



Federal Democratic Republic of Ethiopia  
**OCCUPATIONAL STANDARD**  
**RURAL CADASTRE AND LAND**  
**REGISTRATION SERVICE**

**NTQF Level III**



*Ministry of Education*  
*May 2014*

# 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 Ethiopian 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 respective 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 Unit of 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

## UNIT OF COMPETENCE CHART

Occupational Standard: Rural Cadastre and Land Registration Service		
Occupational Code: <b>AGR CLR</b>		
<i>NTQF Level III</i>		
<p><a href="#">AGR CLR3 01 0514</a> Develop Cadastre and Land Registration Action Plan</p>	<p><a href="#">AGR CLR3 02 0514</a> Organize, Check and Maintain Equipment and Supplies</p>	<p><a href="#">AGR CLR3 03 0514</a> Operate Surveying Equipment</p>
<p><a href="#">AGR CLR3 04 0514</a> Undertake a Site Assessment to Conduct Survey Expeditions</p>	<p><a href="#">AGR CLR3 05 0514</a> Collect and Set-out Basic Surveying Data</p>	<p><a href="#">AGR CLR3 06 0514</a> Demarcate Land Parcel Boundary Using GNSS/GPS</p>
<p><a href="#">AGR CLR3 07 0514</a> Perform Surveying Computations</p>	<p><a href="#">AGR CLR3 08 0514</a> Operate GIS Software to Spatial Input Analysis</p>	<p><a href="#">AGR CLR3 09 0514</a> Read and Interpret Basic Image Data</p>
<p><a href="#">AGR CLR3 10 0514</a> Produce Digital Data</p>	<p><a href="#">AGR CLR3 11 0514</a> Prepare and Produce Maps from Orthophoto</p>	<p><a href="#">AGR CLR3 12 0514</a> Perform Adjudication, Registration and Certification Activities for Legal Cadastre</p>
<p><a href="#">AGR CLR3 13 0514</a> Develop and Use Advanced Spreadsheets</p>	<p><a href="#">AGR CLR3 14 0514</a> Store and Retrieve Spatial and Non Spatial Data</p>	<p><a href="#">AGR CLR3 15 0514</a> Operate Database Management System</p>
<p><a href="#">AGR CLR3 16 0514</a> Perform Tenure Documentation</p>	<p><a href="#">AGR CLR3 17 0514</a> Complete Database Back-up and Recovery</p>	<p><a href="#">AGR CLR3 18 0514</a> Take Instruction in Relation Transaction</p>
<p><a href="#">AGR CLR3 19 0514</a> Deal with Land Holding Conflict</p>	<p><a href="#">AGR CLR3 20 0514</a> Process Applications and Respond to Client's Legal Land Use Related Claims</p>	<p><a href="#">AGR CLR3 21 0514</a> Maintain and Monitor Environmental Work Practices</p>

<p><b><u>AGR CLR3 22 0514</u></b> Monitor Implementation of Work Plan/Activities</p>	<p><b><u>AGR CLR3 23 0514</u></b> Apply Quality Control</p>	<p><b><u>AGR CLR3 24 0514</u></b> Lead Workplace Communication</p>
<p><b><u>AGR CLR3 25 0514</u></b> Lead Small Teams</p>	<p><b><u>AGR CLR3 26 0514</u></b> Improve Business Practice</p>	<p><b><u>AGR CLR3 27 0514</u></b> Prevent and Eliminate MUDA</p>

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Develop Cadastre and Land Registration Action Plan
Unit Code	<a href="#">AGR CLR3 01 0514</a>
Unit Descriptor	This competency standard covers the process of developing an action Plan for Cadastre and Land Registration Service in a Land Administration System. It requires the ability to determine Cadastre and Land Registration Service objectives, plan and organize work, estimate costs and advantages, define performance criteria for each Cadastre and Land Registration Services, select planning options, and negotiate strategies with relevant stakeholders in accordance with local, regional and national land administration process. Developing an action plan for the Cadastre and Land Registration Services of target area requires knowledge of relevant local, Regional States and National strategies, community facilitation process, local land administration process, relevant legislative and regulatory requirements, environmental protection legislation, and improved land administration characteristics and principles.

Elements	Performance Criteria
1. Set objectives	<p>1.1 <b>Objectives</b> are made consistent with and linked to work activities in accordance with organizational aims.</p> <p>1.2 Objectives are made in a way that address major cadastre and <b>land registration</b> activities in the local area in <b>land administration</b> processes.</p> <p>1.3 Objectives are made in a way that relate to the problem definition</p> <p>1.4 Objectives are made to comply with national and regional legislation and regulations.</p> <p>1.5 Objectives are made in a way that support <b>strategies</b> for land administration</p> <p>1.6 Objectives are identified and stated as specific, measurable, attainable targets with clear time frames (SMART).</p> <p>1.7 Support and commitment of team members are reflected in the objectives.</p>
2. Undertake preplanning activities	<p>2.1. Major stakeholders are identified</p> <p>2.1 Availability of specialists is ascertained to assist in management planning work.</p> <p>2.2 <b>Land users</b> and other <b>stakeholders</b> are consulted by regarding to local objectives.</p> <p>2.3 Timelines are established for development of the cadastre and land registration plan and arrangements are reported to</p>

	<p><b>client.</b></p> <p>2.4 <b>Resources</b> required for the development of management strategies are identified.</p>		
3. Prepare a site description	<p>3.1 <b>Landscape values</b> of the area are identified</p> <p>3.2 Physical <b>features and characteristics</b> of the area are identified.</p> <p>3.3 <b>Land uses</b>, including existing cultural and historical modifications and their effects on the cadastre and land registration area are researched, determined &amp; recorded.</p> <p>3.4 <b>Bio-physical condition of site</b> is assessed and documented.</p>		
4. Analyze site information and description	<p>4.1 <b>Information</b> is evaluated in terms of core principles and objectives.</p> <p>4.2 Opportunities and constraints are identified and documented to meet planning objectives and goals.</p> <p>4.3 Presentation is undertaken to stakeholders/clients and feedback is incorporated into plan documentation.</p>		
5. Identify and Define the performance criteria for objectives	<p>5.1. Performance criteria/work activities are identified and defined in accordance with land administration principles.</p> <p>5.2. Performance criteria are made realistic and measurable.</p>		
6. Identify technical strategies	<p>6.1. Strategies that address defined objectives are identified.</p> <p>6.2. <b>Technical strategies</b> are designed to alleviate existing impacts or to target technical actions.</p> <p>6.3. Technical strategies are costed and compared to the existing budgets and <b>available resources</b>.</p> <p>6.4. Staging of work is planned to prioritize outcomes and manager resource allocation.</p> <p>6.5. Consultation is undertaken with stakeholders/clients and feedback incorporated into plan documentation.</p>		
7. Negotiate possible actions with relevant stakeholders	<p>7.1. The action is undertaken based on the definition of the problem using data from measurement of abundance and impacts.</p> <p>7.2. The action that clearly documents the problem, the objectives, the stakeholders, the prioritized management units, the performance criteria, and the most suitable management options is undertaken</p>		
8. Plan and schedule work activities	<p>8.1. Tasks/work activities to be completed are prioritized as directed.</p> <p>8.2. Tasks/work activities are broken down into steps in accordance with time frames achievable components in</p>		
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	<p>accordance with set time frames.</p> <p>8.3. Resources are allocated as per requirements of the activity.</p> <p>8.4. <b>Schedule of work activities</b> is coordinated with personnel concerned.</p>
9. Prepare and Implement the Action plan	<p>9.1. Site information and technical strategies are documented into a draft action plan for consultation.</p> <p>9.2. Consultation is undertaken with stakeholders and clients according to enterprise's guidelines.</p> <p>9.3. Changes are made to the draft plan, and that final plan is prepared and presented to client.</p> <p>9.4. <b>Work methods and practices</b> are identified in consultation with personnel concerned.</p> <p>9.5. <b>Work plans</b> are implemented in accordance with set time frames, resources and standards.</p>
10. Review and evaluate Action plan	<p>10.1. Work plans, strategies and implementation are reviewed based on accurate, relevant and current information.</p> <p>10.2. Revision on outcomes of work plans and reliable feedback is done based on comprehensive consultation with appropriate personnel.</p> <p>10.3. 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>10.4. <b>Feedback mechanisms</b> are implemented in line with organization policies.</p>

Variable	Range
Objectives	<p>Should be 'SMART' , that:</p> <ul style="list-style-type: none"> <li>• specific</li> <li>• measurable</li> <li>• achievable</li> <li>• realistic</li> <li>• time defined</li> </ul>
Land registration	<p>Provides the framework and means for recognizing formalized</p> <ul style="list-style-type: none"> <li>• land holding rights and for regulating the transferability of these rights</li> </ul>
Land administration	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• Kebele, Woreda, zonal, regional states, and federal electoral districts)</li> </ul>
Strategies	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• local, regional, and National strategies</li> </ul>
Land Users	<p>May refers to:</p> <ul style="list-style-type: none"> <li>• the arrangements, activities and inputs people undertake in a certain land cover type to produce, change or maintain it</li> </ul>
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Stakeholders	May include, but not limited to: <ul style="list-style-type: none"> <li>• local land users, Regional Land Administration bodies, local regulatory authorities and Land Administration committees</li> </ul>
Client	May include, but not limited to: <ul style="list-style-type: none"> <li>• a government agency or associated body</li> <li>• private landholder or community group</li> </ul>
Resources	May include, but not limited to: <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> <li>• topographical, vegetation, &amp; aerial maps, government, university and library based</li> <li>• consultation, literature and internet resources</li> <li>• preservation, cultivation &amp; identification community groups</li> </ul>
Landscape values	Are refers to: <ul style="list-style-type: none"> <li>• visual amenity, biodiversity, recreation and tourism</li> <li>• conservation, water and air quality, and cultural values</li> </ul>
Features and characteristics	Included in the site description may include: <ul style="list-style-type: none"> <li>• boundaries, fences, gates</li> <li>• slope, gradient, contours</li> <li>• water courses, current land use, buildings and structures, eroded areas, saline areas, waterlogged areas, water table recharge and discharge sites</li> <li>• water-repellent soils, predominant wind directions, annual rainfall, surface stones and rocks</li> <li>• soil types and specific historic or cultural features</li> </ul>
Land uses	May include, but not limited to: <ul style="list-style-type: none"> <li>• Annual and Perennial crops, forest, settlements, nature and wildlife reserves, heritage areas and recreation areas</li> </ul>
Bio-physical condition of a site	May include, but not limited to: <ul style="list-style-type: none"> <li>• impacts from weeds, pests, erosion, soil disturbance, run-off, water quality, people, vehicle intrusions, soil compaction, and adjacent land use</li> <li>• biotic and a biotic surrounding of an organism or population and includes particularly the factors that have an influence in their survival, development and evolution</li> </ul>
Information	May include, but not limited to: <ul style="list-style-type: none"> <li>• organizational rules, regulation and guidelines</li> <li>• internet, related books and related materials</li> <li>• technical manuals</li> <li>• sharing best practice</li> <li>• virtual library</li> <li>• workplace guidelines</li> <li>• recorded documents/logo/history</li> </ul>



Technical strategies	<p>May Includes, but not limited to:</p> <ul style="list-style-type: none"> <li>• technical plan to achieve pre-stated goals with available means</li> <li>• systems providing effective and efficient services to clients</li> <li>• effective and efficient service delivery systems</li> <li>• relevant work place procedures</li> <li>• required work place performance</li> </ul>
Available resources	<p>That may influence, the selection and priority of management objectives includes:</p> <ul style="list-style-type: none"> <li>• private finance</li> <li>• government funding assistance</li> <li>• land and natural resource regulations and legislation</li> <li>• consideration for neighboring enterprises</li> <li>• community in-kind support</li> <li>• labor and existing administration facilities and infrastructure</li> </ul>
Schedule of work activities	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• daily</li> <li>• work-based</li> <li>• contractual</li> <li>• regular</li> <li>• confidential</li> <li>• disclosure / Non-disclosure</li> </ul>
Work methods and practices	<p>Work methods and practices may include but not limited to:</p> <ul style="list-style-type: none"> <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	<p>May include, but not limited to:</p> <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>
Feedback mechanisms	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• provide organizations with data and perceptions from primary stakeholders about the quality and effectiveness of their efforts</li> <li>• involve the gathering of feedback and the communication of a response</li> </ul>
Federal/Regional legislation and local regulations	<p>may be:</p> <ul style="list-style-type: none"> <li>• land administration and use proclamation and regulations, environmental protection, activities in nature reserves and heritage areas</li> </ul>
Forms of production value	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• economic and environmental value</li> </ul>
Management	<p>May include, but not limited to:</p>

options	<ul style="list-style-type: none"> <li>• commercial management, crisis management, no management, local eradication and strategic management (sustained, targeted and one-off)</li> </ul>
Tools and equipment	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• computer and software, sensitive balance, clinometers, topographic map Plan meter, Tape meter, line level, theodolite (stadia), chaining pins, ranging pole, staff, clinometers, Global positioning system, compass set, compass</li> </ul>

### Evidence Guide

Critical Aspects of competence	<p>A candidate must be able to demonstrate the ability to:</p> <ul style="list-style-type: none"> <li>• explain relevant strategies for Cadastre and Land Registration activities in Land administration</li> <li>• set objectives</li> <li>• plan and schedule work activities</li> <li>• explain community facilitation and Local land administration processes</li> <li>• explain sustainable land administration principles</li> <li>• estimate costs and advantages</li> <li>• communicate, negotiate and liaise with other statutory authorities, agencies and stakeholders</li> <li>• report and document action plan</li> <li>• implement work plans</li> <li>• monitor work activities</li> <li>• review and evaluate work plans and activities</li> </ul>		
Underpinning Knowledge	<p>Knowledge and understanding requirements include:</p> <ul style="list-style-type: none"> <li>• relevant policy and strategies for Cadastre and Land Registration in Land administration</li> <li>• motivational effects of stakeholder involvement</li> <li>• community facilitation processes</li> <li>• local land Administration process</li> <li>• environmental protection legislation</li> <li>• defining local land administration for Cadastre and land registration values</li> <li>• determining cost benefit analysis of management options</li> <li>• sustainable land administration principles</li> <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	<p>Skills required include the ability to:</p> <ul style="list-style-type: none"> <li>• interpret relevant policy and strategies</li> <li>• estimate costs and advantages</li> <li>• communicate, negotiate and liaise with other statutory authorities, agencies and stakeholders</li> <li>• report and document action plan</li> </ul>		
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	<ul style="list-style-type: none"> <li>• determine Cadastre and Land Registration objectives in land administration</li> <li>• estimate costs and advantages for areas affected by the change in land tenure rights and its administration</li> <li>• define performance criteria for each Cadastre and Land Registration projects</li> <li>• select management options for the target area</li> <li>• negotiate tactics with relevant stakeholders</li> <li>• lead, Plan, Organize, and Coordinate</li> <li>• inter-and intra-person/motivation skills</li> <li>• present 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	Competence may be assessed through: <ul style="list-style-type: none"> <li>• Interview / Written Test</li> <li>• Observation / Demonstration with Oral Questioning</li> </ul>
Context of Assessment	Competence may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Organize, Check and Maintain Equipment and Supplies
Unit Code	<a href="#">AGR CLR3 02 0514</a>
Unit Descriptor	This unit covers the knowledge, skill and attitude required to Select, Outlay, organize, check and maintain equipment and supplies. It requires the ability to read specifications, understand spatial on-site job requirements in relation to the use of equipment and supplies, plan and execute set tasks in a team environment, often in the lead role.

Elements	Performance Criteria
1. Select equipment and supplies	<p>1.1 <b>Equipment and supply</b> requirements are ascertained from <b>specifications</b> and <b>principal work activities</b> according to organizational guidelines.</p> <p>1.2 Tools, equipment and supplies appropriate to the environment are selected and prepared.</p> <p>1.3 <b>Contingencies</b> and <b>risk management processes</b> are considered when using equipment and supplies.</p> <p>1.4 Equipment is checked to ensure it is in a safe working order.</p> <p>1.5 Equipment and supplies are allocated to appropriate personnel.</p> <p>1.6 <b>Supervisory processes</b>, checks and measures are implemented to ensure work is completed within time available.</p> <p>1.7 Arrangements are made for the transport of equipment and supplies.</p> <p>1.8 Personal protective equipment is used according to OHS guidelines.</p> <p>1.9 Skills and knowledge are updated to accommodate changes in equipment.</p>
2. Outlay equipment and supplies to be used	<p>2.1 Work is allocated to team members.</p> <p>2.2 Personnel are instructed to operate equipment according to <b>manufacturer's specifications</b> and user manual.</p> <p>2.3 Adjustment, calibration and maintenance of equipment are arranged.</p>
3. Check and Maintain equipment	<p>3.1 Unsafe or faulty equipment is identified and checked; and arrangements are put in place for the <b>operational maintenance</b> of equipment.</p> <p>3.2 Repair work is checked and organized for unsafe or faulty equipment under direction of relevant personnel and according to organizational guidelines.</p>

	3.3 Tools, equipment and batteries are checked and stored safely in an appropriate location and according to manufacturer's specifications.
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Variable	Range
Equipment and supply	May include, but not limited to: <ul style="list-style-type: none"> <li>• data recording equipment</li> <li>• measuring instruments</li> <li>• personal computer-based digitizing boards</li> <li>• tools</li> <li>• battery chargers</li> </ul>
Specifications	May include, but not limited to: <ul style="list-style-type: none"> <li>• budget and personnel required</li> <li>• data capture methods</li> <li>• project deliverables</li> <li>• resources needed and timelines</li> <li>• accuracy and precision</li> </ul>
Principal work activities	May include, but not limited to: <ul style="list-style-type: none"> <li>• activities and sequence of activities determined to be essential in order to meet project objectives.</li> </ul>
Contingencies	May include, but not limited to: <ul style="list-style-type: none"> <li>• equipment and battery failure</li> <li>• injury to personnel</li> <li>• personnel turnover</li> <li>• observation errors</li> <li>• obstructions to project plan</li> <li>• bad weather and topography</li> <li>• customers and their hostile neighbors</li> </ul>
Risk management processes	May include, but not limited to: <ul style="list-style-type: none"> <li>• contingency planning</li> <li>• effective communication and consultation</li> <li>• effective planning, including such things as budget control,</li> <li>• anticipating external influences, realistic timelines</li> <li>• effective project management</li> <li>• internal and external audit processes and milestone review/evaluation</li> <li>• sufficient and relevant information</li> </ul>
Supervisory processes	May include, but not limited to: <ul style="list-style-type: none"> <li>• delegating</li> <li>• implementing</li> <li>• planning, monitoring, reviewing and targeting</li> <li>• overseeing practices</li> </ul>
Manufacturer's specifications	May include, but not limited to: <ul style="list-style-type: none"> <li>• equipment specifications</li> <li>• operator manuals</li> </ul>
Operational	May include, but not limited to:

maintenance	<ul style="list-style-type: none"> <li>• adjusting</li> <li>• cleaning and lubricating</li> <li>• simple repair tightening</li> <li>• battery maintenance</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>• preparing checklist for selecting equipment and supplies</li> <li>• outlaying equipment and supplies to be used</li> <li>• check, maintaining and adjusting equipment and accessories</li> <li>• maintaining battery</li> <li>• performing proper packaging, transportation, handling and storage of equipment and accessories and keeping clean</li> </ul>
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: <ul style="list-style-type: none"> <li>• accuracy and precision requirements, characteristics, capabilities and limitations of tools and equipment</li> <li>• equipment requirements</li> <li>• planning and control processes</li> <li>• project review procedures</li> <li>• safe work practices</li> <li>• spatial data measuring and recording</li> <li>• understanding and application of relevant surveying-related tasks and associated activities</li> <li>• computations and work allocation procedures</li> <li>• professional code of ethics</li> </ul>
Underpinning Skills	Demonstrates skills to: <ul style="list-style-type: none"> <li>• select, check and use tools and equipment safely and appropriately</li> <li>• process workplace documentation</li> <li>• read, record data and write technical reports</li> <li>• search and access routine sources of spatial data</li> <li>• analyze errors</li> <li>• record with accuracy and precision</li> <li>• record and interpret statistical data</li> <li>• undertake computations</li> <li>• interpret manufacturer's specifications</li> <li>• use and apply operating manuals</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	Competence may be assessed through: <ul style="list-style-type: none"> <li>• Interview / Written Test</li> <li>• Observation / Demonstration with Oral Questioning</li> </ul>
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Operate Surveying Equipment
Unit Code	<a href="#">AGR CLR3 03 0514</a>
Unit Descriptor	This unit covers the knowledge, attitudes, skills and professional code of ethics required to perform basic proper field procedures, care and handling of surveying equipment, operate surveying equipment for basic measurements, accurate and neat recording, calculating, sketching horizontal and vertical information, and directing team activity. Proper care in the use, storage, transportation and adjustment of equipment to successful completion of a survey. It requires technical ability in the use of equipment, as well as understanding of how to use it, and make basic instrument adjustments to satisfy key task requirements.

Elements	Performance Criteria
1. Plan survey task	<p>1.1 <b>Task objectives</b> and principal work activities are defined.</p> <p>1.2 <b>Pertinent standards</b> are identified, considered and adhered.</p> <p>1.3 Plans for team activity, resources, check lists and manuals are put into place.</p> <p>1.4 Skills and knowledge are updated to accommodate changes in operating environment and equipment.</p>
2. Identify equipment	<p>2.1 Required <b>equipments</b> are identified</p> <p>2.2 <b>Descriptions of equipments</b> are recognized</p> <p>2.3 Organizational procedures are referred for issued personal use of survey equipment</p> <p>2.4 General Instrumental operation procedures are applied for use, care, adjustment and services</p>
3. Apply general instrumental operation procedures	<p>3.1 Operator's manuals are furnished and applied</p> <p>3.2 Routine care of equipment is applied</p> <p>3.3 Transport and storage of instruments are applied</p> <p>3.4 Casing and uncasing procedures are applied</p> <p>3.5 Instrumental set-up procedures are applied</p> <p>3.6 Instruments are adjusted in the field</p>
4. Execute task	<p>4.1 Identified survey components are measured and sketches drawn.</p> <p>4.2 Measured survey data is reduced and checked for comparison with design.</p> <p>4.3 <b>Measurements</b> are validated and recorded, and backup is saved and kept according to the <b>project specifications</b>.</p>

	<p>4.4 <b>Errors</b> are identified and explained; and corrections and precaution measures are applied</p> <p>4.5 Checks are completed according to <b>organizational documented and undocumented practices</b>.</p> <p>4.6 Team activity is monitored according to plan and customers treated properly.</p> <p>4.7 OHS requirements are planned and adhered.</p>
5. Complete operations and Finalize task	<p>5.1 Equipment is cleaned in accordance with manufacturers' specifications, organizational procedures and regulations.</p> <p>5.2 Attachments and other ancillary equipment are cleaned and stored to minimize damage and maximize hygiene according to manufacturer's specifications, organizational procedures and regulations.</p> <p>5.3 All containers, leftover fluids, waste and debris from the maintenance and servicing work are disposed of safely and appropriately.</p> <p>5.4 All required records and documentation are completed accurately and promptly in accordance with organizational requirements.</p>

Variable	Range
Task objectives	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• agreed client requirements</li> <li>• written survey data specifications</li> </ul>
Pertinent standards	<p>May include, but not limited to, standards essential to the accuracy of:</p> <ul style="list-style-type: none"> <li>• basic measurement system, method</li> <li>• calculation of horizontal and vertical information</li> <li>• data recording</li> </ul>
Equipments	<p>May include, but not limited to the use of:</p> <ul style="list-style-type: none"> <li>• level</li> <li>• photogrammetric</li> <li>• remote sensing</li> <li>• tape</li> <li>• total station</li> <li>• theodolite</li> <li>• barometer</li> <li>• surveyors compass</li> <li>• GPS</li> <li>• data logger</li> <li>• staff</li> <li>• ranging pole</li> <li>• taping arrow</li> <li>• ground plate</li> <li>• pocket calculator</li> </ul>
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	<ul style="list-style-type: none"> <li>• laptop computer</li> </ul>
Descriptions of equipments	<p>May include, but not limited to, the description of:</p> <ul style="list-style-type: none"> <li>• total station</li> <li>• GNSS (Global Navigation Satellite System) include GPS, GLONASS, Galileo, Beidou and other regional systems instruments</li> <li>• tribrachs</li> <li>• electronic Distance Measuring Instruments</li> <li>• miscellaneous Equipment</li> <li>• leveling Instruments</li> <li>• tripods</li> <li>• leveling Roads</li> </ul>
Measurement	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• angular measurement</li> <li>• coordinate measurements</li> <li>• vertical Measurements</li> <li>• linear measurement with tapes</li> <li>• code measurement</li> <li>• phase Measurement</li> </ul>
Project specifications	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• detailed technical descriptions of the survey data &amp; its requirements, such as measurement system, method, accuracy and precision</li> </ul>
Errors	<p>May include, but not limited to</p> <ul style="list-style-type: none"> <li>• instrument errors</li> <li>• personal errors</li> <li>• natural errors (topographic, Relief, vegetation, weather)</li> </ul>
Organizational documented and undocumented practices	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• appropriate timelines</li> <li>• data processing requirements</li> <li>• final product formats</li> <li>• formal design parameters</li> <li>• communication protocols</li> <li>• activity protocols for teamwork</li> </ul>

### Evidence Guide

Critical Aspects of Competence	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>• matches objectives with resources</li> <li>• ensure the accuracy</li> <li>• perform basic measurements</li> <li>• conduct reporting and documentation</li> <li>• apply survey data reduction and manipulation</li> <li>• resource planning</li> <li>• interpretation of basic design information</li> <li>• identifying the components to be measured</li> <li>• performing proper packaging, transportation, handling, minor storage, adjustment of equipment and accessories and</li> </ul>
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	keeping clean
Underpinning Knowledge and Attitudes	Demonstrates Knowledge of: <ul style="list-style-type: none"> <li>• accuracy and precision requirements</li> <li>• data recording and reduction</li> <li>• limitations of surveying equipment</li> <li>• organizational policies and guidelines</li> <li>• safe work practices</li> <li>• basic spatial reference systems</li> <li>• surveying data capture and data set out methodologies</li> <li>• basic surveying equipment for data capture and set-out</li> <li>• minor maintenance and calibration</li> <li>• patience and tactful in dealing with clients</li> <li>• professional code of ethics</li> </ul>
Underpinning Skills	Demonstrates skills to: <ul style="list-style-type: none"> <li>• operate/use/ and minor adjustment of basic instruments</li> <li>• determine the technological requirements of a survey project</li> <li>• read, record data and write field work technical reports</li> <li>• record and interpret statistics with accuracy and precision</li> <li>• undertake accurate computations</li> <li>• prioritize activities to meet contractual requirements and immediate needs pertaining to the use of surveying equipment</li> <li>• capture and set out methodologies for surveying data collection</li> <li>• eliminate errors and mistakes elimination/isolation capability</li> <li>• keep and draft neat and accurate field note</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	Competence may be assessed through: <ul style="list-style-type: none"> <li>• Interview / Written Test</li> <li>• Observation / Demonstration with Oral Questioning</li> </ul>
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Undertake a Site Assessment to Conduct Survey Expeditions
Unit Code	<a href="#">AGR CLR3 04 0514</a>
Unit Descriptor	This unit of competency covers the knowledge, skills and attitude required for the process of undertaking a site assessment as part of preliminary tasks leading to plan and successfully conducts different survey area expeditions. It requires the ability to identify the purpose for site assessment, plan and prepare for the site visit, undertake a site inspection, plan and apply surveying techniques for expeditions, collect and collate document information. Undertaking a site assessment requires knowledge of map reading, basic measuring and survey equipment and environmental threats and problems to site. Undertaking a site assessment is likely to occur under limited supervision from others with checking only related to overall progress. It also requires the ability to work with others, good communication skills and to perform key organizational requirements, on site and often in a lead role.

Elements	Performance Criteria
1. Identify purpose for site assessment and Plan survey expedition	<p>1.1 Client brief is prepared and agreed.</p> <p>1.2 <b>Objectives</b> and principal work activities are outlined and defined.</p> <p>1.3 <b>Equipment</b> is prepared according to organisational policy with guidance from <b>relevant supervisor</b>.</p> <p>1.4 Logistical considerations are incorporated into the expedition planning to ensure that supplies support the location, duration and size of the field trip.</p> <p>1.5 Supplies are obtained according to inventory and securely stowed for a field trip.</p> <p>1.6 Emergency supplies and emergency equipment are prepared.</p> <p>1.7 <b>Occupational Health and Safety (OHS) hazards</b> are planned and adhered.</p> <p>1.8 Skills and knowledge are updated to accommodate changes in expedition and equipment.</p> <p>1.9 Procedures, schemes and check list of the required resource are prepared.</p>
2. Collect and collate basic information	<p>2.1 Existing resources are identified and acquired.</p> <p>2.2 Site maps and plans are sourced.</p> <p>2.3 Base plan of the site is prepared.</p>
3. Prepare and	3.1. Survey camp site is prepared and maintained to comply
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organize for a site visit and survey expedition	<p>with OHS requirements.</p> <p>3.2. <b>Environmental impact</b> is minimised from camp activities.</p> <p>3.3. Maps, photos, survey site descriptions, and other available data are used to plan survey expeditions.</p> <p>3.4. Team members are informed and given briefings.</p> <p>3.5. Occupational Health and Safety (OHS) hazards associated with undertaking a site visit are assessed for potential risks and controls implemented accordingly.</p> <p>3.6. Location, holder ship, and site boundaries are verified.</p> <p>3.7. <b>Covenants</b> which could affect the landscape design are identified and recorded.</p> <p>3.8. Climate and weather conditions are ascertained from historical data.</p> <p>3.9. Where required, formal approval is sought to visit site.</p>
4. Undertake site inspection	<p>4.1 <b>Site orientation</b> is undertaken.</p> <p>4.2 <b>Existing on-site and adjacent site features</b> that may impact upon the project objectives are identified and recorded.</p> <p>4.3 Site grades are visually identified and recorded.</p>
5. Document information and conduct follow-up activity	<p>5.1. On return, equipment is unloaded, checked, cleaned and stored in the prescribed storage area according to organizational guidelines.</p> <p>5.2. Site survey <b>information is documented</b> in accordance with enterprise procedures.</p> <p>5.3. Documents are completed and forwarded to supervisor/manager according to enterprise procedures.</p> <p>5.4. Detailed report is prepared with recommendation.</p>

Variable	Range
Objectives	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• agreed client requirements</li> <li>• written survey data specifications</li> <li>• prepare detailed recommendation for the Main survey</li> </ul>
Equipment	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• camp equipment</li> <li>• surveying instruments</li> </ul>
Relevant supervisor	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• work site personnel</li> <li>• surveyor</li> </ul>
Occupational Health and Safety (OHS) hazards	<p>May include, but not limited to</p> <ul style="list-style-type: none"> <li>• food</li> <li>• electricity</li> </ul>

	<ul style="list-style-type: none"> <li>• shelter</li> <li>• water</li> <li>• daily laborer</li> <li>• Camping site</li> <li>• local administration support</li> <li>• solar radiation</li> <li>• uneven surfaces</li> <li>• tapes</li> <li>• strings and leveling equipment that may be tripped over existing on-site obstacles</li> </ul>
Environmental impact	<p>May include, but not limited to</p> <ul style="list-style-type: none"> <li>• positive and/or negative outcomes of proposed works and site suitability</li> <li>• drainage and irrigation, excess water nutrient and chemical flow into natural waterways proposed, excavation, impact on soil condition and stability</li> </ul>
Covenants	<p>May include, but not limited to</p> <ul style="list-style-type: none"> <li>• easements</li> <li>• right of ways</li> <li>• altered boundaries</li> <li>• council regulations or restrictions</li> </ul>
Site orientation	<p>May include, but not limited to</p> <ul style="list-style-type: none"> <li>• compass bearings and magnetic north</li> <li>• points of access</li> <li>• utility service locations</li> <li>• physical constraints of site</li> <li>• safety threats and hazards</li> <li>• environmental problems</li> </ul>
Existing on-site and adjacent site features	<p>May include, but not limited to</p> <ul style="list-style-type: none"> <li>• topography, vegetation, hydrology, services above and below ground, amenities, buildings and structures, access points, site modifications, fauna, location of boundaries, aspect, streams, paths, banks and gullies.</li> </ul>
Documenting information	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• plans, maps, reports, schedules and field notes</li> </ul>
Leveling equipment	<p>May include, but not limited to</p> <ul style="list-style-type: none"> <li>• Spirit levels, line bubbles, water levels, boning rods, dumpy levels, tilting levels, plumb bobs, staves and tripods</li> </ul>
Required documentation	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• expedition report, field records, survey plots</li> </ul>
Materials	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• field book, fixer, clipboard &amp; pencil lead</li> </ul>
Tools and equipment	<p>May include, but not limited to</p> <ul style="list-style-type: none"> <li>• spirit levels, line bubbles, water levels, boning rods, dumpy levels, tilting levels, plumb bobs, staves and tripods</li> <li>• EC Meters</li> </ul>

**Evidence Guide**

<p>Critical aspects of competence</p>	<p>A candidate must be able to demonstrate the ability to:</p> <ul style="list-style-type: none"> <li>• conduct navigation operations and prepare base plan of the site</li> <li>• plan a survey expedition</li> <li>• organize a survey expedition</li> <li>• assess Occupational Health and Safety hazards associated with undertaking a site visit, for potential risks and implemented controls accordingly</li> <li>• verify location, holder ship and site boundaries</li> <li>• identify and record existing on-site and adjacent site features that may impact upon the project objectives</li> <li>• document site survey information in accordance with enterprise procedures</li> <li>• conduct follow-up activity</li> <li>• read, record data and write technical reports</li> <li>• analyze errors</li> <li>• perform mental calculations</li> <li>• record and interpret statistics with accuracy and precision</li> <li>• plan and undertake expeditions</li> <li>• communicate efficiently with the local administration, people, team</li> </ul>
<p>Underpinning knowledge and attitudes</p>	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> <li>• the interpretation and understanding of legal, financial, technical and procedural requirements</li> <li>• emergency survival techniques</li> <li>• expedition planning processes</li> <li>• operations of camping equipment</li> <li>• map reading</li> <li>• basic measuring and survey equipment</li> <li>• current land use and environmental threats and problems to site</li> <li>• occupational health and safety hazards associated with undertaking a site assessment</li> <li>• protocols of accessing and visiting the site</li> </ul>
<p>Underpinning skills</p>	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> <li>• identify purpose for site assessment</li> <li>• collect and collate base information</li> <li>• prepare for site visit</li> <li>• undertake site inspection</li> <li>• document information</li> <li>• planning of expeditions</li> <li>• undertake expeditions</li> <li>• Solve problems relating to height, depth, breadth, dimension, direction and position in actual operations</li> <li>• conduct navigation operations</li> <li>• read, record data, make sketch and write technical reports</li> </ul>

	<ul style="list-style-type: none"> <li>• analyze and correct errors and mistakes</li> <li>• record and interpret statistics with accuracy and precision</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	Competence may be assessed through: <ul style="list-style-type: none"> <li>• Interview / Written Test</li> <li>• Observation / Demonstration with Oral Questioning</li> </ul>
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Collect and Set-out Basic Surveying Data
Unit Code	<a href="#">AGR CLR3 05 0514</a>
Unit Descriptor	This unit covers the knowledge, attitudes and skills required to collect and set out basic surveying data. It requires the ability to plan and execute the collection and set out operation, in a team environment.

Elements	Performance Criteria
1. Gather basic surveying data	<p>1.1 <b>Equipment</b> is operated according to <b>manufacturer's specifications</b>, operator's manuals and organizational guidelines.</p> <p>1.2 Different surveying methods are identified according to required information</p> <p>1.3 Work procedures are prepared to perform surveying techniques.</p> <p>1.4 Surveying techniques are applied according to work place procedures.</p> <p>1.5 <b>Data</b> and <b>attributes</b> are collected according to the provided <b>data collection plan</b>.</p> <p>1.6 Any discrepancy between specifications and actual activities is identified, recorded and reported.</p> <p>1.7 Administrative and industry requirements are complied with and recorded for data collection.</p> <p>1.8 OHS requirements are adhere.</p> <p>1.9 Skills and knowledge are updated to accommodate changes in equipment and operations.</p>
2. Set out basic surveying data	<p>2.1 Basic surveying data is set out according to data collection plans.</p> <p>2.2 Any discrepancies between the data collection plan and the actual activities are identified and recorded</p>
3. Finalize the collection process	<p>3.1 All <b>required documentations</b> are completed according to the organizational requirements.</p> <p>3.2 All data collections are completed according to organizational requirements.</p> <p>3.3 <b>Measurements</b> are validated and recorded according to the <b>project specifications</b>.</p>

Variable	Range
Equipment	May include, but not limited to: <ul style="list-style-type: none"> <li>Global Navigation Satellite System (GNSS)/Global Positioning System (GPS)</li> </ul>



	<ul style="list-style-type: none"> <li>• Level, Tape, Theodolite, Total station</li> </ul>
Manufacturer's specifications	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• equipment specifications</li> <li>• operator's manuals</li> </ul>
Data	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• data from GNSS/GPS,</li> <li>• level, photogrammetric, remote sensing total station</li> <li>• related to spatial dimension and position</li> <li>• level surface above or below which all heights are measured</li> <li>• assigned value, i.e., 10000, 1000, 100, etc</li> <li>• a permanently fixed point selected by the surveyor for establishment of a starting point, an assumed datum can be set at 0.00 if a survey is not used</li> <li>• an onsite local datum point which could simply be a step or a nail in a fence, to which all levels are referred</li> </ul>
Attributes	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• properties associated with an entity that may include: <ul style="list-style-type: none"> <li>➢ color</li> <li>➢ layer and level</li> <li>➢ line type and width and textual information</li> </ul> </li> </ul>
Data collection plans	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• computer-based data</li> <li>• field recordings</li> </ul>
Required documentations	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• electronic or paper-based correspondence with client</li> <li>• field records and final report</li> <li>• records of conversation</li> <li>• survey plots</li> <li>• organizational work activity sheets</li> <li>• survey site descriptions and how to reaches at least four site photographs from different position/directions</li> </ul>
Measurements	<p>May include, but not limited to the use of:</p> <ul style="list-style-type: none"> <li>• GNSS/GPS, level</li> <li>• remote sensing</li> <li>• tape</li> <li>• total station</li> </ul>
Project specifications	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• Detailed technical descriptions of the survey data &amp; its requirements.</li> </ul>

### Evidence Guide

Critical Aspect of Competence	<p>Assessment requires evidence that the candidate to:</p> <ul style="list-style-type: none"> <li>• collect and set out basic survey data accurately</li> <li>• conduct data recording, processing and reduction perform adjustment activities, eliminating errors and mistake</li> <li>• perform spatial data archival and retrieval</li> <li>• solve basic problems relating to height, depth, breadth,</li> </ul>
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	<p>dimension, direction and position in actual operational activity and virtual representation</p> <ul style="list-style-type: none"> <li>• understand implications of spatial positions to actual operational activity and virtual representation</li> <li>• capture and data set out methodologies of basic surveying data</li> <li>• perform GNSS/GPS observation and data collection</li> </ul>
Underpinning Knowledge and Attitude	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> <li>• accuracy and precision requirements</li> <li>• source of GNSS/GPS error</li> <li>• data recording and reduction</li> <li>• organizational policies and guidelines</li> <li>• safe work practices</li> <li>• Basic surveying data capture and data set out methodologies</li> <li>• survey control requirements</li> <li>• surveying computations and surveying data handling</li> <li>• accuracy and precision requirements related to GPS observation, data formats</li> <li>• data management, adjustment, error and mistake identification, analysis, elimination and accuracy determination</li> </ul>
Underpinning Skills	<p>Demonstrates skills in:</p> <ul style="list-style-type: none"> <li>• performing GNSS/ GPS observation, Total station operation</li> <li>• Collecting and setting out basic survey data accurately</li> <li>• performing spatial data archival and retrieval</li> <li>• Performing surveying data handling</li> <li>• solving basic problems relating to height, depth, breadth, dimension, direction and position in actual operational activity and virtual representation</li> <li>• understanding implications of height, depth, breadth, dimension and position to actual operational activity and virtual representation</li> <li>• capturing and data setting out methodologies of basic surveying data</li> <li>• conducting data recording and reduction activities</li> <li>• error and mistake identification, perform adjustment, analysis, elimination and accuracy determination</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>
Methods of Assessment	<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>Competency may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Demarcate Land Parcel Boundary Using GNSS/GPS
Unit Code	<a href="#">AGR CLR3 06 0514</a>
Unit Descriptor	This unit of competency covers the knowledge, skills and attitude required to collect data using basic Global Navigation Satellite System (GNSS)/Global Positioning System (GPS) equipment and to be able to use suitable software to communicate with a GNSS/GPS receiver in demarcating land parcel boundary. It requires the ability to combine technical application in a team environment with sound communication skills. Functions would be carried out under limited supervision and within organizational guidelines.

Elements	Performance Criteria
1. Plan and prepare	<p>1.1 Work instructions are confirmed and applied.</p> <p>1.2 Safety requirements are obtained from the site safety plan, other regulatory specifications or legal obligations applied.</p> <p>1.3 Measuring and calculating equipment selected to carry out tasks are made consistent with the requirements of the job, checked for serviceability and any faults are rectified or reported.</p>
2. Prepare for GNSS/GPS data collection.	<p>2.1 Data collection plan which detail key activities and timelines is scheduled with full consideration of the <b>specifications</b> and team activity.</p> <p>2.2 <b>Organizational GNSS/GPS survey requirements</b> are complied with and recorded.</p> <p>2.3 <b>Equipment</b> is prepared for the survey with consideration of the specific <b>project parameters and requirements</b>.</p> <p>2.4 Designated responsibilities are communicated to <b>relevant personnel</b> to ensure clarity of understanding of the work and to provide a basis for ongoing data assessment.</p> <p>2.5 Skills and knowledge are updated to accommodate changes in GNSS/GPS equipment.</p>
3. Collect GNSS/GPS data.	<p>3.1 GNSS/GPS equipment is operated according to <b>manufacturer specifications</b> and <b>organizational guidelines</b>.</p> <p>3.2 <b>Point positional data</b> is collected and related to a reference system based on specifications.</p> <p>3.3 GNSS/GPS data is collected using methodologies detailed in the data collection plan.</p> <p>3.4 Conditions are determined for obtaining optimum GNSS/GPS positions.</p> <p>3.5 Basic methods are recognized and used to improve the</p>
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	<p>accuracy of GNSS/GPS point positioning.</p> <p>3.6 GNSS/GPS measurements are <b>validated</b> and recorded on the <b>reference system</b> according to the project specifications.</p> <p>3.7 Any discrepancies between specifications and actual activities are identified and addressed.</p> <p>3.8 <b>OHS</b> requirements are adhered.</p> <p>3.9 GNSS/GPS equipment is operated according to manufacturer specifications and organizational guidelines.</p> <p>3.10 Plan scale, contour interval, and level of detail are identified in accordance with job requirements.</p>
4. Finalize the collection process.	<p>4.1 Basic GNSS/<b>GPS software</b> is used to communicate with basic GPS receivers.</p> <p>4.2 GNSS/GPS software is used to determine <b>required information</b>.</p> <p>4.3 Measured GNSS/GPS data is compared against design.</p> <p>4.4 Checks are completed according to organizational requirements.</p> <p>4.5. All <b>required documentations</b> are completed according to organizational guidelines.</p> <p>4.6 Appropriate software is used to process the data in order to determine required information, according to organizational guidelines.</p>

Variable	Range
Specifications	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>detailed technical descriptions of survey data and its requirements, preparation of cross-sections and plans with all information included</li> </ul>
Organizational GNSS/GPS survey requirements	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>GPS + GLONASS + (future additional systems, such as Galileo)</li> <li>administration (e.g. postcodes, suburbs, and federal and state electoral counties), analysis of environmental, land and geographic information, asset management, cartographic services, integrated services – environmental, land and geographic related datasets, mapping facilities, programming GNSS/GPS, site analysis, survey marks, sewerage and telecommunications.</li> </ul>
Equipment	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>GNSS/GPS receiver, associated equipment capable of differential and real time modes of operation.</li> </ul>
Project parameters and requirements	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>coordinate systems, datum, display formats, information displays, outputs</li> </ul>

Relevant personnel	May include, but not limited to: <ul style="list-style-type: none"> <li>colleagues, registered surveyors, site personnel, staff or employee representatives, supervisors or line managers, suppliers, Users.</li> </ul>
Manufacturer specifications	May include, but not limited to: <ul style="list-style-type: none"> <li>equipment specifications, operator manuals</li> </ul>
Organizational guidelines	May include, but not limited to: <ul style="list-style-type: none"> <li>appropriate timelines, code of ethics, company policy, final product formats, formal design parameters, legislation relevant to the work or service function, including Equal Employment Opportunity (EEO) manuals, OHS policies and procedures, personnel practices and guidelines outlining teamwork, work roles and responsibilities, Requirements for data processing.</li> </ul>
Point positional data	May include, but not limited to: <ul style="list-style-type: none"> <li>basic GNSS/GPS positions, not including differential methods</li> </ul>
Validating	May include, but not limited to: <ul style="list-style-type: none"> <li>reflecting the true state of a test result, including tests for systematic distortions such as: confounding bias, information/data bias, observational bias, recall bias, selection bias</li> </ul>
Reference system	May include, but not limited to: <ul style="list-style-type: none"> <li>projection and datum parameters required for GNSS/GPS equipment and processing software</li> </ul>
OHS	May include, but not limited to: <ul style="list-style-type: none"> <li>Ethiopian standards, development of site safety plan, identification of potential hazards, inspection of work sites, training staff in OHS requirements, use of personal protective clothing use of safety equipment and signage</li> <li>risk assessment and control</li> <li>implementing procedures for dealing with hazardous events</li> <li>maintaining knowledge of OHS legislation, principles and practice within context of organization's operations and plans</li> </ul>
GPS software	May include, but not limited to: <ul style="list-style-type: none"> <li>GNSS/GPS software package designed to process GPS data and output required information.</li> </ul>
Required information	May include, but not limited to: <ul style="list-style-type: none"> <li>calculated information, metadata, positional data, set out positional accuracy., electronic or paper-based correspondence with client., field records, final report , records of conversation , survey plots, and organizational work activity sheets</li> </ul>
Required documentations	May include, but not limited to: <ul style="list-style-type: none"> <li>electronic or paper-based correspondence with client</li> </ul>
Materials	May include, but not limited to: <ul style="list-style-type: none"> <li>field book, fixer, clipboard &amp; pencil lead</li> </ul>
Tools and equipment	May include, but not limited to: <ul style="list-style-type: none"> <li>any geodetic GNSS/GPS receiver and associated equipment</li> </ul>

	capable of differential and real time modes of operations
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<b>Evidence Guide</b>	
Critical Aspects of Competence	<p>A candidate must be able to demonstrate the ability to:</p> <ul style="list-style-type: none"> <li>• confirm and apply work instructions</li> <li>• select measuring and calculating equipment to carry out tasks consistent with the requirements of the job, check serviceability and rectify or report faults</li> <li>• prepare equipment for the survey with consideration of the specific project parameters and requirements</li> <li>• update skills and knowledge to accommodate changes in GNSS/GPS equipment</li> <li>• Collect and relate point positional data to a reference system based on specifications.</li> <li>• validate and record GNSS/GPS measurements on the reference system according to the project specifications</li> <li>• use appropriate software to process the data in order to determine required information, according to organizational guidelines</li> </ul>
Underpinning knowledge and attitudes	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> <li>• accuracy and precision requirements related to GNSS/GPS data</li> <li>• data formats</li> <li>• data management</li> <li>• errors, accuracy and precision in collection techniques</li> <li>• GNSS/GPS data processing and data manipulation</li> <li>• GNSS/GPS equipment</li> <li>• industry standards</li> <li>• limitations of equipment</li> <li>• organizational policies &amp; guidelines, such as OHS guidelines</li> <li>• planning and control processes</li> <li>• relevant industry requirements and standards</li> <li>• spatial reference systems (basic)</li> <li>• relevant health, safety and environment requirements</li> </ul>
Underpinning skills	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> <li>• operate GNSS/GPS instruments</li> <li>• work in teams</li> <li>• safe work practices</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>
Methods of Assessment	<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>Competency may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Perform Surveying Computations
Unit Code	<a href="#">AGR CLR3 07 0514</a>
Unit Descriptor	This unit covers the skills, knowledge and attitudes required to solve Cadastral surveying related problems. It requires the ability to identify errors and mistakes, adjust, analyze and evaluate data to determine the required accuracy in surveying computations.

Elements	Performance Criteria
1. Prepare to perform traverse computations	<p>1.1 Task objectives are defined based on required computation standards and accuracy level.</p> <p>1.2 <b>Pertinent standards</b> are identified, considered and adhered to in line with <b>project specifications</b>.</p>
2. Execute computation task	<p>2.1 Computations are performed on specified angles, bearings and distances.</p> <p>2.2 Conversions between polar and rectangular modes are performed.</p> <p>2.3 Computations are performed on the coordinates of a simple closed <b>traverse</b>.</p> <p>2.4 Computations are performed on the missing elements of a traverse.</p> <p>2.5 Computations are performed on adjusted coordinates of a traverse.</p> <p>2.6 Traverse information is reduced from field notes.</p> <p>2.7 Errors and mistake are identified and corrected according to appropriate industry standards.</p> <p>2.8 Traverse miss-closer computations are adjusted according to appropriate industry standards.</p> <p>2.9 Organizational <b>documented and undocumented practices</b> are adhered.</p> <p>2.10 OHS requirements are planned and adhered.</p>
3. Solve surveying problems involving circular curves	<p>3.1 Computations are performed on all elements of circular curves.</p> <p>3.2 Problems involving circular curve missing elements are solved.</p> <p>3.3 Skills and knowledge are updated to accommodate changes in operating environment and equipment.</p>
4. Finalize task	<p>4.1 All <b>required documentations</b> are completed promptly, accurately and according to organizational guidelines.</p> <p>4.2 <b>Relevant personnel</b> are informed of the results according</p>

	to organizational guidelines. 4.3 Spatial data is archived according to project specifications.
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Variable	Range
Pertinent standards	May include, but not limited to, standards essential to the accuracy of: <ul style="list-style-type: none"> <li>• basic measurement</li> <li>• calculation of horizontal and vertical information</li> <li>• recording</li> </ul>
Project specifications	May include, but not limited to: <ul style="list-style-type: none"> <li>• detailed technical descriptions of the survey data and its requirements</li> <li>• level of accuracy</li> </ul>
Traverse	May include, but not limited to: <ul style="list-style-type: none"> <li>• a method of surveying in which lengths &amp; directions of lines between points on the earth are obtained by, or from, field measurements and are used in determining positions of the points</li> <li>• closed</li> <li>• open</li> </ul>
Documented and undocumented practices	May include, but not limited to: <ul style="list-style-type: none"> <li>• appropriate timelines</li> <li>• Processing requirements, final product formats</li> <li>• formal design parameters, communication protocols</li> <li>• activity protocols for teamwork</li> </ul>
Required documentation	May include, but not limited to: <ul style="list-style-type: none"> <li>• field records</li> <li>• final product reports</li> <li>• survey plots</li> </ul>
Relevant personnel	May include, but not limited to: <ul style="list-style-type: none"> <li>• managers</li> <li>• site personnel such as field hands</li> <li>• supervisors</li> <li>• surveyors</li> <li>• customer or customer legal representative</li> <li>• Local administration or representative.</li> </ul>

Evidence Guide	
Critical Aspects of Competence	Assessment requires evidence that the candidate to: <ul style="list-style-type: none"> <li>• interpret and understand legal, financial and procedural requirements</li> <li>• compute basic traverse data from field information data formats</li> <li>• Exercise precision and accuracy in surveying computations</li> <li>• solve basic problems relating to spatial dimensions and positioning in actual operational activity and virtual representation</li> </ul>



	<ul style="list-style-type: none"> <li>• understand implications of spatial dimension and positioning to actual operational activity and virtual representation</li> <li>• record and interpret statistics with accuracy and precision</li> <li>• apply principles of algebra, geometry and trigonometry</li> <li>• identify, analyze and correct errors and mistakes</li> </ul>
Underpinning Knowledge and Attitude	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> <li>• basic principles of algebra, geometry and trigonometry</li> <li>• computing basic traverse data from field information data formats</li> <li>• data management</li> <li>• planning and control processes</li> <li>• surveying software</li> <li>• safe work practices</li> <li>• spatial reference systems</li> <li>• standard plan design and presentation conventions</li> <li>• vocational issues involving survey computations interaction of surveying software with surveying equipment</li> <li>• understanding and application of significance in calculations</li> <li>• error identification and analysis and correction</li> </ul>
Underpinning Skills	<p>Demonstrates skills in:</p> <ul style="list-style-type: none"> <li>• computing basic traverse data from field information data formats</li> <li>• create, extract &amp; output information from surveying plans</li> <li>• perform business documentation</li> <li>• exercise precision and accuracy in surveying computations</li> <li>• solve basic problems relating to height, depth, breadth, dimension, direction and position in actual operational activity and virtual representation</li> <li>• road design software</li> <li>• record and interpret statistics with accuracy and precision</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	<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	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Operate GIS Software to Spatial Input Analysis
Unit Code	<a href="#">AGR CLR3 08 0514</a>
Unit Descriptor	This unit covers the knowledge, skill and attitude required to apply geographic information systems (GIS) software to resolve problems, using spatial and non spatial data in an integrated manner. It requires the ability to operate GIS applications correctly in order to perform the required tasks of a spatial project.

Elements	Performance Criteria
1. Use GIS software to query spatial data	<p>1.1 <b>Spatial data</b> updates are accessed, read, interpreted and edited to ensure they are in an acceptable format to meet <b>functional requirements</b>.</p> <p>1.2 <b>Entities</b> and <b>attributes</b> are used to display <b>spatial information</b> that will assist in the delivery of <b>spatial information services</b> reported.</p> <p>1.3 Entity and attribute queries of spatial data are used to generate summary results.</p> <p>1.4 Results from queries are used to present spatial data graphically according to <b>organizational guidelines</b>.</p> <p>1.5 Entity and attribute queries are applied when using <b>univariate statistics</b> to explore the dataset.</p> <p>1.6 Routine spatial data problems or irregularities are solved in the course of the activity or via consultation with <b>relevant personnel</b>.</p> <p>1.7 Keyboard and <b>computer hardware equipment</b> are used to meet functional requirements on speed and accuracy and according to OHS requirements.</p> <p>1.8 Skills and knowledge are updated to accommodate changes in GIS software.</p>
2. Solve problems using GIS software	<p>2.1. Existing spatial and a spatial data are adjusted to integrate with new data to meet <b>documentation and reporting</b> requirements and to add to personal learning and organizational intelligence.</p> <p>2.2. <b>Geospatial techniques</b> on <b>appropriate software</b> are used to combine spatial layers data to solve problems, highlight selected data features and improve the visual aspect and understanding of the project.</p> <p>2.3. <b>Spatial overlay techniques</b> are used to solve problems and generate results pertaining to the <b>spatial projects</b> specified by relevant personnel.</p> <p>2.4. Cartographic integrity is tested and <b>validated</b> to solve</p>

	accuracy and quality problems. Spatial projectas specified by relevant personnel.
3. Produce reports based on basic spatial analysis	<p>3.1. Map or plans is/are integrated into project reports.</p> <p>3.2. Results, summary statistics and graphs from a mapping application are incorporated into a project.</p> <p>3.3. Legal and <b>ethical requirements</b> are adhered according to organizational guidelines.</p>
4. Archive data	<p>4.1 Spatial dataset to be archived is manipulated where necessary to ensure completeness.</p> <p>4.2 <b>Metadata</b> is created according to accepted industry standards.</p> <p>4.3 New and existing spatial data is stored and archival details are recorded according to organizational guidelines.</p>

Variable	Range
Spatial data	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• digital</li> <li>• hard copy</li> <li>• image, text</li> <li>• raster and vector</li> </ul>
Functional requirements	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• Work deliverables.</li> </ul>
Entities	<p>May include but, not limited to, a single item created on the screen such as:</p> <ul style="list-style-type: none"> <li>• arc</li> <li>• Circle</li> <li>• hatch</li> <li>• line</li> <li>• text</li> </ul>
Attributes	<p>May include, but not limited to, properties associated with an entity and may include:</p> <ul style="list-style-type: none"> <li>• color and layer</li> <li>• level</li> <li>• line type &amp; width</li> <li>• Text</li> </ul>
Spatial information	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• Virtual data related to the location of objects on the earth.</li> </ul>
Spatial information services	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• virtual data that is: <ul style="list-style-type: none"> <li>➤ collected, analyzed</li> <li>➤ displayed</li> <li>➤ manipulated and stored</li> </ul> </li> <li>• Virtual images used for planning and implementing the efficient administration and development of natural and built resources.</li> </ul>

Organizational guidelines	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• code of ethics</li> <li>• company policy legislation relevant to the work or service function,</li> <li>• manuals</li> <li>• OHS policies and procedures</li> <li>• Personnel practices and guidelines outlining work roles and responsibility.</li> </ul>
Uni-variate statistics	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• summary or descriptive statistics for single variables</li> <li>• arithmetic mean</li> <li>• histograms that illustrate the concepts of normal and other distributions</li> <li>• maximum &amp; minimum</li> <li>• median, mode,</li> <li>• Range standard deviation and variance.</li> </ul>
Relevant personnel	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• colleagues, staff or employee representatives</li> <li>• supervisors or line managers</li> <li>• Suppliers and users.</li> </ul>
Computer hardware equipment	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• mobile devices, multimedia devices</li> <li>• networked systems personal computers,</li> <li>• Printers and scanners.</li> </ul>
Documentation and reporting	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• audit trails</li> <li>• naming standards</li> <li>• project management templates</li> <li>• report writing styles</li> <li>• version control</li> </ul>
Geospatial techniques	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• geo-processing spatial data such as: <ul style="list-style-type: none"> <li>➤ clip</li> <li>➤ dissolve</li> <li>➤ intersect</li> <li>➤ merge</li> <li>➤ union</li> </ul> </li> </ul>
Appropriate software	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• Computer-Aided Design (CAD)</li> <li>• database</li> <li>• GIS</li> <li>• graphic</li> <li>• internet</li> <li>• presentation applications: <ul style="list-style-type: none"> <li>➤ Autodesk's AutoCAD</li> <li>➤ ESRI's Arc View GIS and Arc GIS</li> <li>➤ ERDAS Imagine</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>➤ FREEWARE or other similar applications</li> <li>➤ Intergraph Geo Media</li> <li>➤ Manifold Professional</li> <li>➤ MapInfo Professional</li> <li>➤ remote sensing</li> </ul>
Spatial overlay techniques	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• raster, including: <ul style="list-style-type: none"> <li>➤ aerial photography and/or satellite imagery in digital format</li> </ul> </li> <li>• Vector overlay, geo-processing and the incorporation of other spatial information.</li> </ul>
Spatial project	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• administration (e.g. postcodes, suburbs, and federal)</li> <li>• analysis of environmental, land and geographic information</li> <li>• cartographic services</li> <li>• digital imagery</li> <li>• electricity pole</li> <li>• emergency services management</li> <li>• environmental datasets</li> <li>• GIS</li> <li>• hydrography</li> <li>• integrated services – environmental, land and geographic related datasets</li> <li>• land ownership tenure system</li> <li>• local government</li> <li>• location-based services</li> <li>• global positioning</li> <li>• mapping facilities</li> <li>• Photogrammetric</li> <li>• remote sensing</li> <li>• site analysis</li> <li>• survey marks</li> <li>• telecommunications</li> <li>• terrestrial survey</li> <li>• town planning</li> <li>• utility services, such as water and electricity</li> </ul>
Validating	<p>May include, but not limited to, reflecting the true state of a test result, including tests for systematic distortions such as:</p> <ul style="list-style-type: none"> <li>• confounding bias</li> <li>• information/data bias</li> <li>• observational bias</li> <li>• recall bias</li> <li>• Selection bias</li> </ul>
Ethical requirements	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• confidentiality</li> <li>• privacy</li> </ul>
Metadata	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• Summarized information about a spatial dataset describes the</li> </ul>

	characteristics of the dataset, including availability, conditions of use, coordinate system, currency, spatial data acquisition methodologies, date of acquisition, quality, source and version control.
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<b>Evidence Guide</b>	
Critical Aspects of Competence	<p>Assessment requires evidence that the candidate to:</p> <ul style="list-style-type: none"> <li>• perform basic installation of GIS related software</li> <li>• use GIS software to query spatial data</li> <li>• produce reports based on basic spatial analysis</li> <li>• perform spatial data archival and retrieval</li> <li>• perform spatial data management and manipulation</li> <li>• load spatial data into a mapping application and perform entity and attribute queries</li> <li>• operate relevant software packages</li> <li>• create layouts for map printing</li> <li>• perform spatial database operation</li> <li>• solve basic spatial problems in an operational activity</li> </ul>
Underpinning Knowledge and Attitudes	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> <li>• cartographic design principles, datum and projections</li> <li>• geo-processing and logging procedures relating to a computer</li> <li>• OHS principles and responsibilities,</li> <li>• operation of relevant software packages</li> <li>• organizational policies and guidelines</li> <li>• creation of layouts for map reading</li> <li>• security management guidelines</li> <li>• technical terminology in relation to reading help files and prompts</li> </ul>
Underpinning Skills	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> <li>• perform spatial data management, archival, retrieval and manipulation</li> <li>• perform file management and spatial database operation</li> <li>• solve basic spatial problems and exercise precision and accuracy in all operations</li> <li>• load spatial data into a mapping application and perform entity and attribute queries</li> <li>• Operate relevant software packages</li> <li>• print and image formats for map production</li> <li>• Organize spatial and non-spatial information system</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	<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	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Read and Interpret Basic Image Data
Unit Code	<a href="#">AGR CLR3 09 0514</a>
Unit Descriptor	This unit covers the knowledge, skills and attitude (outcomes) required to interpret information from various types of image data. It requires the ability to identify, analyze and evaluate image data to fulfill project requirements. Functions would be carried out under limited supervision and within organizational guidelines.

Elements	Performance Criteria
1. Apply understanding of basic image data	<p>1.1 Basic principles of <b>image data</b> are applied in the context of the <b>project objective</b> and <b>project survey area</b>.</p> <p>1.2 Possible sources of image data are identified.</p> <p>1.3 Properties of different types of image data are identified.</p> <p>1.4 <b>Constraints</b> of different types of image data are identified.</p> <p>1.5 Spatial reference systems are accessed as required.</p> <p>1.6 Skills and knowledge are updated to accommodate changes in spatial reference systems.</p>
2. Calculate information from image data	<p>2.1. Scale of digital and hard copy image data is determined.</p> <p>2.2. Problems involving <b>acquired image data</b> are solved according to <b>organizational policies and principles</b>.</p>
3. Interpret image data	<p>3.1 Information from acquired image data is used to fulfill project objectives.</p> <p>3.2 Data image problems are resolved where possible.</p>
4. Document activity	<p>4.1 Documents are collected according to organizational procedures.</p> <p>4.2 <b>Required documentation</b> is done according to organizational policies.</p>

Variable	Range
Image data	<p>May include, but not limited:</p> <ul style="list-style-type: none"> <li>• Digital</li> <li>• Hard copy</li> </ul>
Project objectives	<p>May include, but not limited:</p> <ul style="list-style-type: none"> <li>• acquiring intellectual property</li> <li>• aims of project</li> <li>• evaluation criteria</li> <li>• milestones</li> <li>• performance indicators</li> <li>• project implementation</li> <li>• quality standards</li> </ul>

	<ul style="list-style-type: none"> <li>• return on investment</li> <li>• risk management</li> <li>• targets</li> </ul>
Project survey area	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• aerial photographs</li> <li>• Other forms of digital data in the horizontal or vertical plane.</li> </ul>
Constraints	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• resource availability</li> <li>• Specific survey requirement</li> <li>• Time</li> </ul>
Acquired image data	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• aerial photographs</li> <li>• digital</li> <li>• hard copy</li> <li>• imagery</li> <li>• Other remotely sensed images</li> </ul>
Organizational policies and principles	<p>May include, but not limited:</p> <ul style="list-style-type: none"> <li>• code of ethics</li> <li>• legislation relevant to the work or service function,</li> <li>• OHS practices, policies and procedures</li> <li>• personnel practices and guidelines outlining work</li> <li>• roles and responsibilities</li> <li>• quality assurance principles</li> </ul>
Required documentation	<p>May include but not limited:</p> <ul style="list-style-type: none"> <li>• final project reports</li> <li>• project reports</li> </ul>

### Evidence Guide

Critical Aspects of Competence	<p>Assessment requires evidence that the candidates demonstrate:</p> <ul style="list-style-type: none"> <li>• accessing and interpreting information to identify the components of image data to be measured and monitored</li> <li>• planning basic resources</li> <li>• performing measurements</li> <li>• managing quality processes and analysis of the result</li> <li>• Writing reports and completing documentation.</li> </ul>
Underpinning Knowledge and Attitudes	<p>Demonstrates a knowledge of:</p> <ul style="list-style-type: none"> <li>• data formats</li> <li>• image data</li> <li>• information management</li> <li>• organizational policies and guidelines</li> <li>• quality assurance principles</li> <li>• planning</li> <li>• relevant customer/ industry requirements and standards</li> <li>• safe work practices</li> <li>• surveying requirements for capturing various sources of data</li> </ul>



Underpinning Skills	<p>Demonstrates the skills of:</p> <ul style="list-style-type: none"> <li>• accessing and using workplace information and process documentation</li> <li>• interpreting and understanding legal, financial and procedural requirements</li> <li>• reading, recording data and write technical reports</li> <li>• researching and accessing routine sources of spatial data</li> <li>• recording and interpreting statistics accurately and precisely</li> <li>• undertake computations</li> <li>• preparing and administering documentation</li> <li>• prioritizing activities to meet contractual requirements</li> <li>• applying quality assurance and analysis</li> <li>• Interpreting basic data imagery</li> <li>• performing spatial data archival and retrieval</li> <li>• performing spatial data management and manipulation</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	<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	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Produce Digital Data
Unit Code	<a href="#">AGR CLR3 10 0514</a>
Unit Descriptor	This unit of competency covers the knowledge, skills and attitude required to convert analog aerial film into digital image. It requires the ability to identify, analyze and evaluate scanned image to perform mapping activities.

Elements	Performance Criteria
1. Prepare and perform analog aerial film scanning	<p>1.1 Task <b>objectives</b> are defined based on project specification.</p> <p>1.2 <b>Pertinent standards</b> and scanning are identified, considered and adhered according to <b>project specifications</b>.</p> <p>1.3 <b>Principal work activities</b> and <b>constraints</b> in relation to aerial file scanning are defined &amp; documented according to organization/<b>client</b> requirements.</p> <p>1.4 Information on identified risks, <b>contingencies</b>, <b>risk management processes</b> and required resources are included in task objectives.</p> <p>1.5 Requirements of the job are clarified with relevant personnel according to <b>organizational guidelines</b>.</p> <p>1.6 Work is allocated to appropriate personnel and <b>supervisory processes</b>, checks and measures are implemented to ensure work is completed within <b>time available</b>.</p> <p>1.7 <b>OHS requirements</b> are planned and adhered.</p> <p>1.8 Skills and knowledge are updated to accommodate changes in <b>scanning</b> procedures.</p>
2. Arrange for the task to be executed	<p>2.1 Arrangements are made to perform scanning of aerial film.</p> <p>2.2 Requirements for scanning of aerial film are communicated to <b>relevant personnel</b> and performed.</p> <p>2.3 Scanning is performed, the scanned images are checked, and the work is supervised.</p> <p>2.4 <b>Arrangements</b> are made to store the image in appropriate software and format.</p> <p>2.5 <b>Scanning problems</b> involving formats, resolution, and color are communicated to relevant personnel and solved.</p> <p>2.6 <b>Organizational documented and undocumented practices</b> are communicated to relevant personnel and adhered to.</p>
3. Supervise	3.1 Digital data is archived according to project specifications.

4. Document activity	4.1 Digital data are documented for <i>various purposes</i> in appropriate and approved format.
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Variable	Range
Objectives	May include, but not limited to: <ul style="list-style-type: none"> <li>• agreed client requirements</li> <li>• written scanned aerial film/ photo specifications</li> </ul>
Pertinent standards	May include, but not limited to: <ul style="list-style-type: none"> <li>• standards essential to the accuracy of: <ul style="list-style-type: none"> <li>➢ scanned aerial film</li> <li>➢ storage media and format</li> </ul> </li> </ul>
Project specifications	May include, but not limited to: <ul style="list-style-type: none"> <li>• Detailed technical descriptions of scanned aerial film requirements.</li> </ul>
Principal work activities	May include, but not limited to: <ul style="list-style-type: none"> <li>• activity and sequence of activity determined to be appropriate in order to meet project objectives</li> </ul>
Constraints	May include, but not limited to: <ul style="list-style-type: none"> <li>• industry requirements</li> <li>• financial</li> <li>• resource availability</li> <li>• time</li> </ul>
Client	May include, but not limited to: <ul style="list-style-type: none"> <li>• customers with routine or special requests</li> <li>• external to organization</li> <li>• internal to organization</li> <li>• regular and new customers, including: <ul style="list-style-type: none"> <li>➢ business enterprises</li> <li>➢ government agencies</li> <li>➢ members of the public</li> <li>➢ suppliers</li> </ul> </li> </ul>
Contingencies	May include, but not limited to: <ul style="list-style-type: none"> <li>• equipment failure</li> <li>• injury to personnel</li> <li>• personnel turnover</li> <li>• scanning errors/mistakes</li> <li>• power failure</li> </ul>
Risk management processes	May include, but not limited to: <ul style="list-style-type: none"> <li>• adhering to budget</li> <li>• anticipating external influences</li> <li>• contingency planning</li> <li>• effective communication and consultation</li> <li>• effective project management</li> <li>• internal and external audit processes</li> <li>• milestone review and evaluation</li> <li>• realistic timelines</li> <li>• targeted activity</li> </ul>

Organizational guidelines	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• code of ethics, company policy, legislation relevant to the work or service function,</li> <li>• manuals and OHS policies and procedures</li> <li>• Personnel practices and guidelines outlining work roles and responsibilities.</li> <li>• Team charter</li> </ul>
Supervisory processes	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• delegating</li> <li>• implementing</li> <li>• meeting deadlines</li> <li>• monitoring and overseeing practices</li> <li>• planning, targetting and evaluating</li> </ul>
Time available	<p>May involve estimates for time duration of project include:</p> <ul style="list-style-type: none"> <li>• client instructions</li> <li>• consideration of contingencies</li> <li>• consideration of past project experiences including: <ul style="list-style-type: none"> <li>➢ experience of project personnel</li> <li>➢ location of project</li> <li>➢ methods to be employed</li> <li>➢ resources and equipment to be used</li> </ul> </li> </ul>
OHS requirements	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• development of work place safety plan</li> <li>• identification of potential hazards</li> <li>• inspection of work places</li> <li>• training staff in OHS requirements</li> <li>• use of personal protective clothing</li> <li>• use of safety, manual ,equipment and signage</li> </ul>
Scanning	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• method of data acquisition in which analog aerial films are converted into digital format</li> </ul>
Relevant personnel	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• managers</li> <li>• supervisors</li> <li>• technicians</li> </ul>
Arrangements	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• allocation of work to staff</li> <li>• breaking down tasks into logical processes and allocating appropriately</li> <li>• performing tasks or components of tasks alone</li> <li>• supervising</li> <li>• training relevant staff</li> </ul>
Scanning problems	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• scanner failure</li> <li>• film orientation</li> </ul>
Organizational documented and	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• appropriate timelines</li> </ul>

undocumented practices	<ul style="list-style-type: none"> <li>• film scanning process requirements</li> <li>• final product formats</li> <li>• formal scanning parameters</li> <li>• teamwork</li> </ul>
Various purposes	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• responding to client request</li> <li>• different map production scales: <ul style="list-style-type: none"> <li>➢ DTM generation</li> <li>➢ ortho-photo map production</li> <li>➢ line map production</li> </ul> </li> </ul>

### Evidence Guide

Critical Aspects of Competence	<p>Assessment requires evidence that the candidate to:</p> <ul style="list-style-type: none"> <li>• analyze a range of problems and apply relevant solutions</li> <li>• perform scanning following standard procedures</li> <li>• assess and record scanned image from aerial film</li> <li>• demonstrate operational knowledge in areas relating to scanning</li> <li>• take responsibility for team outputs in work</li> </ul>
Underpinning Knowledge and Attitudes	<p>Demonstrates the knowledge of:</p> <ul style="list-style-type: none"> <li>• accuracy and precision requirements</li> <li>• image formats</li> <li>• image data management</li> <li>• Performing proper geo-referencing</li> <li>• image data manipulation techniques</li> <li>• project review procedures</li> <li>• safe work practices</li> </ul>
Underpinning Skills	<p>Demonstrates the skills to:</p> <ul style="list-style-type: none"> <li>• analyze errors</li> <li>• conduct image analysis</li> <li>• prioritize activities to meet contractual requirements</li> <li>• display proficiency in the operation of scanning equipment</li> <li>• perform image data archival &amp; retrieval (including backup procedures)</li> <li>• perform image data management and manipulation</li> <li>• use scanning equipment for image data acquisition</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>
Methods of Assessment	<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>Competency may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Prepare and Produce Maps from Orthophoto
Unit Code	<a href="#">AGR CLR3 11 0514</a>
Unit Descriptor	This unit of competency specifies the outcomes required to be able to create maps. It requires cartographical skills and knowledge and the ability to apply them. It also covers the knowledge, skills and attitude required to interpret, organize and analyze orthorectified image to produce various maps using computer and geospatial processing software. It requires the ability to combine technical applications to organize and produce maps by using orthophoto maps for various applications with sound communication skills. Functions would be carried out under supervision, within organizational guidelines.

Elements	Performance Criteria
1. Apply understanding of cartography principles.	<p>1.1 Purpose, application and scope of cartography are applied in the context of the <b>project objective</b>.</p> <p>1.2 Different types of <b>maps</b> are identified and described.</p> <p>1.3 Cartographic conventions used on maps are identified.</p> <p>1.4 Skills and knowledge are updated to accommodate changes in cartographic requirements.</p>
2. Plan and prepare to obtain orthophoto	<p>2.1. Block diagram is prepared to perform the task.</p> <p>2.2. Work instructions are confirmed and applied according to <b>organizational policy</b>.</p> <p>2.3. <b>OHS</b> requirements are obtained from the safety plan, regulatory specifications and legal obligations are applied.</p> <p>2.4. Measuring and calculating <b>equipment</b> selected to carry out tasks are checked for serviceability and consistent with the requirements of the job, and any faults are rectified or reported.</p> <p>2.5. <b>Job requirements</b> are determined in accordance with workplace procedures.</p> <p>2.6. Ortho <b>image rectification</b> and <b>mosaic creation and edition</b> request procedures are identified and applied.</p> <p>2.7. Ortho image <b>specifications/standards</b> are mentioned clearly and means of obtaining are selected and communicated in accordance with job and accuracy requirements.</p>
3. Develop Maps by applying cartographic practical skills.	<p>3.1. Major elements and <b>features</b> on maps are identified.</p> <p>3.2. <b>Spatial reference systems</b> are used to measure, locate and plot features on maps.</p>

	<p>3.3. Maps are created using correct <b>cartographical design principles</b> and according to <b>project specifications</b>.</p> <p>3.4. <b>Quality assurance</b> principles are observed under the direction of <b>relevant personnel</b>.</p> <p>3.5. Maps are produced in a desired quality and quantity</p> <p>3.6. Required documentation is completed according to organizational policies</p>
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Variable	Range
Project objective	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• acquiring intellectual property</li> <li>• aims of project</li> <li>• evaluation criteria</li> <li>• milestones</li> <li>• performance indicators</li> <li>• quality standards</li> <li>• return on investment</li> <li>• risk management</li> <li>• targets</li> </ul>
Maps	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• hard copy plans</li> <li>• digital information</li> </ul>
Organizational policies	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• code of ethics</li> <li>• organizational policy, structure, procedure</li> <li>• legislation relevant to the work or service function, including Equal Employment Opportunity (EEO)</li> <li>• manuals</li> <li>• OHS policies and procedures</li> <li>• personnel practices and guidelines outlining work roles and responsibilities</li> </ul>
OHS	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• taking prescribed breaks from concentrated work</li> <li>• development of site safety plan</li> <li>• identification of potential hazards</li> <li>• inspection of work sites</li> <li>• training staff in OHS requirements</li> <li>• use of equipment and signage</li> </ul>
Equipment	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• computer and its accessories</li> <li>• geospatial processing software</li> </ul>
Job requirements	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• Map projection,</li> <li>• Coordinate system</li> <li>• Man-made and natural features</li> </ul>
Image	<p>May include, but not limited to:</p>

rectification	<ul style="list-style-type: none"> <li>• ortho images creation</li> <li>• marginal information</li> <li>• area of interest determination.</li> <li>• geometric and radiometric corrections</li> <li>• geo-referencing process</li> </ul>
Mosaic	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• a series of images pinned together</li> </ul>
Mosaic creation and edition	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• mosaic generation using appropriate software</li> <li>• image Mosaics edition and correction</li> </ul>
Specification/standard	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• map scale</li> <li>• equipment</li> <li>• contour interval</li> <li>• resolution</li> </ul>
Features	<p>May refer to any item on a map represented by:</p> <ul style="list-style-type: none"> <li>• line work</li> <li>• a mark</li> <li>• a name</li> <li>• a symbol</li> </ul>
Spatial reference systems	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• contours</li> <li>• map orientations</li> <li>• map scale</li> <li>• map coordinate systems/map projection</li> <li>• datum</li> </ul>
Cartographical design principles	<p>May include, application of:</p> <ul style="list-style-type: none"> <li>• map symbols</li> <li>• color</li> <li>• contours</li> <li>• haching</li> <li>• line work</li> <li>• shading</li> </ul>
Project specifications	<p>Refers to:</p> <ul style="list-style-type: none"> <li>• detailed technical descriptions of the survey data and its requirements</li> </ul>
Quality assurance	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• internal and external</li> <li>• product or service measurement against set criteria</li> <li>• standard verification</li> <li>• target monitoring</li> </ul>
Relevant personnel	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• colleagues</li> <li>• land management information system technicians</li> <li>• registered surveyors</li> <li>• site personnel</li> <li>• staff or employee representatives</li> </ul>



	<ul style="list-style-type: none"> <li>• supervisors or line managers</li> <li>• suppliers</li> <li>• users</li> </ul>
Geometric corrections	<p>May include, but not limited to, the removal of distortion due to:</p> <ul style="list-style-type: none"> <li>• aerial camera tilt</li> <li>• relief displacement</li> <li>• uniform scale</li> </ul>
Radiometric corrections	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• sensor</li> <li>• atmospheric refraction</li> </ul>
Geo-referencing	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• defining existence in physical space</li> <li>• establishing location in terms of: <ul style="list-style-type: none"> <li>• map projection</li> <li>• coordinate system</li> </ul> </li> </ul>
Marginal information	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• image number</li> <li>• strip number</li> <li>• date photo taken</li> <li>• time photo taken</li> <li>• flying height</li> <li>• name of Company</li> <li>• altitude</li> </ul>

### Evidence Guide

Critical Aspects of Competence	<p>Assessment requires evidence that the candidate be able to:</p> <ul style="list-style-type: none"> <li>• prepare ortho image specification/standards; prepare order to procure orthorectified images</li> <li>• access and interpret information to identify the components to be measured and monitored</li> <li>• create base maps</li> <li>• perform measurements</li> <li>• undertake accuracy and precision measurement</li> <li>• organizational policies and procedures including quality requirements</li> <li>• accurately read and interpret of the orthorectified image</li> <li>• produce maps by using orthophoto as base maps</li> </ul>
Underpinning Knowledge and Attitudes	<p>Demonstrates the knowledge of:</p> <ul style="list-style-type: none"> <li>• abilities and capabilities of work team</li> <li>• application of a graphic design package</li> <li>• cartographic conventions used on maps</li> <li>• information on maps and how to extract it</li> <li>• performance of analysis and evaluation procedures</li> <li>• safe work practices</li> <li>• spatial information principles and their application</li> <li>• Photogrammetric terminology</li> <li>• Technical capabilities and limitations</li> </ul>

	<ul style="list-style-type: none"> <li>• Processes for interpreting digital images</li> <li>• Project quality requirement</li> </ul>
Underpinning Skills	<p>Demonstrates the skills to:</p> <ul style="list-style-type: none"> <li>• relate to people from a range of social, cultural and ethnic backgrounds and with a range of physical and mental abilities</li> <li>• have good analytical skills</li> <li>• communicate in a clear and concise manner in both written and verbal modes</li> <li>• have good computer skills, including ability to use basic software systems</li> <li>• have competent literacy skills to: <ul style="list-style-type: none"> <li>➢ assess and use workplace information</li> <li>➢ interpret and understand basic legal, financial, procedural and technical requirements</li> <li>➢ process workplace documentation</li> <li>➢ read and record data</li> </ul> </li> <li>• numeracy skills to: <ul style="list-style-type: none"> <li>➢ accurately record and collate</li> <li>➢ undertake basic computations</li> <li>➢ organizational skills to: <ul style="list-style-type: none"> <li>➢ priorities daily activities</li> <li>➢ process customers routine needs</li> </ul> </li> </ul> </li> <li>• spatial skills to: <ul style="list-style-type: none"> <li>➢ apply understanding of height, depth, breadth, dimension and position to actual operational activity and virtual representation</li> <li>➢ exercise precision and accuracy in relation to basic design application</li> </ul> </li> <li>• have time management skills</li> <li>• Plan and prepare for work</li> <li>• operate GIS, CAD and different geospatial processing software</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	<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	Competency may be assessed in the work place or in a simulated work place setting.

**Occupational Standard: Rural Cadastre and Land Registration Service Level III**

<b>Unit Title</b>	<b>Perform Adjudication, Registration and Certification Activities for Legal Cadastre</b>
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<b>Unit Code</b>	<b><u>AGR CLR3 12 0514</u></b>
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<b>Unit Descriptor</b>	This competency covers the knowledge, skills and attitudes required to perform adjudication activities for Legal Cadastre and apply registration and certification activities. It requires the ability to prepare and raise awareness, application and identification of land holders and users, adjudication of legally recognized rights, mapping, registration and certification, and. It also requires the ability to realize legal Cadastre by ascertaining through land holdings and other legally recognized use rights, and fixing the legal extent of rights by combining two modalities of ensuring a legal Cadastre: through negotiation and legal agreement reached among involved parties (adjoining landholders, witnesses, local representatives, adjudicators) and fixing the boundary mark accurately through surveying by maintaining the tolerance of legal Cadastre.
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<b>Elements</b>	<b>Performance Criteria</b>
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1. Apply preliminary procedures before adjudication, registration and certification activities	<p>1.1 <b>Tools and equipment, source of data and information</b> and group of community participate in registration are identified.</p> <p>1.2 Awareness creation for different target groups, including community, Kebele and Woreda administration are conducted with regard to the necessity of providing authentic information for adjudication processes, boundary delineation and registration and certification activities.</p> <p>1.3 Most communities are convinced and the adjudication process is welcomed.</p> <p>1.4 Land Administration committees are established</p> <p>1.5 The legal format is readied as evidence of legal agreement reached among adjoining landholders.</p> <p>1.6 Local parcel boundary marking materials are collected and readied.</p> <p>1.7 The area of jurisdiction is delineated from aerial photograph or Cadastre or topography map for easy identification of features.</p> <p>1.8 The block of cadastral base map is prepared as the adjudication process should comply with administrative/political boundary framework.</p> <p>1.9 <b>Base map</b> is printed at large scale preferably 1:2000 to 1:500.</p>
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	<p>1.10 Application and identification of land holders and parcels are processed.</p> <p>1.11 <b>Occupational Health &amp; safety</b> is maintained.</p>
2. Apply and Perform adjudication/ascertainment and mapping of right to land in case of unclear boundary	<p>2.1. Adjudication area is surveyed on the ground initiating from a known point, preferably a geodetic benchmark.</p> <p>2.2. Important man made features that include blocks, roads, courtyard/fences and buildings are surveyed.</p> <p>2.3. Negotiations with <b>Adjoining landholders</b> are made to clearly demarcate the boundary.</p> <p>2.4. Adjoining landholders are gathered in the process of demarcation of their boundary.</p> <p>2.5. Kebele land administration committee and other dwellers of the Kebele are called as witnesses for observing and signing on each demarcated parcel boundary amongst adjoining landholders.</p> <p>2.6. Peg/Stone is fixed on the agreed adjoining landholders' boundary of the parcel and surveying is performed accordingly by tying with the national grid by <b>surveying personnel</b>.</p> <p>2.7. The <b>legal format</b> is signed by the legal landholder, adjoining landholders, witnesses, surveying and legal registry technicians.</p>
3. Registration	<p>3.1. Procedures are prepared according to organizational policy and required information.</p> <p>3.2. Surveying techniques are applied according to work place procedures.</p> <p>3.3. Information and materials are collected from field sheet based on requirements.</p> <p>3.4. Identification and demarcation of boundaries are identified.</p>
4. Certification	<p>4.1 Data quality is assessed and formatted</p> <p>4.2 Book of holding and primary certificates are prepared</p> <p>4.3 Parcel Map is developed based on guidelines</p>

Variable	Range
Tools and equipment	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>rope, HHGPS, total station, theodolites, line level, string, graduated staff, measuring tape, digging instruments, ranging pole, pegs, compass, top maps, automatic level, clip board, drawing materials</li> </ul>
Source of data	May include, but not limited to:

and information	<ul style="list-style-type: none"> <li>• federal and regional land administration and use proclamation, property right regulations, ownership Right Book</li> <li>• community and land administration committees</li> <li>• organizational rules, regulation and guidelines</li> <li>• internet, related books and related materials</li> <li>• technical manuals</li> <li>• sharing best practice</li> <li>• virtual library</li> <li>• workplace guidelines</li> <li>• recorded documents/logo/history</li> </ul>
Base map	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• a land use map prepared differentiating land use/land cover like grazing land, forest, and farming area and other land uses by overlaying aerial photograph, satellite image and physical plan</li> </ul>
Occupational Health & safety	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• OHS identification, risk assessment and control</li> <li>• implement procedures for dealing with conflict resolution</li> <li>• Hazards may include disturbance or interruption of services, solar radiation, parcel possessed by several landholders, dust, sharp hand tools and equipment, manual handling, falling objects, and uneven Surfaces.</li> </ul>
Adjoining landholders	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• neighbours sharing common parcel boundary who agree on who owns what land and the legal extent of land during land adjudication</li> </ul>
surveying personnel	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• personnel includes Legal registry technicians, Surveyor, Spatial service technicians/administrators</li> </ul>
Legal format	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• A legal format certifying the agreement amongst adjoining parties on who owns what land and the legal extent. The legal format normally informs the name and signature of owners, adjoining owners, witnesses and surveyor, survey plan number, location information, and legal area extent of the owner</li> </ul>

### Evidence Guide

Critical Aspects of competence	<p>Assessment requires evidence that the candidate to:</p> <ul style="list-style-type: none"> <li>• prepare work procedures</li> <li>• be familiar with the inspection and the history of land acquisition</li> <li>• assure adjoining land holders and witnesses are agreed and signed on the boundary mark</li> <li>• performs surveying based on the agreed boundary mark</li> <li>• use agreed boundary, fences or road as a basis for demarcating legal extent of holders</li> </ul>
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	<ul style="list-style-type: none"> <li>• checks and harmonize the area on tax bill of old occupant with the measured area obtained from existing marks, fences or any agricultural or other boundaries from surveying</li> <li>• assures new title provision or temporary certificate is free from any title defect whatsoever</li> <li>• implements government laws and regulations</li> <li>• meets timelines of surveying and boundary delineation</li> <li>• ensures reconciliation takes place prior to Settlement</li> <li>• Implements government procedures.</li> <li>• prepares contingency plans in the event of a party being unable to fulfill contractual obligations</li> <li>• resolves conflicts</li> <li>• applies surveying techniques</li> <li>• collects tools and equipment</li> <li>• develops map</li> </ul>
Underpinning knowledge	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> <li>• local knowledge of socio-cultural conditions</li> <li>• legal Cadastre principles</li> <li>• parcel size standard regulations</li> <li>• land regularization, adjudication and consolidation</li> <li>• site surveying</li> <li>• land tenure legislation, tenure types and the effect of these maps, plans, title documents and related legal matters</li> <li>• quality control on surveying accuracy</li> <li>• Interpreting aerial photograph and/or satellite imagery.</li> <li>• practice procedures</li> <li>• process monitoring</li> <li>• quality assurance</li> <li>• spread sheets and Database management programs</li> <li>• interpreting legal official agreements</li> <li>• basic principles of survey</li> <li>• operating different survey instruments</li> <li>• proper handling techniques of instruments</li> <li>• map development techniques</li> <li>• dealing with conflicts</li> </ul>
Underpinning skills	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> <li>• work in teams</li> <li>• safe work practices</li> <li>• communicate with communities</li> <li>• Interpret aerial photograph or satellite image.</li> <li>• land consolidation</li> <li>• legal format preparation</li> <li>• negotiate</li> <li>• communicate in a range of business environments with</li> <li>• diverse people</li> <li>• plan contingency measures</li> </ul>

	<ul style="list-style-type: none"> <li>• analyze the responses of third parties</li> <li>• negotiate with a range of people in diverse situations</li> <li>• manage time efficiently</li> <li>• solve problems</li> <li>• operate appropriate technology for data storage and archiving</li> <li>• advocate on a range of issues</li> <li>• obtain ongoing instructions</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	Competence may be assessed through: <ul style="list-style-type: none"> <li>• Interview / Written Test</li> <li>• Observation / Demonstration with Oral Questioning</li> </ul>
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Develop and Use Advanced Spreadsheets
Unit Code	<a href="#">AGR CLR3 13 0514</a>
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to correctly operate spreadsheet applications and perform basic operations. It requires the ability to use spreadsheet software to complete business tasks and produce usable complex documents.

Elements	Performance Criteria
1. Develop a linked spreadsheet solution	<p>1.1 Task is analyzed and specifications are determined for spreadsheets.</p> <p>1.2 Organizational and task requirements are identified in relation to data entry, storage, output, reporting and presentation requirements.</p> <p>1.3 Software <b>functions</b> and <b>formulae</b> are utilized by <b>spreadsheet design</b> to meet identified requirements.</p> <p>1.4 Spreadsheets are linked in accordance with software procedures.</p> <p>1.5 Cells are formatted and data attributes assigned with relative and/or absolute cell references used in accordance with the task specifications.</p> <p>1.6 Formulae are tested to confirm output meets task.</p>
2. Automate and standardize spreadsheet operation	<p>2.1 Tasks are evaluated to identify those where automation would increase efficiency.</p> <p>2.2 <b>Macros</b> are created, used and edited to fulfill the requirements of the task and automate spreadsheet operation.</p> <p>2.3 <b>Templates</b> are developed, edited and used to ensure consistency of design and layout for forms and reports in accordance with organizational requirements.</p>
3. Use Advanced spreadsheet	<p>3.1 Data is entered, checked and amended in accordance with organizational and task requirements.</p> <p>3.2 Data is imported / exported between compatible spreadsheets and host documents adjusted in accordance with software and system procedures.</p> <p>3.3 Manuals, user documentation and on-line help are used to overcome problems with spreadsheet design and production.</p> <p>3.4 Spreadsheet is previewed, adjusted and printed in accordance with organizational and task requirements.</p> <p>3.5 Spreadsheet is named and stored in accordance with</p>



	organizational requirements and the application exited without data loss/damage.
4. Represent numerical data in graphic form	<p>4.1 Style of graph is determined to meet specified requirements and spreadsheet data is manipulated if necessary to suit graph requirements.</p> <p>4.2 <b>Graphs are created</b> with labels and titles from numerical data contained in a spreadsheet file.</p> <p>4.3 Graph is saved, viewed and printed within designated timelines.</p>
5. Complete documentation	<p>5.1 Information on quality and other indicators of service performance is recorded.</p> <p>5.2 All service processes and outcomes are recorded.</p>

Variable	Range
Functions	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• mathematical functions</li> <li>• statistical functions</li> <li>• date functions</li> <li>• logical functions (lookup, if, choose, true, false, conditions)</li> <li>• simple nested functions</li> </ul>
Formulae	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• addition</li> <li>• subtraction</li> <li>• multiplication</li> <li>• division</li> <li>• percentage</li> <li>• exponentiation</li> <li>• comparison</li> <li>• average</li> <li>• combinations of above</li> </ul>
Spreadsheet design	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• analysis</li> <li>• appropriateness</li> <li>• identification and parameters</li> <li>• formulas and functions</li> <li>• relative and absolute cell references</li> <li>• headings and labels</li> <li>• import and export of data</li> <li>• linked formulae</li> <li>• formatting and reformatting</li> <li>• headings</li> <li>• labels</li> <li>• multi-page documents</li> <li>• headers and footers</li> <li>• split screen operation</li> </ul>

	<ul style="list-style-type: none"> <li>• embedding cell references in formulae</li> <li>• avoidance of blank rows and columns</li> </ul>
Macros	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• printing sections of a spreadsheet</li> </ul>
Templates	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• forms</li> <li>• reports</li> <li>• headers/footers</li> <li>• page formats</li> <li>• font types and sizes</li> <li>• headings</li> </ul>
Graphs	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• bar</li> <li>• line</li> <li>• pie</li> <li>• stack</li> <li>• scatter</li> <li>• 3D</li> </ul>
Graph creating	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• using graph menu</li> <li>• data range</li> <li>• X and Y axis</li> <li>• labels and titles</li> <li>• naming</li> <li>• keys and legends</li> <li>• sizing (if possible)</li> </ul>

### Evidence Guide

Critical Aspects of Competence	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>• Develop a linked spreadsheet solution</li> <li>• Automate &amp; standardize spreadsheet operation</li> <li>• Use spreadsheet</li> <li>• Represent numerical data in graphic form</li> </ul>
Underpinning Knowledge	<p>Demonstrates 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</li> <li>• Occupational Health and Safety and environmental issues</li> <li>• Advanced functions of spreadsheet software applications</li> <li>• Impact of formatting and design on the presentation and readability of data</li> </ul>
Underpinning Skills	<p>Demonstrates skill to:</p> <ul style="list-style-type: none"> <li>• interpret and evaluate the purposes and uses of various features of spreadsheets</li> <li>• use a variety of strategies for planning and reviewing own work</li> <li>• check for accuracy and consistency of information by consulting additional resources</li> </ul>

	<ul style="list-style-type: none"> <li>• use processes flexibly and interchangeably</li> <li>• collate and present data; graphs and related references</li> <li>• follow complex oral instructions when using technology;</li> <li>• listen to and interpret complex sequenced instructions</li> <li>• Keyboarding 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	Competence may be assessed through: <ul style="list-style-type: none"> <li>• Interview / Written Test</li> <li>• Observation / Demonstration with Oral Questioning</li> </ul>
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Store and Retrieve Spatial and Non Spatial Data
Unit Code	<a href="#">AGR CLR3 14 0514</a>
Unit Descriptor	This unit covers the knowledge, skills and attitude (outcomes) required to store and retrieve spatial data from a range of storage media, including digital or hard copy storage. It requires the ability to analyze and evaluate spatial information from a variety of sources and to identify and access spatial information for set task requirements. Functions would be carried out under limited supervision and within organizational guidelines.

Elements	Performance Criteria
1. Store spatial and non spatial data	<p>1.1 Data index is created to assist in retrieval and storage according to organizational spatial and non spatial data and legal requirements.</p> <p>1.2 <b>Administrative and legal requirements</b> are complied with and recorded for data storage.</p> <p>1.3 Data is recorded in index according to <b>organizational guidelines</b>.</p> <p>1.4 Spatial and non-spatial data is backed up according to organizational guidelines.</p> <p>1.5 <b>Method of spatial data storage</b> is selected according to organizational guidelines.</p> <p>1.6 <b>Distribution method</b> is determined to ensure that the most current data is available.</p> <p>1.7 Skills and knowledge are updated to accommodate changes in data storage and retrieval processes.</p>
2. Access and retrieve spatial data	<p>2.1 Indexing system is used to locate spatial data source.</p> <p>2.2 Spatial data is translated into required format where necessary.</p>
3. Integrate spatial and non spatial data	<p>3.1 The common field is created for attributes of spatial and non spatial data according to the spatial project requirement.</p> <p>3.2 The spatial and non spatial data is integrated using common field.</p> <p>3.3 The retrieval and display are performed based on the integrated spatial and non spatial data.</p>
4. Manage contingencies	<p>4.1 All reasonable <b>contingencies</b> and possible solutions are considered to anticipate problems in the development of a risk management plan.</p> <p>4.2 Contingency plans are implemented where necessary.</p>

Variable	Range		
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Administrative and legal requirements	<p>May include, but not limited:</p> <ul style="list-style-type: none"> <li>• standards, quality assurance and certification requirements</li> <li>• award and enterprise agreements</li> <li>• licensing arrangements</li> <li>• organizational protocols for accessing physical, financial and human resources</li> <li>• reimbursements</li> <li>• Indigenous considerations</li> <li>• relevant codes of practice</li> <li>• anti-discrimination and diversity</li> <li>• copyright and digital copyright</li> </ul>
Organizational guidelines	<p>May include, but not limited:</p> <ul style="list-style-type: none"> <li>• electronic format</li> <li>• equipment specifications</li> <li>• operator manuals</li> <li>• printed product instructions and information</li> <li>• spatial database</li> <li>• spatial reference systems</li> <li>• warranty documents</li> </ul>
Method of spatial data storage	<p>May include, but not limited:</p> <ul style="list-style-type: none"> <li>• digital</li> <li>• hard copy</li> </ul>
Distribution method	<p>May include, but not limited:</p> <ul style="list-style-type: none"> <li>• network access to an authoritative data source that can accommodate storage in digital or hard copy</li> <li>• format</li> </ul>
Contingencies	<p>May include, but not limited:</p> <ul style="list-style-type: none"> <li>• fireproof storage</li> <li>• insurance</li> <li>• media malfunction</li> <li>• media and formats becoming outdated</li> <li>• offsite storage</li> <li>• storage in different media</li> </ul>

### Evidence Guide

Critical Aspects of Competence	<p>Assessment requires evidence that the candidate be able to:</p> <ul style="list-style-type: none"> <li>• apply data security and backup measures</li> <li>• create a workable index system</li> <li>• manage contingencies</li> <li>• Retrieve spatial and non-spatial data</li> </ul>
Underpinning Knowledge	<p>Demonstrates the knowledge of:</p> <ul style="list-style-type: none"> <li>• classification systems, processes &amp; products linked to specification</li> <li>• corporate information database environment</li> <li>• current indexing systems</li> <li>• data retrieval methods, querying and browsing</li> <li>• downloading Global Positioning System (GPS) and GIS</li> </ul>

	<ul style="list-style-type: none"> <li>• network and security guidelines</li> <li>• OHS requirements</li> <li>• organizational policies and guidelines</li> <li>• risk management principles as applied to spatial data storage</li> <li>• spatial data formats</li> <li>• spatial data management practices</li> <li>• spatial data structure requirements and storage media</li> </ul>
Underpinning Skills	<p>Demonstrates the skills of:</p> <ul style="list-style-type: none"> <li>• recording with accuracy and precision</li> <li>• maintaining information systems</li> <li>• prioritizing activities to meet contractual requirements</li> <li>• performing spatial data archival and retrieval</li> <li>• performing spatial data management and manipulation</li> <li>• performing file management</li> <li>• solving basic problems relating to spatial dimensions, direction and position in actual operational activity and virtual representation</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	<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	Competency may be assessed in the work place or in a simulated work place setting.

<b>Occupational Standard: Rural Cadastre and Land Registration Service Level III</b>	
<b>Unit Title</b>	<b>Operate Database Management System</b>
<b>Unit Code</b>	<a href="#"><u>AGR CLR3 15 0514</u></a>
<b>Unit Descriptor</b>	This unit defines the competency required to operate database applications and perform basic operations on tenure and land related information inputting, storage, organizing and retrieval.

<b>Elements</b>	<b>Performance Criteria</b>
1. Create database	<p>1.1A <b>database application</b> and design are opened to a two-table simple relational database for linking <b>land related data</b> incorporating basic <b>design principles</b>.</p> <p>1.2A table is developed with fields and <b>attributes</b> according to database usage, as well as user requirements.</p> <p>1.3A primary key is created and an index established for each table.</p> <p>1.4 Table layout and field attributes are modified as required.</p> <p>1.5A <b>relationship</b> between the two tables is created.</p> <p>1.6 Data in a table are added and modified according to information requirements.</p> <p>1.7 Records are added and deleted as required.</p> <p>1.8 Database is saved and closed to <b>disk</b>.</p>
2. Customize basic settings	<p>2.1 <b>Page layout</b> is adjusted to meet user requirements.</p> <p>2.2 Different <b>toolbars</b> are opened and viewed.</p> <p>2.3 <b>Fonts</b> are formatted as appropriate for the purpose of the database entries.</p>
3. Create reports	<p>3.1 Reports are designed to present data in a logical sequence.</p> <p>3.2 Reports are modified to include/exclude additional requirements.</p> <p>3.3 Reports are distributed to <b>appropriate person</b> in a suitable format.</p>
4. Create forms	<p>4.1A wizard is used to create a simple form.</p> <p>4.2 Existing database is opened and records are modified through a simple form.</p> <p>4.3 <b>Objects</b> are rearranged within the form to accommodate information requirements.</p>
5. Retrieve information	<p>5.1 Existing database is accessed and required records are located.</p> <p>5.2 Simple query is created and required information is retrieved.</p>

	5.3 Query is developed with multiple criteria and required information is retrieved.
	5.4 Data is selected and displayed appropriately.

<b>Variable</b>	<b>Range</b>
Database application	May include, but not limited to: <ul style="list-style-type: none"> <li>• SQL server, Oracle or Access SQL programming</li> </ul>
Land related data	May include, but not limited to: <ul style="list-style-type: none"> <li>• land book related data organized in Relational Database Management Software</li> </ul>
Design principles	May include: <ul style="list-style-type: none"> <li>• naming conventions, data layout and formatting, endorsed by the notary</li> </ul>
Attributes	May include, but not limited to: <ul style="list-style-type: none"> <li>• name</li> <li>• data type and size</li> </ul>
Relationship	May be, but is not limited to: <ul style="list-style-type: none"> <li>• one-to-one,</li> <li>• one-to-many or</li> <li>• many-to-many relationships</li> </ul>
Disk	May include, but are not limited to: <ul style="list-style-type: none"> <li>• diskettes (flash disks), CDs, CD-RW (Compact Discs-Read Write), DVD RW, zip disks, solid state hard drives</li> </ul>
Page layout	<ul style="list-style-type: none"> <li>• May include, landscape and portrait</li> </ul>
Toolbars	May include but not limited to: <ul style="list-style-type: none"> <li>• buttons, menus or a combination of both</li> </ul>
Font	May include, but not limited to: <ul style="list-style-type: none"> <li>• the combination of typeface and other attributes, such as size, pitch, and spacing character or symbol.</li> </ul>
Appropriate person	May include, but not limited to: <ul style="list-style-type: none"> <li>• a supervisor, teacher, authorized business representative or client</li> </ul>
Objects	May include, but not limited to: <ul style="list-style-type: none"> <li>• buttons, checkboxes, option buttons, text boxes, drop down lists</li> </ul>

<b>Evidence Guide</b>	
Critical Aspects of Assessment	Assessment may provide evidence that the candidate must: <ul style="list-style-type: none"> <li>• Design and develop a simple database using a standard database package</li> <li>• add data</li> <li>• use queries</li> <li>• Create forms and reports</li> </ul>
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: <ul style="list-style-type: none"> <li>• basic database design</li> <li>• relationships between tables (cardinality)</li> <li>• forms, reports and queries for retrieving and displaying</li> </ul>



Underpinning Skills	Demonstrate skill of: <ul style="list-style-type: none"> <li>• reading and writing at a level where basic workplace documents are understood</li> <li>• clear and precise communication</li> <li>• interpretation of user manuals</li> <li>• ability to create a simple database</li> <li>• ability to perform a query on database</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	Competence may be assessed through: <ul style="list-style-type: none"> <li>• Interview / Written Test</li> <li>• Observation / Demonstration with Oral Questioning</li> </ul>
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Perform Tenure Documentation
Unit Code	<a href="#">AGR CLR3 16 0514</a>
Unit Descriptor	This unit covers the knowledge, skills and attitude required to document or reconstruct, design and describe a record system and its context over a period of time. The unit can be applied to records entered on land books to compile, collate and organize archive work.

Elements	Performance Criteria
1. Establish the activities / functions documented	<p>1.1 The actions / activities, by which the records are generated, documented, established and documented.</p> <p>1.2 The boundaries of the activities are established from the records and checked against a functional analysis of the organization.</p> <p>1.3 The records creators are identified by mapping them to the parts of the organization responsible for the function activities that the records document.</p> <p>1.4 Changes to the activities / functions are established from the records and verified against other appropriate <b>sources</b> over the time period of the records; the result of this research is documented.</p> <p>1.5 Relationships between activities / functions and their relationships with other entities are established and documented</p>
2. Identify and document the records' creator(s)	<p>2.1 The records' creators are described in their organizational structure and context</p> <p>2.2 The accountability requirements and functional responsibilities of the records' creators are identified from appropriate sources.</p> <p>2.3 Where appropriate, the nature of the jurisdiction governing the organization is identified and described.</p> <p>2.4 Relationships between the records' creators and their relationships with other entities are established and documented.</p>
3. Describe the records' chronological and system context	<p>3.1 Where appropriate, the previous and/or subsequent records / series are identified and described to place the records in their chronological context</p> <p>3.2 Where appropriate, records related to the records in question are identified by the nature of their content, similar function, or systemic relationship.</p> <p>3.3 The related records/series are documented in accordance with organizational standards.</p>

<p>4. Document the records, their systemic, organizational and chronological context</p>	<p>4.1 The documentations of the function and the creators of the records are presented according to organizational standards.</p> <p>4.2 The descriptions of the system and its related records series and any changes and anomalies over time are presented according to organizational standards.</p> <p>4.3 The documentation of the records' chronological context is presented according to organizational standards to maintain the accessibility of the records.</p> <p>4.4 Control is established by capturing the records into an appropriate system of the organization, according to its standards and procedures.</p> <p>4.5 Computerized/digital documentation systems are applied into an appropriate system of the organization, according to its standards and procedures.</p>
<p>5. Document the reconstruction of the business or records system</p>	<p>5.1 The elements of the land book or records system are identified from the records and documented.</p> <p>5.2 The records series are identified and documented in accordance with the organizational standards and procedures.</p> <p>5.3 Where changes to, or anomalies in, the business or records system over time are identified and documented.</p> <p>5.4 Where no system is apparent, or is inadequate to maintain control of the records, control is established by capturing the records into the organization's system, according to its standards and procedures.</p>

<b>Variable</b>	<b>Range</b>
<p>Source of data and information</p>	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• federal and regional land administration and use proclamation, property right regulations, owner ship Right Book</li> <li>• community and land administration committees</li> <li>• organizational rules, regulation and guidelines</li> <li>• internet, related books and related materials</li> <li>• technical manuals</li> <li>• sharing best practice</li> <li>• virtual library</li> <li>• workplace guidelines</li> <li>• recorded documents/logo/history</li> </ul>

<b>Evidence Guide</b>	
<p>Critical Aspects of Competence</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>• understand the concepts of records series and records system</li> </ul>

	<ul style="list-style-type: none"> <li>• apply those concepts to analysis information about records</li> <li>• demonstrate organizational activities</li> <li>• document the reconstruction of the business or records system</li> <li>• create and manage different systems for records</li> <li>• describe the records' chronological and system context</li> <li>• describe the content and structure of the records and system(s)</li> </ul>
Underpinning Knowledge and Attitude	<p>Demonstrate knowledge of:</p> <ul style="list-style-type: none"> <li>• relevant legislation from all levels of government</li> <li>• occupational health and safety and environmental issues</li> <li>• organizations' functions, structure and culture</li> <li>• organization's policies and strategies</li> <li>• recordkeeping principles and processes, particularly Archival</li> <li>• business or records system and technologies</li> <li>• research sources and methods</li> </ul>
Underpinning Skills	<p>Demonstrate skill of:</p> <ul style="list-style-type: none"> <li>• analyzing process functions and problems</li> <li>• preparing, compiling and writing complex documents and reports</li> <li>• documenting complex relationships and processes</li> <li>• analyzing and interpreting legal and regulatory requirements and organization policies and procedures</li> <li>• analyzing and synthesizing documentation, verbally delivered information, and observed behaviors</li> <li>• application of computerized/digital documentation systems</li> <li>• communicating complex relationships and processes effectively to users and management</li> <li>• Identifying and viewing component parts as integral elements of the whole system</li> <li>• using tools and techniques to solve problems</li> <li>• an ability to relate to people from a range of social, cultural</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>
Methods of Assessment	<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>Competency may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Complete Database Back-up and Recovery
Unit Code	<a href="#">AGR CLR3 17 0514</a>
Unit Descriptor	This unit covers the knowledge, skills and attitude required to define the competency required to back-up and recover a database.

Elements	Performance Criteria
1. Review database architecture	<p>1.1 The <b>architecture</b> of a <b>database</b> file system is identified consequently and, the most appropriate methods are determined for <b>back-up</b> and recovery.</p> <p>1.2 Risks and failure scenarios that are likely or possible are identified and examined.</p>
2. Determine back-up methods appropriate to database requirements	<p>2.1 A range of back-up and restoration methods are evaluated based on organizational and security <b>standards</b> and on the assessment of likely of possible failure scenarios.</p> <p>2.2 Full off-line back-ups are completed according to organizational and security standards with minimal down time.</p> <p>2.3 On-line file back-ups are completed as determined by organizational and security standards and with minimal down time.</p> <p>2.4 Disk mirroring and redundant array of inexpensive disks (RAID) hard disk configurations are employed to keep copies of files.</p> <p>2.5 Off-site copies of back-up file are arranged.</p>
3. Establish recovery points and disaster recovery procedures	<p>3.1 Database recovery points are determined based on the back-up arrangements according to <b>organizational guidelines</b>.</p> <p>3.2 The restore process is tested in order to ensure that the database can be restored to a given recovery point, with minimal down time.</p> <p>3.3 The restoration of the database is completed to the point of failure, without loss of committed transactions.</p>
4. Create and deploy standby database	<p>4.1 A standby database is created or set up to meet organizational guidelines.</p> <p>4.2 Standby database is implemented to support critical business functions.</p> <p>4.3 <b>Documentation</b> is prepared for standby database.</p>

Variable	Range
Architecture	May include, but is not limited to:

	<ul style="list-style-type: none"> <li>operating system: Novell NetWare 5 or above or operating system that has multi-user ability; Linux, Mac OS , Windows 2000 or above</li> <li>database software: Oracle, Sybase, Microsoft SQL server, Microsoft Access, My SQL</li> <li>configuration: small memory model, large memory model, requests per second</li> </ul>
Database	<p>May include, but are not limited to:</p> <ul style="list-style-type: none"> <li>relational databases, object-relational databases, and proprietary databases, commercial off the shelf (COTS) database packages</li> </ul>
Back-up	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>involve single or multiple tape units or DVD or CD back-up to more comprehensive and complex back-up facilities across the network or the internet</li> </ul>
Standards	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>ISO/IEC standards, organizational standards, project standards</li> </ul>
Organizational guidelines	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>personal use of emails and internet access, content of emails, downloading information and accessing particular websites, opening mail with attachments, virus risk, dispute resolution, document procedures and templates, communication methods and financial control mechanisms</li> </ul>
Documentation	<ul style="list-style-type: none"> <li>May follow ISO/IEC standards, audit trails, naming standards, version control, project management templates and report writing, maintaining equipment inventory; client training and satisfaction reports</li> </ul>

### Evidence Guide

Critical Aspects of Competence	<p>Assessment requires evidence that the candidate can:</p> <ul style="list-style-type: none"> <li>implement back-up and recovery procedures, with minimum disruption to the business and if necessary, to introduce contingency plans.</li> </ul>
Underpinning Knowledge and Attitudes	<p>Demonstrate knowledge on:</p> <ul style="list-style-type: none"> <li>general structured query language</li> <li>database administration</li> <li>basic knowledge of tuning methodologies</li> <li>general principles of databases</li> <li>a broad range of diagnostic tools</li> <li>back-up and recovery methods</li> <li>database security</li> </ul>
Underpinning Skills	<p>Demonstrate skills on:</p> <ul style="list-style-type: none"> <li>analysis skills in relation to non-routine work processes</li> <li>project planning skills in relation to set benchmarks and identified scope</li> <li>report writing skills for business requiring depth in some areas, analysis and evaluation of information in a defined</li> </ul>

	<p>range of areas</p> <ul style="list-style-type: none"> <li>• problem solving skills in non-routine work processes</li> <li>• open file back-up procedures and restore operations</li> <li>• research skills for identifying , analyzing and evaluating broad features of a particular business domain and best practice in back-up and recovery strategies</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	Competence may be assessed through: <ul style="list-style-type: none"> <li>• Interview / Written Test</li> <li>• Observation / Demonstration with Oral Questioning</li> </ul>
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
<b>Unit Title</b>	<b>Take Instruction in Relation Transaction</b>
<b>Unit Code</b>	<b><a href="#">AGR CLR3 18 0514</a></b>
<b>Unit Descriptor</b>	This unit describes the process of taking instructions for the transactions of transfer of property or land right. It includes establishing client's needs, identifying parties, properties and other interest, determining contingency strategies and whether the transaction should proceed or not.

<b>Elements</b>	<b>Performance Criteria</b>
1. Establish the client's needs	1.1 Client and any potential clashes of interest are identified. 1.2 The client's needs and expectations are assessed in discussion with client. 1.3 Optional courses of action are determined and discussed with client. 1.4 Communication is made courteous and clarification is sought where necessary. 1.5 Information collected/given is made accurate and relevant. 1.6 An understanding of needs/and responsibilities is confirmed by client and conveyances.
2. Identify parties, properties and other interests	2.1 Parties, properties and interests relevant to the transaction are identified. 2.2 Documentation and titles are examined to confirm facts pertaining to the transaction.
3. Determine contingency strategies	3.1 Contingencies relating to the transaction are assessed. 3.2 Client is advised of range of contingencies and possible options. 3.3 Strategies are determined in consultation with client.
4. Initiate the transaction (see Range for a complete description of possible transactions)	4.1 A course of action which meets client's needs is selected. 4.2 Client is advised of procedures to achieve client's goal. 4.3 Instructions are confirmed with client to proceed or not to proceed. 4.4 <b>Client's instructions</b> are recorded. 4.5 Authorities are obtained from client and other relevant parties. 4.6 Referral is made to another professional discipline or agency where appropriate.
5. Determine terms of engagement	5.1 Terms of engagement are articulated to client. 5.2 Client's agreement is established with terms. 5.3 Disclosure of terms that complies with legal/practice requirements is used.



	5.4 Quotations of fees and disbursements are provided to client who is accurate and complete.
6. Identify any conflict of interest between conveyance and client	6.1 File is opened in accordance with practice procedures. 6.2 Any conflicts of interest associated with the transaction are identified. 6.3 Conflict of interest is assessed and appropriate actions are determined to client and business.

Variable	Range
Client's instructions	May include but not limited to: <ul style="list-style-type: none"> <li>• geographic location of client</li> <li>• communication skills of each party</li> <li>• honesty and intelligence of each party</li> <li>• understanding of client's goals</li> <li>• availability and quality of information provided by client \</li> <li>• consumer protection legislation including Fair Trading</li> <li>• understanding of common law in relation to provision of advice</li> </ul>

Evidence Guide	
Critical Aspects of Competence	Assessment may provide evidence that the candidate must: <ul style="list-style-type: none"> <li>• establish a realistic time frame and the client's needs in relation to the transaction</li> <li>• check the accuracy of information collected/given</li> <li>• confirm the authority to act maintains client confidentiality at all times</li> <li>• ensure qualified practitioner completes transaction</li> </ul>
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: <ul style="list-style-type: none"> <li>• relevant legislative and common law</li> <li>• relevant types of contract and other required documentation</li> <li>• professional/industry terminology and accepted practices</li> </ul>
Underpinning Skills	Demonstrate skills to: <ul style="list-style-type: none"> <li>• clarify information given/received and interpret documents/legislation</li> <li>• explain complex/legal issues in simple terms and write in plain English</li> <li>• operate appropriate technology</li> <li>• negotiate with a range of people in diverse situations</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	Competence may be assessed through: <ul style="list-style-type: none"> <li>• Interview / Written Test</li> <li>• Observation / Demonstration with Oral Questioning</li> </ul>
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Deal with Land Holding Conflict
Unit Code	<a href="#">AGR CLR3 19 0514</a>
Unit Descriptor	This unit of competency covers the knowledge, skills and attitude required to deal effectively with conflict in work place, among landholders and other stakeholders. It requires the ability to identify conflict situations, implement conflict resolution strategies and use effective interpersonal skills.

Elements	Performance Criteria
1. Identify conflict situations	<p>1.1. Signs and possible causes of conflict are quickly identified.</p> <p>1.2. Stage of the conflict is accurately determined with respect to progression and possible escalation.</p> <p>1.3. Swift and tactful action is taken to prevent escalation.</p> <p>1.4. Situations where personal safety of clients or staff may be threatened are quickly identified and appropriate assistance is organized.</p> <p>1.5. Factors are identified within the individual or workplace which relate to the developing conflict.</p>
2. Implement conflict resolution strategies	<p>2.1 Responsibility is taken for resolving the conflict within scope of individual responsibility.</p> <p>2.2 <b>Factors and issues relevant to the conflict</b> are clarified.</p> <p>2.3 Correct <b>conflict resolution technique</b> is used to manage the <b>conflict situation</b> after consideration of the particular <b>workplace environment</b>.</p> <p>2.4 <b>Options for resolution</b> of the conflict are identified which allow for constructive responses to be negotiated and enable established work relationships to continue.</p> <p>2.5 During negotiations and discussions, all points of view are encouraged, accepted and treated with respect.</p>
3. Use effective interpersonal skills	<p>3.1 Effective verbal and non verbal communication is used during negotiations, including body language, questioning, language style, active listening and reflection.</p> <p>3.2 Feedback is given assertively and received non-defensively during negotiations.</p>

Variable	Range
Factors and issues relevant to the conflict	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• opposing attitudes, values, beliefs</li> <li>• individual versus group goals/interest</li> <li>• workload</li> <li>• stress</li> </ul>

	<ul style="list-style-type: none"> <li>• limited resources</li> </ul>
Conflict resolution techniques	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• withdrawal</li> <li>• smoothing</li> <li>• compromise</li> <li>• forcing</li> <li>• confrontation problem solving</li> <li>• compromise, majority vote, arbitration</li> </ul>
Conflict situation	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• client complaints</li> <li>• conflicts among work colleagues</li> <li>• conflict between landholders/stakeholders</li> </ul>
Workplace environment	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• all agricultural (among animal, crop and forestry sectors), environmental sectors and other sectors</li> </ul>
Options for resolution	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• win-win</li> <li>• win-lose</li> <li>• lose-lose</li> </ul>
OHS	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• OHS hazard identification, risk assessment and control</li> <li>• Implement procedures for dealing with hazardous events</li> <li>• Maintaining knowledge of OHS legislation, principles and practice within context of organization's operations and plans</li> </ul>
Materials	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• federal and regional states legislations, guidelines and regulations</li> </ul>

### Evidence Guide

Critical aspects of Competence	<p>A candidate must be able to demonstrate the ability to:</p> <ul style="list-style-type: none"> <li>• identify signs and possible causes of conflict</li> <li>• used correct conflict resolution technique to manage the conflict situation after consideration of the particular situation</li> <li>• use effective verbal and non verbal communication during negotiations, including body language, questioning, language style, active listening and reflection</li> </ul>
Underpinning knowledge and attitudes	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> <li>• signs and stages of conflict in the workplace and among landholders/stakeholders</li> <li>• possible causes/sources of conflict (ideational, status and power, goal conflict)</li> <li>• functions of conflict (functional and dysfunctional)</li> <li>• options for constructive responses to typical conflict situations</li> <li>• relevant legislations and guidelines</li> <li>• relevant health, safety and environment requirements</li> </ul>

Underpinning skills	Demonstrates skills of: <ul style="list-style-type: none"> <li>• interpersonal communication skills</li> <li>• participation in small informal work groups</li> <li>• problem solving</li> <li>• ability to gather, record, and convey information</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	Competence may be assessed through: <ul style="list-style-type: none"> <li>• Interview / Written Test</li> <li>• Observation / Demonstration with Oral Questioning</li> </ul>
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Process Applications and Respond to Client's Legal Land Use Related Claims
Unit Code	<a href="#">AGR CLR3 20 0514</a>
Unit Descriptor	This unit covers knowledge, skills and attitude required to analyze and review information sourced for processing of applications in a land and property related claim, consult with stakeholders, prepare a submission, and carry out post-determine instructions.. It requires the ability to establish client requirements, determine scope of the request and present findings. Processing applications for legal land use related claims requires a knowledge of relevant Federal and Regional States legislation, and regulations on notification, interpreting Orthorectified images, maps and GIS, communicating with stakeholders, agency policies and procedures and formats for presenting information to clients. It includes investigation of land and property related claims.

Elements	Performance Criteria
1 Establish client requirements	<p>1.1. <b>Client</b> information is used to identify services required.</p> <p>1.2. Specific needs of clients are recognized and addressed in targeting client services.</p> <p>1.3. Proposed changes in legal land use claims are discussed with and confirmed with the landholder.</p> <p>1.4. Current impacting <b>legislation, policies and procedures</b> are explained to the landholder.</p> <p>1.5. Possible strategies are discussed with the landholder and the best option confirmed.</p>
2 Analyze and review information sourced for land claim	<p>2.1 A complete review of the <b>information supplied</b> is carried out to ensure all technical aspects of the claim have been adhered to.</p> <p>2.2 The <b>evidence</b> supplied is analyzed to ensure that the correct legal interpretation has been applied and that organizational policies have been considered.</p>
3 Consult with stakeholders	<p>3.7. A check is made to ensure all <b>stakeholders</b> involved in the process have been consulted.</p> <p>3.8. Interests/concerns of all stakeholders are established in accordance with <b>organizational procedures</b>.</p> <p>3.9. Issues raised by stakeholders are acknowledged and dealt in their submissions with in accordance with organizational procedures.</p> <p>3.10. Stakeholders are consulted if clarification of information in a submission or an issue raised is required.</p>

4 Prepare a submission	<p>3.1 Relevant information and evidence gathered for a land claim are documented and presented in accordance with organizational procedures.</p> <p>3.2 All information in the submission is clearly expressed and technically correct.</p> <p>3.3 The submission is directed to the appropriate personnel for determination and issue of approval or refusal by the authoritative bodies.</p>
5 Carry out post determination instructions	<p>3.4 Details of <b>post determination instructions</b> are noted.</p> <p>3.5 All instructions are completed in accordance with organizational procedures.</p> <p>3.6 Documentation is prepared and directed following organizational and <b>best practice requirements</b>.</p>

Variable	Range
Clients	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• individual members of the public</li> <li>• other agencies</li> <li>• community groups</li> <li>• other work areas in the organization</li> <li>• individual members of the organization</li> <li>• senior management</li> <li>• government</li> <li>• minister</li> </ul>
Legislation, policy and procedures	<p>May include, but not limited to state/and commonwealth legislation and regulations such as:</p> <ul style="list-style-type: none"> <li>• relevant federal or regional legislation and local regulations and common law principles relating to property, stock, duty of care and due diligence linked with land use and administration, environmental protection, activities in nature reserves and heritage areas, OHS</li> <li>• organizational enabling legislation</li> <li>• public sector management acts</li> <li>• financial management acts</li> <li>• privacy legislation</li> <li>• consumer legislation</li> <li>• risk management guidelines</li> <li>• ethics and accountability standards</li> <li>• public sector standards</li> <li>• government security standards</li> <li>• organizational client service standards</li> <li>• client service charter</li> <li>• organizational policy, procedures and protocols</li> </ul>
Information supplied	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• topographic-maps</li> </ul>

	<ul style="list-style-type: none"> <li>• titles</li> <li>• survey plans</li> <li>• field inspection report</li> <li>• aerial photographs</li> <li>• tracing paper and air-flown MSS</li> <li>• GIS, Stereoscope, plani-metre</li> <li>• documentation provided by government authorities</li> <li>• information relating to the claimer heritage issues that needs to be addressed to see if a survey is required</li> </ul>		
Evidence	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• information from statistics</li> <li>• local environmental study</li> <li>• information supplied by government authorities</li> <li>• reserve trust records</li> <li>• letters of request for use of land</li> <li>• rural lands protection board records</li> <li>• fencing details</li> <li>• tax bill information</li> <li>• documentation proving occupation of land at date claim</li> </ul>		
Stakeholders	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• communities</li> <li>• local Government</li> <li>• government agencies</li> <li>• community land councils</li> <li>• community land trusts</li> <li>• rural lands protection board</li> <li>• public</li> <li>• field inspection report</li> <li>• local members</li> <li>• objectors</li> <li>• internal clients</li> <li>• tenure holders</li> </ul>		
Organizational procedures	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• regulatory requirements</li> <li>• industry practices</li> <li>• manual or electronic applications</li> <li>• procedures manual</li> <li>• office practice guidelines</li> <li>• workplace notices</li> <li>• computer training manuals</li> </ul>		
Post determination instructions	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>• record noting</li> <li>• raise title</li> <li>• arrange survey</li> <li>• arrange presentation of title to local old occupants land</li> <li>• council by local dignitary</li> <li>• arrange publicity for title handover</li> </ul>		
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Best practice requirements	May include, but not limited to: <ul style="list-style-type: none"> <li>• quality client service</li> <li>• quality system documentation</li> </ul>
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<b>Evidence Guide</b>	
Critical Aspects of Competence	Assessment may provide evidence that the candidate must: <ul style="list-style-type: none"> <li>• carry out post determination instructions</li> <li>• apply land tenures activity</li> <li>• apply property transactions regulations</li> <li>• document investigation and interpretations</li> <li>• prepare a submission</li> <li>• understand land title system</li> <li>• analyze and review information sourced for land claim</li> <li>• consult with stakeholders</li> <li>• gather evidence</li> <li>• preparing detailed reports</li> <li>• determining land tenure and ownership</li> <li>• presenting evidence in a submission</li> <li>• interpreting maps/plans/aerial photos</li> </ul>
Underpinning Knowledge and Attitudes	Demonstrates knowledge and understanding of: <ul style="list-style-type: none"> <li>• legislation, policies and procedures relating to land administration and land claims/applications</li> <li>• preparation of officials submissions requiring formality of style, language and format</li> <li>• information that can be used as evidence</li> <li>• culture and customs</li> <li>• acquisition methods</li> <li>• land tenures</li> <li>• land title system</li> <li>• departmental delegations</li> <li>• the different types of organizational records that need to be noted or updated and in what circumstances</li> <li>• public sector legislation including occupational health and safety and environment in the context of land claims/applications</li> </ul>
Underpinning Skills	Demonstrates skills in: <ul style="list-style-type: none"> <li>• interpreting legislation relating to land administration and old occupants land claims/applications</li> <li>• analyzing evidence</li> <li>• gathering evidence</li> <li>• preparing detailed reports</li> <li>• determining land tenure and ownership</li> <li>• presenting evidence in a submission</li> <li>• interpreting maps/plans/aerial imagery</li> <li>• communicating with diverse stakeholders including negotiation and mediation</li> <li>• responding to diversity, including gender and disability</li> </ul>



	<ul style="list-style-type: none"> <li>• applying public sector legislation such as occupational health and safety, environment,</li> <li>• anti-discrimination and diversity in the context of Old occupants land claims/applications</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	Competence may be assessed through: <ul style="list-style-type: none"> <li>• Interview / Written Test</li> <li>• Observation / Demonstration with Oral Questioning</li> </ul>
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Cadastre and Land Registration Service Level III	
Unit Title	Maintain and Monitor Environmental Work Practices
Unit Code	<a href="#">AGR CLR3 21 0514</a>
Unit Descriptor	<p>This competency standard covers the process of maintaining and monitoring positive environmental work practices. It requires the ability to recognize basic environmental hazards and threats. It includes the ability to follow and give workplace directions and instructions by communicating accurately with supervisors and workplace colleagues, and to keep records. Maintaining and monitoring environmental work practices requires awareness of, and an ability to implement relevant environmental legislation, policies and workplace/industry practices.</p> <p>Effective methods of improving environmental performance and environmental issues especially in regard to water catchments, air, noise, ecosystems, habitat, efficient use of resources, sustainability and waste minimization, are also necessary.</p>

Elements	Performance Criteria
1. Maintain workplace environmental procedures	<p>1.1 <b>Workplace procedures</b> and work instructions for integrated environmental work practices for own work area are <b>recognized, followed</b> and conveyed to team members.</p> <p>1.2 Relevant <b>legislation, codes and national standards</b> that impact on workplace environmental practices are recognized and conveyed to team members.</p>
2. Recognize and report on potential environmental threats	<p>2.1 Existing and <b>potential environmental risks and hazards</b> are identified, reported and dealt with <b>designated personnel</b> and</p> <p>2.2 Location and extent of the potential environmental threat are accurately recorded.</p> <p>2.3 <b>Reports</b> on the potential environmental threat are completed according to enterprise guidelines.</p>
3. Support continuous improvement of environmental work practices	<p>3.1 Information is gathered and improvements are <b>suggested</b> to support the development of improved environmental workplace practices.</p> <p>3.2 <b>Environmental issues</b> and their relationship to workplace practices are discussed in the workplace.</p> <p>3.3 Changes to <b>workplace approaches to environmental practices</b> are responded positively and promptly in accordance with enterprise requirements.</p> <p>3.4 Individuals/teams are informed of the results of environmental improvements in the workplace.</p> <p>3.5 Environmental training needs of the work team are identified, and training is sought where required.</p>

4. Maintain environmental records	<p>4.1 <b>Environmental records</b> are accurately and legibly maintained and stored securely in a form accessible for reporting purposes.</p> <p>4.2 Internal and external reporting procedures are identified and maintained.</p>
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Variable	Range
Workplace procedures	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>written procedures or work instructions for environmental hazard and risk identification, avoiding or minimizing environmental risks, improving environmental performance, waste minimization and segregation, environmental monitoring, signs and labels (e.g. chemical labels), emergency procedures, hazard and incident recording and reporting procedures, and environmental data recording and reporting procedures where applicable. Verbal instructions from persons with responsibility related to environmental work practices are also included in this definition.</li> </ul>
Recognizing and following	<p>Means:</p> <ul style="list-style-type: none"> <li>that a person will acknowledge that environmental impacts, hazards and risks exist, and that they have a responsibility to work in a manner which will minimize the impact on the environment within the guidelines established by the workplace</li> </ul>
Legislation, codes and national standards	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>award and enterprise agreements, relevant environmental legislation from all levels of government, Ethiopian standards, international agreements and relevant industry codes of practice</li> </ul>
Environmental risks and hazards	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>spills, leaks, pollution, planned and unplanned emissions, soil compaction, disturbance and erosion, accidents and disposal of waste, and damage or disruption to ecosystems resulting from work practices. Also includes plants, animals or diseases that are classified as an environmental threat or problem in an area, unauthorized changes in land use, fire risks and threats, and inappropriate human interaction on the environment, damage to habitat resources, disruption of animal behavior and territorial use, illegal vegetation clearance, seed collection, firewood gathering, nest disturbance and egg collecting</li> </ul>
Designated personnel	<p>May include, but not limited to:</p> <ul style="list-style-type: none"> <li>manager, supervisor, and people who are responsible for work area or who may be assigned to act as a trainer to a person under instruction</li> </ul>
Reports	<p>May be made:</p> <ul style="list-style-type: none"> <li>verbally (face-to-face or through communication equipment) and in writing (notes, faxes, email or electronic messages)</li> </ul>

Suggesting	May include, but not limited to: <ul style="list-style-type: none"> <li>ideas to minimize hazards and risks, reduce waste, make more efficient use of resources and improve environmental performance, reduce soil disturbance and improve habitat resources</li> </ul>
Environmental issues	May include, but not limited to: <ul style="list-style-type: none"> <li>sustainability, reduction and disposal of waste, water quality, energy efficiency, biodiversity and habitat protection, conservation of natural resources, air quality, land contamination, noise, soil and salinity management, and fire management.</li> </ul>
Workplace approaches to environmental practices	May include, but not limited to: <ul style="list-style-type: none"> <li>preventing and minimizing the production of pollution (e.g. discharges to air, land and water, hazardous waste, reducing 'burning off', composting, recycling materials, conservation practices), and improving workplace maintenance practices (e.g. using a broom instead of a hose, using environment-friendly cleaning agents).</li> </ul>
Environmental records	May include, but not limited to: <ul style="list-style-type: none"> <li>environmental data, maintenance and inspection reports, incident or accident reports, and complaints from the public</li> </ul>
Environmental policies	May include, but not limited to: <ul style="list-style-type: none"> <li>waste minimization and management, sustainability, local, regional, State and National strategies on weed and pest management, protection of land and habitat and the conservation of resources, energy use, greenhouse gas emissions, use of chemicals, and plant and equipment</li> </ul>

### Evidence Guide

Critical Aspects of Competence	Assessment may provide evidence that the candidate must: <ul style="list-style-type: none"> <li>competence in monitoring and maintaining environmental work practices requires evidence that skills and knowledge have been successfully and appropriately applied and demonstrated in a work place or equivalent situation</li> </ul>
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: <ul style="list-style-type: none"> <li>relevant legislation from all levels of government on environmental issues</li> <li>relevant environmental policies and workplace/industry practices and procedures</li> <li>good practice approaches relevant to work area particularly in regard to minimizing environment hazards and risks, and improving environmental performance</li> <li>environmental issues, especially in regard to water catchments, air, noise, ecosystems, habitat, efficient use of resources, sustainability and waste minimization</li> <li>potential environmental threats and problems relevant to a given region and occupation</li> <li>general work place practices and their potential impact on</li> </ul>

	the environment
Underpinning Skills	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> <li>• communicate with supervisors and workplace colleagues</li> <li>• recognize environmental hazards and threats</li> <li>• act upon environmental hazards and threats by following enterprise procedures legislative requirements</li> <li>• instruct/advise others to follow enterprise procedures and legislative requirements</li> <li>• follow workplace directions and instructions</li> <li>• keep environmental records</li> <li>• Communicate ideas and information verbally with supervisors and work colleagues on environmental work practices and potential hazards and risks</li> <li>• Collect, analyze and organize information through maintaining and analyze environmental records</li> <li>• Plan and organize activities according to enterprise environmental and work place practices and policies</li> <li>• Use mathematical ideas and techniques through quantification (e.g. counting, estimating areas) of environmental hazards or problems and through collection of data</li> <li>• Solve problems through recognition of and responses to environment hazards and risks, and determining ways that work practices can be more environmentally friendly</li> <li>• Use technology required to record information, deal with environmental hazards, and improve work practices to be more environmentally friendly</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	<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	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Monitor Implementation of Work Plan/Activities
Unit Code	<a href="#">AGR CLR3 22 0514</a>
Unit Descriptor	This unit covers competence required to oversee and monitor the quality of work operations within an enterprise. This unit may be carried out by team leaders or supervisors.

Elements	Performance Criteria
1. Monitor and improve workplace operations	<p>1.1 Efficiency and service levels are monitored on an ongoing basis.</p> <p>1.2 Operations in the workplace support overall enterprise goals and quality assurance initiatives.</p> <p>1.3 Quality <b>problems</b> and issues are promptly identified and adjustments are made accordingly.</p> <p>1.4 Procedures and systems are changed in consultation with colleagues to improve efficiency and effectiveness.</p> <p>1.5 Colleagues are consulted about ways to improve efficiency and service levels.</p>
2. Plan and organise workflow	<p>2.1 Current workload of colleagues is accurately assessed.</p> <p>2.2 Work is scheduled in a manner which enhances efficiency and customer service quality.</p> <p>2.3 Work is delegated to appropriate people in accordance with principles of delegation.</p> <p>2.4 Workflow is assessed against agreed objectives and timelines and colleagues are assisted in prioritisation of workload.</p> <p>2.5 Input is provided to appropriate management regarding staffing needs.</p>
3. Maintain workplace records	<p>3.1 <b>Workplace records</b> are accurately completed and submitted within required timeframes.</p> <p>3.2 Where appropriate completion of records is delegated and monitored prior to submission.</p>
4. Solve problems and make decisions	<p>4.1 Workplace problems are promptly identified and considered from an operational and customer service perspective.</p> <p>4.2 Short term action is initiated to resolve the immediate problem where appropriate.</p> <p>4.3 Problems are analysed for any long term impact and potential solutions are assessed and actioned in consultation with relevant colleagues.</p> <p>4.4 Where problem is raised by a team member, they are encouraged to participate in solving the problem.</p> <p>4.5 Follow up action is taken to monitor the effectiveness of solutions in the workplace.</p>

Variable	Range
Problems	May include but not limited to: <ul style="list-style-type: none"> <li>• difficult customer service situations</li> <li>• equipment breakdown/technical failure</li> <li>• delays and time difficulties</li> <li>• competence</li> </ul>
Workplace records	May include but is not limited to: <ul style="list-style-type: none"> <li>• staff records and regular performance reports</li> </ul>

Evidence Guide	
Critical Aspects of Competence	Demonstrates skills and knowledge in: <ul style="list-style-type: none"> <li>• ability to effectively monitor and respond to a range of common operational and service issues in the workplace</li> <li>• understanding of the role of staff involved in workplace monitoring</li> <li>• knowledge of quality assurance, principles of workflow planning, delegation and problem solving</li> </ul>
Underpinning Knowledge and Attitudes	Demonstrate knowledge of: <ul style="list-style-type: none"> <li>• roles and responsibilities in monitoring work operations</li> <li>• overview of leadership and management responsibilities</li> <li>• principles of work planning and principles of delegation</li> <li>• typical work organization methods appropriate to the sector</li> <li>• quality assurance principles and time management</li> <li>• problem solving and decision making processes</li> <li>• industrial and/or legislative issues which affect short term work organization as appropriate to industry sector</li> </ul>
Underpinning Skills	Demonstrate skills to: <ul style="list-style-type: none"> <li>• monitor and improve workplace operations</li> <li>• plan and organize workflow</li> <li>• maintain workplace records</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	Competence may be assessed through: <ul style="list-style-type: none"> <li>• Interview / Written Test</li> <li>• Observation / Demonstration with Oral Questioning</li> </ul>
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Apply Quality Control
Unit Code	<a href="#">AGR CLR3 23 0514</a>
Unit Descriptor	This unit covers the knowledge, attitudes and skills required in applying quality control in the workplace.

Elements	Performance Criteria
1. Implement quality standards	<p>1.1 Agreed quality standard and procedures are acquired and confirmed.</p> <p>1.2 Standard procedures are introduced to organizational staff/personnel.</p> <p>1.3 Quality standard and procedures documents are provided to employees in accordance with the organization policy.</p> <p>1.4 Standard procedures are revised / updated when necessary.</p>
2. Assess quality of service delivered	<p>2.1 Services delivered are <b>quality checked</b> against organization <b>quality standards</b> and specifications.</p> <p>2.2 Service delivered are evaluated using the appropriate evaluation <b>quality parameters</b> and in accordance with organization standards.</p> <p>2.3 Causes of any identified faults are identified and corrective actions are taken in accordance with organization policies and procedures.</p>
3. Record information	<p>3.1 Basic information on the quality performance is recorded in accordance with organization procedures.</p> <p>3.2 Records of work quality are maintained according to the requirements of the organization.</p>
4. Study causes of quality deviations	<p>4.1 Causes of deviations from final outputs or services are investigated and reported in accordance with organization procedures.</p> <p>4.2 Suitable preventive action is recommended based on organization quality standards and identified causes of deviation from specified quality standards of final service or output.</p>
5. Complete documentation	<p>5.1 Information on quality and other indicators of service performance is recorded.</p> <p>5.2 All service processes and outcomes are recorded.</p>

Variable	Range
Quality check	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• Check against design / specifications</li> <li>• Visual inspection and Physical inspection</li> </ul>



Quality standards	May include but not limited to: <ul style="list-style-type: none"> <li>• Materials</li> <li>• Components</li> <li>• Process</li> <li>• Procedures</li> </ul>
Quality parameters	May include but not limited to: <ul style="list-style-type: none"> <li>• Standard Design / Specifications</li> <li>• Material Specification</li> </ul>

### Evidence Guide

Critical Aspects of Competence	Demonstrates skills and knowledge in: <ul style="list-style-type: none"> <li>• Check completed work continuously against organization standard</li> <li>• Identify and isolate faulty or poor service</li> <li>• Check service delivered against organization standards</li> <li>• Identify and apply corrective actions on the causes of identified faults or error</li> <li>• Record basic information regarding quality performance</li> <li>• Investigate causes of deviations of services against standard</li> <li>• Recommend suitable preventive actions</li> </ul>
Underpinning Knowledge	Demonstrates knowledge of: <ul style="list-style-type: none"> <li>• Relevant quality standards, policies and procedures</li> <li>• Characteristics of services</li> <li>• Safety environment aspects of service processes</li> <li>• Evaluation techniques and quality checking procedures</li> <li>• Workplace procedures and reporting procedures</li> </ul>
Underpinning Skills	Demonstrates skills to: <ul style="list-style-type: none"> <li>• interpret work instructions, specifications and standards appropriate to the required work or service</li> <li>• carry out relevant performance evaluation</li> <li>• maintain accurate work records</li> <li>• meet work specifications and requirements</li> <li>• communicate effectively within defined workplace procedures</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	Competence may be assessed through: <ul style="list-style-type: none"> <li>• Interview / Written Test</li> <li>• Observation / Demonstration with Oral Questioning</li> </ul>
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
<b>Unit Title</b>	<b>Lead Workplace Communication</b>
<b>Unit Code</b>	<a href="#">AGR CLR3 24 0514</a>
<b>Unit Descriptor</b>	This unit covers the knowledge, attitudes and skills needed to lead in the dissemination and discussion of information and issues in the workplace.

Elements	Performance Criteria
1. Communicate information about workplace processes	1.1 Appropriate <b>communication method</b> is selected. 1.2 Multiple operations involving several topics areas are communicated accordingly. 1.3 Questions are used to gain extra information. 1.4 Correct sources of information are identified. 1.5 Information is selected and organized correctly. 1.6 Verbal and written reporting is undertaken when required. 1.7 Communication skills are maintained in all situations.
2. Lead workplace discussion	2.1 Response to workplace issues is sought. 2.2 Response to workplace issues are provided immediately. 2.3 Constructive contributions are made to workplace discussions on such issues as production, quality and safety. 2.4 Goals/objectives and action plan undertaken in the workplace are communicated.
3. Identify and communicate issues arising in the workplace	3.1 Issues and problems are identified as they arise. 3.2 Information regarding problems and issues are organized coherently to ensure clear and effective communication. 3.3 Dialogue is initiated with appropriate staff/personnel. 3.4 Communication problems and issues are raised as they arise.

Variable	Range
Methods of communication	May include but not limited to: <ul style="list-style-type: none"> <li>• Non-verbal gestures</li> <li>• Verbal</li> <li>• Face to face</li> <li>• Two-way radio</li> <li>• Speaking to groups</li> <li>• Using telephone</li> <li>• Written</li> <li>• Using Internet</li> <li>• Cell phone</li> </ul>

<b>Evidence Guide</b>	
Critical Aspects of Competence	Demonstrates skills and knowledge in: <ul style="list-style-type: none"> <li>• Deal with a range of communication/information at one time</li> <li>• Make constructive contributions in workplace issues</li> <li>• Sought workplace issues effectively</li> <li>• Respond to workplace issues promptly</li> <li>• Present information clearly and effectively written form</li> <li>• Use appropriate sources of information</li> <li>• Ask appropriate questions</li> <li>• Provide accurate information</li> </ul>
Underpinning Knowledge and Attitudes	Demonstrates knowledge of: <ul style="list-style-type: none"> <li>• Organization requirements for written and electronic communication methods</li> <li>• Effective verbal communication methods</li> </ul>
Underpinning Skills	Demonstrates skills to: <ul style="list-style-type: none"> <li>• Organize information</li> <li>• Understand and convey intended meaning</li> <li>• Participate in variety of workplace discussions</li> <li>• Comply with organization requirements for the use of written and electronic communication methods</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	Competence may be assessed through: <ul style="list-style-type: none"> <li>• Interview / Written Test</li> <li>• Observation / Demonstration with Oral Questioning</li> </ul>
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Lead Small Teams
Unit Code	<a href="#">AGR CLR3 25 0514</a>
Unit Descriptor	This unit covers the skills, knowledge and attitudes required to determine individual and team development needs and facilitate the development of the work group.

Elements	Performance Criteria
1. Provide team leadership	<p>1.1 <b>Learning and development needs</b> are systematically identified and implemented in line with <b>organizational requirements</b>.</p> <p>1.2 Learning plan to meet individual and group training and developmental needs is collaboratively developed and implemented.</p> <p>1.3 Individuals are encouraged to self-evaluate performance and identify areas for improvement.</p> <p>1.4 <b>Feedback on performance</b> of team members is collected from relevant sources and compared with established team learning process.</p>
2. Foster individual and organizational growth	<p>2.1 Learning and development program goals and objectives are identified to match the specific knowledge and skills requirements of Competence standards.</p> <p>2.2 <b>Learning delivery methods</b> are appropriate to the learning goals, the learning style of participants and availability of equipment and resources.</p> <p>2.3 Workplace learning opportunities and coaching/ mentoring assistance are provided to facilitate individual and team achievement of competencies.</p> <p>2.4 Resources and timelines required for learning activities are identified and approved in accordance with organizational requirements.</p>
3. Monitor and evaluate workplace learning	<p>3.1 Feedback from individuals or teams is used to identify and implement improvements in future learning arrangements.</p> <p>3.2 Outcomes and performance of individuals/teams are assessed and recorded to determine the effectiveness of development programs and the extent of additional support.</p> <p>3.3 Modifications to learning plans are negotiated to improve the efficiency and effectiveness of learning.</p> <p>3.4 Records and reports of Competence are maintained within organizational requirement.</p>
4. Develop team commitment and	<p>4.1 Open communication processes to obtain and share information is used by team.</p>

cooperation	4.2 Decisions are reached by the team in accordance with its agreed roles and responsibilities. 4.3 Mutual concern and camaraderie are developed in the team.
5. Facilitate accomplishment of organizational goals	5.1 Team members actively participated in team activities and communication processes. 5.2 Teams' members developed individual and joint responsibility for their actions. 5.3 Collaborative efforts are sustained to attain organizational goals.

Variable	Range
Learning and development needs	May include but not limited to: <ul style="list-style-type: none"> <li>• Coaching, mentoring and/or supervision</li> <li>• Formal/informal learning program</li> <li>• Internal/external training provision</li> <li>• Work experience/exchange/opportunities</li> <li>• Personal study</li> <li>• Career planning/development</li> <li>• Performance appraisals</li> <li>• Workplace skills assessment</li> <li>• Recognition of prior learning</li> </ul>
Organizational requirements	May include but not limited to: <ul style="list-style-type: none"> <li>• Quality assurance and/or procedures manuals</li> <li>• Goals, objectives, plans, systems and processes</li> <li>• Legal and organizational policy/guidelines and requirements</li> <li>• Safety policies, procedures and programs</li> <li>• Confidentiality and security requirements</li> <li>• Business and performance plans</li> <li>• Ethical standards</li> <li>• Quality and continuous improvement processes and standards</li> </ul>
Feedback on performance	May include but not limited to: <ul style="list-style-type: none"> <li>• Formal/informal performance appraisals</li> <li>• Obtaining feedback from supervisors and colleagues</li> <li>• Obtaining feedback from clients</li> <li>• Personal and reflective behavior strategies</li> <li>• Routine and organizational methods for monitoring service delivery</li> </ul>
Learning delivery methods	May include but not limited to: <ul style="list-style-type: none"> <li>• On the job coaching or mentoring</li> <li>• Problem solving</li> <li>• Presentation/demonstration</li> <li>• Formal course participation</li> <li>• Work experience and Involvement in professional networks</li> </ul>

	<ul style="list-style-type: none"> <li>• Conference/seminar attendance and induction</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>• identify and implement learning opportunities for others</li> <li>• give and receive feedback constructively</li> <li>• facilitate participation of individuals in the work of the team</li> <li>• negotiate learning plans to improve the effectiveness of learning</li> <li>• prepare learning plans to match skill needs</li> <li>• access and designate learning opportunities</li> </ul>
Underpinning Knowledge and Attitude	Demonstrates knowledge of: <ul style="list-style-type: none"> <li>• coaching and mentoring principles</li> <li>• how to work effectively with team members who have diverse work styles, aspirations, cultures and perspective</li> <li>• how to facilitate team development and improvement</li> <li>• methods and techniques for eliciting and interpreting feedback</li> <li>• methods for identifying and prioritizing personal development opportunities and options</li> <li>• career paths and competence standards in the industry</li> </ul>
Underpinning Skills	Demonstrates skills to: <ul style="list-style-type: none"> <li>• read and understand a variety of texts, prepare general information and documents according to target audience; spell with accuracy; use grammar and punctuation effective relationships and conflict management</li> <li>• receive feedback and report, maintain effective relationships and conflict management</li> <li>• organize required resources and equipment to meet learning needs</li> <li>• provide support to colleagues</li> <li>• organize information; assess information for relevance and accuracy; identify and elaborate on learning outcomes</li> <li>• facilitation skills to conduct small group training sessions</li> <li>• relate to people from a range of social, cultural, physical and mental backgrounds</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	Competence may be assessed through: <ul style="list-style-type: none"> <li>• Interview / Written Test</li> <li>• Observation / Demonstration with Oral Questioning</li> </ul>
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Improve Business Practice
Unit Code	<a href="#">AGR CLR3 26 0514</a>
Unit Descriptor	This unit covers the skills, knowledge and attitudes required in promoting, improving and growing business operations.

Elements	Performance Criteria
1. Diagnose the business	1.1 <b>Data required</b> for diagnosis is determined and acquired. 1.2 <b>Competitive advantage</b> of the business is determined from the data. 1.3 <b>SWOT analysis</b> of the data is undertaken.
2. Benchmark the business	2.1 Sources of relevant benchmarking data are identified. 2.2 <b>Key indicators</b> for benchmarking are selected in consultation with key stakeholders. 2.3 Like indicators of own practice are compared with benchmark indicators. 2.4 Areas for improvement are identified.
3. Develop plans to improve business performance	3.1 A consolidated list of required improvements is developed. 3.2 Cost-benefit ratios for required improvements are determined. 3.3 Work flow changes resulting from proposed improvements are determined. 3.4 Proposed improvements are ranked according to agreed criteria. 3.5 An action plan is developed and agreed to implement the top ranked improvements. 3.6 <b>Organizational structures</b> are checked to ensure they are suitable.
4. Develop marketing and promotional plans	4.1 The practice vision statement is reviewed. 4.2 Practice <b>objectives</b> are developed/ reviewed. 4.3 Target markets are identified/ refined. 4.4 <b>Market research data</b> is obtained. 4.5 <b>Competitor analysis</b> is obtained. 4.6 <b>Market position</b> is developed/ reviewed. 4.7 <b>Practicebrand</b> is developed. 4.8 <b>Benefits</b> of practice/practice products/services are identified. 4.9 <b>Promotion tools</b> are selected/ developed.
5. Develop	5.1 Plans are developed to increase <b>yield per existing client</b> .

business growth plans	<p>5.2 Plans are developed to add new clients.</p> <p>5.3 Proposed plans are ranked according to agreed criteria.</p> <p>5.4 An action plan is developed and agreed to implement the top ranked plans.</p> <p>5.5 Practice work practices are reviewed to ensure they support growth plans.</p>
6. Implement and monitor plans	<p>6.1 Implementation plan is developed in consultation with all relevant stakeholders.</p> <p>6.2 Indicators of success of the plan are agreed.</p> <p>6.3 Implementation is monitored against agreed indicators.</p> <p>6.4 Implementation is adjusted as required.</p>

Variable	Range
Data required	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• organization capability</li> <li>• appropriate business structure</li> <li>• level of client service which can be provided</li> <li>• internal policies, procedures and practices</li> <li>• staff levels, capabilities and structure</li> <li>• market, market definition</li> <li>• market changes/market segmentation</li> <li>• market consolidation/fragmentation</li> <li>• revenue</li> <li>• level of commercial activity</li> <li>• expected revenue levels, short and long term</li> <li>• revenue growth rate</li> <li>• break even data</li> <li>• pricing policy</li> <li>• revenue assumptions</li> <li>• business environment</li> <li>• economic conditions</li> <li>• social factors</li> <li>• demographic factors</li> <li>• technological impacts</li> <li>• political/legislative/regulative impacts</li> <li>• competitors, competitor pricing and response to pricing</li> <li>• competitor marketing/branding</li> <li>• competitor products</li> </ul>
Competitive advantage	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• services/products</li> <li>• fees</li> <li>• location</li> <li>• timeframe</li> </ul>
SWOT analysis	<p>May include but not limited to:</p>



	<ul style="list-style-type: none"> <li>• internal strengths such as staff capability, recognized quality</li> <li>• internal weaknesses such as poor morale, under-capitalization, poor technology</li> <li>• external opportunities such as changing market and economic conditions</li> <li>• external threats such as industry fee structures, strategic alliances, competitor marketing</li> </ul>
Key indicators	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• salary cost and staffing</li> <li>• personnel productivity (particularly of principals)</li> <li>• profitability</li> <li>• fee structure</li> <li>• client base</li> <li>• size staff/principal</li> <li>• overhead/overhead control</li> </ul>
Organizational structures	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• Legal structure (partnership, Limited Liability Company, etc.)</li> <li>• organizational structure/hierarchy</li> <li>• reward schemes</li> </ul>
Objectives should be 'SMART'	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• S: Specific</li> <li>• M: Measurable</li> <li>• A: Achievable</li> <li>• R: Realistic</li> <li>• T: Time defined</li> </ul>
Market research data	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• data about existing clients</li> <li>• data about possible new clients</li> <li>• data from internal sources</li> <li>• data from external sources such as: <ul style="list-style-type: none"> <li>➤ trade associations/journals</li> <li>➤ Yellow Pages small business surveys</li> <li>➤ libraries</li> <li>➤ Internet</li> <li>➤ Chamber of Commerce</li> <li>➤ client surveys</li> <li>➤ industry reports</li> <li>➤ secondary market research</li> </ul> </li> <li>• primary market research such as: <ul style="list-style-type: none"> <li>➤ telephone surveys</li> <li>➤ personal interviews</li> <li>➤ mail surveys</li> </ul> </li> </ul>
Competitor analysis	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• competitor offerings</li> <li>• competitor promotion strategies and activities</li> <li>• competitor profile in the market place</li> </ul>

Market position	<p>Should include data on:</p> <ul style="list-style-type: none"> <li>• product</li> <li>• the good or service provided</li> <li>• product mix</li> <li>• the core product - what is bought</li> <li>• the tangible product - what is perceived</li> <li>• the augmented product - total package of consumer</li> <li>• features/benefits</li> <li>• product differentiation from competitive products</li> <li>• new/changed products</li> <li>• Price and pricing strategies (cost plus, supply/demand, ability to pay, etc.)</li> <li>• Pricing objectives (profit, market penetration, etc.)</li> <li>• cost components</li> <li>• market position</li> <li>• distribution strategies</li> <li>• marketing channels</li> <li>• promotion</li> <li>• promotional strategies</li> <li>• target audience</li> <li>• communication</li> <li>• promotion budget</li> </ul>		
Practice brand	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• practice image</li> <li>• practice logo/letter head/signage</li> <li>• phone answering protocol</li> <li>• facility decor</li> <li>• slogans</li> <li>• templates for communication/invoicing</li> <li>• style guide</li> <li>• writing style</li> <li>• AIDA (Attention, Interest, Desire, Action)</li> </ul>		
Benefits	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• Features and benefits as perceived by the client</li> </ul>		
Promotion tools	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• networking and referrals</li> <li>• seminars</li> <li>• advertising</li> <li>• press releases</li> <li>• publicity and sponsorship</li> <li>• brochures</li> <li>• newsletters (print and/or electronic)</li> <li>• websites</li> <li>• direct mail</li> <li>• telemarketing/cold calling</li> </ul>		
Yield per existing client	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• raising charge out rates/fees</li> </ul>		
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	<ul style="list-style-type: none"> <li>• packaging fees</li> <li>• reduce discounts</li> <li>• sell more services to existing clients</li> </ul>
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<b>Evidence Guide</b>	
Critical Aspects of Competence	<p>Demonstrates skills and knowledge in:</p> <ul style="list-style-type: none"> <li>• identifying the key indicators of business performance</li> <li>• identifying the key market data for the business</li> <li>• a wide range of available information sources</li> <li>• acquiring information not readily available within a business</li> <li>• analyzing data and determine areas of improvement</li> <li>• negotiating required improvements to ensure implementation</li> <li>• evaluating systems against practice requirements</li> <li>• and form recommendations and/or make recommendations</li> <li>• assessing the accuracy and relevance of information</li> </ul>
Underpinning Knowledge and Attitudes	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> <li>• data analysis and communication skills</li> <li>• computer skills to manipulate data and present information</li> <li>• negotiation, problem solving and planning skills</li> <li>• marketing principles</li> <li>• ability to acquire and interpret relevant data</li> <li>• current product and marketing mix</li> <li>• use of market intelligence</li> <li>• development and implementation strategies of promotion and growth plans</li> </ul>
Underpinning Skills	<p>Demonstrates skill in:</p> <ul style="list-style-type: none"> <li>• data analysis and manipulation</li> <li>• ability to acquire and interpret required data, current practice systems and structures and sources of relevant benchmarking data</li> <li>• applying methods of selecting relevant key benchmarking indicators</li> <li>• communication skills</li> <li>• working and consulting with others when developing plans for the business</li> <li>• planning skills, negotiation skills and problem solving</li> <li>• using computers to manipulate, present and distribute information</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>
Methods of Assessment	<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>Competency may be assessed in the work place or in a simulated work place setting.</p>

Occupational Standard: Rural Cadastre and Land Registration Service Level III	
Unit Title	Prevent and Eliminate MUDA
Unit Code	<a href="#">AGR CLR3 27 0514</a>
Unit Descriptor	This unit of competence covers the knowledge, skills and attitude required by a worker to prevent and eliminate MUDA/wastes in his/her their workplace. It covers responsibility for the day-to-day operation of the work and ensures Kaizen elements are continuously improved and institutionalized.

Elements	Performance Criteria
1. Prepare for work.	<p>1.1 Work instructions are used to determine job requirements, including method, material and equipment.</p> <p>1.2 Job specifications are read and interpreted following working manual.</p> <p>1.3 <b>OHS requirements</b>, including dust and fume collection, breathing apparatus and eye and ear personal protection needs are observed throughout the work.</p> <p>1.4 Appropriate material is selected for work.</p> <p>1.5 <b>Safety equipment and tools</b> are identified and checked for safe and effective operation.</p>
2. Identify MUDA.	<p>2.1 Plan of MUDA identification is prepared and implemented.</p> <p>2.2 Causes and effects of MUDA are discussed.</p> <p>2.3 <b>Tools and techniques</b> are used to draw and analyze current situation of the work place.</p> <p>2.4 Wastes/MUDA are identified and measured based on <b>relevant procedures</b>.</p> <p>2.5 Identified and measured wastes are reported to relevant personnel.</p>
3. Eliminate wastes/MUDA	<p>3.1 Plan of MUDA elimination is prepared and implemented.</p> <p>3.2 Necessary attitude and <b>theten basic principles for improvement</b> are adopted to eliminate waste/MUDA.</p> <p>3.3 Tools and techniques are used to eliminate wastes/MUDA based on the procedures and OHS.</p> <p>3.4 Wastes/MUDA are reduced and eliminated in accordance with OHS and organizational requirements.</p> <p>3.5 Improvements gained by elimination of waste/MUDA are reported to relevant bodies.</p>
4. Prevent occurrence of wastes/MUDA	<p>4.1 Plan of MUDA prevention is prepared and implemented.</p> <p>4.2 Standards required for machines, operations, defining normal and abnormal conditions, clerical procedures and procurement are discussed and prepared.</p>

	<p>4.3 Occurrences of wastes/MUDA are prevented by using <b>visual and auditory control methods</b>.</p> <p>4.4 Waste-free workplace is created using <b>5W and 1H</b> sheet.</p> <p>4.5 The completion of required operation is done in accordance with standard procedures and practices.</p> <p>4.6 The updating of standard procedures and practices is facilitated.</p> <p>4.7 The capability of the work team that aligns with the requirements of the procedure is ensured.</p>
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Variable	Range
OHS requirements	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• Are to be in accordance with legislation/ regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances.</li> <li>• Personal protective equipment is to include that prescribed under legislation/regulations/codes of practice and workplace policies and practices.</li> <li>• Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with workplace organization.</li> <li>• Emergency procedures related to this unit are to include but may not be limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation.</li> </ul>
Safety equipment and tools	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• dust masks / goggles</li> <li>• glove</li> <li>• working cloth</li> <li>• first aid</li> <li>• safety shoes</li> </ul>
Tools and techniques	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• Plant Layout</li> <li>• Process flow</li> <li>• Other Analysis tools</li> <li>• Do time study by work element</li> <li>• Measure Travel distance</li> <li>• Take a photo of workplace</li> <li>• Measure Total steps</li> <li>• Make list of items/products, who produces them and who uses them &amp; those in warehouses, storages etc.</li> <li>• Focal points to Check and find out existing problems</li> </ul>

	<ul style="list-style-type: none"> <li>• 5S</li> <li>• Layout improvement</li> <li>• Brainstorming</li> <li>• And on</li> <li>• U-line</li> <li>• In-lining</li> <li>• Unification</li> <li>• Multi-process handling &amp; Multi-skilled operators</li> <li>• A.B. control (Two point control)</li> <li>• Cell production line</li> <li>• TPM (Total Productive Maintenance)</li> </ul>
Relevant procedures	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• Make waste visible</li> <li>• Be conscious of the waste</li> <li>• Be accountable for the waste.</li> <li>• Measure the waste.</li> </ul>
The ten basic principles for improvement	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• Throw out all of your fixed ideas about how to do things.</li> <li>• Think of how the new method will work- not how it won.</li> <li>• Don't accept excuses. Totally deny the status quo.</li> <li>• Don't seek perfection. A 50 percent implementation rate is fine as long as it's done on the spot.</li> <li>• Correct mistakes the moment they are found.</li> <li>• Don't spend a lot of money on improvements.</li> <li>• Problems give you a chance to use your brain.</li> <li>• Ask "why?" At least five times until you find the ultimate cause.</li> <li>• Ten people's ideas are better than one person's.</li> <li>• Improvement knows no limits.</li> </ul>
Visual and auditory control methods	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• Red Tagging</li> <li>• Sign boards</li> <li>• Outlining</li> <li>• Andons</li> <li>• Kanban, etc.</li> </ul>
5W and 1H	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>• Who</li> <li>• What</li> <li>• Where</li> <li>• When</li> <li>• Why</li> <li>• How</li> </ul>

### Evidence Guide

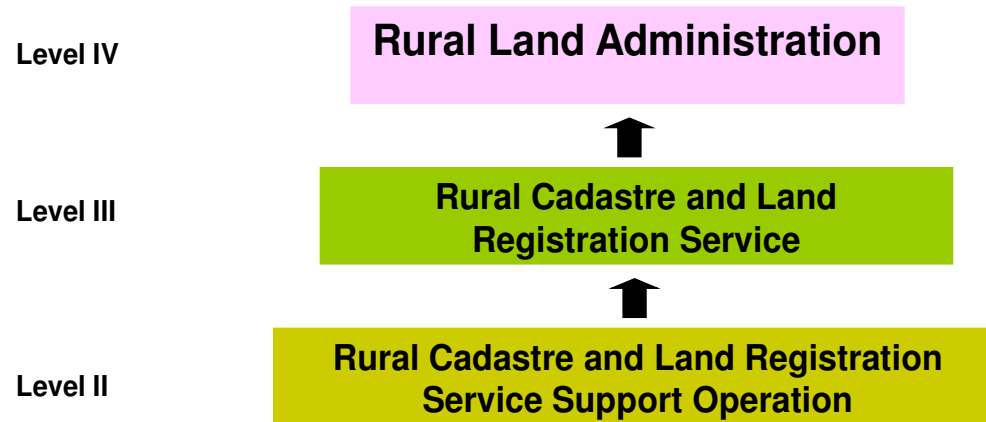
Critical Aspects of Competence	<p>Demonstrates skills and knowledge to:</p> <ul style="list-style-type: none"> <li>• discuss why wastes occur in the workplace</li> <li>• discuss causes and effects of wastes/MUDA in the</li> </ul>
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	<p>workplace</p> <ul style="list-style-type: none"> <li>• analyze the current situation of the workplace by using appropriate tools and techniques</li> <li>• identify, measure, eliminate and prevent occurrence of wastes by using appropriate tools and techniques</li> <li>• use 5W and 1H sheet to prevent</li> </ul>
Underpinning Knowledge and Attitudes	<p>Demonstrates knowledge of:</p> <ul style="list-style-type: none"> <li>• Targets of customers and manufacturer/service provider</li> <li>• Traditional and kaizen thinking of price setting</li> <li>• Kaizen thinking in relation to targets of manufacturer/service provider and customer</li> <li>• value</li> <li>• The three categories of operations</li> <li>• the 3“MU”</li> <li>• waste/MUDA</li> <li>• wastes occur in the workplace</li> <li>• The 7 types of MUDA</li> <li>• The Benefits of identifying and eliminating waste</li> <li>• Causes and effects of 7 MUDA</li> <li>• Procedures to identify MUDA</li> <li>• Necessary attitude and the ten basic principles for improvement</li> <li>• Procedures to eliminate MUDA</li> <li>• Prevention of wastes</li> <li>• Methods of waste prevention</li> <li>• Definition and purpose of standardization</li> <li>• Standards required for machines, operations, defining normal and abnormal conditions, clerical procedures and procurement</li> <li>• Methods of visual and auditory control</li> <li>• TPM concept and its pillars.</li> <li>• Relevant Occupational Health and Safety (OHS) and environment requirements</li> <li>• Plan and report</li> <li>• Method of communication</li> </ul>
Underpinning Skills	<p>Demonstrates skills to:</p> <ul style="list-style-type: none"> <li>• draw &amp; analyze current situation of the work place</li> <li>• use measurement apparatus (stop watch, tape, etc.)</li> <li>• calculate volume and area</li> <li>• use and follow checklists to identify, measure and eliminate wastes/MUDA</li> <li>• identify and measure wastes/MUDA in accordance with OHS and procedures</li> <li>• use tools and techniques to eliminate wastes/MUDA in accordance with OHS procedure</li> <li>• apply 5W and 1H sheet</li> <li>• update and use standard procedures for completion of</li> </ul>

	<p>required operation</p> <ul style="list-style-type: none"> <li>• work with others</li> <li>• read and interpret documents</li> <li>• observe situations</li> <li>• solve problems</li> <li>• communicate</li> <li>• gather evidence by using different means</li> <li>• report activities and results using report formats</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	Competence may be assessed through: <ul style="list-style-type: none"> <li>• Interview / Written Test</li> <li>• Observation / Demonstration with Oral Questioning</li> </ul>
Context of Assessment	Competency may be assessed in the work place or in a simulated work place setting.



# RURAL LAND ADMINISTRATION



## Acknowledgement

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### COMMENT TEMPLATE

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