Australian Industry and Skills Committee

LABORATORY OPERATIONS

Case for Change

Name of allocated IRC(s): Process Manufacturing, Recreational Vehicle and Laboratory IRC

Name of the SSO: IBSA Manufacturing

Administrative information

***Attachment A** lists the Training Package components the project will develop or review*

Name of IRC(s):	Process Manufacturing, Recreational Vehicle and Laboratory Industry Reference Committee (PMRVL IRC)
Name of SSO:	IBSA Manufacturing

1.1 Name and code of Training Package(s) examined to determine that change is required

MSL Laboratory Operations

The Case for Change

***Attachment B** lists the job roles to be supported through the updated qualifications, enrolment data, completion rates and the number of RTOs delivering these qualifications.*

2.1 Rationale for change

This Case for Change, which is proposed by the Process Manufacturing, Recreational Vehicle and Laboratory Industry Reference Committee (PMRVL IRC), is a proposal for a project to review and redevelop five qualifications and 60 units of competency, develop five new units and identify skillsets to meet contemporary job role requirements. Specifically, the proposed project will:

- review and redevelop:
    - Certificate II in Sampling and Measurement
    - Certificate III in Laboratory Skills
    - Certificate IV in Laboratory Techniques
    - Diploma of Laboratory Technology
    - Advanced Diploma of Laboratory Operations
    - 60 existing units of competency
- develop:
    - five new units: 'Simple transfers in surgical cut-up', 'Simple surgical cut-up', 'Perform histological cut up triage and allocation', 'Molecular testing' and 'Operate automated laboratory equipment'
    - two new skillsets: Surgical cut-up and Molecular testing.

Attachment A lists the Training Package components the proposed project will develop or review.

Reasons for updating or developing the training products at this time

The PMRVL IRC has identified the need to review and redevelop the five qualifications, to address the Laboratory Operations sector's needs for surgical cut-up, genetic testing, molecular testing and diagnostics, and food testing skills. These needs were identified through research and industry consultation undertaken on behalf of the IRC by IBSA Manufacturing, which is summarised in **2.2 Evidence for change**. **Attachment D** sets out issues that stakeholders raised during consultation to develop this Case for Change.

The native units of competency will need to be reviewed and redeveloped, to ensure they reflect workplace knowledge and skill needs in current and emerging techniques, technologies, automated laboratory equipment and standards. This is particularly important because nearly all of the existing units of competency included in this Case for Change have not been reviewed since 2016-2018.

The use of imported units will need to be evaluated, to ensure the relevance and currency of the five qualifications. As well, one unit of competency the AISC has flagged for deletion — MSL974029 — is currently packaged in two of the laboratory operations qualifications, so the packaging rules will need to be reviewed and the impact of deleting the unit assessed, to make sure essential skills are still available to the industry.

Job role changes in surgical cut-up are requiring Technical Officers to have higher-level skills. New National Pathology Accreditation Advisory Council (NPAAC) requirements for the performance of anatomical pathology cut-up permit Technical Officers to perform cut-up and require them to have formal training to do so.[1] The MSL Laboratory Operations Training Package does not currently provide the skills Technical Officers need in this area, so it is proposed to develop:

- three surgical cut-up units: 'Simple transfers in surgical cut-up', 'Simple surgical cut-up' and 'Perform histological cut up triage and allocation'
- one skillset — Surgical cut-up — to support the upskilling and reskilling of workers to take up opportunities in the potential new Technical Officer career path.

Skill requirements for molecular and genetic testing are increasing, due to increasing demand and technological advances in the healthcare sector. The public's expectation of early, accurate diagnosis of diseases such as cancer is driving job growth in the health industry: such diagnosis is essential for effective treatment and recovery and increased rates of survival. COVID-19 has also greatly increased demand for molecular testing and diagnostics, which are essential for detecting the disease and preventing its spread.[2] Research also identified the need to strengthen knowledge and skills in the fundamentals of cell biology, molecular biology and genetics; these areas are central to biological and biomedical laboratory sciences and have seen very significant growth. It is therefore proposed to develop:

- one unit: Molecular testing
- one skillset: Molecular testing, to support upskilling and reskilling of workers.

There is an increasing focus on food-testing skills. 'Food and beverage' was identified as one of the six National Manufacturing Priorities3 in 2020. Free trade agreements are opening up opportunities in agribusiness and food, as Asian nations look to Australia for agricultural and food products. It is therefore proposed to review the existing units of competency and evaluate the imported units, to ensure food-testing knowledge and skills in the key areas of compliance, safety and quality standards are sufficiently addressed.

Furthermore, with a lot of processes becoming automated, it is therefore proposed to develop one general unit to address skills needed for automation in laboratory work.

Implications of not making the change

If the proposed changes are not made:

- graduates will not meet industry needs, and they will:
    - lack the knowledge, skills and training they need to meet the new NPAAC requirements to perform surgical cut-up

[1] Australian Government Department of Heath, "Requirements for the Performance of Anatomical Pathology Cut-up (Fourth Edition 2013)", available at https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-npaac-docs-surgical.htm, accessed on 13/5/2021.

[2] Liam Harrison, "Preventative measures: The availability of and demand for pathology tests has boosted revenue," *IBISWorld Industry Report Q8521*, March 2021, p.3.

[3] Department of Industry, Science, Energy and Resources, "Modern Manufacturing Initiative and National Manufacturing Priorities announced," available at https://www.industry.gov.au/news/modern-manufacturing-initiative-and-national-manufacturing-priorities-announced, accessed on 22/07/2021.

- have insufficient core, foundational knowledge and skills in key areas — genetic testing, molecular testing and diagnostics — they need to work across the laboratory operations sector in the near future
- have knowledge and skills gaps in food testing

- the Laboratory Operations sector will continue to struggle to upskill or reskill workers, and it will be unable to meet demand for essential surgical cut-up and molecular testing services.

2.2 Evidence for change

The December 2020 PMRVL IRC prioritisation report identified that the five qualifications in this Case for Change must be monitored for updates, and monitoring and research have identified that the current laboratory operations qualifications and units of competency are out of date and do not adequately address industry requirements. The key issues, as **2.1 Rationale for change explained**, are to address the Laboratory Operations sector's needs for surgical cut-up, genetic testing, molecular testing and diagnostics, and food testing skills.

Surgical cut-up

Research and industry consultation identified that emerging skill needs in the pathology sector, particularly for surgical cut-up skills, are being driven by changes in job roles and the increasing complexity of work[1]. The last five years has seen growing contention about who should undertake surgical cut-up, and if it is a technical function, a scientific function or both. The new NPAAC requirements provide for Technical Officers to surgically dissect specimens, with the Pathologist ultimately responsible for handling specimens. An increasing number of Technical Officers are performing this role, and they need training to ensure the anatomical pathology workforce has sufficient competency.[2]

NPAAC requirements mean Technical Officers performing cut-up must have formal training, which creates the need to develop two units to cover skills in post-surgical removal: that is, to perform cut-up of specimens including handling, measuring and weighing, describing and dissecting prior to processing. These skills are not covered by existing units. **2.3 Consideration of existing products** has more information.

Molecular and genetic testing

Stakeholders consider that molecular testing is not appropriately included in existing units, and they should be redeveloped to ensure workers acquire the necessary knowledge and skills at the foundational and advanced levels, so they can undertake molecular testing in their job role. It is essential to develop new units and redevelop existing units to meet industry needs, especially with the increasing importance of molecular testing in laboratories.

Scientific advances, an ageing population and the increasing prevalence of chronic illnesses have increased demand for more frequent, timely and accurate pathology services3. COVID-19 has also resulted in a surge in demand for molecular testing — to detect active infections with SARS-CoV-2 — and genomic testing: for contact tracing.[4] Demand for genetic testing is also forecast to increase, and it continues to require a wider range of techniques and technologies.[5]

The 2019-20 Federal Budget further emphasised the significance of molecular testing by including $430 million for genomics research, $354 million for clinical trials for rare cancers, rare diseases and unmet

[1] MSL Skills Forecast and Proposed Schedule of Work 2019–2023, p.12.

[2] Ibid, p.38.

[3] Liam Harrison, "Preventative measures: The availability of and demand for pathology tests has boosted revenue," *IBISWorld Industry Report Q8521*, March 2021, pp.5-10.

[4] Ibid

[5] Ibid, p.32.

needs, and $150 million for stem cell research.[1] Other demand drivers are increasing requests for new-technology services, which allow for a greater range of testing (e.g. the new cervical screening test), and growing health consciousness, which increases demand for prevention screening (such as for the early detection of breast and bowel cancer). Testing demand has also increased the number of mobile pathology services, vital in regional and rural Australia.[2]

Accordingly, the research and industry consultation identified the need to:

- develop one foundational cross-sectorial unit to support existing molecular testing units in the MSL - Laboratory Operations Training Package
- update existing units to better reflect the role of molecular biology in the current world of work.

2.3 Consideration of existing products has more information.

Food testing compliance

Research and industry consultation identified an increasing focus on food testing, to ensure compliance with current health and safety and quality standards in the food processing industry[3]. With food and beverage identified as a national manufacturing priority in 2020[4] and overseas demand for Australian produce strong and growing, industry relies heavily on laboratory testing and analysis to ensure our exports meet the high standards set by importing countries[5].

Industry consultation highlighted compliance and quality assurance as high priorities for the sector over the next five years. Further, Australian food suppliers face increasing pressure and scrutiny to ensure they comply with food safety standards.[6] Government priorities are also going to result in growth in manufacturing and increase demand for skilled workers, particularly in quality assurance and quality control testing.

Business and employment statistics

The five qualifications included in this Case for Change are available as an apprenticeship or traineeship in most Australian states or territories, and four qualifications are also eligible under JobTrainer: this clearly indicates industry demand.

There is strong demand for laboratory operations services, with an estimated 10,564 businesses in the industry as of June 2020.[7] The qualifications in this Case for Change provide skills for the ANZSCO occupations of Science Technicians and Agricultural, Medical and Science Technicians nfd, which have projected annual employment growths of 9.2% and 26.5% respectfully[8] and which employed some 16,400

[1] Arna Richardson, "Testing times: Social distancing measures have reduced non-critical clinical trial activity," *IBISWorld Industry Report X001*, October 2020, p.15.

[2] Liam Harrison, "Preventative measures: The availability of and demand for pathology tests has boosted revenue," *IBISWorld Industry Report Q8521*, March 2021, pp.5-32.

[3] MSL IRC Skills Forecast and Proposed Schedule of Work 2019–2023, pp.12.

[4] Department of Industry, Science, Energy and Resources, "Modern Manufacturing Initiative and National Manufacturing Priorities announced," available at https://www.industry.gov.au/news/modern-manufacturing-initiative-and-national-manufacturing-priorities-announced, accessed on 22/07/2021.

[5] MSL IRC Skills Forecast and Proposed Schedule of Work 2019–2023, pp.12-24.

[6] Manufacturers' Monthly, "Biscuit manufacturer benefits from food safety compliance solution," available at https://www.manmonthly.com.au/features/biscuit-manufacturer-benefits-food-safety-compliance-solution/, accessed on 04/05/2021.

[7] ABS, "Counts of Australian Businesses, including Entries and Exits (Operating at end of financial year)", available at https://www.abs.gov.au/statistics/economy/business-indicators/counts-australian-businesses-including-entries-and-exits/latest-release#data-download, accessed on 03/05/2021.

[8] PMRVL IRC Prioritisation Report December 2020.

people as of November 2020.[1] The rates of change in tasks in these occupations are between 7.3% and 7.6%, which reinforces the need to update training products to ensure they meet current workplace skills needs.

Attachment F provides additional data and references.

2.3 Consideration of existing products

IBSA Manufacturing used the TGA Text Analysis Tool to analyse existing units that could potentially cover the emerging needs described in this Case for Change. The search, on 9 June 2021, included the terms 'surgical cut-up', 'genetic testing', 'molecular testing/biology/analysis', 'food testing' and 'cell biology'. The search identified the following 14 units.

Surgical cut-up units

There are two existing MSL units that relate to surgical cut-up:

- MSL973020 - Perform histological procedures
- MSL975029 - Perform histological tests

However, these units do not cover foundational skills relating to surgical cut-up prior to histological processes, so the proposed three new units would fill this gap.

Molecular biology/testing units

There are seven existing MSL units that relate to molecular/cell biology or molecular/genetic testing:

- MSL975034 - Perform molecular biology tests and procedures
- MSL975035 - Perform microbiological tests
- MSL975036 - Perform haematological tests
- MSL974021 - Perform biological procedures
- MSL975033 - Perform tissue and cell culture techniques
- MSL975037 - Perform chemical pathology tests
- MSL975030 - Perform immunohaematological tests.

These units are quite advanced, so one new unit in molecular biology needs to be developed at the Certificate IV level to fill the gap. As well, some aspects of MSL975034 are very specific. It is therefore proposed to review and redevelop the existing units, to ensure they satisfy current industry requirements.

Food testing units

There are two existing MSL units and three FBP units that relate to food testing skills. It is proposed to update the MSL units, to reflect emerging skills and compliance needs in food testing.

Of the three FBP units, one unit, FBPFST4004 - Perform microbiological procedures in the food industry. is an elective unit in the MSL50118 - Diploma of Laboratory Technology. It should also be included in the Certificate IV.

The project will consider including the other two FBP units, FBPFST5005 - Examine the biochemical properties of food and FBPTEC4009 - Identify the physical and chemical properties of materials, food and related products, in the elective banks of the Certificate IV and Diploma.

The project will undertake further consultation to confirm the appropriateness of these units with industry.

[1] Australian Government, "Labour Market Information Portal, Occupation Projections – five years to November 2025", available at https://lmip.gov.au/default.aspx?LMIP/EmploymentProjections, accessed on 7/6/2021.

2.4 Approach to streamlining and rationalisation of the training products being reviewed

The project will incorporate surgical cut-up skills into existing qualifications rather than develop new qualifications. It will also review low- or no-enrolment units and remove any superfluous units.

3. Stakeholder consultation

3.1 Stakeholder consultation undertaken in the development of Case for Change

***Attachment C** lists industry-specific stakeholders who actively participated in stakeholder consultations to develop the Case for Change.*

The impetus for this case for change was initially identified through research and consultation to inform the Laboratory Operations Skills Forecast and Proposed Schedule of Work 2019-2023. Since that time, ongoing industry engagement has consistently validated skill gaps in the areas of surgical cut-up, molecular and genetic testing and food testing. The specific consultation activities to demonstrate the manufacturing sector's support for the review of the qualifications in this Case for Change included the following activities.

- Review MSL "Issues Register" to identify any stakeholders who have raised issues related to the scope of this Case for Change
- Review feedback from key industry and RTO stakeholders from the Laboratory Operations session of the 2020 *IBSA Delivering modern manufacturing through a skilled workforce* webinar series.
- A public consultation webpage was established to provide stakeholders with broad access to information about the development of this Case for Change and invite feedback on the training package components. This was promoted via email blasts to IBSA stakeholders, including training providers, State Training Authorities, associations, and industry.
- Five webinar sessions were held for industry and RTO stakeholders to provide feedback on the Case for Change. There were 154 registrants and 85 attendees in total.
- Direct engagement with key industry stakeholders including NSW Health Pathology, Histotechnology Society of NSW, Douglass Hanly Moir Pathology, Laverty Pathology and Australian Clinical Labs (ACL)
- State Training Authorities distributed the draft Case for Change for review by key stakeholders in their jurisdictions.
- Each State Training Authority has been consulted and given the opportunity to provide feedback and nominate stakeholders to be included in the project consultation list.
- State Training Authorities distributed the draft case for change to key stakeholders in their jurisdictions to review. No objections from STAs were received.
- The public consultation included broad distribution of the draft Case for Change to 715 stakeholders, including training providers, State Training Authorities, associations, and industry. The draft Case for Change was available on the IBSA website from 30 August to 15 September 2021 and was viewed 1,214 times by stakeholders.

For a full list of industry-specific stakeholders contacted to participate in the stakeholder consultation process undertaken to develop the Case for Change, please see **Attachment C**.

3.2 Evidence of industry support

*For a list of the issues stakeholders raised during consultations and the IRC's response to them, please see **Attachment D.***

This Case for Change is based on input by industry stakeholders, and **Attachment D** lists the issues they raised and how the IRC proposes to respond to them.

The 2020 *IBSA Delivering modern manufacturing through a skilled workforce* webinar series included a session for the Laboratory Operations sector. Industry stakeholders who attended the session highlighted the industry's needs over the next 2–5 years. These included:

- the need for more technically qualified staff arising from technological advances
- laboratory skills shortages in regional areas
- the major increase in demand for testing services arising from COVID-19
- knowledge and skills gaps in current molecular biology training
- the increasing focus on quality assurance and compliance in the sector.

The industry feedback strongly supports the rationale for this Case for Change: that the Laboratory Operations sector requires workers competent to use emerging technologies and materials and to have greater foundational knowledge and skills about molecular biology and quality assurance.

3.3 Proposed stakeholder consultation strategy for project

Note: For a full list of industry-specific stakeholders who are planned to be contacted to participate in the stakeholder consultation process undertaken for this project, please see ***Attachment E****.*

IBSA Manufacturing follows a training package development model that comprises the development of two drafts and two rounds of public consultation. The model has the following steps.

- The project is listed on the IBSA Manufacturing > Current Projects page on the IBSA Group website, at https://www.ibsa.org.au/. Full project details including a project rationale and overview, milestones and current project status are available on the website.
- The PMRVL IRC nominates Technical Advisory Committee (TAC) members who will:
  - provide subject-matter advice and technical expertise for the development and review of the training package components; TAC members represent the broad range of industry users and RTO representatives
  - attend regular meetings throughout the project to review draft documents, consider issues raised by stakeholders and in public consultations, and provide expert advice
  - develop draft training package components.
- The project implements stakeholder consultation strategies including:
  - promoting the project via the IBSA website, newsletters and email notifications to subscriber stakeholders and industry groups at key stages of the project
  - undertaking industry surveys and webinar/s to obtain feedback about:
    - the job roles of people involved in genetic, molecular and food testing, and surgical cut-up

      the key tasks performed in the workplace and the knowledge and skills required to complete the tasks competently
    - whether knowledge and skills have changed over time
    - the amount of evidence industry would want to see, to know a person is competent and ready to perform in the workplace.
  - undertaking broader consultation with industry by engaging and meeting with stakeholders across jurisdictions, to collect industry intelligence to inform training package development
  - undertaking targeted consultation with regional stakeholders, most of which are satellites of larger organisations, including Douglass Hanly Moir Pathology, NSW Health and Laverty Pathology
  - undertaking targeted consultation with regional RTOs in Queensland and Western Australia

- completing two rounds of public consultation, via the IBSA Manufacturing website, about draft one and draft two components for review and comment
- consulting with state and territory training authorities (STAs) throughout the project by:
  - conducting an initial briefing and maintaining open dialogue throughout the project
  - requesting feedback on draft one and draft two, which is the validation draft
  - providing opportunities for STAs to review the components and provide feedback at the conclusion of the project, as per the *Training Package Development and Endorsement Process Policy*

- IBSA manufacturing compiles feedback from public consultations and issues register, which the TAC considers. All feedback is considered and competing views dealt with by consultation. The outcomes ate approved by the IRC.

Attachment E *lists industry-specific stakeholders who will be contacted as part of the development of the Case for Endorsement.*

4. Licencing or regulatory linkages

The qualifications in this Case for Change did not have licensing or certification requirements at the time of producing the Case for Change. However, the review will need to consider:

- the requirement of pathology laboratories to obtain ISO 17025 (General requirements for the competence of testing and calibration laboratories) and/or ISO 15189 (Medical laboratories - Requirements for quality and competence) and NATA accreditation
- food safety standards ISO 9001 (Quality management systems – Requirements) and ISO 22000 (Food safety management systems - Requirements for any organization in the food chain)
- NPAAC requirements for the performance of anatomical pathology cut-up.

5. Project implementation

5.2 Prioritisation category

This project will be progressed as a routine project.

The December 2020 PMRVL IRC prioritisation report identified that the five qualifications in this Case for Change must be monitored for updates, and the rates of change in tasks in occupations related to these qualifications are between 7.3% and 7.6%. As such, these findings reinforce the need to update training products to ensure they meet current workplace skills needs.

Nearly all of the existing training products included in this Case for Change have not been reviewed for several years: the last full review of the five qualifications was in 2016–18, 59 units of competency were last reviewed between 2016-2018, and one was established in 2020

5.2 Project milestones

The proposed project milestones are

- AISC project approval (November 2021)
- draft 1 consultation and stakeholder feedback (May/June 2022)
- stakeholder validation (August 2022)
- quality assurance (September 2022)
- case for endorsement submitted for approval (November 2022).

5.3 Delivery or implementation issues

RTOs have raised delivery or implementation issues through the issues register and during the 2020 *IBSA Delivering modern manufacturing through a skilled workforce* webinar series, which featured a session for the Laboratory Operations sector. These issues relate to molecular biology knowledge and skills gaps in the MSL training package, the need to update the terminology in units of competency and the need to review unit elective banks to reflect current best practice. These issues will be considered as part of the review of the MSL training package components.

6. Implementing the Skills Minister's priority reforms for Training Packages (2015 and October 2020)

This Case for Change addresses the following priorities.

Ensure that more information about industry's expectations of training delivery is available to training providers to improve their delivery and to consumers to enable more informed course choices

The project will:

- include information about industry's expectations of training delivery
- explain how MSL qualifications and units align to industry's needs and work outcomes.

Ensure the training system better supports individuals to move more easily between related occupations

The project will review existing Training Package components and develop new components, to address emerging skills needs of the Laboratory Operations sector, including for compliance.

Improve the efficiency of the training system by creating units that can be owned and used by multiple industry sectors

The project will:

- develop new units with the intention of making them usable across industry sectors where relevant
- redevelop existing units, considering their use across industry sectors where relevant. **Attachment F** lists other Training Packages in addition to Laboratory Operations that import units in this Case for Change**.**

Foster greater recognition of skill sets and work with industry to support their implementation

The project will develop new skillsets to address the emerging calibration, quality, surgical cut-up, educational support and molecular knowledge and skills needs of the Laboratory Operations sector.

This Case for Change was agreed to by the PMRVL IRC

Name of Chair	Keith Monaghan
Signature of Chair	
Date	8 October 2021

Attachment A: Training Package components to change

IBSA Manufacturing

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Date submitted: 8 October 2021

Project number	Project name	Qualification / unit / skillset	Code	Title	Details of last review *(endorsement date, nature of this update transition, review, establishment)*	Change required
1	Laboratory Operations	Qualification	MSL20118	Certificate II in Sampling and Measurement	Last major review 01/Mar/2016	Update
1	Laboratory Operations	Qualification	MSL30118	Certificate III in Laboratory Skills	Last major review 01/Mar/2016 *Minor IRC update* *19/Apr/2021*	Update
1	Laboratory Operations	Qualification	MSL40118	Certificate IV in Laboratory Techniques	Last major review 20/Jul/2018 *Minor IRC update* *19/Apr/2021*	Update
1	Laboratory Operations	Qualification	MSL50118	Diploma of Laboratory Technology	Last major review 20/Jul/2018 *Minor IRC update* *19/Apr/2021*	Update

Project number	Project name	Qualification / unit / skillset	Code	Title	Details of last review *(endorsement date, nature of this update transition, review, establishment)*	Change required
1	Laboratory Operations	Qualification	MSL60118	Advanced Diploma of Laboratory Operations	Last major review 01/Mar/2016 *Minor IRC update* *19/Apr/2021*	Update
1	Laboratory Operations	Unit	MSL912001	Work within a laboratory or field workplace (induction)	Reviewed 01/Mar/2016	Update
1	Laboratory Operations	Unit	MSL922001	Record and present data	Reviewed 01/Mar/2016	Update
1	Laboratory Operations	Unit	MSL934005	Contribute to the ongoing development of HACCP plans	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL952001	Collect routine site samples	Reviewed 01/Mar/2016	Update
1	Laboratory Operations	Unit	MSL952002	Handle and transport samples or equipment	Reviewed 01/Mar/2016	Update
1	Laboratory Operations	Unit	MSL954003	Relate anatomical and physiological features to laboratory samples	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL972001	Conduct routine site measurements	Reviewed 01/Mar/2016	Update
1	Laboratory Operations	Unit	MSL973016	Perform aseptic techniques	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL973019	Perform microscopic examination	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL973020	Perform histological procedures	Reviewed 20/Jul/2018	Update

Project number	Project name	Qualification / unit / skillset	Code	Title	Details of last review *(endorsement date, nature of this update transition, review, establishment)*	Change required
1	Laboratory Operations	Unit	MSL974020	Perform food tests	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL974021	Perform biological procedures	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL974025	Prepare tissue and cell cultures	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL975029	Perform histological tests	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL975030	Perform immunohaematological tests	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL975033	Perform tissue and cell culture techniques	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL975034	Perform molecular biology tests and procedures	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL975035	Perform microbiological tests	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL975036	Perform haematological tests	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL975037	Perform chemical pathology tests	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL975039	Apply electrophoretic techniques	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL975040	Apply routine chromatographic techniques	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL975046	Perform complex tests to measure chemical properties of materials	Reviewed 20/Jul/2018	Update

Project number	Project name	Qualification / unit / skillset	Code	Title	Details of last review *(endorsement date, nature of this update transition, review, establishment)*	Change required
1	Laboratory Operations	Unit	MSL975047	Apply complex instrumental techniques	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL975048	Apply routine spectrometric techniques	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL975049	Apply routine electrometric techniques	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL975050	Perform food analyses	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL925003	Determine measurement of uncertainty	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL975031	Supervise sampling, inspections and testing at construction sites	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL904002	Perform standard calibration	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL913003	Communicate with other people	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL933006	Contribute to the achievement of quality objectives	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL953003	Receive and prepare samples for testing	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL973013	Perform basic tests	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL973014	Prepare working solutions	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL934007	Maintain and control stocks	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL924003	Process and interpret data	Reviewed 20/Jul/2018	Update

Project number	Project name	Qualification / unit / skillset	Code	Title	Details of last review *(endorsement date, nature of this update transition, review, establishment)*	Change required
1	Laboratory Operations	Unit	MSL934006	Apply quality system and continuous improvement processes	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL924004	Use laboratory application software	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL954004	Obtain representative samples in accordance with sampling plan	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL974017	Prepare, standardise and use solutions	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL974019	Perform chemical tests and procedures	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL974030	Process body fluid specimens using a point of care testing device	Established 28/Apr/2020	Update
1	Laboratory Operations	Unit	MSL925004	Analyse data and report results	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL934004	Maintain and calibrate instruments and equipment	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL935007	Monitor the quality of test results and data	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL916006	Develop and maintain laboratory documentation	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL916007	Manage and develop teams	Reviewed 20/Jul/2018	Update

Project number	Project name	Qualification / unit / skillset	Code	Title	Details of last review *(endorsement date, nature of this update transition, review, establishment)*	Change required
1	Laboratory Operations	Unit	MSL916008	Supervise laboratory operations in work or functional area	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL916009	Maintain registration and statutory or legal compliance in work or functional area	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL916010	Manage complex projects	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL936003	Maintain quality system and continuous improvement processes within work or functional area	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL936004	Conduct an internal audit of the quality system	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL946002	Implement and monitor WHS and environmental management systems	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL976005	Evaluate and select appropriate test methods and/or procedures	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL977005	Validate test methods	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL977006	Contribute to the development of products and applications	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL977007	Troubleshoot equipment and/or production processes	Reviewed 20/Jul/2018	Update

Project number	Project name	Qualification / unit / skillset	Code	Title	Details of last review *(endorsement date, nature of this update transition, review, establishment)*	Change required
1	Laboratory Operations	Unit	MSL977008	Develop or adapt analyses and procedures	Reviewed 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSL975028	Apply advanced embedding and microtomy skills.	Established 20/Jul/2018	Update
1	Laboratory Operations	Unit	MSLXXXXXX	Simple transfers in surgical cut-up	N/A	New
1	Laboratory Operations	Unit	MSLXXXXXX	Simple surgical cut-up	N/A	New
1	Laboratory Operations	Unit	MSLXXXXXX	Perform histological cut up triage and allocation	N/A	New
1	Laboratory Operations	Unit	MSLXXXXXX	Molecular testing (unit)	N/A	New
1	Laboratory Operations	Unit	MSLXXXXXX	Operate automated laboratory equipment	N/A	New
1	Laboratory Operations	Skillset	MSLSSXXXX	Surgical cut-up skillset	N/A	New
1	Laboratory Operations	Skillset	MSLSSXXXX	Molecular testing (skillset)	N/A	New

Attachment B: Job role, enrolment information, the number of RTOs currently delivering these qualifications

Please set out the job roles to be supported through the updated qualifications, enrolment data over the past three years in which data is available for each qualification, completion rates for each qualification, and the number of RTOs delivering these qualifications.

Job role	Qualification to be updated to support the job role	Enrolment data (2017-19)	Completion rates (2017-19)	Number of RTOs delivering (for the past three years)

• Milk Tanker Sampler/Driver • Sampler/Tester: Construction Materials, Food Manufacturing, Air, Manufacturing • Sample Courier • Field Assistant (Sample Testing) • Laboratory Attendant • Plant/Production operators • Quarry Aggregates Sampler	Certificate II in Sampling and Measurement	2,960	2,330	28
• Laboratory Assistant: Mineral Assay, Biomedical, Water Quality, Food Testing, Polymer Testing • Technical Assistant: Biological Testing, Environmental Testing, Construction Materials Testing, Dairy Factory • Field Assistant and Environmental Field Assistant (Sample Testing) • Laboratory Technician	Certificate III in Laboratory Skills	1,740	1,150	30
• Biological Technical Assistant • Food Testing Technical Assistant • Manufacturing Testing Technician • Environmental Technician • Mineral Assay Technician • Construction Materials Testing Technician • Laboratory Technician	Certificate IV in Laboratory Techniques	4,915	1,680	24
• Pathology Technical Officer • Biotechnology Technical Officer • Laboratory Technical Officer	Diploma of Laboratory Technology	2,430	790	20

• Manufacturing Testing Technical Officer • Food Laboratory Technical Officer • Mineral Assay Technical Officer • Construction Materials Testing Technical Officer • Forensic Science Technician • Calibration Technician				
• Senior Technical Officer: Food Testing, Laboratory • Senior Technician: Mineral Assay, Pathology Testing, Calibration • Laboratory Supervisor: Environmental Testing, Manufacturing Testing, Water Treatment	Advanced Diploma of Laboratory Operations	15	5	7

Attachment C: Stakeholders who actively participated in the consultation process of the Case for Change

Name of stakeholder	Title	Organisation	Organisation type (e.g. Employer, peak body, union, RTO, regulator)	Jurisdiction/town/city (e.g. NSW/Sydney)
Ben Lunn	Business Development Manager	LTT Group Pty Ltd	RTO	QLD
Simon Gazia		LTT Group Pty Ltd	RTO	QLD
Maung Maung Soe	Trainer/Assessor	LTT Group Pty Ltd	RTO	QLD
Terri Quinn	Manager – Learning Governance & Quality	Department of Education	Government	QLD
Matthew Hand	Pathology & Laboratory Trainer	ABC Training	RTO	
Allan Hicks	Course Convener – Histology and Histopathology	Griffith University	RTO	QLD
Lois Higginson	Manager Skills Development Unit	Queensland Health	Industry	QLD
Phillip McGlashan	Advanced Skills Teacher	Swinburne University of Technology	RTO	VIC
Carin Grant		Swinburne University of Technology	RTO	VIC
Veluppillai Packiyasothy		Swinburne University of Technology	RTO	VIC
Tracey Salter	Program Manager Applied Sciences Social Care and Health	RMIT	RTO	VIC
Lisa Gilbert	Queensland Industry Skills Adviser - Manufacturing	AI Group	STA	QLD

Denise Hatton	Product Development Co-ordinator: Sustainability and Process Manufacturing	TAFE NSW	RTO	NSW
Bradford Cullen	Lecturer	TAFE SA	RTO	SA
Sarah	Teacher	The Gordon TAFE	RTO	VIC
Sophie Wylde	Lecturer	SM TAFE	RTO	WA
Joanne Brett	VET Unit Program Manager	VCAA	Government	VIC
Suzanne Seinor	Senior Program Officer	Department of Training and Workforce Development	Government	WA
Pip Craw	Teacher	TasTAFE	RTO	TAS
Leah Simmons	Industry Relationship Lead	TAFE NSW	RTO	NSW
Deb Rulach	Executive Officer Strategy and Planning	LTT Group Pty Ltd	RTO	QLD
Carin Grant	Lab tech teacher, Biology area.	Swinburne University	RTO	VIC
Bradley Wilman	Executive Manager Nursing, Health and Science	Swinburne University	RTO	VIC
Liz Crompton	Lead	Resources Industry Training Council	Council	WA
Melissa Lockwood	Teacher	Gordon institute of TAFE	RTO	VIC
Katrina Mengede	Teacher / Workplace assessor	TAFE Queensland	RTO	QLD
Paul Saunders	Executive Officer	Victorian Curriculum Maintenence Management Service		VIC
Pip Craw	Teacher (AST)	TasTAFE	RTO	TAS

Dr Freba Olime	Head Teacher	TAFE Granville	RTO	NSW
Jacqueline law	Senior scientist - Histology	NSW Health Pathology	Industry	NSW
Leah Simmons	Industry Relationship Lead	TAFE NSW	RTO	NSW
Thayaline Suthakaran	Biomedical Scientist	Austpath Laboratories	Industry	NSW
Justin Dennis	Technical Officer Surgical Cut Up	NSW Health Pathology	Industry	NSW
Cathy Gorrie	Lecturer/Academic	UTS	RTO	NSW
Jodi Blakeney	Scientist	Capital pathology	Industry	ACT
Courtney Colless		TAFE Queensland		QLD
Joanne LaMalfa	Department manager	NSW health Pathology - Randwick	Industry	NSW
Vanessa Thomson	Director Scientific and Technical Strategy	NSW Health Pathology	Industry	NSW
Wendy Cooper	Pathologist	NSW Health Pathology	Industry	NSW
Nabilah Amdani	Technician	Dorevitch Pathology	Industry	VIC
Anne Beaty	Principal Scientist Anatomical Pathology	The Royal Melbourne Hospital	Industry	Vic
Naomi McGeorge	Technical officer	NSW Health Pathology	Industry	NSW
Trenna Stewart	Senior Hospital Scientist	NSW Health Pathology	Industry	NSW
Josh Furnell	Surgical Scientist	DHM Macquarie Park	Industry	NSW
Elena Petrovska	Medical laboratory technician	NSW Health	Industry	NSW

Jan Hallett		DHM Histology	Industry	NSW
Tony Henwood	Principal Scientist	Children's Hospital at Westmead	Industry	NSW
Andrew Kennedy	Laboratory Manager	NSWHP Anatomical Pathology, Concord Hospital	Industry	NSW
Louise Douglas	Manager - Anatomical Pathology	Melbourne Pathology	Industry	VIC
Jennifer Semlitzky	Senior Scientific Officer	Laverty Pathology	Industry	NSW
Trevor Hinwood	Chairman	Histotechnology Society of NSW	Association	NSW
Narelle Vogels	Histology Scientist	Melbourne Pathology	Industry	VIC
Neeta Lal	Scientist	RCPAQAP	Industry	NSW
Rebecca Thai	Cut-up Scientist	Douglass Hanly Moir Pathology	Industry	NSW
Liz Martin	Chief Scientist	Western Diagnostic Pathology	Industry	WA
Rebecca Papaloizou	Surgical Scientist	Douglass Hanly Moir Pathology	Industry	NSW
Sarah Teakel	Medical Scientist	Laverty Pathology	Industry	NSW
Samantha Arandelovic	Senior Scientist	Mater Pathology	Industry	QLD
Katherine Munoz		Douglass Hanly Moir Pathology	Industry	NSW
Avilashni Sewak	Technical Officer	NSWHP, AP Liverpool	Industry	NSW
Jacky Jongkryg	Teacher	TAFE NSW	RTO	NSW
Nayma Bilal	Medical Science Student	Charles Sturt University	RTO	NSW
Saurab Raj Joshi	Student	TAFE Granville	RTO	NSW

Virginia James	Histology	Westmead Hospital	Industry	NSW
Sithari Ranpatabandige	Medical Scientist	Barratt & smith pathology Penrith	Industry	NSW
Sambath Soth	Tech. officer	NSW Health Liverpool Hospital	Industry	NSW
Ujenia Renganathan	Medical Scientist	Dorevitch pathology	Industry	VIC
Tania Marsden	Principal Scientist	Eastern Health	Industry	VIC
Cristina George	Cert IV Trainer	Holmesglen TAFE	RTO	VIC
Begum	Surgical Scientist	DHM	Industry	NSW
Linda	Scientist	Royal Melbourne Hospital	Industry	VIC
Hazel chambers	Medical scientist	Royal children's hospital	Industry	VIC
Heenal Sugrim	T. O	NSW Health Pathology	Industry	NSW
Sambath SOTH	Tech Officer	NSW Health Liverpool Hospital	Industry	NSW
Andriana Bruce	Senior Scientist Histology	Capital Pathology	Industry	ACT
Michael Bushe-Jones	Complex cut-up Scientist	ACL	Industry	WA
Natalie Rayment	Scientific officer	Capital Pathology	Industry	ACT
Thakwan Yousif	Scientist	Austpath Laboratory	Industry	NSW
Josh Furnell	Surgical Scientist	DHM Macquarie Park	Industry	NSW
Joy Bagsic		Austin Hospital	Industry	VIC
Qian WU	Scientist	ACL	Industry	VIC

Allan Hicks	Program Advisor	Griffith university	RTO	QLD
Katherine Wells-Reed	Anatomical Pathology Quality Coordinator	Douglass Hanly Moir Pathology	Industry	NSW
Richard Farquharson	Cut-Up Coordinator	Douglass Hanly Moir Pathology	Industry	NSW

Attachment D: Issues Raised by stakeholders during consultation on the development of the Case for Change

Stakeholder type	Issues raised	IRC's response to issues raised
Industry Reference Committee (IRC) Representatives	The PMRVL IRC has identified the need to review and redevelop the MSL qualifications and have raised several issues, outlined below.	Develop the Case for Change on behalf of the industry.
	1.1 There is provision in the National Pathology Accreditation Advisory Council (NPAAC) requirements for Technical Officers to perform surgical cut-up. There needs to be training in place as there have been job role changes in surgical cut-up requiring higher-level skills and increasing complexity in the work undertaken by Technical Officers. New units need to be developed to cover skills in post-surgical removal to perform cut- up of specimens.	Develop three units in surgical cut-up to be incorporated as electives in relevant MSL qualifications Develop one new surgical cut-up skillset to support upskilling and reskilling of workers to take up opportunities in the potential new career path as Technical Officer
	1.2 Currently, molecular testing is inappropriately included across units that should be reworked to ensure workers are provided with the correct skills at different levels, foundational and advanced, to ensure appropriate understanding of molecular testing for their job role. Further, there are wider range of techniques and technologies in molecular/genetic testing.	Develop one new unit to address skill gaps in molecular testing Review and redevelop existing qualifications and units to support laboratory operations employers, and address current skills and knowledge gaps Develop one new skillet to support upskilling and reskilling in molecular testing/biology
	1.3 With the rate of food allergies, intolerances and lifestyle choices on the rise, organisations are increasingly requiring their food products to be tested to provide the consumer with reliable labelling information	Review and redevelop existing qualifications and units to ensure food testing skills are covered sufficiently
	1.4 Need for new skillsets to cover the following areas in laboratory operations to support workers upskill/reskill: construction materials, calibration, quality, surgical cut-up, educational support and molecular testing	Develop two new skillsets (surgical cut-up and molecular testing) embedding areas outlined in 1.4.

	1.5 A lot of processes are/or becoming automated in laboratory work; there is a need for a general unit in automation	Develop one new unit to address skills needed for automation in laboratory work.
Peak Industry Bodies		
Employers (Non-IRC)	I think this (surgical cut up) would be a huge benefit. It is a major factor now within the histology workplace so something that needs to be factored into courses.	Develop three units in surgical cut-up to be incorporated as electives in relevant MSL qualifications Develop one new surgical cut-up skillset to support upskilling and reskilling of workers to take up opportunities in the potential new career path as Technical Officer
Regulators		
Registered Training Organisations (RTOs)	2.1 The pathology industry will increasingly require graduates to have analytical skills.	Review and redevelop existing qualifications and units to incorporate analytical skills where relevant
	2.2 Keeping up to date with technologies, compliance and QA is critical in the laboratory operations sector	Refer to 1.1, 1.2 and 1.3 above.
	2.3 Need to update terminology in units of competency and review the elective bank of Certificate III in Laboratory Skills to reflect current best practice in laboratory operations sector	Review and redevelop units to ensure terminology is up to date with current industry practices Review elective bank of MSL qualifications for suitability with current industry needs and practices
State and Territory Training Authorities (STAs)		
Unions		
Please add other categories as appropriate		

Attachment E: List of stakeholders to be contacted as part of the development of the Case for Endorsement

Name of Stakeholder	Title	Organisation	Organisation type	Jurisdiction/town/city
		National Pathology Accreditation Advisory Council	Council	National
		Histotechnology Society of NSW	Association	NSW
		Australasian Association of Histology and Histotechnology	Association	National
		Douglass Hanly Moir Pathology	Industry	NSW
		NSW Health	Industry	NSW
		Laverty Pathology	Industry	NSW
		Australian Clinical Labs	Industry	National
		Sonic Healthcare	Industry	National
		National Association of Testing Authorities' stakeholders who are accredited for Anatomical Pathology	Accreditation authority	National

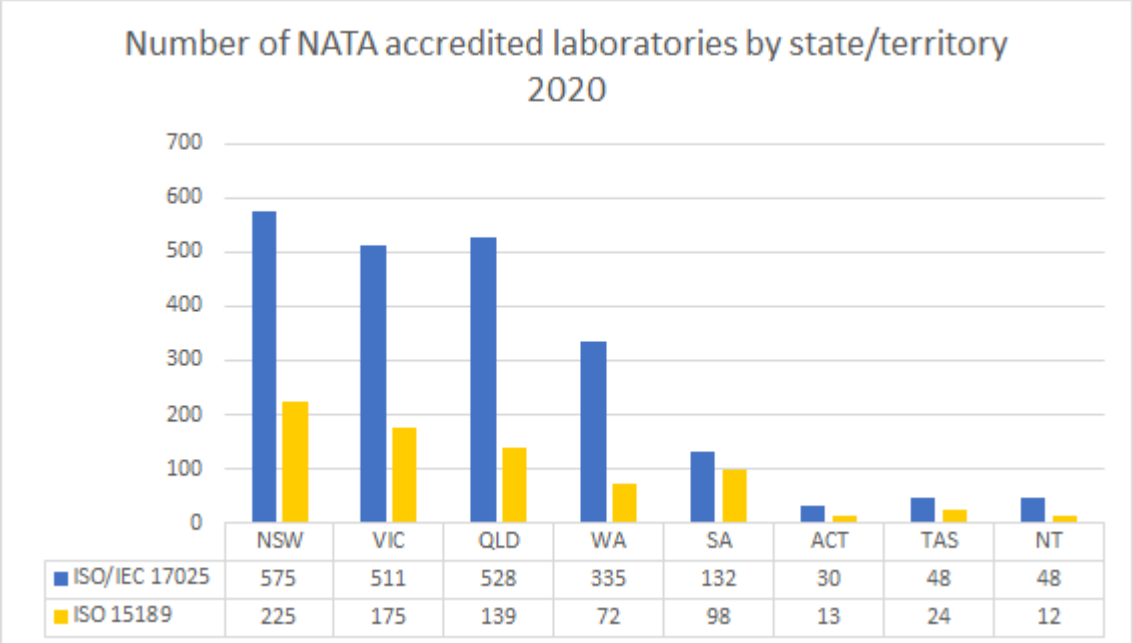
Attachment F: Additional Data

Business Data 2017-20

ANZSIC code and class		Jun-17	Jun-18	Jun-19	Jun-20
6910	Scientific Research Services	3,806	4,133	4,524	4,767
6925	Scientific Testing and Analysis Services	3,216	3,204	3,277	3,255
6999	Other Professional, Scientific and Technical Services n.e.c.	2,377	2,398	2,504	2,542
Total		**9,399**	**9,735**	**10,305**	**10,564**

Source: ABS, "Counts of Australian Businesses, including Entries and Exits (Operating at end of financial year)", available at https://www.abs.gov.au/statistics/economy/business-indicators/counts-australian-businesses-including-entries-and-exits/latest-release#data-download, accessed on 03/05/2021

NATA Data 2020



Discipline	NSW	VIC	QLD	WA	SA	ACT	TAS	NT	Aus	Standard
Materials	233	156	208	147	53	8	13	19	837	ISO17025
Food and Beverage	73	67	62	32	21	4	8	5	272	ISO17025
Human Pathology	219	171	133	70	96	13	22	11	735	ISO15189
Animal Health	15	14	7	4	2	0	1	1	44	ISO17025

Calibration	86	85	35	40	15	3	2	3	269	ISO17025
Infrastructure and Asset Integrity	278	233	326	224	56	8	20	35	1180	ISO17025
Manufactured goods	134	107	67	37	24	3	4	1	377	ISO17025
Healthcare, Pharmaceutical and Media Products	19	22	17	9	6	5	1	0	79	ISO17025
Environment	158	121	102	59	24	12	18	13	507	ISO17025
Agribusiness	38	29	38	17	12	0	3	0	137	ISO17025

Source: National Association of Testing Authorities (NATA), Australia available at https://nata.com.au/accredited-facility, extracted 24/03/2020

Subject enrolments 2017-20

Unit code	Unit title	2017-20 enrolments
MSL912001	Work within a laboratory or field workplace (induction)	**7,410**
MSL922001	Record and present data	**10,700**
MSL934005	Contribute to the ongoing development of HACCP plans	**70**
MSL952001	Collect routine site samples	**7,480**
MSL952002	Handle and transport samples or equipment	**3,580**
MSL954003	Relate anatomical and physiological features to laboratory samples	**1095**
MSL972001	Conduct routine site measurements	**5,730**
MSL973016	Perform aseptic techniques	**2610**
MSL973019	Perform microscopic examination	**2785**
MSL973020	Perform histological procedures	**295**
MSL974020	Perform food tests	**385**
MSL974021	Perform biological procedures	**1310**
MSL974025	Prepare tissue and cell cultures	**310**
MSL975029	Perform histological tests	**450**
MSL975030	Perform immunohaematological tests	**260**
MSL975033	Perform tissue and cell culture techniques	**250**
MSL975034	Perform molecular biology tests and procedures	**405**
MSL975035	Perform microbiological tests	**715**
MSL975036	Perform haematological tests	**375**
MSL975037	Perform chemical pathology tests	**325**
MSL975039	Apply electrophoretic techniques	**160**
MSL975040	Apply routine chromatographic techniques	**295**
MSL975046	Perform complex tests to measure chemical properties of materials	**50**
MSL975047	Apply complex instrumental techniques	**55**
MSL975048	Apply routine spectrometric techniques	**240**
MSL975049	Apply routine electrometric techniques	**35**

MSL975050	Perform food analyses	**25**
MSL925003	Determine measurements of uncertainty	35
MSL904002	Perform standard calibrations	1,195
MSL913003	Communicate with other people	3,115
MSL933006	Contribute to the achievement of quality objectives	2,205
MSL953003	Receive and prepare samples for testing	3,595
MSL973013	Perform basic tests	4,305
MSL973014	Prepare working solutions	2,895
MSL934007	Maintain and control stocks	1,430
MSL924003	Process and interpret data	2,925
MSL934006	Apply quality system and continuous improvement processes	1,890
MSL924004	Use laboratory application software	2,560
MSL954004	Obtain representative samples in accordance with sampling plan	1,530
MSL974017	Prepare, standardise and use solutions	1,615
MSL974019	Perform chemical tests and procedures	1,605
MSL925004	Analyse data and report results	975
MSL934004	Maintain and calibrate instruments and equipment	2930
MSL935007	Monitor the quality of test results and data	820
MSL916006	Develop and maintain laboratory documentation	170
MSL916007	Manage and develop teams	175
MSL916008	Supervise laboratory operations in work or functional area	165
MSL916009	Maintain registration and statutory or legal compliance in work or functional area	75
MSL916010	Manage complex projects	60
MSL936003	Maintain quality system and continuous improvement processes within work or functional area	75
MSL936004	Conduct an internal audit of the quality system	65
MSL946002	Implement and monitor WHS and environmental management systems	85
MSL976005	Evaluate and select appropriate test methods and/or procedures	65
MSL977005	Validate test methods	20
MSL977006	Contribute to the development of products and applications	20
MSL977008	Develop or adapt analyses and procedures	20

Source: NCVER, extracted 23/09/2021 – 30/09/2021

2017-20 low/zero subject enrolment units

Unit code	Unit title	Low/zero enrolments
MSL975031	Supervise sampling, inspections and testing at construction sites	**Zero**
MSL974030	Process body fluid specimens using a point of care testing device	**Zero**
MSL977007	Troubleshoot equipment and/or production processes	**Low**

MSL975028	Apply advanced embedding and microtomy skills	**Zero**

Source: NCVER, extracted 23/09/2021 – 30/09/2021

List of Training Package that import units contained in this Case for Change

- Laboratory Operations (MSL, PML)
- Agriculture, Horticulture and Conservation and Land Management (AGF, AGR, AHC, RTD, RTE, RTF, RUA, RUH)
- Animal Care and Management (ACM, RUV)
- Chemical, Hydrocarbons and Refining (PMA)
- Food, Beverage and Pharmaceutical (FBP, FDF, SUG)
- Health (HLT)
- Manufacturing (MCM, MSA, MSM)
- National Water (NWP, UTW)
- Resources and Infrastructure (BCC, DRT, MNC, MNM, MNQ, RII)
- Seafood Industry (SFI)
- Sustainability (MSS)

Occupation Projections to November 2025

Occupation Code	Occupation	Employment level - November 2020 ('000)	National Skills Commission Projections		
			Projected employment level - November 2025 ('000)	Projected employment growth - five years to November 2025	
				('000)	(%)
3114	Science Technicians	16.3	16.7	0.4	2.6
3110	Agricultural, Medical and Science Technicians nfd	0.1	0.1	0.0	10.3

Source: Australian Government, "Labour Market Information Portal, Occupation Projections – five years to November 2025", available at https://lmip.gov.au/default.aspx?LMIP/EmploymentProjections, accessed on 7/6/2021.

MSL IRC Prioritisation Report December 2020 - Benchmark against prioritisation tests

Qualification		Primary occupation	Categorisation	No. people employed	% annual employment growth	% task change
MSL20118	Certificate II in Sampling and Measurement	Science Technicians	Monitor	16,948	9.2%	7.6%
MSL30118	Certificate III in Laboratory Skills	Agricultural, Medical And Science Technicians nfd	Monitor	791	26.5%	7.3%
MSL40118	Certificate IV in Laboratory Techniques					
MSL50118	Diploma of Laboratory Technology					

MSL60118	Advanced Diploma of Laboratory Operations					

Source: PMRVL IRC Prioritisation Report December 2020

Apprenticeship funding

Qualification		States/territories where an apprenticeship/traineeship is available	JobTrainer eligible course
MSL20118	Certificate II in Sampling and Measurement	WA, SA, ACT	QLD
MSL30118	Certificate III in Laboratory Skills	WA, NT, QLD, SA, NSW, ACT, VIC, TAS	NSW, QLD, SA, VIC, WA
MSL40118	Certificate IV in Laboratory Techniques	WA, SA, NT, QLD, NSW, ACT, VIC, TAS	ACT, NSW, QLD, SA, VIC. WA
MSL50118	Diploma of Laboratory Technology	WA, SA, NT, QLD, NSW, ACT, VIC	ACT, NSW, SA, TAS
MSL60118	Advanced Diploma of Laboratory Operations	WA, SA, QLD, ACT	

Source: National Careers Institute, "MySkills," available at https://www.myskills.gov.au/, accessed on May – June 2021