



Australian Government

MSL905005 Create or modify calibration procedures

Release: 1

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Modification History

Release	Comments
Release 1	This version was released in <i>MSL Laboratory Operations Training Package Release 2.0</i>. Supersedes and equivalent to MSL905002 Create or modify calibration procedures. Foundation skills information added. Range of conditions removed. Assessment requirements amended. Equivalent outcome.

Application

This unit of competency describes the skills and knowledge to create or modify calibration procedures in response to the introduction of alternative/new equipment, changing test circumstances, activities involved in research and development trials or to meet client needs. The unit covers research of current calibration procedures and technology, development or modification of a procedure, its subsequent trialling and confirmation that it is fit for purpose. This unit of competency does not cover the ability to create or edit software controlled calibration procedures as this is covered in another unit of competency.

This unit applies to calibration technicians/specialists who carry out test and/or calibrations in first, second and third party laboratories, and laboratories where testing and/or calibration forms part of inspection or product certification. It covers the work of only those personnel who are authorised by their laboratory to create or modify calibration procedures. They work with limited guidance and results of their work are checked by the laboratory manager, quality inspector or designated signatory.

No licensing or certification requirements exist at the time of publication. However, regulations and/or external accreditation requirements for laboratory operations exist, so local requirements should be checked. Relevant legislation, industry standards and codes of practice within Australia must also be applied.

Pre-requisite Unit

MSL905004 Perform non-standard calibrations

Competency Field

Calibration

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

- | | |
|---|--|
| 1 Assess the suitability of available calibration procedures | <ul style="list-style-type: none">1.1 Confirm that the authorised calibration procedure is not appropriate for intended use or requires modification1.2 Research suitable alternative established calibration procedures1.3 Establish whether an available procedure can be customised or if a new procedure is needed1.4 Obtain internal approval to develop or modify a calibration procedure1.5 Confirm that available resources meet all the requirements of the alternative or new procedure1.6 Gain authorisation for any deviation from requirements previously agreed with client |
| 2 Develop procedure | <ul style="list-style-type: none">2.1 Identify and document all relevant calibration data to be collected, including parameters and ranges to be tested2.2 Describe all new instructions or modifications to methods to ensure repeatability of test2.3 Document all hazards and safety measures to be observed2.4 Specify data to be recorded and produce a results template2.5 List the requirements for calibration approval and rejection2.6 Confirm that all calibration requirements can be fulfilled by using the procedure |
| 3 Prepare equipment for testing | <ul style="list-style-type: none">3.1 Use the appropriate personal protective equipment (PPE), safety equipment and procedures3.2 Assemble and set up reference standards and associated equipment prior to testing |

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	3.3 Verify performance of reference standards and measuring equipment prior to use and adjust or calibrate as necessary 3.4 Identify and minimise potential sources of measurement error
4 Trial modified or new calibration procedure	4.1 Perform individual steps and confirm they are adequately documented to ensure repeatability of measurement 4.2 Critically analyse readings to confirm they are the result of a valid measurement and record data as required 4.3 Adjust device under test to bring readings within tolerance and record results 4.4 Analyse the resulting test data to detect trends or inconsistencies that may significantly affect the accuracy or validity of test results
5 Confirm the modified or new procedure is fit for purpose	5.1 Compare results achieved with those from other calibration procedures 5.2 Systematically analyse all measurement and environmental factors that may influence the result and take corrective action as required 5.3 Arrange for internal peer checking of calibration procedure, data and results and incorporate feedback 5.4 Quantify the uncertainties of results obtained by analysing equipment specifications and test methodology 5.5 Confirm that the modified or new procedure is fit for purpose and relevant to the client's needs and document as necessary
6 Document and review modified	6.1 Ensure that the procedure is written in accordance with workplace procedures or statutory and regulatory

Elements describe the essential outcomes.

**or new
calibration
procedure**

Performance criteria describe the performance needed to demonstrate achievement of the element.

requirements

- 6.2 Ensure that the procedure has been reviewed in accordance with workplace procedures
- 6.3 Report and present the procedure to appropriate personnel for validation before use

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

- Writing skills to produce calibration procedures using an unambiguous, logical sequence of instructions that meet statutory and regulatory requirements, and workplace procedures.
- Oral communication skills to liaise with peers and technical staff from other laboratories to clarify and validate test methods
- Numeracy skills to estimate measurement uncertainty and applying statistical techniques for analysing test and/or calibration data

Other foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

Equivalent to MSL905002 Create or modify calibration procedures, Release 1.

Links

MSL Laboratory Operations Companion Volume Implementation Guide is available from VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5c63a03b-4a6b-4ae5-9560-1e3c5f462baa>

Assessment Requirements for MSL905005 Create or modify calibration procedures

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and:

- created or modified at least 2 calibration procedures, including trialling and confirming that each is fit for purpose to meet technical and/or client requirements.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- procedures, and implications, for creating or modifying calibration procedures
- Australian and international standards covering accuracy of measurement methods and results, expression of uncertainty (GUM), quantifying uncertainty in analytical measurement, and quality assurance of measurement equipment
- registration/licensing and/or National Association of Testing Authorities (NATA) accreditation requirements
- electrical reference standard
- common test equipment
- laboratory environmental control requirements
- structure and terminology used in standard calibration methods, procedures, requests and instructions
- current calibration methods, procedures and technology applications used in laboratory
- handling, transport, storage and operation requirements of reference and working standards
- calculation procedures to give results in appropriate accuracy, precision and units
- methods for statistical analysis (means, ranges and standard deviations) and estimation of uncertainty of measurement (may include the use of software)

- equipment and testing method troubleshooting procedures
- workplace procedures for documenting calibration procedures
- workplace and/or legal traceability requirements
- legal, ethical and work health and safety (WHS) requirements specific to the work task.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - specialised calibration/test equipment, reference standards and materials and laboratory facilities
 - access to a library of calibration methods, procedures and equipment specifications
 - workplace quality manual and procedures.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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