



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)
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Name of SSO:	IBSA Manufacturing
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### 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 27 units of competency, develop three 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
  - 27 existing units of competency
- develop:
  - three new units: Simple transfers in surgical cut-up, Simple surgical cut-up and Molecular testing
  - two new skillsets: Surgical cut-up and Molecular testing.

**Attachment D** 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 and

standards This is particularly important because the 27 existing units of competency included in this Case for Change have not been reviewed since 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.<sup>1</sup> This creates a potential career path for Technical Officers exclusively in surgical cut-up. The MSL Laboratory Operations Training Package does not currently provide the skills Technical Officers need in this area, so it is proposed to develop:

- two surgical cut-up units: Simple transfers in surgical cut-up and Simple surgical cut-up
- 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.<sup>2</sup> 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 Priorities<sup>3</sup> 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.

### ***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

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<sup>1</sup> Australian Government Department of Health, "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.

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

<sup>3</sup> 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.

### ***Justification if reviewing products within 12 months of last update/change***

The last full review of the five qualifications was in 2016–18. Since then, four of the qualifications have had minor updates, to accommodate updated elective units.

## 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<sup>1</sup>. 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.<sup>2</sup>

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 services<sup>3</sup>. COVID-19 has also resulted in a surge in demand for molecular testing — to detect active infections with SARS-

<sup>1</sup> MSL Skills Forecast and Proposed Schedule of Work 2019–2023, p.12.

<sup>2</sup> Ibid, p.38.

<sup>3</sup> Liam Harrison, “Preventative measures: The availability of and demand for pathology tests has boosted revenue,” *IBISWorld Industry Report Q8521*, March 2021, pp.5-10.

CoV-2 — and genomic testing: for contact tracing.<sup>1</sup> Demand for genetic testing is also forecast to increase, and it continues to require a wider range of techniques and technologies.<sup>2</sup>

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 needs, and \$150 million for stem cell research.<sup>3</sup> 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.<sup>4</sup>

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<sup>5</sup>. With food and beverage identified as a national manufacturing priority in 2020<sup>6</sup> 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<sup>7</sup>.

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.<sup>8</sup> 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.

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<sup>1</sup> Ibid

<sup>2</sup> Ibid, p.32.

<sup>3</sup> Arna Richardson, "Testing times: Social distancing measures have reduced non-critical clinical trial activity," *IBISWorld Industry Report X001*, October 2020, p.15.

<sup>4</sup> Liam Harrison, "Preventative measures: The availability of and demand for pathology tests has boosted revenue," *IBISWorld Industry Report Q8521*, March 2021, pp.5-32.

<sup>5</sup> MSL IRC Skills Forecast and Proposed Schedule of Work 2019–2023, pp.12.

<sup>6</sup> 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.

<sup>7</sup> MSL IRC Skills Forecast and Proposed Schedule of Work 2019–2023, pp.12-24.

<sup>8</sup> 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.

There is strong demand for laboratory operations services, with an estimated 10,564 businesses in the industry as of June 2020.<sup>1</sup> The qualifications in this Case for Change provide skills for the ANZCO occupations of Science Technicians and Agricultural, Medical and Science Technicians nfd, which have projected annual employment growths of 9.2% and 26.5% respectively<sup>2</sup> and which employed some 16,400 people as of November 2020.<sup>3</sup> 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 two 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**

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<sup>1</sup> 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.

<sup>2</sup> PMRVL IRC Prioritisation Report December 2020.

<sup>3</sup> 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.

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.

#### 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

**This section will be updated to incorporate outcomes of public consultation once completed**

#### 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.
- State Training Authorities will distribute the draft Case for Change for review by key stakeholders in their jurisdictions.
- Each State Training Authority will be consulted and given the opportunity to provide feedback and nominate stakeholders to be included in the project consultation list.
- Additionally, there are key stakeholders with a direct interest in the training products being reviewed who will be consulted with as part of the project:
  - National Pathology Accreditation Advisory Council

- Histotechnology Society of NSW
- Australasian Association of Histology and Histotechnology
- Douglass Hanly Moir Pathology (DHM)
- NSW Health
- Lavery Pathology
- Australian Clinical Labs
- Sonic Healthcare
- National Association of Testing Authorities' stakeholders who are accredited for Anatomical Pathology

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 are 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%. These things reinforce the need to update training products to ensure they meet current workplace skills needs.

All 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, and the 27 units of competency were last reviewed in 2018.

### 5.2 Project milestones

The proposed project milestones are

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

Name of Chair	Keith Monaghan
Signature of Chair	
Date	

## Attachment A: Training Package components to change

IBSA Manufacturing

Contact details: Antoinette Hewitt, General Manager SSO, Antoinette.Hewitt@ibsa.org.au, +61 3 9815 7000

Date submitted: [TBA]

Project number	Project name	Qualification / unit / skillset	Code	Title	Details of last review <i>(endorsement date, nature of this update transition, review, establishment)</i>	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 <i>Minor IRC update 19/Apr/2021</i>	Update
1	Laboratory Operations	Qualification	MSL40118	Certificate IV in Laboratory Techniques	Last major review 20/Jul/2018 <i>Minor IRC update 19/Apr/2021</i>	Update
1	Laboratory Operations	Qualification	MSL50118	Diploma of Laboratory Technology	Last major review 20/Jul/2018 <i>Minor IRC update 19/Apr/2021</i>	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
1	Laboratory Operations	Unit	MSL974020	Perform food tests	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	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 immuno-haematological 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
1	Laboratory Operations	Unit	MSL975047	Apply complex instrumental techniques	Reviewed 20/Jul/2018	Update

Project number	Project name	Qualification / unit / skillset	Code	Title	Details of last review <i>(endorsement date, nature of this update transition, review, establishment)</i>	Change required
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	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	Molecular testing (unit)	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)
<ul style="list-style-type: none"> <li>• Milk Tanker Sampler/Driver</li> <li>• Sampler/Tester: Construction Materials, Food Manufacturing, Air, Manufacturing</li> <li>• Sample Courier</li> <li>• Field Assistant (Sample Testing)</li> <li>• Laboratory Attendant</li> <li>• Plant/Production operators</li> <li>• Quarry Aggregates Sampler</li> </ul>	Certificate II in Sampling and Measurement	2,960	2,330	28
<ul style="list-style-type: none"> <li>• Laboratory Assistant: Mineral Assay, Biomedical, Water Quality, Food Testing, Polymer Testing</li> <li>• Technical Assistant: Biological Testing, Environmental Testing, Construction Materials Testing, Dairy Factory</li> <li>• Field Assistant and Environmental Field Assistant (Sample Testing)</li> <li>• Laboratory Technician</li> </ul>	Certificate III in Laboratory Skills	1,740	1,150	30
<ul style="list-style-type: none"> <li>• Biological Technical Assistant</li> <li>• Food Testing Technical Assistant</li> <li>• Manufacturing Testing Technician</li> <li>• Environmental Technician</li> <li>• Mineral Assay Technician</li> </ul>	Certificate IV in Laboratory Techniques	4,915	1,680	24



<ul style="list-style-type: none"> <li>• Construction Materials Testing Technician</li> <li>• Laboratory Technician</li> </ul>				
<ul style="list-style-type: none"> <li>• Pathology Technical Officer</li> <li>• Biotechnology Technical Officer</li> <li>• Laboratory Technical Officer</li> <li>• Manufacturing Testing Technical Officer</li> <li>• Food Laboratory Technical Officer</li> <li>• Mineral Assay Technical Officer</li> <li>• Construction Materials Testing Technical Officer</li> <li>• Forensic Science Technician</li> <li>• Calibration Technician</li> </ul>	Diploma of Laboratory Technology	2,430	790	20
<ul style="list-style-type: none"> <li>• Senior Technical Officer: Food Testing, Laboratory</li> <li>• Senior Technician: Mineral Assay, Pathology Testing, Calibration</li> <li>• Laboratory Supervisor: Environmental Testing, Manufacturing Testing, Water Treatment</li> </ul>	Advanced Diploma of Laboratory Operations	15	5	7

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

**To be completed after public consultation**

Name of stakeholder	Title	Organisation	Organisation type (e.g. Employer, peak body, union, RTO, regulator)	Jurisdiction/town/city (e.g. NSW/Sydney)

## 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 two 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 skillset 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.
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 two 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

**To be completed after public consultation**

Name of Stakeholder	Title	Organisation	Organisation type	Jurisdiction/town/city

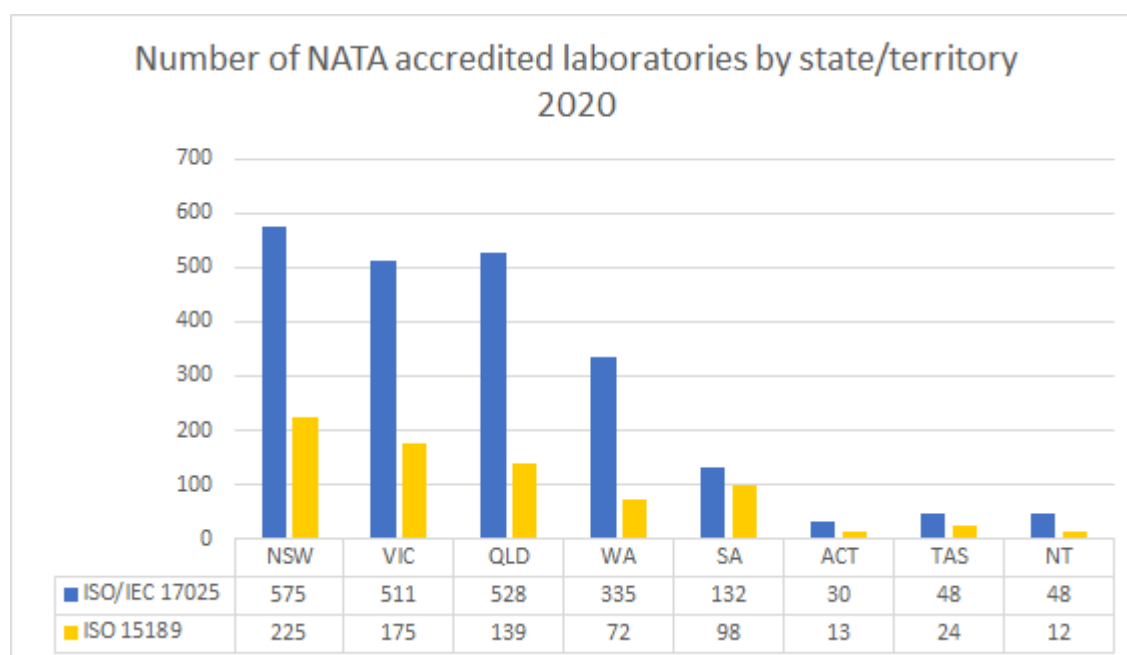
## Attachment F: Additional Data

### 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
<b>Total</b>		<b>9,399</b>	<b>9,735</b>	<b>10,305</b>	<b>10,564</b>

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 2016-19

Unit code	Unit title	2016-19 enrolments
MSL912001	Work within a laboratory or field workplace (induction)	6935
MSL922001	Record and present data	10335
MSL934005	Contribute to the ongoing development of HACCP plans	130
MSL952001	Collect routine site samples	7145
MSL952002	Handle and transport samples or equipment	3490
MSL954003	Relate anatomical and physiological features to laboratory samples	540
MSL972001	Conduct routine site measurements	5385
MSL973016	Perform aseptic techniques	7175
MSL973019	Perform microscopic examination	7320
MSL973020	Perform histological procedures	1475
MSL974020	Perform food tests	960
MSL974021	Perform biological procedures	4290
MSL974025	Prepare tissue and cell cultures	1500
MSL975029	Perform histological tests	1740
MSL975030	Perform immunohaematological tests	795
MSL975033	Perform tissue and cell culture techniques	770
MSL975034	Perform molecular biology tests and procedures	185
MSL975035	Perform microbiological tests	2500
MSL975036	Perform haematological tests	1285
MSL975037	Perform chemical pathology tests	1080
MSL975039	Apply electrophoretic techniques	890
MSL975040	Apply routine chromatographic techniques	765
MSL975046	Perform complex tests to measure chemical properties of materials	135
MSL975047	Apply complex instrumental techniques	135
MSL975048	Apply routine spectrometric techniques	940
MSL975049	Apply routine electrometric techniques	50
MSL975050	Perform food analyses	335

Source: NCVER, extracted 10/08/2021

**2016-19 low/no subject enrolment units**

Not applicable

***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					
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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.

## **Attachment G: Letters of Support**

**Letters of support to be added after public consultation**