activities</li> <li>• reviewed and evaluated work plans and activities</li> </ul>
Underpinning Knowledge	<ul style="list-style-type: none"> <li>• Organization's strategic plan, policies rules and regulations, laws and objectives for work unit activities and priorities</li> <li>• Organizations policies, strategic plans, guidelines related to the role of the work unit</li> <li>• Team work and consultation strategies</li> </ul>
Underpinning Skills	<ul style="list-style-type: none"> <li>• Leading</li> <li>• Planning, Organizing and Coordinating</li> <li>• Communication Skills</li> <li>• Inter-and intra-person/motivation skills</li> <li>• Presentation skills</li> </ul>
Resource Implications	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>• Workplace or fully equipped location with necessary tools and equipment as well as consumable materials</li> </ul>
Assessment Methods	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> <li>• Interview / Written exam</li> <li>• Observation / Demonstration</li> </ul>
Context for Assessment	<p>Competence may be assessed in the workplace or in simulated work</p>



Occupational Standard: Electronics Technology Management Level V	
<b>Unit Title</b>	<b>Provide Advanced Training for Technicians</b>
<b>Unit Code</b>	<b>EEL ECT5 02 0511</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to provide advanced training for technicians. It addresses training need assessment, training program development and training provision capability.

Elements	Performance Criteria
1. Plan and prepare training program	1.1 Perform training need assessment 1.2 Assess skill, knowledge and attitude gap 1.3 Prepare <b>training materials</b> and facilities 1.4 Prepare schedule
2. Provide training	2.1 Apply proper methodology of training 2.2 Ensure alignment of training with the required objective 2.3 Address knowledge, skill and attitude as per the need assessment 1.5 Measures are taken to ensure that the technician understands <b>OHS requirements and safe working procedures</b> and practices for the particular training to be undertaken 2.4 Provide continuous feedback to the trainee
3. Perform evaluation	3.1 Conduct assessment for every knowledge, skill and attitude entity 3.2 Record performance of trainee against the knowledge, skill and attitude based on assessment result 3.3 Report the assessment result to the concerned stake holders

Variable	Range
OH&S policies and procedures	May include but not limited to: <ul style="list-style-type: none"> <li>• Arrangements of an organization or enterprise to meet their legal and ethical obligations of ensuring that the workplace is safe and without risk to health. this may include:                             <ul style="list-style-type: none"> <li>▪ hazard and risk assessment mechanisms</li> <li>▪ implementation of safety regulations</li> <li>▪ safety training</li> <li>▪ safety systems incorporating,                                     <ul style="list-style-type: none"> <li>• work clearance procedures</li> <li>• isolation procedures</li> <li>• gas and vapor</li> </ul> </li> </ul> </li> </ul>



	<ul style="list-style-type: none"> <li>• monitoring/testing procedures</li> <li>• use of protective equipment and clothing</li> <li>▪ use of codes of practice</li> </ul>
Training materials	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• handout</li> <li>• lab manual</li> </ul>

<b>Evidence Guide</b>	
Critical Aspects of Competence	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>• planned and prepared the training program</li> <li>• apply proper methodology</li> <li>• Ensured alignment of training with the required objective</li> <li>• document the performance of the technician</li> <li>• provided feedback to the technician and training evaluation report is submitted to the stake holders</li> </ul>
Underpinning Knowledge and Attitudes	<ul style="list-style-type: none"> <li>• Fundamentals of coaching and mentoring</li> <li>• Theories of adult learning</li> <li>• Methods of teaching</li> </ul>
Underpinning Skills	<ul style="list-style-type: none"> <li>• Communicate effectively with trainees</li> <li>• Applying effective techniques of coaching and mentoring</li> <li>• Demonstrate positive work values and attitudes</li> <li>• Effectively deliver training in accordance to training plan</li> <li>• Develop training plan/lesson plan</li> <li>• Perform trainee evaluation</li> </ul>
Resources Implication	<p>Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.</p>
Assessment Methods	<p>Competence may be accessed through:</p> <ul style="list-style-type: none"> <li>• Interview / questioning / written test</li> <li>• Simulation/demonstration</li> <li>• Observation</li> </ul>
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting</p>

Occupational Standard: Electronics & Communications Technology Management Level V	
Unit Title	Perform Technical Consultation
Unit Code	EEL ECT5 03 0511
Unit Descriptor	This unit covers the knowledge, attitudes and skills required to conduct technical consultation, provide recommendation and solution for technical problems and operation procedures, improve the performance of operation and maintenance services and proposed guidelines and systematic approach on maintenance practices within the organization and to enhance the productivity and smooth operation of the industry.

Elements	Performance Criteria
1. Conduct inspection	<p>1.1 Industry are inspected and technical problems are addressed, analyzed the problems and prepare document for evaluation and consultation with <b>Technical personnel, specialist and technical manager</b></p> <p>1.2 <b>Consultation processes</b> are developed and/or implemented as an integral part of the operational planning process</p> <p>1.3 <b>Evaluation and work plans</b> are develop to create a systematic solution for the technical problems</p>
2. Evaluate technical problems	<p>2.1 Technical problems are identified, evaluated and create systematic solution/remedy and prioritized as directed</p> <p>2.2 <b>Required resources</b> are allocated as per requirements of the activity</p>
3. Prepare technical recommendation	<p>3.1 <b>Established OHS</b> and risk control measures and procedures in preparation for the work are followed.</p> <p>3.2 <b>Policies and procedures</b> are developed to include OHS practices, skills required and frequency and level of maintenance work.</p> <p>3.3 Project proposal are reviewed and ensure that all necessary documents, manuals and checklist are obtained</p> <p>3.4 <b>Schedule of work activities</b> are prepared according to manufacturers recommendation</p> <p>3.5 Appropriately competent persons are engaged to assess the risks associated with individual equipment failure.</p> <p>3.6 Level and frequency of repair/replace to be done under maintenance work is established from risk assessment reports and manufacture's recommendations and standards reflecting acceptable exposure to risk of equipment failure.</p>

	3.7 Systems are established to manage and record technical work activities in accordance with organization and regulatory requirements
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Variable	Range
Technical personnel, specialist and technical manager	<ul style="list-style-type: none"> <li>managers</li> <li>supervisors</li> <li>other employees</li> <li>OHS committee(s) and other people with specialist responsibilities</li> <li>union or employee representatives</li> <li>people at the same level or more senior managers</li> <li>people from a wide range of social, cultural and ethnic Backgrounds</li> </ul>
Consultation processes	<ul style="list-style-type: none"> <li>meetings, interviews, brainstorming sessions, email/internet communications, newsletters or other processes and devices which ensure that all employees have the opportunity to contribute to team and individual operational plans</li> <li>mechanisms used to provide feedback to the work team in relation to outcomes of consultation</li> </ul>
Evaluation and work plans	<ul style="list-style-type: none"> <li>measures for monitoring or evaluating the efficiency or effectiveness of a which may be used to demonstrate accountability and to identify areas for improvements</li> </ul>
Required resources	<ul style="list-style-type: none"> <li>Work description are establish and prepared</li> <li>Tools and material</li> <li>Designated persons/group based on their own specialization</li> <li>Manuals and manufacturers guide</li> </ul>
Established OHS	<ul style="list-style-type: none"> <li>May include but not limited to: <ul style="list-style-type: none"> <li>hazard and risk assessment mechanisms</li> <li>implementation of safety regulations</li> <li>safety training</li> <li>safety systems incorporating,</li> <li>work clearance procedures</li> <li>isolation procedures</li> <li>gas and vapor</li> <li>monitoring/testing procedures</li> <li>use of protective equipment and clothing</li> <li>use of codes of practice</li> </ul> </li> </ul>
Policies and procedures	<ul style="list-style-type: none"> <li>Pro-active maintenance procedures</li> <li>Re-active maintenance procedure</li> <li>Operation and servicing procedures</li> <li>Health and safety procedures</li> </ul>

Schedule of work activities	<ul style="list-style-type: none"> <li>• Tasks/work activities to be completed are identified and prioritized as directed</li> <li>• Tasks/work activities are set into achievable components in accordance with time frames</li> <li>• Resources are allocated as per requirements of the activity</li> <li>• Schedule of work activities is coordinated with personnel concerned</li> </ul>
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<b>Evidence Guide</b>	
Critical Aspects of Competence	Demonstrates skills and knowledge in: <ul style="list-style-type: none"> <li>• Analyzing electrical and mechanical faults</li> <li>• Operation and servicing procedures</li> <li>• Testing and commissioning of equipment</li> </ul>
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: <ul style="list-style-type: none"> <li>• Electromechanical device and equipment installation</li> <li>• maintaining and servicing Industrial Electrical Machines and Drives</li> <li>• Fundamentals of troubleshooting and repair of electrical machines and drives</li> <li>• Code of practice in industrial electrical machines installation</li> <li>• Basic consultancy training</li> <li>• Codes of practice and guidelines for the organization</li> <li>• Organizations policy and procedures for negotiations</li> <li>• Decision making and conflict resolution strategies procedures</li> <li>• Problem solving strategies on how to deal with unexpected questions and attitudes during negotiation</li> <li>• Flexibility</li> <li>• Empathy</li> </ul>
Underpinning Skills	Demonstrates skills to: <ul style="list-style-type: none"> <li>• Trouble shoot and repair electro mechanical equipment</li> <li>• Interpersonal skills to develop rapport with other parties</li> <li>• Communication skills (verbal and listening)</li> <li>• Observation skills</li> <li>• Negotiation skills</li> </ul>
Resources Implication	Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices.
Methods of Assessment	Competency may be assessed through: <ul style="list-style-type: none"> <li>• Interview/Written Test</li> <li>• Observation/Demonstration (Simulation)</li> </ul>
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting



Occupational Standard: Electronics & Communications Technology Management	
Unit Title	Manage Budgets and Financial Plan Within the Project
Unit Code	EEL ECT5 04 0511
Unit Descriptor	This unit deals with the skills, attitudes and knowledge required in financial management of the project. This includes planning and implementing financial management approaches, supporting project team members whose role involves aspects of financial operations, monitoring and controlling finances, and reviewing and evaluating effectiveness of financial management processes in line with the financial objectives of the organization.

Elements	Performance Criteria
1. Plan financial management approaches	1.1 <b>Budget/financial plans</b> for the project are accessed 1.2 Budget/financial plans are clarified with <b>relevant personnel</b> within the organization to ensure that documented outcomes are achievable, accurate and comprehensible 1.3 Any changes required to be made to budget/financial plans are negotiated with relevant personnel within the organization 1.4 <b>Contingency plans</b> are prepared in the event that initial plans need to be varied
2. Implement financial management approaches	2.1 Relevant details of the agreed budget/financial plans are disseminated to team members 2.2 <b>Support</b> is provided to ensure that team members can competently perform <b>required roles</b> associated with management of finances 2.3 <b>Resources and systems</b> to manage financial management processes within the work team are determined and accessed
3. Monitor and control finances	3.2 <b>Processes for reporting</b> of expenditure, income, assets, stock, consumables, equipment and wastage are implemented across the work teams to monitor actual expenditure and to control costs 3.3 Expenditure and costs are monitored on an agreed cyclical basis to identify cost variations and expenditure overruns 3.4 Contingency plans are implemented, monitored and modified as required to maintain financial objectives
4. Review and evaluate financial	4.1 <b>Data and information on the effectiveness of financial management processes</b> within the work team are collected and collated for analysis

management processes	<p>4.2 Data and information on the effectiveness of financial management processes within the work team are analyzed and any improvements to existing processes identified, documented and recommended</p> <p>4.3 Agreed improvements are implemented and monitored in line with financial objectives of the work team and the organization</p>
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Variables	Range
Budget/financial plans may include:	<ul style="list-style-type: none"> <li>• long-term budgets/plans</li> <li>• short-term budgets/plans</li> <li>• operational plans</li> <li>• spreadsheet-based financial projections</li> <li>• cash flow projections</li> <li>• targets or key performance indicators for production, productivity, wastage, sales, income and expenditure</li> </ul>
Relevant personnel may include:	<ul style="list-style-type: none"> <li>• supervisors, fellow frontline managers</li> <li>• financial managers, accountants or financial controllers</li> </ul>
Contingency plans may include:	<ul style="list-style-type: none"> <li>• rental, hire purchase or alternative means of procurement of required materials, equipment and stock</li> <li>• contracting out or outsourcing human resource and other functions or tasks</li> <li>• restructuring of organization to reduce labour costs</li> <li>• strategies for reducing costs, wastage, stock or consumables</li> <li>• diversification of outcomes</li> <li>• recycling and re-use</li> <li>• finding cheaper or lower quality raw materials and consumables</li> <li>• seeking further funding</li> <li>• increasing sales or production</li> <li>• risk identification, assessment and management processes</li> <li>• succession planning</li> </ul>
Support may include:	<ul style="list-style-type: none"> <li>• documentation of procedures</li> <li>• intranet-based information</li> <li>• training including, mentoring, coaching and shadowing</li> <li>• help desk or identified experts within the organization</li> <li>• information briefings or sessions</li> <li>• access to specialist advice</li> </ul>
Required roles may include:	<ul style="list-style-type: none"> <li>• maintaining petty cash system</li> <li>• purchasing and procurement</li> <li>• invoicing clients, customers and consumers</li> <li>• debt collection</li> <li>• wages and salaries payments and record keeping</li> </ul>

	<ul style="list-style-type: none"> <li>• banking</li> <li>• maintaining journals, ledgers and other record keeping systems</li> <li>• arranging for use of corporate credit cards</li> <li>• ensuring security, accuracy and currency of financial operations</li> </ul>
Resources and systems may include:	<ul style="list-style-type: none"> <li>• hardware and software</li> <li>• human, physical or financial resources</li> <li>• specialist advice or support</li> <li>• record keeping systems (electronic and paper-based)</li> </ul>
Processes for reporting may include:	<ul style="list-style-type: none"> <li>• petty cash records</li> <li>• logs</li> <li>• ledgers and journals</li> <li>• spreadsheet-based records</li> <li>• invoices and receipts</li> <li>• bank statements</li> <li>• credit card statements</li> <li>• financial reports</li> </ul>
Data and information on the effectiveness of financial management processes may include records (paper-based and electronic) related to:	<ul style="list-style-type: none"> <li>• income and expenditure</li> <li>• cash flow data</li> <li>• quotations</li> <li>• files of paid purchase and service invoices</li> <li>• job costing</li> <li>• employee timesheets</li> <li>• credit card receipts</li> <li>• petty cash receipts</li> <li>• wages/salaries books</li> <li>• invoices</li> <li>• bank account records</li> <li>• insurance reports</li> <li>• taxation records</li> <li>• contracts</li> </ul>

<b>Evidence Guide</b>	
Critical Aspects of Competence	<p>Candidates must provide evidence that they are able to manage finances for the project effectively and efficiently and within organizational and legislative requirements. This may include evidence of managing the work of others whose roles are associated with financial management and record keeping.</p> <p>Products that could be used as evidence include:</p> <ul style="list-style-type: none"> <li>• documentation produced in managing finances, such as: <ul style="list-style-type: none"> <li>▪ revised budgets</li> <li>▪ cost estimates</li> <li>▪ cost management plans and strategies</li> </ul> </li> </ul>



	<ul style="list-style-type: none"> <li>▪ cost breakdown structures</li> <li>▪ expenditure forecasts</li> <li>▪ records of cost management lessons learned and</li> <li>▪ recommendations for improvements</li> </ul> <p>Processes that could be used as evidence include:</p> <ul style="list-style-type: none"> <li>• how any required changes to budgets/financial plans were negotiated</li> <li>• how cost management plans and contingency plans were developed</li> <li>• how budgets/financial plans were communicated to team members</li> <li>• how team members were supported in undertaking roles associated with financial management</li> <li>• how problems and issues with respect to finances were identified and addressed</li> <li>• how financial management was reviewed and improvements acted upon</li> </ul>
Underpinning Knowledge and Attitudes	<p>Knowledge of –</p> <ul style="list-style-type: none"> <li>• relevant legislation from all levels of government that affects business operation, especially in regard to occupational health and safety and environmental issues, equal opportunity, industrial relations and anti-discrimination</li> <li>• organizational requirements related to financial management</li> <li>• organization roles in respect to financial delegations, accountabilities and responsibilities</li> <li>• requirements for organizational record keeping and audit requirements</li> <li>• organizational objectives and plans</li> <li>• financial management requirements and performance measurement</li> <li>• basic accounting principles</li> <li>• consultative methods and processes</li> <li>• the principles and techniques involved in: <ul style="list-style-type: none"> <li>▪ budgeting</li> <li>▪ cash flows</li> <li>▪ ledgers and financial statements</li> <li>▪ accrual accounting concepts</li> <li>▪ advanced numerical calculations</li> <li>▪ electronic spreadsheets</li> </ul> </li> <li>• attitudes (behavioral indicators): <ul style="list-style-type: none"> <li>▪ ethical</li> <li>▪ communicative</li> <li>▪ showing positive leadership</li> </ul> </li> </ul>
Underpinning Skills	<ul style="list-style-type: none"> <li>• ability to relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities</li> <li>• communication and training skills</li> <li>• financial planning and management skills, including budgeting</li> </ul>

	<ul style="list-style-type: none"> <li>• contingency management skills</li> <li>• problem solving skills</li> <li>• leadership and personnel management</li> <li>• monitoring and review skills</li> <li>• skills in the use of specialist software for financial record</li> <li>• keeping and management (if and as relevant)</li> </ul>
Resource Implications	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>• workplace or fully equipped assessment area with necessary documentation and resources normally used in the workplace as well as consumable materials</li> </ul>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> <li>• Interview / Oral questioning / Written Test</li> <li>• Observation/Demonstration</li> </ul>
Context of Assessment	<ul style="list-style-type: none"> <li>• competence may be assessed in the work place or in a simulated work place setting</li> <li>• that examples of actions taken by the candidate to manage finances are provided</li> </ul>

Occupational Standard: Electronics & Communications Technology Management	
Unit Title	Manage People and Equipment Performance
Unit Code	EEL ECT5 05 0511
Unit Descriptor	This competency unit covers the knowledge, skills and attitude to develop key result areas and key performance indicators and standards, coupled with regular and timely coaching and feedback, provide the basis for performance management of an employees and equipment.

Elements	Performance Criteria		
1. Allocate work	<p>1.1 Relevant groups and individuals are consulted on work to be allocated and resources to be deployed</p> <p>1.2 Ensure work is allocated in accordance with operational plans</p> <p>1.3 Ensure allocation of work is cost effective and appropriate in terms of the use of internal/external labor</p> <p>1.4 <b>Performance standards, code of conduct</b> and work outputs and processes are confirmed prior to commencement</p> <p>1.5 <b>Performance indicators</b> are developed for key result areas and agreed prior to commencement of work</p> <p>1.6 Ensure <b>supply chain</b> of resources to work teams established and operating effectively.</p> <p>1.7 <b>Risk analyses</b> are undertaken in accordance with the organizational risk management plan and legal requirements</p>		
2. Assess performance	<p>2.1 <b>Performance management</b> and review processes are designed to be consistent with organizational objectives and policies</p> <p>2.2 Participants in the performance management and review process are trained</p> <p>2.3 Performance management processes are implemented in accordance with planning and timelines</p> <p>2.4 Coordination of people, resources and equipment are assessed for provision of optimum results</p> <p>2.5 Relevant <b>performance reports</b> are analyzed in details and appropriate action undertaken to respond to performance data</p> <p>2.6 Performance is monitored and evaluated on a continuous</p>		
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	basis
3. Provide feedback	<p>3.2 Informal feedback is given in a regular, timely manner</p> <p>3.3 Poor performance is identified promptly and brought to the attention of the appropriate person</p> <p>3.4 On-the-job coaching is provided when necessary, both to improve performance and confirm excellence in performance</p> <p>3.5 Documentation of performance is in accordance with performance management system</p> <p>3.6 Formal structured feedback sessions occur as necessary and in accordance with organizational policy</p>
4. Manage follow-up	<p>4.1 Performance improvement and development plans are developed in accordance with organizational policies and with assistance from human resource specialists where appropriate</p> <p>4.2 <b>Excellence in performance</b> is reinforced through recognition and continuous feedback</p> <p>4.3 Individuals not meeting expectations are provided with the necessary <b>coaching</b> and re-training and monitored closely Support services are provided to meet individual needs and circumstances</p> <p>4.4 Individuals who continue to perform below expectations are counseled and, where necessary, placed within the disciplinary process</p> <p>4.5 <b>Terminations</b> occur where serious misconduct or on-going under-performance occurs</p> <p>4.6 Terminations are in accordance with organizational and legal requirements</p> <p>4.7 Appropriate action to bring equipment performance to desired level is ensured to be undertaken</p> <p>4.8 Performance feedback systems are evaluated regularly and revised as necessary</p> <p>4.9 Selection, induction and training systems are evaluated regularly and improved</p>

Variable	Range
Key result areas means:	Those areas of project performance which are critical to the overall success of the business (or section of a projects)
Key performance indicators means:	Those measures developed to gauge performance outcomes against targets
Performance standards means:	The level of performance sought of an individual or group which may be expressed either quantitatively or qualitatively

Code of Conduct means:	An agreed (or decreed) set or rules relating to employee behavior/conduct with other employees or customers
Supply chain means:	Network of people transforms into work services and then finished products, and delivers them through a distribution system. It spans work distribution; views them not as discrete elements but interlinked.
Risk analysis means:	a determination of the likelihood of a negative event preventing the organization meeting its objectives and the likely consequences of such an event on organizational performance
Performance management means:	<ul style="list-style-type: none"> <li>• a process or set of processes for establishing a shared understanding of what an individual or group is to achieve, and managing and developing individuals in a way which increases the probability it will be achieved in both the short and longer term in accordance with relevant industrial agreements</li> </ul>
Performance reports	<ul style="list-style-type: none"> <li>• individual or team performance</li> <li>• equipment performance <ul style="list-style-type: none"> <li>▪ condition monitoring results</li> <li>▪ underperformance</li> <li>▪ misuse / overuse</li> </ul> </li> </ul>
Excellence in performance means:	<ul style="list-style-type: none"> <li>• regularly and consistently exceeding the performance targets established whilst meeting the organization's performance standards</li> </ul>
Relevant groups and individuals include:	<ul style="list-style-type: none"> <li>• employees, employee representatives, employer representatives, line managers and human resource personnel</li> </ul>

<b>Evidence Guide</b>			
Critical Aspects of Competence	<ul style="list-style-type: none"> <li>• Direct evidence of the performance management processes being undertaken is essential in the assessment of this unit, including the linking of performance indicators to the allocation of work and assessment of performance against performance standards</li> <li>• There must be evidence of a systematic value chain analysis of all of the support activities of the business and the outcomes of that analysis being translated into action</li> <li>• Evidence of risk management and evaluation of performance leading to effective remediation also needs to be present</li> <li>• Workplace coaching (informal feedback) coupled with formal performance feedback, resulting in performance improvement</li> </ul>		
Underpinning Knowledge and Attitudes	<ul style="list-style-type: none"> <li>• Relevant legislation from all levels of government that affects business operation, especially in regard to Occupational Health and Safety and environmental issues, equal opportunity, industrial relations and anti-discrimination</li> <li>• Relevant awards and certified agreements</li> <li>• Performance measurement systems utilized within the organization</li> <li>• Key result areas of the organization</li> </ul>		
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	<ul style="list-style-type: none"> <li>• Human resource specialist assistance available</li> <li>• Organizational plans and objectives (strategic, tactical and operational)</li> <li>• Human resource planning</li> <li>• All legislation relevant to the organization which impacts on people performance (including anti-discrimination laws)</li> <li>• Organizational support services for employees (external and internal)</li> <li>• Electronic commerce systems</li> <li>• Critical path/PERT methodology</li> <li>• High reliability organizational concepts</li> <li>• Energy management</li> <li>• Capital investment evaluative methodology including NPV and ROI</li> <li>• Unfair dismissal rules and due process</li> <li>• Staff development strategies</li> </ul>
Underpinning Skills	<ul style="list-style-type: none"> <li>• Analytical and evaluative skills to assess supply chain performance</li> <li>• Performance measurement skills to develop and manage key performance indicators</li> <li>• Planning and coordination skills to ensure the people resources and equipment work in a functional manner to achieve optimum results</li> <li>• Communication/consultation skills to ensure all relevant groups and individuals are advised of what is occurring and are provided with an opportunity for input</li> <li>• Performance management skills to ensure objectives, outcomes and outputs are delivered on time, within budget, and incident free</li> <li>• Systems analysis and design skills to ensure that system measure performance in a timely way</li> <li>• Coaching and training skills to remediate any under-performance present in the work group or individuals</li> <li>• Ability to relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities</li> </ul>
Resource Implications	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>• workplace or fully equipped assessment location with necessary tools and equipment as well as consumable materials</li> </ul>
Methods of Assessment	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> <li>• Interview / Oral questioning / Written Test</li> <li>• Observation/Demonstration with oral questioning</li> </ul>
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting</p>

<b>Unit of competence Title</b>	<b>Compile and produce a biomedical equipment report.</b>
<b>Unit Code</b>	<b>EEL ECT5 06 0511</b>
<b>Unit Descriptor</b>	This unit covers complying and producing a biomedical equipment technology report. It encompasses determining the safety requirements are met and all regulatory responsibilities are adhered to. The person competent in this unit must demonstrate an ability to identify information sources and collect and analyze and format information applicable to the biomedical equipment industry and produce a report as required.

<b>Elements</b>	<b>Performance criteria</b>
1 Prepare to develop a report	1.1 OHS processes and procedures for a given work area are identified, obtained and understood. 1.2 Established techniques for report writing are reviewed and adopted in accordance with organization policies. 1.3 The scope of the report is evaluated and report parameters established using a formal evaluation/survey processes. 1.4 Criteria from other related works impacting on the report are determined from other sources. 1.5 Identify source and availability of information
2. Develop report.	2.1 Report is developed to include scenarios/requirements established in consultation with appropriate person(s), and regulatory requirements. 2.2 Report is developed in collaboration with all relevant personnel. 2.3 Competent persons are identified to assist in the compilation of the report. 2.4 Report is reviewed against all inputs and adjusted to rectify any anomalies. 2.5 Compile report in accordance with organization policies and procedures. 2.6 Compile and analyze research report information
3 Obtain approval for final report	3.1 Report is presented and discussed with person(s) of higher authority. 3.2 Alterations to the report resulting from the presentation/discussion are negotiated with person(s) of higher authority within the constraints of organization policy. 3.3 Final report is presented and approval obtained from appropriate person(s).

<b>Range Variables</b>	<b>Description</b>
Unit Scope	This unit of competency is typically performed by high-level technicians, working as part of a product/application/service research and/or design, development and implementation team. This generally involves working closely with a range of management and production/operations personnel and requires

	balancing the business and technical sides of the research process.
Occupational Health and safety(OHS)	<p>Apply OH&amp;S requirements in accordance with regulations/codes of practice and enterprise safety policies and procedures. This may include:</p> <ul style="list-style-type: none"> <li>- Using of relevant protective clothing and equipment,</li> <li>- use of tooling and equipment, workplace environment and safety handling of material,</li> <li>- use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances.</li> <li>- Using Chemical prove gowns, rubber boots of appropriate size, Goggles, respirators, helmet, and head phones , gloves etc,</li> <li>- Following Occupational health and safety procedures designated for the task</li> <li>- Checking and fulfilling required safety devices before starting operation</li> </ul> <p>Apply safe operating procedures regarding:</p> <ul style="list-style-type: none"> <li>- electrical safety,</li> <li>- machinery movement and operation,</li> <li>- manual and mechanical lifting and shifting,</li> <li>- working in proximity to others and site visitors.</li> </ul> <p>Apply emergency procedures :</p> <ul style="list-style-type: none"> <li>- emergency shutdown and sping of equipment,</li> <li>- using extinguishing fires, first aid application and site evacuation</li> </ul>
Tools and Equipment	Computer, printer and auxiliary equipments
Types and sources of information	Manual, catalogues, internet, equipment-performance and manufacturer's information background; procurement directives, regulatory information & standards, and senior expertise, reference books, enterprise quality management system procedures
Required knowledge	<p>The extent of the essential knowledge and associated skills (EKAS) required is given. It forms an integral part of this unit.</p> <ol style="list-style-type: none"> <li>A. Enterprise communication methods</li> <li>B. Enterprise work activities records</li> <li>C. Computer use basics</li> <li>D. Engineering analysis, decision making and reporting</li> <li>E. Research concepts</li> <li>F. Working in a team</li> <li>G. Data collection techniques</li> <li>H. Data analysis and presentation</li> <li>I. Occupational Health and Safety, enterprise responsibilities</li> </ol>
<b>Evidence Guide</b>	<b>Description</b>
Critical aspects of	A representative body of performance criteria demonstrated



Assessment	<p>within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:</p> <ul style="list-style-type: none"> <li>▪ Implement Occupational Health and Safety workplace procedures and practices, including the use of risk control measures as specified in the performance criteria and range statement</li> <li>▪ Apply sustainable energy principles and practices as specified in the performance criteria and range statement</li> <li>▪ Demonstrate an understanding of the essential knowledge and associated skills as described in this unit . It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.</li> <li>▪ Demonstrate an appropriate level of skills enabling employment</li> <li>▪ Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures</li> </ul> <p>Demonstrated consistent performance across a representative range of contexts from the prescribed items below:  Compile and produce an electro technology report as described in unit scope and including:</p> <ul style="list-style-type: none"> <li>• Typical organisation policies and procedures.</li> <li>• Access to a report brief to established report parameters.</li> <li>• Access to appropriate person(s) to establish report requirements.</li> <li>• Establishing the scope and parameters of the report.</li> <li>• Determining the impact of other related works.</li> <li>• Developing design brief incorporating scenarios and all requirements.</li> <li>• Appropriate computer application.</li> <li>• Identifying competencies required for the report.</li> <li>• Documenting report proposal.</li> <li>• Negotiating alterations to the proposed report successfully.</li> </ul>
Resource Implications	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> <li>- Workplace or fully equipped assessment location with 1 necessary tools and equipment as well as consumable materials</li> <li>- Approved assessment tools</li> <li>- Certified assessor /Assessor's panel</li> </ul>
Methods of assessment	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> <li>• Practical assessment <ul style="list-style-type: none"> <li>○ Technical Interview/oral questioning</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ Practical demonstration</li> <li>○ Simulation by off site practical test</li> <li>○ Structured Observation of work</li> <li>● Theoretical exam</li> <li>● Supervisor report</li> <li>● Portfolio Assessment (Eg Certificate from training providers)</li> </ul>
Context of assessment	<ul style="list-style-type: none"> <li>● Competency may be assessed in the work place or in a simulated work place setting</li> <li>● The unit of competency should be assessed in conjunction with other relevant units in this occupation.</li> </ul>

<b>Unit of competence Title</b>	<b>Manage risk in Biomedical Equipment technology activities</b>
<b>Unit of competence Code</b>	<b>EEL ECT5 07 0511</b>
<b>Unit Descriptor</b>	This unit covers managing risk related to OHS, environment, resources and financial viability. It encompasses identifying risk events, the likelihood and consequences of such events, evaluating risk, risk management planning and mitigation of risk.

<b>Elements</b>	<b>Performance criteria</b>
1 .Identify risks and develop management strategies	<p>1.1 OHS policies, processes and procedures for a given work area are identified, obtained and understood.</p> <p>1.2 The extent of a program or project is established from design brief, specification and/or other relevant documentation and from discussions with appropriate person(s).</p> <p>1.3 Potential, perceived and actual risk events are identified, documented and analyzed, in consultation with risk professionals and appropriate other person(s) in accordance with organization policies and procedures.</p> <p>1.4 Risk management methods, tools and techniques are used to assist in the analysis and reporting of identified risk events.</p> <p>1.5 Risk management techniques are used to analyze risk events, assess options and recommend risk approaches to appropriate person(s) for approval.</p> <p>1.6 Risk management processes and procedures are developed and agreed to by all stakeholders and communicated to ensure clarity of understanding and ongoing management of risk factors.</p> <p>1.7 OHS risk control measure are incorporated in the in the in the risk management strategies in compliance with organisation's OHS policy and regulations.</p>
2 Implement and monitor risk management strategies	<p>2.1 Risk management processes and procedures are incorporated into work and project plans to ensure common approach achieving outcomes.</p> <p>2.2 Activities are monitored against programs and projects plans to identify and respond to variations in accordance with risk management processes and procedures.</p> <p>2.3 Agreed risk responses are implemented and plans modified to reflect changing project objectives in an environment of uncertainty.</p>
3 Evaluate risk	3.1 Project outcomes are reviewed wit appropriate person(s) to

management strategies.	<p>determine effectiveness of risk management processes and procedures.</p> <p>3.2 Risk issues and recommended improvements are identified, documented and passed to appropriate person(s) for approval to incorporate them into ongoing programs and future program and project and plans.</p>
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Range Variables	Description
Unit Scope	<p>This unit shall be demonstrated in managing risk in relation to a program or an individual project.</p> <p>Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated.</p>
Occupational Health and safety(OHS)	<p>Apply OH&amp;S requirements in accordance with regulations/codes of practice and enterprise safety policies and procedures. This may include:</p> <ul style="list-style-type: none"> <li>- Using of relevant protective clothing and equipment,</li> <li>- use of tooling and equipment, workplace environment and safety handling of material,</li> <li>- use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances.</li> <li>- Using Chemical prove gowns, rubber boots of appropriate size, Goggles, respirators, helmet, and head phones , gloves etc,</li> <li>- Following Occupational health and safety procedures designated for the task</li> <li>- Checking and fulfilling required safety devices before starting operation</li> </ul> <p>Apply safe operating procedures regarding:</p> <ul style="list-style-type: none"> <li>- electrical safety,</li> <li>- machinery movement and operation,</li> <li>- manual and mechanical lifting and shifting,</li> <li>- working in proximity to others and site visitors.</li> </ul> <p>Apply emergency procedures :</p> <ul style="list-style-type: none"> <li>- emergency shutdown and sping of equipment,</li> <li>- using extinguishing fires, first aid application and site evacuation</li> </ul>
Tools and Equipment	Computer, printer and auxiliary equipments
Types and sources of information	Manual, catalogues, internet, equipment-performance and manufacturer's information background; procurement directives, regulatory information & standards, and senior expertise, reference books, enterprise quality management system procedures

Required knowledge	The extent of the essential knowledge and associated skills (EKAS) required is given. It forms an integral part of this unit. A. Risk management, application and techniques B. Occupational Health and Safety, organizational responsibilities
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Evidence Guide	Description
Critical aspects of Assessment	<p>A representative body of performance criteria demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:</p> <ul style="list-style-type: none"> <li>▪ Implement Occupational Health and Safety workplace procedures and practices, including the use of risk control measures as specified in the performance criteria and range statement</li> <li>▪ Apply sustainable energy principles and practices as specified in the performance criteria and range statement</li> <li>▪ Demonstrate an understanding of the essential knowledge and associated skills as described in this unit . It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.</li> <li>▪ Demonstrate an appropriate level of skills enabling employment</li> <li>▪ Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures</li> </ul> <p>Demonstrated consistent performance across a representative range of contexts from the prescribed items below: Manage risk in electro technology activities as described in unit of scope and including:</p> <ul style="list-style-type: none"> <li>• Identifying potential, perceived and actual risk events.</li> <li>• Using risk management methods, tools and techniques in analysis and reporting.</li> <li>• Incorporating risk management processes and procedures into program and project plans.</li> <li>• Monitoring and responding risk events effectively.</li> <li>• Identifying improvements and documenting recommendation for their inclusion in ongoing or future programs and projects.</li> <li>• Dealing with unplanned events by drawing on essential knowledge and skills to provide appropriate solutions incorporated in a holistic assessment with the above listed items.</li> </ul>

Resource Implications	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> <li>- Workplace or fully equipped assessment location with necessary tools and equipment as well as consumable materials</li> <li>- Approved assessment tools</li> <li>- Certified assessor /Assessor's panel</li> </ul>
Methods of assessment	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> <li>• Practical assessment <ul style="list-style-type: none"> <li>○ Technical Interview/oral questioning</li> <li>○ Practical demonstration</li> <li>○ Simulation by off site practical test</li> <li>○ Structured Observation of work</li> </ul> </li> <li>• Theoretical exam</li> <li>• Supervisor report</li> <li>• Portfolio Assessment (Eg Certificate from training providers)</li> </ul>
Context of assessment	<ul style="list-style-type: none"> <li>• Competency may be assessed in the work place or in a simulated work place setting</li> <li>• The unit of competency should be assessed in conjunction with other relevant units in this occupation.</li> </ul>

Occupational Standard: Electronics & Communications Technology Management	
Unit Title	Facilitate and Capitalize on Change and Innovation
Unit Code	EEL ECT5 08 0511
Unit Descriptor	This unit specifies the outcomes required to plan and manage the introduction and facilitation of change; particular emphasis is on the development of creative and flexible approaches, and on managing emerging opportunities and challenges.

Elements	Performance Criteria
1. Participate in planning the introduction and facilitation of change	<p>1.1 <b>Manager</b> contributes effectively to the organization's planning processes to introduce and facilitate change</p> <p>1.2 Plans to introduce change are made in consultation with <b>appropriate stakeholders</b></p> <p>1.3 Organization's objectives and plans to introduce change are communicated effectively to individuals and teams</p>
2. Develop creative and flexible approaches and solutions	<p>2.1 Variety of approaches to managing workplace issues and problems are identified and analyzed</p> <p>2.2 <b>Risks</b> are identified and assessed, and action initiated to manage these to achieve a recognized benefit or advantage to the organization</p> <p>2.3 Workplace is managed in a way which promotes the development of innovative approaches and outcomes</p> <p>2.4 Creative and responsive approaches to resource management improve productivity and services, and/or reduce costs</p>
3. Manage emerging challenges and opportunities	<p>3.1 Individuals and teams are supported to respond effectively and efficiently to changes in the organization's goals, plans and priorities</p> <p>3.2 Coaching and mentoring assist individuals and teams to develop competencies to handle change efficiently and effectively</p> <p>3.3 Opportunities are identified and taken as appropriate, to make adjustments and to respond to the changing needs of customers and the organization</p> <p>3.4 <b>Information needs</b> of individuals and teams are anticipated and facilitated as part of change implementation and management</p>

	3.5 Recommendations for improving the methods and techniques to manage change are identified, evaluated and negotiated with appropriate individuals and groups
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Variables	Range
Manager	a person with frontline management roles and responsibilities, regardless of the title of their position
Appropriate stakeholders may refer to:	those individuals and organizations who have a stake in the change and innovation being planned, including: <ul style="list-style-type: none"> <li>• organization directors and other relevant managers</li> <li>• teams and individual employees who are both directly and indirectly involved in the proposed change</li> <li>• union/employee representatives or groups</li> <li>• OHS committees</li> <li>• other people with specialist responsibilities</li> <li>• external stakeholders where appropriate - such as clients, suppliers, industry associations, regulatory and licensing agencies</li> </ul>
Risks may refer to:	<ul style="list-style-type: none"> <li>• any event, process or action that may result in goals and objectives of the organization not being met</li> <li>• any adverse impact on individuals or the organization</li> <li>• various risks identified in a risk management process</li> </ul>
Information needs may include:	<ul style="list-style-type: none"> <li>• new and emerging workplace issues</li> <li>• implications for current work roles and practices including training and development</li> <li>• changes relative to workplace legislation, such as OHS, workplace data such as productivity, inputs/outputs and future projections</li> <li>• planning documents</li> <li>• reports</li> <li>• market trend data</li> <li>• scenario plans</li> <li>• customer/competitor data</li> </ul>

Evidence Guide	
Critical Aspects of Competence	<ul style="list-style-type: none"> <li>• Planning the introduction and facilitation of change</li> <li>• Developing creative and flexible approaches and solutions</li> <li>• Managing emerging challenges and opportunities</li> </ul>
Underpinning	<ul style="list-style-type: none"> <li>• Relevant legislation from all levels of government that</li> </ul>



Knowledge and Attitudes	<p>affects business operation, especially in regard to occupational health and safety and environmental issues, equal opportunity, industrial relations and anti-discrimination</p> <ul style="list-style-type: none"> <li>• the principles and techniques involved in: <ul style="list-style-type: none"> <li>▪ change and innovation management</li> <li>▪ development of strategies and procedures to implement and facilitate change and innovation</li> <li>▪ use of risk management strategies: identifying hazards,</li> </ul> </li> <li>• assessing risks and implementing risk control measures <ul style="list-style-type: none"> <li>▪ problem identification and resolution</li> <li>▪ leadership and mentoring techniques</li> <li>▪ management of quality customer service delivery</li> <li>▪ consultation and communication techniques</li> <li>▪ record keeping and management methods</li> <li>▪ the sources of change and how they impact</li> </ul> </li> <li>• factors which lead/cause resistance to change</li> <li>• approaches to managing workplace issues</li> </ul>
Underpinning Skills	<ul style="list-style-type: none"> <li>• Communication skills</li> <li>• Planning work</li> <li>• Managing risk</li> </ul>
Resources Implication	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>• Workplace or fully equipped assessment location with necessary tools, equipment and consumable materials</li> </ul>
Assessment Methods	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> <li>• Interview</li> <li>• Observation/Demonstration</li> </ul>
Context of Assessment	<p>Competence may be assessed in the work place or in a simulated work place setting</p>

Occupational Standard: Electronics & Communications Technology Management	
Unit Title	Practice Career Professionalism
Unit Code	EEL ECT5 09 0511
Unit Descriptor	This unit covers the knowledge, skills and attitudes in promoting career growth and advancement.

Elements	Performance Criteria
1. Integrate personal objectives with organizational goals	1.1 Personal growth and work plans are pursued towards improving the qualifications set for the profession 1.2 Intra- and interpersonal relationships are maintained in the course of managing oneself based on performance <b>evaluation</b> 1.3 Commitment to the organization and its goal is demonstrated in the performance of duties
2. Set and meet work priorities	2.1 Competing demands are prioritized to achieve personal, team and organizational goals and objectives. 2.2 <b>Resources</b> are utilized efficiently and effectively to manage work priorities and commitments 2.3 Practices along economic use and maintenance of equipment and facilities are followed as per established procedures
3. Maintain professional growth and development	3.1 <b>Trainings and career opportunities</b> are identified and availed of based on job requirements 3.2 <b>Recognitions</b> are -sought/received and demonstrated as proof of career advancement 3.3 <b>Licenses and/or certifications</b> relevant to job and career are obtained and renewed

Variables	Range
Evaluation	<ul style="list-style-type: none"> <li>• Performance Appraisal</li> <li>• Psychological Profile</li> <li>• Aptitude Tests</li> </ul>
Resources	<ul style="list-style-type: none"> <li>• Human</li> <li>• Financial</li> <li>• Technology               <ul style="list-style-type: none"> <li>▪ Hardware</li> <li>▪ Software</li> </ul> </li> </ul>
Trainings and career	<ul style="list-style-type: none"> <li>• Participation in training programs               <ul style="list-style-type: none"> <li>▪ Technical</li> </ul> </li> </ul>

opportunities	<ul style="list-style-type: none"> <li>▪ Supervisory</li> <li>▪ Managerial</li> <li>▪ Continuing Education</li> <li>• Serving as Resource Persons in conferences and workshops</li> </ul>
Recognitions	<ul style="list-style-type: none"> <li>• Recommendations</li> <li>• Citations</li> <li>• Certificate of Appreciations</li> <li>• Commendations</li> <li>• Awards <ul style="list-style-type: none"> <li>▪ Tangible and Intangible Rewards</li> </ul> </li> </ul>
Licenses and/or certifications	<ul style="list-style-type: none"> <li>• National Certificates</li> <li>• Certificate of Competence</li> </ul> Support Level Licenses <ul style="list-style-type: none"> <li>• Professional Licenses</li> </ul>

<b>Evidence Guide</b>	
Critical aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>• Attained job targets within key result areas (KRAs)</li> <li>• Maintained intra - and interpersonal relationship in the course of managing oneself based on performance evaluation</li> <li>• Completed trainings and career opportunities which are based on the requirements of the industries</li> <li>• Acquired and maintained licenses and/or certifications according to the requirement of the qualification</li> </ul>
Underpinning Knowledge	<ul style="list-style-type: none"> <li>• Work values and ethics (Code of Conduct, Code of Ethics, etc.)</li> <li>• Company policies</li> <li>• Company-operations, procedures and standards</li> <li>• Fundamental rights at work including gender sensitivity</li> <li>• Personal hygiene practices</li> </ul>
Underpinning Skills	<ul style="list-style-type: none"> <li>• Appropriate practice of personal hygiene</li> <li>• Intra and Interpersonal skills</li> <li>• Communication skills</li> </ul>
Resource Implications	<p>The following resources must be provided:</p> Workplace or assessment location <ul style="list-style-type: none"> <li>• Case studies/scenarios</li> </ul>
Methods of Assessment	<p>Competency may be assessed through:</p> Interview / Exams and Tests Simulation/Role-plays Observation / demonstration
Context for Assessment	<p>Competency may be assessed in the work place or in a simulated work place setting</p>



Occupational Standard: Electronics & Communications Technology Management	
Unit Title	Establish and Conduct Business Relationships
Unit Code	EEL ECT5 10 0511
Unit Descriptor	This unit covers the skills, attitudes and knowledge required to manage business relationship with customers within the industry context.

Elements	Performance Criteria
1. Establish contact with customer	<ul style="list-style-type: none"><li>1.1 Welcoming customer environment is maintained</li><li>1.2 Customer is greeted warmly according to enterprise policies and procedures</li><li>1.3 Effective service environment is created through verbal and non-verbal presentation according to enterprise policies and procedures</li><li>1.4 Customer data is maintained to ensure database relevance and currency</li><li>1.5 Information on customers and service history is gathered for analysis</li><li>1.6 <b>Opportunities</b> to maintain regular contact with customers are identified and taken up</li></ul>
2. Clarify needs of customer	<ul style="list-style-type: none"><li>2.1 Customer needs are determined through questioning and active listening</li><li>2.2 Customer needs are accurately assessed against the products/services of the enterprise</li><li>2.3 Customer details are documented clearly and accurately in required format</li><li>2.4 Conduct negotiations in a business-like and professional manner</li><li>2.5 Maximize benefits for all parties in the negotiation through use of established <b>techniques</b> and in the context of establishing long term relationships</li><li>2.6 Communicate the results of negotiations to appropriate colleagues and stakeholders within appropriate timeframes</li></ul>
3. Provide information and advice	<ul style="list-style-type: none"><li>3.1 Features and benefits of products/services provided by the enterprise are described/recommended to meet customer needs</li><li>3.2 Information to satisfy customer needs is provided</li></ul>

	3.3 Alternative sources of information/advice are discussed with the customer
4. Foster and maintain business relationships	<p>4.1 Pro-actively seek, review and act upon information needed to maintain sound business relationships.</p> <p>4.2 Honor agreements within the scope of individual responsibility.</p> <p>4.3 Make adjustments to agreements in consultation with the customer and share information with appropriate colleagues.</p> <p>4.4 Nurture relationships through regular contact and use of effective interpersonal and communication styles.</p>

Variables	Range
Opportunities to maintain regular contact with customers may include:	<ul style="list-style-type: none"> <li>• informal social occasions</li> <li>• industry functions</li> <li>• association membership</li> <li>• co-operative promotions</li> <li>• program of regular telephone contact</li> </ul>
Negotiation techniques	<ul style="list-style-type: none"> <li>• identification of goals, limits</li> <li>• clarification of needs of all parties</li> <li>• identifying points of agreement and points of difference</li> <li>• preparatory research of facts</li> <li>• active listening and questioning</li> <li>• non-verbal communication techniques</li> <li>• appropriate language</li> <li>• bargaining</li> <li>• developing options</li> <li>• confirming agreements</li> <li>• appropriate cultural behavior</li> </ul>

Evidence Guide	
Critical Aspects of Competence	<p>It is essential that competence is fully observed and there is ability to transfer competence to changing circumstances and to respond to unusual situations in the critical aspects of:</p> <ul style="list-style-type: none"> <li>• consistently applying enterprise policies and procedures and industry codes of practice in regard to customer service</li> <li>• providing a quality service environment by treating customers in a courteous and professional manner through all stages of the procedure</li> <li>• using effective questioning/active listening and observation skills to identify customer needs</li> <li>• communicating effectively with others involved in or affected by the work</li> </ul>

	<ul style="list-style-type: none"> <li>• maintaining relevant and current customer databases in accordance with enterprise policies and procedures</li> <li>• ability to build and maintain relationships to achieve successful business outcomes</li> </ul>
Required knowledge	<ul style="list-style-type: none"> <li>• Operational knowledge of enterprise policies and procedures in regard to: <ul style="list-style-type: none"> <li>▪ customer service</li> <li>▪ dealing with difficult customers</li> <li>▪ maintenance of customer databases</li> <li>▪ allocated duties/responsibilities</li> <li>▪ General knowledge of the range of enterprise merchandise and services, location of telephone extensions and departments/sections</li> </ul> </li> <li>• Basic operational knowledge of legislation and statutory requirements, including consumer law, trade practices and fair trading legislation</li> <li>• Basic operational knowledge of industry/workplace codes of practice in relation to customer service</li> <li>• negotiation and communication techniques appropriate to negotiations that may be of significant commercial value</li> </ul>
Underpinning Skills	<ul style="list-style-type: none"> <li>• Use workplace technology related to use of customer database</li> <li>• Collect, organize and understand information related to collating and analyzing customer information to identify needs</li> <li>• Communicate ideas and information</li> <li>• Plan and organize activities concerning information for database entries</li> <li>• Use mathematical ideas and techniques to plan database cells and size</li> <li>• Establish diagnostic processes which identify and recommend improvements to customer service</li> </ul>
Resources Implication	<p>The following should be made available:</p> <ul style="list-style-type: none"> <li>• a workplace or simulated workplace</li> <li>• documentation, such as enterprise policy and procedure manuals relating to customer service</li> </ul>
Assessment Methods	<p>Competence may be assessed through:</p> <ul style="list-style-type: none"> <li>• Interview / Written Test</li> <li>• Observation/Demonstration with Oral Questioning</li> </ul>
Context of Assessment	<p>Elements of competence contain both knowledge and practical components. Knowledge components may be assessed off the job. Practical components should be assessed on the job or in a simulated work environment.</p>

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Occupational Standard: Electronics and Communications Technology Management Level V	
Unit Title	Develop and Refine Systems for Continuous Improvement in Operations
Unit Code	EEL ECT5 11 1012
Unit Descriptor	This unit of competency covers the skills, knowledge and processes required to ensure that continuous improvement systems do not stultify and continue to improve along with other operational systems in an organization. This unit is about improving the process yield/unit of effort or cost, reducing process variation and increasing process reliability, upgrading, enhancing or refining process outputs, and includes developing a culture of reviewing and sustaining change ensuring improvements are maintained and built on.

Elements	Performance Criteria
1. Establish parameters of current internal improvement systems	1.1 Describe <b>organization systems</b> that impact on continuous improvement 1.2 Identify current <b>relevant metrics</b> and their values 1.3 Check that metrics are collected for all improvements 1.4 Determine <b>yield of current improvement processes</b> 1.5 Review results of improvements
2. Distinguish breakthrough improvement processes	2.1 Identify all <b>improvements</b> which have occurred over an agreed period of time 2.2 Distinguish between <b>breakthrough improvements</b> and continuous improvements 2.3 Determine the timing of breakthrough improvement processes 2.4 Analyze factors controlling the <b>timing</b> and selection of breakthrough improvements 2.5 Analyze <b>continuous improvements</b> to identify cases where breakthrough improvements were required 2.6 Validate findings with process/system owners and obtain required approvals 2.7 Improve timing/selection of breakthrough improvements 2.8 Improve other factors limiting the gains from breakthrough improvements
3. Develop continuous improvement practice	3.1 Check that levels of delegated authority and responsibility are appropriate for continuous improvement from the shop floor 3.2 Ensure all personnel have appropriate capabilities for



	<p>continuous improvement processes</p> <p>3.3 Ensure personnel and systems recognize potential breakthrough improvement projects</p> <p>3.4 Ensure sufficient resources are available for the operation of continuous and breakthrough improvement processes</p> <p>3.5 Check that relevant information flows from improvement changes to all required areas and stakeholders</p> <p>3.6 Check data collection and metrics analysis capture changes which result from improvement actions</p> <p>3.7 Check that improvement changes are standardized and sustained</p> <p>3.8 Check review processes for routine continuous improvements</p> <p>3.9 Remove or change factors limiting gains from improvements</p> <p>3.10 Modify systems to ensure appropriate possible changes are referred to other improvement processes</p> <p>3.11 Institutionalize breakthrough</p>		
<p>4. Establish parameters of current external improvement system</p>	<p>4.1 Review <b>value stream</b> systems that impact on improvement</p> <p>4.2 Review procedures for deciding improvement methodologies Identify current relevant metrics and their values, as appropriate</p> <p>4.3 Determine yield of current improvement processes</p> <p>4.4 Review results of improvements</p>		
<p>5. Explore opportunities for further development of value stream improvement processes</p>	<p>5.1 Review mechanisms for consultation with value stream members</p> <p>5.2 Develop mechanisms for further improving joint problem solving</p> <p>5.3 Develop mechanisms for increased sharing of organizational knowledge</p> <p>5.4 Obtain support and necessary authorizations from process/system owners</p> <p>5.5 Capture and standardize improvements</p> <p>5.6 Improve factors limiting gains from continuous improvements</p>		
<p>6. Review systems for compatibility with improvement strategy</p>	<p>6.1 Review all systems which impact or are <b>impacted on improvements</b> and the improvement system</p> <p>6.2 Analyze relationships between improvement systems and other relevant systems</p>		
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	<p>6.3 Analyze practices caused by and results from the systems</p> <p>6.4 Negotiate changes to the systems to improve the outcomes from improvement systems</p> <p>6.5 Obtain necessary approvals to implement changes</p> <p>6.6 Monitor the implementation of the changes</p>
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Variable	Range
Competitive systems and practices	<p>Competitive systems and practices may include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• lean operations</li> <li>• agile operations</li> <li>• preventative and predictive maintenance approaches</li> <li>• monitoring and data gathering systems, such as Systems Control and Data Acquisition (SCADA) software, Enterprise Resource Planning (ERP) systems, Materials Resource Planning (MRP) and proprietary systems</li> <li>• statistical process control systems, including six sigma and three sigma</li> <li>• JIT, kanban and other pull-related operations control systems</li> <li>• supply, value, and demand chain monitoring and analysis</li> <li>• 5S</li> <li>• continuous improvement (kaizen)</li> <li>• breakthrough improvement (kaizen blitz)</li> <li>• cause/effect diagrams</li> <li>• overall equipment effectiveness (OEE)</li> <li>• takt time</li> <li>• process mapping</li> <li>• problem solving</li> <li>• run charts</li> <li>• standard procedures</li> <li>• current reality tree</li> <li>• Competitive systems and practices should be interpreted so as to take into account: <ul style="list-style-type: none"> <li>– stage of implementation of competitive systems and practices</li> <li>– the size of the enterprise</li> <li>– the work organization, culture, regulatory environment and the industry sector</li> </ul> </li> </ul>

Code of practice and standards	Where reference is made to industry codes of practice, and/or Ethiopian/international standards, the latest version must be used
Organization systems	Organization systems may include: <ul style="list-style-type: none"> <li>• problem recognition and solving</li> <li>• operational/process improvement</li> <li>• improvement projects</li> <li>• product/process design and development</li> <li>• processes for making incremental improvements</li> </ul>
Relevant metrics	Relevant metrics include all those measures which might be used to determine the performance of the improvement system and may include: <ul style="list-style-type: none"> <li>• hurdle rates for new investments</li> <li>• KPIs for existing processes</li> <li>• quality statistics</li> <li>• delivery timing and quantity statistics</li> <li>• process/equipment reliability ('uptime')</li> <li>• incident and non-conformance reports</li> <li>• complaints, returns and rejects</li> </ul>
Process improvement yield	Improvement process yield may be regarded as: <ul style="list-style-type: none"> <li>• the benefit achieved for the effort invested</li> </ul>
Breakthrough improvements	Breakthrough improvements include: <ul style="list-style-type: none"> <li>• those which result from a kaizen blitz or other improvement project or event and are a subset of all improvements</li> </ul>
Timing of breakthrough improvements	Timing of breakthrough improvements includes: <ul style="list-style-type: none"> <li>• frequency (which should be maximized) and duration (which should be minimized) of events/projects</li> </ul>
Continuous improvement	Continuous improvement is part of normal work and does not require a special event to occur (although may still require authorizations) and contrasts with breakthrough improvement/kaizen blitz which occurs by way of an event or project
Resources for improvement	Resources for improvements include: <ul style="list-style-type: none"> <li>• improvement budget</li> <li>• guidelines for trialing of possible improvements</li> <li>• mechanism for approvals for possible improvements</li> <li>• business case guidelines for proposed improvements</li> <li>• indicators of success of proposed improvement</li> <li>• mechanisms for tracking and evaluation of changes</li> <li>• forum for the open discussion of the results of the implementation</li> <li>• mechanisms for the examination of the improvement for additional improvements</li> <li>• organization systems to sustain beneficial changes</li> </ul>

Capturing value stream	Capturing value stream improvements includes: <ul style="list-style-type: none"> <li>• revised contractual arrangements</li> </ul>
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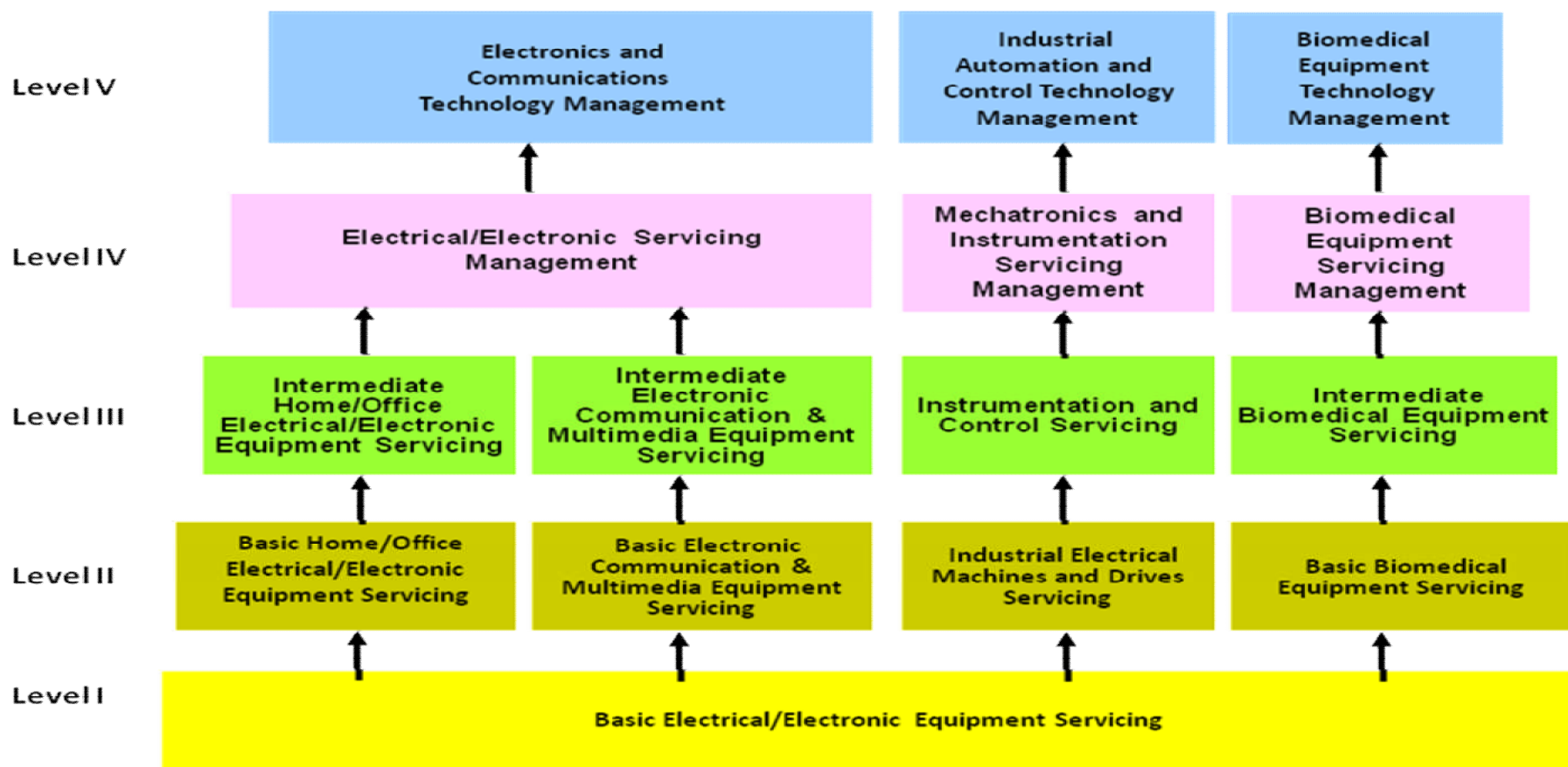
improvements	<ul style="list-style-type: none"> <li>• revised specifications</li> <li>• signed agreements</li> <li>• other documented arrangements which formalize the raised base line</li> </ul>
Systems impacting improvements	<p>Systems which impact/are impacted on improvements and the improvement system include:</p> <ul style="list-style-type: none"> <li>• office</li> <li>• purchasing</li> <li>• rewards (individual or team at all levels)</li> <li>• sales</li> <li>• marketing</li> <li>• maintenance</li> <li>• process/product</li> <li>• transport and logistics</li> </ul>
Organizational knowledge	<p>Organizational knowledge should:</p> <ul style="list-style-type: none"> <li>• be able to be quantified or otherwise modified to make its outcomes measurable or observable</li> <li>• be able to be expressed in an accessible and distributable form appropriate to the organization operations and stakeholders</li> </ul>
Improvements	<p>Improvements may:</p> <ul style="list-style-type: none"> <li>• be to process, plant, procedures or practice</li> <li>• include changes to ensure positive benefits to stakeholders are maintained</li> </ul>
Manager	<p>Manager may include:</p> <ul style="list-style-type: none"> <li>• any person who may have either a permanent or an ad hoc role in facilitating the function of multiple teams in a workplace, departments or entire organizations</li> </ul>

<b>Evidence Guide</b>			
Critical Aspects of Competence	<p>A person who demonstrates competency in this unit must be able to provide evidence of the ability to:</p> <ul style="list-style-type: none"> <li>• critically review current continuous improvement processes</li> <li>• establish ongoing review of continuous improvement processes</li> <li>• implement improvements in the practice of continuous improvement</li> <li>• better align internal and external systems</li> <li>• gather data through interviews with stakeholders</li> <li>• review existing data</li> <li>• obtain additional data through a variety of techniques</li> <li>• communicate and negotiate at all levels within the organization</li> </ul>		
Underpinning Knowledge and Attitudes	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> <li>• competitive systems and practices tools, including:</li> <li>• value stream mapping</li> </ul>		
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	<ul style="list-style-type: none"> <li>• 5S</li> <li>• Just in Time (JIT)</li> <li>• mistake proofing</li> <li>• process mapping</li> <li>• establishing customer pull</li> <li>• kaizen and kaizen blitz</li> <li>• setting of KPIs/metrics</li> <li>• identification and elimination of waste (muda)</li> <li>• continuous improvement processes including implementation, monitoring and evaluation strategies for a whole organization and its value stream</li> <li>• difference between breakthrough improvement and continuous improvement</li> <li>• organizational goals, processes and structure</li> <li>• approval processes within organization</li> <li>• cost/benefit analysis methods</li> <li>• methods of determining the impact of a change</li> <li>• advantages and disadvantages of communication media, methods and formats for different messages and audiences</li> <li>• customer perception of value</li> <li>• define, measure, analyze, improve, and control and sustain (DMAIC) process</li> </ul>		
Underpinning Skills	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> <li>• undertaking self-directed problem solving and decision-making on issues of a broad and/or highly specialized nature and in highly varied and/or highly specialized contexts</li> <li>• communicating at all levels in the organization and value stream and to audiences of different levels of literacy and numeracy</li> <li>• analyzing current state/situation of the organization and value stream</li> <li>• determining and implementing the most appropriate method for capturing value stream improvements</li> <li>• collecting and interpreting data and qualitative information from a variety of sources</li> <li>• analyzing individually and collectively the implementation of competitive systems and practices tools in the organization and determining strategies for improved implementation</li> <li>• relating implementation and use of competitive systems and practices and continuous improvement to customer benefit</li> <li>• solving highly varied and highly specialized problems related to competitive systems and practices implementation and continuous improvement to root cause</li> <li>• negotiating with stakeholders, where required, to obtain information required for implementation and refinement of continuous improvements, including management, unions, value stream members, employees and members of the</li> </ul>		
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	<p>community</p> <ul style="list-style-type: none"> <li>• reviewing relevant metrics, including all those measures which might be used to determine the performance of the improvement system, including: <ul style="list-style-type: none"> <li>– key performance indicators (KPIs) for existing processes</li> <li>– quality statistics</li> <li>– delivery timing and quantity statistics</li> <li>– process/equipment reliability ('uptime')</li> <li>– incident and non-conformance reports</li> <li>– implementing continuous improvement to support systems and areas, including maintenance, office, training and human resources</li> </ul> </li> </ul>
Resources Implication	<p>Access may be required to:</p> <ul style="list-style-type: none"> <li>• workplace procedures and plans relevant to work area</li> <li>• specifications and documentation relating to planned, currently being implemented, or implemented changes to work processes and procedures relevant to the assessee</li> <li>• documentation and information in relation to production, waste, overheads and hazard control/management</li> <li>• reports from supervisors/managers</li> <li>• case studies and scenarios to assess responses to contingencies</li> </ul>
Methods of Assessment	<p>Competence in this unit may be assessed by using a combination of the following to generate evidence:</p> <ul style="list-style-type: none"> <li>• demonstration in the workplace</li> <li>• suitable simulation</li> <li>• oral or written questioning to assess knowledge of principles and techniques associated with change management</li> </ul> <p>In all cases it is expected that practical assessment will be combined with targeted questioning to assess underpinning knowledge</p>
Context of Assessment	<p>Assessment of performance must be undertaken in a workplace using or implementing one or more competitive systems and practices.</p>

**Sector: Electrotechnology and Telecommunication**  
**Sub-Sector: Electrotechnology**



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