



**Australian Government**

# **RIICAM501 Analyse and interpret civil infrastructure asset datasets**

**Release: 1**

# RIICAM501 Analyse and interpret civil infrastructure asset datasets

## Modification History

| Release   | Comments                                                                                                                            |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------|
| Release 1 | This version first released with the RII Resources and Infrastructure Industry Training Package Version 8.0.<br>Newly created unit. |

## Application

This unit describes the skills and knowledge required to analyse and interpret civil infrastructure asset datasets. This includes an understanding of dataset functions and features.

It applies to those working in management or technical specialist roles. They generally apply a broad range of technical and managerial skills and are responsible for the delivery of outputs that meet workplace requirements.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

## Unit Sector

Civil Infrastructure Asset Management

## Elements and Performance Criteria

| ELEMENT                                                                        | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Elements describe the essential outcomes.</i>                               | <i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>                                                                                                                                                                                                                                                                                                                    |
| 1. Determine purpose and scope for civil infrastructure asset dataset analysis | 1.1 Obtain, interpret, clarify and confirm work requirements according to legislation, standards, regulations, codes, guidelines and manuals<br>1.2 Determine purpose of work activity and required outcomes<br>1.3 Identify and select civil infrastructure dataset according to task requirements<br>1.4 Establish and confirm parameters to be applied in analysis according to organisational policies and procedures |

|                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. Analyse and evaluate trends and relationships for civil infrastructure asset dataset | 2.1 Normalise data according to analysis requirements<br>2.2 Analyse civil infrastructure dataset and derive insights into trends using required tools and dashboards<br>2.3 Evaluate analysis according to task requirements<br>2.4 Conduct further data extraction and analysis, where required                                                                                       |
| 3. Finalise civil infrastructure asset dataset analysis                                 | 3.1 Conduct statistical analysis to confirm accuracy of civil infrastructure dataset analysis<br>3.2 Isolate and remove identified incorrect results<br>3.3 Determine organisational reporting format and structure<br>3.4 Report details on analysis activities and results according to task requirements<br>3.5 Submit report to required personnel and seek and respond to feedback |

## Foundation Skills

*This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.*

| Skill                   | Description                                                                                                                                                                                          |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Numeracy                | <ul style="list-style-type: none"> <li>Calculates resourcing requirements and performs mathematical calculations</li> </ul>                                                                          |
| Oral communication      | <ul style="list-style-type: none"> <li>Uses listening and questioning techniques to confirm requirements and articulate complex concepts using relevant industry for intended audience</li> </ul>    |
| Planning and organising | <ul style="list-style-type: none"> <li>Uses a formal, logical planning processes together with an increasingly intuitive understanding of context</li> </ul>                                         |
| Technology              | <ul style="list-style-type: none"> <li>Identifies principles, concepts, language and articulates associated with the digital world</li> </ul>                                                        |
| Writing                 | <ul style="list-style-type: none"> <li>Develops documentation conveying explicit information, requirements and recommendations for a specific audience, using clear and detailed language</li> </ul> |

## Unit Mapping Information

New unit.

## Links

Companion Volume Implementation Guide is found on VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

# Assessment Requirements for RIICAM501 Analyse and interpret civil infrastructure asset datasets

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## Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- analyse and interpret two separate civil infrastructure datasets.

In the course above, the candidate must:

- locate and apply required documentation, policies and procedures and confirm that the work activity is compliant
- apply diagnostic, problem solving and decision making techniques
- communicate clearly and concisely with others to receive and clarify work instructions.

## Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- key requirements of legislation, codes, regulations, standards and security arrangements relating to analysing and interpreting civil infrastructure datasets
- organisational policies and procedures applicable to analysing and interpreting civil infrastructure datasets
- organisational information management strategies
- principles and features of:
  - data analysis methodologies
  - data cleansing methodologies
  - data extraction methodologies
  - data normalising methodologies
- key tools and dashboards for data analysis
- key data collection tools, and procedures for their use, including:

- asset inventory
- asset management systems
- asset register
- geographic information systems
- spreadsheets.

## Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
  - personal protective equipment
  - equipment required for analysing and interpreting civil infrastructure datasets
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment\* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

### Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current\*\* work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

| Industry sector                                                                              | AQF indicator level***                                                                                                                                                                                                                                                                                                         | Required assessor or industry subject matter expert experience |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure | 1                                                                                                                                                                                                                                                                                                                              | 1 year                                                         |
|                                                                                              | 2                                                                                                                                                                                                                                                                                                                              | 2 years                                                        |
| Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure | 3-6                                                                                                                                                                                                                                                                                                                            | 3 years                                                        |
| Other sectors                                                                                | Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation. |                                                                |

\*Guidance on simulated environments has been stipulated in the Companion Volume Implementation Guide located on VETNet.

\*\*Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

\*\*\*While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

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